SERVICE MANUAL

PHILIPS

B3G99U

B4G01U

Radio Receivers
Types
B3G99U and
B4G01U

CENTRAL SERVICE DEPARTMENT
WADDON FACTORY ESTATE
CROYDON SURREY

Telephone . . CROydon 7722
Grams . Philiserve Croydon

AUGUST 1960

PRICE 2s. 6d
CIRCULATION RESTRICTED TO THE RADIO TRADE

SERVICE INFORMATION FOR THE

RADIO RECEIVERS
TYPES B3G99U AND B4G01U

GENERAL DESCRIPTION

Both are AM/FM receivers employing the same chassis. The B3G99U is housed in a moulded cabinet, the B4G01U in a wooden cabinet.

VALVE COMBINATION

V1	UCC85	R.F. amplifier and frequency changer (F.M. only).
V2	UCH81	1st I.F. amplifier F.M., frequency changer A.M.
V3	UF89	2nd I.F. amplifier F.M., I.F. amplifier A.M.
V4	UABC80	Ratio detector F.M. Detector and A.V.C. A.M. A.F. amplifier A.M. and F.M.
V5	UL84	Output.
V6	UY85	Mains rectifier.

PILOT LAMP

Type 8097D 19V. 0.1A.

WAVEBAND RANGES

A.M.	Medium Wave:	188 to 569 metres.
	Long Wave:	1,090 to 2,000 metres.
F.M.		87.5 mc/s to 100 mc/s.

TRIMMING FREQUENCIES

A.M.	I.F.	470 kc/s.
	M.W.	1,620 kc/s.
	L.W.	190 kc/s.
F.M.	I.F.	10.7 mc/s.
	R.F.	87.5 mc/s. 94.0 mc/s. 100 mc/s.

MAINS CONSUMPTION

Approximately 60 watts.

VOLTAGE RANGE

200V. to 250V. D.C. or A.C. 50 c/s.

VOLTAGE ADJUSTMENT

The flying lead which plugs on to the mains dropper is initially set to the 240V. position (extreme right-hand tag viewed from the rear of the chassis). The tag immediately to the left is the 210V. connection.

CABINET DIMENSIONS

B3G99U
Width 14". Height 8½". Depth 7⅝".

B4G01U
Width 18¼". Height 10½". Depth 7⅞".

REMOVING THE CHASSIS

Remove the two chassis fixing screws located at the bottom of the front edge of the chassis, also the two screws at the rear of the bottom of the cabinet. Withdraw the chassis and unsolder the loudspeaker leads.

REPLACING THE DRIVE CORD

Make up the cord to the dimensions shown on page 7.
Turn the tuner unit drum to its maximum clockwise position. Insert the collar on the cord into the slot in the small diameter section of the drum, the short end of the cord leading. Pass the short end of the cord one turn clockwise around the drum, winding from back to front, and down to the rear section of the spindle pulley. Wind on two turns from back to front in a clockwise direction, and then pass the cord around the bottom right-hand pulley. Fit the tension spring to the cord and anchor it to a convenient point.

Take the longer end of the cord and wind on 3½ turns from front to back anti-clockwise around the drum. Next pass the cord around the front section of the drive spindle pulley and wind on 2½ turns in an anti-clockwise direction, winding from back to front. Feed the cord up to the top right-hand pulley, around the two left-hand pulleys, and attach it to the tension spring.

REPLACING THE COILS IN THE TUNER UNIT

(a) **A.M. Coils**

The tuner unit, tuning drum and A.M. coils (S10, S13) are pre-trimmed as a complete item. If either of the A.M. coils are defective it is necessary to replace the complete unit.

To remove the unit, disconnect the pointer cord, the coil wiring connections and remove the 3 unit fixing screws. When wiring the replacement unit care must be taken to replace the components in their original positions.

Note
The tie wires attached to the cores in the A.M. coils must not be unsoldered from their anchoring points, and the position of the sealed ferroxcube rods must not be altered. When the replacement unit has been fitted it will be necessary to re-trim both A.M. and F.M. H.F. circuits.

(b) **F.M. Coils**
The F.M. coils S5, S6/S7 can be replaced independently without removing the complete unit in the following manner:—
Unsolder the coil connections.
Straighten the two coil retaining ears with a pointed tool and remove the coil from the underside of the chassis. Fit the replacement coil into the can, taking care to locate the coil core, and bend the clamping ears back into position. Reconnect the coil leads and re-trim the F.M. H.F. circuits.

CIRCUIT DESCRIPTION

The power supplies for this receiver follow normal universal technique. The valve heaters are series connected with a Varite (R46) in circuit to limit the initial surge current through the heater chain. A Varite (R47) is also connected across the dial lamp in order to maintain the heater current should the dial lamp become open circuit. H.T. smoothing is provided by C1, R50, C2 and a section of the output transformer primary S23.

Operation on A.M.

When switched to A.M. the H.T. line is switched off from V1. The input signal is applied via the M.W. and L.W. internal aerial S11, the coupling transformer S12/S13 (plus S30 on L.W.) and the wavechange switch, to the grid of the mixer section of the frequency changer V2 (UCH81).
This section of the valve is gain controlled from the A.G.C. line, R9 and C59 providing decoupling. The oscillator (triode section of V2) is a parallel fed Colpitts type, S10 being the M.W., and S32 the L.W. coils.

From the 1st I.F. transformer S16/S17 signals are applied to the grid of the I.F. amplifier V3 (UF89). A.G.C. is applied to the valve and R15, C59 and C35 provide decoupling. S21/S22 is the 2nd I.F. transformer which couples the I.F. signals to the detector diode in the V4 envelope (UABC80). The negative D.C. voltage at the junction of R20 and C45 is applied via R18 to the A.G.C. line, and A.F. signals across R37 are fed to the volume control via contacts 25 and 26 of the wavechange switch. A.F. amplification takes place in the triode section of V4 which is coupled to the output valve V5 (UL84) via C49. Tone correction is provided by C61, C51 and R40. Negative feedback is applied via R38 to the grid circuit of V4.

Operation on F.M.

When switched to F.M. the H.T. line is switched off from the triode section of V2.

The input signal is applied via the aerial transformer S2/S4 to the cathode of the R.F. amplifier V1a (UCC85). The anode circuit S5, C8 and C10 is tuned; S5 being a section of the tuner unit. V1b is the frequency changer. The oscillator coils are S6/S7, and C16 is the oscillator trimmer.
The 1st I.F. transformer S8/S9 couples the I.F. signal to the first I.F. amplifier, the hexode portion of V2 (UCH81). The A.G.C. line is now connected to chassis via switch contacts 21 and 22. The valve is biased by the grid contact potential. The 2nd I.F. transformer S14/S15 provides coupling to the 2nd I.F. amplifier V3 (UF89). This valve, working with a short grid base due to low screen volts, will also provide A.M. limiting.

Coils S18/S20 and the diodes of V4a form part of a ratio detector circuit, R21 is the load resistor and C46 the reservoir capacitor. To compensate for the top note emphasis at the transmitter, the circuit includes a de-emphasis filter R19/C47. The A.F. output from the ratio detector is passed to the volume control (R22) via switch contacts 23 and 26. The remainder of the circuit is the same as for A.M.

TRIMMING INSTRUCTIONS—A.M. CIRCUITS

(1) A.M. I.F. Circuits

Disconnect the loudspeaker and connect an output meter in parallel with a 5Ω resistor across the loudspeaker leads. Turn the tuning knob to the maximum anti-clockwise position. Switch to medium wave. Turn the volume control to maximum. Apply a modulated signal of 470 kc/s to G1V2 via a 47 KpF capacitor.

Trim S22, S21, S17 and S16 in that order for maximum output.

(2) A.M. R.F. and Oscillator Circuits

Disconnect the loudspeaker and connect an output meter in parallel with a 5Ω resistor across the loudspeaker leads. Turn the volume control to maximum. Connect the signal generator to the A.M. aerial socket via a dummy aerial. Switch to medium wave.

Close the tuner unit fully (maximum clockwise position of tuning knob). Adjust the pointer to line up with the right-hand end of the windows on the scale which carry the wavelength markings.

Rotate the tuning knob until the pointer lines up with the 185 metres trimming mark and apply a signal of 1,620 kc/s. Trim C58 and C32 for maximum output.
Switch to long wave.
By rotating the tuning knob, set the pointer to the 1,580 metres trimming mark and apply a signal of 190 kc/s.
Trim C67 and S30 for maximum output.

TRIMMING INSTRUCTIONS—F.M. CIRCUITS

(a) Using an F.M. Method

1. Ratio detector trimming

Switch to F.M.

Disconnect C46.

Connect an oscilloscope across R21 via a 100 KΩ resistor.

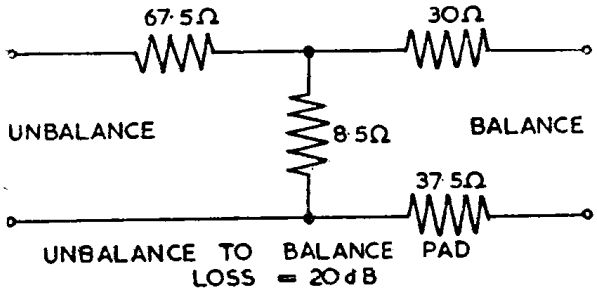
During the following operation the voltage across R21 should not exceed 3 volts. Apply an input of 10.7 mc/s with a deviation of 500 kc/s at 50 c/s to GIV3. Trim S18 for best response with a 10.7 mc/s marker at the centre of the response curve.

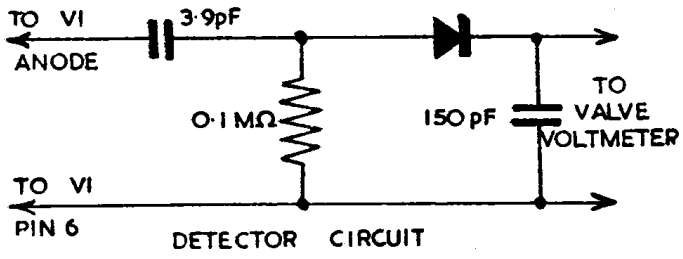
Trim S19/S19a for maximum curve width and symmetry.

2. Check Ratio Detector Curve

Re-connect C46.

Connect an oscilloscope across C41.





Check that the response is straight over approximately 200 kc/s.

Apply A.M. (modulation 400 c/s depth 30%). The straight part of the curve should remain unchanged.

3. I.F. Trimming F.M.

Connect an oscilloscope across R21 with C46 disconnected.

Apply an input of 10.7 mc/s with a 500 kc/s deviation at 50 c/s to G1V2 (mixer). Trim S14 for maximum height with a 10.7 mc/s marker at the centre of the response curve.

Trim S15 for maximum curve height and symmetry consistent with marker position.

Change the input to the anode of V1a via a 4.7 KpF capacitor.

Trim S8 for maximum height with a 10.7 mc/s marker at the centre of the response curve.

Trim S9 for maximum height and symmetry consistent with marker position. S14 may require slight readjustment.

4. I.F. Curve Check F.M.

Re-connect C46.

Apply an unmodulated 10.7 mc/s signal to the anode of V1a and adjust the input level to give 8V. across C46. Swing the generator frequency either side of 10.7 mc/s until the output drops to 5V.

The total frequency change should be greater than 200 kc/s.

H.F. Trimming F.M.

1. A 75 Ω balanced input is required.

If the generator output is unbalanced the matching pad shown on page 2 should be used. The pointer setting should be checked as stated in the A.M. oscillator trimming instructions (see page 2). Set C10, C14 and C16 to their mid positions.

Connect a valve voltmeter via a 100 KΩ resistor across C46.

During this operation the output voltage should not exceed 8V.

Adjust the tuning knob so that the pointer lines up with the first "E" of R. Eireann. Apply an unmodulated signal of 87.5 mc/s to the F.M. aerial socket (via a matching transformer if necessary) and trim S6 and S5 for maximum output. Adjust the tuning knob so that the pointer lines up with 100 mc/s.

Adjust the generator to 100 mc/s and trim C16 and C10 for maximum output.

2. Disconnect the generator.

Adjust the tuning knob so that the pointer lines up with 94 mc/s. Connect the detector (see page 2) between the anode of V1a and the earth of V1 valve holder.

Connect a valve voltmeter to the detector output.

Trim C14 for minimum oscillator voltage.

3. Disconnect the detector. Repeat (1) as necessary.

4. Connect a valve voltmeter via a 100 KΩ resistor across C46.

Apply an unmodulated signal of 94 mc/s to the F.M. aerial sockets.

Trim S2/4 for maximum output.

TRIMMING INSTRUCTIONS—F.M. CIRCUITS

(b) Using an A.M. Method

For the convenience of those who have no suitable F.M. test equipment the following instructions involve the use of an A.M. generator only as a signal source.

1. I.F. Trimming F.M.

Turn the volume control to minimum and the tuner unit to the closed position.

Connect a valve voltmeter via a 100 KΩ resistor across C46.

During trimming the input should be such that the voltage across C46 does not exceed 8V.

Apply an unmodulated signal of 10.7 mc/s to G1V2 via a ceramic capacitor of 1,500 pF.

Damp S14 with a 4.7 KΩ resistor.

Trim S15 for maximum output.

Remove the damper from S14 and apply it to S15.

Trim S14 for maximum output.

Remove the damper from S15.

Trim S18 for maximum output on the meter and then adjust the input to give 8V. across C46.

Disconnect the voltmeter from C46 and reconnect it across C41.

Adjust S19 to give 4V. on the meter.

Change the input point to the anode of V1a via a 4.7 KpF capacitor.

Connect meter across C46.

Apply the damper to S8 and trim S9 for maximum output.

Remove the damper from S8 and apply it to S9.

Trim S8 for maximum output.

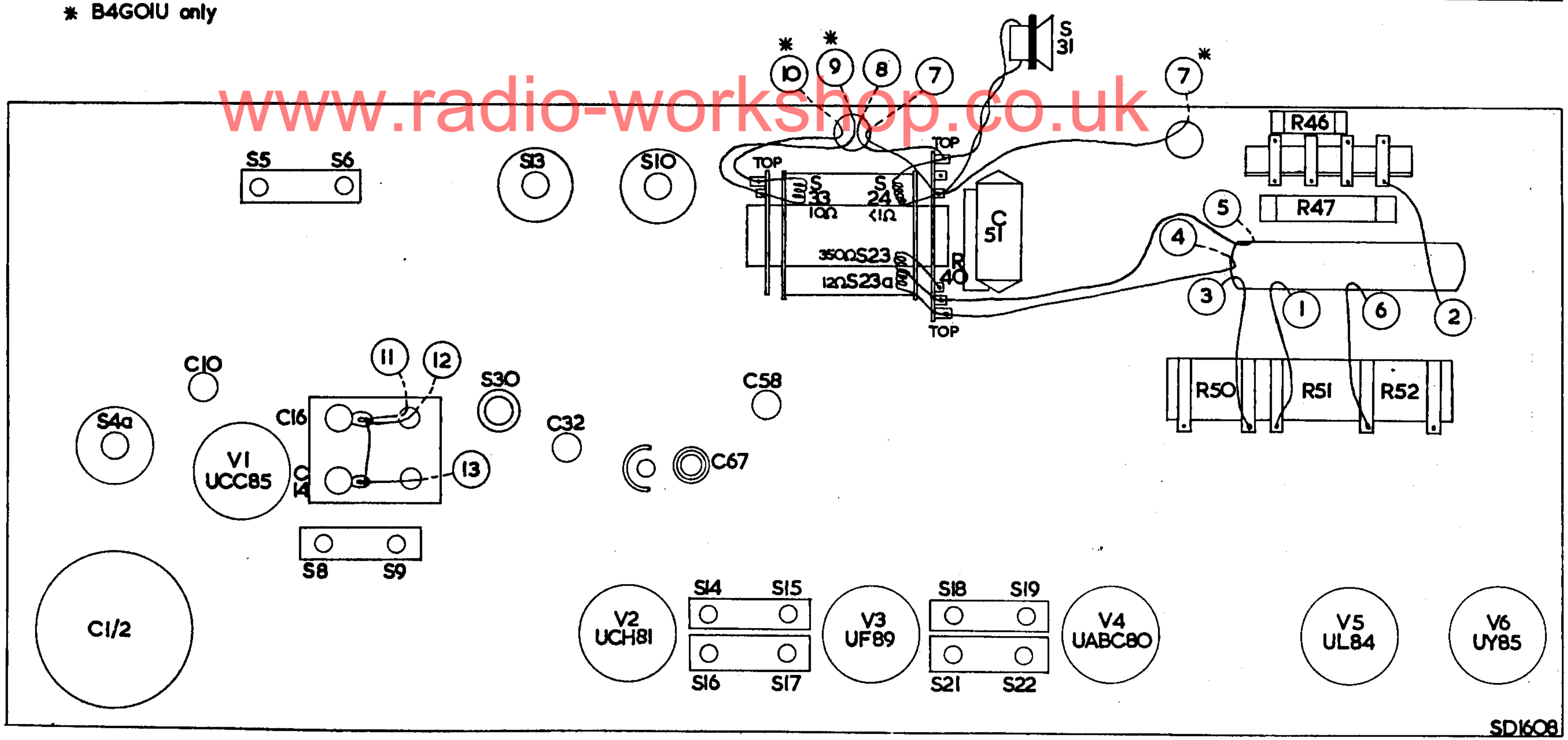
Remove the damper from S9.

2. H.F. Trimming F.M.

The H.F. trimming procedure is the same as the instructions given earlier.

S	4a. 5. 8. 6. 9. 30. 13. 10. 14. 16. 15. 17. 33. 24. 23. 23a. 18. 21. 31. 19. 22.
C	1. 2. 10. 16. 14. 32. 67. 58. 51.
R	40. 50. 46. 47. 51. 52.

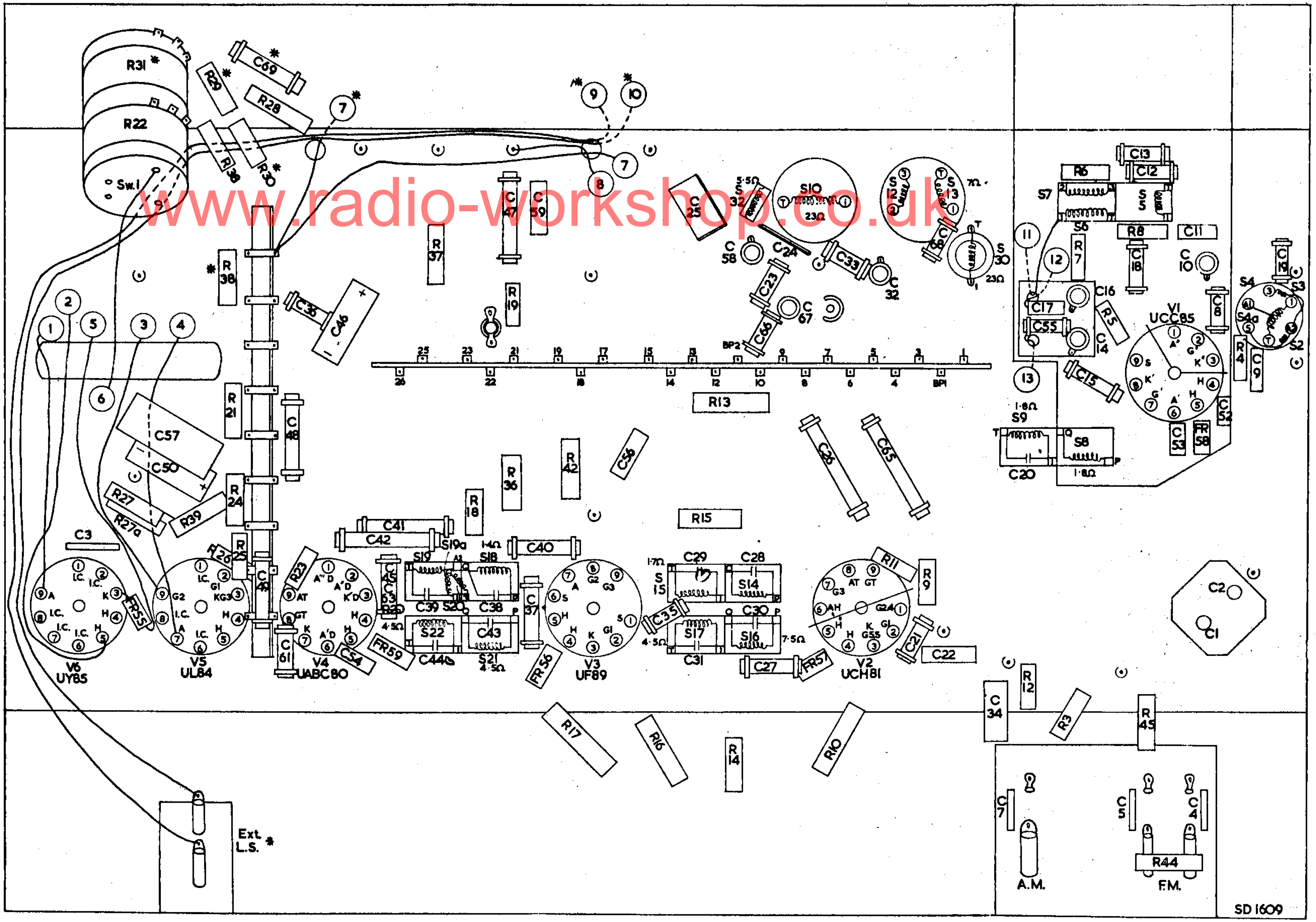
* B4G01U only



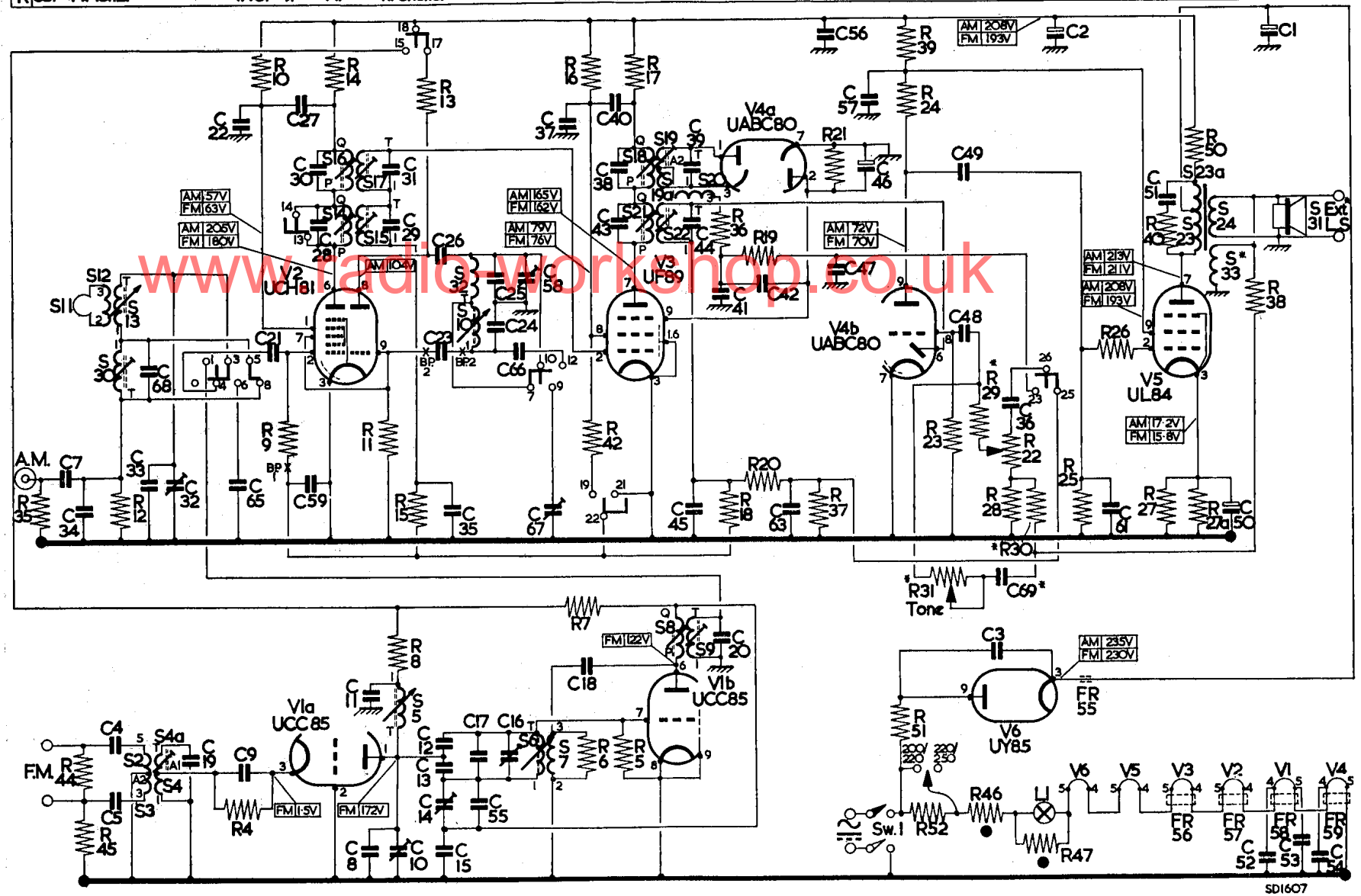
S	19. 22. 19a. 20. 18. 21. 15. 17. 14. 16. 32. 10. 12. 13. 30. 9. 7 6. 8. 5. 2. 3. 4. 4a.
C	3. 57 50. 69. 49. 61. 48. 36. *46. 54. 42. 45. 63. 41. 39. 44. 38. 43. 47. 59. 40. 37. 56. 35. 25. 29. 31. 58. 28. 30. 23. 66. 27. 67. 24. 33. 26. 32. 65. 21. 68. 22. 34. 7. 20. 17. 55. 16. 14. 15. 18. 13. 12. 5. 53. 11. 10. 8. 52. 2. 1. 4. 9. 19.
R	27. 27a. 55. 22. 39. 39a. 26. 21. 38. 29. 24. 30. 25. 28. 23. 59. 20. 37. 18. 36. 19. 56. 17. 42. 16. 15. 13. 14. 57. 10. 11. 9. 12. 7 6. 35. 5. 8. 45. 44. 58. 4.

* B4G01U only

Coil D.C. not shown are all <1Ω each.



S	11. 12. 13. 30. 2. 3. 4. 4a. 16. 14. 17. 15. 5. 32. 10. 6. 7. 18. 21. 19. 19a. 20. 22. 8. 9. 23. 23a. 24. 33. 31.
C	7. 34. 45. 33. 68. 32. 19. 22. 65. 9. 21. 27. 59. 30. 28. 11. 8. 31. 29. 10. 26. 23. 35. 12. 13. 14. 15. 17. 55. 25. 24. 16. 58. 66. 67. 37. 18. 40. 38. 43. 39. 44. 45. 20. 41. 42. 63. 56. 47. 57. 46. 49. 48. 3. 36. 2. 61. 69. 51. 50. 1. 52. 53. 54.
R	35. 44. 45. 12. 4. 10. 9. 14. 11. 8. 15. 13. 7. 16. 42. 6. 5. 17. 36. 18. 19. 20. 29. 37. 21. 31. 30. 39. 24. 51. 23. 52. 46. 22. 28. 47. 25. 55. 26. 40. 27. 56. 50. 27a. 57. 38. 58. 59.



Circuit drawn in the M.W. position

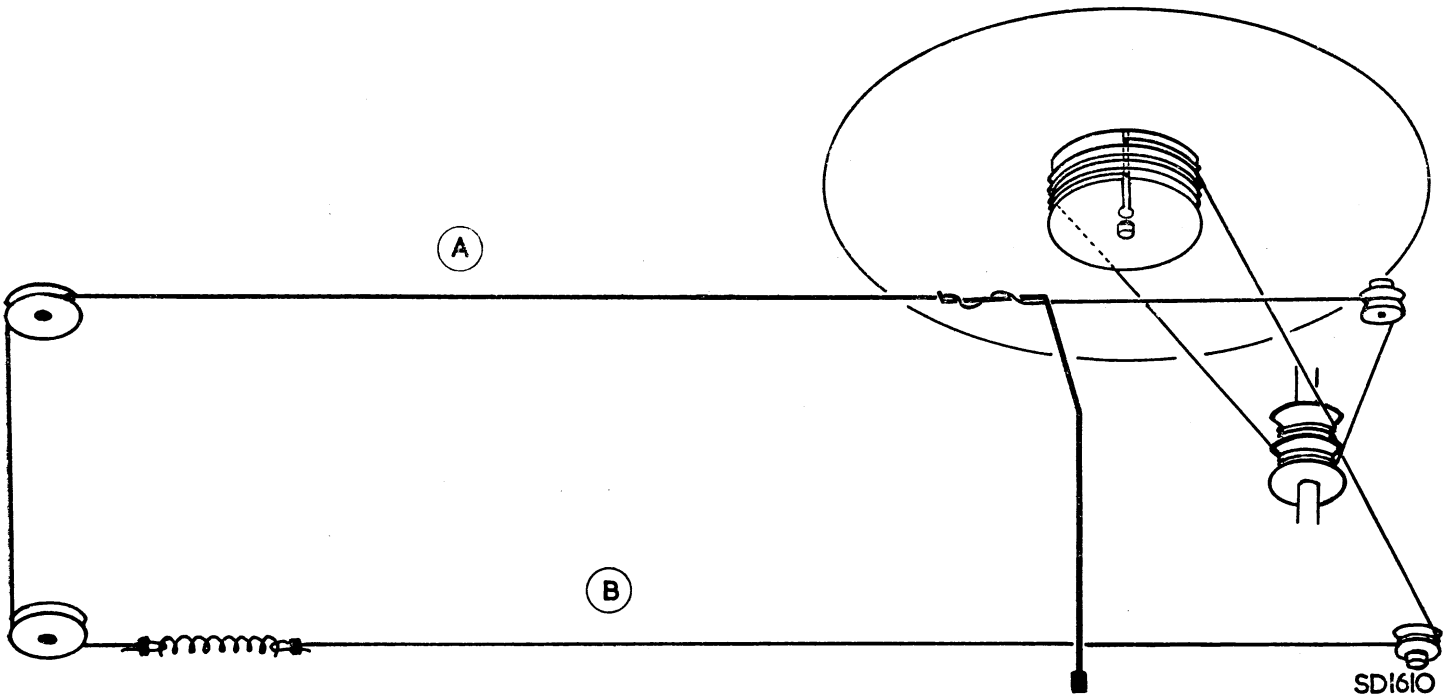
F.M. ◄— M.W. —► L.W.

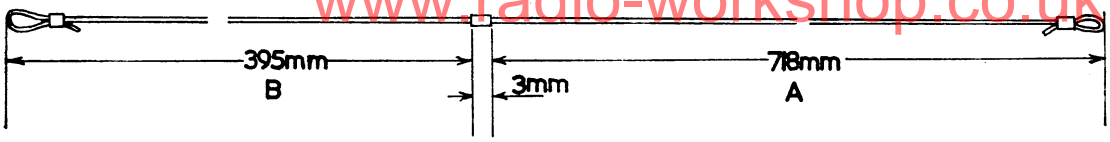
All voltages to chassis using a 20,000Ω/V voltmeter.

* B4GOIU only. R38 is connected to S33 and not to S24. S31 is NOT connected to chassis.

ADDENDUM:

In later Receivers a 1000 pF Capacitor has been connected between pins 1 and 4 of V3 valve holder.





SPARE PARTS LIST—TYPES B3G99U & B4G01U

CABINET ASSEMBLY with grille		MK.982.60
Grille only		MK.912.33
Locking rings for above (6)		B.053.ZZ/808
Clips for speaker (4)		MK.751.68
Clips for backplate (6)		MK.955.91
Ornamental strip		MK.682.08
CABINET ASSEMBLY with grille—B4G01U		MK.983.02
Oranamental grille only—B4G01U		MK.912.43
Cabinet legs (set of 4)—B4G01U		MK.833.54
Backplate retaining brackets (4)—B4G01U		MK.068.91
CONTROL KNOBS		
Waveband		MK.856.48
Volume—large		MK.856.45
Tuning		MK.856.72
Volume—small		MK.856.75
Tone—B4G01U		MK.856.71
Volume—B4G01U		MK.856.72
BACKPLATE ASSEMBLY		MK.984.84
Backplate assembly—B4G01U		MK.985.20
Screws for backplate (6)		MK.946.88
STATION SCALE—Glass		MK.706.80
Station scale—glass—B4G01U		MK.706.96
POINTER ASSEMBLY		MK.984.83
Felt rings (2)		A3.564.36
POINTER DRIVE ASSEMBLY		
Small pulley (2)		MK.931.12
Large pulley (2)		P4.120.01/01
Nylon drive cord (1,169 mm.)		K.288.ZZ/923
Tension spring		A3 646.14
PILOT LAMP HOLDER		MK.957.47
TUNER UNIT COMPLETE		MK.892.98
Operating cam		MK.955.23
Tension spring for above		MK.740.35
Drive drum		MK.906.32
WAVEBAND SWITCH ASSEMBLY		
Knob spindle assembly		MK.966.31
Steel ball for stop mechanism		89.205.80
Switch wafer		MK.966.32
MISCELLANEOUS		
Socket plate—aerial		MK.879.56
Socket plate—extension speaker—B4G01U		MK.985.14
Holder for V1		MK.225.70
Other valveholders		MK.225.81
Brackets for S2-4a		MK.067.10
Spire clips for S30		MK.955.92
Springs for other coils		MK.730.23
Tapping clip for R50/51/52		MK.751.46
Trimmer and plate assembly (C14 and C16)		MK.974.57
2-pin plug for backplate aerial		MK.931.58
Nylon nut for chassis screws (2)		MK.927.28
VALVES AND PILOT LAMPS		
V1		UCC85
V2		UCH81
V3		UF89
V4		UABC80
V5		UL84
V6		UY85
L1 Pilot Lamp		00.080.97D
TRANSFORMERS AND COILS		
S2–4a	Aerial coil F.M.	MK.568.97
S5	Coupling coil F.M.	MK.568.44
S6/7	Osc. coil F.M.	MK.568.43
S8/9	1st I.F. coil F.M.	925/10.7
S10	Osc. coil M.W.	MK.568.42
S12/13	Aerial coil M.W.	MK.568.41
S14/15	2nd I.F. coil F.M.	MK.568.94
S16/17	1st I.F. coil A.M.	925/470
S18–20	Ratio detector coil F.M.	926/10.7RD
S21/22	2nd I.F. coil A.M.	MK.566.52
S23–24	Speaker transformer	MK.515.61
S23–24/33	Speaker transformer—B4G01U	MK.515.61
S30	Aerial loading coil L.W.	MK.569.60
S31	Loudspeaker	ND.2346X
S32	Osc. loading coil L.W.	MK.568.47
CORES FOR COILS—S4a		MK.954.95
S5 and 6		MK.979.22
S8, 9, 18 and 19		P4.380.61/99
S10 and 13		MK.979.21
S14 and 15		MK.955.03
S16 and 17		A3.770.47
S21 and 22		A3.750.70
S30		MK.905.72

SPARE PARTS LIST—TYPES B3G99U & B4G01U—(Contd.)

CAPACITORS

			Working Voltage	Permitted Tolerance %	
C1, C2	Electrolytic	50uF, 100uF	275	+100	MK.182.27/50
C3	Ceramic	4,700pF			MK.205.93
C4	Ceramic	470pF		20	MK.206.06
C5	Ceramic	470pF		20	MK.206.06
C7	Ceramic	1,800pF		+50—20	MK.206.08
C8	Ceramic	4.7pF	500	0.5pF	C.304.GB/L4E7
C9	Ceramic	1,000pF		+50—20	MK.206.05
C10	Trimmer	2-5pF			908/5E5
C11	Ceramic	1,000pF		+50—25	MK.206.05
C12	Ceramic	8.2pF	500	0.5pF	C.304.AB/N8E2
C13	Ceramic	8.2pF	500	0.5pF	C.304.AB/N8E2
C14	Trimmer	2-10pF	See trimmer Assembly		MK.974.57
C15	Ceramic	130pF	500	1	C.304.AB/D130E
C16	Trimmer	2-10pF	See trimmer Assembly		MK.974.57
C17	Ceramic	15pF		10	MK.206.17
C18	Ceramic	33pF	500	10	C.304.AB/A33E
C19	Ceramic	6.8pF	500	0.5pF	C.304.AB/L6E8
C20		15pF			In S8/9
C21	Ceramic	100pF	500	10	C.304.AH/A100E
C22	Ceramic	1,200pF	500	+50—20	904/1K2
C23	Ceramic	56pF	500	10	C.304.AH/A56E
C24	Mica	290pF		1	MK.193/01/290E
C25	Mica	120pF		1	MK.193.01/120E
C26	Ceramic	470pF	500	10	904/470E
C27	Ceramic	4,700pF	500	+50—20	904/4K7
C28		15pF			In S14/15
C29		15pF			
C30		110pF			In S16/17
C31		195pF			
C32	Trimmer	18pF			908/22E
C33	Ceramic	33pF	500	10	904/33E
C34	Suflex	3,000pF	250	5	MK.205.84
C35	Ceramic	100pF	500	10	C.304.GH/A100E
C36	Ceramic	4,700pF	500	+50—20	904/4K7
C37	Ceramic	4,700pF	500	+50—20	904/4K7
C38		22pF			In S18-20
C39		47pF			
C40	Ceramic	4,700pF	500	+50—20	904/4K7
C41	Ceramic	330pF	500	10	C.304.AH/A330E
C42	Ceramic	330pF	500	10	C.304.AH/A330E
C43		195pF			In S21/22
C44		195pF			
C45		100pF			See R20
C46	Electrolytic	2uF	50		909/D2
C47	Ceramic	330pF	500	10	C.304.AH/A330E
C48	Ceramic	10,000pF	500	+50—25	904/10K
C49	Ceramic	10,000pF	500	+50—25	904/10K
C50	Electrolytic	25uF	25		909/C25
C51	Paper	1,000pF	1,300	20	HT.193.20/1K
C52	Ceramic	1,000pF		+50—20	MK.206.05
C53	Ceramic	1,000pF		+50—20	MK.206.05
C54	Ceramic	1,000pF		+50—20	MK.206.05
C55	Ceramic	5.6pF	500	0.5pF	C.304.AB/L5E6
C56	Ceramic	1,000pF		+50—20	MK.206.05
C57	Polyester	0.22uF	400	10	C.296.AC/A220K
C58	Trimmer	18pF			908/22E
C59	Polyester	22,000pF	125	20	C.296.AC/A22K
C61	Ceramic	1,500pF	500	+50—25	904/1K5
C63		100pF			See R20
C65	Ceramic	742pF	500	1	C.304.GH/D742E
C66	Ceramic	15pF	500	10	C.304.GB/A15E
C67	Trimmer	50pF			907/10E-50E
C68	Ceramic	56pF	500	10	C.304.GH/A56E
C69	Ceramic (B4G01U)	390pF	500	10	C.304.AH/A390E

RESISTORS

N.B.—Wattage is based upon an ambient temperature of 70° C.

		Ohms	Wattage	Permitted Tolerance %	
R4		180	¼	10	48.426.10/180E
R5		0.1M	¼	10	48.426.10/100K
R6		2,200	¼	10	48.426.10/2K2
R7		10,000	¼	10	48.426.10/10K
R8		2,200	¼	10	48.426.10/2K2
R9		1.0M	¼	10	48.426.10/1M
R10		39,000	1	10	48.427.10/39K
R11		47,000	¼	10	48.426.10/47K
R12		33,000	¼	10	48.426.10/33K
R13		33,000	1	10	48.427.10/33K
R14		2,200	¼	10	48.426.10/2K2
R15		1.0M	¼	10	48.426.10/1M
R16		33,000	1	10	48.427.10/33K
R17		4,700	1	10	48.427.10/4K7
R18		1.2M	¼	10	48.426.10/1M2
R19		47,000	¼	10	48.426.10/47K
R20, C45, C63	Diode Filter	47,000, 100pF, 100pF			B8.600.00/00
R21		27,000	½	10	48.426.10/27K
R22	Volume control & switch	2.0M	Log Law		HT.904.66/DL2M
R22/31	Potentiometer—B4G01U	2.0M & 2.0M	Log Law		HT.930.14
R23		10.0M	¼	10	48.426.10/10M
R24		0.22M	¼	10	48.426.10/220K
R25		0.47M	¼	10	48.426.10/470K
R26		1,000	¼	10	48.426.10/1K
R27, R27a	In parallel	560, 560	1	10	900/560E
R28		68	¼	10	48.426.10/68E
R29	—B4G01U	68,000	¼	10	48.426.10/68K
R30	—B4G01U	470	¼	10	48.426.10/470E
R35		4.7M	¾	20	MK.771.23
R36		120	¼	20	48.426.10/120E
R37		0.22M	¼	20	48.426.10/220K
R38		3,300	¼	10	48.426.10/3K3
R38	—B4G01U	2,700	¼	10	48.426.10/2K7
R39		0.1M	½	10	48.426.10/100K
R40		27,000	1	10	48.427.10/27K
R42		47,000	¼	10	48.426.10/47K
R44		10,000	¼	20	48.426.10/10K
R45		4.7M	¾	20	MK.771.23
R46	Varite				MK.796.21
R47	Varite				MK.796.20
R50	Wirewound	1,000	1.5	5	MK.791.98
R51	Wirewound	140	5	5	MK.791.98
R52	Wirewound	235	2.5	5	MK.791.98

FERROXCUBE BEADS

FR55, 56, 57, 58 & 59	56.390.31/4B