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Despite the above, we will be making copies of essential technical information (circuit diagram, parts list, layout) freely available to all via our website from Summer 2004 onwards. This will be done to try and encourage and enable the maintenance of our remaining stock of vintage electronic equipment.

Guidance on using this electronic document

Acrobat Reader version

You need to view this document with Acrobat Reader **version 5.0** or later. It is possible that the document might open with an earlier version of the Acrobat Reader (thus allowing you to get this far!), but is also likely that some pages will not be shown correctly. You can upgrade your Acrobat Reader by direct download from the internet at http://www.adobe.com/products/acrobat/readermain.html or going to http://www.adobe.com/ and navigating from there.

Bookmarks

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Large diagrams

The large diagrams are given in two formats – in A4 size sheets to allow easy printing, and complete as originally published to allow easy on-screen viewing. These versions are in different sections of the document, which can be found within the bookmarks.

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The document has been optimised for printing on A4 size paper (this is the common size available in UK and Europe, which measures 29.7cm by 21.0cm). Please follow these steps (these are based on Acrobat Reader version 6.0 – other versions may differ in detail):

1. Work out the page numbers you want to print. If you want to print the whole document, then within "Bookmarks" (see above), first click on "**Front**", and note the page number given at the bottom of the Acrobat window – this will give you the page number of the first page to be printed. Similarly click on "**End of A4 printable copy**", to determine the last page to be printed.

2. Select "File – Print" or click on the printer icon. This will bring up the print dialog box.

3. Select the correct printer if necessary.

4. In the area marked "Print Range" click on the radio button marked "Pages from..", then enter the first and last page numbers worked out in step 1 into the "from" and "to" boxes.

5. In the "Page Handling" area, next to "Page Scaling", select "Fit to paper". The press "OK"

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Please get in touch with me at archivist@vmarsmanuals.co.uk.

Richard Hankins, VMARS Archivist, Spring 2004

RESTRICTED

ELECTRICAL & MECHANICAL ENGINEERING REGULATIONS

(By Command of the Defence Council)

TELECOMMUNICATIONS L392

STATION KIT, RADIO, AMPLIFIER, RF, No. 7

(Power supply, rotary No. 47 & Loading coil assembly, Aerial)

TECHNICAL HANDBOOK -

TECHNICAL DESCRIPTION AND FAULT FINDING AND REPAIR DATA

WARNING

The voltage produced by this equipment is sufficiently high to endanger human life. For first aid in case of electric shock see inside front cover.

RESTRICTED

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Issue 1, 1 Apr 66.

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FIRST AID IN CASE OF ELECTRIC SHOCK

1. ***SWITCH OFF.*** If this is not possible, ***PROTECT YOURSELF*** with dry insulating material and pull the victim clear of the conductor.

   DON'T TOUCH THE VICTIM WITH YOUR BARE HANDS until he is clear of the conductor, but ***DON'T WASTE TIME.***

2. ***(a)*** Lay the patient on his back. Quickly loosen waist band and clothing round neck. If his mouth is open, sweep a finger through his mouth to clear obstruction and remove loose dentures.

   (b) Lift the head and tilt the head backwards by putting one hand underneath the neck and the other on the crown of the head. See fig. 1

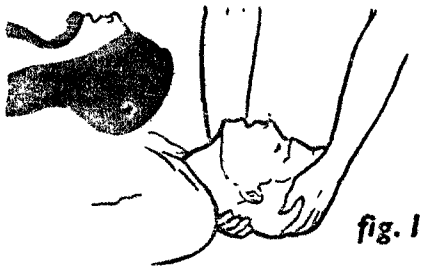


fig. 1

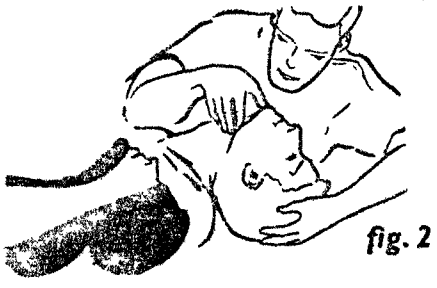


fig. 2

   (c) Hold the head tilted as far back as possible and lift up the jaw firmly, closing the lips. This keeps the victim's airway clear by straightening the breathing passage. See fig. 2

   (d) Take a deep breath. Open your mouth as wide as you can. Seal your lips on the victim's cheeks around his nose Blow air into his nose until you see the chest rise (inspiration). See fig. 3

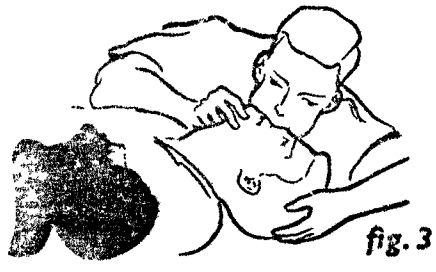


fig. 3

fig. 4

   (e) Remove your mouth to let him breathe out, his chest will fall (expiration). See fig. 4

   (f) Take another deep breath and blow again as soon as he has exhaled, and continue inflations 10 — 15 times a minute. (This is a little slower than the normal rate of 18).

   The movement of the victim's chest provides visual confirmation of the success of your efforts.

3. If you fail with the nasal route, try the mouth as follows :-
   Lift the jaw and hold his mouth open slightly as you blow, keeping the head tilted well back with the other hand.

   Seal your lips around his opened mouth and press your cheek against his nostrils to stop air leakage.

   Continue as described above, until the victim is seen by a Doctor.

DO NOT GIVE LIQUIDS UNTIL VICTIM IS CONSCIOUS.

STATION KIT, RADIO, AMPLIFIER, R.F., NO 7

(Power supply, rotary No 47 and loading coil assembly, aerial)

Errata

Note: This Page 0, Issue 1, must be filed immediately in front of Page 1, Issue 1, dated 1 Apr 66.

1. The following amendment must be made to the regulation.

2. Page 1016, Table 2504, R3, Part No

Delete: '5905-99-900-5948'
Insert: 'Z30/5905-99-112-9370'

T/8/2834 and T/8/2584 (TELS)

STATION KIT, RADIO, AMPLIFIER, R.F., No 7

(Power supply, rotary No 47 and Loading coil assembly, aerial)

This Part 2 contains fault finding and repair data in tabular and diagrammatic form. Part 1 of this EMER contains a general description of the equipment. Tels L 394 deals with repairs.

INDEX TO FIGURES

INDEX TO FIGURES - (cont)

INDEX TO TABLES

Note 1. Grid references are given in the form figure-letter-figure. The prefix figure refers to the drawing and the suffix letter and figure denote the actual grid reference on the drawing, eg 01bJ6 means that a component is located at J6 on Fig 2501b.

2. All catalogue numbers given are in VAOS section Z1 unless another prefix is quoted.

3. The following abbreviations have been used in the 'Type' column:-

w.w.	=	wire wound
film HS	=	film high stability
paper met	=	paper metallised
paper met tub	=	paper metallised tubular

Relay contacts		Switch contacts	
Cct. ref.	Grid ref.	Cct. ref.	Grid ref.
RLA (coil) RLA1	01aE7 01aB5	SA1F SA1B SA2F SA2B SA3B SA4B SA5F SA6B	01bB5 01bB3 01bC2 01bC3 01bC1 01bF1 01bE1 01bF2
RLB (coil) RLB1	01bG4 01bG5		
RLC (coil) RLC1 RLC2	01bD8 01bA2 01bD7		
RLD (coil) RLD1 RLD2	01bD5 01bH1 01bF5	SB1F SB1B SB2F SB3F SB4B	01bC5 01bB5 01bJ2 01bM1
RLE (coil) RLE1 RLE2 RLE3 RLE4 (unused)	01bJ7 01bH7 01bC6 01bB8		
RLF (coil) RLF1 RLF2	01aF7 01aE4 01aE4	SC1F SC1F SC2F SC2F SC3F SC3F SC4F	01bG7 01bK6 01bB7 01bJ7 01bC7 01bE6 01bC8
RLG (coil) RLG1	01aE6 01aC6		
RLH (coil) RLH1	01aC7 01aE6	SD1 SD2	01bH6 01bJ6

Table 2501 - Relay location

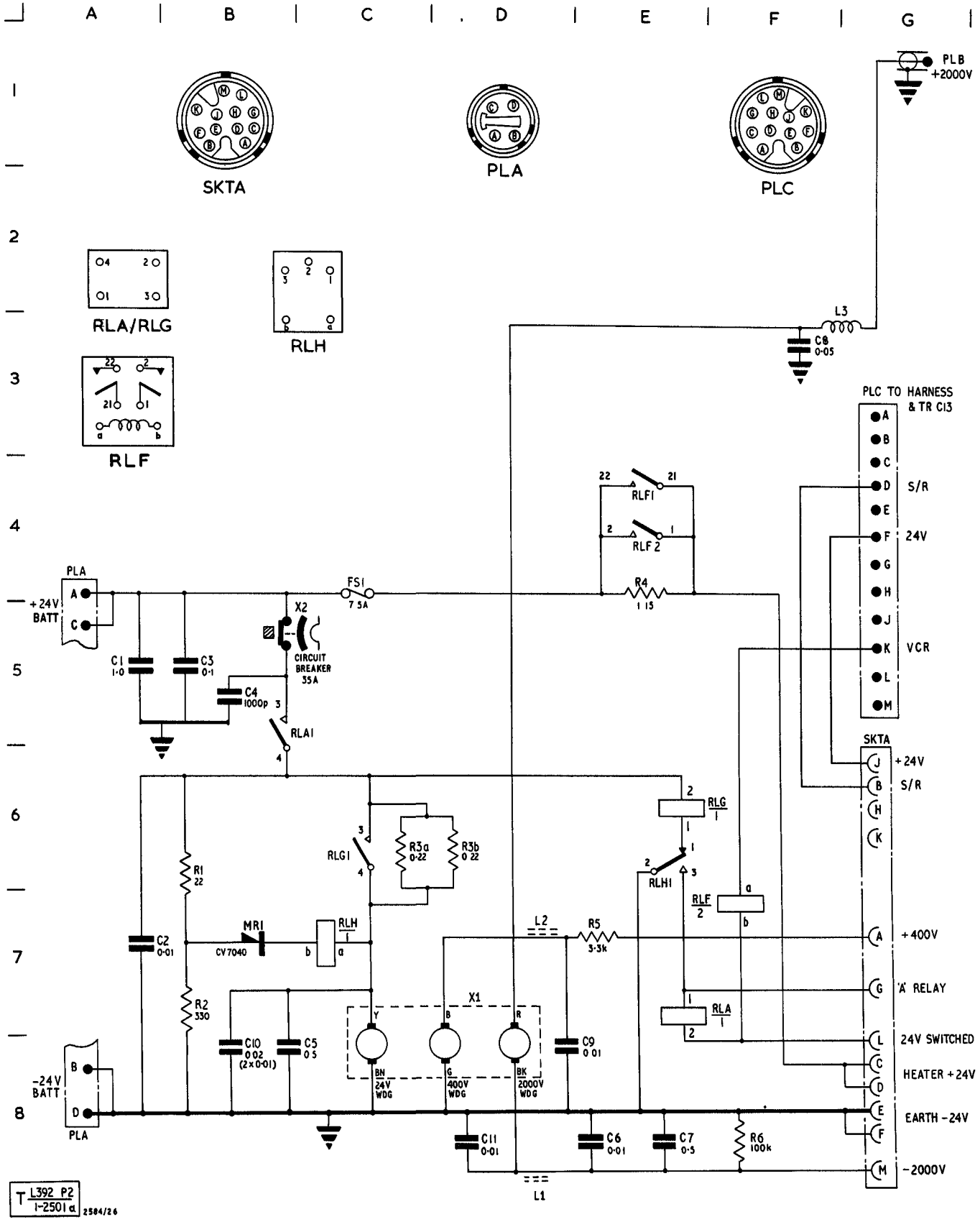


Fig 2501a - Circuit diagram, PSR No 47

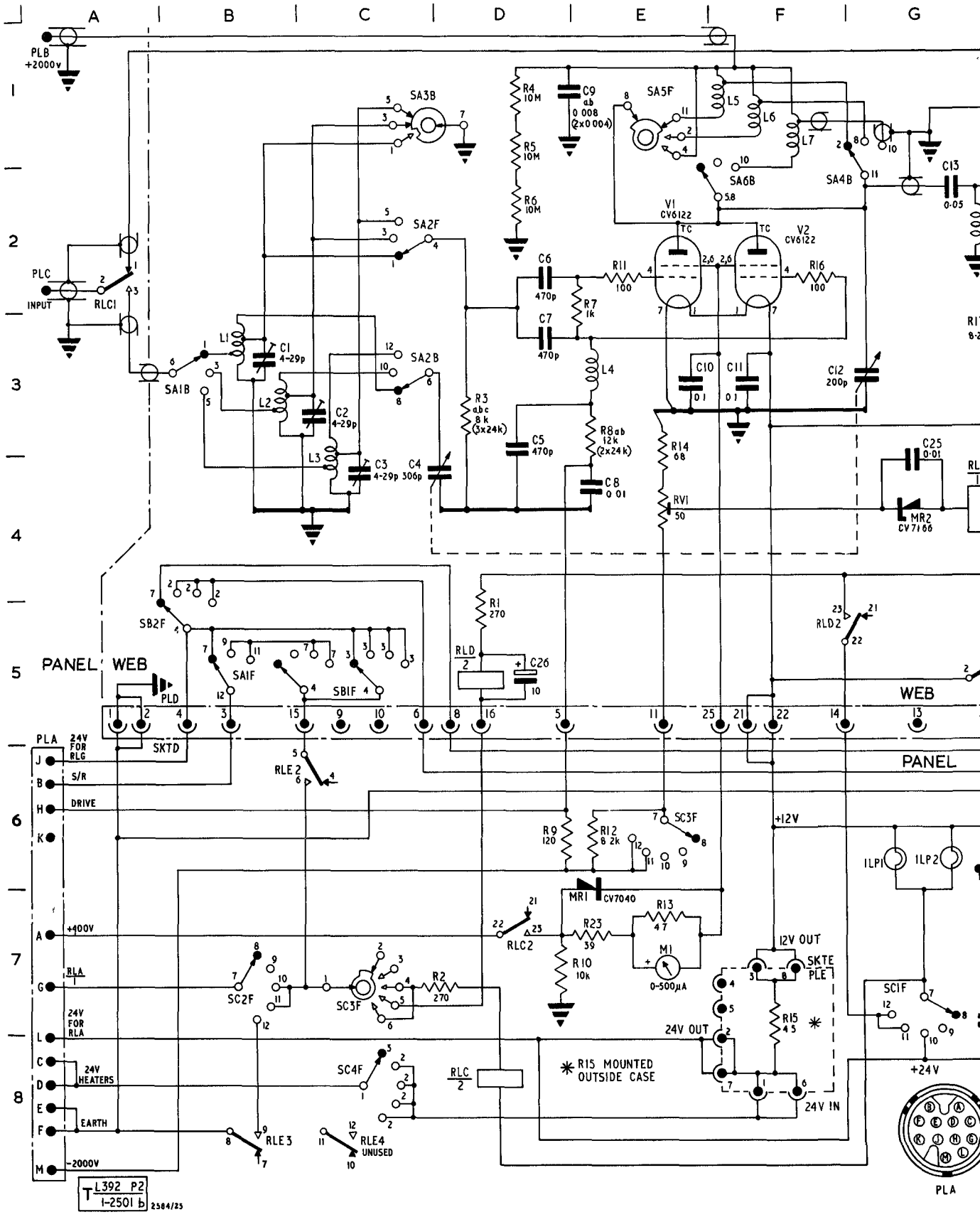
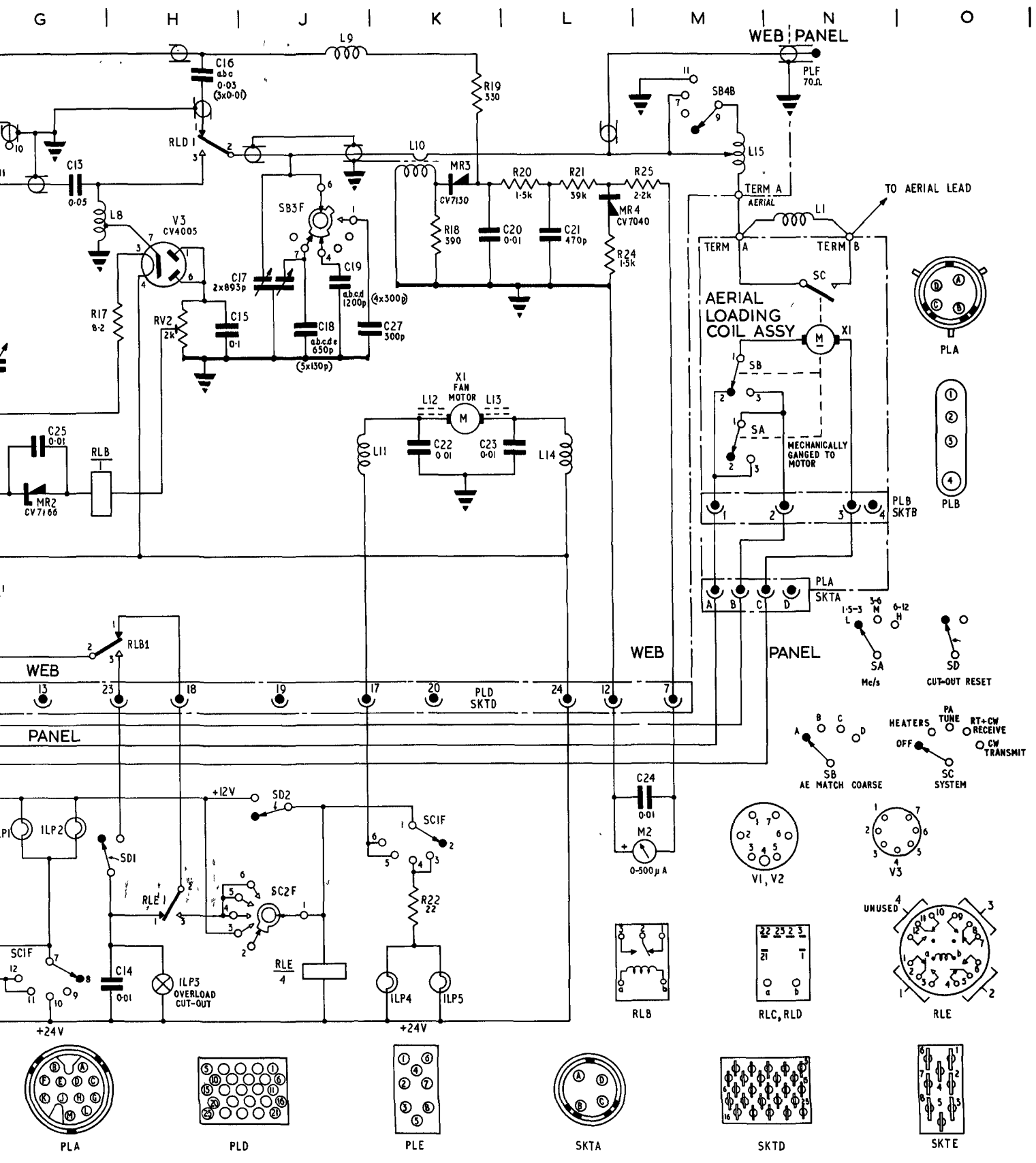


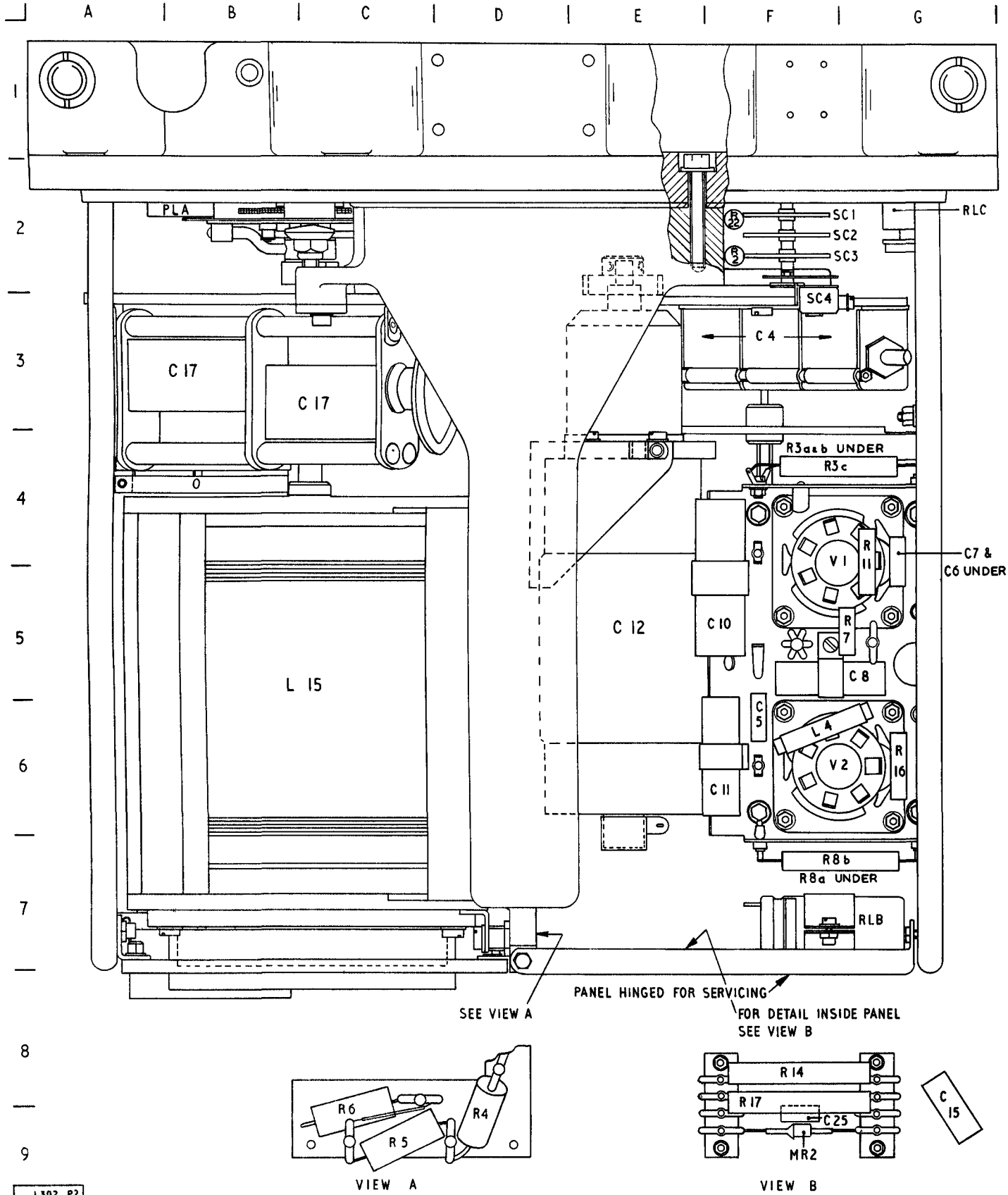
Fig 2501b - Circuit diag



rcuit diagram, Amplifier r.f. No 7

R E S T R I C T E D

Fig 2501b - Circuit diagram, Amplifier R.F., No. 7



T L392 P2 1-2502 2584/2

Fig 2502 - Component layout, bottom view

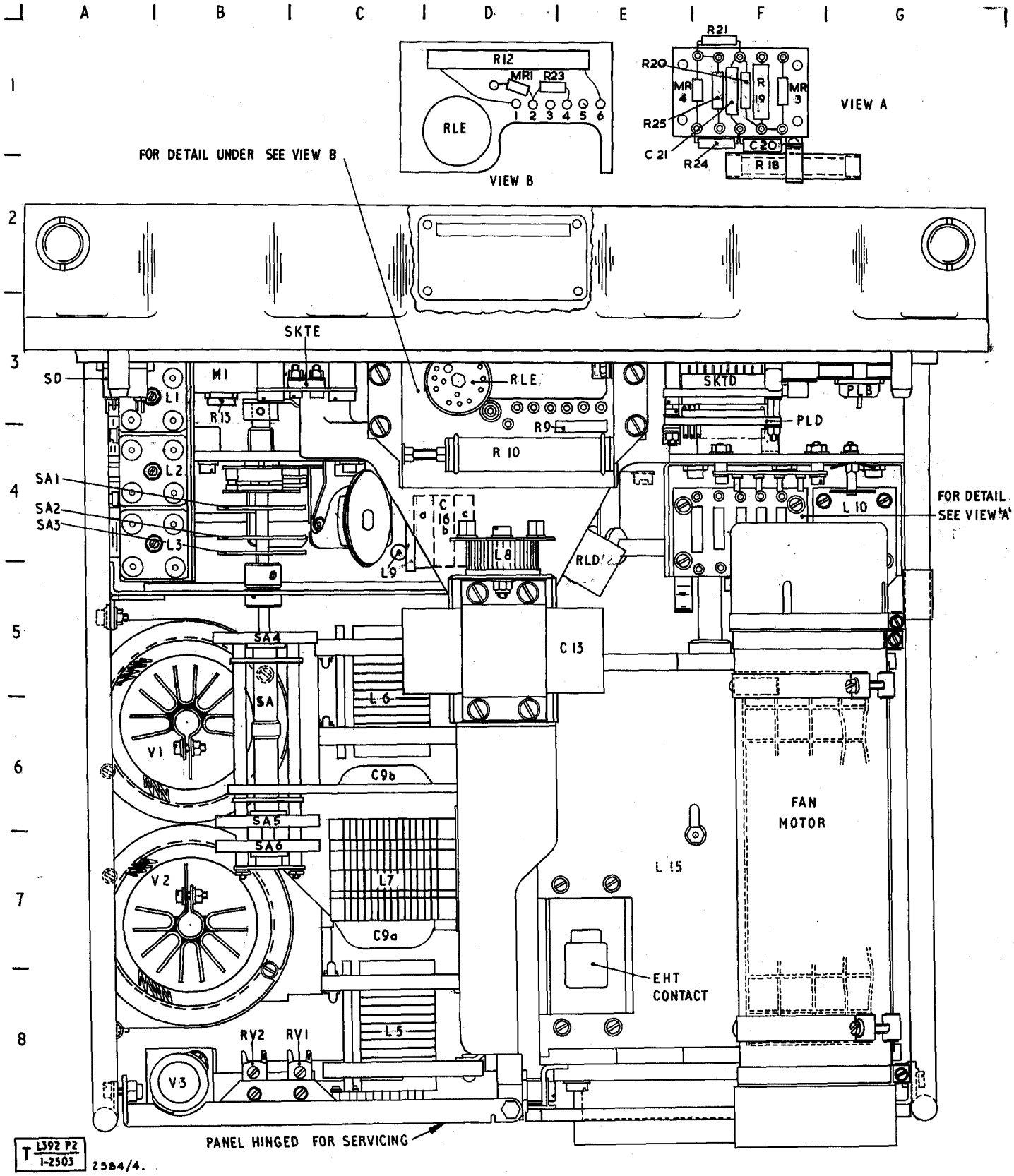
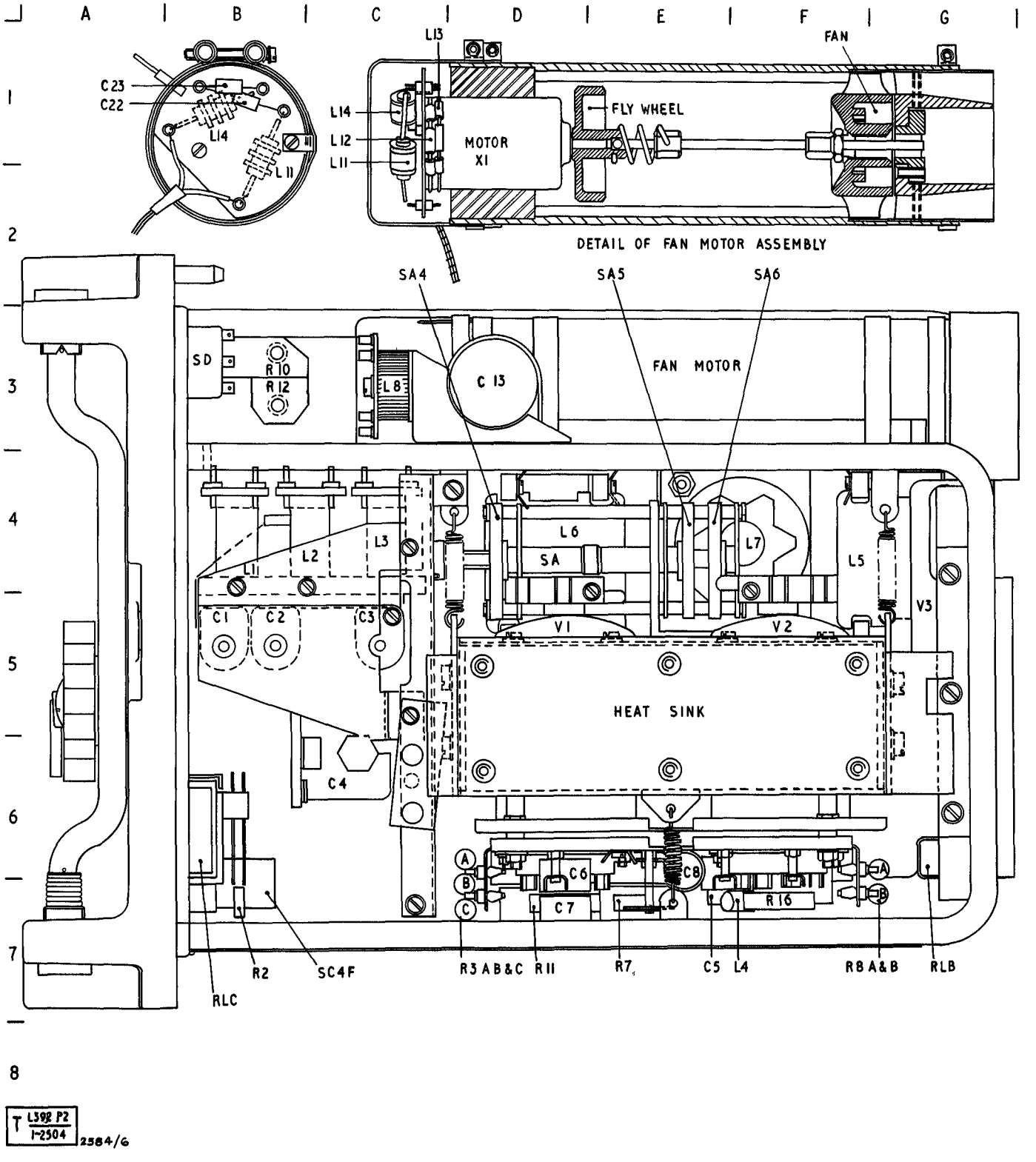


Fig 2503 - Component layout, top view



T L392 P2 1-2504 2584/6

Fig 2504 - Component layout, r.h. side

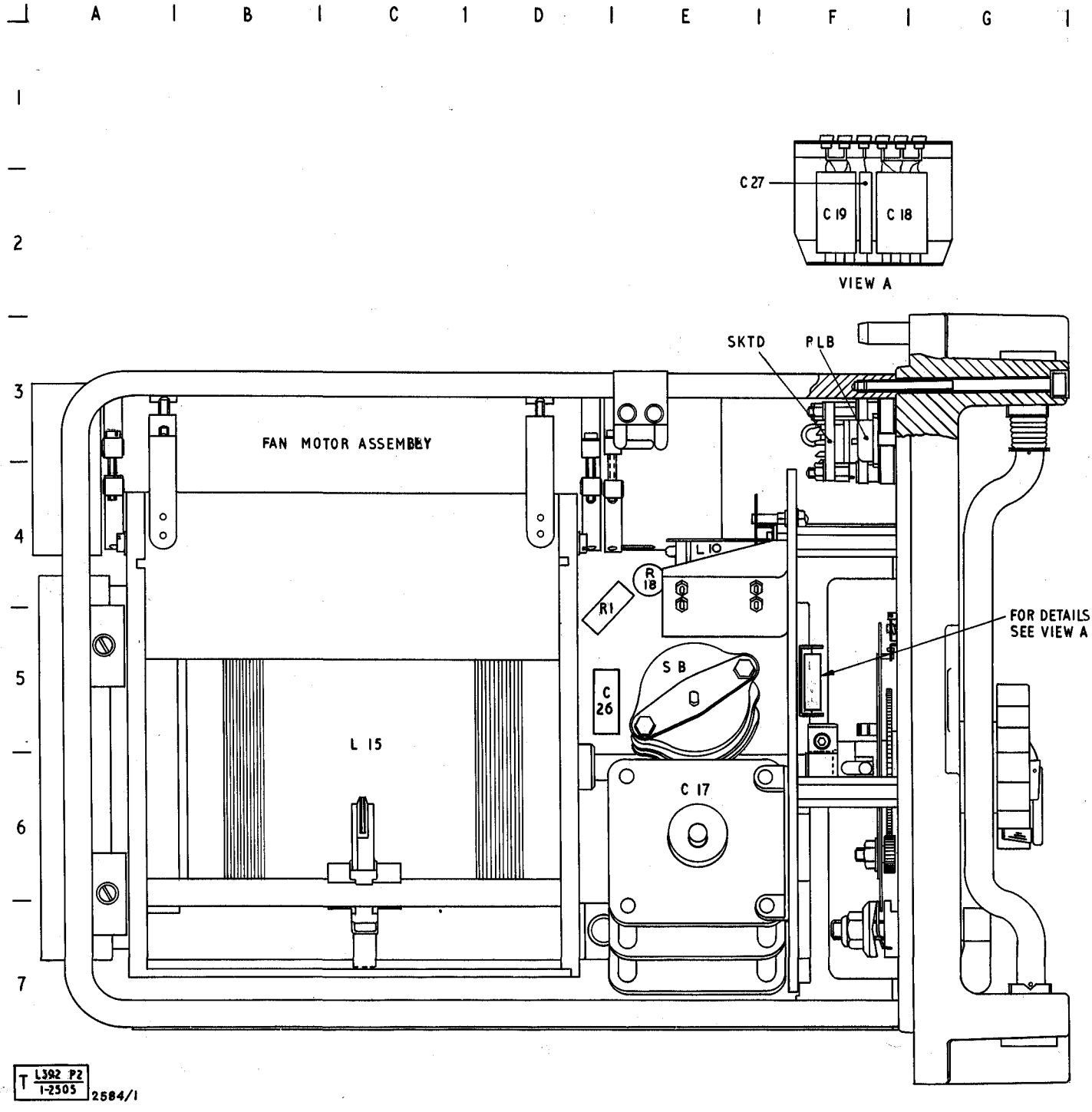
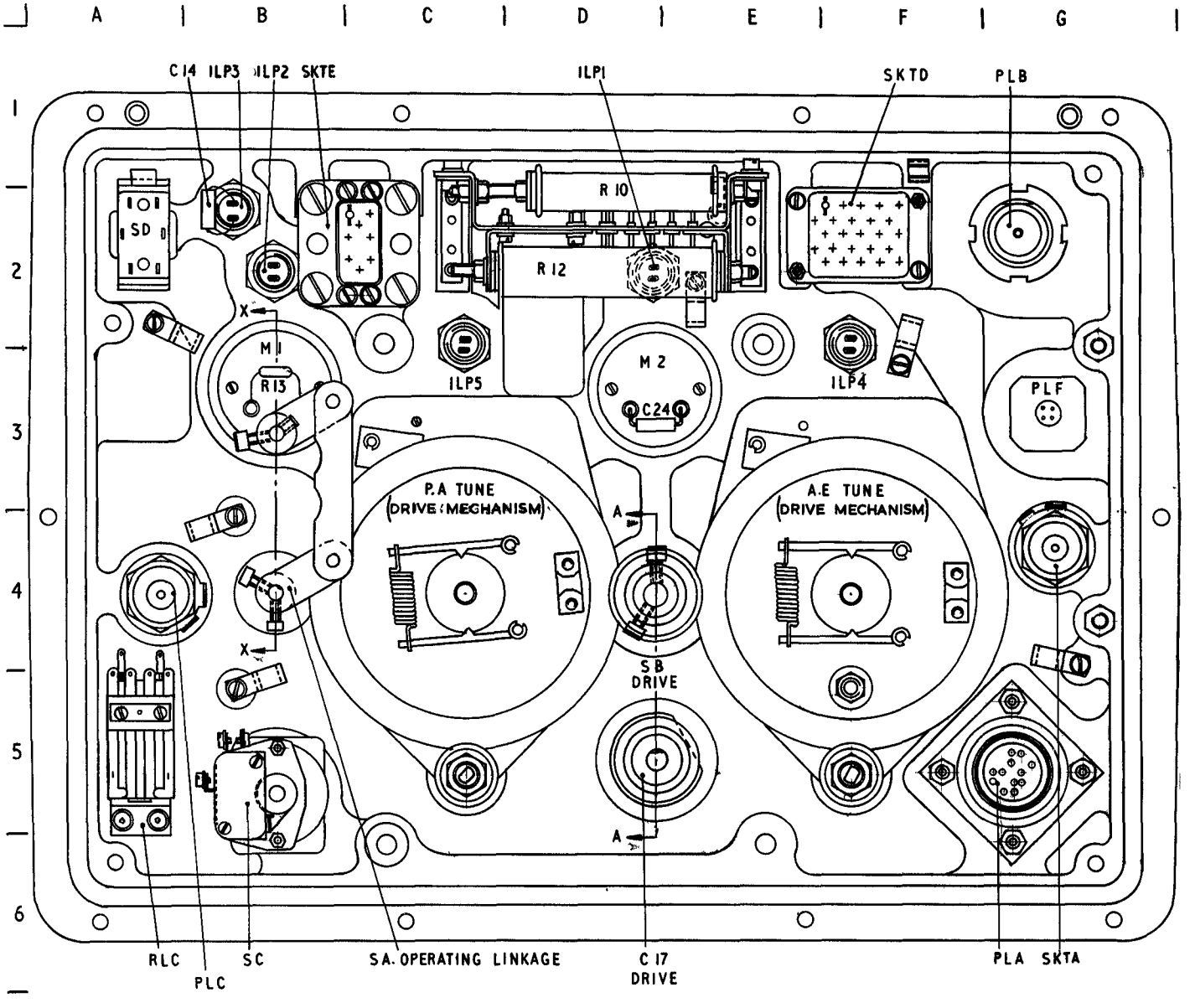
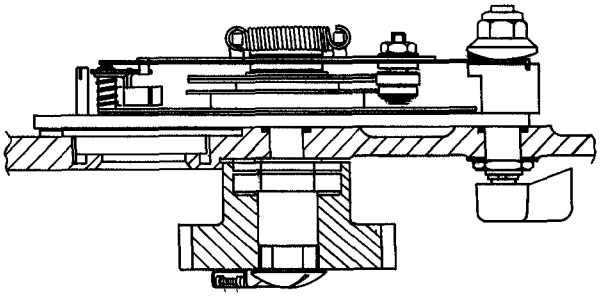
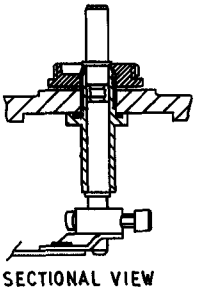


Fig 2505 - Component layout, l.h. side

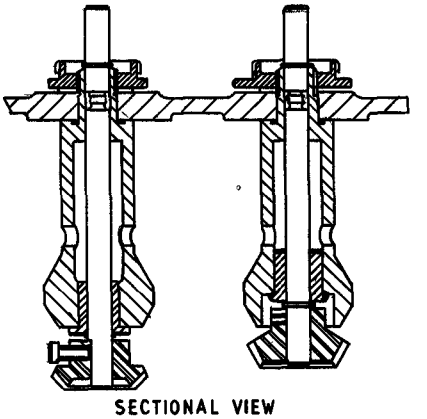




CROSS SECTION OF DRIVE MECHANISMS



SECTIONAL VIEW
ON 'X X'



SECTIONAL VIEW
ON 'A A'

T L392 P2 1-2506 2584/7

Fig 2506 - Rear view of front panel and drive mechanisms

Table 2502 - Amplifier, r.f., No 7, component schedule

Description and Part numbers in these tables are current at time of issue only. Use ISPL, when published, to demand stores

Cct. ref.	Component location: Main cct. Fig 2501b	Component location: Unit layout	Value	Tol. %	Rating	Type	Part No
			RESISTORS				
R1	01 D5	05E4	270Ω	±5	1.5W	w.w.	5905-99-011-3241
R2	01 C7	02F2	270Ω	±5	1.5W	w.w.	5905-99-011-3241
R3	01 D3	02F4	24kx3	±5	6W ea.	w.w.	5905-99-011-7902
R4	01 D1	02D9	1ΩMΩ	±10	1W	comp	5905-99-011-1536
R5	01 D1	02C9	1ΩMΩ	±10	1W	comp	5905-99-011-1536
R6	01 D2	02C9	1kΩ	±10	1W	comp	5905-99-011-1536
R7	01 D2	02G5	24kΩx2	±10	0.5W	comp ins	5905-99-022-2006
R8	01 E3	02F7	120Ω	±5	6W ea.	w.w.	5905-99-011-7902
R9	01 E6	03E4	10kΩ	±5	0.5W	comp	5905-99-022-1123
R10	01 D7	06D2	100Ω	±5	10W	w.w.	5905-99-011-3088
R11	01 E2	02G5	100Ω	±5	0.5W	film H.S.	5905-99-021-5122
R12	01 E6	06D2	8.2kΩ	±5	15W	w.w.	5905-99-011-3176
R13	01 E7	06B3	4.7Ω	±10	1.5W	w.w.	5905-99-011-3203
R14	01 E3	02F8	68Ω	±5	6W	w.w.	5905-99-011-3369
R15	01 F7	ON CASE	4.5Ω	±2	125W	w.w.	5905-99-900-5950
R16	01 F2	02G6	100Ω	±5	0.5W	film H.S.	5905-99-021-5122
R17	01 G3	02F9	8.2Ω	±5	6W	w.w.	5905-99-011-9805
R18	01 K2	05E4	390Ω	±5	1.5W	film H.S.	5905-99-021-5195
R19	01 K1	03F1	330Ω	±10	0.5W	comp	5905-99-022-1174
R20	01 L2	03F1	1.5kΩ	±5	0.25W	film H.S.	5905-99-012-0716
R21	01 L2	03F1	39kΩ	±5	0.25W	film H.S.	5905-99-012-0818
R22	01 K7	03F2	22Ω	±5	1.5W	w.w.	5905-99-011-3215
R23	01 E7	03D1	39Ω	±5	1.5W	w.w.	5905-99-011-3221
R24	01 L2	03F1	1.5kΩ	±5	0.25W	film H.S.	5905-99-012-0716
R25	01 M2	03F1	2.2kΩ	±5	0.25W	film H.S.	5905-99-012-0728
RV1	01 E4	03B8	50Ω	±10	0.5W		5905-99-900-5967
RV2	01 H3	03B8	2kΩ	±10	0.5W		5905-99-900-5968
			CAPACITORS				
C1	01 B3	04B5	4-29pF			variable	5910-99-016-0049
C2	01 C3	04B5	4-29pF			variable	5910-99-016-0049
C3	01 C4	04C5	4-29pF			variable	5910-99-016-0049
C4	01 D4	02F3	306pF max			variable	5910-99-016-0059
C5	01 D4	02F6	470pF	±10	750V	mica	*5910-99-012-3949
C6	01 D2	02G5	470pF	±10	750V	mica	*5910-99-012-3949
C7	01 D3	02G5	470pF	±10	750V	mica	*5910-99-012-3949
C8	01 E4	02G5	0.01μF	±20	1000V	paper	5910-99-011-7828
C9	01 D1	03C6/7	0.004μFx2	±20	2500V	mica	5910-99-900-6037
C10	01 E3	02F5	0.1μF	±20	1000V	paper	5910-99-011-7829
C11	01 F3	02F6	0.1μF	±20	350V	paper	5910-99-011-7818
C12	01 G3	02E5				vacuum variable	5910-99-110-2730
C13	01 G2	04D3	0.05μF	±20	3000V	paper	5910-99-900-6042
C14	01 H7	06B2	0.01μF	±20	250V	paper met	5910-99-012-0113
C15	01 H3	03G8	0.1μF	±20	350V	paper tub ins	5910-99-011-7818

*Only TCC capacitors are suitable in this position

Table 2502 - (cont)

Cct. ref.	Component location: Main cct. Fig 2501b	Component location: Unit layout	Value	Tol. %	Rating	Type	Part No.
			CAPACITORS - (cont)				
C16	01H1	03D4	0.01μFx3	±10	350V	mica	5910-99-012-4744
C17	01J2	02B3	893pF	swing		2 section variable	5910-99-900-6054
C18	01J3	05F2	130pFx5	±2	750V	ceramic tubular	5910-99-011-8629
C19	01J2	05F2	300pFx4	±2	750V	ceramic tubular	5910-99-011-8637
C20	01K2	03F1	0.01μF	±20	250V	paper met	5910-99-012-0113
C21	01L2	03F1	470pF	±10	750V	mica	5910-99-012-3949
C22	01K4	04B1	0.01μF	±20	250V	paper met	5910-99-012-0113
C23	01L4	04B1	0.01μF	±20	250V	paper met	5910-99-012-0113
C24	01M6	06D3	0.01μF	±20	250V	paper met	5910-99-012-0113
C25	01G3	02F9	0.01μF	±20	250V	paper met	5910-99-012-0113
C26	01D5	05D5	10μF	±20	25V	electrolytic	5910-99-900-6332
C27	01J3	05F2	300pF	±2	750V	ceramic tubular	5910-99-011-8637

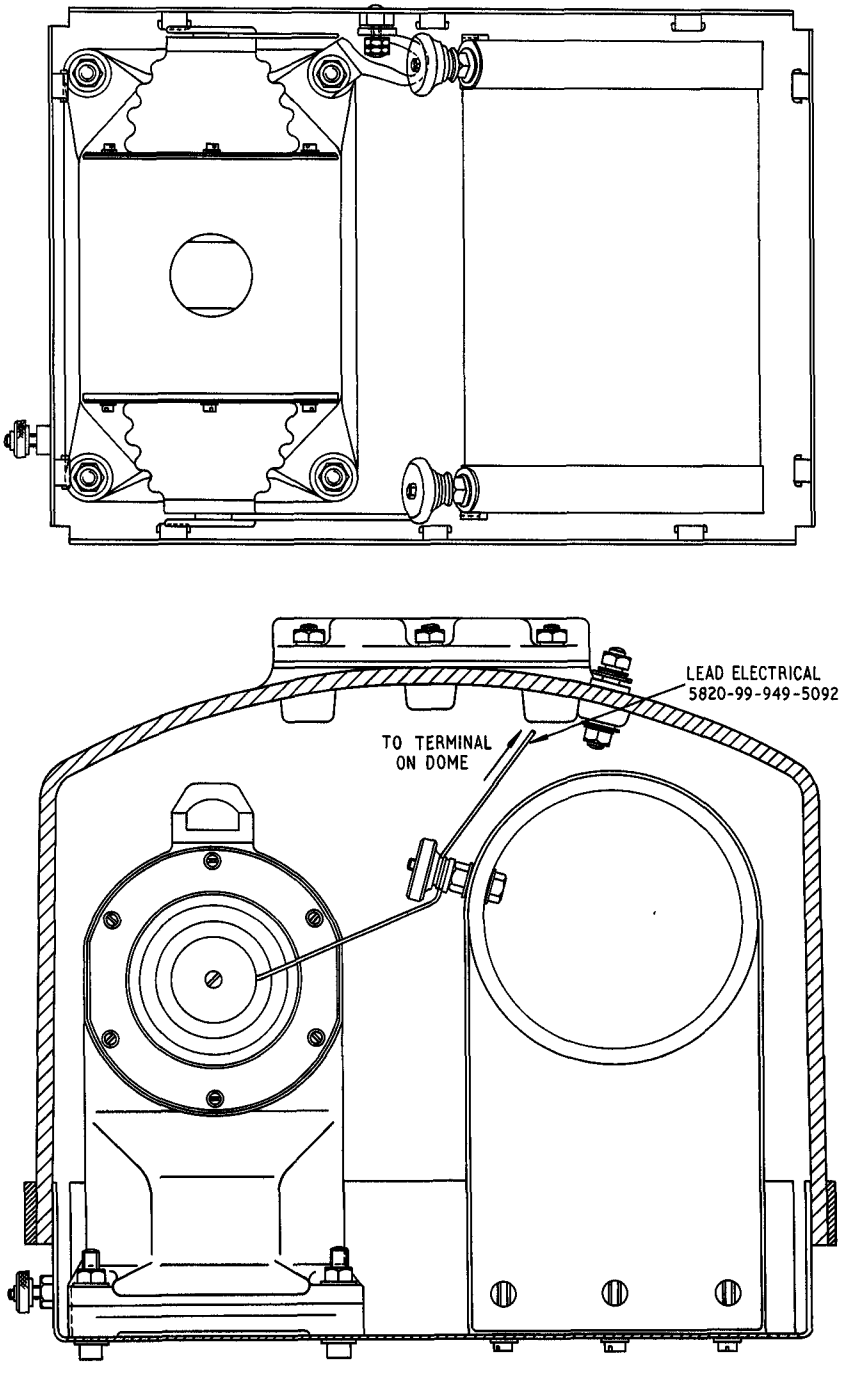
Cct. ref.	Component location: Main cct. Fig 2501b	Component location: Unit layout	Description		Part No.
			VALVES AND SEMI-CONDUCTORS		
V1	01E2	02F4	Tetrode	CV6122	5960-99-037-3328
V2	01F2	02F6	Tetrode	CV6122	5960-99-037-3328
V3	01H2	04G5	Double diode	CV4005	5960-99-000-4005
MR1	01E6	03D1	Diode	CV7040	5960-99-037-2016
MR2	01G4	02F9	Zener diode	CV7166	5960-99-037-2457
MR3	01K2	03F1	Diode	CV7130	5960-99-037-2373
MR4	01L2	03F1	Diode	CV7040	5960-99-037-2016
			INDUCTORS		
L1	01B3	04B4	Transformer, r.f.		5950-99-949-4874
L2	01B3	04B4	Transformer, r.f.		5950-99-949-4878
L3	01C3	04C4	Transformer, r.f.		5950-99-949-4890
L4	01E3	02F6	Inductor, r.f.		5950-99-949-4907
L5	01F1	04F4	Transformer, r.f.		5950-99-949-4545
L6	01F1	04D4	Transformer, r.f.		5950-99-949-4544
L7	01F1	04E4	Transformer, r.f.		5950-99-949-4538
L8	01G2	04C3	Transformer, r.f.		5950-99-102-6421
L9	01J1	03C5	Inductor, r.f.		5950-99-949-4907
L10	01K2	05E4	Transformer, current		5950-99-949-4531
L11	01J3	04B2	Inductor		5950-99-949-5239
L12	01K3	04C1	Ferrox beads		5950-99-949-5076
L13	01K3	04C1	Ferrox beads		5950-99-949-5076
L14	01L4	04B1	Inductor, r.f.		5950-99-949-5239
L15	01M1	05C6	Inductor, r.f., rotary tuning		5950-99-949-5974

Table 2502 - (cont)

Cct. ref.	Component location: Main cct. Fig 2501b	Component location: Unit layout	Description	Part No.
		MISCELLANEOUS		
RLB	01G4	02G7	Relay, miniature sealed, type SH5B-N30	5945-99-011-4687
RLC	01D8	06A5	Relay, non-sealed	5945-99-053-0223
RLD	01D5	03E4	Relay, non-sealed	5945-99-053-0223
RLE	01J7	03D1/3	Relay, sealed, type SM6D-N72	5945-99-011-9144
M1	01E7	06B3	Meter, sealed, 500μA	6625-99-900-6323
M2	01M6	06D3	Meter, sealed, 500μA	6625-99-900-6323
X1	01K3	04D1	Fan motor, p.m., 28V	6105-99-110-2134
PLA	01A7	06G5	Plug, 12 pole	5935-99-911-6993
PLB	01A1	05G2	Plug, high voltage, 1 pole	5935-99-900-6093
PLC	01A2	06A4	Plug, coaxial	5935-99-011-9484
PLF	01N1	06G3	Plug, coaxial	5935-99-011-9484
PLE	01F7	ON CASE	Plug, 8 pole	5935-99-940-2008
SKTA	01M5	06G4	Socket, 4 pole	5935-99-949-4873
SKTE	01F7	06C2	Socket, 8 pole	5935-99-940-2009
SKTD	01A-M5	05F2	Socket, 25 pole	5935-99-932-5985
PLD	01A-M5	03F3	Plug, 25 pole	5935-99-932-5975
SA	See Fig 2501a/Table 2501	04E4	Mc/s switch - rotary	5930-99-900-6246
SB	See Fig 2501a/Table 2501	05E5	AE match coarse - rotary	5930-99-900-6126
SC	See Fig 2501a/Table 2501	02F2	System switch - rotary	5930-99-051-0080
SD	See Fig 2501a/Table 2501	04B3	Cut out reset - biased toggle	5930-99-051-0555
ILP1	01G6	06D2	Lamp, 0.1A 12V	6240-99-995-9120
ILP2	01G6	06B2	Lamp, 0.1A 12V	6240-99-995-9120
ILP3	01N7	06B2	Lamp, 0.1A 12V	6240-99-995-9120
ILP4	01K7	06F2	Lamp, 0.1A 12V	6240-99-995-9120
ILP5	01K7	06C2	Lamp, 0.1A 12V	6240-99-995-9120
			Brushes for Aerial tuning coil	5977-99-949-4992
			Brushes for Aerial tuning coil	5977-99-949-4998

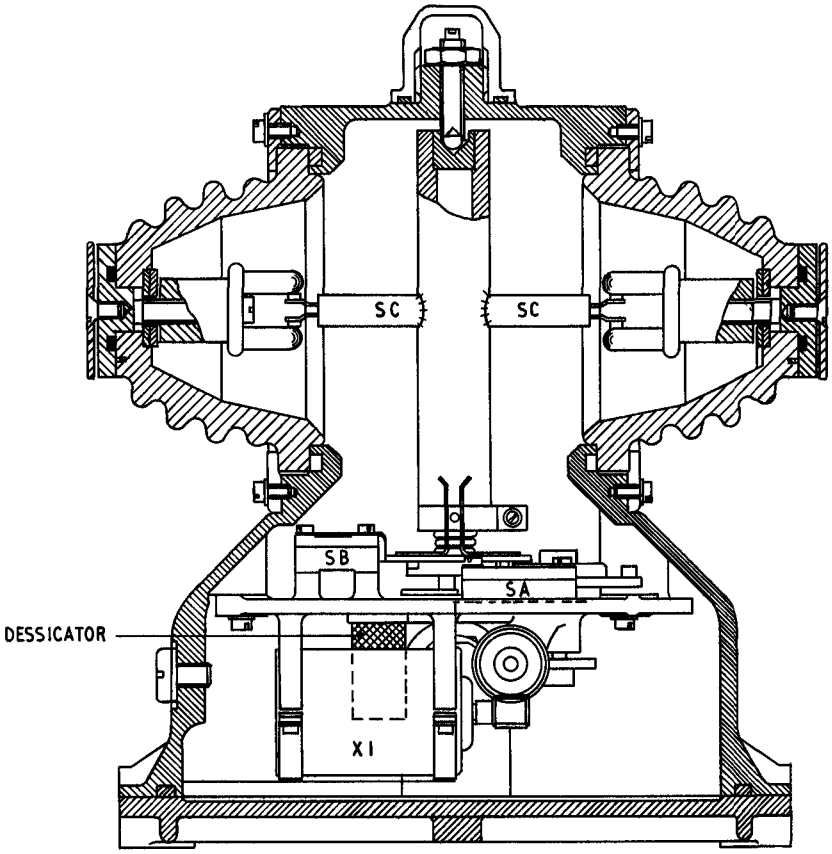
Table 2503 - Aerial loading coil assembly, component schedule

Cct. ref.	Component location: Main cct. Fig 2501b	Component location: Unit layout	Description	Part No.
		MISCELLANEOUS		
L1	01N2		Loading coil complete	5820-99-949-5027
SC	01N3	08E2	Rotor assembly	5820-99-949-5128
SC	01N3	08E2	Fixed contacts for S.C.	5820-99-949-5083
SC	01N3	08E2	Insulator bowl	5970-99-949-5139
SC	01N3		Insulator sealing ring - rubber	5330-99-949-4877
SA	01M4	08J6	Micro switch	5930-99-057-0080
SB	01M3	08K7	Micro switch	5930-99-057-0080
X1	01N3	08D7	Drive motor for S.C. 28V p.m.	6105-99-103-6424
PLA	01M5	08E8	Plug, 4 pole	5935-99-949-5054
PLB	01M4	08H7	Plug, 4 pole	5935-99-949-5222
SKTB	01M4	08F7	Socket, 4 pole	5935-99-949-3556

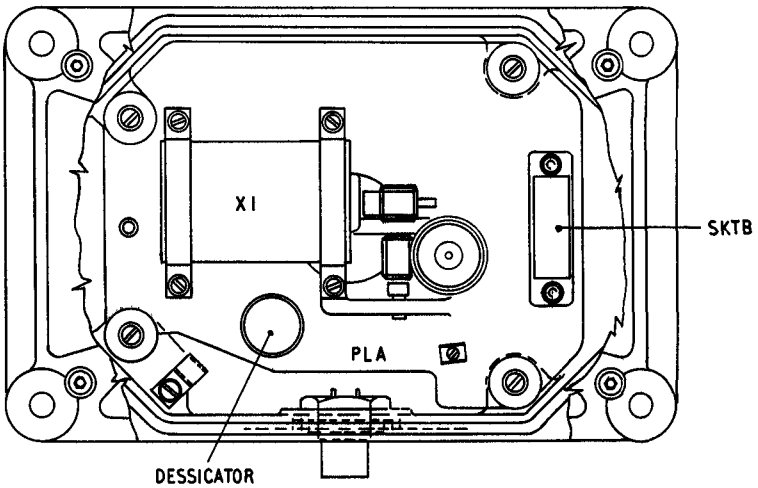


T L392 P2 / I-2507 2584/36

Fig 2507 - Layout of aerial loading coil assembly



SECTIONAL VIEW OF
INTERNAL ASSEMBLY

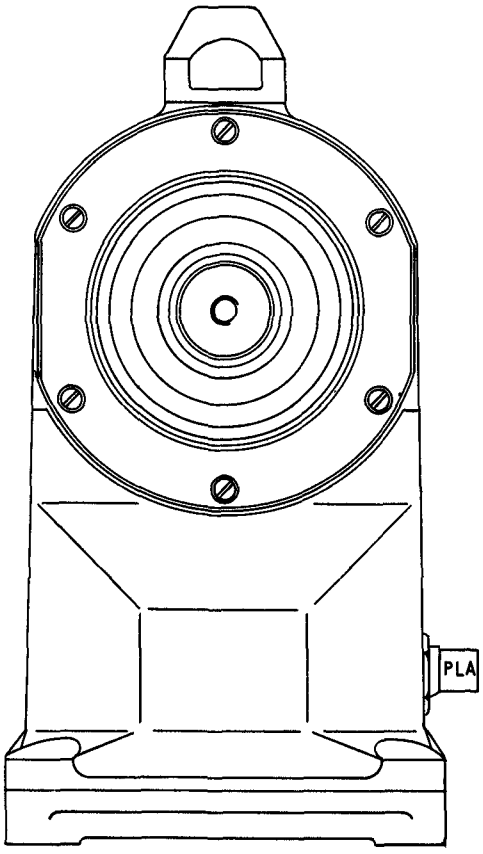


CUT AWAY VIEW SHOWING BOTTOM OF
SWITCH PLATE ASSEMBLY

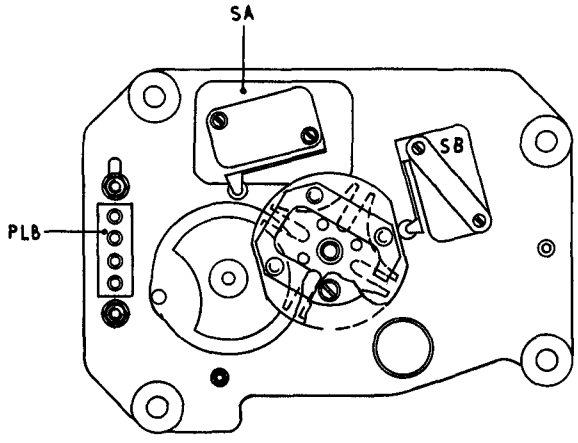
T L392 P2 1-2508 2564/28

Fig 2508 - Detail of lo

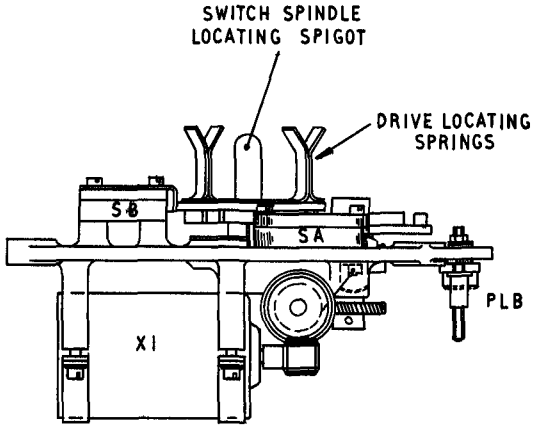
| G | H | J | K | L | M | N |



END VIEW



TOP VIEW OF SWITCH PLATE ASSEMBLY



SIDE VIEW OF SWITCH PLATE ASSEMBLY

- SKTB

tail of loading coil switch

R E S T R I C T E D

Fig 2508 - Detail of loading coil switch

Table 2504 - Power supply, rotary, No 47, component schedule

Cct. ref.	Component location: Main cct. Fig 2501(a)	Component location: Unit layout	Value	Tol. %	Rating	Type	Part No.
			RESISTORS				
R1	01B6	09D5	22Ω	±5	1.5W	w.w.	5905-99-011-3215
R2	01B7	09D4	330Ω	±5	3W	w.w.	5905-99-011-3308
R3	01C6	09F3/4	0.22Ωx2	±10	45W	w.w.	5905-99-900-5948
R4	01E4	09D2	1.15Ω	±10	60W	w.w.	5905-99-900-5949
R5	01E7	09K5	3.3kΩ	±5	15W	w.w.	5905-99-011-3166
R6	01F8	09C3	100kΩ	±5	1.5W	film H.S.	5905-99-021-6125
			CAPACITORS				
C1	01A5	09C5	1μF	±25	200V	paper met	5910-99-011-9836
C2	01A7	09E5	0.01μF	±10	1400V	ceramic	5910-99-943-4758
C3	01B5	09C5	0.1μF	±25	200V	paper met	5910-99-011-9827
C4	01B5	09E4	1000pF	±20	500V	ceramic	5910-99-900-6048
C5	01B8	09F2	0.5μF	±25	200V	paper met	5910-99-011-9833
C6	01E8	09E3	0.01μF	±10	1400V	ceramic	5910-99-943-4758
C7	01E8	09C3	0.5μF	±20	500V	paper	5910-99-011-7825
C8	01F3	09F4	0.05μF	±20	3000V	paper	5910-99-900-6042
C9	01D8	09F5	0.01μF	±10	1400V	ceramic	5910-99-943-4758
C10	01B8	09F3	0.01μFx2	±10	1400V	ceramic	5910-99-943-4758
C11	01D8	09E3	0.01μF	±10	1400V	ceramic	5910-99-943-4758

Cct. ref.	Component location: Main cct. Fig 2501a	Component location: Unit layout	Description	Part No.
		MISCELLANEOUS		
L1	01D8	09E3	R.F. choke	5999-99-949-5079
L2	01D7	09F5	R.F. choke	5999-99-949-5079
L3	01F3	09E2	Inductor	5950-99-949-4907
PLA	01A4 and A8	09M2	Mk 4 4-pole	5935-99-940-8526
PLB	01G3	09C2/M5	1-pole HV	5935-99-900-6093
PLC	01G3 to 5	09M3	Mk 4 12-pole	5935-99-911-6993
SKTA	01G5 to 8	09M4	104B 12-pole	5935-99-013-1474
FS1	01C4	09C2/L5	7.5A	5920-99-943-8286
X1	01D8	09G /K4	Rotary transformer	NELCO RT 65
X2	01B5	09C5/L2	Circuit breaker	5925-99-900-7655
MR1	01B7	09D4	CV7040	5960-99-037-2016
RLA	01 See Fig 2501a/Table 2501	09E4		5945-99-901-4627
RLF	01 See Fig 2501a/Table 2501	09E3	Sealed relay	5945-99-012-3889
RLG	01 See Fig 2501a/Table 2501	09E4		5945-99-901-4627
RLA	01 See Fig 2501a/Table 2501	09D4	Sealed relay	5945-99-011-4687

Description and Part Numbers in these tables are current at time of issue only. Use ISPL, when published, to demand stores.

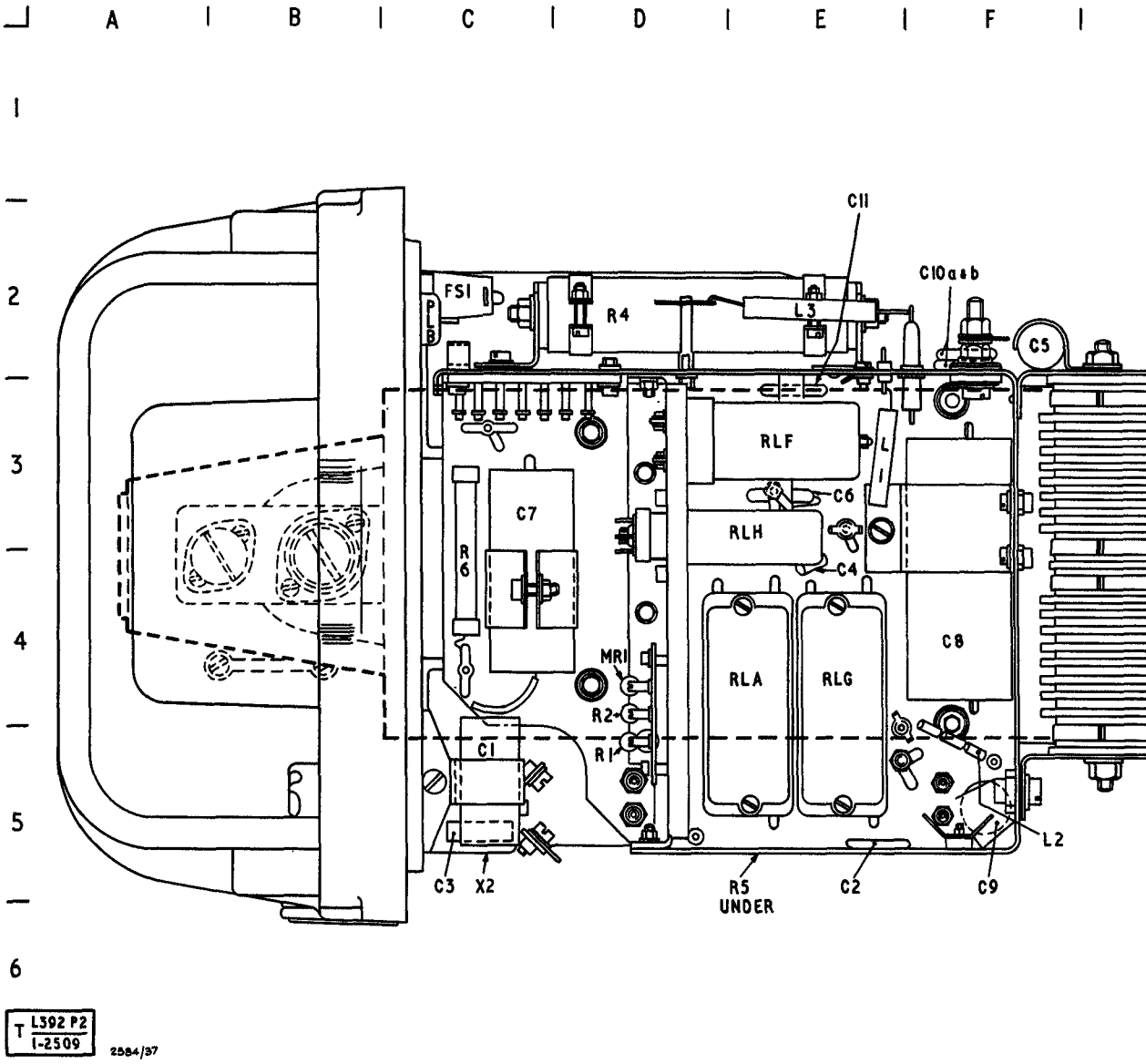
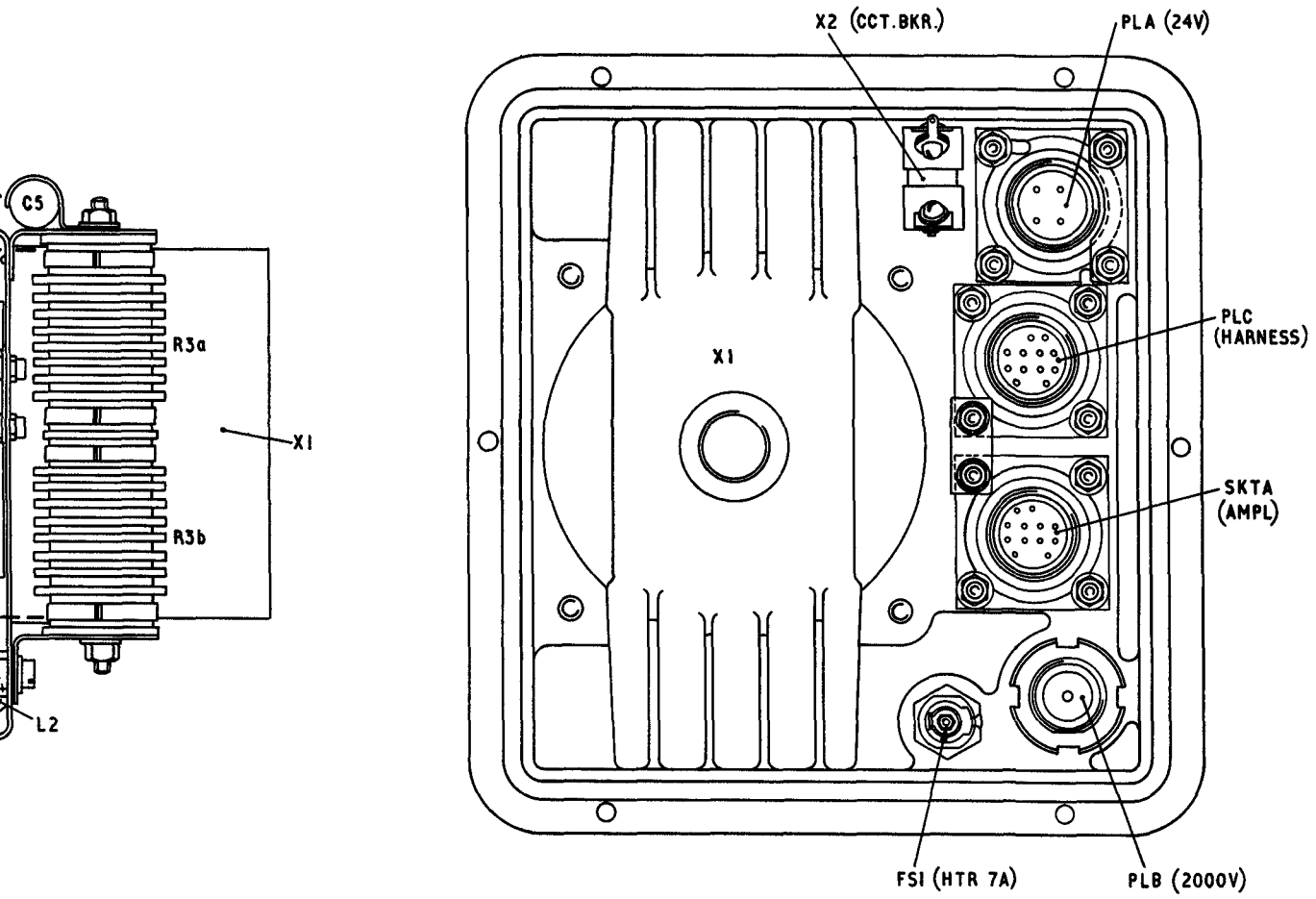


Fig 2509 - Component

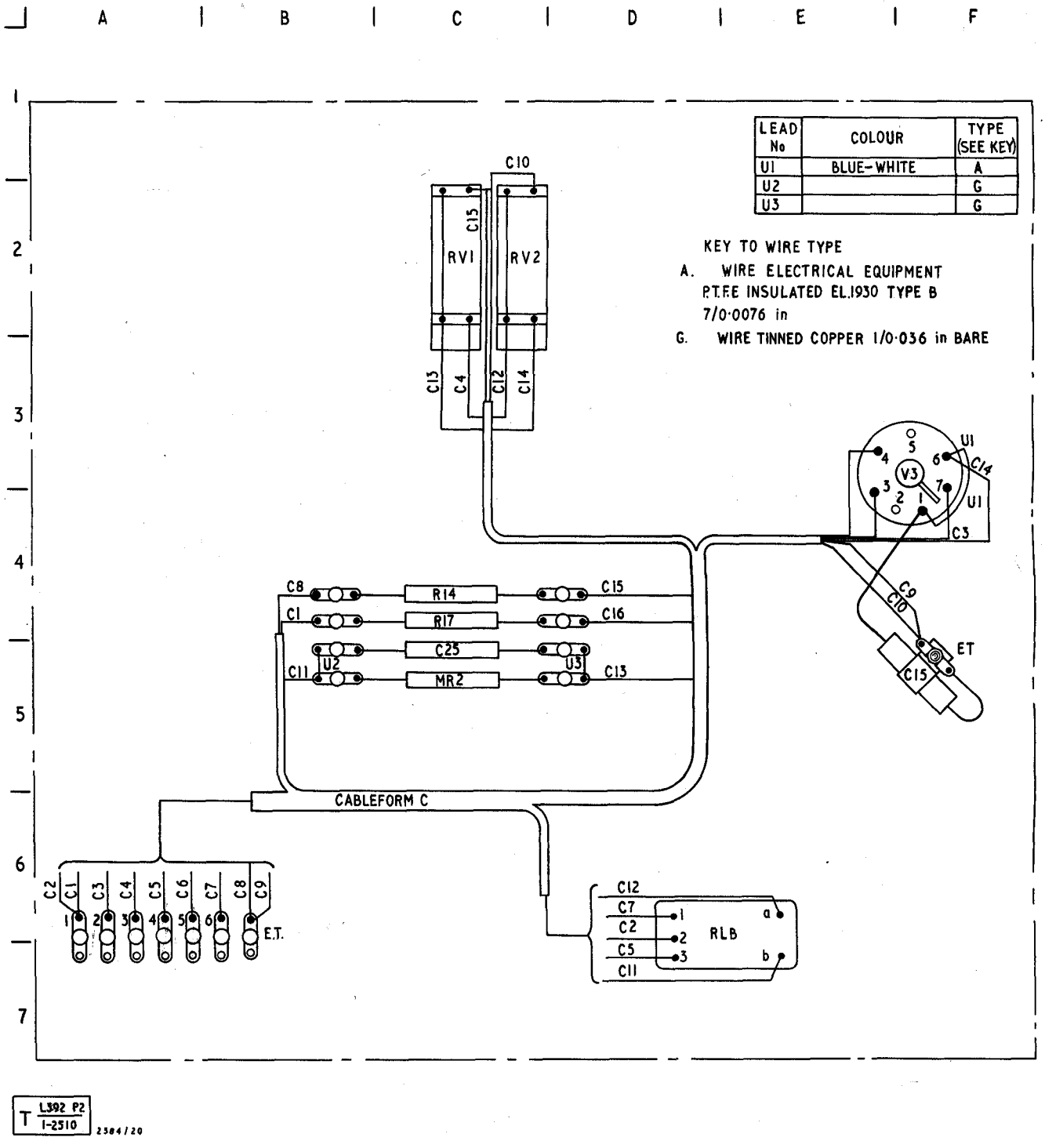
| G | H | J | K | L | M | N |



Component layout, PSR No 47

R E S T R I C T E D

Fig 2509 - Component layout, PSR No. 47



T L392 P2 1-2510 2504/20

Fig 2510 - R.F. Amplifier, rear chassis assembly

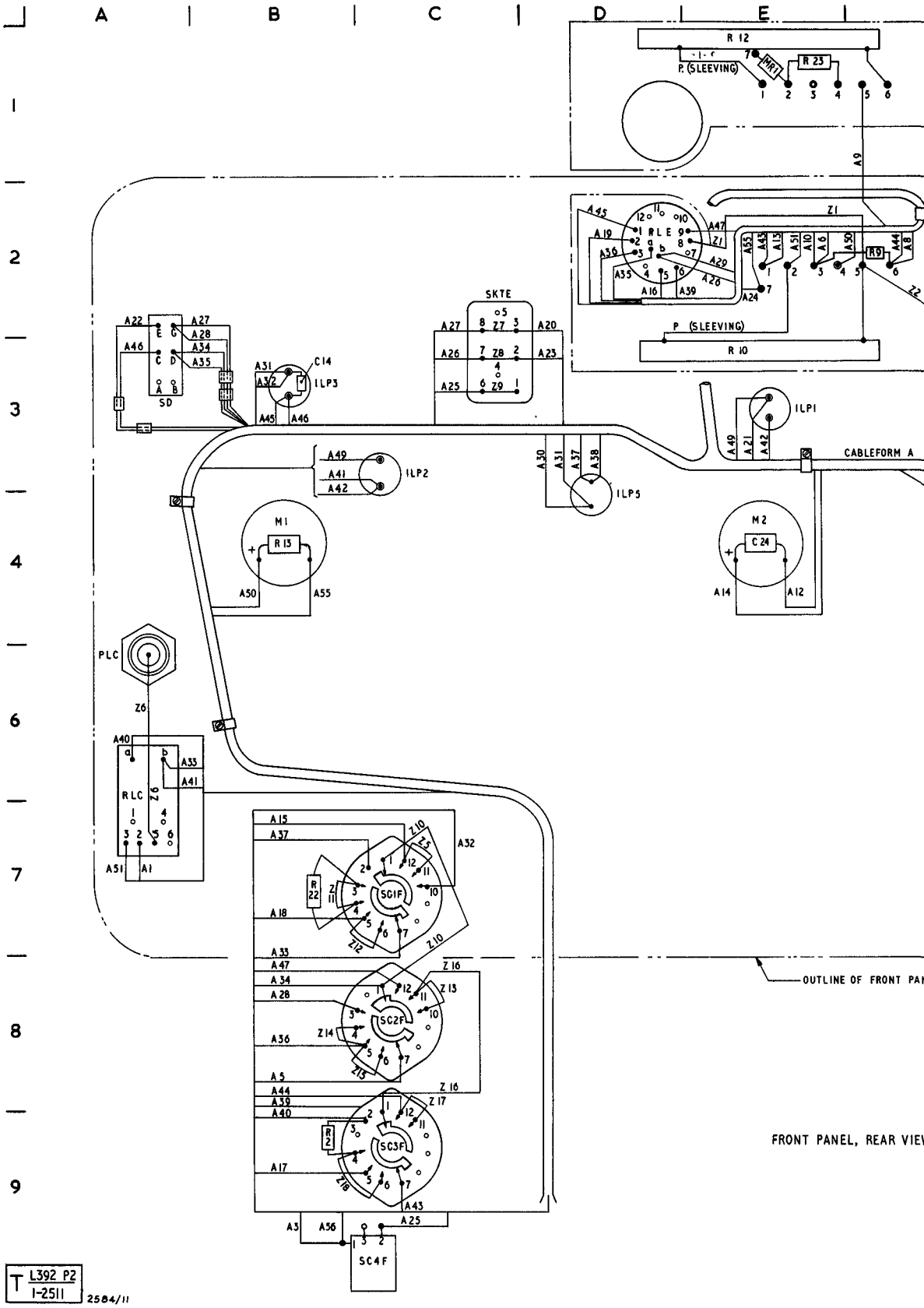
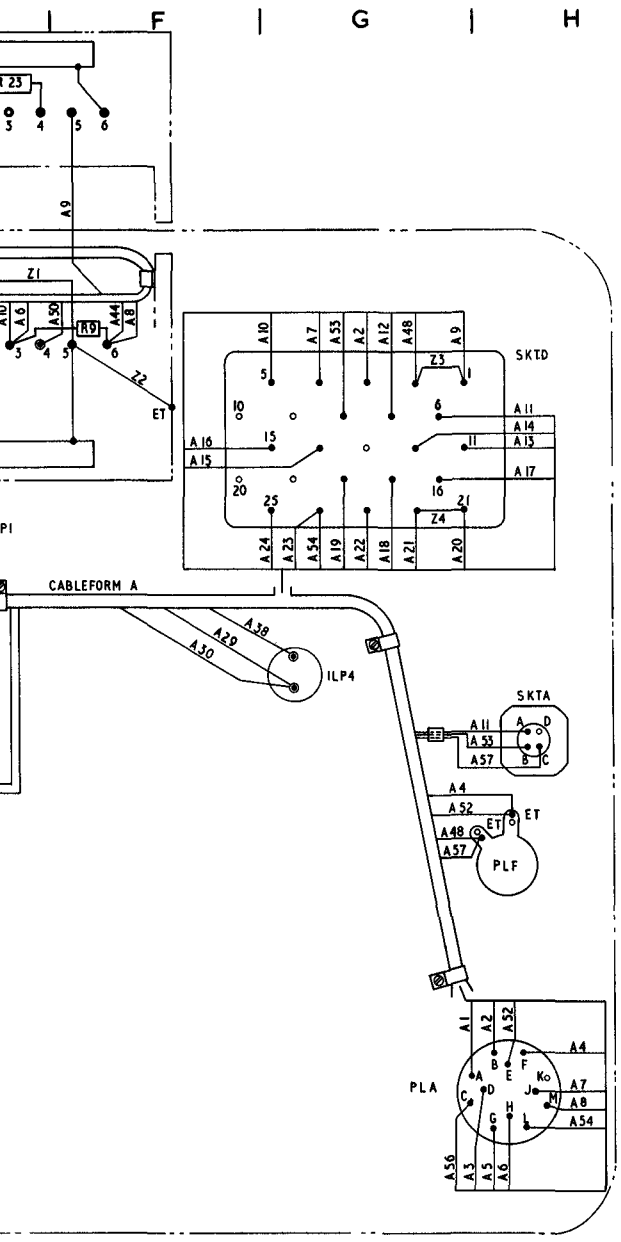


Fig 2511 - R.F. amplifier, wir



OUTLINE OF FRONT PANEL

PANEL, REAR VIEW

LEAD NO	COLOUR	LENGTH	SIZE ALL OTHER LEADS 7/0076
57	BLACK	9 IN	19/0076
56	RED	2 FT 8 IN	19/0076
55	BLUE	18 1/2 IN	
54	RED-ORANGE	12 3/4 IN	
53	RED-BROWN	10 1/2 IN	
52	BLACK	8 IN	
51	BLUE-WHITE	2 FT	
50	WHITE	19 1/2 IN	
49	WHITE-BROWN	12 IN	
48	BLACK	12 IN	19/0076
47	ORANGE	2 FT 4 IN	
46	BLUE-ORANGE	8 1/2 IN	
45	BLUE-ORANGE	16 IN	
44	VIOLET	2 FT 2 IN	
43	GREEN-BLACK	22 IN	
42	BLUE-ORANGE	11 IN	
41	BLUE-ORANGE	13 IN	
40	SLATE	14 IN	
39	BLACK-ORANGE	2 FT 2 1/2 IN	
38	BLACK-ORANGE	11 IN	
37	BLACK-ORANGE	19 IN	
36	RED-BROWN	23 1/2 IN	
35	BROWN	17 1/2 IN	
34	BROWN	17 1/2 IN	
33	RED-ORANGE	11 IN	
32	RED-ORANGE	16 1/2 IN	
31	RED-ORANGE	8 3/4 IN	
30	RED-ORANGE	10 1/2 IN	
29	RED-ORANGE	14 1/2 IN	
28	WHITE-BROWN	17 1/2 IN	
27	WHITE-BROWN	9 1/2 IN	
26	RED-ORANGE	14 IN	
25	RED-ORANGE	19 1/2 IN	19/0076
24	BLUE	16 1/2 IN	
23	RED-ORANGE	14 IN	
22	PINK	19 IN	
21	WHITE-BROWN	10 IN	
20	WHITE-BROWN	15 IN	19/0076
19	RED-GREEN	16 IN	
18	BLUE-BLACK	2 FT 1 1/2 IN	
17	BLUE-YELLOW	2 FT 1 1/2 IN	
16	SLATE	15 IN	
15	WHITE-ORANGE	2 FT 3 IN	
14	BLACK-WHITE	10 IN	
13	GREEN-BLACK	17 IN	
12	RED-YELLOW	10 IN	
11	RED-BLUE	9 IN	
10	GREEN-ORANGE	16 1/2 IN	
9	BLACK	16 1/2 IN	
8	VIOLET	22 IN	
7	RED-WHITE	14 IN	
6	GREEN-ORANGE	22 IN	
5	RED-BLACK	2 FT 5 IN	
4	BLACK	8 IN	19/0076
3	RED	2 FT 8 IN	19/0076
2	GREEN-WHITE	14 1/2 IN	
1	BLUE-WHITE	2 FT 3 3/4 IN	

LEAD NO	COLOUR	TYPE SEE KEY
Z1	BLACK	A
Z2	BLACK	A
Z3		K
Z4		K
Z5		K
Z6	BLACK	D
Z7		K
Z8		K
Z9		K
Z10		K
Z11		K
Z12		K
Z13		K
Z14		K
Z15		K
Z16	PINK	C
Z17		K
Z18	PINK	C

KEY TO WIRE TYPE

A WIRE ELECTRICAL EQUIPMENT PTFE INSULATED EL 1930 TYPE B 7/0·0076 IN

C WIRE TINNED COPPER 1/0·036 IN COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180T 1 mm ID

D WIRE TINNED COPPER 1/0·048 IN COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180T 1·5 mm ID

K WIRE TINNED COPPER 1/0·028 IN BARE

fier, wiring of front panel assembly

R E S T R I C T E D

Fig 2511 - R.F. amplifier, wiring of front panel assembly

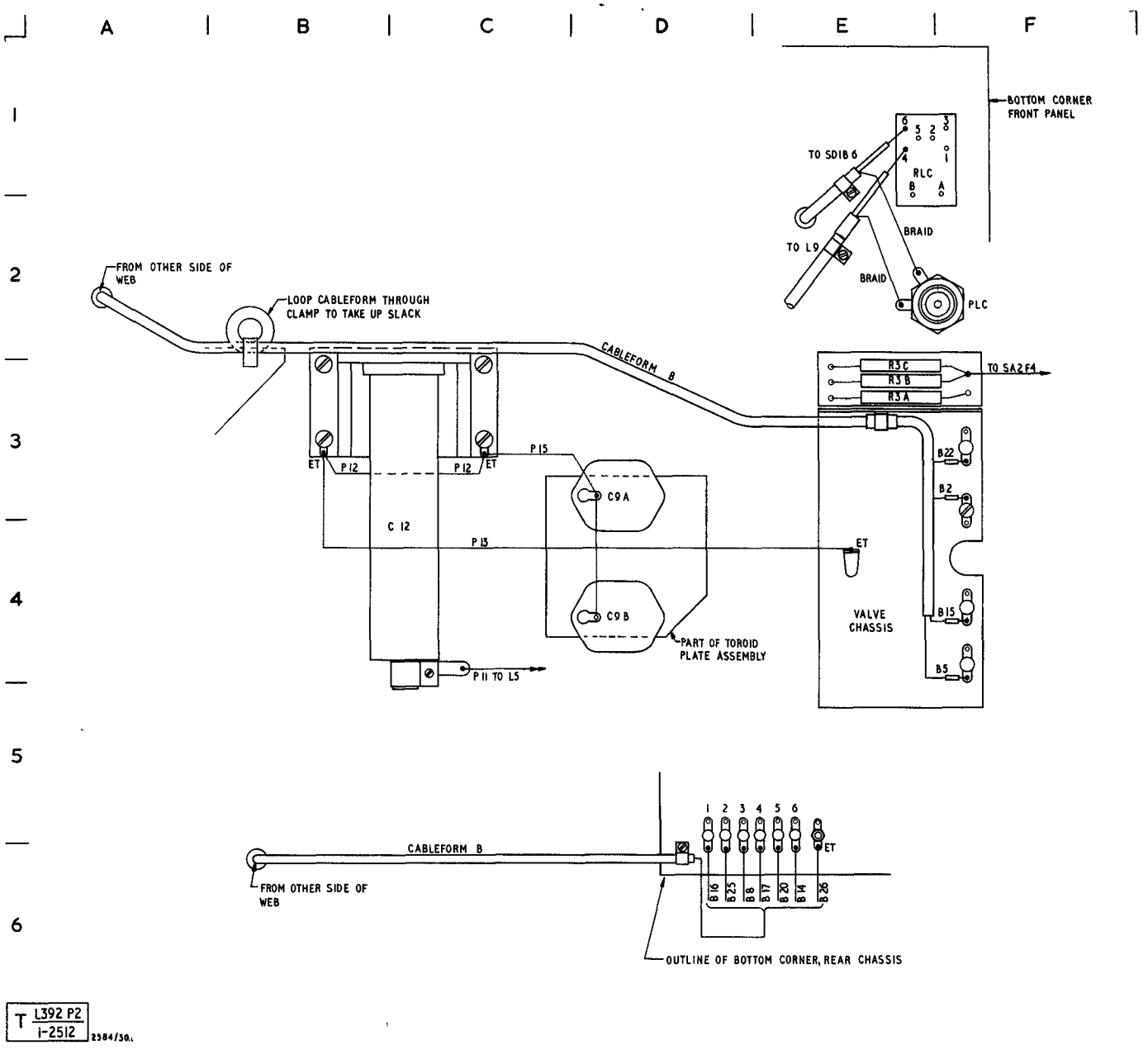
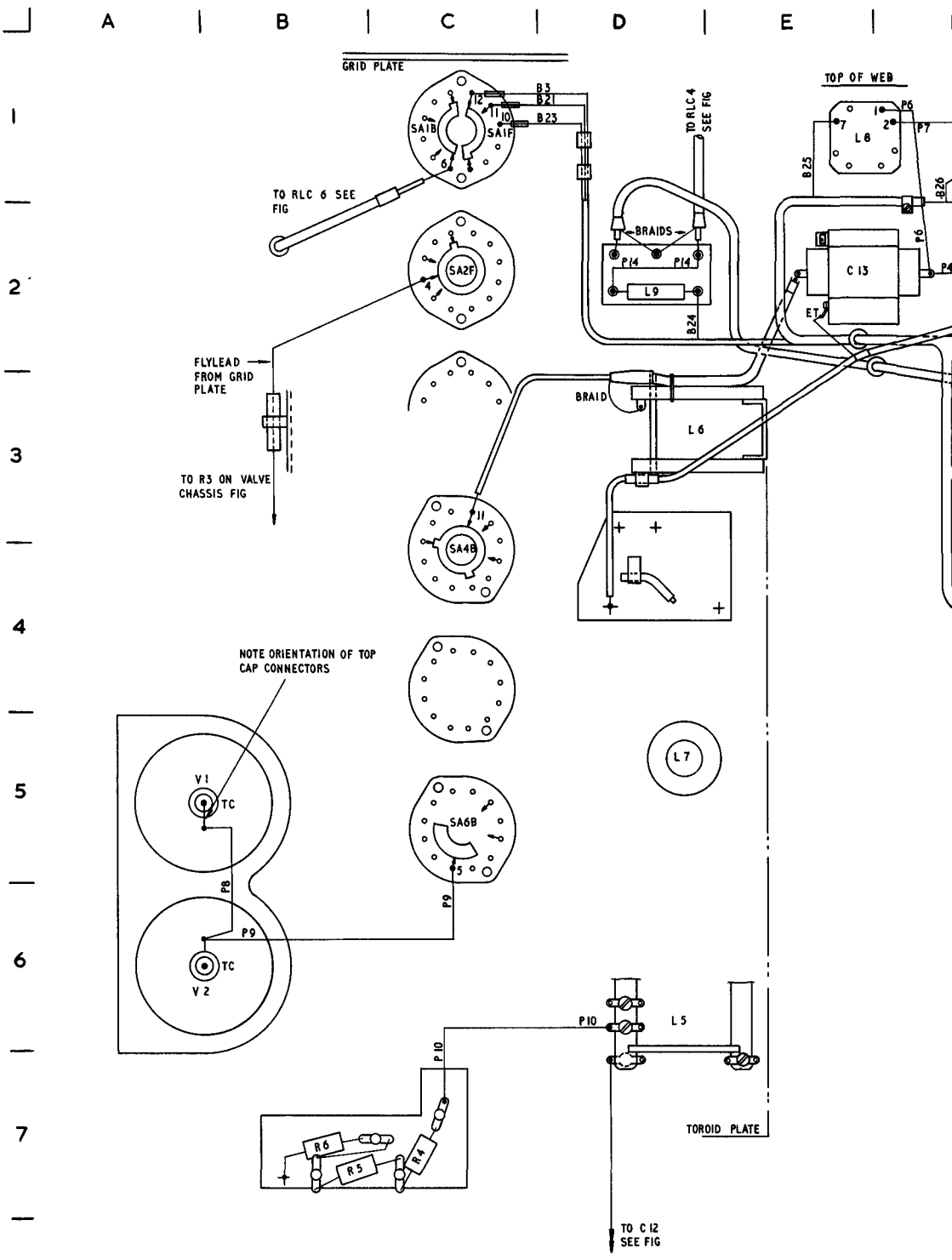
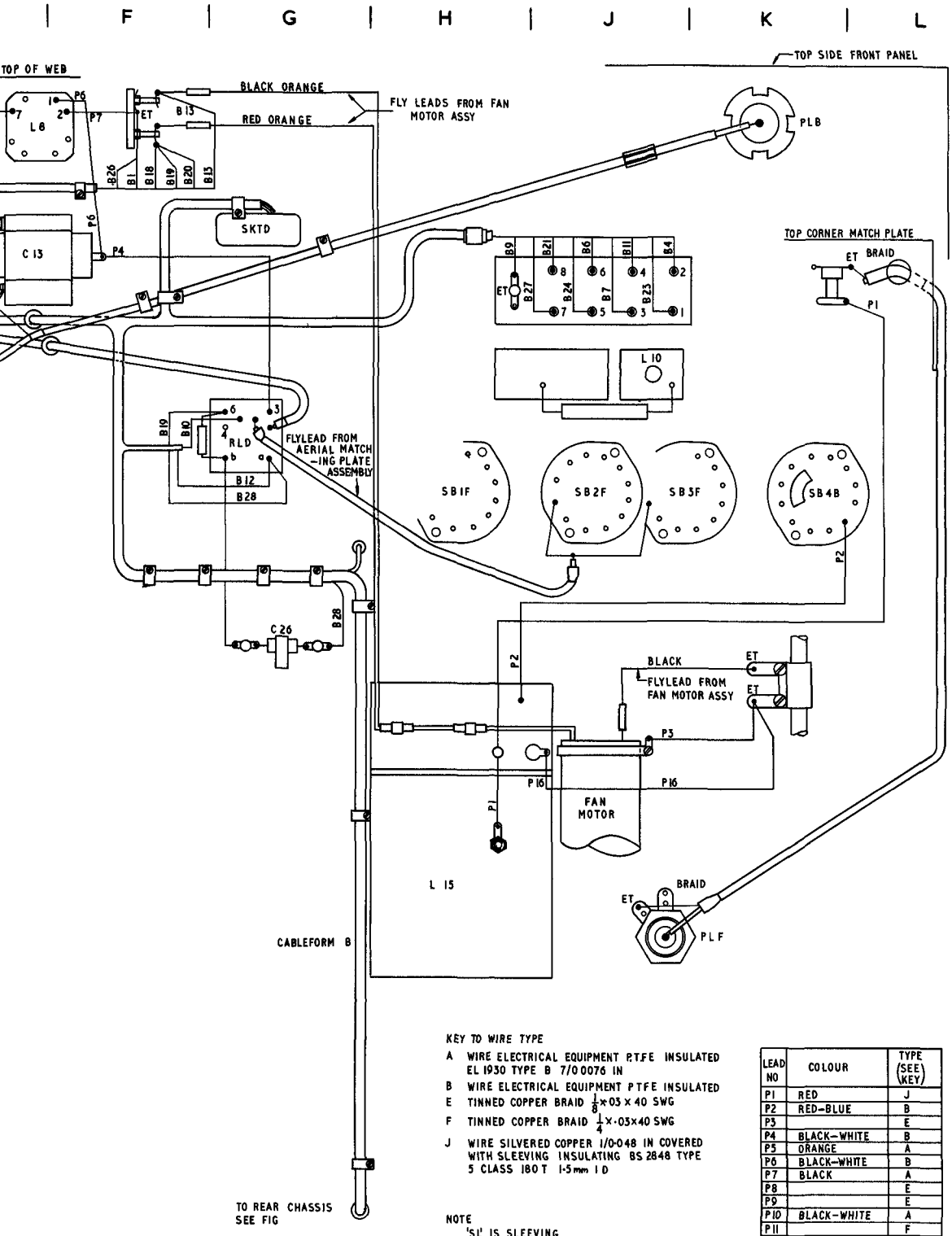


Fig 2512 - R.F. amplifier, wiring of front panel and web assembly
(Use in conjunction with Fig 2513)



T L392 P2 1-2513 2584/12

Fig 2513 - R.F. amplifier, wiring
(Use in conjunctio



KEY TO WIRE TYPE

A WIRE ELECTRICAL EQUIPMENT PTFE INSULATED EL 1930 TYPE B 7/0 0076 IN

B WIRE ELECTRICAL EQUIPMENT PTFE INSULATED

E TINNED COPPER BRAID $\frac{1}{8}$×·03×40 SWG

F TINNED COPPER BRAID $\frac{1}{4}$×·03×40 SWG

J WIRE SILVERED COPPER 1/0·048 IN COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180 T 1·5mm I D

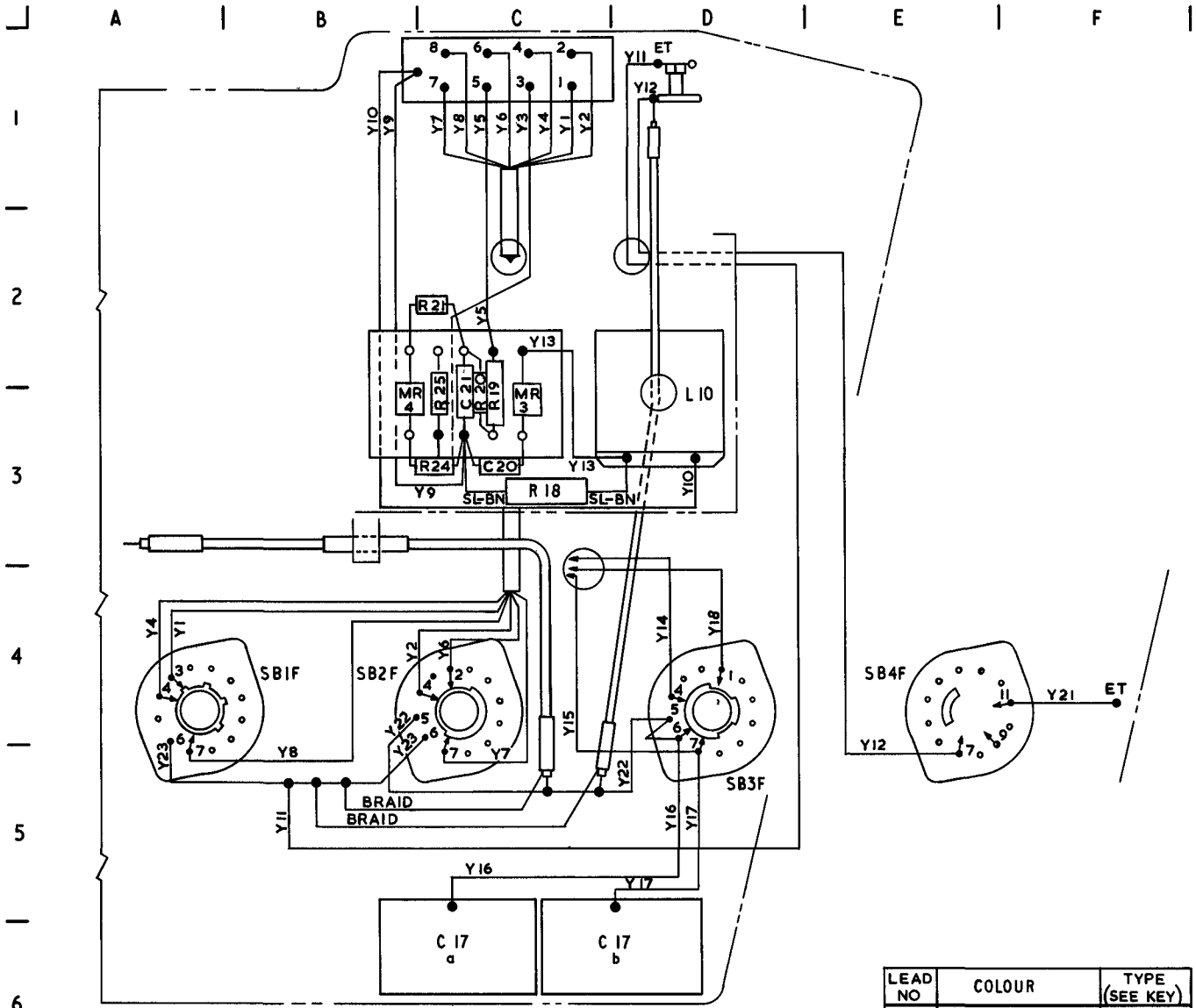
NOTE
'SL' IS SLEEVING

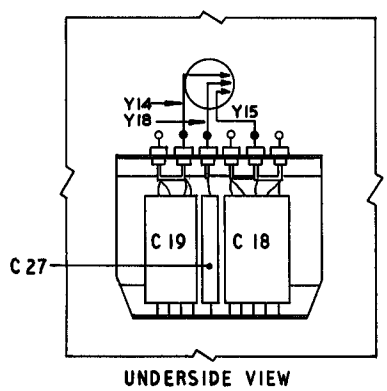
LEAD NO	COLOUR	TYPE (SEE KEY)
P1	RED	J
P2	RED-BLUE	B
P3		E
P4	BLACK-WHITE	B
P5	ORANGE	A
P6	BLACK-WHITE	B
P7	BLACK	A
P8		E
P9		E
P10	BLACK-WHITE	A
P11		F
P12		F
P13		F
P14	PINK	B
P15		F
P16		E

er, wiring of front panel and web assembly
conjunction with Fig 2512)

R E S T R I C T E D

Fig 2513 - R.F. amplifier, wiring of front panel and web assembly
(Use in conjunction with Fig 2512)





UNDERSIDE VIEW

KEY TO WIRE TYPE.

A WIRE ELECTRICAL EQUIPMENT P.T.F.E. INSULATED EL 1930 TYPE B 7/0·0076.

C WIRE TINNED COPPER 1/0036 COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180 T 1 mm I.D

D WIRE TINNED COPPER 1/0048 COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180T 1·5mm I.D

E TINNED COPPER BRAID $\frac{1}{8}$ x·03 40 SWG.

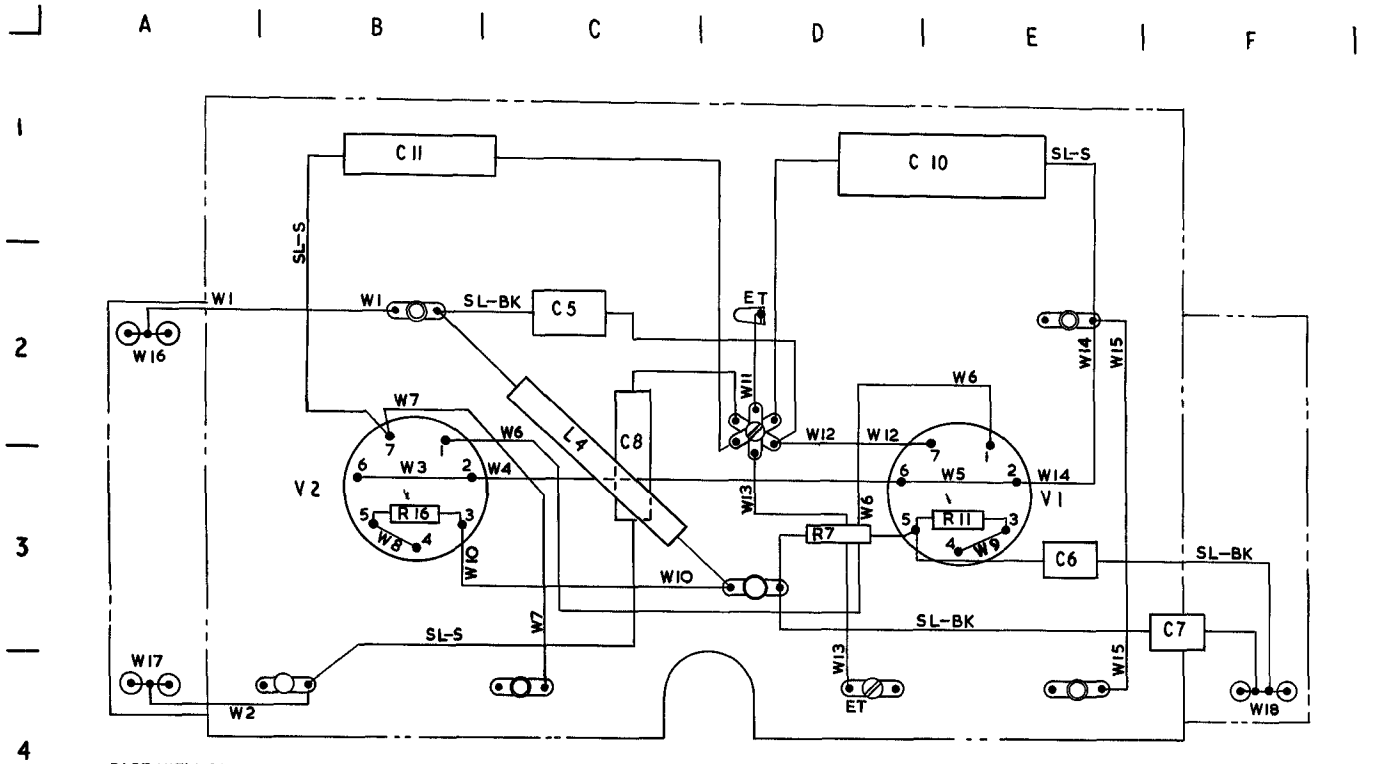
G WIRE TINNED COPPER 1/0·036 BARE.

NOTE.
'SL' IS SLEEVING

LEAD NO	COLOUR	TYPE (SEE KEY)
Y1	GREEN-YELLOW	A
Y2	RED-WHITE	A
Y3	RED-BLUE	A
Y4	WHITE	A
Y5	BLUE-ORANGE	A
Y6	RED	A
Y7	RED-YELLOW	A
Y8	GREEN	A
Y9	BLACK	C
Y10	BLACK	C
Y11	BLACK	D
Y12	BROWN	C
Y13	BROWN	C
Y14	GREY	C
Y15	GREEN	C
Y16	BROWN	C
Y17	GREEN	C
Y18	ORANGE	C
Y19		G
Y21		E
Y22	18 SWG TINNED	
Y23	CU WIRE STRAPS	

T L392 P2 1-2514 2584/10

Fig 2514 - R.F. amplifier, wiring diagram AE matching plate assembly



LEAD No	COLOUR	TYPE (SEE KEY)
W1	GREEN	B
W2	SLATE	B
W3	BLUE	B
W4	BLUE	B
W5	BLUE	B
W6	WHITE-BROWN	B
W7	WHITE-BROWN	B
W8		G
W9		G
W10	GREEN	B
W11		G
W12	BLACK	B
W13		G
W14	BLUE	B
W15	BLUE	B
W16		G
W17		G
W18		G

KEY TO WIRE TYPE:

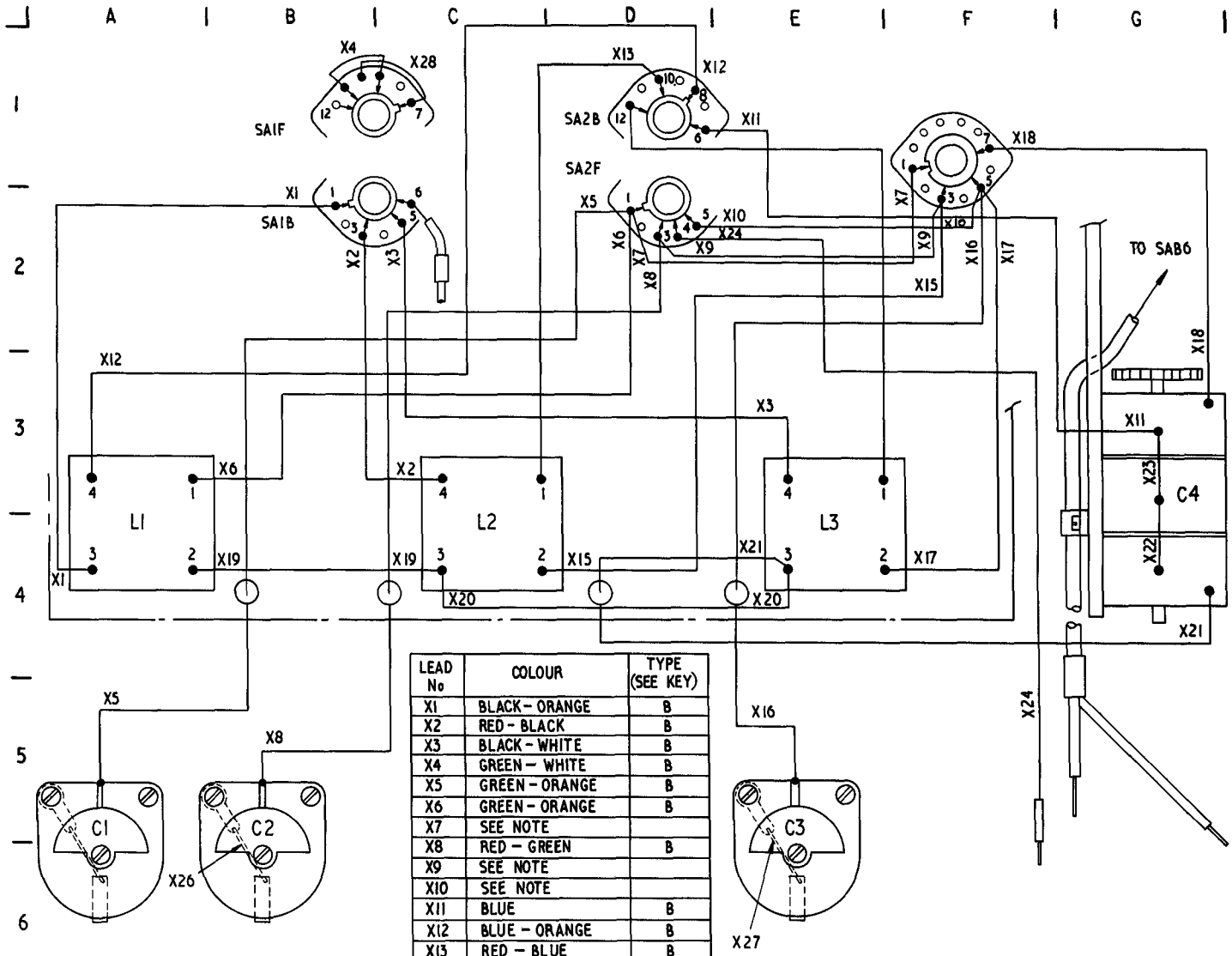
B WIRE ELECTRICAL EQUIPMENT P.T.F.E INSULATED EL 1930 TYPE C 19/0·0076

G WIRE TINNED COPPER 1/0·036 BARE

NOTE:
'SL' IS SLEEVING

T L392 P2 1-2515 2564/9.

Fig 2515 - R.F. amplifier, wiring diagram of valve chassis



LEAD No	COLOUR	TYPE (SEE KEY)
X1	BLACK - ORANGE	B
X2	RED - BLACK	B
X3	BLACK - WHITE	B
X4	GREEN - WHITE	B
X5	GREEN - ORANGE	B
X6	GREEN - ORANGE	B
X7	SEE NOTE	
X8	RED - GREEN	B
X9	SEE NOTE	
X10	SEE NOTE	
X11	BLUE	B
X12	BLUE - ORANGE	B
X13	RED - BLUE	B
X14	BLUE - WHITE	B
X15	RED - GREEN	B
X16	GREEN - WHITE	B
X17	GREEN - WHITE	B
X18	BLACK	D
X19	BLACK	D
X20	BLACK	D
X21	BLACK	D
X22	BLACK	D
X23	BLACK	D
X24	GREEN	B
X25		G
X26		G
X27		G
X28	GREEN- YELLOW	B

KEY TO WIRE TYPE

B WIRE ELECTRICAL EQUIPMENT PTFE INSULATED EL 1930 TYPE C 19/0·0076

7 D WIRE TINNED COPPER 1/0·048 COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180T 1·5mm I.D.

G WIRE TINNED COPPER 1/0·036 BARE

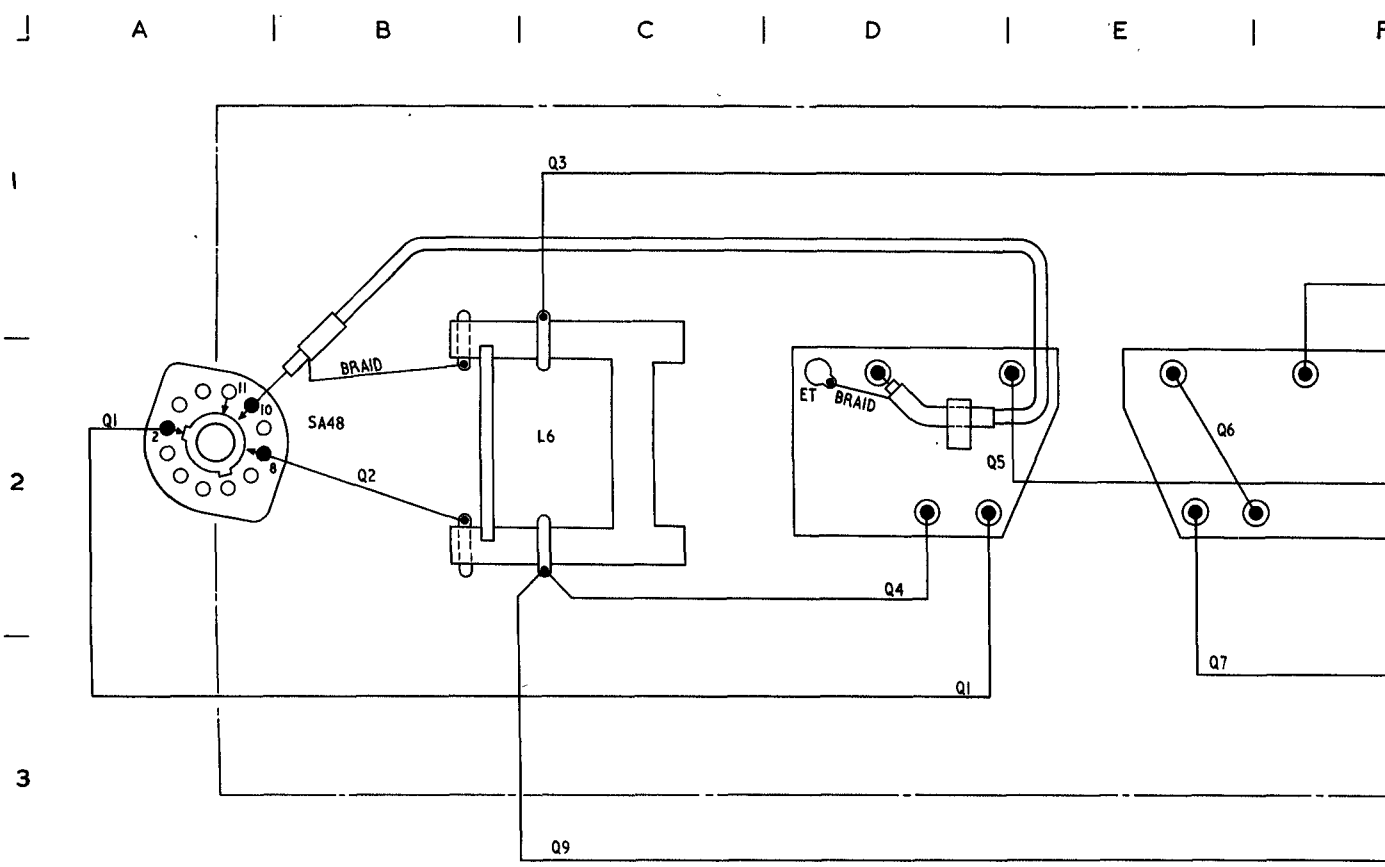
NOTE

8 LEADS Nos X7, X9, AND X10 ARE SHOWN TO INDICATE THAT THE LUGS 1, 3, AND 5 ON SA2F ARE SOLDERED TO LUGS 1, 3 AND 5 ON SA3B

T L392 P2 1-2516 LS66/17

Fig 2516 - R.F. amplifier, wiring of grid plate assembly

Note: This Page 1024A, Issue 1, must be filed immediately in front of Page 1025, Issue 1, dated 1 Apr 66. On insertion



LEAD No.	COLOUR	TYPE (SEE KEY)
Q1	SLATE	J
Q2		H
Q3	SLATE	J
Q4		H
Q5	SLATE	J
Q6		H
Q7	SLATE	J
Q8	SLATE	J
Q9		H
Q10		H
Q11	SLATE	J
Q12		H
Q13		H
Q14		H
Q15		H
Q16		H

KEY TO WIRE TYPE

H WIRE SILVERED COPPER 1/0·048 BARE

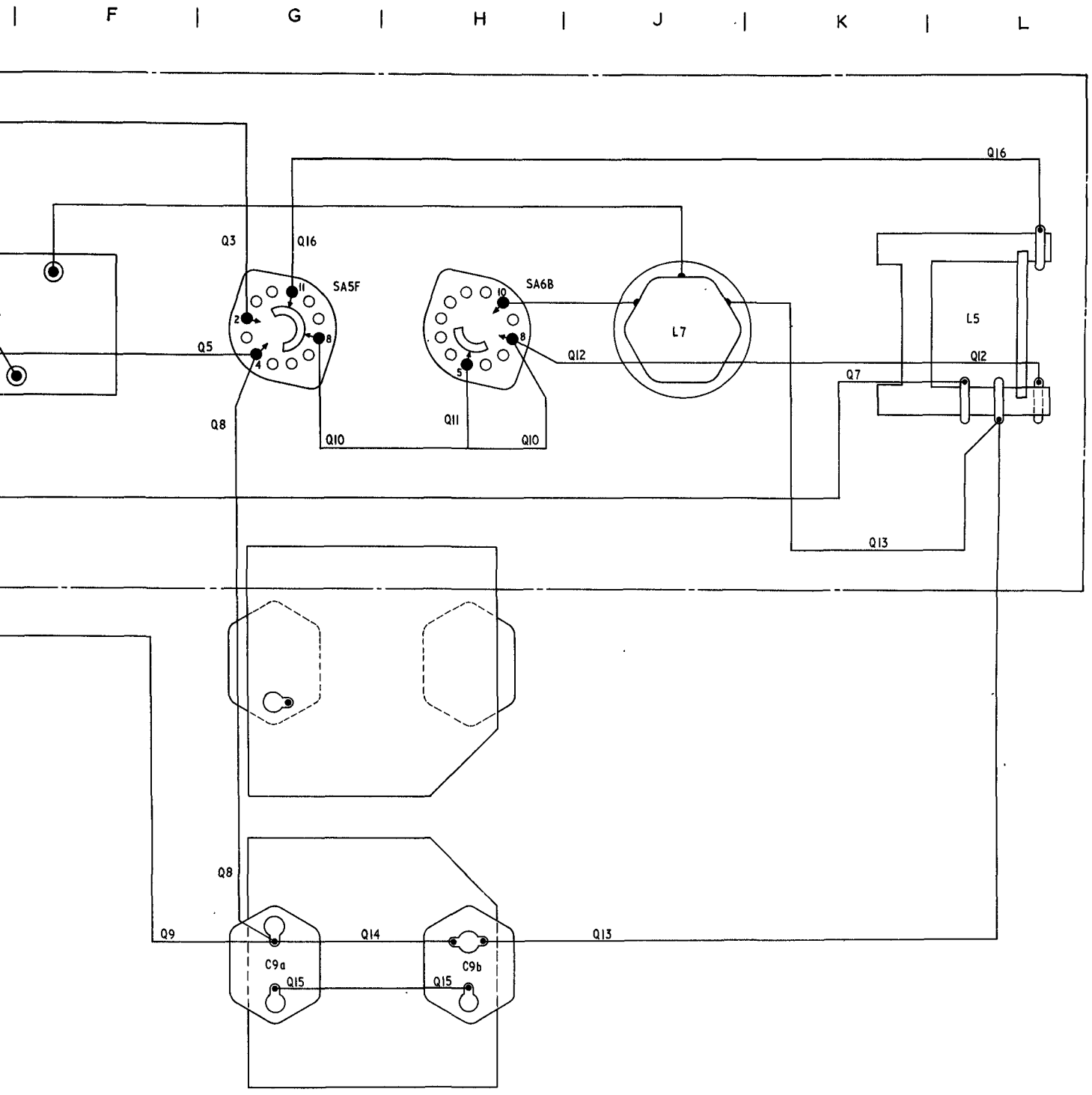
J WIRE SILVERED COPPER 1/0·048 COVERED WITH SLEEVING INSULATING BS2848 TYPE S CLASS 180T 1·5mm. I. D.

TL 392
1-2517a

2584/45

Fig 2517, Part 1 - R.F. amplifier, wiring of

On insertion of this Page 1024A, Fig 2517, Page 1025, must be amended to read 'Fig 2517, Part 2'.



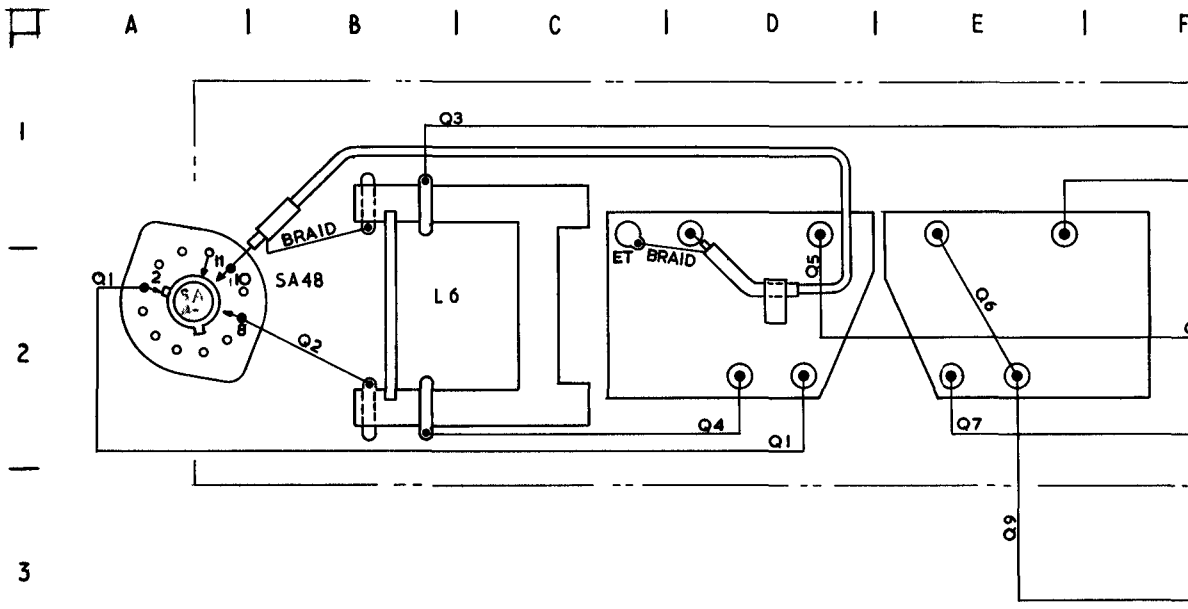
wiring of toroid plate assembly (for later models)

on - Class 335. Code No 3

Issue 1, 27 Oct 67

R E S T R I C T E D

Fig 2517A, Part 1 - R.F. amplifier, wiring of toroid plate assembly (for later models)

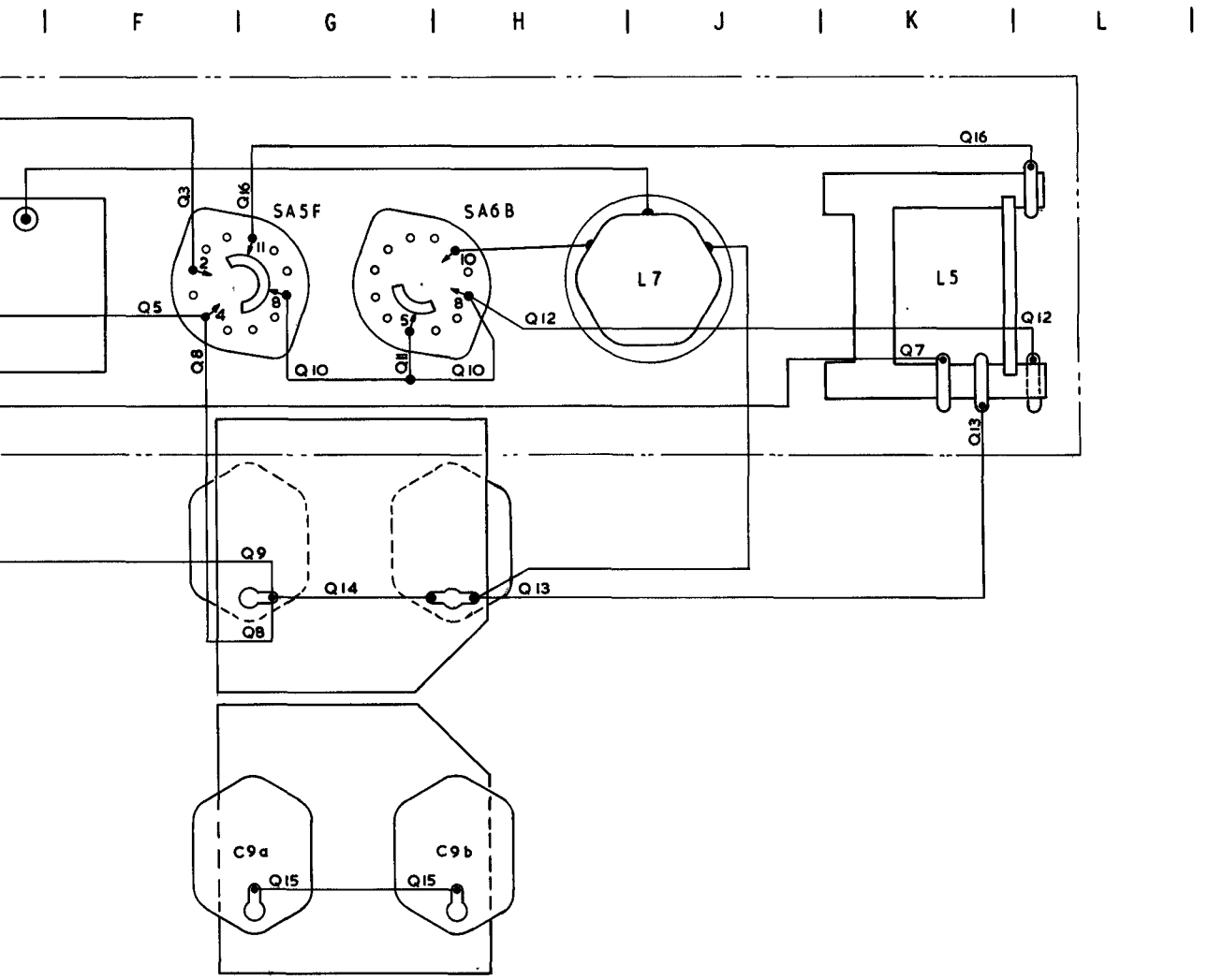


LEAD NO	COLOUR	TYPE (SEE KEY)
Q1	SLATE	J
Q2		H
Q3	SLATE	J
Q4		H
Q5	SLATE	J
Q6		H
Q7	SLATE	J
Q8	SLATE	J
Q9		H
Q10		H
Q11	SLATE	J
Q12		H
Q13		H
Q14		H
Q15		H
Q16		H

KEY TO WIRE TYPE
H WIRE SILVERED COPPER 1/0·048 BARE.
J WIRE SILVERED COPPER 1/0·048 COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180 T 1·5 mm T.D.

T L392·P2 / 1-2517 2584/6

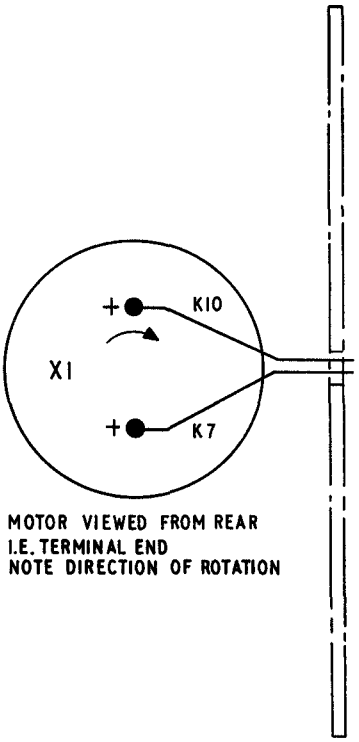
Fig 2517 - R.F. amplifier, wiri

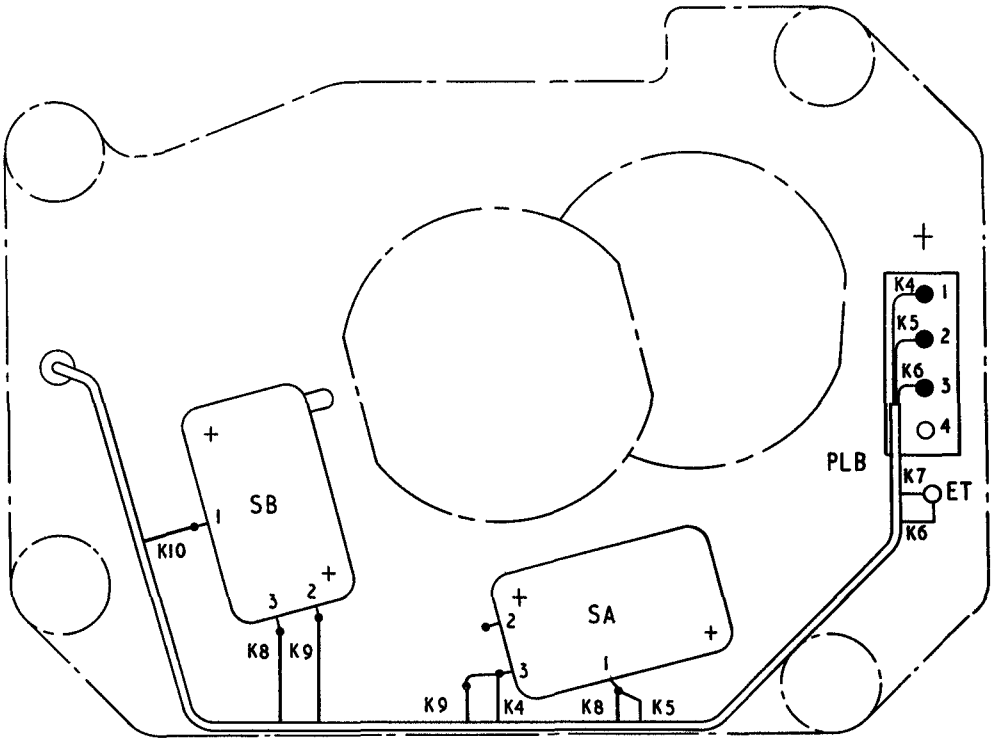


ier, wiring of toroid plate assembly

R E S T R I C T E D

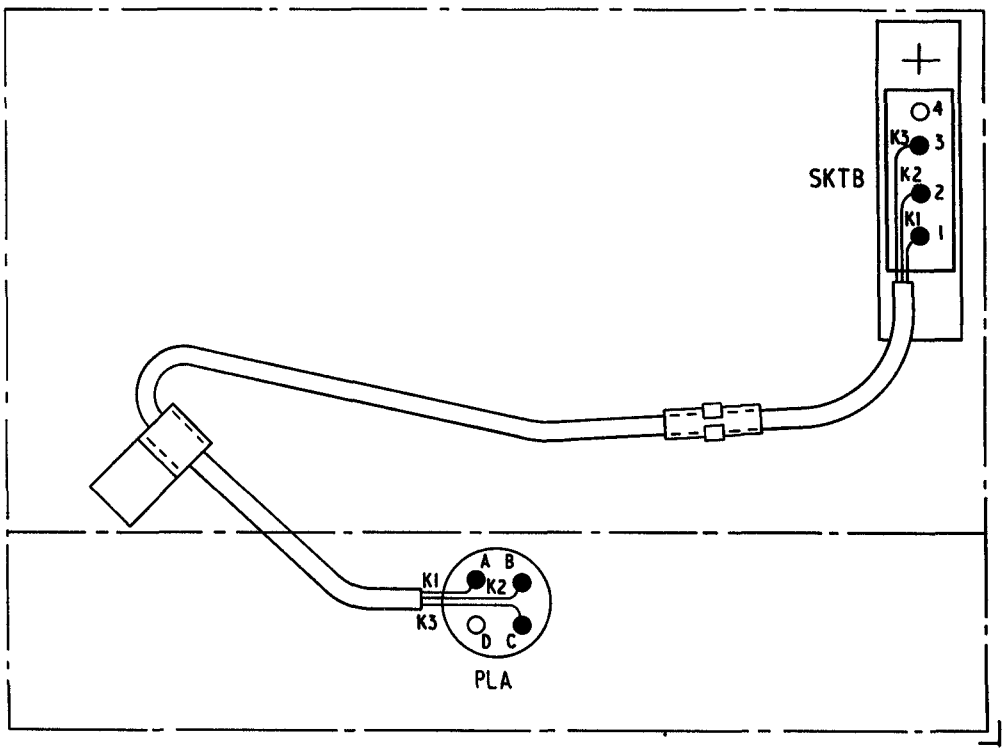
Fig 2517 - R.F. amplifier, wiring of toroid plate assembly





LEAD No	COLOUR	TYPE (SEE KEY)
K1	BLUE	A
K2	BROWN	A
K3	BLACK	B
K4	BLUE	A
K5	BROWN	A
K6	BLACK	B
K7	BLACK	B
K8	BROWN	A
K9	BLUE	A
K10	RED	A

KEY TO WIRE TYPE
A. WIRE ELECTRICAL EQUIPMENT
PTFE INSULATED EL 1930
TYPE B 7/0·0076 IN
B. WIRE ELECTRICAL EQUIPMENT
PTFE INSULATED EL 1930 TYPE C
19/0·0076 IN



T L392 P2
I-2518 2584/29

Fig 2518 - Wiring diagram of aerial loading coil

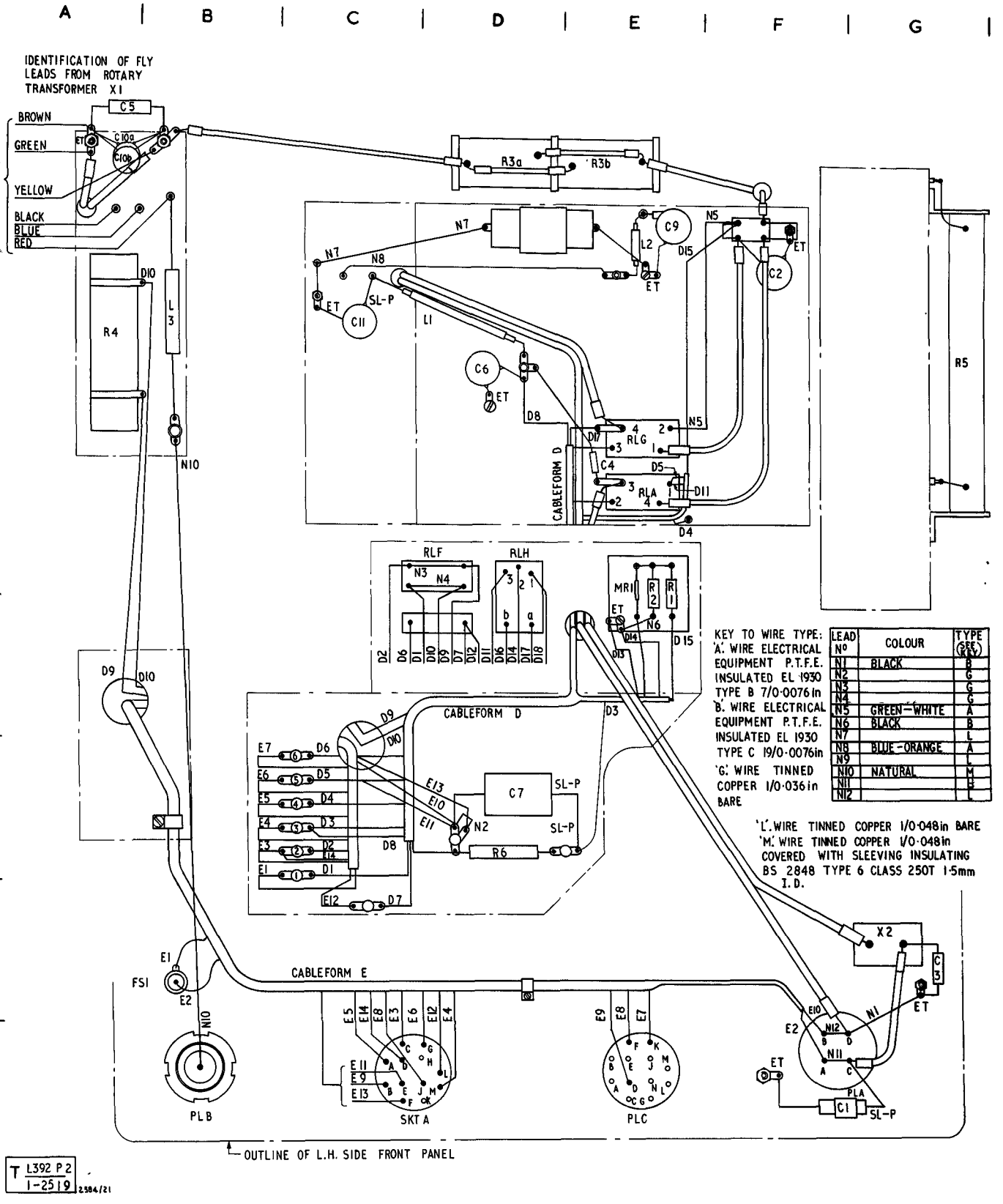
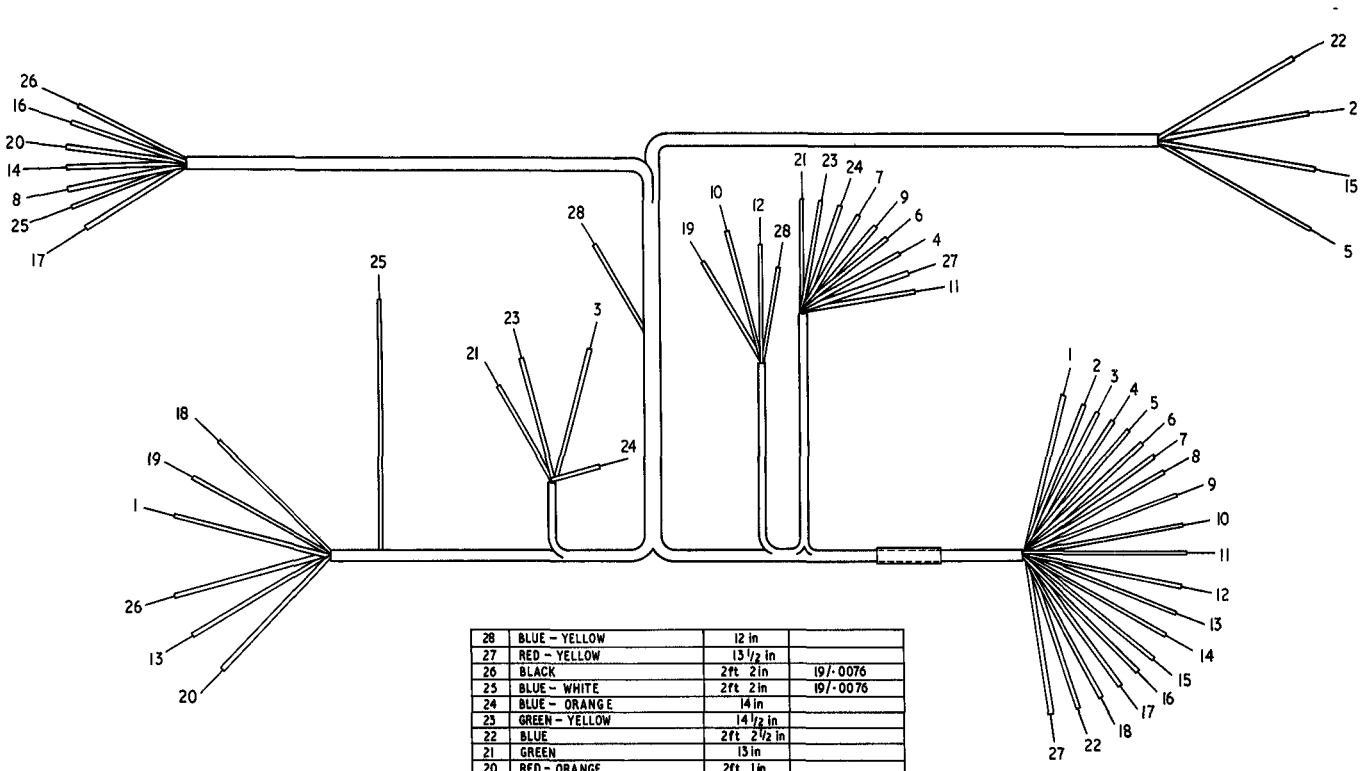


Fig 2519 - Wiring diagram, PSR No 47, panel and chassis assembly



LEAD No	COLOUR	LENGTH	SIZE ALL LEADS 7/ 0076 EXCEPT WHERE SHOWN
28	BLUE – YELLOW	12 in	
27	RED – YELLOW	13 1/2 in	
26	BLACK	2ft 2in	19/·0076
25	BLUE – WHITE	2ft 2in	19/·0076
24	BLUE – ORANGE	14 in	
23	GREEN – YELLOW	14 1/2 in	
22	BLUE	2ft 2 1/2 in	
21	GREEN	13 in	
20	RED – ORANGE	2ft 1in	
19	RED – ORANGE	14 in	
18	RED – ORANGE	15 1/4 in	
17	PINK	2ft 3 in	
16	WHITE – BROWN	2ft 2 1/2 in	
15	WHITE – BROWN	2ft 3 in	19/ 0076
14	RED – GREEN	2ft 1 1/2 in	
13	BLACK – ORANGE	15 1/4 in	
12	BLUE – YELLOW	13 in	
11	WHITE	13 in	
10	WHITE – ORANGE	12 in	
9	BLACK – WHITE	13 in	
8	GREEN – BLACK	2ft 2 1/2 in	
7	RED – BLUE	13 in	
6	RED	13 in	
5	GREEN – ORANGE	2ft 6in	
4	RED – WHITE	13 in	
3	GREEN – WHITE	15 1/4 in	
2	BLACK	2ft 2 in	19/·0076
1	BLACK	15 1/2 in·	19/·0076

T L392 P2 / 1-2520 2584/18

Fig 2520 - R.F. amplifier, cableform B (5820-99-102-9544)

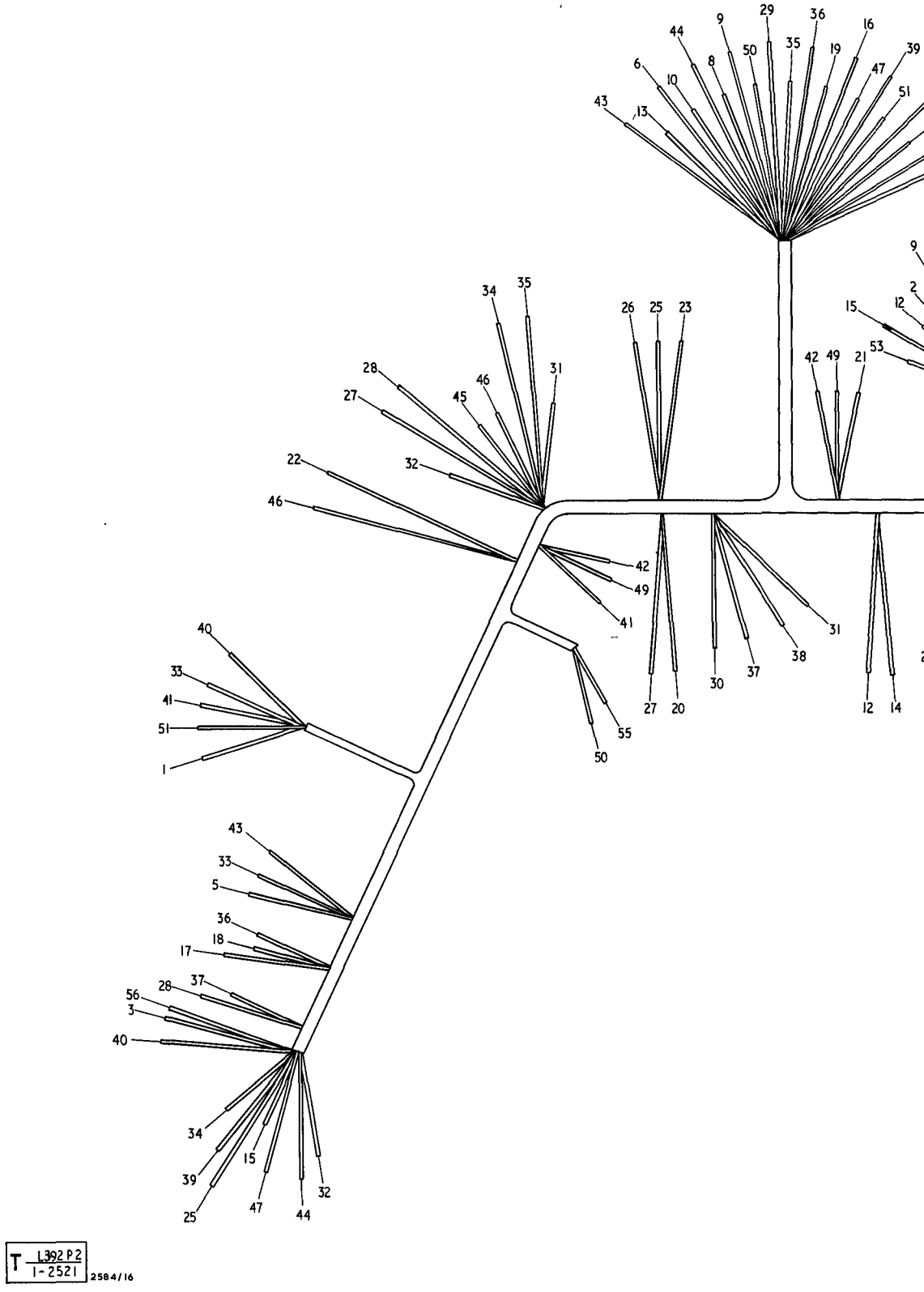
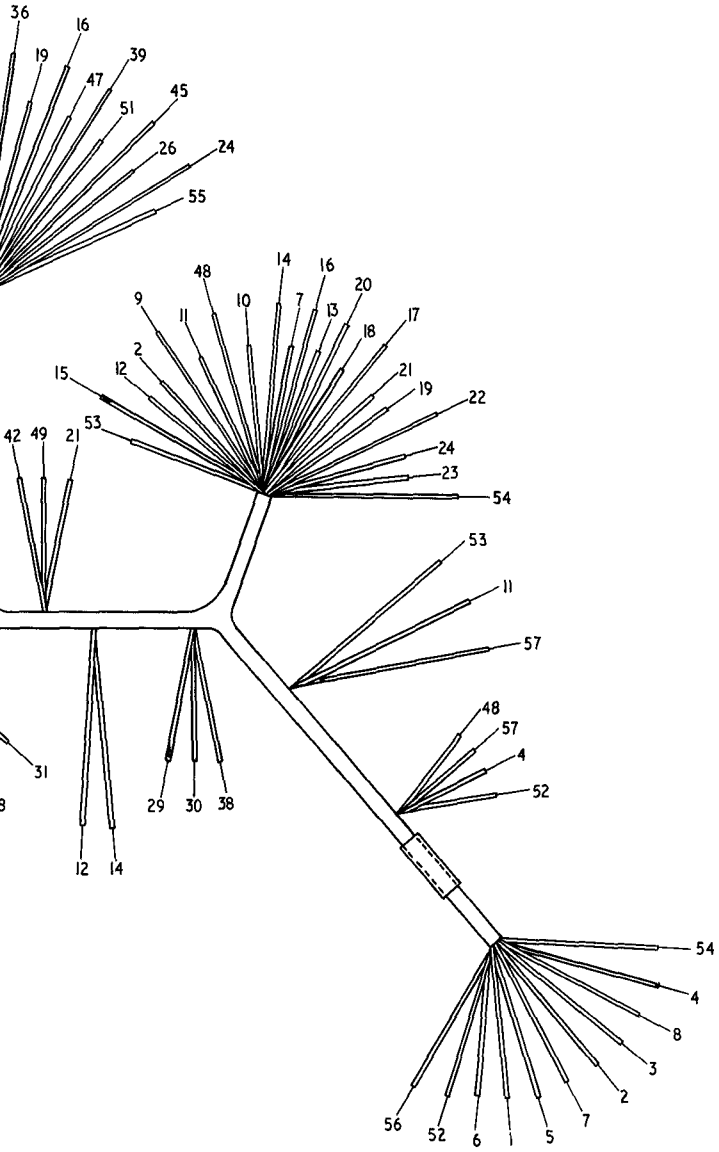


Fig 2521 - R.F. amplifier, cab

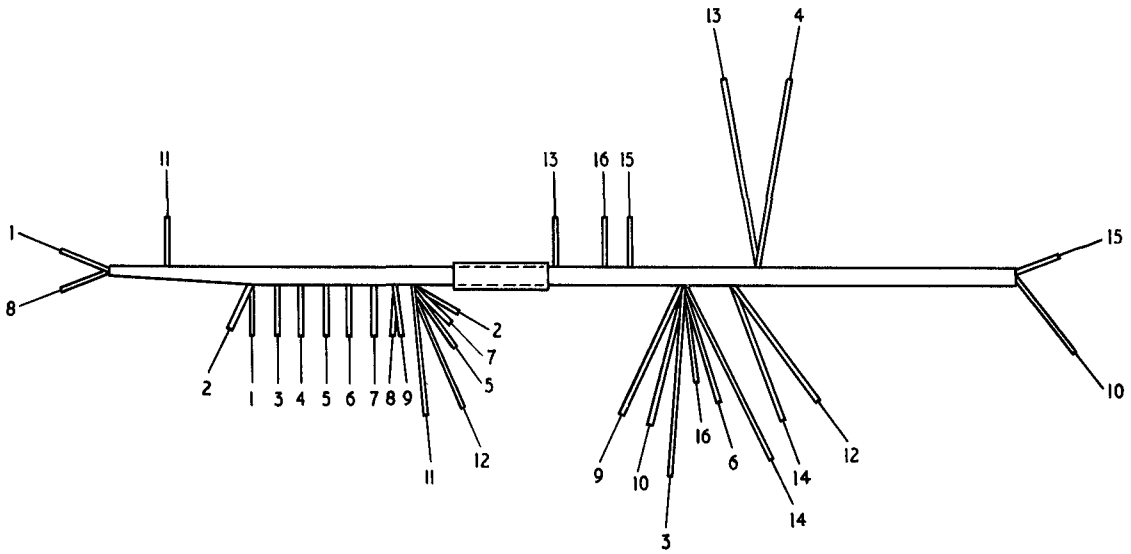


LEAD NO	COLOUR	LENGTH	SIZE ALL LEADS 7/0076 EXCEPT SHOWN
57	BLACK	9 IN	19/0076
56	RED	32 IN	19/0076
55	BLUE	18 1/4 IN	
54	RED-ORANGE	12 3/4 IN	
53	RED-BROWN	10 1/2 IN	
52	BLACK	8 IN	
51	BLUE-WHITE	24 IN	
50	WHITE	19 1/2 IN	
49	WHITE-BROWN	12 IN	
48	BLACK	12 IN	19/0076
47	ORANGE	28 IN	
46	BLUE-ORANGE	8 1/2 IN	
45	BLUE-ORANGE	16 IN	
44	VIOLET	28 IN	
43	GREEN-BLACK	22 IN	
42	BLUE-ORANGE	11 IN	
41	BLUE-ORANGE	13 IN	
40	SLATE	14 IN	
39	BLACK-ORANGE	26 1/2 IN	
38	BLACK-ORANGE	11 IN	
37	BLACK-ORANGE	19 IN	
36	RED-BROWN	23 1/2 IN	
35	BROWN	17 1/2 IN	
34	BROWN	17 1/2 IN	
33	RED-ORANGE	11 IN	
32	RED-ORANGE	16 1/2 IN	
31	RED-ORANGE	8 3/4 IN	
30	RED-ORANGE	10 1/2 IN	
29	RED-ORANGE	14 1/2 IN	
28	WHITE-BROWN	17 1/4 IN	
27	WHITE-BROWN	9 1/2 IN	
26	RED-ORANGE	14 IN	
25	RED-BLUE	19 1/2 IN	19/0076
24	BLUE	16 1/2 IN	
23	RED-ORANGE	14 IN	
22	PINK	19 IN	
21	WHITE-BROWN	10 IN	
20	WHITE-BROWN	15 IN	19/0076
19	RED-GREEN	16 IN	
18	BLUE-BLACK	23 1/2 IN	
17	BLUE-YELLOW	25 1/2 IN	
16	SLATE	15 IN	
15	WHITE-ORANGE	27 IN	
14	BLACK-WHITE	10 IN	
13	GREEN-BLACK	17 IN	
12	RED-YELLOW	10 IN	
11	RED-BLUE	9 IN	
10	GREEN-ORANGE	16 1/2 IN	
9	BLACK	16 1/2 IN	
8	VIOLET	22 IN	
7	RED-WHITE	14 IN	
6	GREEN-ORANGE	22 IN	
5	RED-BLACK	29 IN	
4	BLACK	8 IN	19/0076
3	RED	32 IN	19/0076
2	GREEN-WHITE	14 1/2 IN	
1	BLUE-WHITE	27 3/4 IN	

ifier, cableform A (5820-99-102-9543)

R E S T R I C T E D

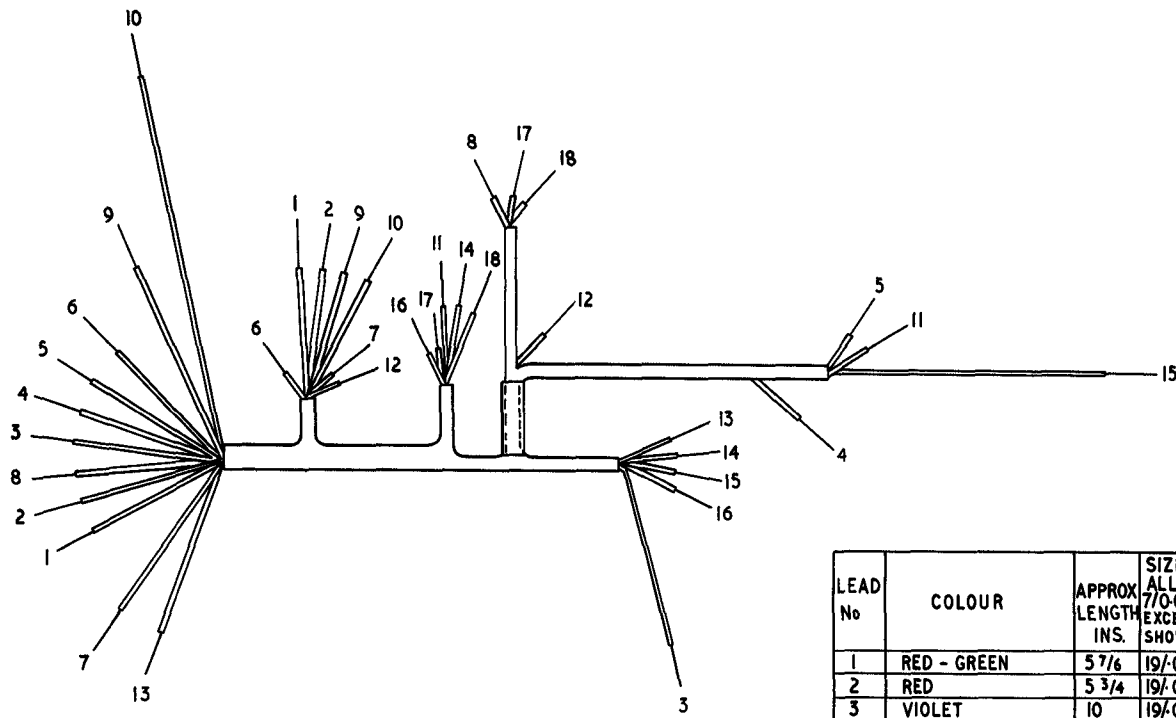
Fig 2521 - R.F. amplifier, cableform A
(5820-99-102-9543)



16	WHITE	3 1/2	
15	BLACK - WHITE	6	
14	BLUE - WHITE	5	
13	RED	5 1/2	
12	RED - BLACK	7 1/4	
11	BLUE - YELLOW	5 1/2	
10	BLACK	7	19/ 0076
9	BLACK	6	19/·0076
8	BLACK	5 1/4	19/·0076
7	RED - GREEN	2 3/4	
6	RED - ORANGE	6 1/2	
5	PINK	3 1/2	
4	GREEN - BLACK	8 1/2	
3	BLACK - ORANGE	7 3/4	19/·0076
2	WHITE - BROWN	4	
1	WHITE - BROWN	3 3/4	
LEAD No	COLOUR	LENGTH (ins)	SIZE ALL LEADS 7/0076 EXCEPT WHERE SHOWN

T L392 P2 1-2522 2584/19

Fig 2522 - R.F. amplifier, wiring harness cableform C (5820-99-102-9545)

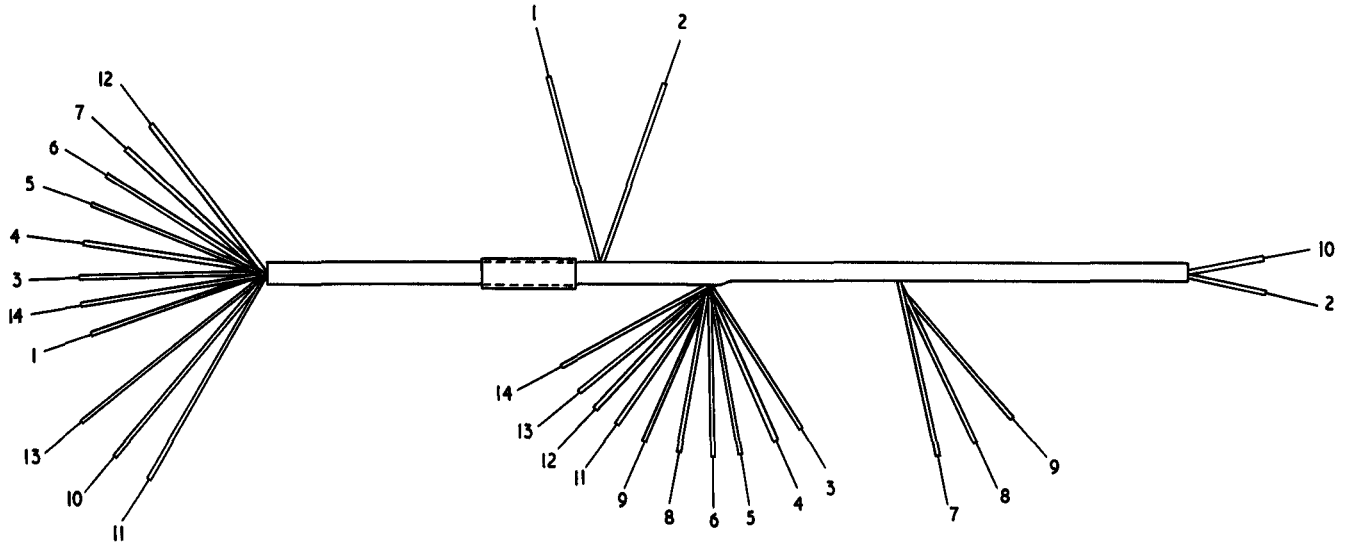


LEAD No	COLOUR	APPROX LENGTH INS.	SIZE ALL LEADS 7/0·0076 in EXCEPT WHERE SHOWN
1	RED - GREEN	5 7/6	19/·0076 in
2	RED	5 3/4	19/·0076 in
3	VIOLET	10	19/·0076 in
4	BLUE - ORANGE	10 3/8	
5	RED - BLACK	10 5/8	
6	GREEN-ORANGE	4 1/4	
7	RED-ORANGE	5 1/4	
8	VIOLET	9	19/· 0076 in
9	RED - GREEN	6 1/2	19/· 0076 in
10	RED	8 1/2	19/· 0076 in
11	RED - BLACK	8	
12	RED - ORANGE	6	
13	BLACK	8 3/4	19/· 0076 in
14	BLACK	5 1/2	19/· 0076 in
15	RED - WHITE	10 1/4	
16	BLACK - WHITE	5	
17	WHITE - ORANGE	5 1/2	
18	BLACK - ORANGE	7	

NOTE :-
ALL WIRES TO BE P.T.F.E. INSULATED TO EL 1930
7/· 0076 in TYPE B
19/·0076 in TYPE C

T L 392 P2 1-2523 2594/38

Fig 2523 - PSR No 47, wiring harness cableform D (5820-99-102-9546)



LEAD No	COLOUR	APPROX LENGTH ins	SIZE (ALL LEADS 7/·0076 in EXCEPT WHERE SHOWN)
14	RED	9 1/2	19/·0076 in
13	BLACK	9 1/4	19/·0076 in
12	RED – ORANGE	12	
11	BLACK	9	19/·0076 in
10	BLACK	11 1/2	19/·0076 in
9	GREEN – WHITE	6	
8	RED – WHITE	5 1/2	
7	GREEN – ORANGE	11 1/4	
6	RED – BLACK	10 1/4	
5	BLUE – ORANGE	10 1/4	
4	VIOLET	10 1/4	19/·0076 in
3	RED	10	19/·0076 in
2	RED – BLUE	10 1/4	19/·0076 in
1	RED – GREEN	8 1/2	19/·0076 in

T L 392 P2 / 1-2524 2864/25

Fig 2524 - PSR No 47, wiring harness branched cableform E
(5820-99-102-9547)

Table 2505 - Test equipment schedule

Part No	Designation	
Z4/00000-06691	Test Kit, Radio, Amplifier RF No 7	
Z4/00000-07885	A.C. Power Supply Unit (Selected Base Workshops only), Field and other Base Workshops will use PSR No 47 with 50A Superseder.	
NIV	Battery Superseder - Westinghouse Type 62522, 12/24V, 0/50A.	
Z4/6625-99-103-3116	Voltmeter, Electronic (Marconi TF 2600)	
Z4/6625-99-949-0470	Voltmeter, Valve, No 3, CT208, Equipment	
Z4/6625-99-949-1999	Multimeter, Set, Avo, type 9SX (CT498)	
Z4/6625-99-952-0551	Wattmeter, Absorption (Marconi TF1020A/4M1)	
Z4/ZD 00747	Wattmeter, Absorption, H.F., No 2, CT211, Equipment	
Z4/6625-99-102-8077	Signal Generator Set, No 12/2	
Z4/6625-99-102-6694	Oscilloscope Set, CT436 with probe	
Z4/6625-99-949-2062	Megohmmeter, Mains, 0.05 to 200,000MΩ	
Z4/ZD 01142	Test Set, Insulation, 40kV CT91, Equipment	
Z4/6625-99-949-0517	Bridge, Impedance, No 5, CT43, Equipment	
Z4/6625-99-103-1083	Panel, Test, Electronic (Marconi TF1245)	Q Meter
Z4/6625-99-103-5187	Test Oscillator (Marconi TF1246)	Q Meter
Z4/5820-99-103-4146	Keyer, Automatic, two operating speeds	

Table 2506 - Amplifier, R.F., No 7, specification tests

1. Notes

a. The tests quoted are derived from the original Design Specification which may be changed during production.

b. Any such changes will be included in Tels L 394 or Tels L 398 when published.

c. Methods of carrying out the tests will be published in Tels L 394.

d. Tests marked (B) are not normally required to ensure serviceability but are included as they may be of value in clearing obscure faults.

e. Test Kit, Radio, Amplifier, R.F., No 7 must be used to carry out these tests.

Table 2506 - (cont)

2. Conditions of tests

The voltages and drive power levels quoted must be observed whilst carrying out tests on the amplifier, also the tuning and matching procedure given in Tels L 394 must be followed.

	Supply		
	Low	Normal	High
Battery (nominal)	21V	26V	29V
Heaters (regulated ±0.5V)	21V	22V	25V
H.T. (±1%)	1600V	2000V	2200V
M.T. (±1%)	320V	400V	440V
Frequency Mc/s		Drive power	
1.5-6	10W	16W	25W
6-12	8W	12W	25W

3. Panel lights and fan motor

When tuning and matching the amplifier ensure that the panel and meter lights operate correctly.

System switch	OFF	HEATERS ON	PA TUNE	RT	CW
Receive		S	S.M.	F	F
Transmit		S	S.M.	F M	F M

Code:
- Blank - lights off
- 'S' - Scale lights are on
- 'M' - Meter lights are on
- 'F' - Fan motor is running

Table 2506 - (cont)

4. Power output and efficiency

Normal power supply and drive power conditions					
Frequency Mc/s	Minimum grid current M/A	Maximum screen current M/A	Maximum anode current M/A	Minimum power to 70Ω	Minimum efficiency %
1.5 Low	11.5	60	190	192W	60
3.0 Low	11.5	60	190	210W	60
3.0 Mid	10	60	190	186W	55
6.0 Mid	10	60	190	195W	55
6.0 High	8.5	60	190	182W	55
12.0 High	8.5	60	190	212W	55

$$\text{PA output efficiency} = \frac{\text{RF power into } 70\Omega \times 100}{\text{PA anode current} \times \text{PA anode volts}} \%$$

Low power supply and drive conditions	
Frequency Mc/s	Minimum power into 70Ω
1.5 Low 3.0 Low	111W 115W
3.0 Mid 6.0 Mid	108W 114W
6.0 High 12.0 High	100W 110W

5. PA tuning meter

a. With low drive and supply at 6Mc/s (High band), system switch at PA TUNE, the PA tuning meter must read not less than 2 on the scale.

b. Similarly with high supply and drive power of 25W at 3Mc/s (Low band) the meter must not exceed full scale reading.

Table 2506 - (cont)

6. Power consumption

Under normal supply conditions the currents detailed must not be exceeded. This test is carried out with the S/R switch open.

System switch	Heater	Anode	Screen
OFF	Nil	Nil	Nil
HTRS ON	4A	Nil	Nil
RT/CW RECEIVE	4A	Nil	Nil
CW TRANSMIT	4A	25mA	Nil

7. Overload cut-out

At any frequency between 2 and 10Mc/s, under normal power supply and drive conditions. The addition of the test kit dummy load (70Ω + 220pF) across the r.f. wattmeter load should cause the following effects:-

a. Overload cut-out operates and switches off h.t.

b. ILP3 lights (OVERLOAD CUT OUT).

c. Drive generator output is fed to the load.

d. Delay time between adding additional load and cut-out operating should be 1/2 to 1.1/2 secs.

e. Operation of the RESET switch will restore the HT supply and power output with ILP3 on.

f. Release of RESET will cause amplifier to trip once again.

g. Removal of additional load and operation of RESET will again restore normal running and power output.

8. Antenna tuning and matching

Match setting	A2 to A4	A9	B3.5 to B5.5	B9	C0	C9	D0	D4 to D7	A6 to A8	C0.5 to C2	D0.5 to D2
Frequency Mc/s	2.05	3.1 to 3.5	2.05	2.5 to 2.9	2.2 to 2.6	7.4 to 8.2	7.1 to 7.9	12.0	FB	FB	FC

Let FB and FC be the measured frequencies to match with the settings B9 and C9 respectively. Obtain the match settings on ranges A and C at FB and on range D at FC, these shall be within the tolerances given.

Table 2506 - (cont)

9. Amplifier output

The specification figures quoted for amplifier output and overall efficiency are dependent on the following conditions:-

a. When tuning and matching ensure that drive input (shown on the drive unit meter) is not less than 1/3 f.s.d.

b. The current flowing in the 6Ω load is not less than the minimum shown in col 2 (I_6).

c. The anode current (I_a) must be measured at the same time as observation b.

d. Measurements must be made immediately after tuning and matching as prolonged periods of transmission will cause low output readings due to overheating.

Frequency Mc/s	R.F. current I_6 amps	Anode current I_a M/A	Efficiency %	Antenna tuning scale limits
2 Low 50pF	3.9	Note current as detailed in c.	26	0-4
3 Low 50pF	4.2	as above	30	18-22
6 Mid 50pF	4.65	as above	40	33-35
10 High 50pF	4.8	as above	45	38-40
12 High 68pF	4.65	as above	35	40.5-42.5

10. Overall efficiency

Using the two sets of figures arrived at whilst measuring amplifier output calculate the overall efficiency from:-

$$\text{Efficiency} = \frac{I_6^2 \times 300\%}{I_a}$$

The calculated figures must not be less than shown in para 9 (column 4)

11. Antenna tuning scale

Settings of the antenna tuning scale will be within the limits shown in para 9 (column 5).

Table 2506 - (cont)

12. Antenna current meter

Set to Low supply and drive condition tune to 12Mc/s - the antenna current meter reading should not be less than 4.

Set to High supply and drive condition at 10Mc/s - the antenna current meter should not be more than 10.

13. Antenna coil minimum inductance

It must be possible to tune and match correctly at 12Mc/s, using the Coupler, antenna dipole and the r.f. wattmeter.

14. Loading coil switch control

COARSE MATCH Switch position	Potential between pin C (SKTA)	
	and A	and B
A	0	20-30V
B, C, D	20-30V	0

15. Extra high voltage test

a. Amplifier tuned and matched at 2.0Mc/s

b. 24V heaters set to 27V
2000V HT set to 2400V
400V MT set to 485V (nominal)
Drive power set to 25W

c. Run amplifier under these conditions for nine minutes at S/R ratio of 1 minute send - 1 minute receive, then set for 1 minute to PA TUNE.

d.. Operate amplifier at normal supply and drive conditions then measure r.f. current in 6Ω load at 2Mc/s. The current should be within 0.5A of the figure obtained in section 9 (column 2).

16. Sealing test

Initial pressure: 10lb/sq. in.

Leakage rate: 50cc/hr maximum

Time constant: Not less than 180 hr for drop to 37% of initial pressure

Table 2506 - (cont)

17. R.F. power output and efficiency (B)

Additional frequency tests to supplement those in para 4.

Normal power supply and drive conditions					
Frequency Mc/s	Minimum grid current M/A	Maximum screen current M/A	Maximum anode current M/A	Minimum power to 70Ω	Minimum efficiency %
2.0	11.5	60	190	198W	60
2.5	11.5	60	190	204W	60
4	10	60	190	194W	55
5	10	60	190	194W	55
8	8.5	60	190	198W	55
10	8.5	60	190	211W	55

Low power supply and drive conditions	
Frequency Mc/s	Minimum Power into 70Ω
2.0	114W
2.5	115W
4	113W
5	114W
8	110W
10	110W

18. P.A. tuning meter (B)

Additional frequency tests to supplement those in para 5.

a. With low power supply and drive conditions at 1.5 and 3Mc/s (Mid band), system switch at PA TUNE, the PA tuning meter must read not less than 2 on the scale.

b. With high power supply and drive conditions at 6 (Mid band) and 12Mc/s the meter must not exceed full scale reading.

Table 2506 - (cont)

19. Antenna matching, low level efficiency (B)

Using the dummy antenna, low power, from the test kit and an output of 100mV from the S.G. No 12 to obtain the V1 reference reading. The V2 must not exceed the value shown in column 3.

Frequency Mc/s	V1	V2 (m/V max)
2		52
5		42
8		36
11		36

20. Amplifier output and efficiency (B)

Additional frequency tests to supplement those in para 9 and 10 using similar test conditions.

Frequency Mc/s	R.F. current I_6 amps	Anode current I_a M/A	Minimum efficiency %
2.5 Low 50pF	4.1	As noted in para 9.c.	29
3 Mid 50pF	4.0	as above	29
4 Mid 50pF	4.3	as above	33
5 Mid 50pF	4.55	as above	36
6 High 50pF	4.4	as above	35
8 High 50pF	4.6	as above	42
10 High 68pF	5.1	as above	50

21. Fan motor, interference with receiver (B)

The amplifier fan motor must not degrade the TRC13 signal:noise ratio by more than 3dB, at test frequencies of 2.1, 3.1, 4.1, 6.1, 8.1, 10.1 and 11.9Mc/s.

Table 2506 - (cont)

22. C.W. operation (B)

With auto keyer set to give an equal mark/space ratio of 60 msec duration (mark=space=60 msec), the output of the amplifier should have marks and spaces within the limits 45 to 75 msec. There should also be no visible pulses indicative of key clicks.

Table 2507 - Power supply, rotary, No 47, specification tests

23. Notes

a. The tests quoted are derived from the original design specification which may be changed during production.

b. Any such changes will be included in Tels L 394 or Tels L 398 when published.

c. Methods of carrying out the tests will be published in Tels L 394.

d. Test kit, radio, amplifier, r.f., No 7 must be used to carry out these tests.

24. Conditions of tests

For all tests the PSR No 47 should be connected to the dummy load via the Metering unit, No 1. The primary supply will be connected to the PSR No 47 using the Metering unit, No 2.

Standard supply voltages are:-

Low	21V
Normal (off charge)	23V
Normal (on charge)	26V
High	29V

Table 2507 - (cont)

25. Output voltages

a. On load

Input volts	Output volts			V.C.R. switch
	2000V HT	400V MT	Heaters	
Normal, on charge, 26V	1900-2100	220-250	21.5-22.5	O/C
Normal, off charge, 23V	1700-1900	195-225	22.9-23	S/C
Low, 21V	1500-1700	175-205	20.9-21	S/C
High, 29V	2050-2350	250-280	24-25	O/C

b. Off load

With HT, MT and HTR loads switched off and battery supply set to High, the output volts should not exceed:

2000V HT: 2550V
400V MT: 500V

26. Ripple volts

The peak value of the ripple voltage with 26V input should not exceed:

2000V HT: 60V ripple
400V MT: 20V ripple

27. Input current

With "Normal, on charge" 26V supply the input currents should not exceed:-

HT and MT load switch	HTR load switch	S/R switch	Maximum current
OFF	OFF	OFF	NIL
OFF	OFF	ON	12A
OFF	ON	OFF	3.6A
ON	ON	ON	29A

Table 2507 - (cont)

28. Starting current

With high supply (29V) the input starting current measured across the input current meter shunt, at the moment RLA releases, should not be less than 30A and not more than 40A.

29. High resistance supply

With an additional 200 milliohm resistor introduced into the battery supply and low supply conditions (21V) the p.s.r. should start up smoothly and without signs of relay chatter.

30. Overload circuit breaker

Check that with the overload circuit breaker button on the p.s.r. pulled out the p.s.r. will not start.

31. Continuity test

With all supplies and loads disconnected the resistance between SRA pin M to SKA pins E and F should be between 80 and 120kΩ.

32. Extra high voltage test

a. With supply volts set to 31.6V and VCR switch o/c.

b. Set the S/R switch to ON and run the p.s.r. for 10 minutes, switch the HT and MT loads on and off during alternate minutes (ie 1 minute on 1 minute off) the p.s.r. should continue to operate.

33. Sealing test

Initial pressure:	10lb/sq. in.
Leakage rate:	20cc/hr maximum
Time constant:	not less than 180 hr for drop to 37% of initial pressure

Table 2508 - Loading coil assembly, antenna specification tests

34. Loading coil

Inductance:	100 to 115μH
'Q' valves:	'Q' at 1.5Mc/s not less than 600
Self capacitance:	not greater than 15pF
Voltage breakdown:	the voltage breakdown from either terminal to the mounting tray should not be less than 15kV

Table 2508 - (cont)

35. Switch unit

a. With the control box switch set to A and 20V d.c. applied, at the end of a switching cycle the loading coil switch should be made.

b. Control box switch set to B, loading coil switch should be open.

c. Check intermittent operation of motor switch to prove that switching motor has no stalling position.

d. Check a. to c. with 31.6V applied to motor.

36. Current handling capacity

The loading coil switch should pass 7A with not more than 45mV drop.

37. Voltage breakdown

a. Not less than 10kV in the made condition.

b. Not less than 15kV in the open condition.

38. Insulation resistance

In the made condition the insulation resistance should be greater than 500MΩ.

39. Sealing test

Initial pressure:	10lb/sq. in.
Leakage rate:	10cc/hr maximum
Time constant:	Not less than 180 hr for drop to 37% of initial pressure.

40. Functional test

It should be possible to tune and match to 1.5Mc/s and F Mc/s with the COARSE MATCH in position A and to F Mc/s and 3.0Mc/s with COARSE MATCH in position B.

F Mc/s is one frequency in the range 1.8 to 2.2Mc/s.

41. Switch capacity (B)

With the switch disconnected from the loading coil, the capacity of the switch to case in the made condition must not be more than 12pF.

In the open condition the capacity must not be more than 5pF.

EME8c/2584(TELS)

END

STATION KIT, RADIO, AMPLIFIER, R.F., NO 7

FORWARD CODING

Note: The following list of Assembly Codes must be used in conjunction with EMER J 021 Part 4

Assembly code	Designation
0001	Amplifier, r.f., No 7
0002	Power Supply, rotary, No 47
0003	Interconnecting box
0004	Loading coil assembly, antenna
0005	Associated antennae
0006	Interconnecting cables

6.502 (Data Centre)

END

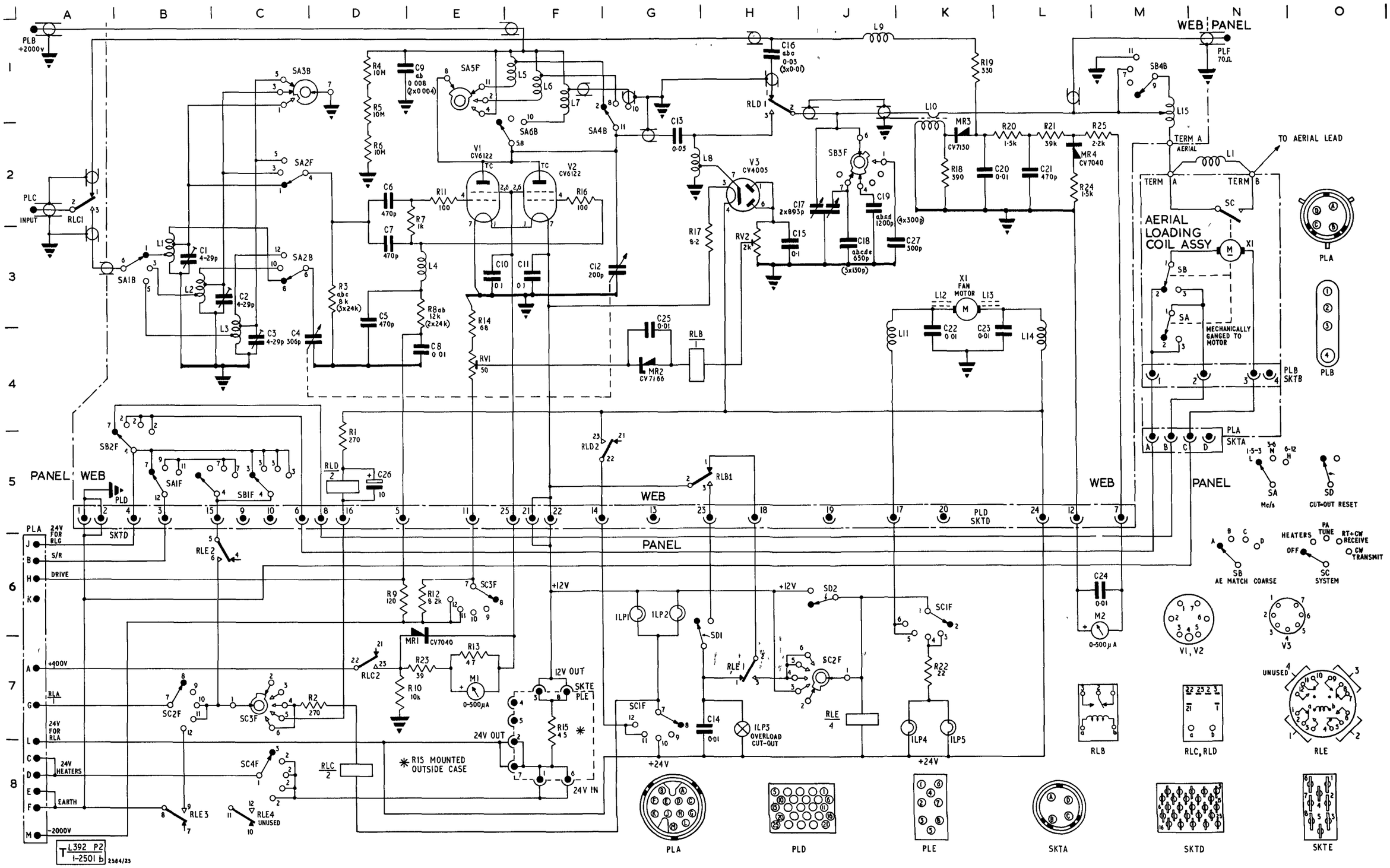
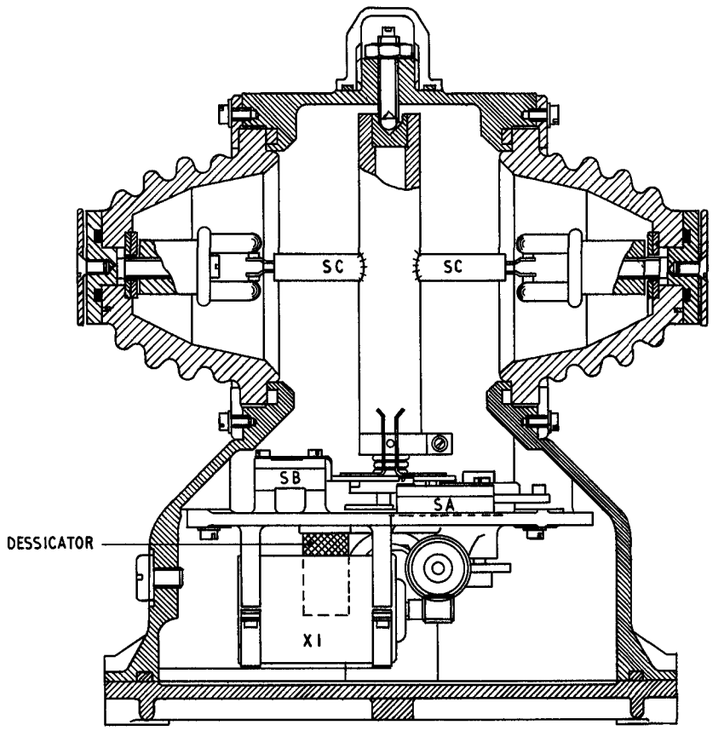
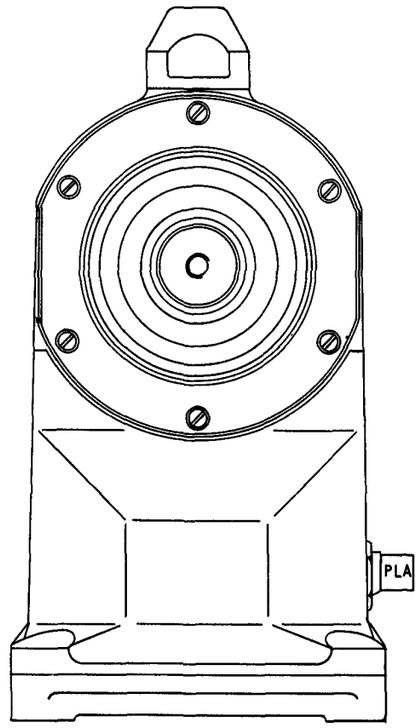


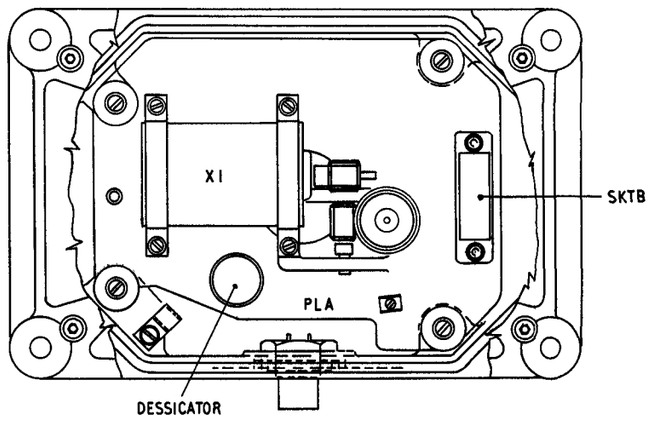
Fig 2501b - Circuit diagram, Amplifier r.f. No 7



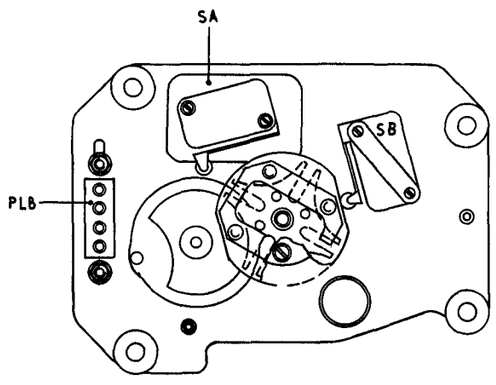
SECTIONAL VIEW OF
INTERNAL ASSEMBLY



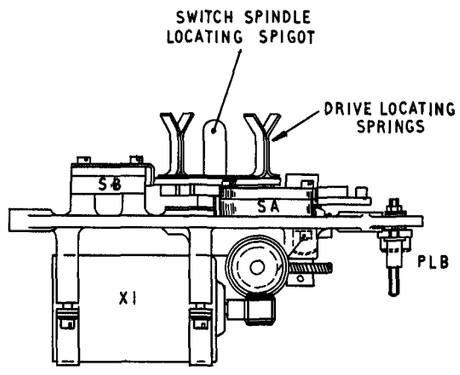
END VIEW



DESSICATOR
CUT AWAY VIEW SHOWING BOTTOM OF
SWITCH PLATE ASSEMBLY



TOP VIEW OF SWITCH PLATE
ASSEMBLY



SIDE VIEW OF SWITCH PLATE
ASSEMBLY

T L392 P2 I-2508 2584/28

Fig 2508 - Detail of loading coil switch

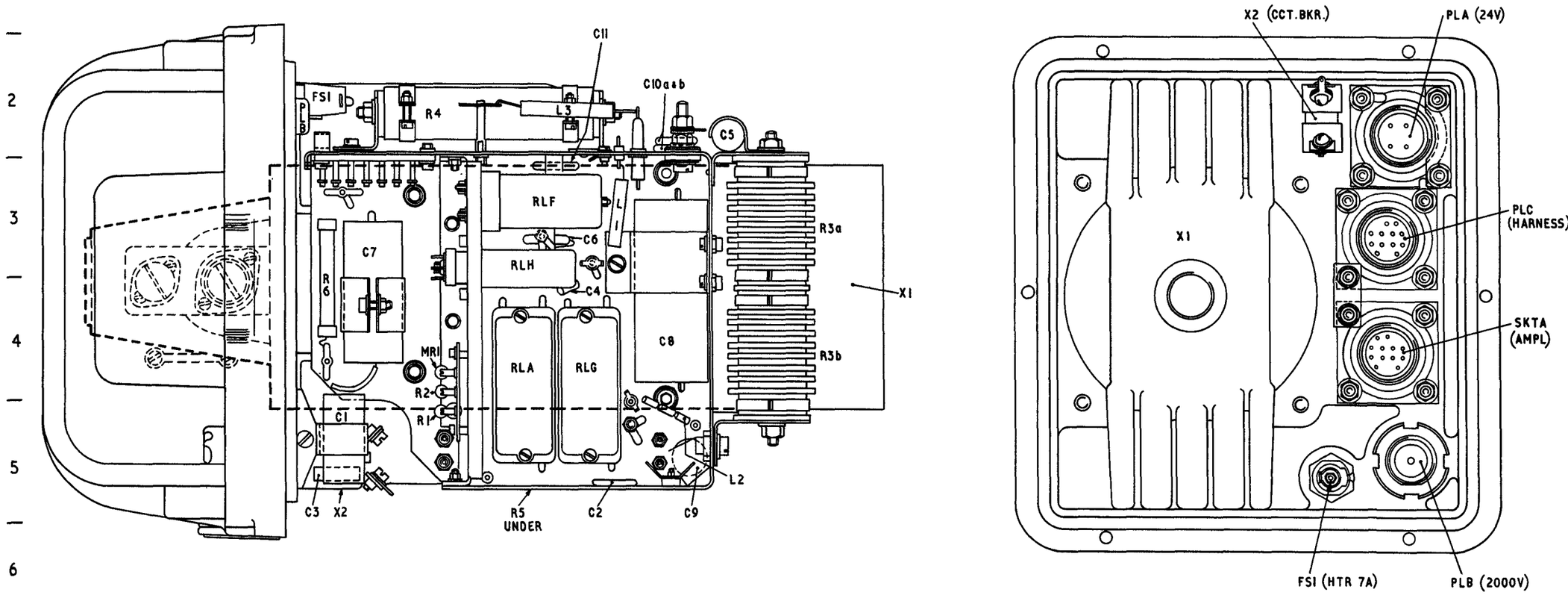
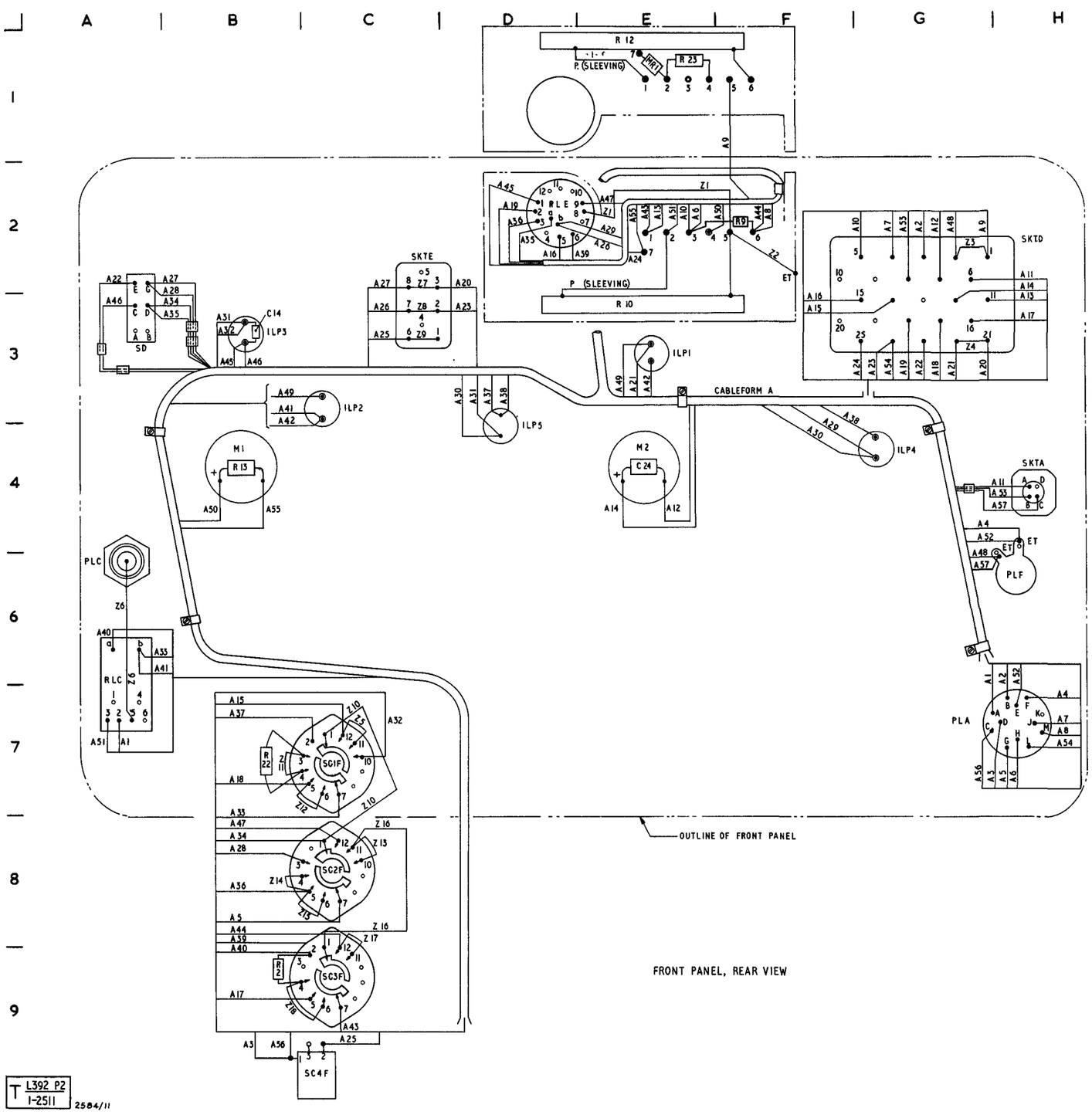


Fig 2509 - Component layout, PSR No 47



LEAD NO	COLOUR	LENGTH	SIZE ALL OTHER LEADS 7/0076
57	BLACK	9 IN	19/0076
56	RED	2 FT 8 IN	19/0076
55	BLUE	18 1/4 IN	
54	RED-ORANGE	12 3/4 IN	
53	RED-BROWN	10 1/2 IN	
52	BLACK	8 IN	
51	BLUE-WHITE	2 FT	
50	WHITE	19 1/2 IN	
49	WHITE-BROWN	12 IN	
48	BLACK	12 IN	19/0076
47	ORANGE	2 FT 4 IN	
46	BLUE-ORANGE	8 1/2 IN	
45	BLUE-ORANGE	16 IN	
44	VIOLET	2 FT 2 IN	
43	GREEN-BLACK	22 IN	
42	BLUE-ORANGE	11 IN	
41	BLUE-ORANGE	13 IN	
40	SLATE	14 IN	
39	BLACK-ORANGE	2 FT 2 1/2 IN	
38	BLACK-ORANGE	11 IN	
37	BLACK-ORANGE	19 IN	
36	RED-BROWN	23 1/2 IN	
35	BROWN	17 1/2 IN	
34	BROWN	17 1/2 IN	
33	RED-ORANGE	11 IN	
32	RED-ORANGE	16 1/2 IN	
31	RED-ORANGE	8 3/4 IN	
30	RED-ORANGE	10 1/2 IN	
29	RED-ORANGE	14 1/2 IN	
28	WHITE-BROWN	17 1/2 IN	
27	WHITE-BROWN	9 1/2 IN	
26	RED-ORANGE	14 IN	
25	RED-ORANGE	19 1/2 IN	19/0076
24	BLUE	16 1/2 IN	
23	RED-ORANGE	14 IN	
22	PINK	19 IN	
21	WHITE-BROWN	10 IN	
20	WHITE-BROWN	15 IN	19/0076
19	RED-GREEN	16 IN	
18	BLUE-BLACK	2 FT 1 1/2 IN	
17	BLUE-YELLOW	2 FT 1 1/2 IN	
16	SLATE	15 IN	
15	WHITE-ORANGE	2 FT 3 IN	
14	BLACK-WHITE	10 IN	
13	GREEN-BLACK	17 IN	
12	RED-YELLOW	10 IN	
11	RED-BLUE	9 IN	
10	GREEN-ORANGE	16 1/2 IN	
9	BLACK	16 1/2 IN	
8	VIOLET	22 IN	
7	RED-WHITE	14 IN	
6	GREEN-ORANGE	22 IN	
5	RED-BLACK	2 FT 5 IN	
4	BLACK	8 IN	19/0076
3	RED	2 FT 8 IN	19/0076
2	GREEN-WHITE	14 1/2 IN	
1	BLUE-WHITE	2 FT 3 3/4 IN	

LEAD NO	COLOUR	TYPE SEE KEY
Z1	BLACK	A
Z2	BLACK	A
Z3		K
Z4		K
Z5		K
Z6	BLACK	D
Z7		K
Z8		K
Z9		K
Z10		K
Z11		K
Z12		K
Z13		K
Z14		K
Z15		K
Z16	PINK	C
Z17		K
Z18	PINK	C

KEY TO WIRE TYPE

A WIRE ELECTRICAL EQUIPMENT PTFE INSULATED EL 1930 TYPE B 7/0·0076 IN

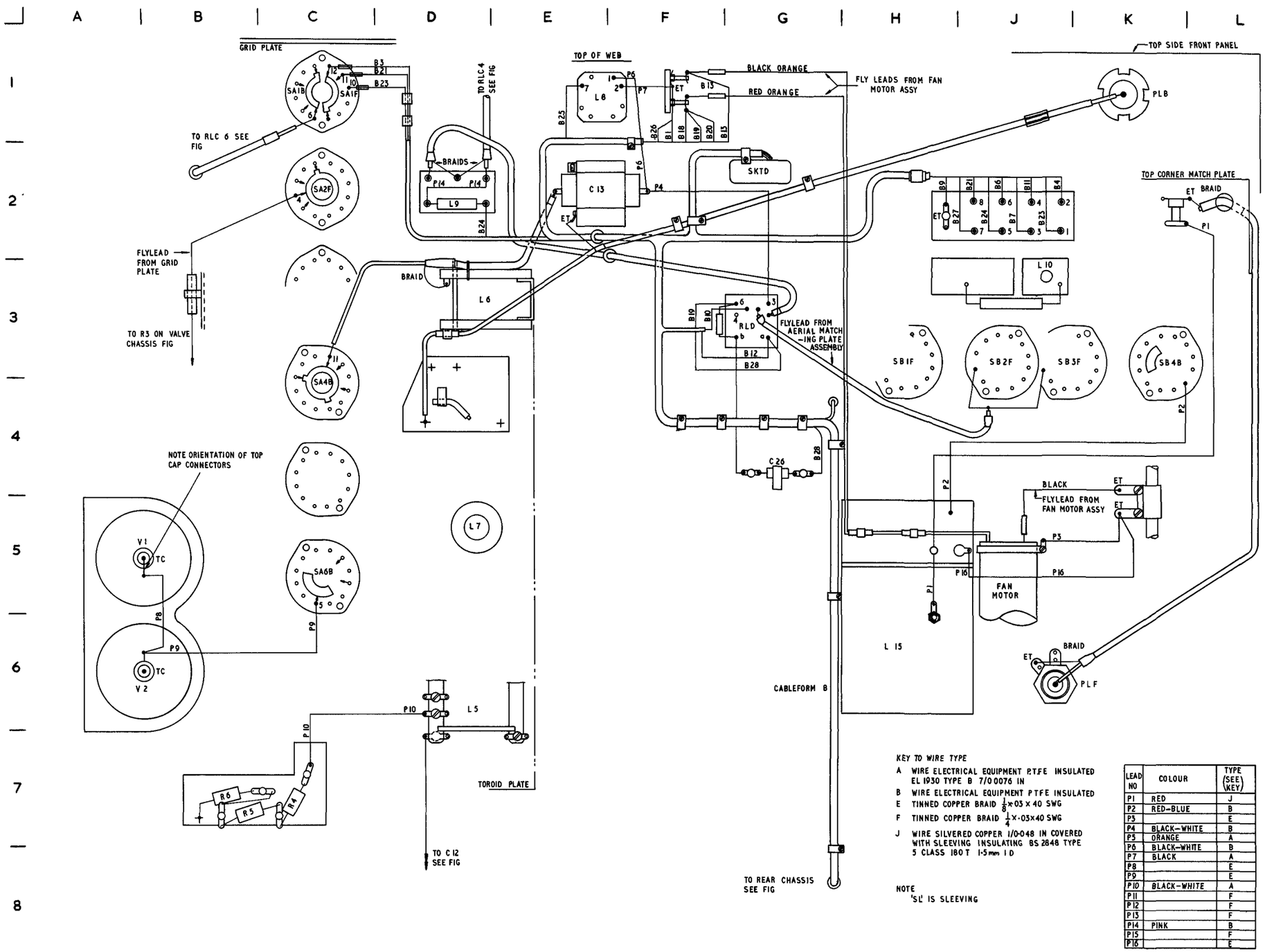
C WIRE TINNED COPPER 1/0·036 IN COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180T 1 mm ID

D WIRE TINNED COPPER 1/0·048 IN COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180T 1·5 mm ID

K WIRE TINNED COPPER 1/0·028 IN BARE

T L392 P2 1-2511 2584/11

Fig 2511 - R.F. amplifier, wiring of front panel assembly



KEY TO WIRE TYPE

A WIRE ELECTRICAL EQUIPMENT P.T.F.E. INSULATED EL 1930 TYPE B 7/0 0076 IN

B WIRE ELECTRICAL EQUIPMENT P.T.F.E. INSULATED

E TINNED COPPER BRAID $\frac{1}{8}$×·03 × 40 SWG

F TINNED COPPER BRAID $\frac{1}{4}$×·03×40 SWG

J WIRE SILVERED COPPER 1/0·048 IN COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180 T 1·5mm I D

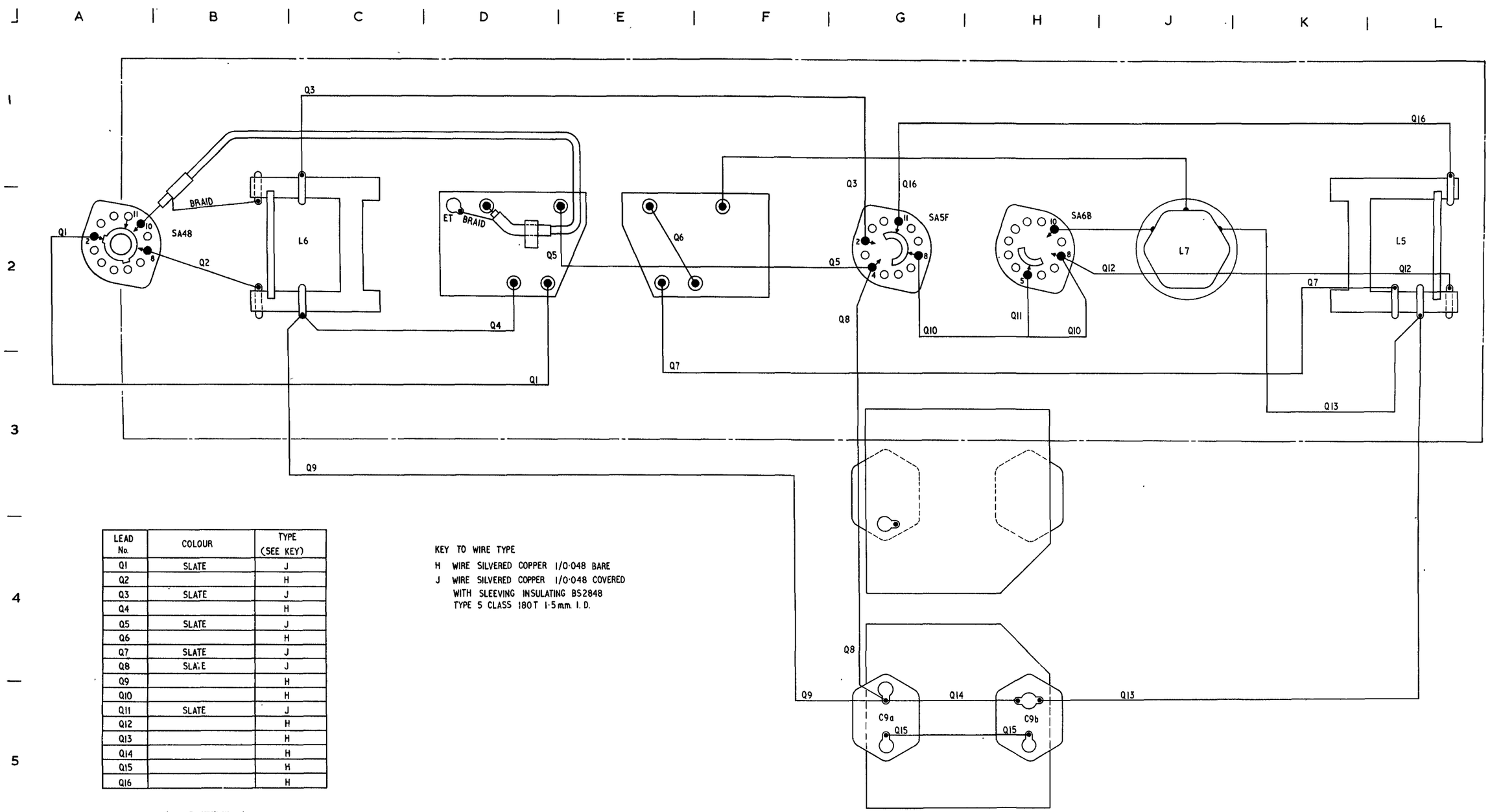
NOTE
'SL' IS SLEEVING

LEAD NO	COLOUR	TYPE (SEE KEY)
P1	RED	J
P2	RED-BLUE	B
P3		E
P4	BLACK-WHITE	B
P5	ORANGE	A
P6	BLACK-WHITE	B
P7	BLACK	A
P8		E
P9		E
P10	BLACK-WHITE	A
P11		F
P12		F
P13		F
P14	PINK	B
P15		F
P16		E

T L392 P2 1-2513 2584/12

Fig 2513 - R.F. amplifier, wiring of front panel and web assembly
(Use in conjunction with Fig 2512)

Note: This Page 1024A, Issue 1, must be filed immediately in front of Page 1025, Issue 1, dated 1 Apr 66. On insertion of this Page 1024A, Fig 2517, Page 1025, must be amended to read 'Fig 2517, Part 2'.



LEAD No.	COLOUR	TYPE (SEE KEY)
Q1	SLATE	J
Q2		H
Q3	SLATE	J
Q4		H
Q5	SLATE	J
Q6		H
Q7	SLATE	J
Q8	SLATE	J
Q9		H
Q10		H
Q11	SLATE	J
Q12		H
Q13		H
Q14		H
Q15		H
Q16		H

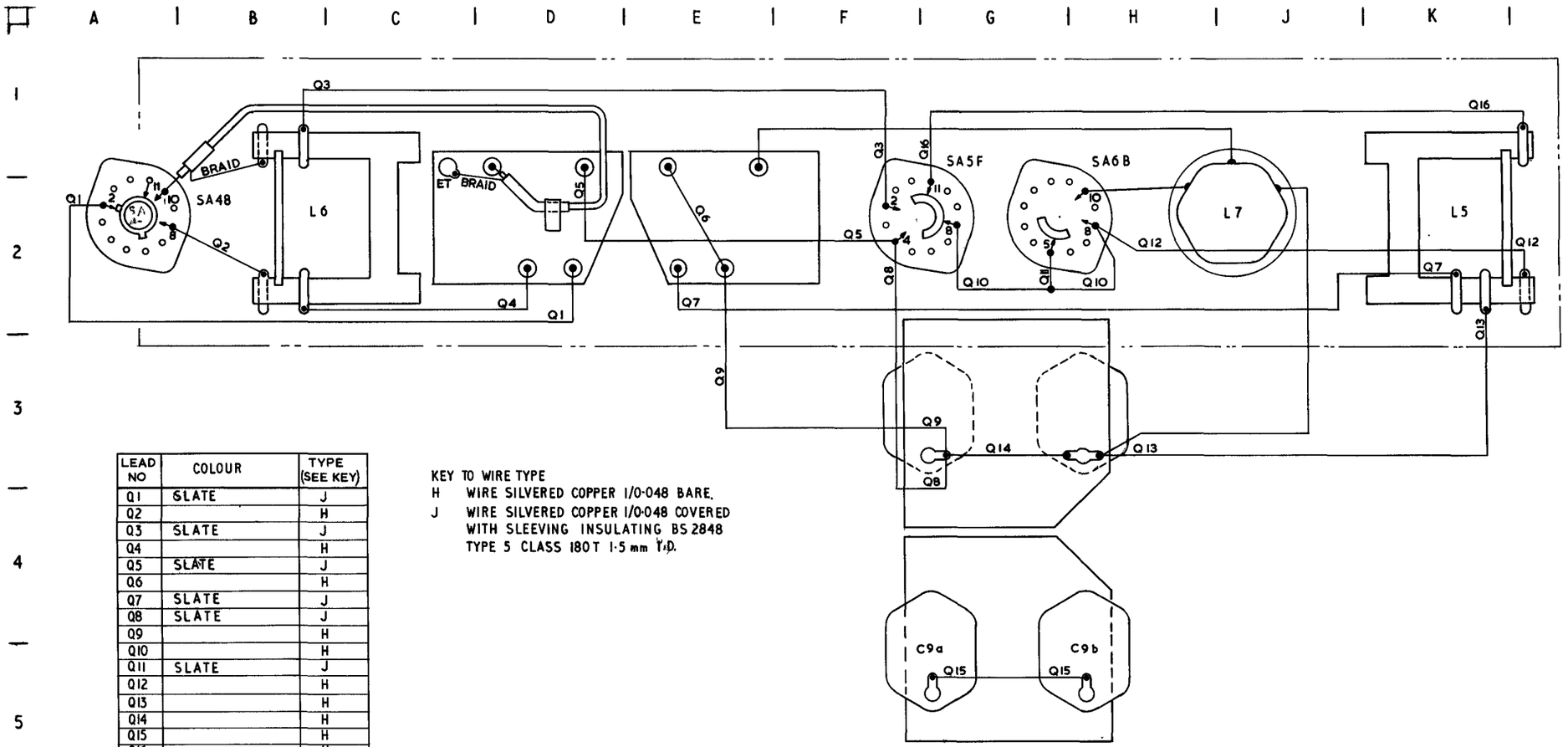
KEY TO WIRE TYPE

H WIRE SILVERED COPPER 1/0·048 BARE
J WIRE SILVERED COPPER 1/0·048 COVERED WITH SLEEVING INSULATING BS2848 TYPE 5 CLASS 180T 1·5mm. I.D.

TL 392
1-2517a

2584/45

Fig 2517, Part 1 - R.F. amplifier, wiring of toroid plate assembly (for later models)

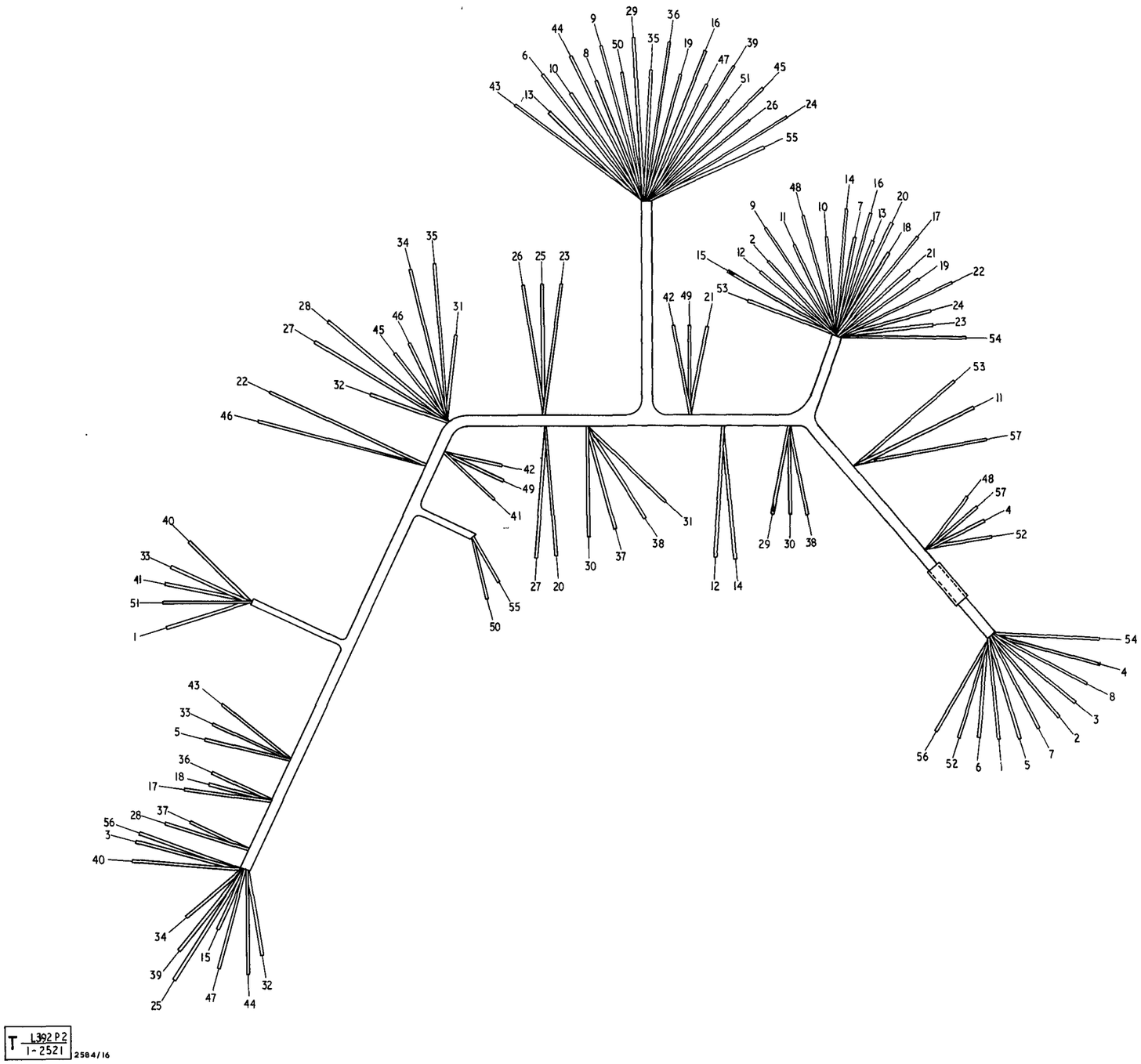


LEAD NO	COLOUR	TYPE (SEE KEY)
Q1	SLATE	J
Q2		H
Q3	SLATE	J
Q4		H
Q5	SLATE	J
Q6		H
Q7	SLATE	J
Q8	SLATE	J
Q9		H
Q10		H
Q11	SLATE	J
Q12		H
Q13		H
Q14		H
Q15		H
Q16		H

KEY TO WIRE TYPE
H WIRE SILVERED COPPER 1/0·048 BARE.
J WIRE SILVERED COPPER 1/0·048 COVERED WITH SLEEVING INSULATING BS 2848 TYPE 5 CLASS 180 T 1·5 mm T.D.

T L392·P2 1-2517 2584/6

Fig 2517 - R.F. amplifier, wiring of toroid plate assembly



LEAD NO	COLOUR	LENGTH	SIZE ALL LEADS 7/0076 EXCEPT SHOWN
57	BLACK	9 IN	19/0076
56	RED	32 IN	19/0076
55	BLUE	18 1/4 IN	
54	RED-ORANGE	12 3/4 IN	
53	RED-BROWN	10 1/2 IN	
52	BLACK	8 IN	
51	BLUE-WHITE	24 IN	
50	WHITE	19 1/2 IN	
49	WHITE-BROWN	12 IN	
48	BLACK	12 IN	19/0076
47	ORANGE	28 IN	
46	BLUE-ORANGE	8 1/2 IN	
45	BLUE-ORANGE	16 IN	
44	VIOLET	28 IN	
43	GREEN-BLACK	22 IN	
42	BLUE-ORANGE	11 IN	
41	BLUE-ORANGE	13 IN	
40	SLATE	14 IN	
39	BLACK-ORANGE	26 1/2 IN	
38	BLACK-ORANGE	11 IN	
37	BLACK-ORANGE	19 IN	
36	RED-BROWN	23 1/2 IN	
35	BROWN	17 1/2 IN	
34	BROWN	17 1/2 IN	
33	RED-ORANGE	11 IN	
32	RED-ORANGE	16 1/2 IN	
31	RED-ORANGE	8 3/4 IN	
30	RED-ORANGE	10 1/2 IN	
29	RED-ORANGE	14 1/2 IN	
28	WHITE-BROWN	17 1/4 IN	
27	WHITE-BROWN	9 1/2 IN	
26	RED-ORANGE	14 IN	
25	RED-BLUE	19 1/2 IN	19/0076
24	BLUE	16 1/2 IN	
23	RED-ORANGE	14 IN	
22	PINK	19 IN	
21	WHITE-BROWN	10 IN	
20	WHITE-BROWN	15 IN	19/0076
19	RED-GREEN	16 IN	
18	BLUE-BLACK	23 1/2 IN	
17	BLUE-YELLOW	25 1/2 IN	
16	SLATE	15 IN	
15	WHITE-ORANGE	27 IN	
14	BLACK-WHITE	10 IN	
13	GREEN-BLACK	17 IN	
12	RED-YELLOW	10 IN	
11	RED-BLUE	9 IN	
10	GREEN-ORANGE	16 1/2 IN	
9	BLACK	16 1/2 IN	
8	VIOLET	22 IN	
7	RED-WHITE	14 IN	
6	GREEN-ORANGE	22 IN	
5	RED-BLACK	29 IN	
4	BLACK	8 IN	19/0076
3	RED	32 IN	19/0076
2	GREEN-WHITE	14 1/2 IN	
1	BLUE-WHITE	27 3/4 IN	

Fig 2521 - R.F. amplifier, cableform A (5820-99-102-9543)