REDIFFUSION

MK12 W

Service Manual

Partial service manual, originally photocopied in about 1975
by TonyWilk at Hull University

PRE-SET ADJUSTMENTS

As in the Mk.XI, there is no need for any external customer operated pre-set controls, as high quality components have been used where necessary to increase stability. However, certain pre-set controls are incorporated in the circuit design and although they should not need any adjustment on installation, the following procedure should be carried out if adjustment is necessary.

Height RV202
The height control mounted on the timebase board should be adjusted for 5% overscan. This corresponds to cutting off about half the castellations at the top and bottom of test card 'F'. *Adjustment to be carried out at low brilliance.*

Field Linearity RV203
This control also mounted on the timebase board should be adjusted for best overall linearity on test card 'F'.

Focus RV302
The focus control mounted on the line stage board is adjusted for optimum focus. *Care should be taken when adjusting this control as high voltages exist at this point.*

Line Hold RV201
The line hold control mounted on the timebase board should be adjusted as follows:-

1. Rotate scan coils so that the edges of raster are visible.
2. Adjust RV201 to centralise the picture within raster, break and re-connect signal to check that a locked picture is obtained.
3. Reset scan coils making sure that the position of the linearity sleeve has not been disturbed, otherwise the width setting will have been affected.

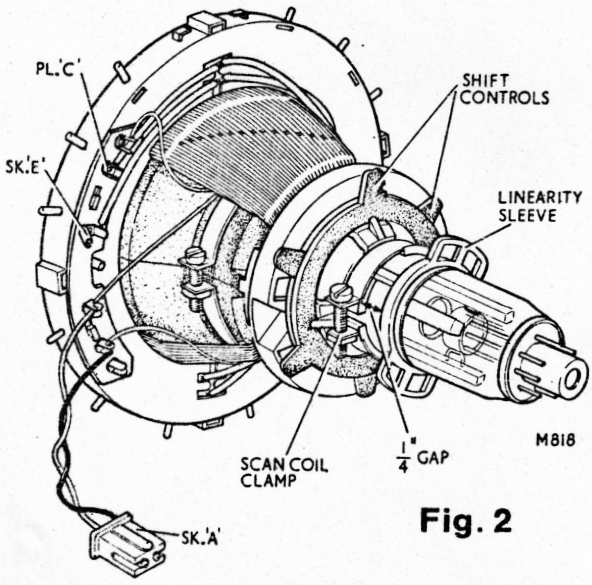


Fig. 2

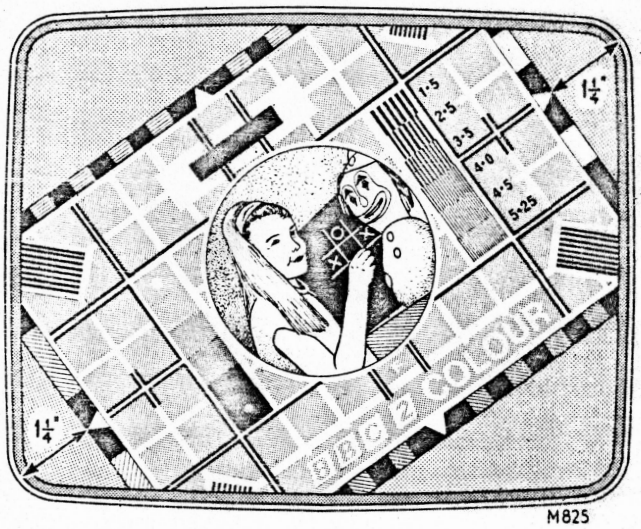


Fig. 3

Boost Set-Up RV301
This control mounted on the line stage board must be used in conjunction with the line linearity sleeve in order to set the picture width.

NOTE: *The following adjustment should also be made when the line stage board is changed during service.*

1. Ensure that RV202 (height) is set for 5% overscan.
2. Rotate the scan coils to give a diagonal picture.
3. Set the linearity sleeve so that there is a ¼" gap between the black moulding on the sleeve and the moulding of the scan coils. See Fig. 2.
4. Connect positive lead of an Avo 8 to the boost end of C306 (junction of C306, C305 and R307).
5. Connect negative lead to C406 (H.T.).
6. Adjust RV301 (boost set-up) for 550V. This must be done at zero beam current.
7. The edge of the test card castellations should now be 1¼" short of the tube corners. See Fig. 3.
8. If the required width measurement has not been obtained, final adjustment should be made with the linearity sleeve and **NOT** by re-adjusting RV301.
9. Re-set the scan coils to square the picture taking care not to disturb the setting of the linearity sleeve.

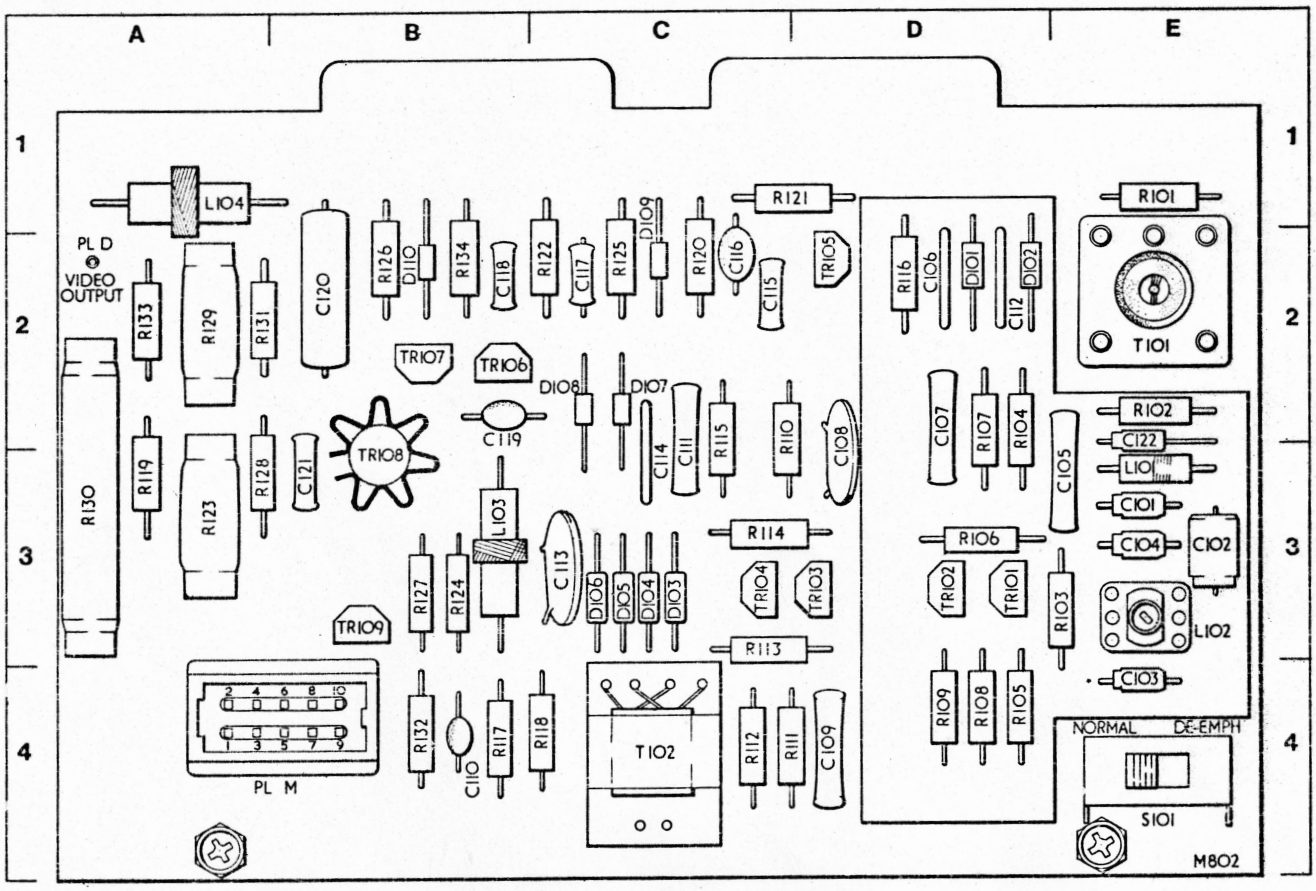
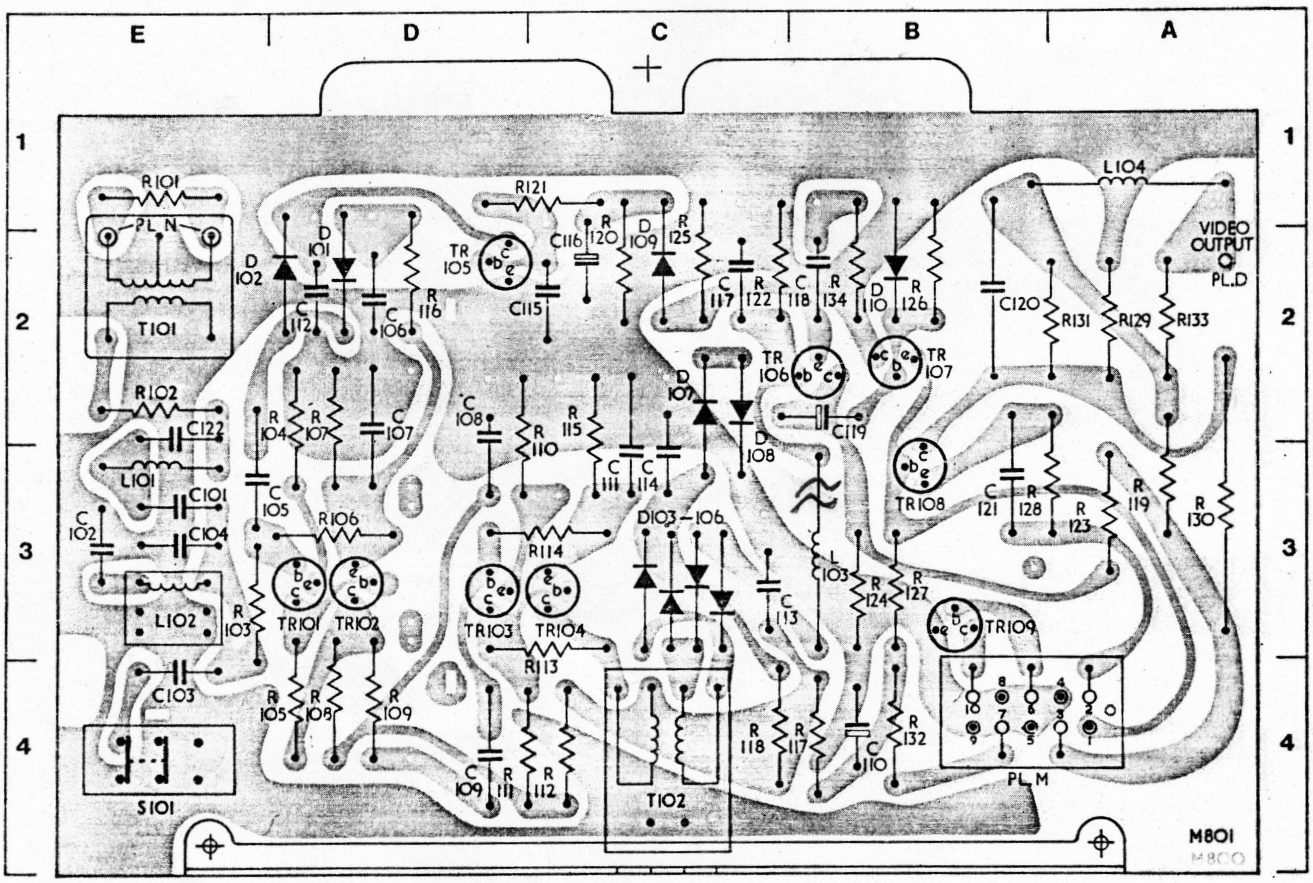

A
B
C
D
E
1
2
3
4
PL D
VIDEO OUTPUT
L104
R133
R129
R131
C120
R126
D110
R134
C118
R122
C117
R125
D109
R120
C116
C115
R121
TR105
R116
C106
D101
C112
D102
R101
T101
TR107
TR106
D108
D107
C119
C114
C111
R115
R110
C108
C107
R107
R104
C105
R102
C122
L101
C101
C104
C102
L102
C103
R130
R119
R123
R128
C121
TR108
L103
C113
R114
R127
R124
TR104
TR103
TR102
TR101
R106
R103
D106
D105
D104
D103
TR109
R113
R112
R111
C109
R109
R108
R105
NORMAL
DE-EMPH
S101
PL M
R132
C110
R117
R118
T102
M802

Fig. 5


E
D
C
B
A
1
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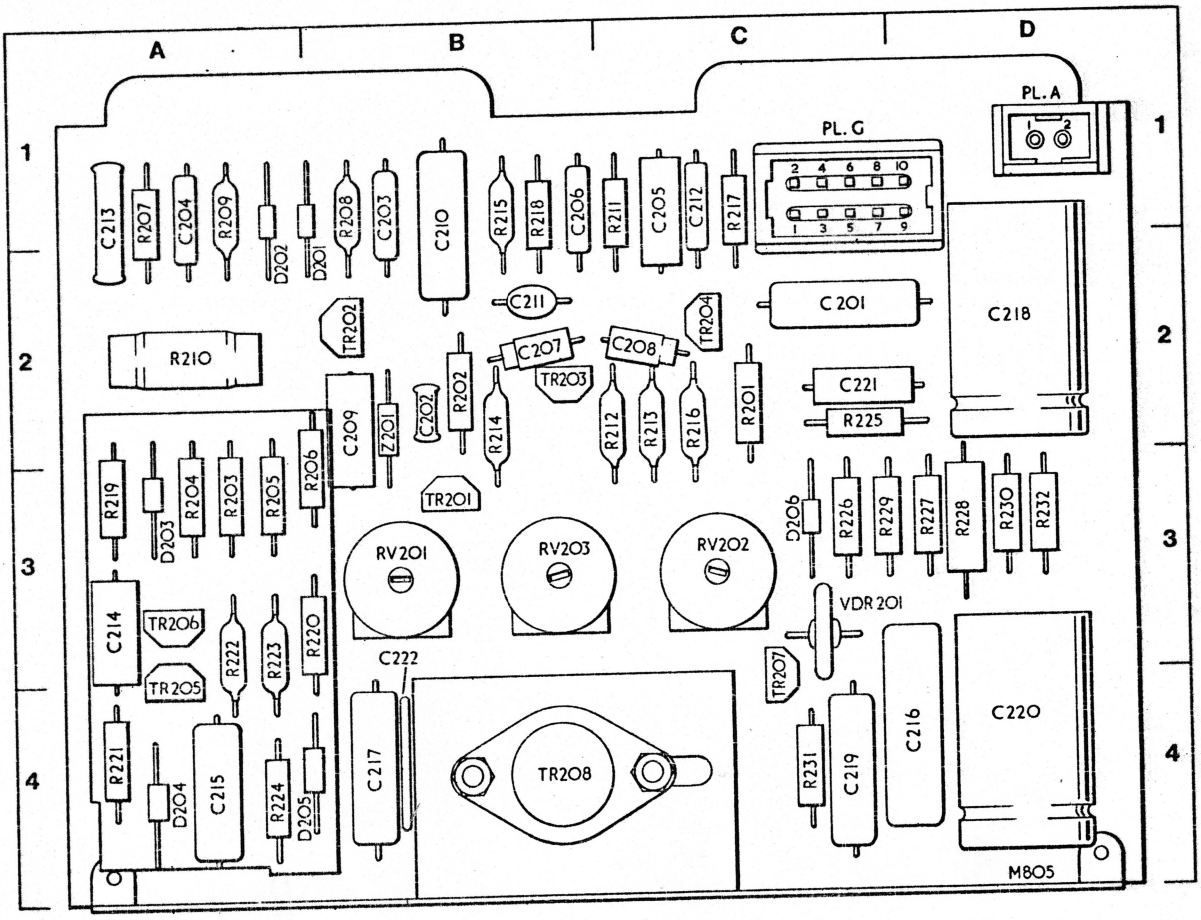
3
4
R101
PL N
T101
D102
D101
C112
C106
R116
TR105
C115
R121
C116
R120
D109
R125
C117
R122
C118
R134
D110
R126
L104
VIDEO OUTPUT
PL.D
C120
R131
R129
R133
R102
C122
L101
C101
C104
C102
L102
C103
S101
R104
R107
C107
C105
R106
R103
TR101
TR102
C108
R110
R115
C111
C114
D107
D108
TR106
TR107
C119
TR108
C121
R128
R123
R119
R130
R114
TR103
TR104
R113
D103–106
C113
L103
R124
R127
TR109
R105
R108
R109
C109
R111
R112
T102
R118
R117
C110
R132
PL M
M801

Fig. 6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PL.G
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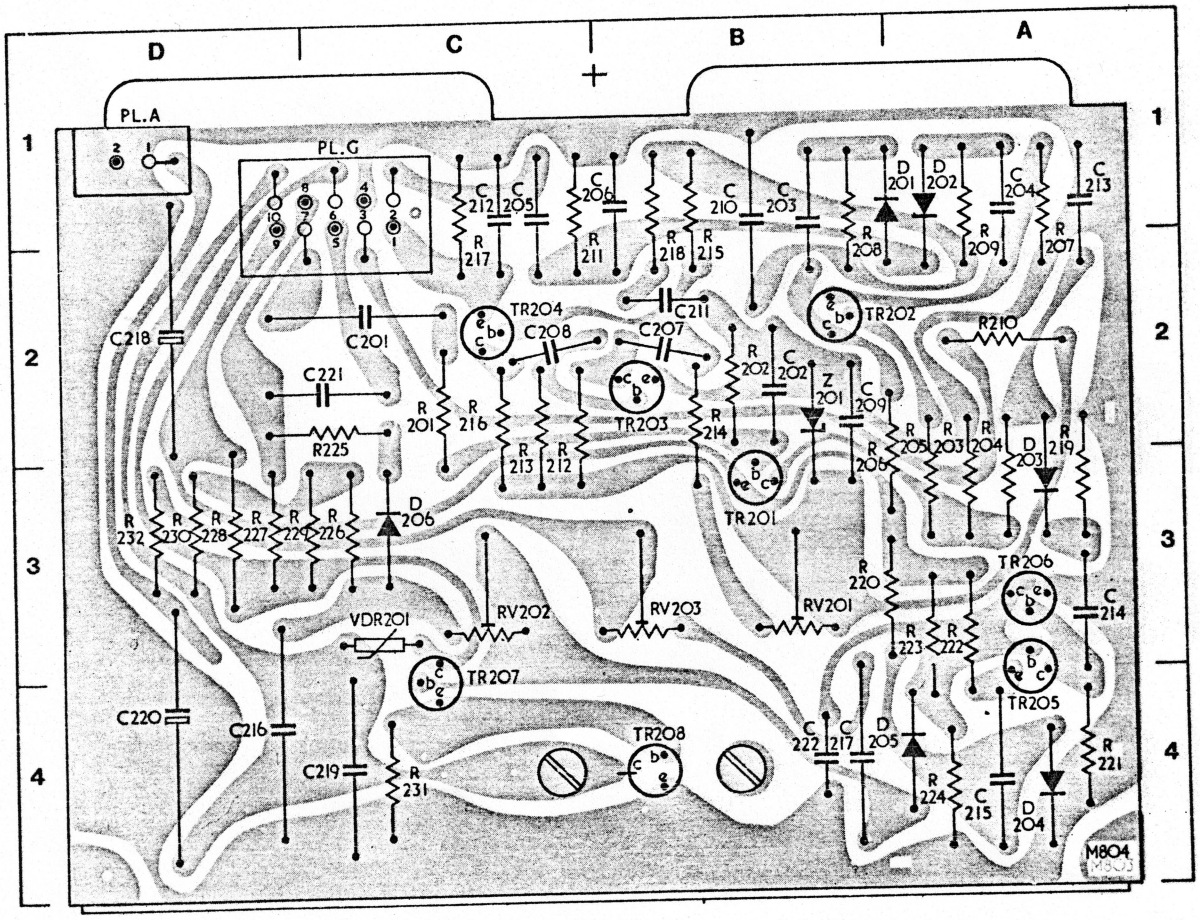
C204
R209
D202
D201
R208
C203
C210
R215
R218
C206
R211
C205
C212
R217
C211
C201
C218
TR202
TR204
R210
C207
C208
TR203
R202
R214
R212
R213
R216
R201
C221
R225
C209
Z201
C202
TR201
R219
D203
R204
R203
R205
R206
D206
R226
R229
R227
R228
R230
R232
RV201
RV203
RV202
VDR201
C214
TR206
R222
R223
R220
TR205
C222
TR207
C217
TR208
C216
C220
R221
D204
C215
R224
D205
R231
C219
M805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A
PL.A
PL.G
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C210
C203
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D202
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R207
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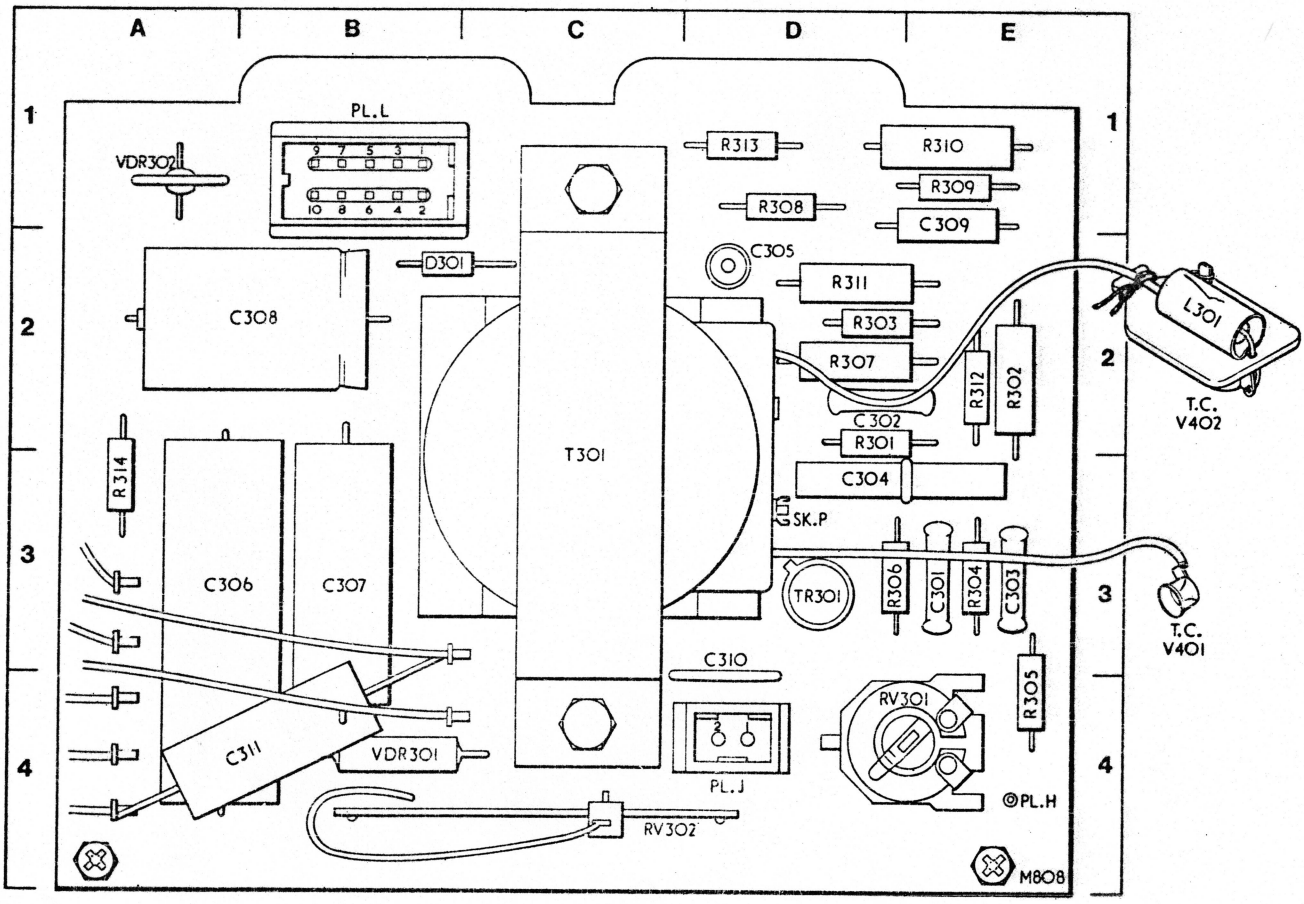
C211
TR202
C218
C201
C208
C207
R210
C221
R202
C202
Z201
C209
R201
R216
R213
R212
TR203
R214
R205
R203
R204
D203
R219
R225
R206
TR201
R232
R230
R228
R227
R229
R226
D206
R220
TR206
C214
VDR201
RV202
RV203
RV201
R223
R222
TR207
TR205
C220
C216
TR208
C222
C217
D205
R221
C219
R231
R224
C215
D204
M804

Fig. 9


A
B
C
D
E
1
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3
4
PL.L
VDR302
R313
R310
R309
R308
C309
C305
D301
C308
R311
R303
R307
L301
R312
R302
T.C.
V402
C302
R301
C304
T301
R314
SK.P
C306
C307
TR301
R306
C301
R304
C303
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V401
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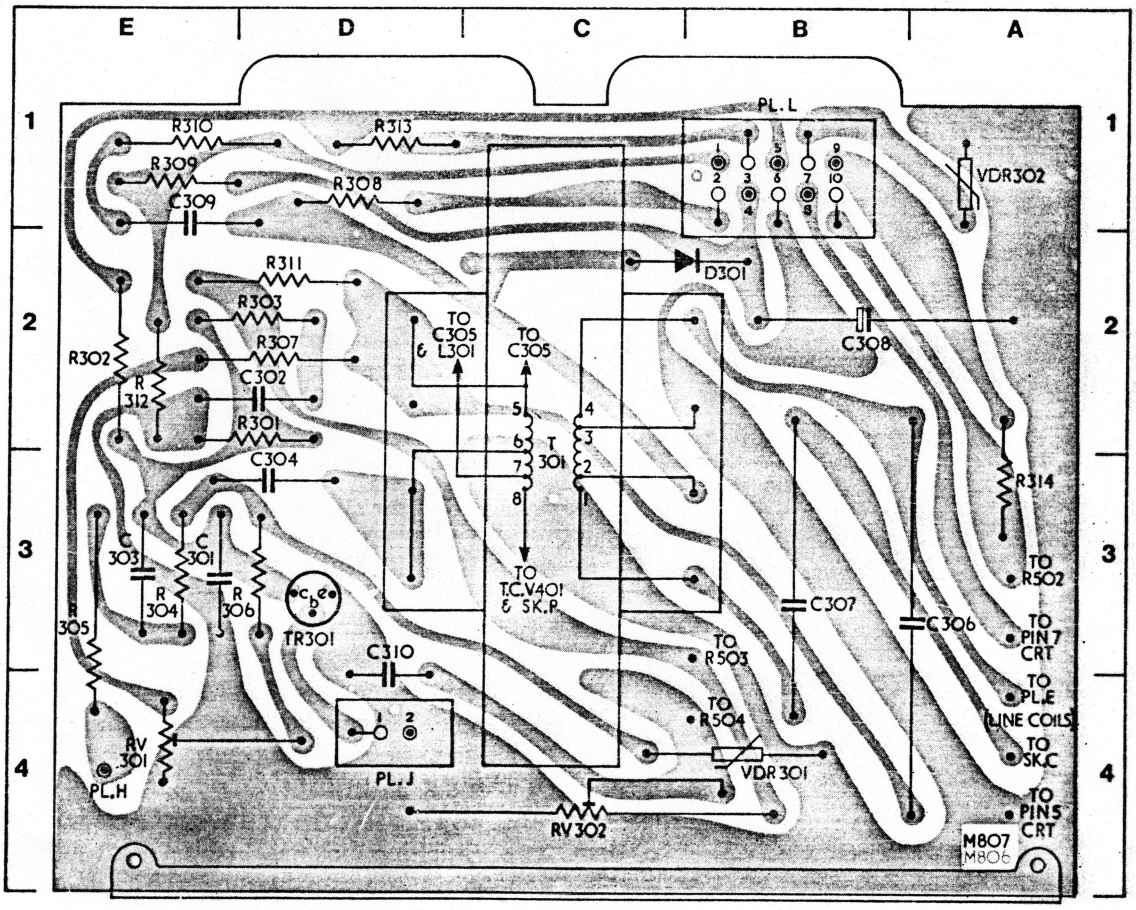
PL.J
PL.H
RV302
M808

Fig.11


E
D
C
B
A
1
2
3
4
PL.L
R310
R313
R309
R308
C309
VDR302
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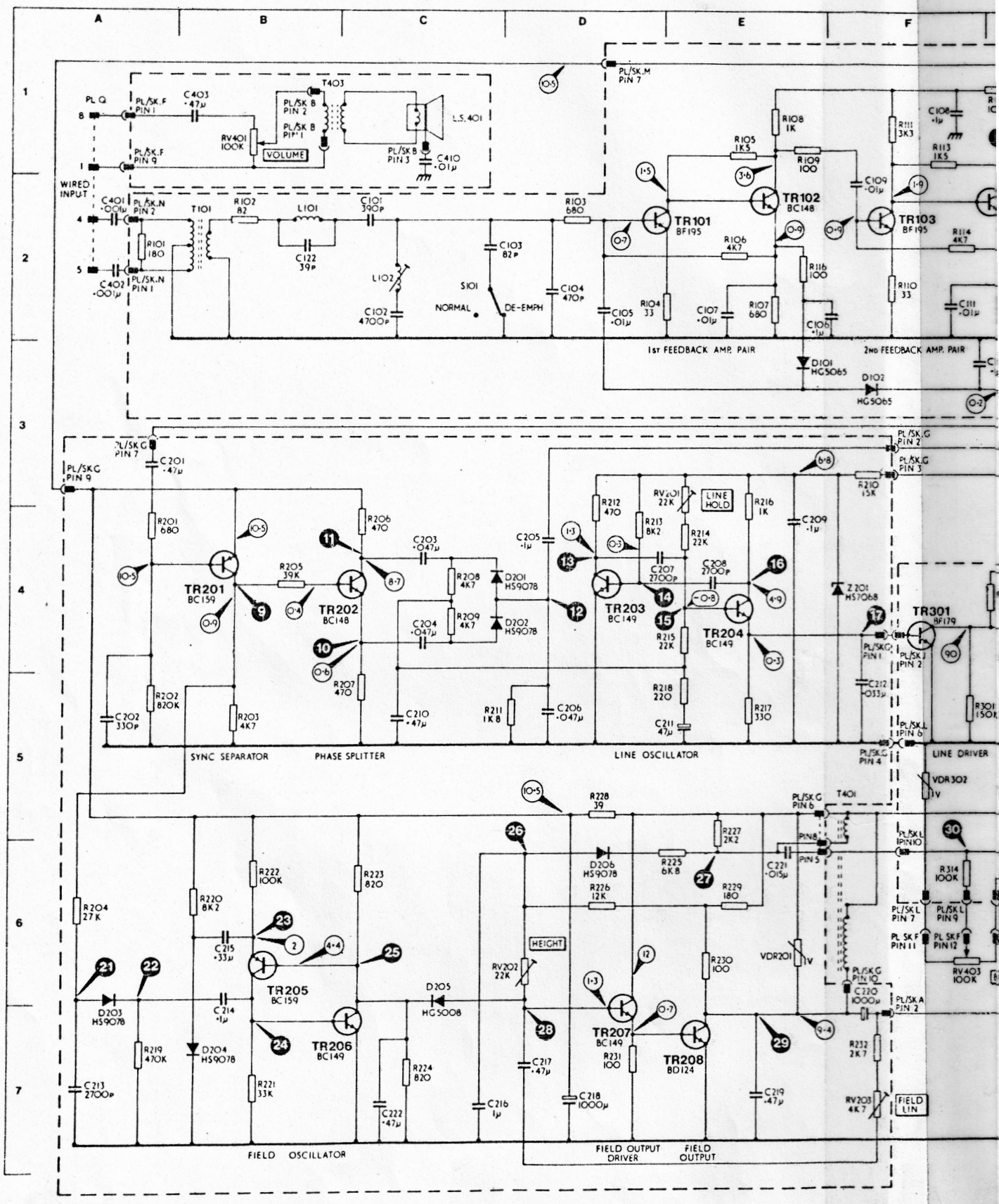
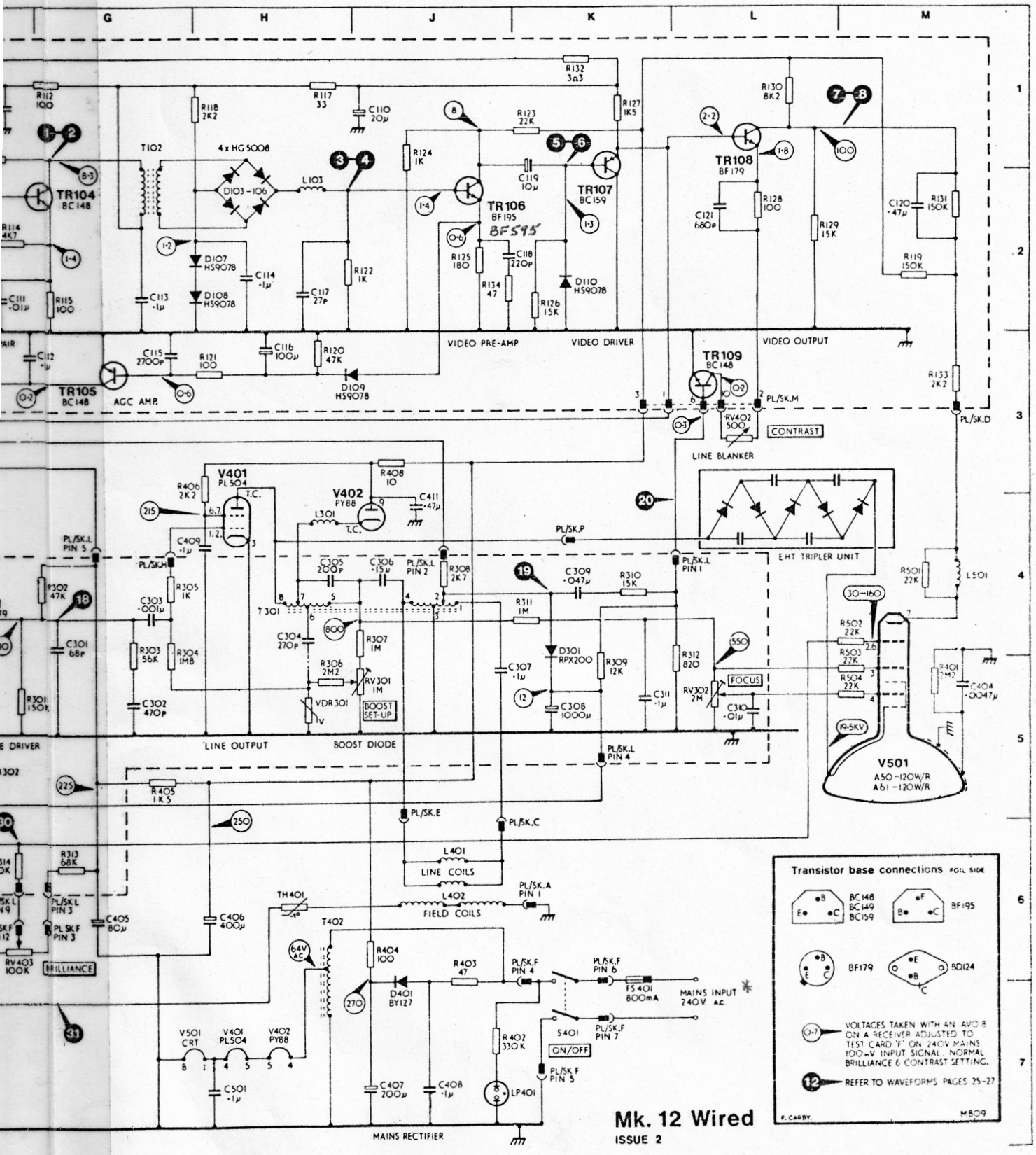
R311
R303
TO
C305
& L301
TO
C305
C308
R302
R307
R 312
C302
R301
T
301
C304
R314
C 303
C 301
R 304
R 306
TR301
TO
T.C.V401
& SK.P
TO
R502
C307
C306
TO
PIN 7
CRT
R 305
C310
TO
R503
TO
PL.E
LINE COILS
TO
R504
TO
SK.C
RV
301
PL.H
PL.J
VDR301
RV302
TO
PIN 5
CRT
M807
M806

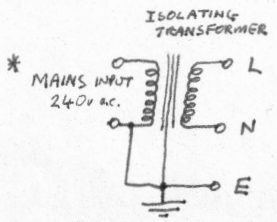
Fig.12


A
B
C
D
E
F
1
2
3
4
5
6
7
PL Q
WIRED INPUT
PL/SK.F PIN 1
PL/SK.F PIN 9
C403 ·47µ
T403
PL/SK B PIN 2
PL/SK B PIN 1
RV401 100K
VOLUME
L.S.401
PL/SK B PIN 3
C410 ·01µ
PL/SK.M PIN 7
C401 ·001µ
PL/SK.N PIN 2
C402 ·001µ
PL/SK.N PIN 1
T101
R102 82
L101
C101 390P
R103 680
R101 180
C122 39P
L102
C102 4700P
S101
NORMAL
DE-EMPH
C103 82P
C104 470P
TR101 BF195
TR102 BC148
TR103 BF195
R105 1K5
R108 1K
R109 100
R106 4K7
R116 100
R104 33
C105 ·01µ
C107 ·01µ
R107 680
C106 ·1µ
D101 HG5065
D102 HG5065
1ST FEEDBACK AMP. PAIR
2ND FEEDBACK AMP. PAIR
C109 ·01µ
R111 3K3
R113 1K5
C108 ·1µ
R114 4K7
R110 33
C111 ·01µ
PL/SK.G PIN 7
PL/SK.G PIN 9
C201 ·47µ
R201 680
TR201 BC159
R205 39K
R206 470
TR202 BC148
C203 ·047µ
R208 4K7
R209 4K7
D201 HS9078
D202 HS9078
C204 ·047µ
R207 470
R202 820K
C202 330P
R203 4K7
C210 ·47µ
R211 1K8
C206 ·047µ
C205 ·1µ
R212 470
RV301 22K
LINE HOLD
R213 8K2
R214 22K
C207 2700P
C208 2700P
TR203 BC149
TR204 BC149
R215 22K
R218 220
C211 47µ
R216 1K
R217 330
C209 ·1µ
Z201 HS7068
R210 15K
PL/SK.G PIN 2
PL/SK.G PIN 3
PL/SK.G PIN 1
PL/SK.J PIN 2
C212 ·033µ
PL/SK.L PIN 6
PL/SK.G PIN 4
TR301 BF179
R301 150K
SYNC SEPARATOR
PHASE SPLITTER
LINE OSCILLATOR
LINE DRIVER
VDR302 1V
R228 39
PL/SK.G PIN 6
T401
PIN 8
PIN 5
C221 ·015µ
R227 2K2
D206 HS9078
R225 6K8
R226 12K
R229 180
PL/SK.L PIN 10
R314 100K
PL/SK.L PIN 7
PL/SK.L PIN 9
PL SK.F PIN 11
PL SK.F PIN 12
RV403 100K
R204 27K
R220 8K2
R222 100K
R223 820
C215 ·33µ
TR205 BC159
D203 HS9078
C214 ·1µ
D204 HS9078
R219 470K
TR206 BC149
R221 33K
C213 2700P
D205 HG5008
R224 820
C222 ·47µ
C216 1µ
HEIGHT
RV202 22K
C217 ·47µ
C218 1000µ
R231 100
TR207 BC149
TR208 BD124
R230 100
VDR201 1V
PL/SK.G PIN 10
C220 1000µ
PL/SK.A PIN 2
R232 2K7
C219 ·47µ
RV203 4K7
FIELD LIN
FIELD OSCILLATOR
FIELD OUTPUT DRIVER
FIELD OUTPUT



Mk. 12 Wired

ISSUE 2



CABLEFORM ROUTING CHART

The routing diagram shows connections between sockets on the main cable harness. Connections between fixed components mounted on the chassis are not shown.

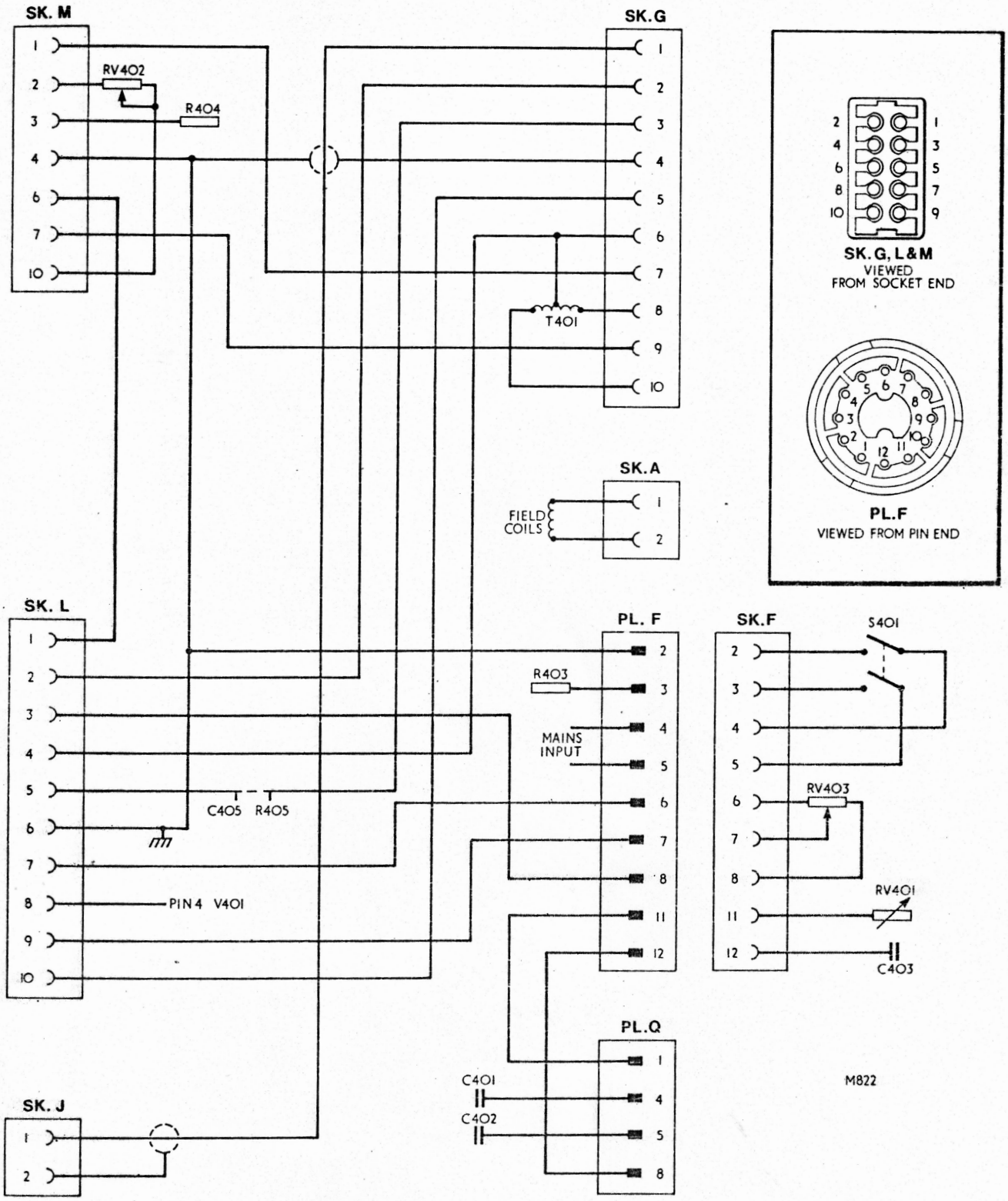
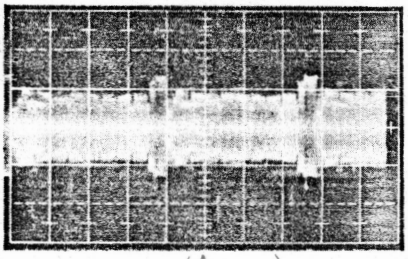


Fig. 15

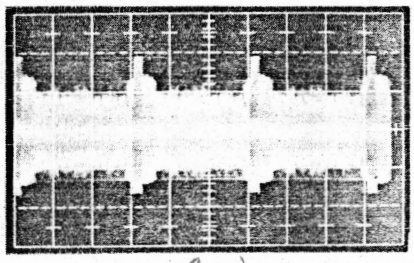
WAVEFORMS

Signal voltage waveforms taken with a Dynamco wide-band oscilloscope, on a receiver adjusted to test card 'F' with normal brilliance and contrast settings. A x10 low capacity probe was used. The figures below the waveforms indicate the horizontal and vertical scale per division on the graticule. Waveforms 7 and 8 vary with contrast setting.



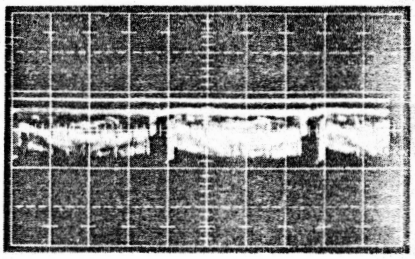
(frame)

1 5mS/cm – 2V/cm

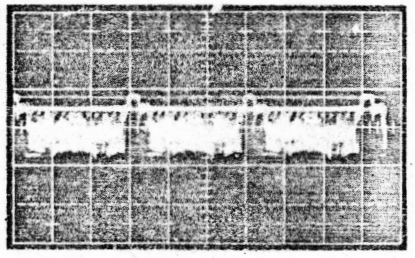


(line)

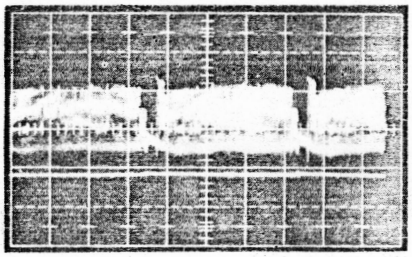
2 20μS/cm – 2V/cm



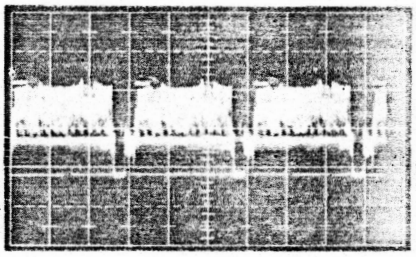
3 5mS/cm – 0.5V/cm



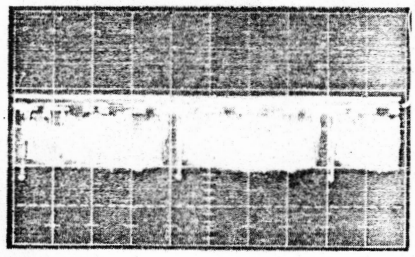
4 20μS/cm – 0.5V/cm



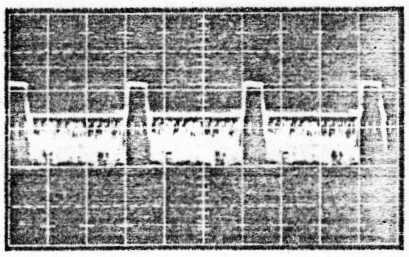
5 5mS/cm – 2V/cm



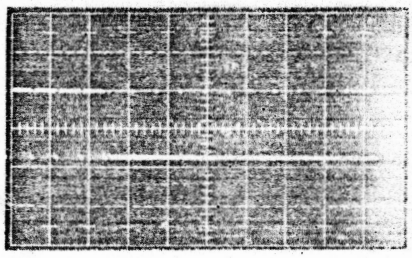
6 20μS/cm – 2V/cm



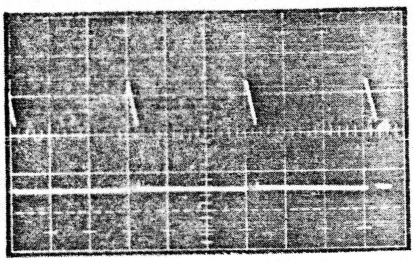
7 5mS/cm – 50V/cm



8 20μS/cm – 50V/cm



9 50μS/cm – 5V/cm



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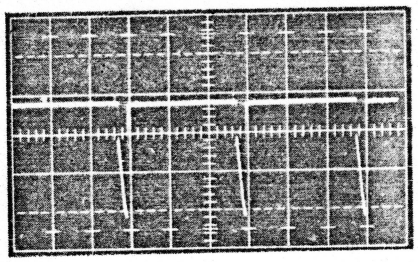
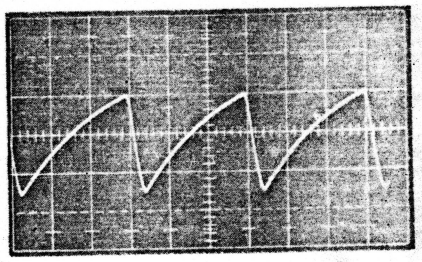
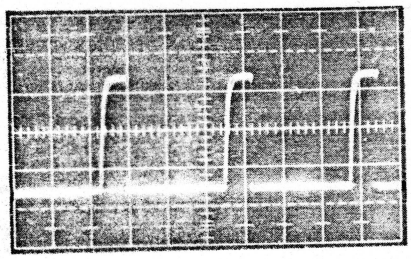


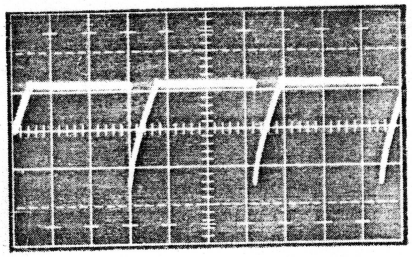
11 20μS/cm – 2V/cm



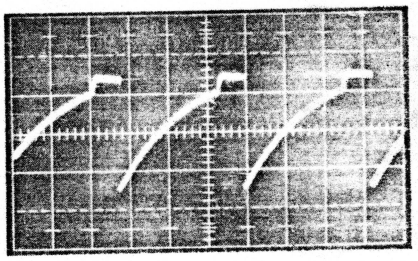
12 20μS/cm – 2V/cm



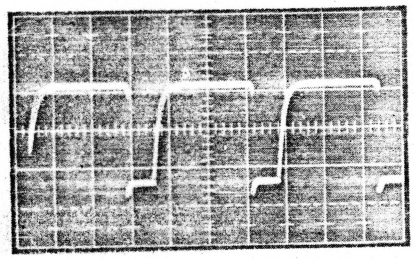
13 20μS/cm – 2V/cm



14 20μS/cm – 2V/cm



15 20μS/cm – 2V/cm



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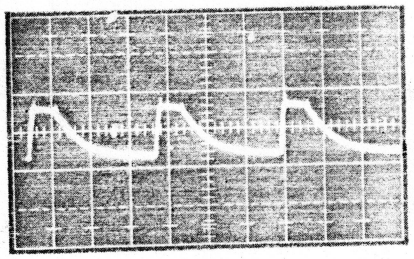
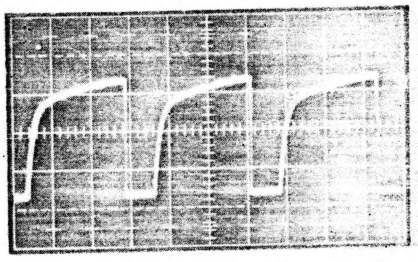
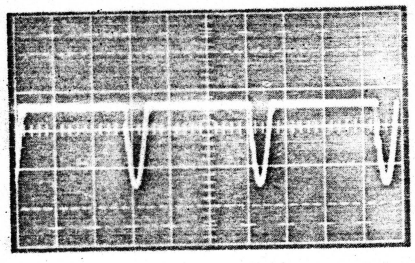


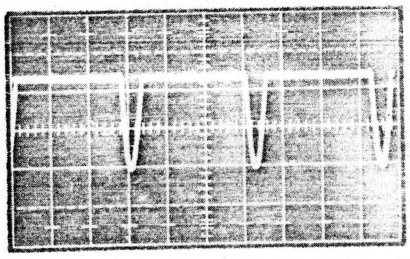
17 20μS/cm – 0.5V/cm



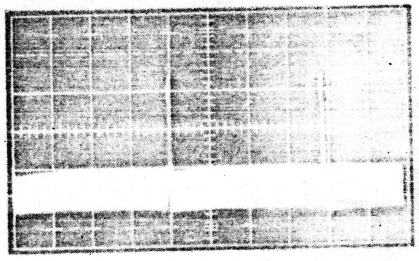
18 20μS/cm – 50V/cm



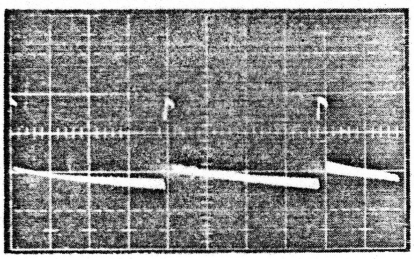
19 20μS/cm – 50V/cm



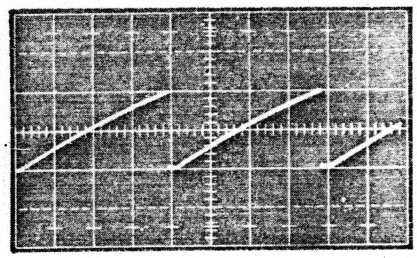
20 20μS/cm – 2V/cm



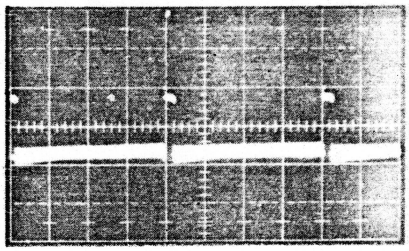
21 5mS/cm – 0.5V/cm



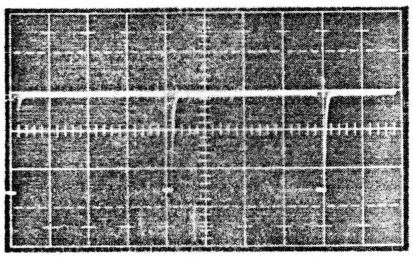
22 5mS/cm – 0.5V/cm



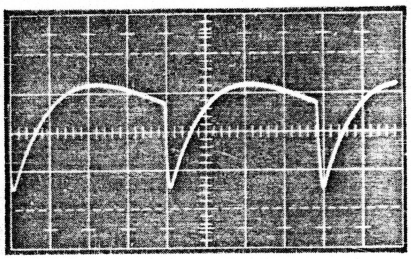
23 5mS/cm – 2V/cm



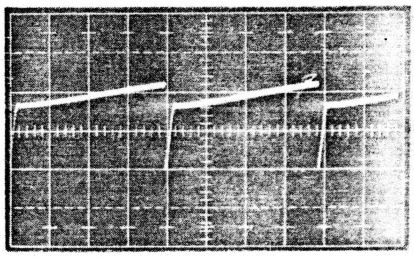
24 5mS/cm – 0.5V/cm



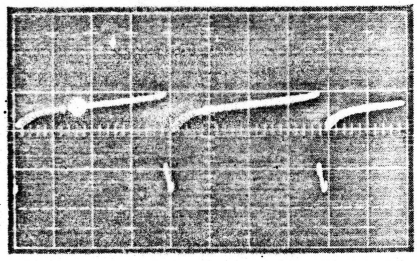
25 5mS/cm – 2V/cm



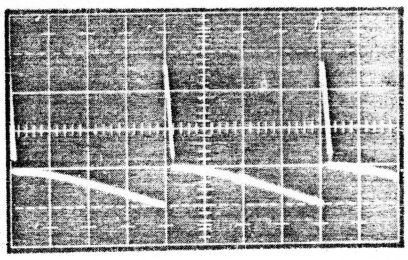
26 5mS/cm – 2V/cm



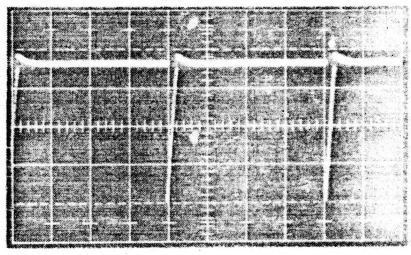
27 5mS/cm – 50V/cm



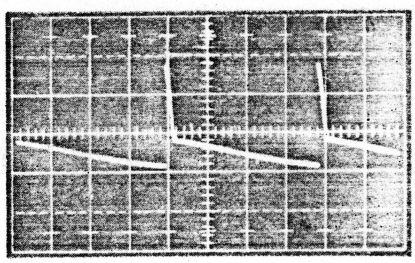
28 5mS/cm – 0.5V/cm



29 5mS/cm – 10V/cm



30 5mS/cm – 20V/cm



31 5mS/cm – 20V/cm