WIRELESS SET BURNDEPT BE 201

TECHNICAL HANDBOOK - FIELD AND BASE REPAIRS

SUBJECT INDEX

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INTRODUCTION

1. This regulation deals with the Wireless set Burndept BE 201 and the Power supply unit No. 42, and covers field and base repairs and alignment work. It should be used in conjunction with Tels. F 732, to which reference must be made for circuit diagrams, component details and technical description. For unit repairs and routine maintenance tasks refer to Tels. F 733.

MECHANICAL ADJUSTMENTS AND REPLACEMENTS

Sender-Receiver

General

2. The adjustment and replacement of most components on the sender-receiver chassis is self-evident. When making component replacements it is essential that a high standard of soldering is maintained and that the circuit wiring be disturbed as little as possible. Particular attention must be paid to earthing points in the R.F. and oscillator circuits where short and rigid wiring is essential.

Removal of ganged tuning capacitors

3. Carefully unsolder all connections under the chassis to each capacitor section. The sender and receiver capacitors are each mounted on a single bracket. Remove the bracket fixing screws and the whole assembly will lift out together with the tuning dial. Note that the local oscillator sections are insulated from the bracket. When replacing the receiver assembly, the local oscillator capacitor sections must be earthed at one point only, i.e., at the earthing tag provided on the screening compartment.

4. The capacitors should be aligned when in position on the chassis. All capacitors must be at maximum capacity with the tuning dial set at the lowest frequency calibration line.

Power supply unit

Inspection and replacement of brushes

5. The negative input and positive output brushes on the rotary transformer XI are accessible from beneath the chassis. To gain access to the positive input and negative output brushes, unclamp LI and C4 respectively. All brushes on rotary transformer X2 are accessible.

Removal of rotary transformers

6. Remove all connections to both transformers. In order to gain access to the mountings of the transformers, the upper sub-chassis must be lifted. Unsolder the connection between L6 and L4 and release the screws which secure the sub-chassis to the main framework. The sub-chassis can now be pivoted about one end. To remove either transformer, release the four locknuts which bolt the transformer shock-proof mountings to the chassis.

7. To replace either transformer reverse the procedure detailed in para. 6.

Dismantling of rotary transformers

8. To dismantle transformer XI, proceed as follows:-

(a) Remove the brushes.
(b) Remove the fan by releasing the No. 2 B.A. locking nut and withdraw the fan keying pin.
(c) The transformer end castings are secured by two No. 4 B.A. bolts which pass through the main body of the transformer. Release these bolts and remove one of the end castings. Note that both castings are keyed to facilitate replacement.
(d) The armature is now free and may be withdrawn from the main body complete with its bearings.
(e) To reassemble the transformer reverse the above order.

9. To dismantle transformer X2 proceed as follows:-

(a) Remove the brushes.
(b) Remove the fan by releasing the recessed No. 4 B.A. locking nut.
(c) Remove the two No. 6 B.A. countersunk screws at each end of the transformer which secure the armature bearing outer covers.
(d) The transformer end castings are secured by two No. 6 B.A. bolts which pass through the main body of the transformer. Before releasing these bolts, mark the relative positions of the end castings and the main body to facilitate replacement. Release the bolts and remove one of the end castings.
(e) The armature is now free and may be withdrawn from the main body complete with its bearings.
(f) To reassemble the transformer, reverse the above order.

ALIGNMENT AND SPECIFICATION TESTING

General

10. It is essential that all receiver tests and alignments be carried out in a completely screened compartment. Failure to do this is likely to result in false readings being given due to stray pick-up.

Valveholders

11. A Jig, wiring, valveholder, B7G (ZA 35755) now forms part of the Tool kit, telecommunications, basic. When it is necessary to solder to a B7G valveholder tag, the valve must be removed and the jig inserted.

B.F.O. attenuator

12. The output meter of the Oscillator, beat-frequency, No. 5, 7 or 8 on the 10 Ω range is scaled up to 5V. To permit voltages of the order of 0 - 10mV to be measured, a simple attenuator is used between the output of the B.F.O. and the circuit under test. Suitable values for an attenuator giving an attenuation of 500:1 are given in Fig. 1. The reading on the B.F.O. meter x 2 = the output from the attenuator in mV.

Dummy aerial load

13. When the sender tests and alignments are being carried out a dummy aerial load must be connected across the sender output. A 5W 80Ω non-inductive resistor is used for this purpose and is connected in series with an H.F. ammeter for reading aerial current. The connecting leads must be as short as possible and the unit placed in close proximity to the output termination with one side of the ammeter connected to chassis.

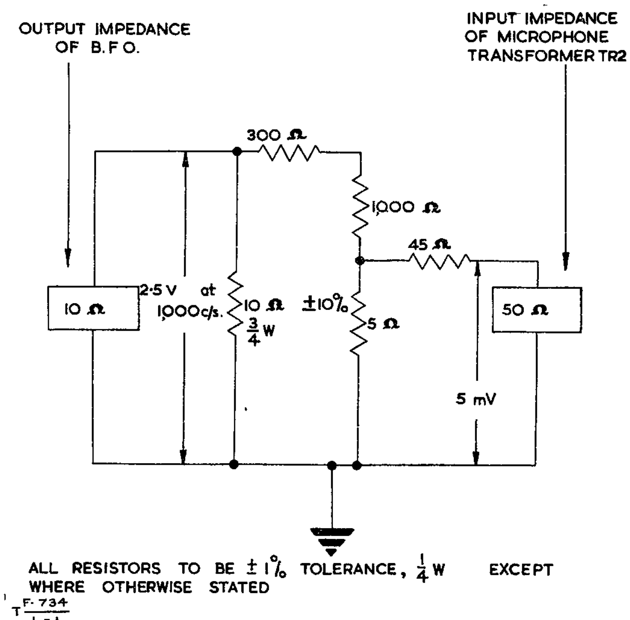

Fig. 1 - B.F.O. attenuator - circuit diagram

Adjustments to tuned circuits

14. When making adjustments to the trimming capacitors and to the iron-dust cored coils a non-metallic trimming tool must be used. When the alignment of any particular section is completed, the trimming capacitors and iron-dust cores must be fixed with a drop of Wax, sealing, special, No. 4 (ZA 27330).

15. Adjustment to air spaced coils is made by altering the over-all length of the coil. A non-metallic tool must be used and great care exercised in bending the turns.

Test equipment

16. The following test equipment is required for alignment and specification testing:-

Avometer, universal, 46-range, Mk. 1 (or 50-range).
Dummy aerial load (see para. 13).
Ammeter, H.F., 350mA, No. 1, (X4/ZA 0204).
Meter, output power, No. 1, 3 or 5 or Wattmeter, absorption, No. 1.
Oscillator, beat-frequency, No. 5, 7 or 8.
B.F.O. attenuator (see para. 12).
Voltmeter, valve, No. 2.
Frequency meter SCR 211.
Signal generator, No. 1, Mk. 2 or No. 2, Mk. 2.
Signal generator No. 2, Mk. 4.

General conditions

17. (a) L.T. 12V as indicated on P.S.U. meter.
(b) Set to be switched on for a period of at least 10 min. before any circuit adjustment is made.
(c) An output meter of 150Ω impedance to be connected to the set in place of the headset, on all tests.
(d) The dummy aerial load to be used on all sender tests.

POWER SUPPLY UNIT

Voltmeter calibration

18. Put the MAIN SWITCH on and using the Avometer, measure the voltage across the P.S.U. meter. This must agree with the voltage reading on the P.S.U. meter taking into account the meter calibration figure painted on the front panel. If any discrepancy occurs re-correct the calibration figure.

Sender and receiver H.T. voltages

19. On any channel, tune both the sender and receiver. With a battery voltage of 12V as indicated on the P.S.U. meter, the sender and receiver H.T. voltages should be of the order of 295V and 235V respectively.

Float charge

20. With the battery on FLOAT CHARGE and the P.S.U. meter reading 13.5V, check that the set voltages are as follows:-

L.T. voltage:	11V
Sender H.T.:	300V
Receiver H.T.:	210V

Change-over time

21. Check with a stop-watch the change-over time from Send conditions to Receive conditions and vice versa. This must not exceed 1.5 sec. in either case.

SENDER

R.F. circuits

22. Connect the 80 Ω dummy aerial load across the aerial socket in series with the 350mA H.F. ammeter.

23. Switch the set to send by connecting pin PLB3 to earth. This energizes relays RLA1 and RLB1 Pin PLB3 may be conveniently connected to earth at the snatch socket terminal strip.

24. Insert the following sender crystals:-

$5.55\dot{5}$Mc/s crystal in Socket A for 100Mc/s.
$8.33\dot{3}$Mc/s crystal in Socket B for 150Mc/s.
$6.66\dot{6}$Mc/s crystal in Socket C for 120Mc/s.
$7.77\dot{7}$Mc/s crystal in Socket D for 140Mc/s.

25. Set the Avometer to the 0.002A D.C. range and connect it between TP4 and chassis, with the positive terminal to chassis. Check that each crystal will oscillate by measuring the grid current of V2. This should be of the order of 0.8mA on each channel.

26. Reconnect the Avometer to read the grid current of V3 at TP3 and switch to channel A. Set SENDER TUNE to 100Mc/s and adjust L3 for maximum grid current. Switch to channel B and set SENDER TUNE to 150Mc/s. Adjust C8 to give maximum grid current.

27. Repeat the procedure para. 26 until no further increase in grid current is obtainable on either channel A or B. This should be of the order of 0.8mA.

28. Repeat the procedure of paras. 26 and 27 for the alignment of the grid circuit of V4. TP2 is the test point for measuring grid current and L5 and C14 should be adjusted on channel A and channel B respectively.

29. The grid circuit of V5 is adjustable during the normal operation of the set by DRIVE ADJUST which controls C19. Check at TP1 on channels A and B that maximum grid current is obtainable at settings of C19 well within its capacity range. This may be determined by inspection of the variable capacitor's vanes at each setting. If the misalignment is considerable adjust L7 in accordance with the procedure of paras. 26 and 27.

30. The aerial tuned circuit is also adjustable by AERIAL TRIM which controls C25. Check on channels A and B that any misalignment can be corrected by tuning C25 for maximum sender output in each case. If the misalignment is considerable adjust L9 in accordance with the procedure detailed in paras. 26 and 27.

31. Switch to channel A and adjust SENDER TUNE, DRIVE ADJUST and AERIAL TRIM for maximum reading on the H.F. ammeter. Repeat on channels B, C and D. The aerial current in each case must be greater than 220mA (i.e. greater than 4W into 80Ω). This measurement is made with a battery voltage of 12V.

32. With the battery at its end point of 10.8V the aerial current on any channel must exceed 190mA.

Calibration

33. On each channel the setting of the SENDER TUNE dial for maximum output must be within ± 1% of the nominal frequency of the channel.

Modulator and sidetone

34. Connect the beat-frequency oscillator across the primary of TR2 through the B.F.O. attenuator. Connect the output meter across the secondary of TR1, on the 20mW range and 150Ω impedance. Connect the Avometer on the 400V A.C. range across the secondary of TR3 in series with a 0.5μF 350V D.C. blocking capacitor.

35. Tune to channel A and inject a 5mV signal at 1,000c/s into TR2. Owing to the damping effect of the Avometer it may be necessary to remove the meter connection while tuning the sender. Measure the voltage across TR3. Tune to channel B and repeat the measurement. The modulator output must be 180 ± 25V on both channels.

36. Adjust the B.F.O. to 300c/s amd 3,500c/s and measure the modulator output in each case on channel A only. This must not differ by more than -4db. and -3.5db. respectively from the output obtained at 1,000c/s.

37. Remove the Avometer and tune for maximum aerial current on channel A. With a modulation input of ~~5mV at 1,000c/s~~ 6mV at 1085c/s the aerial current should rise above its unmodulated value by approximately 13%. This corresponds to 75% modulation. Repeat on channel B.

38. With the input as in para. 37 measure the sidetone on the output meter on channels A and B. This must be of the order of ~~1mW~~. 0.5mV at Ccont

Muting bias

39. Connect the valve voltmeter on the 150V D.C. range between the lower end of RV1 and chassis, to measure a negative voltage. Switch to SEND. On each channel the muting bias developed must exceed 40V.

40. When all sender tests have been completed, remove the beat-frequency oscillator, valve voltmeter and earthing connection to PLB3.

41. Para. 71 gives sender fault-finding information.

RECEIVER

Output stage

42. Set RV1 to minimum gain and connect its lower end direct to chassis. Set the beat-frequency oscillator to the 10Ω output range and apply a 3V 1,000c/s signal between the junction of R32 and C63, and earth. Increase the receiver gain until the audio output as indicated on the output meter is 1mW. Maintaining the signal constant at 3V adjust the B.F.O. frequency for maximum audio output, with RV1 at a constant setting. The frequency at which the audio gain is a maximum ~~must be~~ is between ~~1,000~~ 1,200c/s and ~~1,500~~ 1,800c/s.

43. Adjust the B.F.O. frequency to 500c/s and 3,500c/s at 3V. The audio output must not differ from 1mW by more than -3db. in each case. With the B.F.O. set to frequencies below 100c/s and above 10,000c/s. the audio response must fall by more than 8db. and 12db. respectively.

44. Remove the connection between the lower end of RV1 and earth. Remove the B.F.O. connection.

I.F. amplifiers

45. The 9.720Mc/s intermediate frequency used in this set arises from the difference in frequency between two crystal-controlled circuits. It is, therefore, essential that the I.F. amplifiers be aligned with a high degree of accuracy. This is most conveniently done by calibrating a signal generator against a crystal-controlled frequency meter before alignment is commenced.

46. Unsolder the grid lead of V7 (pin 6) and set the output meter to the 2mW range. Adjust the output of the Signal generator No. 1, Mk. 2 or No. 2, Mk. 2 to 10μV and connect the terminating unit directly between the grid of V7 and the common earth point of the circuit using the shortest possible leads. Switch on and adjust the signal generator frequency to exactly 9.720Mc/s, modulated 30% at 400c/s. Adjust the iron-dust cores of all the I.F. transformers for maximum A.F. output, maintaining the output at 1mW by adjusting the input. The final sensitivity of the I.F. amplifiers must be such that the input for 1mW audio output is less than 15μV. Note that whilst making any adjustments or sensitivity readings, the frequency meter must be switched off.

47. Using the frequency meter, determine the band-width at -6db. This must be between 50 and 70kc/s and the mean of the two extreme frequencies must lie within 10kc/s of 9.720Mc/s.

48. If the band-width is less than 50kc/s, proceed as follows. Detune the signal generator to 9.695Mc/s and adjust the iron-dust cores of TR4 for maximum A.F. output. Adjust the signal input to maintain an audio output of 1mW throughout. Retune the signal generator to 9.745Mc/s and adjust the iron-dust cores of TR7 for maximum audio output.

49. Re-determine the band-width at -6db. If this is not within the limits specified, detune TR4 and TR7 still further until the correct band-width is obtained. When this is achieved the I.F. amplifier sensitivity must be within the limit already specified in para. 46.

50. Remove the signal generator and resolder the grid connection to V7.

Local oscillator

51. Insert the following receiver crystals:-

5.0155Mc/s crystal in Socket A for 100Mc/s.
7.7933Mc/s crystal in Socket B for 150Mc/s.
6.1266Mc/s crystal in Socket C for 120Mc/s.
7.2377Mc/s crystal in Socket D for 140Mc/s.

52. Set the Avometer to the 0.002A D.C. range and connect it between TP7 and chassis, with the positive terminal to chassis. Check that each crystal will oscillate by measuring the grid current of V18 which should be of the order of 0.040mA.

53. Reconnect the Avometer to read grid current of V17 at TP6 and switch to channel A. Set RECEIVER TUNE to 100Mc/s and adjust L24 to give maximum grid current. Switch to channel B and set RECEIVER TUNE to 150Mc/s. Adjust C78 to give maximum grid current.

54. Repeat the procedure of para. 53 until no further increase in grid current is obtainable on either channel. The grid current of V17 should be of the order of 0.1mA.

55. Repeat the procedure of paras. 53 and 54 for the alignment of the grid circuit of V16. TP5 is the test point for measuring grid current, and L22 and C73 should be adjusted on channel A and channel B respectively. The grid current of V16 should be of the order of 0.12mA.

56. The third harmonic amplifier tuned circuit V16 can not be aligned by the grid current method since the circuit is coupled to the grid of the mixer valve V7 via C66. The circuit however may be aligned approximately and an indication of local oscillator voltage obtained. The circuit should not be aligned too accurately at this stage as a further check will be necessary when the R.F. circuits are aligned.

57. Connect the probe of the Voltmeter, valve, No. 2 between the junction of C66 and C69 and the common earth point of the circuit using the shortest possible leads. Switch to channel A and set RECEIVER TUNE to 100Mc/s. Adjust L20 for maximum reading on the valve voltmeter. Switch to channel B and set RECEIVER TUNE to 150Mc/s. Adjust C68 for maximum reading on the valve voltmeter. If considerable adjustment of C68 is required, repeat the alignment procedure. The local oscillator voltage should vary between 3.5 and 1.5V as the frequency is varied from 100 to 150Mc/s.

R.F. and mixer stages

58. The output impedance of the Signal generator No. 2, Mk. 4 is 14Ω. To match this to the 80Ω input impedance of the receiver, connect the generator output termination to the aerial socket via a 68Ω ¼W, non-inductive resistor. Adjust the signal to 5µV, at approximately 100Mc/s modulated 30% at 400c/s.

59. Switch to channel A and set RECEIVER TUNE to 100Mc/s. Adjust the signal generator frequency for maximum audio output and adjust the input level to give 1mW on the output meter. Adjust L10, L11 and L20 for maximum A.F. output. Since the circuits of L11 and L20 are linked by C66, the adjustment of one will have a slight effect upon the other. Adjust L11 and L20 in turn until no further increase in output can be obtained.

60. Switch to channel B and set RECEIVER TUNE to 150Mc/s. Adjust the signal generator frequency to approximately 150Mc/s and tune it for maximum audio output. Adjust C29, C35 and C68 for maximum A.F. output. Since C35 and C68 are also linked by C66, adjust each in turn until no further increase in output can be obtained.

61. Repeat the procedure of para. 60 until no further increase in receiver sensitivity can be obtained. The final input required for 1mW A.F. output must not exceed 5µV on all channels.

62. With the battery at its end point voltage of 10.8V the input required for 1mW A.F. output must not exceed 6µV.

Calibration

63. On each channel the setting of RECEIVER TUNE for maximum audio output must be within ± 1% of the nominal frequency of the channel.

Signal-to-noise ratio

64. Switch to channel A and tune to 100Mc/s. Inject a 5µV signal, modulated 30% at 400c/s and adjust RECEIVER GAIN to give 1mW A.F. output. Switch off the modulation and note the receiver output due to noise alone. This must be at least 20db. below 1mW, i.e. less than 10µW. Repeat on all channels.

Second channel and spurious responses

65. Switch to channel B and tune the receiver to 150Mc/s. Set RV1 to maximum gain. Inject a 200µV signal at 130.56Mc/s modulated 30% at 400c/s, and tune for maximum output. The ratio of the response at the working frequency to the second channel frequency shall not be less than the following-

66.
100Mc/s - 40dB
120Mc/s - 37dB
128Mc/s - 27dB
156Mc/s - 20dB

Automatic gain-control

67. Tune to channel A and inject a ~~5µV~~ 10µV signal, modulated 30% at 400c/s. Adjust RV1 to give 1mW A.F. output. Increase the input from the signal generator gradually to 100mV, correcting for any frequency drift in the signal generator. The audio output throughout must not rise by more than 14db. above 1mW.

68. Paras. 72 and 74 give receiver fault-finding information.

SPECIMEN A.F.G 3504

69. A specimen extract from an A.F.G.3504 is shown in Table 1. This gives specification figures to be obtained after the sender and receiver alignments have been carried out.

Tests recorded correspond with those detailed in Tels. F 734 against the para. Nos. shown.

Para.	Spec. figure	Fig. obtained	Pass
31	Greater than 220mA		
32	Greater than 190mA		
33	Within ± 1%		
35	At 1,000c/s 180 ± 25V		
36	At 300c/s, not more than -4db. At 3,500c/s, not more than -3.5db.		
37	+ 13%		
38	1mW		
39	Greater than 40V		
42	1,000 - 1,500c/s		
43	At 500c/s, not more than -3db. At 3,500c/s, not more than -3db. Below 100c/s, greater than -8db. Above 10,000c/s, greater than -12db.		
46	Less than 15µV.		
47	50 to 70kc/s Mid-point within 10kc/s of 9.720Mc/s		
57	3.5 to 1.5V		
61	Less than 5µV		
62	Less than 6µV		
63	Within ± 1%		
64	Greater than 20db.		
65	Greater than 30db.		
66	Greater than 40db.		
67	Less than 14db.		

Result of test

Signature.... ....

Table 1 - Extract from A.F.G 3504 specification tests

FAULT-FINDING

Power supply unit

70. Table 2 gives typical power supply unit voltages at various battery voltages. All measurements are made with an Avometer, universal, 46-range, Mk. 1, (or 50-range). The sender and receiver H.T. voltages are measured with the set tuned to a channel frequency (see paras. 19 and 20).

P.S.U. meter volts	Position of Float charge switch	L.T. volts at set	Receiver H.T. volts	Sender H.T. volts
10.8	NORMAL	10.8	210	265
12	NORMAL	12	235	295
13	NORMAL	13	250	320
13.5	FLOAT CHARGE	11	210	300

Table 2 - Typical power supply unit voltages

Sender

71. Table 3 gives modulator performance data. All voltage measurements are made with an Avometer and with an output meter connected to the receiver (see paras. 34 to 38).

Input	Output	Conditions
5mV at 1,000c/s to primary of TR2	180 ± 25V across TR3. Greater than 1mW sidetone	Sender tuned to 100 and 150Mc/s
5mV at 300c/s to primary of TR2	Voltage across TR3 not to differ by more than -4db. from level at 1,000c/s	Sender tuned to 100Mc/s
5mV at 3,500c/s to primary of TR2	Voltage across TR3 not to differ by more than -3.5db. from level at 1,000c/s	Sender tuned to 100Mc/s
25V at 1,000c/s to grid of V14 or V15	115 ± 15V across TR3	Sender tuned to 100Mc/s

Table 3 - Modulator performance data

Receiver

72. Table 4 gives output stage response figures. The input should be applied at the top end of RV1 with RECEIVER GAIN at maximum. A 10 to 1 attenuator is required when using Oscillators, beat-frequency No. 5, 7 or 8 on the 10 Ω range.

Input across RV1	Frequency	Output
0.13V	500c/s	1mW
0.116V	1,000c/s	1mW
0.125V	3,500c/s	1mW

Table 4 - Output stage response figures

73. Table 5 gives average I.F. sensitivity figures, with an input of 9.720Mc/s modulated 30% at 400c/s (see paras. 45 to 50).

Stage	Input	Output
V7 grid	12.5µV	1mW
V8 grid	70µV	1mW
V9 grid	1.6mV	1mW
V10 grid	35mV	1mW

Table 5 - Average I.F. sensitivity figures

74. Table 6 gives typical local oscillator output voltages (see paras. 51 to 57).

Crystal frequency	Receiver frequency	Voltage at V7 grid
5.0155Mc/s	100Mc/s	3.2 to 3.8V
7.7933Mc/s	150Mc/s	1.4 to 1.6V

Table 6 - Typical local oscillator output voltages

COIL WINDING DATA

75. Table 1001 and Fig. 1001 give the specification of sender and receiver R.F. coils.

76. Table 1002 and Fig. 1002 give I.F. transformer winding data.

77. Table 1003 and Fig. 1003 give power supply unit choke winding data.

Note: The next page is 1001.

Circuit ref.	Specification (see Fig. 1001)
L2	88 turns of No. 34 S.W.G. D.S.C. wire, close wound, twisted round pins and soldered. Finish with Varnish, insulating, air-drying - HA 10777 (Tels. A 303)
L3	11 turns, double spaced, of No. 24 S.W.G. enamelled copper wire. Nominal inductance - 0.926µH; Q - 126; resonant frequency with 400pF parallel capacity - 8.27Mc/s
L4	30 turns (approx. 26 turns per inch) of No. 30 S.W.G. enamelled copper wire, twisted round pins and soldered. Finish as for L2
L5	4¾ turns of No. 16 S.W.G., high conductivity, silver plated copper wire
L6	As for L4
L7	1½ turns of No. 16 S.W.G. high conductivity, silver plated copper wire
L8	As for L4
L9	(Primary winding: : 1¾ turns of No. 14 S.W.G. high conductivity, silver plated copper wire (Secondary winding: 1 full turn of No. 18 S.W.G. high conductivity, silver plated copper wire with brown P.V.C. sleeve (thickness 0.020 ins).
L10	1½ turns of No. 16 S.W.G. high conductivity, silver plated copper wire
L11	As for L10
L20	2½ turns of No. 16 S.W.G. high conductivity, silver plated copper wire
L21	As for L4
L22	5¾ turns of No. 16 S.W.G. high conductivity, silver plated copper wire
L23	As for L4
L24	13 turns, double spaced, of No. 24 S.W.G. enamelled copper wire. Nominal inductance - 1.122µH; Q - 127; resonant frequency with 400pF parallel capacity - 7.51Mc/s
L25	As for L2

Table 1001 - Specification of sender and receiver R.F. coils

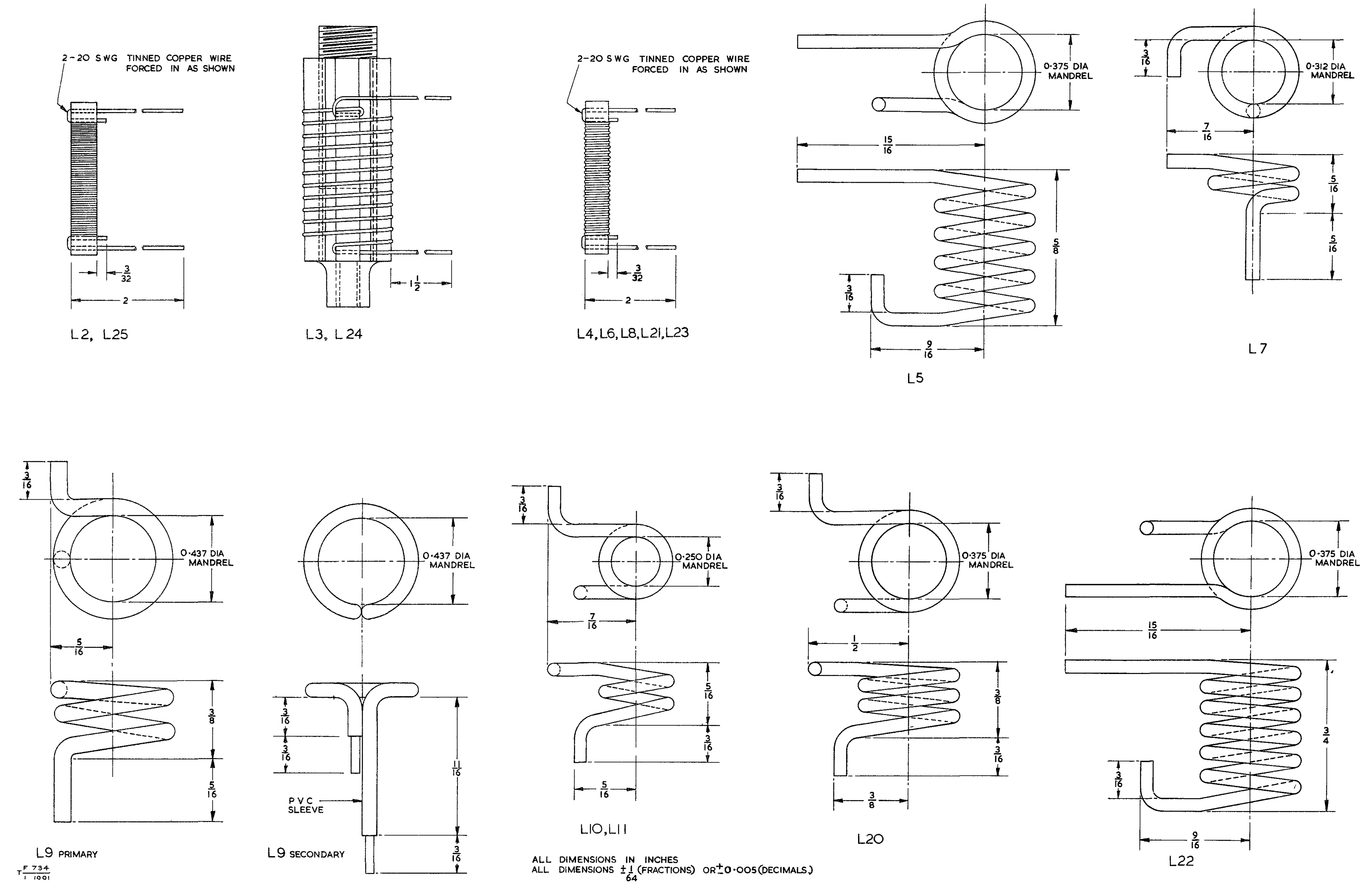

Fig. 1001 - Sender and receiver R.F. coils

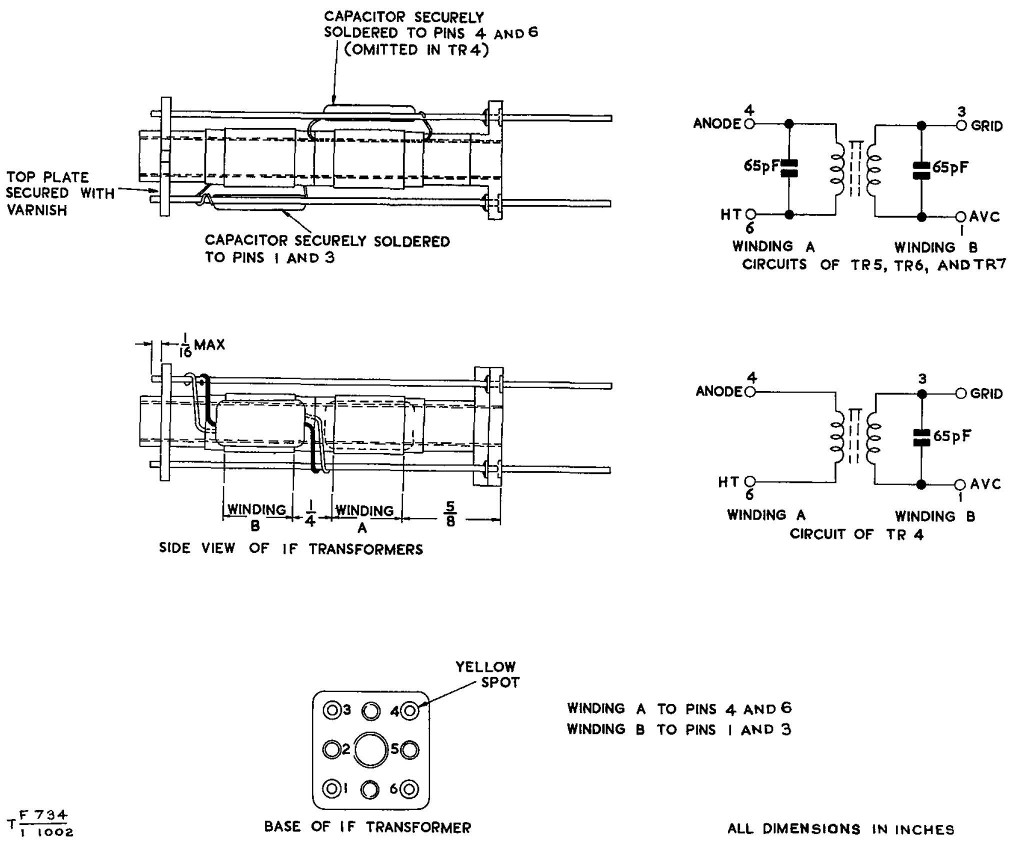

Fig. 1002 - I.F. transformer assembly details

Circuit ref.	Specification (see Fig. 1002)
TR4) TR5) TR6) TR7)	2 windings each of 29 turns of No. 28 S.W.G. enamelled copper wire, both wound in same direction. Ends of windings secured by cellophane self-adhesive tape $\frac{1}{8}$in. wide. Finish with Varnish, insulating, air-drying - HA 10777 (Tels. A 303). Nominal inductance - 3.287µH; Q - 75; resonant frequency of windings only with 400pF parallel capacity - 4.4 Mc/s

Table 1002 - I.F. transformer winding data

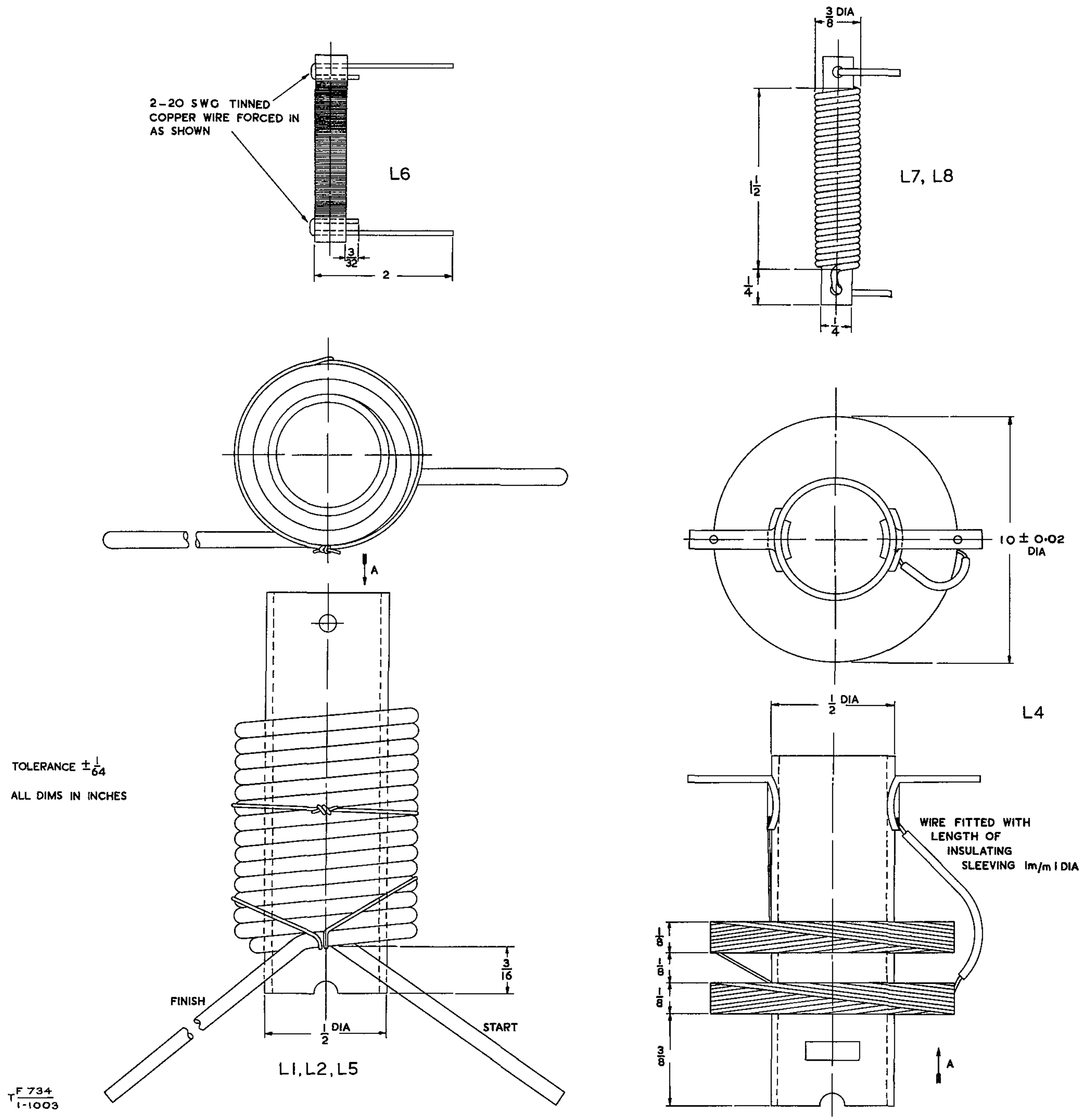

Fig. 1003 - Power supply unit - choke details

Circuit ref.	Specification (see Fig. 1003)
L1	30 turns of No. 16 S.W.G. enamelled and S.C.C. copper wire, wound in 2 layers in a clockwise direction when viewed from 'A'. Anchor start of winding with self-adhesive tape and secure finish with thin string. Impregnate whole assembly with Wax, sealing, special No. 4 - ZA 27330, (Tels. A 303). D.C. resistance = 0.016Ω ± 10%
L2	As for L1
L4	2 windings of 120 turns of No. 30 S.W.G. D.S.C. copper wire, single wave wound, $\frac{1}{8}$ in. wide. 6 turns per layer in clockwise direction viewed from 'A'. Secure coils with $\frac{1}{8}$ in. wide self-adhesive transparent tape. D.C. resistance = 3.4Ω ± 10%. Inductance 760μH
L5	As for L1
L6	88 turns of No. 34 S.W.G. D.S.C. wire, close wound, twisted round pins and soldered. Finish with Varnish, insulating, air-drying - HA 10777 (Tels. A 303)
L7) L8)	29 turns of No. 16 S.W.G. enamelled copper wire, close wound on a paxolin former. Ends to be secured as shown

Table 1003 - Power supply unit choke winding data

57/Maint./4482

END