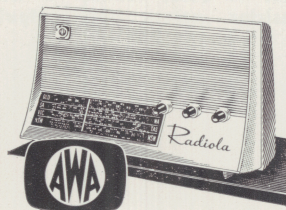


TECHNICAL INFORMATION AND SERVICE DATA



Radiola Mantel Receiver Model B15

ISSUED BY
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.

GENERAL DESCRIPTION

MODEL B15 is a five valve, A.C. operated super-heterodyne receiver designed for the reception of the Medium Wave Band.

Features of the design include: Ferrite Rod aerial with provision for external aerial; high gain I.F. transformers; wide range tone control; negative feedback over audio stages; high sensitivity 6" x 4" elliptical speaker; all components readily accessible on chassis.

ELECTRICAL AND MECHANICAL SPECIFICATIONS


Frequency Range 540-1600 Kc/s
(555-187.5 metres)
Intermediate Frequency 455 Kc/s
Power Supply Rating 200—260 volts A.C.
50 C.P.S.
Power Consumption 36 watts
Undistorted Power Output 3 watts
Loudspeaker: 6" x 4" Permanent Magnet 50067.
Loudspeaker Transformer 50543A
V.C. Impedance—15 ohms at 400 C.P.S.

CONNECTION TO POWER SUPPLY:

The receiver should not be connected to any circuit supplying other than 200-260 volts A.C. at a frequency of 50 C.P.S.

Connections on the power transformer are shown below.

RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES


230-260
VOLTS


200-230
VOLTS



VALVE COMPLEMENT:

- (1) 6BE6—Converter.
- (2) 6BA6—I.F. Amplifier.
- (3) 6AV6—Audio Amplifier, Detector and A.V.C.
- (4) 6AQ5—Audio Output.
- (5) 6X4—Rectifier.

CHASSIS REMOVAL

Loosen off completely the two cabinet retaining screws in the cabinet back.

Remove the two rear chassis mounting screws through the base of the cabinet back.

Remove the cabinet back.

Unplug the speaker cable.

Remove all control knobs; these are a push on fit.

Remove the remaining two chassis mounting screws and slide the chassis free of the cabinet.

Replacing the chassis is the reverse of the above procedure.

ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced or when it is found that the seals over the adjusting screws have been broken. It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and can only be re-adjusted by skilled operators using special equipment.

For all alignment operations, keep the generator output as low as possible to avoid A.V.C. action and set the volume control in the maximum clockwise position.

Testing Instruments:

- (1) A.W.A. Junior Signal Generator, type 2R7003; or
- (2) A.W.A. Modulated Oscillator, series J6726.

If the modulated oscillator is used, connect a .22 megohms non-inductive resistor across the output terminals.

- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE

Alignment Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for Maximum Peak Output:
1	Aerial Section of Gang	455 Kc/s.	Gang fully closed	Cores in TR3 and TR2
Repeat adjustment until maximum output is obtained.				
2	Inductively Coupled to Rod Aerial*	600 Kc/s.	600 Kc/s.	L.F. Osc. Core Adj. (L1)†
3	Inductively Coupled to Rod Aerial*	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C8)
4	Inductively Coupled to Rod Aerial*	1500 Kc/s	1500 Kc/s	H.F. Aerial Adj. (C6)

* A coil comprising 3 turns of 16 gauge D.C.C. wire and about 12 inches in diameter should be connected between the output terminals of the test instrument, placed concentric with the rod aerial and distant not less than 1 foot from it.

† Rock the tuning control back and forth through the signal.

SOCKET VOLTAGES

Volts	Cathode to Chassis Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Heater Volts
6BE6 Converter ..	—	75	170	2	6.3
6BA6 I.F. Amp. ..	1.5	75	170	4	6.3
6AV6 A.F. Amp., Det., A.V.C.	—	—	105	0.5	6.3
6AQ5 Output	—	170	230	36	6.3
6X4 Rectifier	250	—	235/235 A.C. R.M.S.	—	6.3

Volts across back—bias resistor R15 = —8 volts.

Total H.T. Current = 50 mA.

Measured at 240 volts A.C. Supply. No signal input.

Volume Control maximum clockwise. Voltmeter 20,000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

D.C. RESISTANCE OF WINDINGS

WINDING	D.C. RESISTANCE IN OHMS
Ferrite Rod Assembly TR1:	
Primary	*
Secondary	1.5
Oscillator Coil L1	3.5
I.F. Transformer Windings TR2 and TR3	18
Output Transformer TR4:	
Primary	380
Secondary	2
Power Transformer TR5:	
Primary	50
H.T. Secondary	330
L.T. Secondary	*

* Less than 1 ohm.

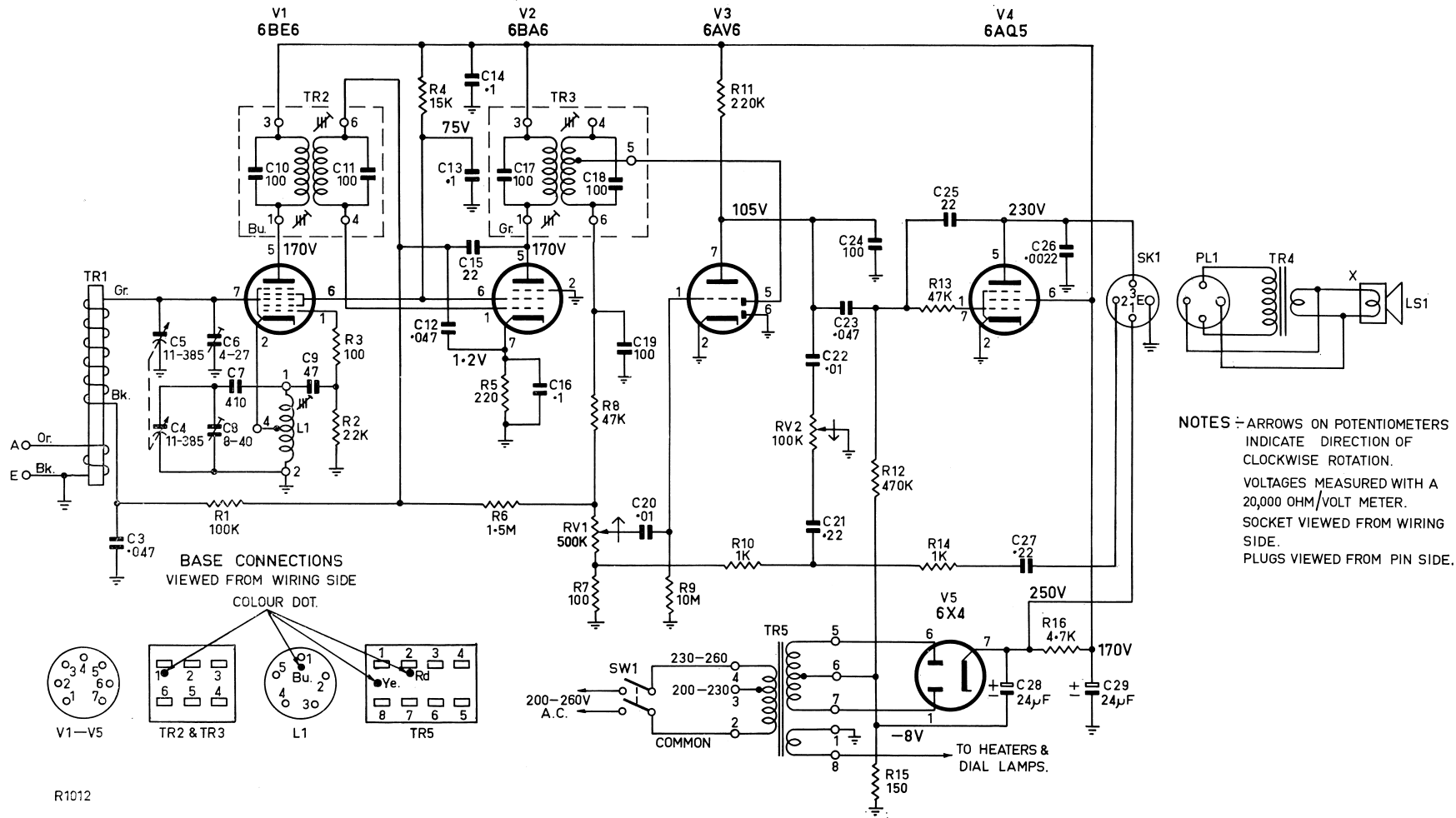
The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

MECHANICAL REPLACEMENT PARTS

ITEM	PART OR CODE No.
Cabinet Fitting:	
Cabinet, Back	60201
Cabinet, Front	60085/1
Knob Assembly	42644
Screw, Retaining	60081
Chassis Assembly:	
Cover, Transformer	20150
Cover, Power Switch	38469
Dial Scale	60089
Drum Assembly, Gang	60080
Lamp Holder Assembly	4194
Plug, 4 Pin Moulded	28313
Pointer Assembly	60069
Screen, Valve	33165
Screw, Coil Mounting	34147
Socket, 7 Pin	794579
Socket, 7 Pin McMurdo	794620
Spindle Assembly, Tuning	60066
Support, Aerial	36403

CIRCUIT CODE—RADIOLA—B15

CODE No.	DESCRIPTION	PART No.	Fig No.	Location	CODE No.	DESCRIPTION	PART No.	Fig No.	Location
RESISTORS									
All Resistors carbon unless otherwise stated.									
R1	100K ohms ±10% ½ watt	616017	2	E14	C15	22pf ±10% N750 tubular	220882	2	F13
R2	22K ohms ±10% ½ watt	613653	2	F17	C16	0.1uf ±20% 200VW paper	227022	2	D13
R3	100 ohms ±10% ½ watt W.W.	602061	2	G17	C17	100pf ±5% 600VW plastic film	222222		In TR3
R4	15K ohms ±10% 1 watt	612928	2	G12	C18	100pf ±5% 600VW plastic film	222222		In TR3
R5	220 ohms ±10% 1 watt	605257	2	F13	C19	100pf ±10% 500VW mica	226814	2	F11
R6	1.5 Megohms ±10% ½ watt	618260	2	E12	C20	0.01uf ±20% 400VW paper	226311	2	F11
R7	100 ohms ±10% ½ watt W.W.	602061	2	C10	C21	0.22uf ±20% 200VW paper	227330	2	D10
R8	47K ohms ±10% ½ watt	614961	2	F11	C22	0.01uf ±20% 400VW paper	226311	2	G9
R9	10 Megohms ±10% ½ watt	619406	2	G10	C23	0.047uf ±20% 200VW paper	226834	2	F9
R10	1K ohms ±10% ½ watt	608025	2	D11	C24	100pf ±10% 500VW mica	226814	2	G9
R11	220K ohms ±10% 1 watt	616726	2	E9	C25	22pf ±10% N750 tubular	220882	2	F8
R12	470K ohms ±10% ½ watt	617356	2	E7	C26	0.0022uf ±20% 600 VW paper	225624	2	G7
R13	47K ohms ±10% ½ watt	614961	2	F8	C27	0.22uf ±20% 200 VW paper	227330	2	C10
R14	1K ohms ±10% ½ watt	608025	2	C11	C28	24uf 300VW Electrolytic	222811	2	D6
R15	150 ohms ±10% 1 watt	604681	2	E5	C29	24uf 300VW Electrolytic	222810	2	D8
R16	4.7K ohms ±10% 2 watt	610962	2	D7	TRANSFORMERS				
RV1	500K ohms Log. Carbon Volume	620550	1	F5	TR1	Ferrite Rod Aerial	36946C	1	B5
RV2	100K ohms Log. Carbon Tone W/S	620421	1	F7	TR2	1st I.F. Transformer	51052	2	G15
					TR3	2nd I.F. Transformer	51054	2	G12
					TR4	Output Transformer (on LS1)	50543A		On LS1
					TR5	Power Transformer	25807	2	F3
					INDUCTORS				
C1	Not used				L1	Oscillator Coil	32406	2	E16
C2	Not used				VALVES				
C3	0.047uf ±20% 200VW paper	226834	2	D14	V1	Radiotron 6BE6		2	G17
C4	11—385pf tuning Oscillator }	60090	1	D4	V2	Radiotron 6BA6		2	G13
C5	11—385pf tuning Aerial }		1	E4	V3	Radiotron 6AV6		2	G10
C6	4—27pf trimmer Aerial	33304	1	E2	V4	Radiotron 6AQ5		2	G8
C7	410pf ±2½% padder	223940	2	E15	V5	Radiotron 6X4		2	G6
C8	5—30pf trimmer Oscillator	231136	1	D2	MISCELLANEOUS				
C9	47pf ±10% 500VW mica	226809	2	E16	LS1	6" x 4" PM Speaker (incl. TR4)	50067		
C10	100pf ±5% 600VW plastic film	222222		In TR2					
C11	100pf ±5% 600VW plastic film	222222		In TR2					
C12	0.047uf ±20% 400VW paper	226329	2	F14					
C13	0.1uf ±20% 400VW paper	227017	2	D12					
C14	0.1uf ±20% 400VW paper	227017	2	D7					



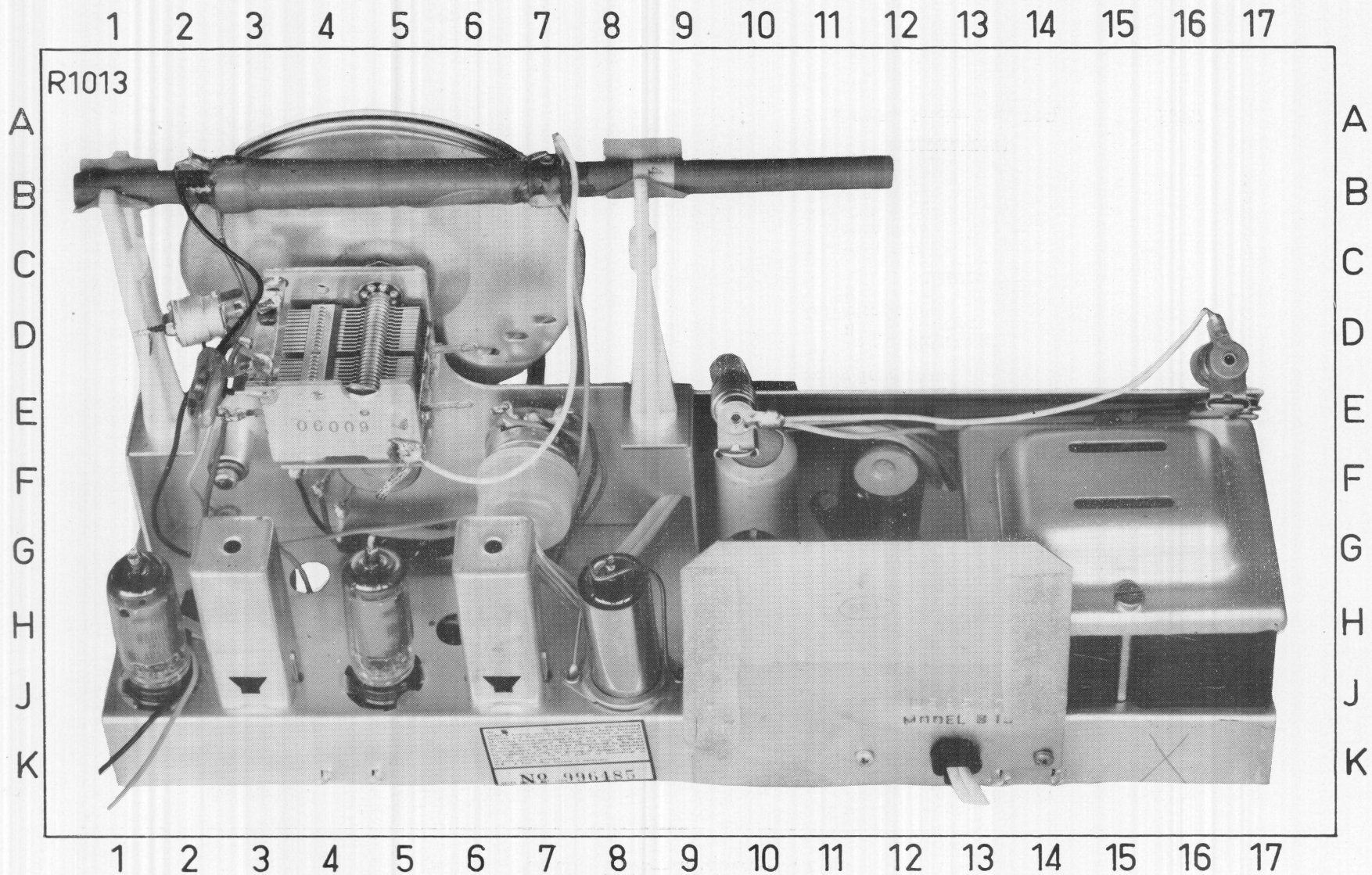


FIG. 1

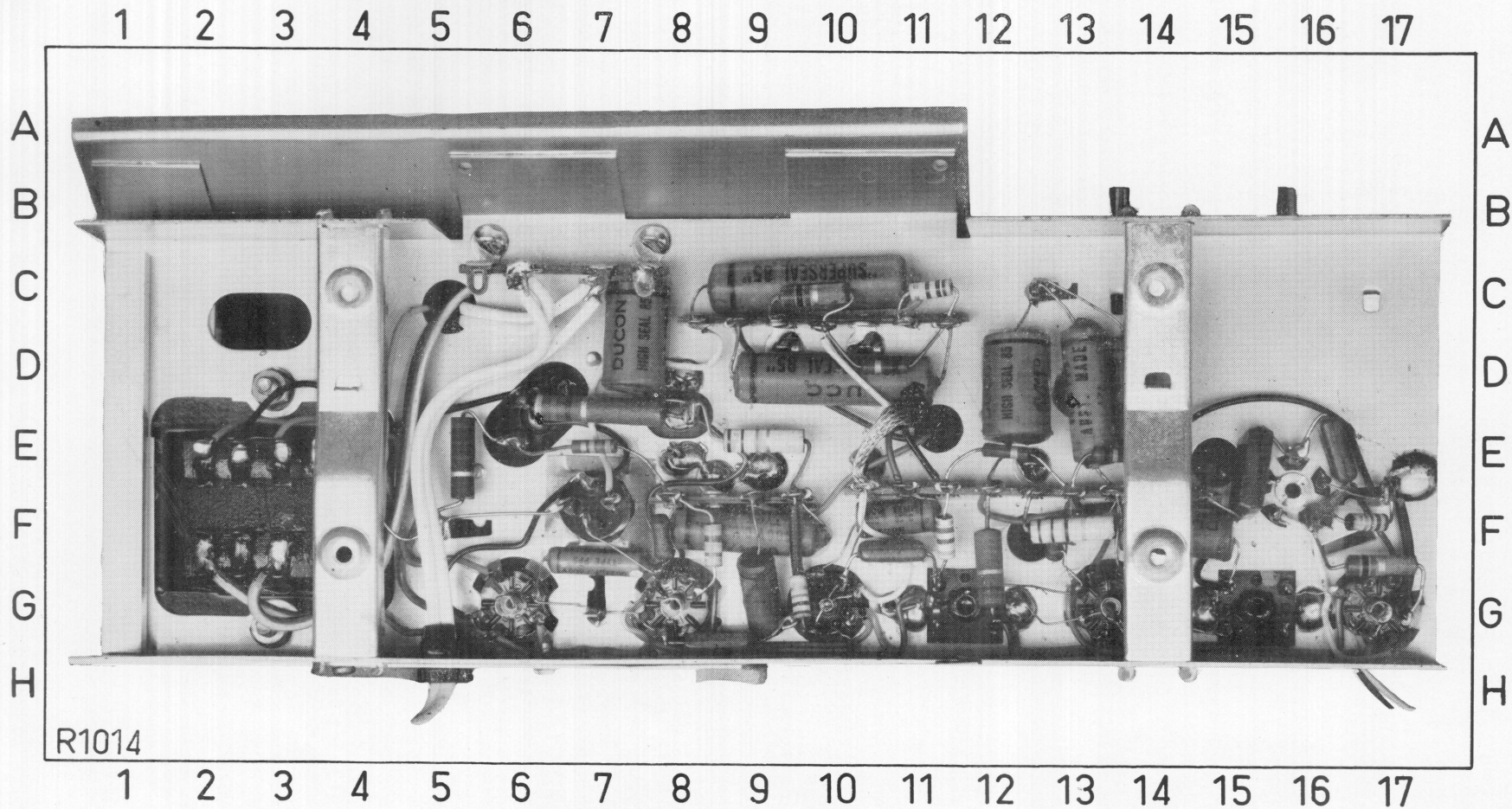


FIG .2