

ORAC MK III / ELECTRICAL JRC'S.

| DEG. NO. | DESCRIPTION | REMARKS. |
|----------|---|----------|
| 1 | L 1722 MAIN INTERCONNECTIONS — CABLES. | |
| 2 | S 1719 M 1718 M 1721 S 1844 Power Supply Unit — CIRCUIT DIAG. " " " — GEN. ARRGT. " " " — WIRING DIAGRAM. EM-STOP UNIT PC 1619 — L/O. | |
| 3 | L 1804 M 1714 Comstar VF PC 1690 — CIRC. DIAG. " " " — L/O | |
| 4 | S 1645 S 1610 REGULATOR BOARD PC 1608 — CIRC. DIAG. " " " — L/O | |
| 5 | M 1739 GEN. ARRGT. OF PC's 1690 & 1608 ABOVE. | |
| 6 | S 1698 BLUEREL BOARD PC 1693 — L/O | |
| 7 | MAN 1. MAN 2. S 1668 MOTOROLA INC — COPY VDU MANUAL PHILIPS — COPY VDU MANUAL MODULATOR PC 1626 — L/O ONLY. | |
| 8 | L 1723 RIBBON INTERCONNECTIONS. M 1918 KEYBOARD MEMBRANE CONNECTIONS S 1682 DATA CASSETTE / RACK INTERCONN S 1649 -12V DC CONNS ON AFEZ AC7151 PSU. S 1861 INTERCONNS FROM AFEZ 8151 PSU TO RACK S 1741 AUDIO CASSETTE — SUPPLY CABLE ETC. S 1632 " " — HEADPHONE JACK WIRINGS. | |
| 9 | M 1670 T10-A BOARD — CIRC. DIAG. S 1737 " " — L/O M 1669 T10-B BOARD — CIRC. DIAG. S 1738 " " — L/O M 1768 MP09 BOARD — L/O ETC. S 1639 VIM1 BOARD — L/O | |
| 10 | M 1612 RACK WIRING DIAGRAM. | |
| 11 | S 1853 OM6 SENSOR PC 1852 — L/O ETC. | |
| 12 | S 1609 GEN. ARRGT OF 'PARTITION' CHASSIS. — S 1946 S 1929 S 1933 S 1930 S 1934 S 1938 S 1944 RETRO-FIT INSTRUCTIONS - INCLINING TOOLPOST (ITP) — CONN. DIAG. Combined ESR / ITP BOARD PC 1921L — CIRC. DIAG. " " " " " " " — L/O ITP SENSOR BOARD PC 1928 — CIRC. DIAG. " " " " " " " — L/O ETC ITP. SENSOR DISC ENCODING. GUARD SWITCH (PC 1942) — C. L/O | |

S1844

ORG. NO.

BBM-SYNTTEL LTD.

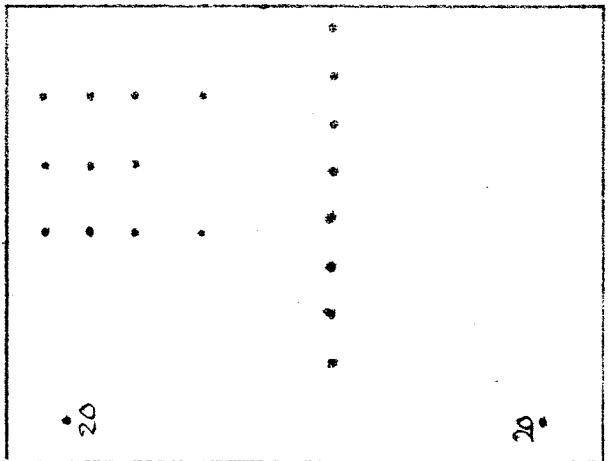
VICTORIA WORKS,
QUEENS MILL ROAD,
MUSDONERFIELD,
W. YORKSHIRE, HG9 1 2PR
Phone: 0423 38101/2

DRILLING DETAILS & COMPONENT LAYOUT: PC1619
ORAC EMERGENCY STOP RELAY BOARD.

TMU

UNWORKED HOLES N°54

20.



VDR
ACROSS COIL
ON REAR.

24 VAC

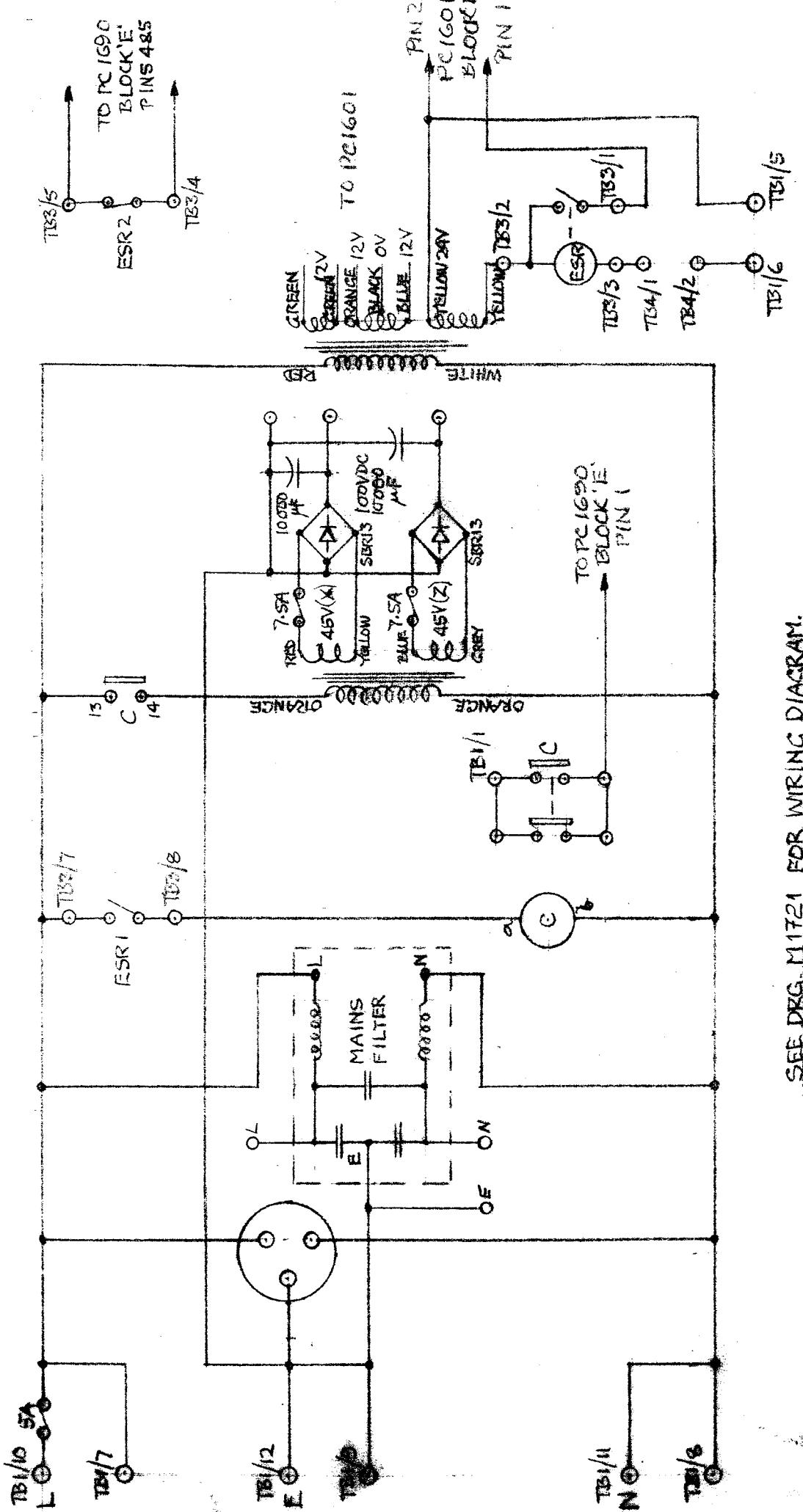
TYPE
60-43
RELAY
coil

| | | | | | | | | | | | | | | | | | | | |
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8 WAY
MK10
T.B.

○

○



ORG. NO.

S1719

GM ELECTRICAL CONTROLS LTD.

 VICTORIA WORKS,
 QUEENS MILL ROAD,
 HUDDERSFIELD,
 W. YORKS. HD1 3PP
 PHONE 01483 351672

DRG. NO.

 DRG. NO.
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 DRG. NO.

SERIAL NO.

SERIAL NO.

DATE

DATE

PAGE

PAGE

CIRCUIT DIAGRAM OF ORAC POWER SUPPLY
 DATE 24. II. 82.

RACK A'

PIN 1 - VOL/PIN7
 - 3 - P/S TM371 EARTH/SCREEN
 - 4 - FILTER SIDE B. & GREEN
 - 5 - " " N/BLUE
 - 6 - " " L/RED
 4 CORES & GND.
 OMIT YELLOW
 - 8 - CAPACITOR Z/PIN-
 - 9 - - Z/PIN+
 - 10 - - X/PIN+

RACK 'B'

PIN 1 - PC1680 BLOCK 'D'. PIN 17. 200E
 - 2 - 2/85.
 - 3 - 3/200E
 - 4 - 4/85
 - 5 - BOTH SIDES OF ABOVE CABLES
 - 6 - PC1690 BLOCK 'A' N/G
 - 8 - POWER SUPPLY TM371 EARTH
 - 9 - - Z/PIN+
 - 10 - - X/PIN+

RACK 'C'

PIN 1 - HEADSOCK SOCKET. PIN 10
 - 2 - 2/85.
 - 3 - 3/200E
 - 4 - 4/85
 - 5 - 5/85
 - 6 - 6/85
 - 7 - 7/85
 - 8 - 8/85
 - 9 - 9/85
 - 10 - 10/85

PC1601

BLOCK 'A'

PIN 1 - PC1680 BLOCK 'C'
 - 2 - 7
 - 3 - 4
 - 4 - 1
 - 5 - 12
 - 6 - 9
 - 7 - 6
 - 8 - 3
 - 9 - 7
 - 10 - 4

PC1680

BLOCK 'C'

PIN 1 - HEADSOCK SOCKET. PIN 10
 - 2 - 7
 - 3 - 4
 - 4 - 1
 - 5 - 12
 - 6 - 9
 - 7 - 6
 - 8 - 3
 - 9 - 7
 - 10 - 4

PC1601

BLOCK 'B'

PIN 1 - YELLOW
 - 2 - 2
 - 3 - BLACK
 - 4 - ORANGE
 - 5 - BLUE
 - 6 - GREEN
 - 7 - - 2

PC1690
BLOCK 'E'

PIN 1 - PC1680 BLOCK 'E'
 - 2 - 2/YELLOW
 - 3 - 3/BLUE
 - 4 - TB3. PIN4. } POWER
 - 5 - - . . 5. } SUPPLY
 - 6 - YELLOW
 - 7 - BLUE
 - 8 - RED
 - 9 - GREEN/S.

PC1690

BLOCK 'F'

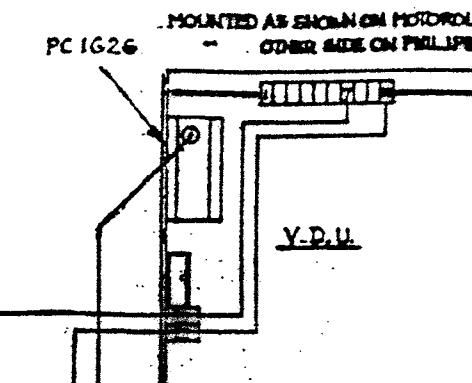
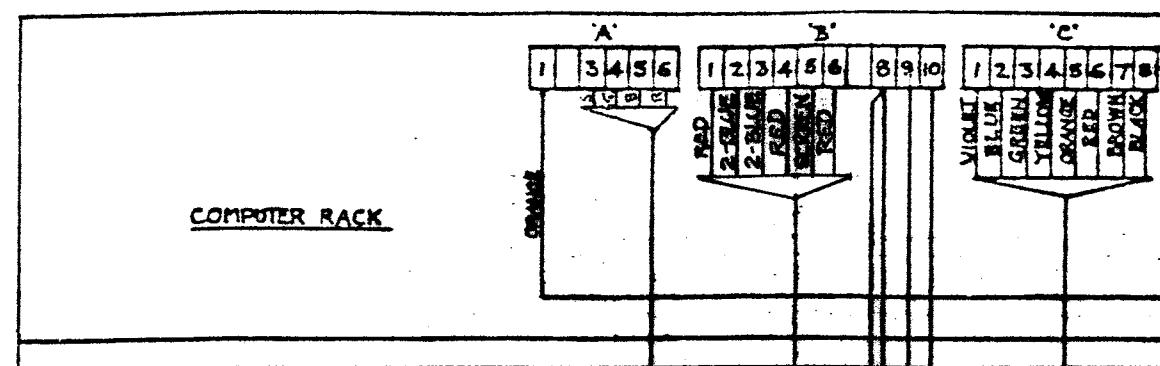
PIN 1 - TB1. PIN4. GREEN } PARAJUST
 - 2 - 2/RED } MODULE
 - 3 - 3/BROWN } SCREEN EARTHED AT MODULE END ONLY
 - 4 - TB3. PIN4. } POWER
 - 5 - - . . 5. } SUPPLY
 - 6 - LINE
 - 7 - NEUTRAL } MAINS INPUT
 - 12 - EARTH } SOCKET
 - 1 - FROM CONT. -33
 - 2 - YELLOW. PIN2 } PC1690
 - 3 - BLUE. PIN3 }
 - 4 - SCREEN. PIN4. } BLOCK 'E'

POWER PACK

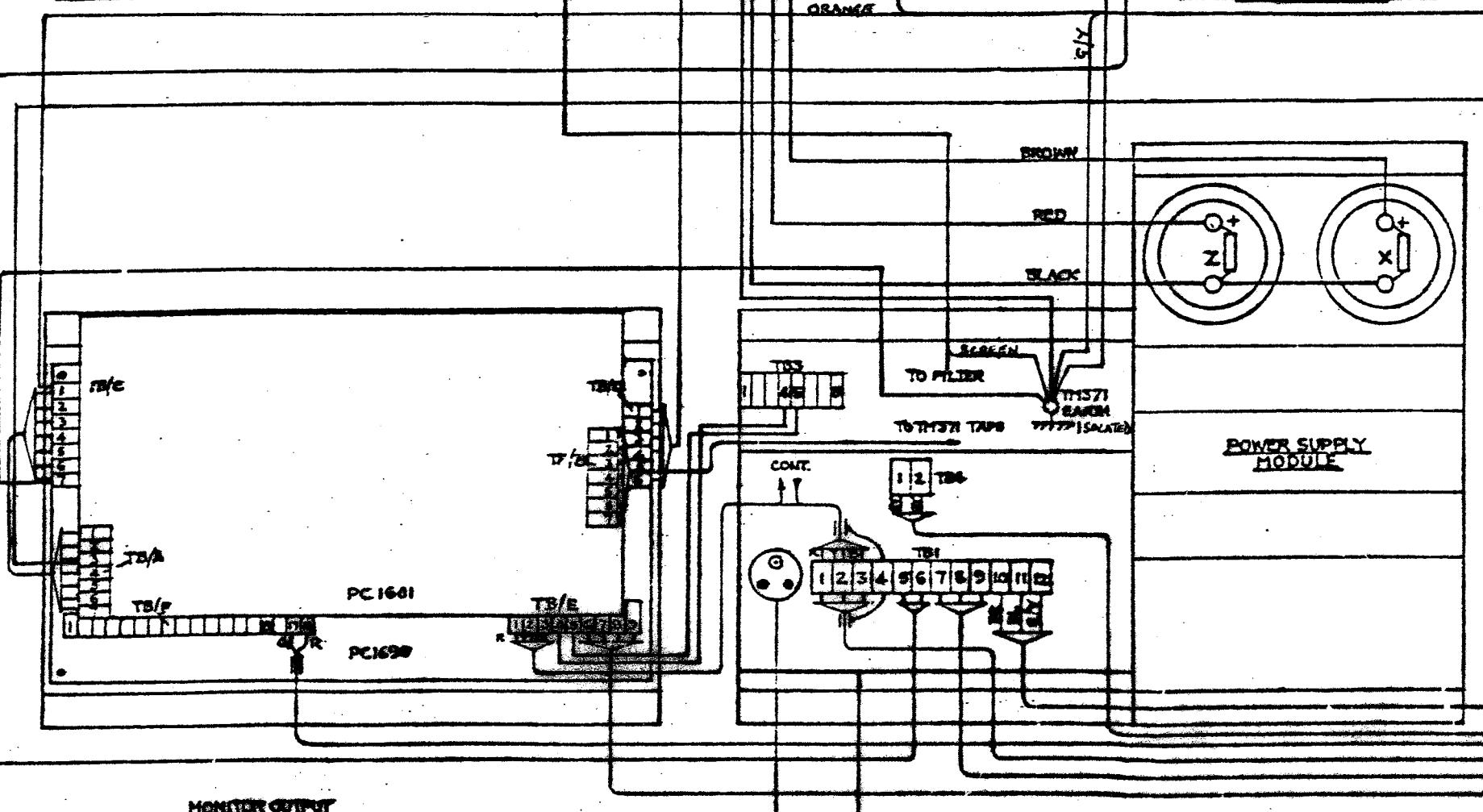
T.B.1

PIN 5 - BROWN } EMERGENCY
 - 6 - BLUE } STOP
 - 7 - BROWN -TB2.PIN1
 - 8 - BLUE - - - 2 } PARAJUST
 - 9 - G/Y - - - 3
 - 10 - LINE
 - 11 - NEUTRAL } MAINS INPUT
 - 12 - EARTH } SOCKET
 - 1 - FROM CONT. -33
 - 2 - YELLOW. PIN2 } PC1690
 - 3 - BLUE. PIN3 }
 - 4 - SCREEN. PIN4. }

EMER-STOP
 also



COMPUTER RACK



THIS TRANSFORMER TERMINAL BOARDS SHOWN IN ELEVATION

REVISED EDITION 2000
 ADD. SEC.

TITLE: WIRING DIAGRAM SHOWING SINGLE PHASE AND
 SCREENED CABLE SCREWED CONNECTIONS ON MAINS AC/DC AIDS

RED. SCALE
 1:1

1:1

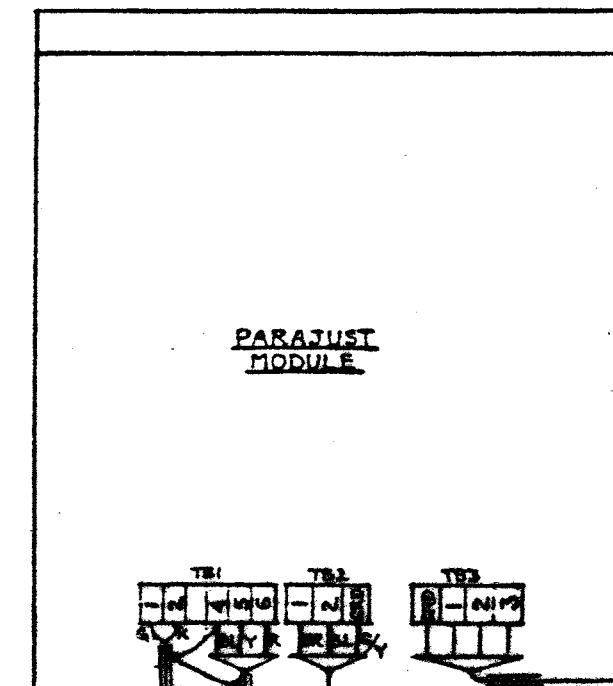
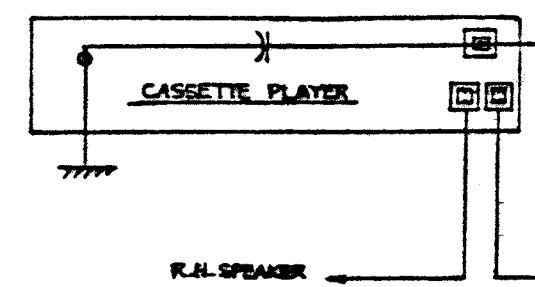


GEM ELECTRICAL CONTROLS LTD.
 VICTORIA WORKS,
 GLOUCESTER ROAD,
 NEWCASTLE,
 N.W. YORKS. NG1 3PZ
 PHONE 061 251002

1:1

L 1722

— THESE UNITS SHOWN
 IN ELEVATION



PARAJUST
 MODULE

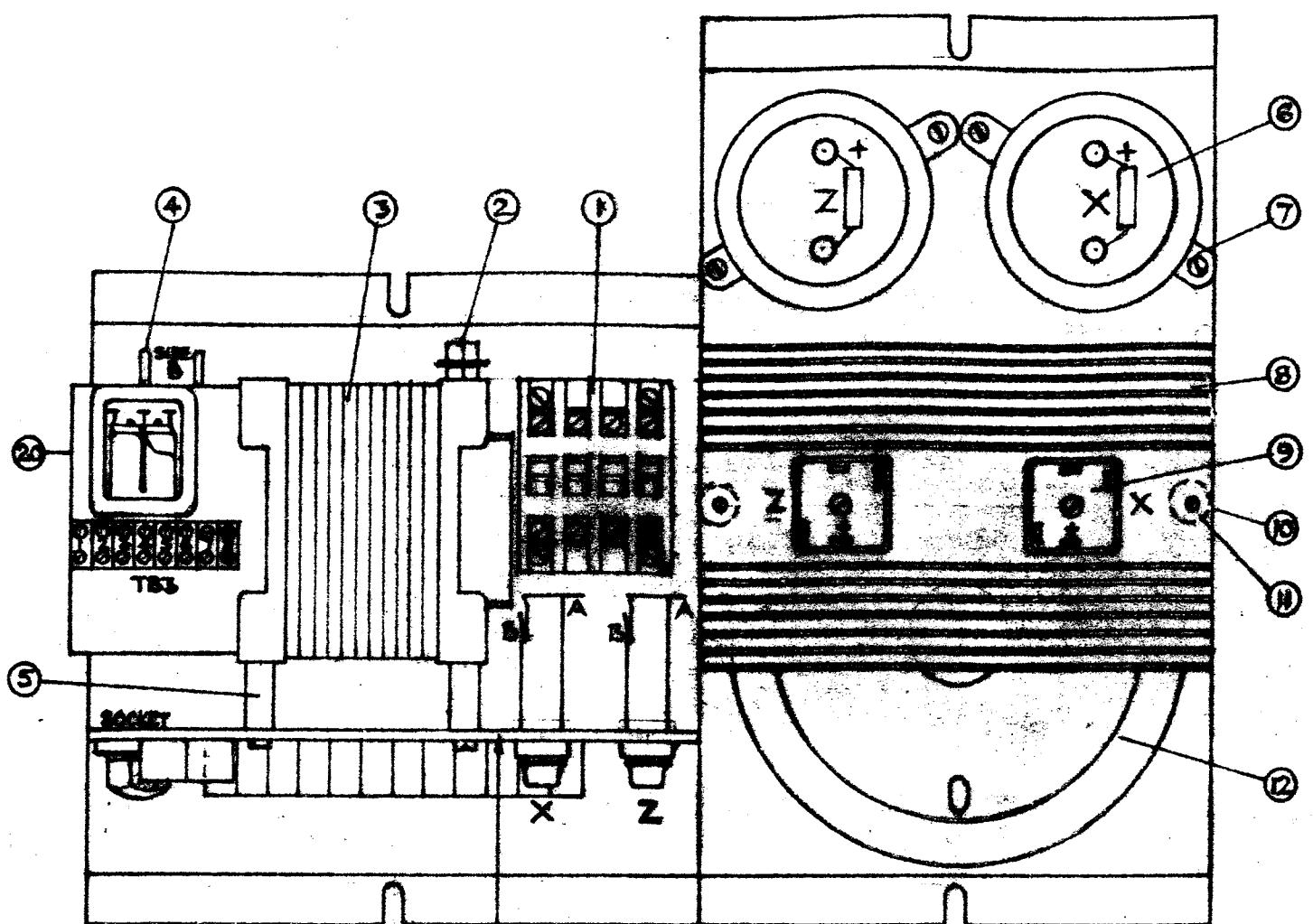
MAIN DRIVE
 — THESE UNITS SHOWN
 IN PLAN

MAINS
 INPUT SOCKET

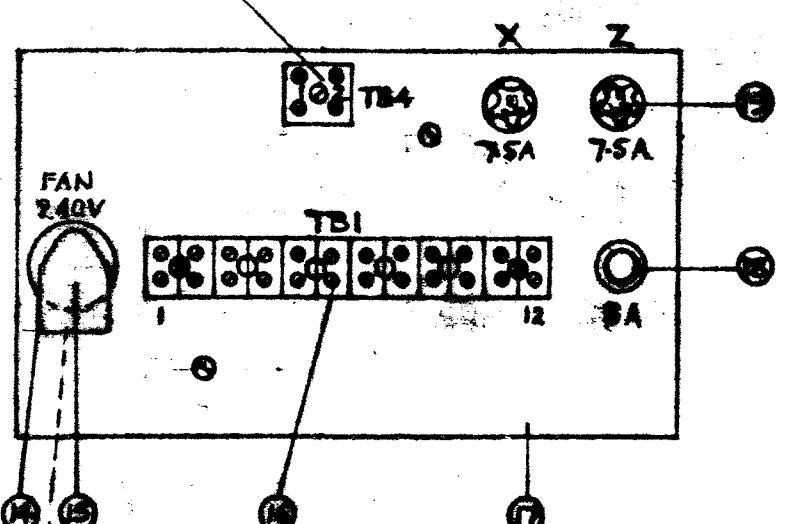
12 CORES IN SLEEVE
 TO MAINS SOCKET

PC1607

| ITEM NO | DESCRIPTION | G.S.M. PART NO. | NR OFF | REMARKS. |
|---------|--|-----------------|--------|--|
| 1 | BENEDICT & JAGER KSA315 CONTACTOR | CR126 | 1 | 240VAC COIL. PLATE NUTS AND CLAMP WASHERS INC. |
| 2 | 25A X 7/8" EARTH STUD | | 1 | |
| 3 | CONTROL TRANSFORMER | TM314 | 1 | |
| 4 | MAINS FILTER | GH185 | 1 | N3 230-450V 2A 321-AED/T.S |
| 5 | 48AX 7/8" INS. PILLARS | GH174 | 4 | |
| 6 | 10,000UF/100VDC CAPACITOR | C151 | 2 | |
| 7 | 2 1/2" CAPACITOR CLIP | GH158 | 2 | |
| 8 | GM-1 HEATSINK | SA46 | 1 | |
| 9 | SK825/02 DIODE RECTIFIERS | SR13 | 2 | |
| 10 | 1/2" DIA. INS. TUBE PILLARS | | 2 | 85mm LONG |
| 11 | 2BA SCREWED ROD | | 2 | 95mm LONG |
| 12 | D.C. SUPPLY POWER TRANSFORMER | TM316 | 1 | TYPE 32025 TOROIDAL |
| 13 | | | | |
| 14 | L1436 B3 SOCKET | TS63 | 1 | BELLING LEE |
| 15 | L1436 4P PLUG | TS62 | 1 | " " |
| 16 | MK3 12 WAY T.B. | TS29 | 1 | |
| 17 | NON FUSIBLE FUSE 5A T.O. MOUNTING PANEL | | 1 | 117X102MM 3MM BLACK PLASTIC |
| 18 | FUSE HOLDER | PD3 | 1 | 5A 20mm FUSE |
| 19 | FUSE HOLDER | PD65 | 2 | 5A 1 1/4" FUSE |
| 20 | PC 1619 COMPLETE | | 1 | |
| 21 | MK3 2 WAY T.B. | TS29 | 1 | CUT TO 2 WAY |



FOR DETAILS OF TRANSFORMER MOUNTING PANEL, SEE ON RIGHT



REVISIONS PC 1619 ADDED, FUSES
ALTERED, TB4 ADDED - 12.11.82.

TB2 (ITEM 13) REMOVED
10.8.83

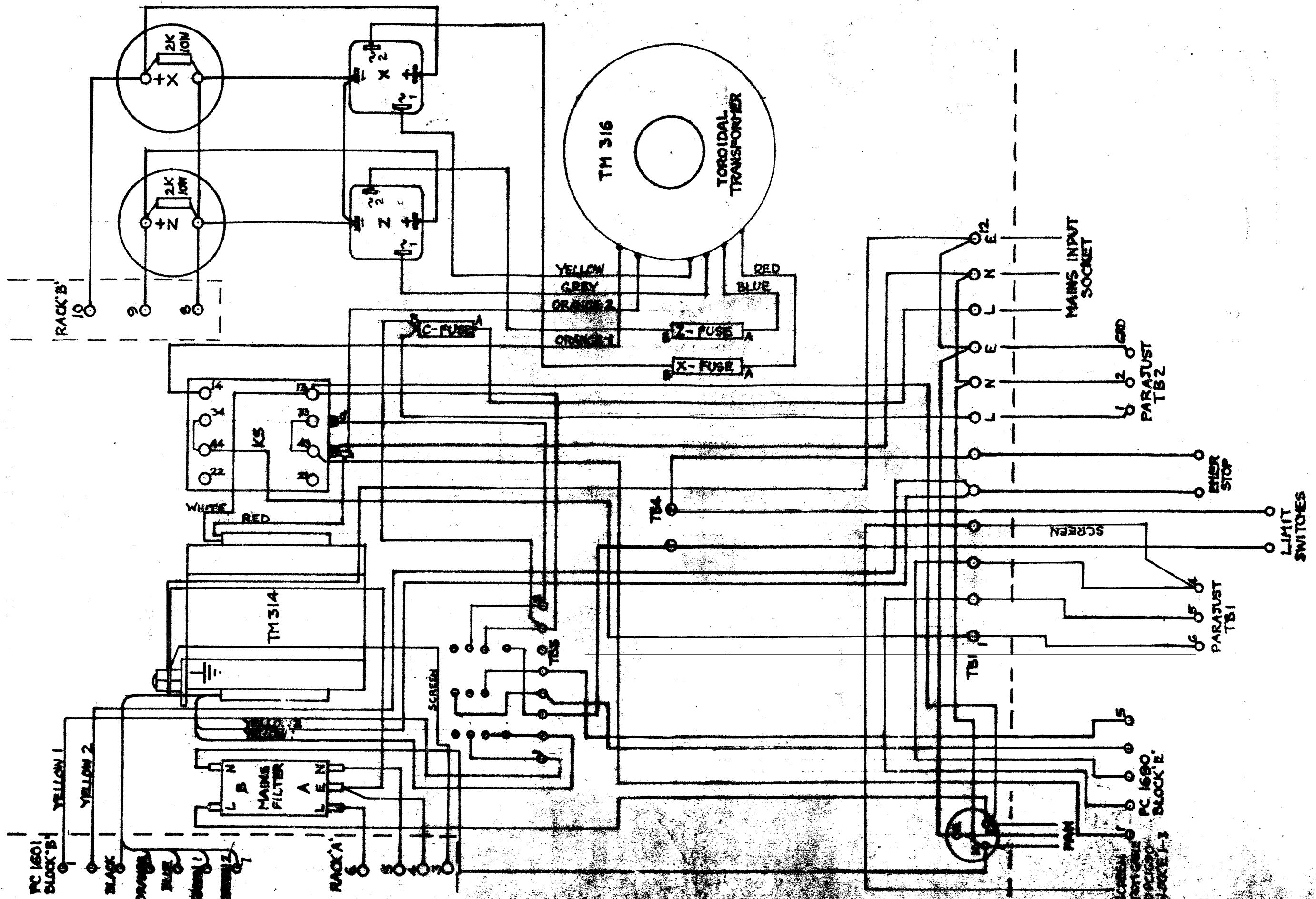
RED. SCALE

| | |
|------------|---------|
| RED. SCALE | |
| DATE | 12.7.82 |
| DRAWN. | 3/3 |
| DESIGN. | |

BSM ELECTRICAL CONTROLS LTD.
VICTORIA WORKS,
QUEENS MILL ROAD,
HUDGEMFIELD,
W. YORKS. HG1 3JY
PHONE 0484 331012

DRG. NO.

M 1718



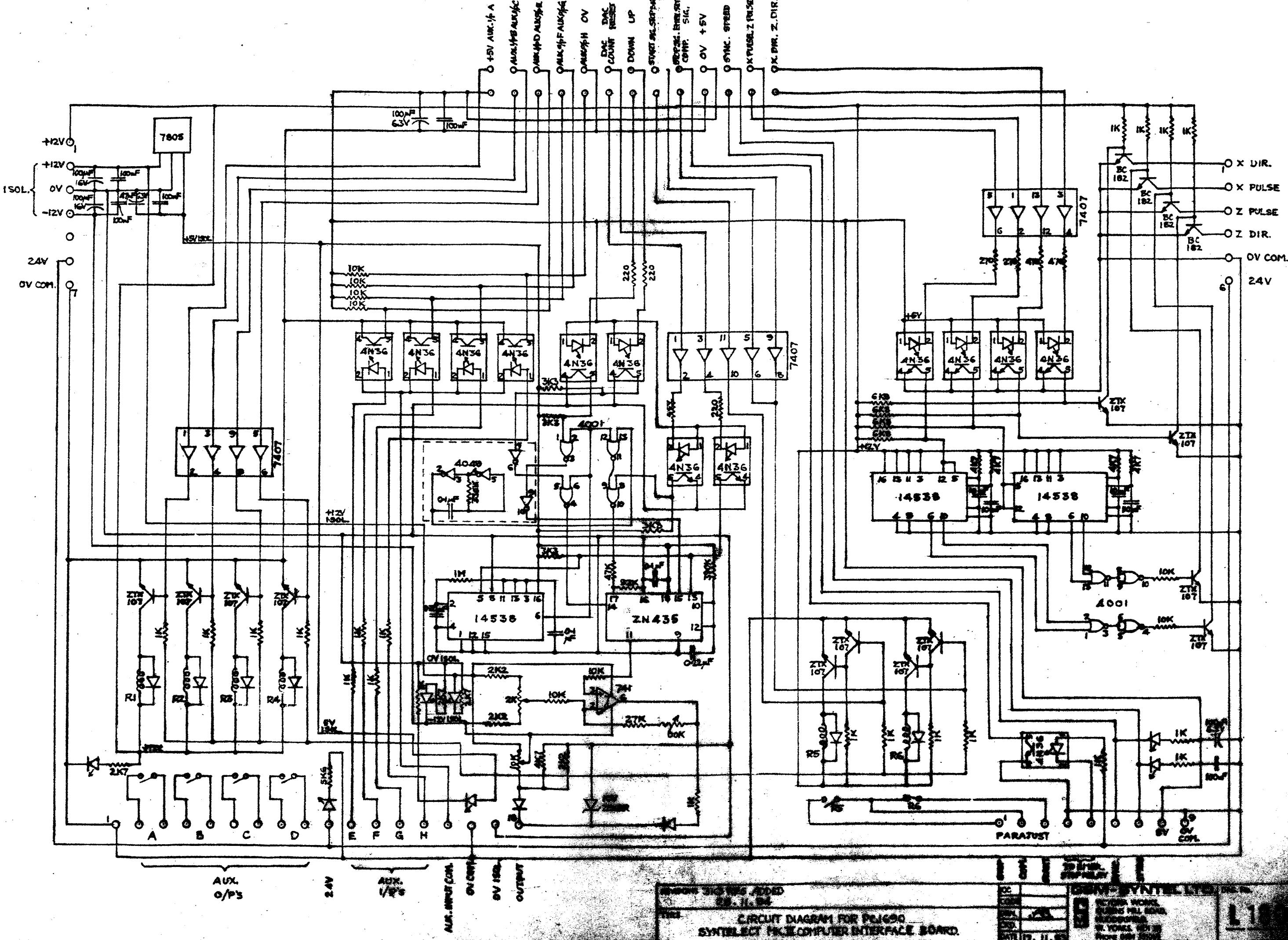
SEE DRAWING 31719 FOR CIRCUIT DIAGRAM.

WIRING DIAGRAM FOR 'ORAC' POWER SUPPLY

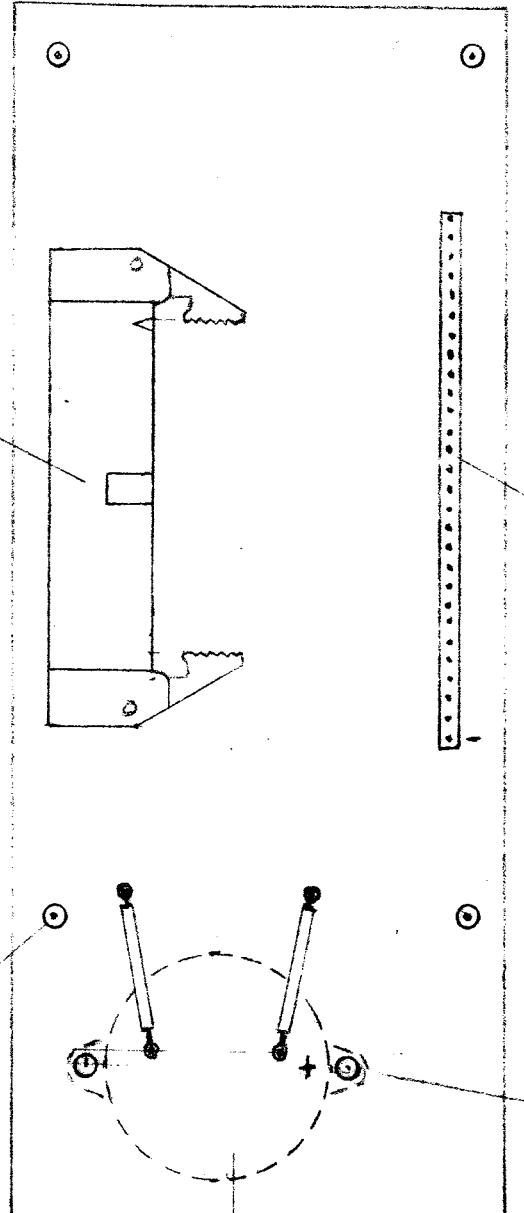
| REV. | DATE |
|--------|-----------|
| DESIGN | CKD. |
| DATE | 14. F2.62 |

RHM ELECTRONIC CONTROLS LTD.
VICTORIA WORKS,
QUARRY MILL ROAD,
HUDDERSFIELD,
WEST YORKS. HD9 3JY
PHONE 0484 351002

M 1721



TERMINAL PINS (20P)



BEEPER MOUNTED ON TRACK SIDE

BBA FIXING SETSCREWS AND NUTS

34 WAY MOLEX RIGID ANGLE CONNECTOR - TYPE 5340-2841

28 WAY MOLEX STAGGER ROW CONNECTOR - TYPE 4030-2842

DRG. No.

S 1698

GSM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3PJ
PHONE 0484 351012

| JOB CODE | DRG. NO. |
|----------|----------|
| DIN. 223 | |
| CXO. | |

COMPONENT LAYOUT FOR PC1692 - SYNTSELECT MKIII
KEYBOARD CONNECTOR & BLEEPER

PC1692
SYNTSELECT
MKIII
KEYBOARD CONNECTOR & BLEEPER

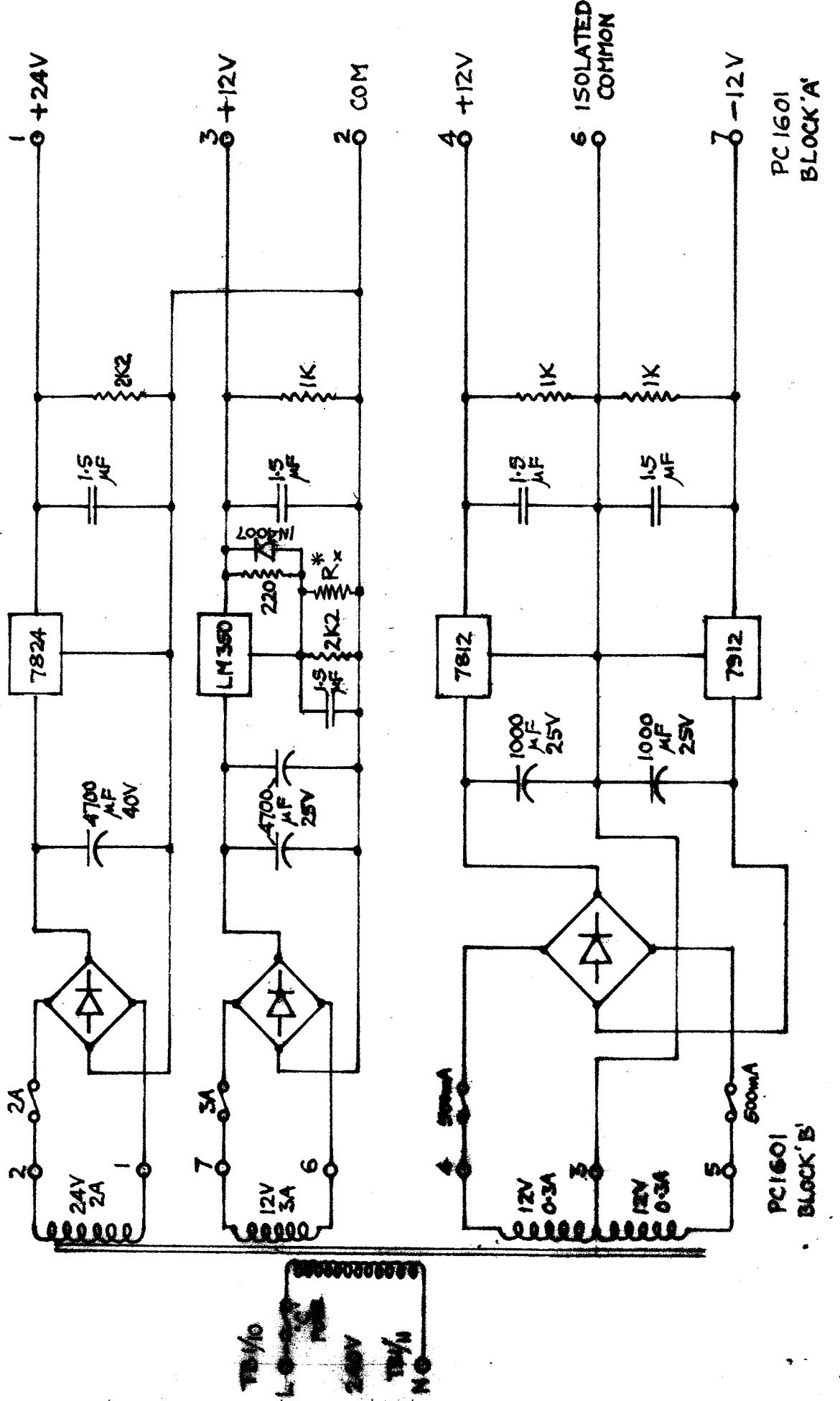


Fig. 1. R₁ is a trimming resistor - normally 15 k_Ω.

Block 'B'

CIRCUIT DIAGRAM FOR PC 1601 POWER SUPPLY REGULATOR BOARD

VICTORIA WORKS,
QUEENS TERRACE ROAD,
HUDSONSBURG.
W. YORKS. MDL 31612
PHONE 094-331612

12

www.elleclicca.com.it

S 1645

S 1610

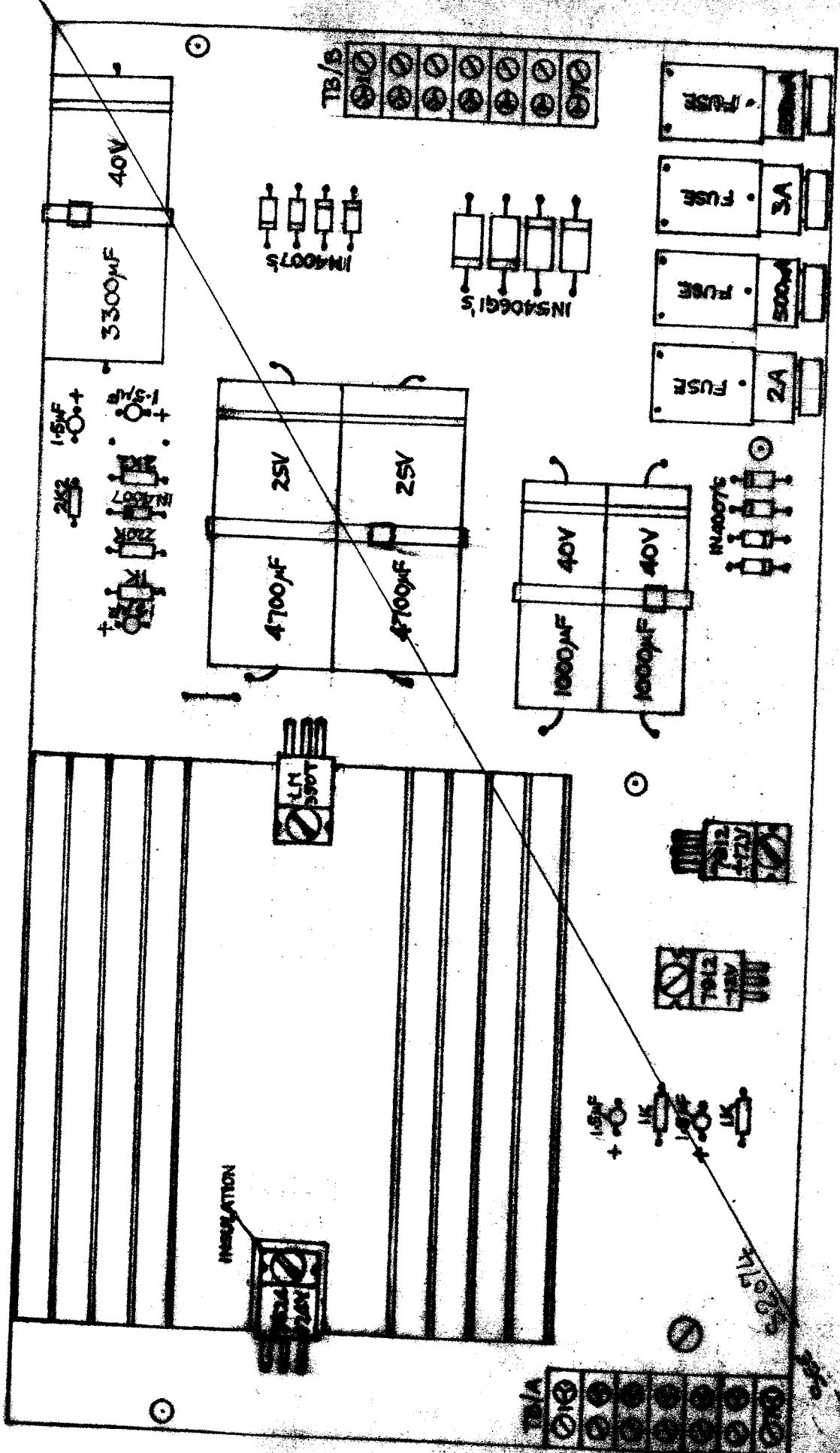
GEC ELECTRICAL COTTONS LTD. ORG. NO.

VICTORIA WORKS,
QUEEN'S TELL ROAD,
HUDSONFIELD,
W. YORKS. HU 3 3P
PHONE 061 351012



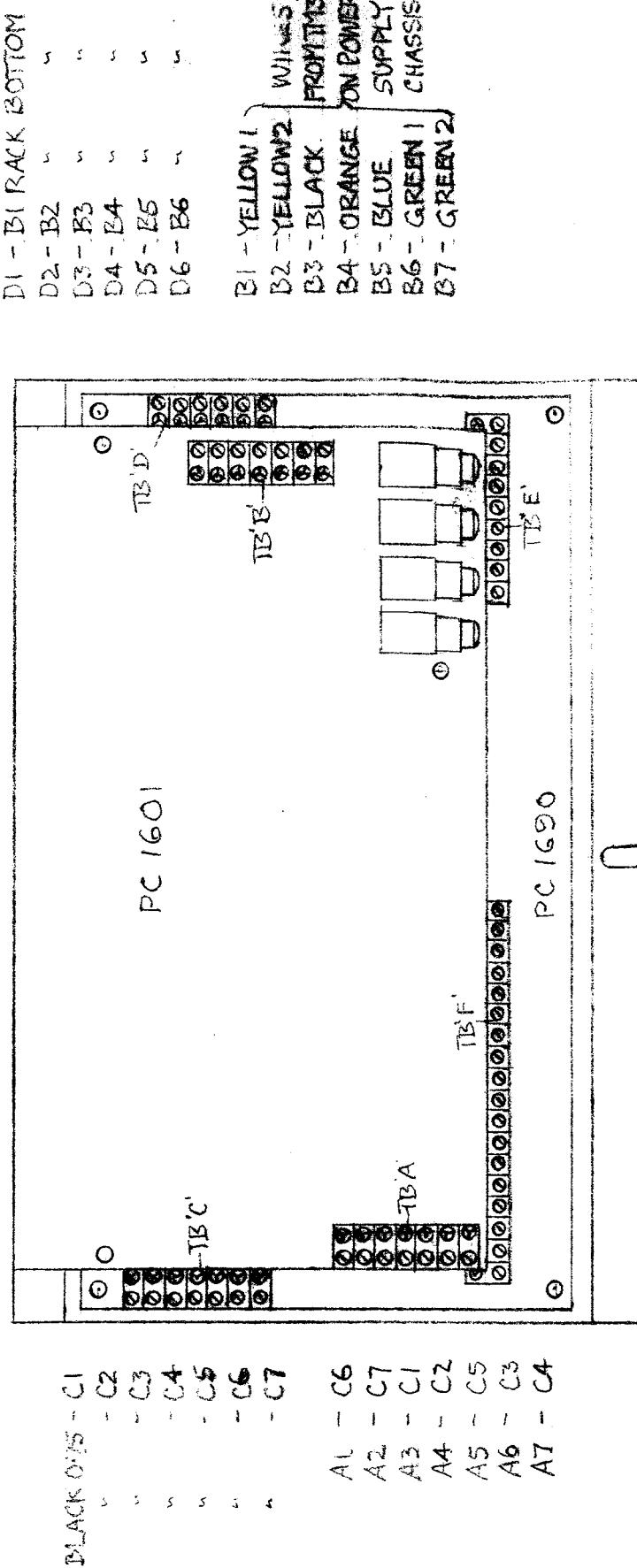
3.62

PRINTED CIRCUIT BOARD
PC 1610
PC 1610 SERVING MACHINE



NOTE
 C7 HAS A 15G/Y EARTH LEAD FROM P.S.U.
 C1 HAS AN ORANGE LEAD FROM INSR. LAMP
 A3 HAS A RED LEAD FROM CASSETTE.

D1 - RED } 2 CORE SCREENED
 D2 - BLUE }
 D3 - BLUE } 2 CORE SCREENED
 D4 - RED }
 D5 - BOTH SCREENS FROM ABOVE
 D6 - RED 0.75.

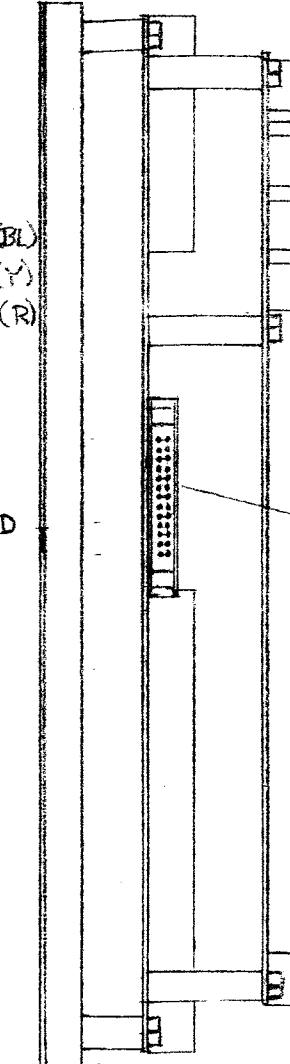


4 CORE SCREENED
 TO SENSOR BOARD
 PC 1685

9 - PC1685.TB1/1 (G & S)
 8 - PC1685.TB1/2 (R)
 7 - PC1685.TB1/3 (BL)
 6 - PC1685.TB1/4 (Y)
 5 - P.S.U.-TB3/5
 4 - P.S.U.-TB3/4
 3 - P.S.U.-TB1/3 } 4 CORE (BL)
 2 - P.S.U.-TB1/2 } SCREENED (Y)
 1 - P.S.U.-'C' 43) MAIN PSU (R)

18 - P/JUST. TB1/2 (R) } 4 CORE
 17 - " TB1/1 (G) } SCREENED

16
 15
 14
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 2
 1
 COMMON.



DRAWING NO. S.1610 - COMPONENT LAYOUT OF PC1690
 M.1714- PC1690

REVISIONS

TITLE

GENERAL ARRANGEMENT AND CONNECTIONS FOR PC 1690 & PC 1601
 'ORAC' COMPUTER P.S.U. & INTERFACE BOARDS

| JOB CODE | DRN. |
|----------|---------|
| | 9.83. |
| CKD. | DATE |
| | 31.8.83 |

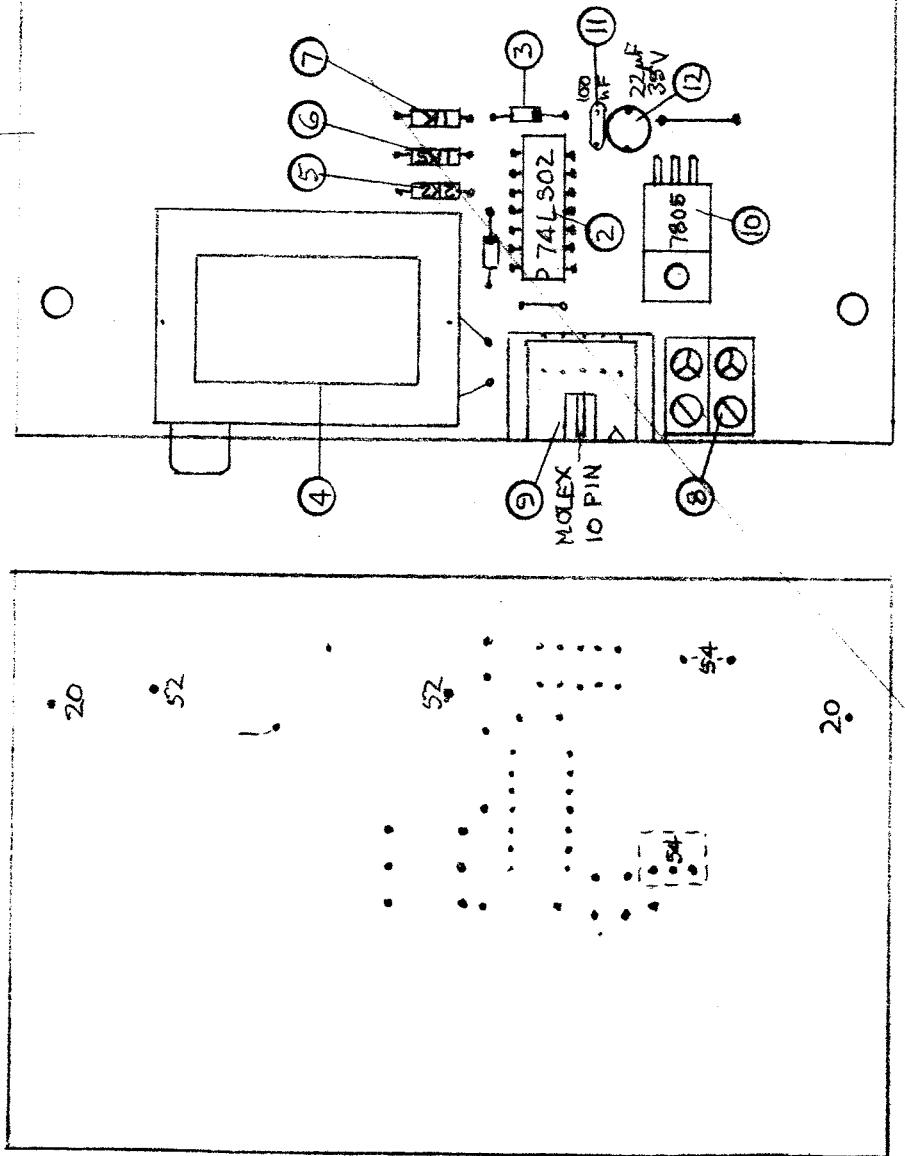
GSM ELECTRICAL CONTROLS LTD.
 VICTORIA WORKS,
 QUEENS MILL ROAD,
 HUDDERSFIELD,
 W. YORKS. HD1 3PJ
 PHONE 0484 351012

DRG. NO.

M 173

| ITEM No. | DESCRIPTION | C.S. PART No | No OF | REMARKS |
|-------------|----------------------------------|-----------------|----------|-----------------|
| 1 | P.C. BOARD. | TR/C26 | 1 | |
| 2 | N74LS02N | SIC 46 | 1 | |
| 3 | BAX1301 DIODE | SDS20 | 2 | |
| 4 | UNI-III E36 MODULATOR | CH197 | 1 | |
| 5 | 2K2.4W RES. | XR222 | 1 | |
| 6 | 1K5. " " | XR.152 | 1 | |
| 7 | 1K. " " | XR.102 | 1 | |
| 8 | 3WAY TERM BLOCK | TS107 | 1 | CUT TO 2 WAY |
| 9 | 10 WAY RIBBON CABLE CONNECTOR | TS212 | 1 | |
| 10 | 7805 REGULATOR | SIC 26 | 1 | |
| 11 | 0.1μF CAPACITOR | C 144 | 1 | |
| 12 | 22μF. 35V | C225 | 1 | |

-



ALL UNCHARTED HOURS N° 60

APPEAL 6.2.84

CEM-MNT LTD. DIG. NO.

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**DRILLING DETAILS & COMPONENT LAYOUT
FOR MODULATOR BOARD-PC1626**

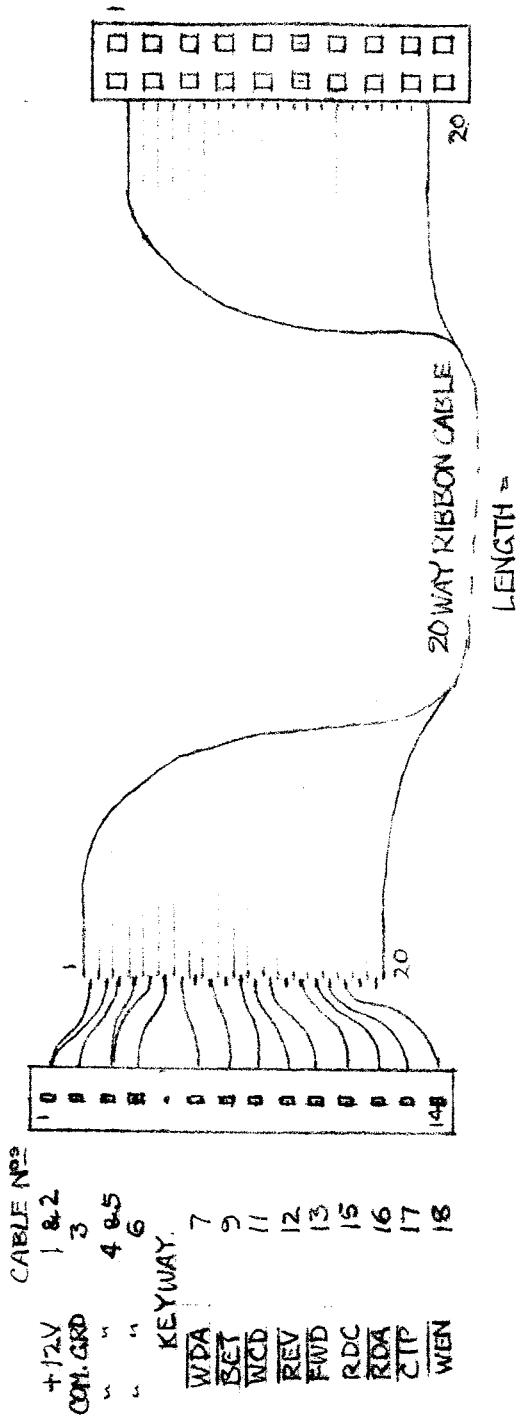
三

W. VOGELS. MFA 2013/14

J. H. WARD 8070/H

CABLE CONNECTIONS
CASSETTE END
CON. 8, 10, 14, 19 & 20 CUT SHORT

CABLE CONNECTIONS
TIO'A END
NUMBER TO FOLLOW



14 WAY IN-LINE PLUG
PIN 5 OMITTED.

20 WAY MOLEX
SOCKET

REVISIONS
TITLE
DATE

DATA CASSETTE RIBBON CABLE TO TIO'A HOUSE
CONNECTION DETAILS

| | | |
|----------|--|----------|
| JOB CODE | GSM ELECTRICAL CONTROLS LTD. | DRG. No. |
| DNN. | VICTORIA WORKS, QUEENS MILL ROAD, HUDDERSFIELD, W. YORKS. HD1 3PQ | |
| CKD. | | |
| DATE | 21. 4. 82. | |
| | | |

S 1682

CONT. WIRE

S 1649

DRG. No.

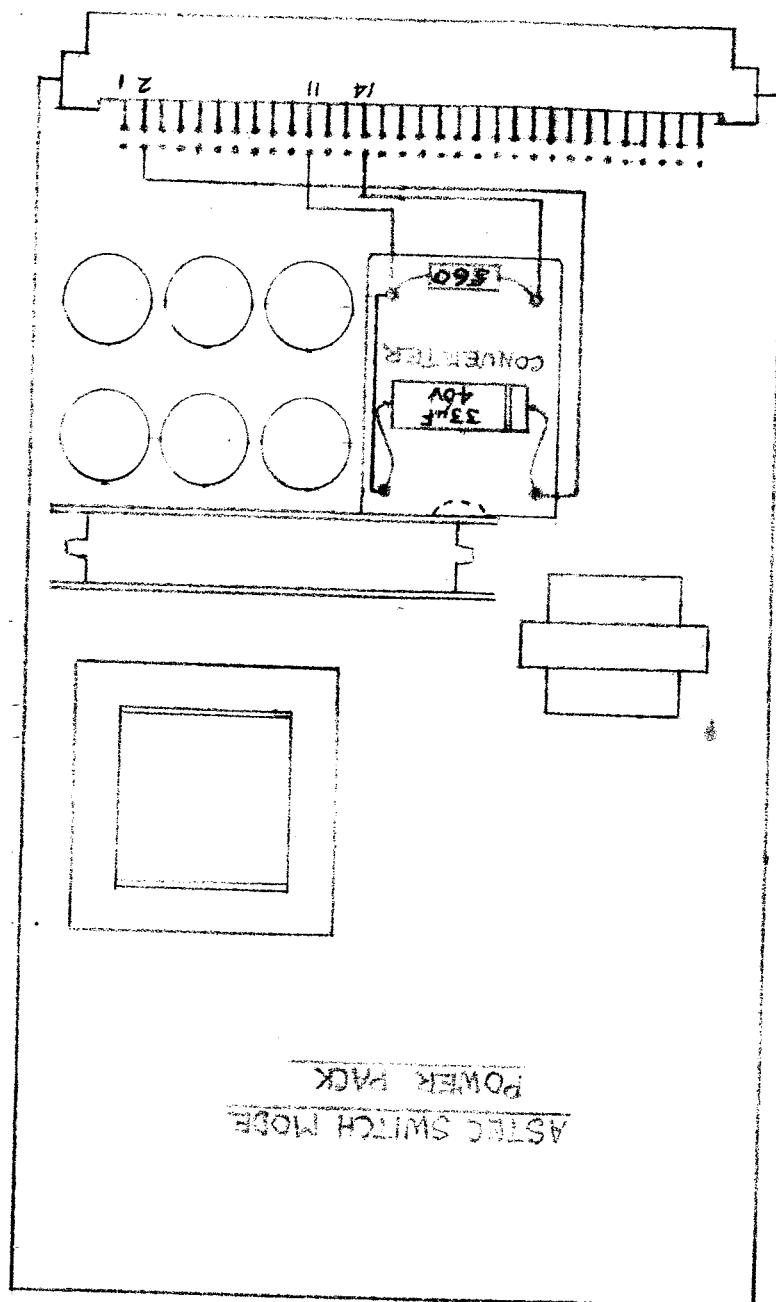
GSM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3P
PHONE 0484 351012

| | | |
|-----|------|-----------|
| 108 | Code | Ref. |
| DRN | CKD. | DATE |
| 108 | CKD. | 10. 1. 83 |
| | | |

**DETAIL OF -12V CONVERTER MOUNTING & CONNECTIONS
TO ASTEC AC7151 P.S.D. FOR 'ORAC' MACHINE**

108
Title
Rev. No.
Date



+12V TO -12V CONVERTER
MOUNTED ON HEAT SINK
WITH SUPERGLUE

Remove existing choke and replace
with 0.75mm² red cable

Melt a 2.5mm dia. slot to
accommodate capacitor lead

40v 1000μF

Sleeve capacitor lead with 1mm
red rubber sleeving and solder to
cable as shown.

Solder cable to capacitor lead
and sleeve with 4.8mm yellow
heat shrink sleeving.

18½" 0.75mm Black cable

REV. 005

DATE

IOS

CODE

DRN.

A.C.H

CKD.

DATE

2 9 83

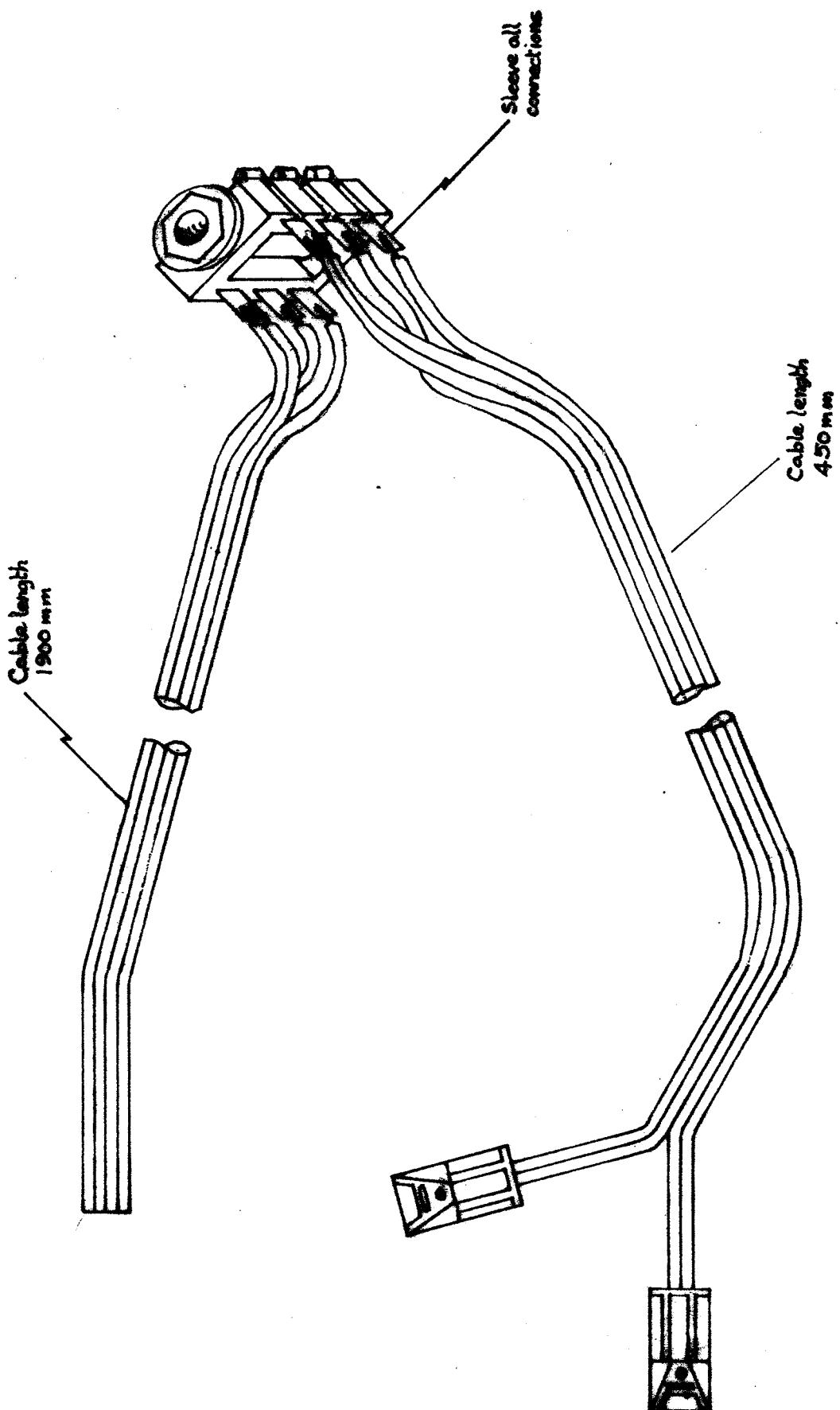
DRG. No.

S1741

GSM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3P
PHONE 044 351012

ITEM
AUDIO CASSETTE SUPPLY CABLE



CABLE SUPPLIED
WITH SHARP
CONNECTORS

DRG. NO.

S 1632

GSM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3P
PHONE 0484 351012

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DATE



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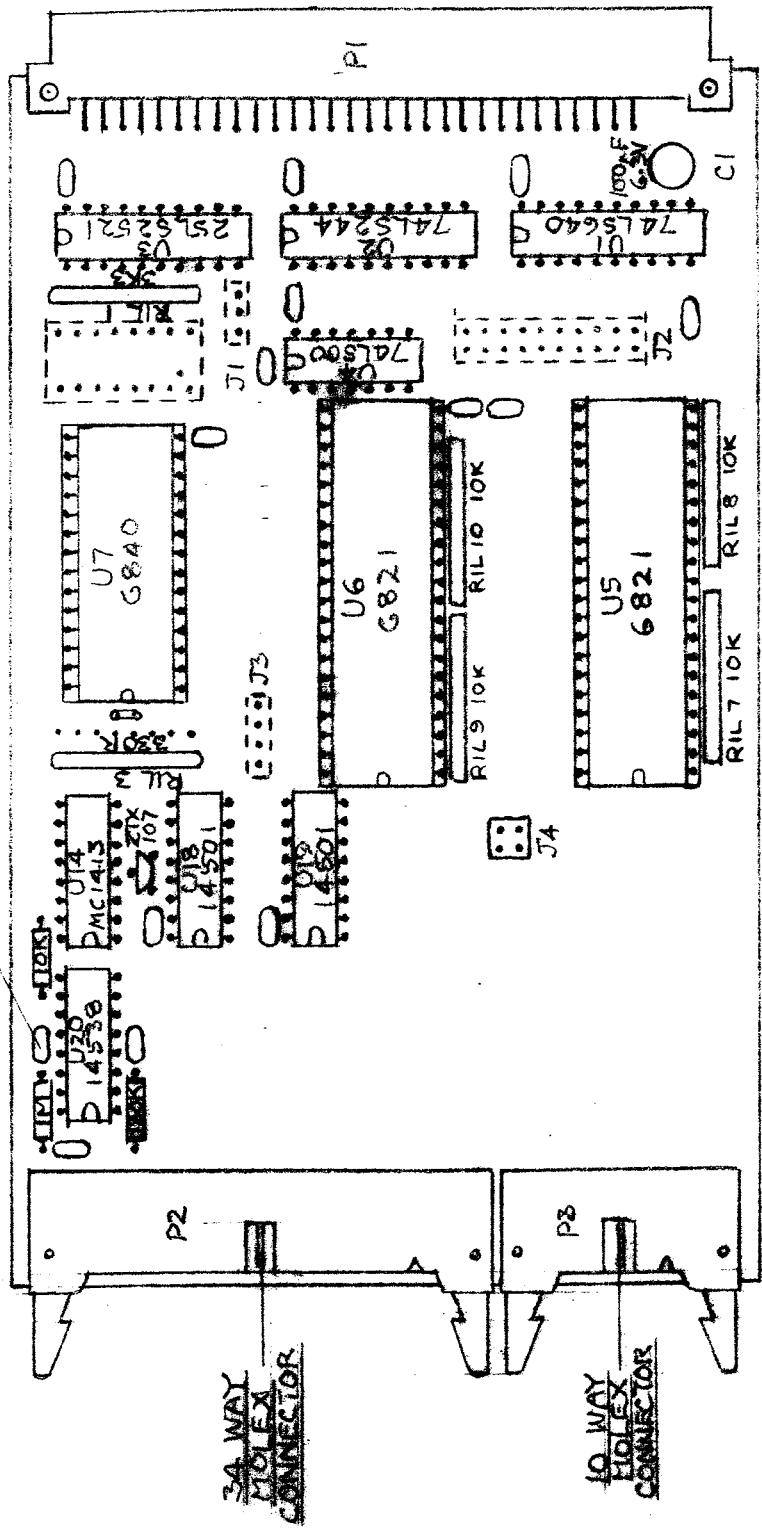
1632

1632

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1632

ALL SMALL CAPACITORS ON



| | | |
|-----|------|-----------|
| 108 | CODE | J.B. |
| | CKD | |
| | DATE | 30. 8. 83 |

COMPONENT LAYOUT FOR
T10-B TIMER MODULE

DRG. No.

S1738

PHONE 6-35012
W. YOKS. HENRY ST.
HODGES MFG. CO.
QUEENS MILK ROAD,

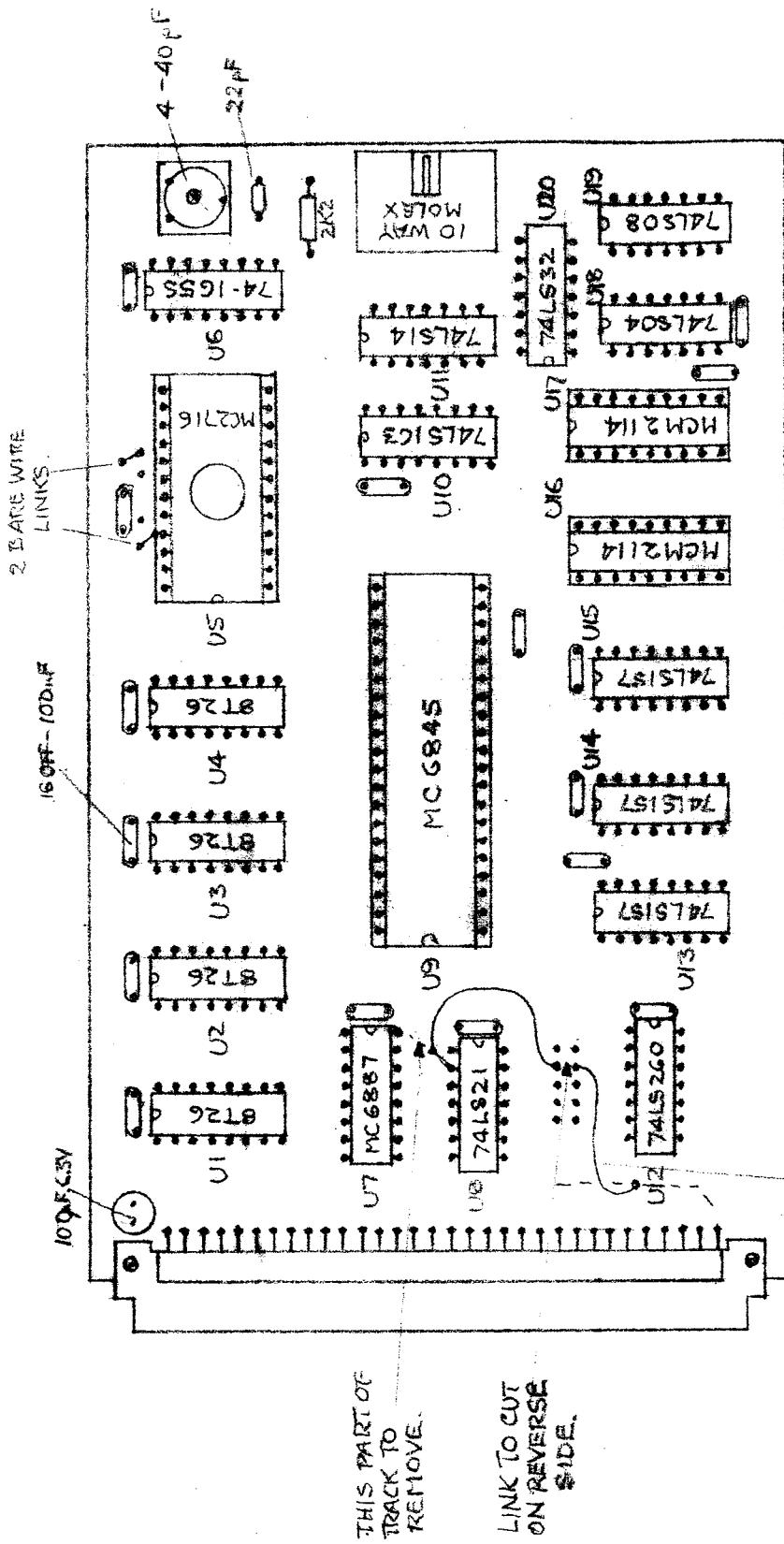
S 1639

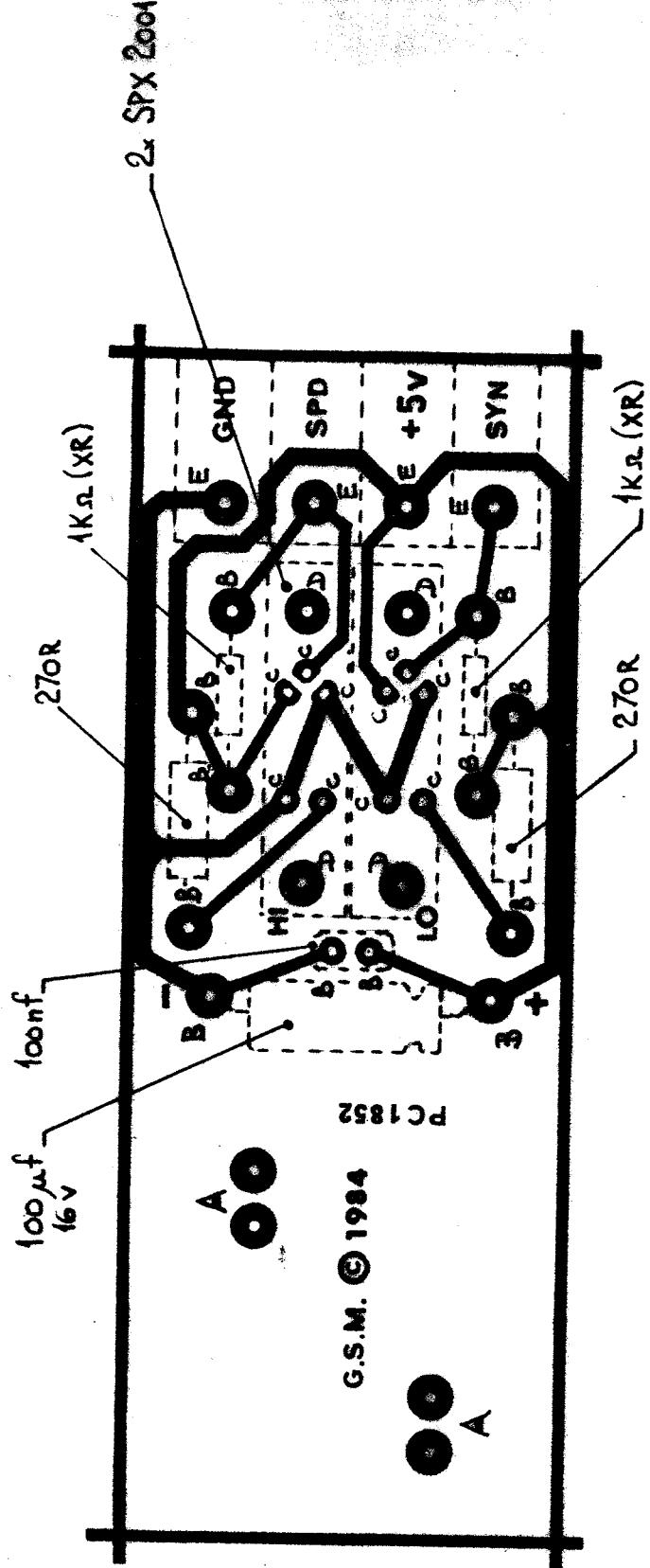
ORG. NO.

GEM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3P
PHONE 0484 351912

COMPONENT LAYOUT FOR VIRT. I CARD.





FIXING DETAILS.

1. "HIGH" OPTIO:- 2-off M3 x 12mm C.H. SCREWS WITH 4 BA NUTS AS SPACERS. SECURED WITH PLASTIC NUTS.
2. "LOW" OPTIO:- 2-off M3 x 10mm C.H. SCREWS & PLASTIC NUTS
3. P.C.B. :- FIT TO BRACKET WITH 2 OFF 4 BA SCREWS AND SHAKE PROOF WASHERS.

HOLE REF. NO OFF DRAWING DETAILS.

| HOLE REF. | NO OFF | DRAWING DETAILS. |
|-----------|--------|-------------------------|
| A | 2 | DRILL 2x №26 THIN SLOT. |
| B | 12 | DRILL № 60 |
| C | 10 | PILOT № 70 THIN № 60 |
| D | 4 | DRILL № 30 |
| E | 4 | DRILL № 54 |

REMARKS: HOLE 91764 = EXTRA CONDUIT FITTED.

DRILLING DETAILS SEE FIG. PC1852 Mk III OPTO-SENSOR
PCB FOR SYNTSELECT

| | |
|--|----------|
| BBM-SYNTTEL LTD. | DRG. NO. |
| VICTORIA WORKS, GUNNISON MILL ROAD, HUNTERSFIELD, W. YORKSHIRE, HG1 3PS Phone: 0423 381012 | S1853 |

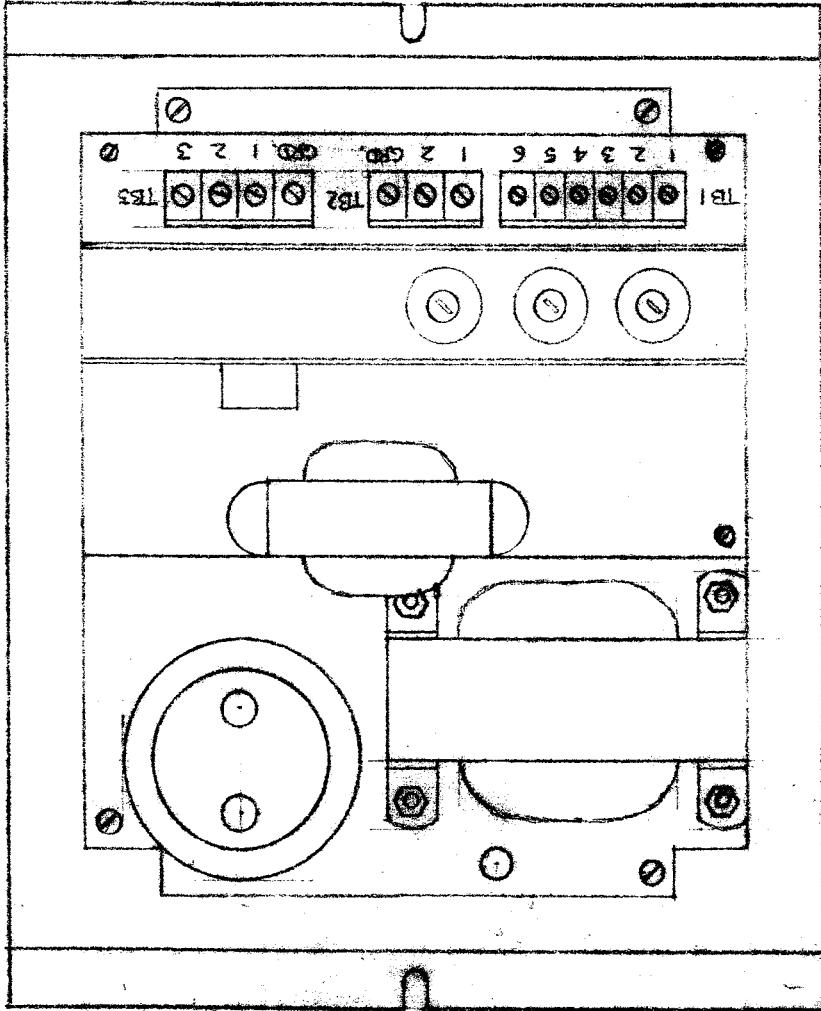
S 1608

DRG. NO.

GEM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEEN'S MILL ROAD,
HUDSONFIELD,
W. YORKS. HD1 3P
PHONE 0643 351612

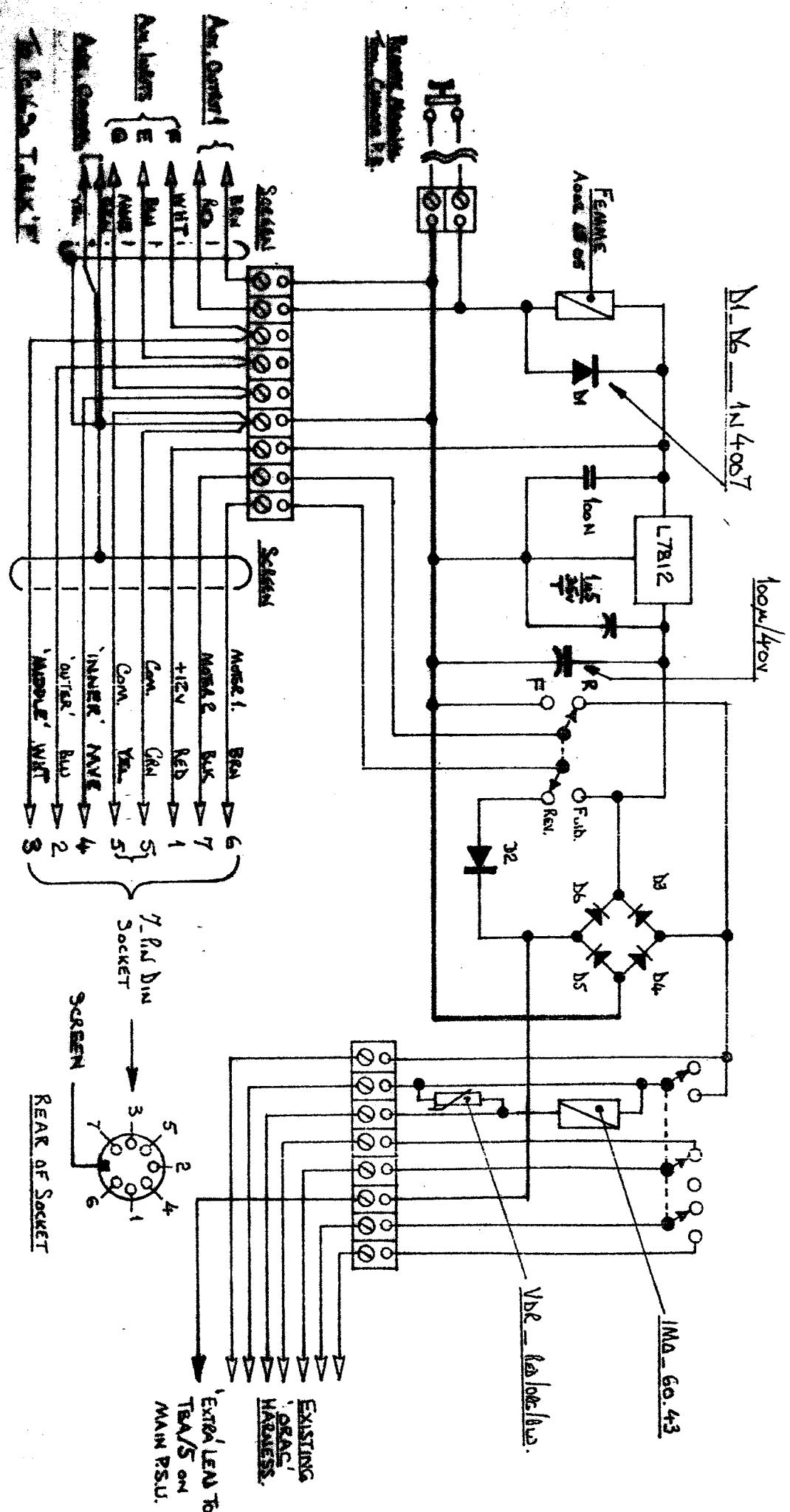
DATE 7.9.82.



HALF SCALE

UNIT TURNED
25-10-83

INTERNAL ARRANGEMENTS OF FHP PARAJUST.
'ORAC' CHASSIS.



CERTIFICATE FOR FC 1924 Combined ESR/ITP BOARD.

| | |
|--------|---------|
| CODE | 10 |
| DAN. | 100% |
| C.K.D. | |
| DATE | 19.9.84 |

S1929

DENFORD INDEXING TOOL-POST — INSTRUCTIONS FOR RETRO-FITTING

To THE 'ORAC' C.N.C. TRAINING LATHE.

A. THE KIT COMPRISSES:

1. INDEXING TOOL-POST ASSEMBLY.
2. REPLACEMENT COMBINED INDEXING TOOL POST / EMERGENCY-STOP RELAY BOARD REF. PC 1924.
3. DIN SOCKET / CABLE ASSEMBLY. (CABLES A & B)
4. CONNECTING LINK (REF. 'C')
5. CONNECTION DIAGRAM S1946

BEFORE COMMENCING WORK, ENSURE MAINS SUPPLY IS DISCONNECTED!

B. 'ORAC' UNIT

1. REMOVE THE TWO SCREWS SECURING THE HINGED REAR PANEL AND LOWER.
2. REMOVE THE FOUR SCREWS RETAINING THE PCB CHASSIS, POWER SUPPLY CHASSIS AND 'PARAJUST' CHASSIS.
3. EASE OUT EACH CHASSIS IN TURN UNTIL THE TWO SCREWS SECURING THE EMERGENCY-STOP RELAY BOARD (PC1619) TO THE MAINS TRANSFORMER BECOME ACCESSIBLE.
4. DISCONNECT THE WIRING HARNESS FROM PC1619 AND REMOVE THE BOARD.
5. REPLACE THIS WITH THE COMBINED I.T.P./E.S.R VERSION (PC1924).

IMPORTANT MOUNT P.C.B. ON UNDERSIDE OF TRANSFORMER CLAMPING BRACKET.

6. SOLDER ONE END OF CONNECTING LINK 'C' TO THE BLANK TAG OF THE EXISTING PC1619 HARNESS (SITUATED 6TH FROM THE LEFT) AND RUN SLEEVE OVER TAG.
7. REPLACE HARNESS INTO THE ^{8-WAY} RIGHT-HAND T-BLOCK OF (NEW) PC1924.
8. REMOVE PLASTIC PROTECTIVE COVER FROM THE REAR OF THE MAIN POWER SUPPLY UNIT.
9. CONNECT THE FREE END OF CONNECTING LINK 'C' INTO THE 5TH CONNECTION FROM THE LEFT OF T-BLOCK TBA ON MAIN P.S.U. ALONG WITH THE TWO EXISTING YELLOW WIRES.
10. REPLACE PLASTIC COVER.

C. FITTING THE DIN SOCKET / CABLE ASSEMBLY.

1. UNSCREW THE LOCK-NUT FROM THE DIN SOCKET-BUSH, THEN THREAD THE TWO AND FIVE-WAY TAG STRIPS OF CABLE 'A' THROUGH THE NUT. THIS LATTER CAN THEN BE PASSED OVER THE 9-WAY TAG-STRIP AND REMOVED.

CONT....

C1b (2).....

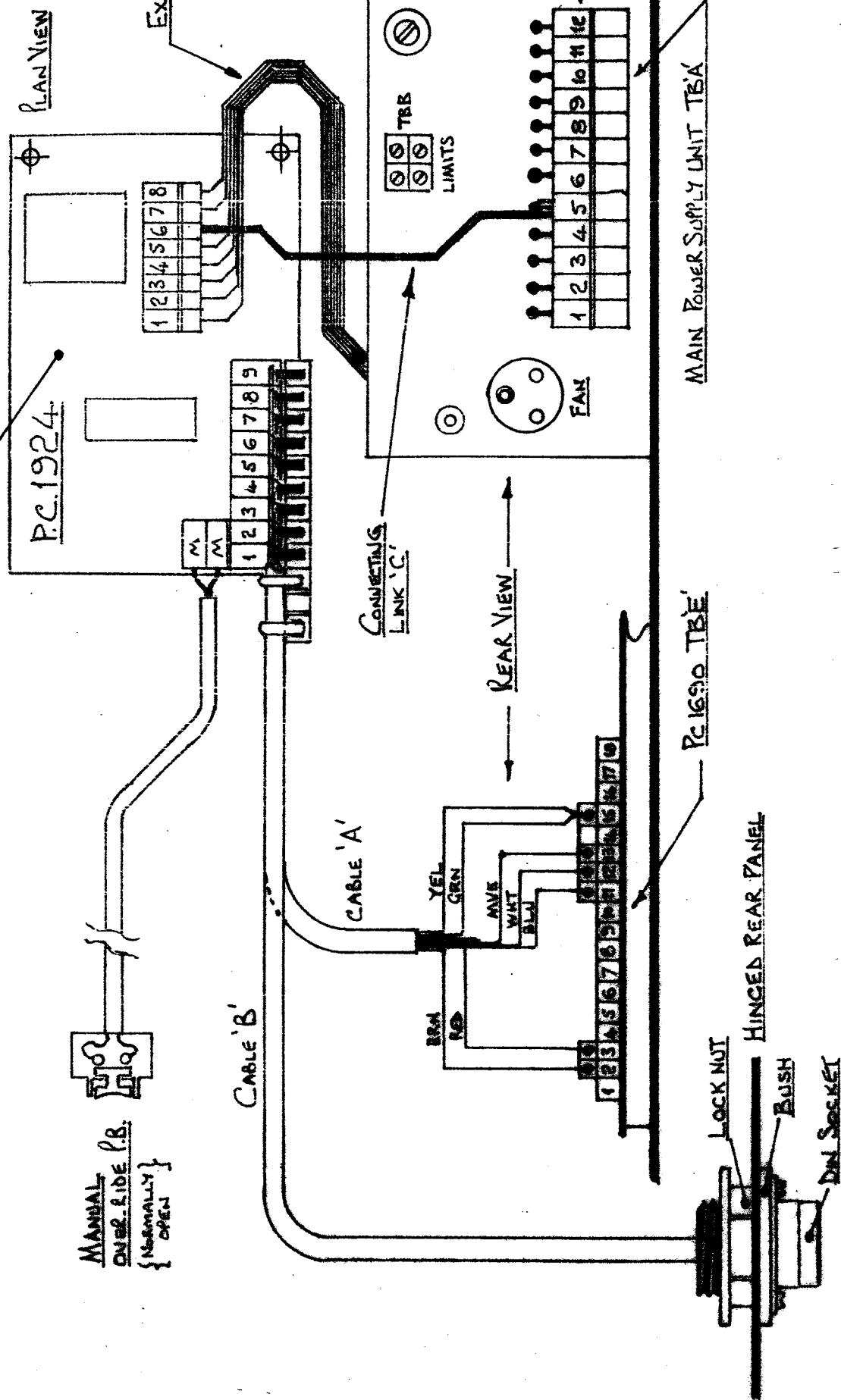
- C2. REMOVE THE RUBBER PLUG FROM THE SELECTED 20MM CONDUIT ENTRY ON THE LEFT-HAND SIDE OF THE HINGED REAR PANEL.
3. TUREAD THE CABLE ASSEMBLY THROUGH FROM THE OUTSIDE, 9-WAY TAG-STRIP FIRST.
4. SLIDE THE LOCK NUT BACK OVER THE CABLES ENSURING THAT ITS HEXAGON FACE IS TOWARDS THE DIN SOCKET. THIS PREVENTS THE NUT FROM FOULING THE REAR PANEL PIANO HINGE.
5. STRAIGHTEN THE SPILLS OF THE TAG-STRIPS, THEN CONNECT THESE (PER DRG. S1946) AS FOLLOWS:-
 - 2-WAY _____ TO AUX. OUTPUT 'A' ON PC1690.
 - 5-WAY _____ TO AUX. INPUTS 'E, F & G - SPACE - COMMON' ON PC1690.
 - 9-WAY _____ TO THE LEFT-HAND (3-WAY) T-BLOCK OF PC1924.

D. MANUAL OVER-RIDE CONTROL

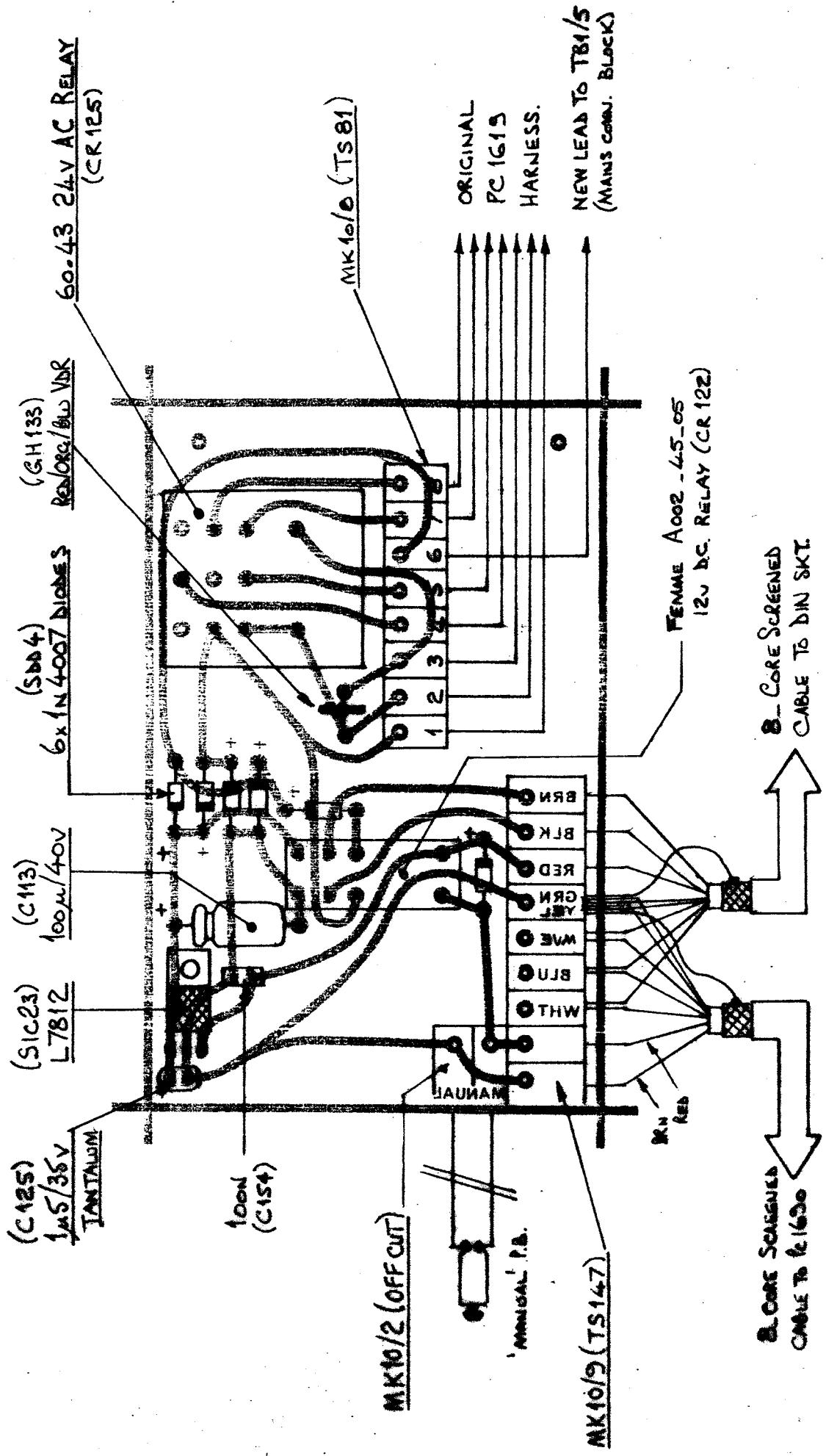
A NORMALLY-OPEN PUSH-BUTTON IS USED TO EFFECT MANUAL OPERATION OF THE TOOL-POST. ITS LOCATION IS LEFT TO THE DISCRETION OF THE USER AND CAN EITHER BE MOUNTED REMOTELY, OR IN SOME CONVENIENT POSITION ON THE 'ORAC'. IF REMOTELY MOUNTED, THE CABLING SHOULD BE BROUGHT IN BY WAY OF THE SECOND 20MM CONDUIT ENTRY ON THE REAR PANEL.
IN EITHER CASE, THE CABLE IS CONNECTED TO THE 2-WAY T-BLOCK SITUATED ON THE EXTREME LEFT-HAND SIDE OF PC1924.

- E. THIS COMPLETES THE FITTING OPERATION AND THE THREE CHASSIS CAN NOW BE REPLACED TAKING EXTREME CARE TO AVOID TRAPPING ANY WIRING AT THE REAR OF THE CHASSIS CONCERNED. RAISE AND SECURE THE HINGED REAR PANEL, ENSURING THAT THE NEWLY-FITTED CABLES ARE NOT KINKED OR TRAPPED.

Note! This board to be mounted on underside of transformer clamping bracket



| | |
|--|------------------|
| ORG. NO. | S1946 |
| CODE | |
| D.R.N. | CP |
| C.K.D. | |
| DATE | 26.10.84 |
| ORG. NO. | GBM-SYNTHEL LTD. |
| VICTORIA WORKS, QUEENS MILL ROAD, WUDENFIELD, W.YORKS. HD1 3RD PHONE: 0644 26101/2 | |
| CODE | |
| D.R.N. | |
| C.K.D. | |
| DATE | |
| PC1924 RETRO-FIT CONNECTION DIAGRAM | |



Content Without

• Case 3: Constant ESR and indexing fault fact RELAY Board -

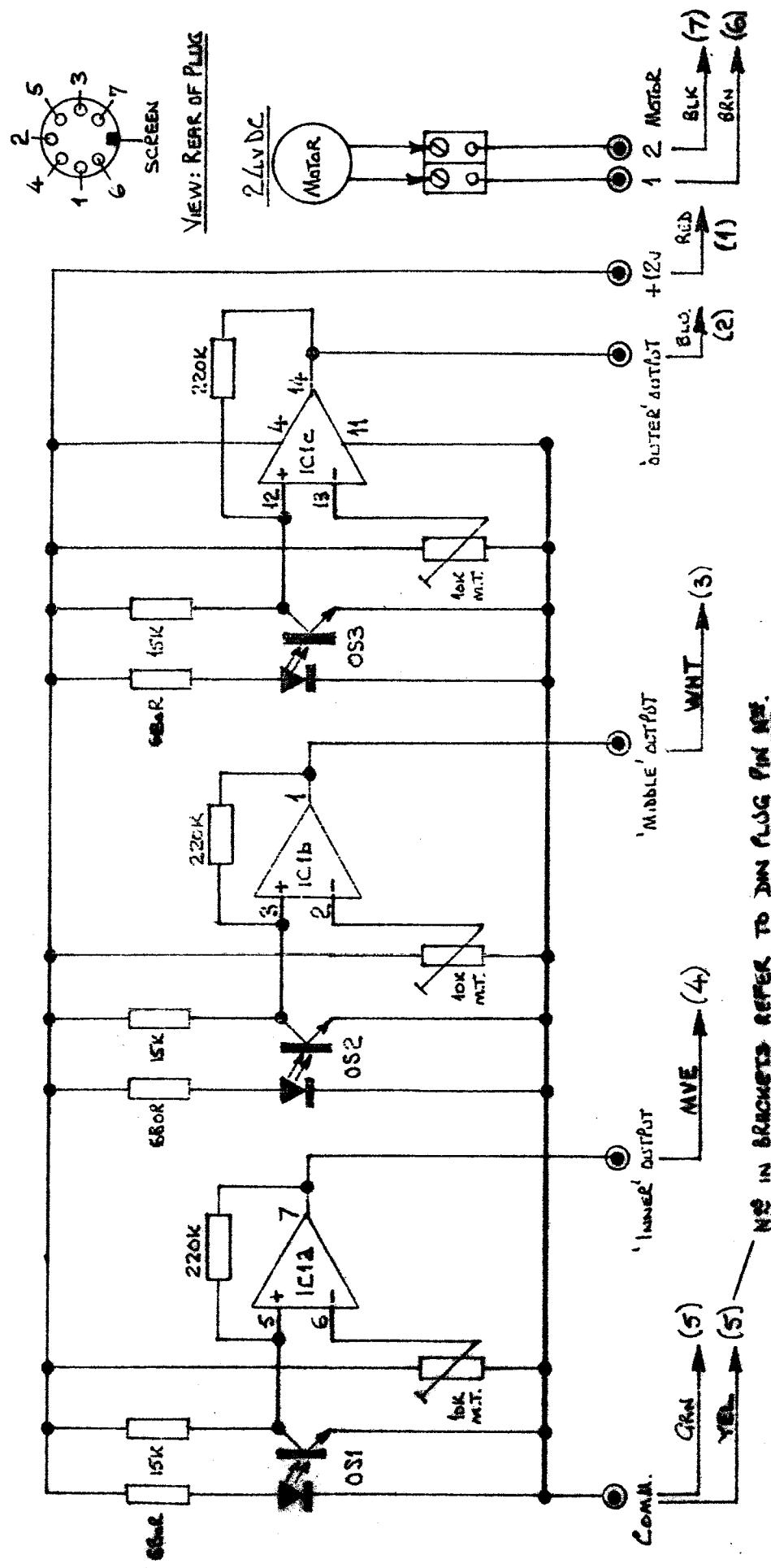
S1933

AM-SMITH LTD. DRG. No. 10

**VICTORIA WORKS,
GUESS MILL ROAD,
HUDDERSFIELD,
W. YORKSHIRE. HD1 3PS**
Phone: 0484 381013

Ic1 — RS TLE 348 (Quad 741)

O.S. 1—3 — R.S. 307—913 REFLECTIVE OPTO SWITCH



1
3
600R RESISTORS ARE $\frac{1}{2}$ WATT — REMAINDER ARE $\frac{1}{4}$ WATT.

REMARKS

T.M.L.

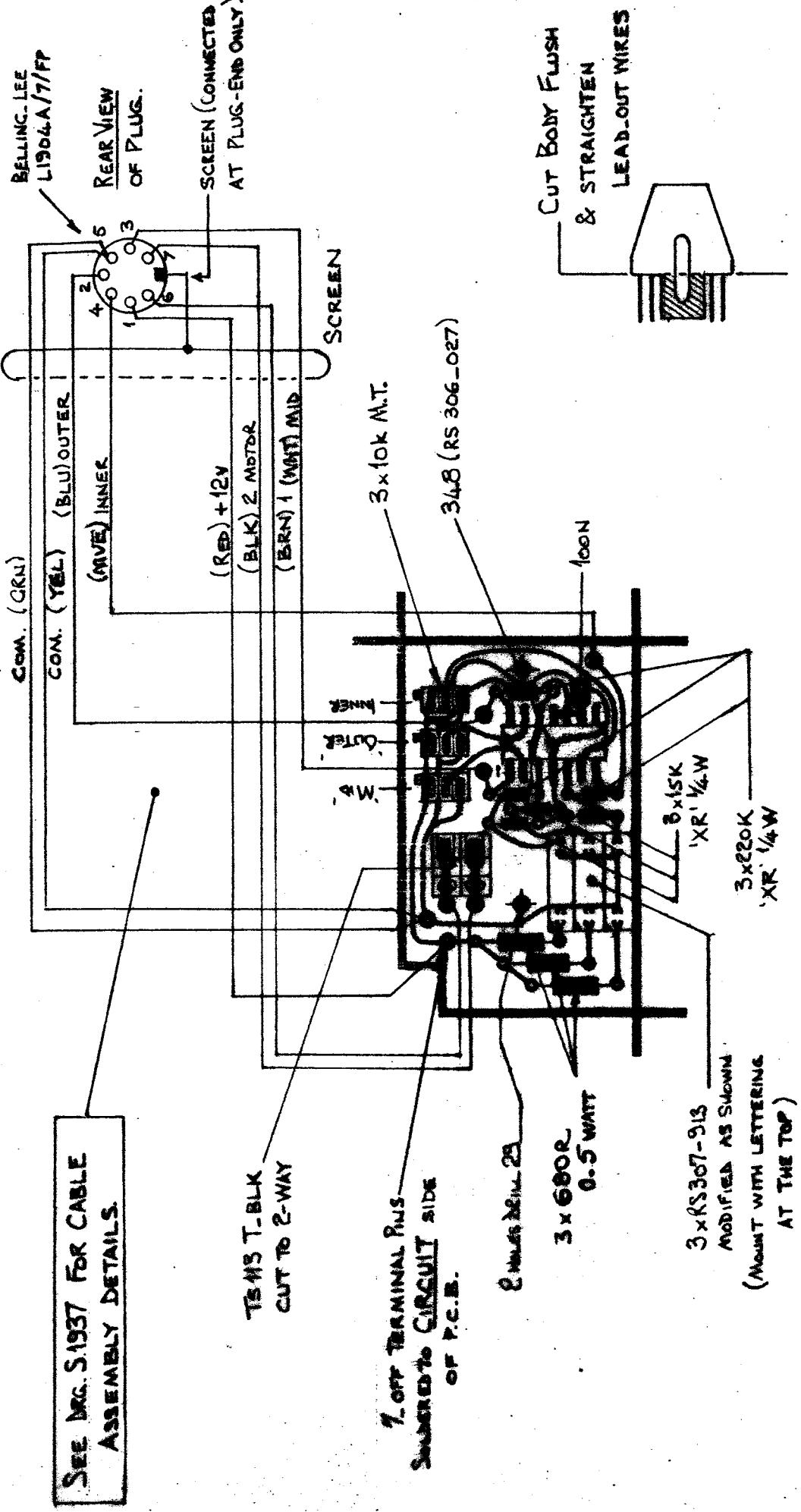
Circuit Diagram for P.C. 1928 — Sensor Board for I.T.P.

OBM-SYNTTEL LTD. ORG. NO.

S1930

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDSONS FIELD,
W. YORKSHIRE, HG1 3RS
Phone: 0484 38101/2

| | |
|------|---------|
| IOB | |
| CODE | |
| DEN. | AB |
| CKD. | |
| DATE | 19.9.84 |



MODIFICATIONS TO SENSORS

Dwg. 'No.' : I.T.P. SENSOR BOARD (P.C. 1928) — COMPONENT
LAYOUT & CABLE CONNECTIONS.

S1934

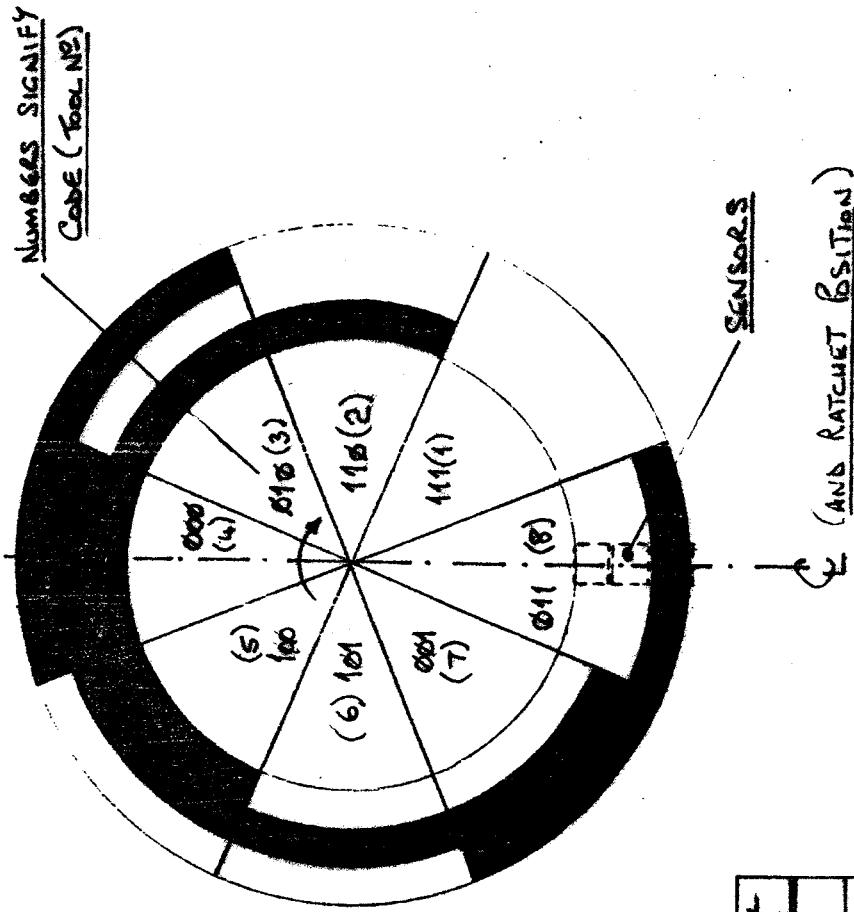
| | | | |
|------|---------|---|----------|
| DRW. | 08 | CEM-SYNTTEL LTD. | ORG. NO. |
| CODE | 0000 | VICTORIA WORKS, GLENMILL ROAD, HUDSONSFIELD, W. YORKS. HD1 3BD | |
| DES. | PRE | | |
| INN. | CKD | | |
| DATE | 2/10/84 | | |

PROGRAM

→ Aux. OUT
A B C D
1 0 0 0
→ Dwell
3 SECS.
→ AUX. IN *
E F G H
1 1 1 1 — (For Tool No 1)
→ Aux. OUT
A B C D
0 0 0 0

* Note: 'H' INPUT ALWAYS AT '1'

Disc Position For Tool 1 Setting.



Auxiliary Input Codes For Desired Tool Setting.

| Tool | Tool 1 | Tool 2 | Tool 3 | Tool 4 | Tool 5 | Tool 6 | Tool 7 | Tool 8 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Outer Blue | E | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| Outer White | F | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| Inner White | G | 1 | 0 | 0 | 0 | 1 | 1 | 1 |

OLAC: INDEXING TOOL POST — SENSOR DISC ENCODING ETC.

104

CODE

DIN.

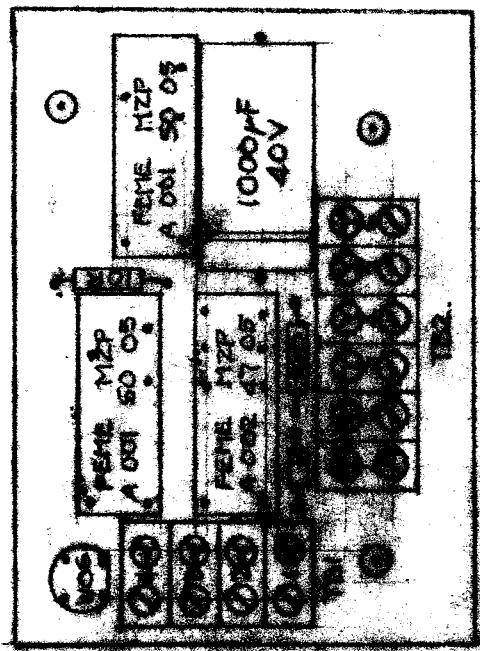
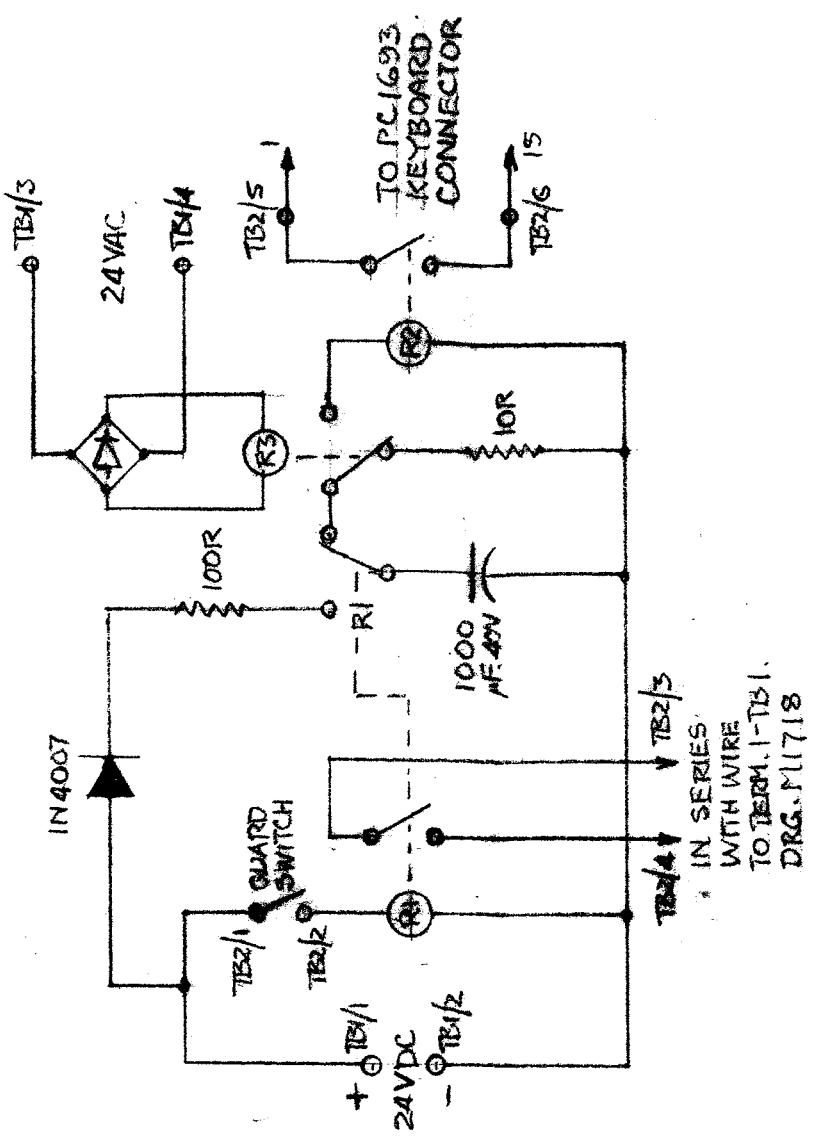
CKD.

DATE

ORG. NO.

VICTORIA WORKS,
SURREY HILL ROAD,
HUDSONSFIELD,
W. YORKS. MD1 3EP
Phone: 0484 38101/2

S1938



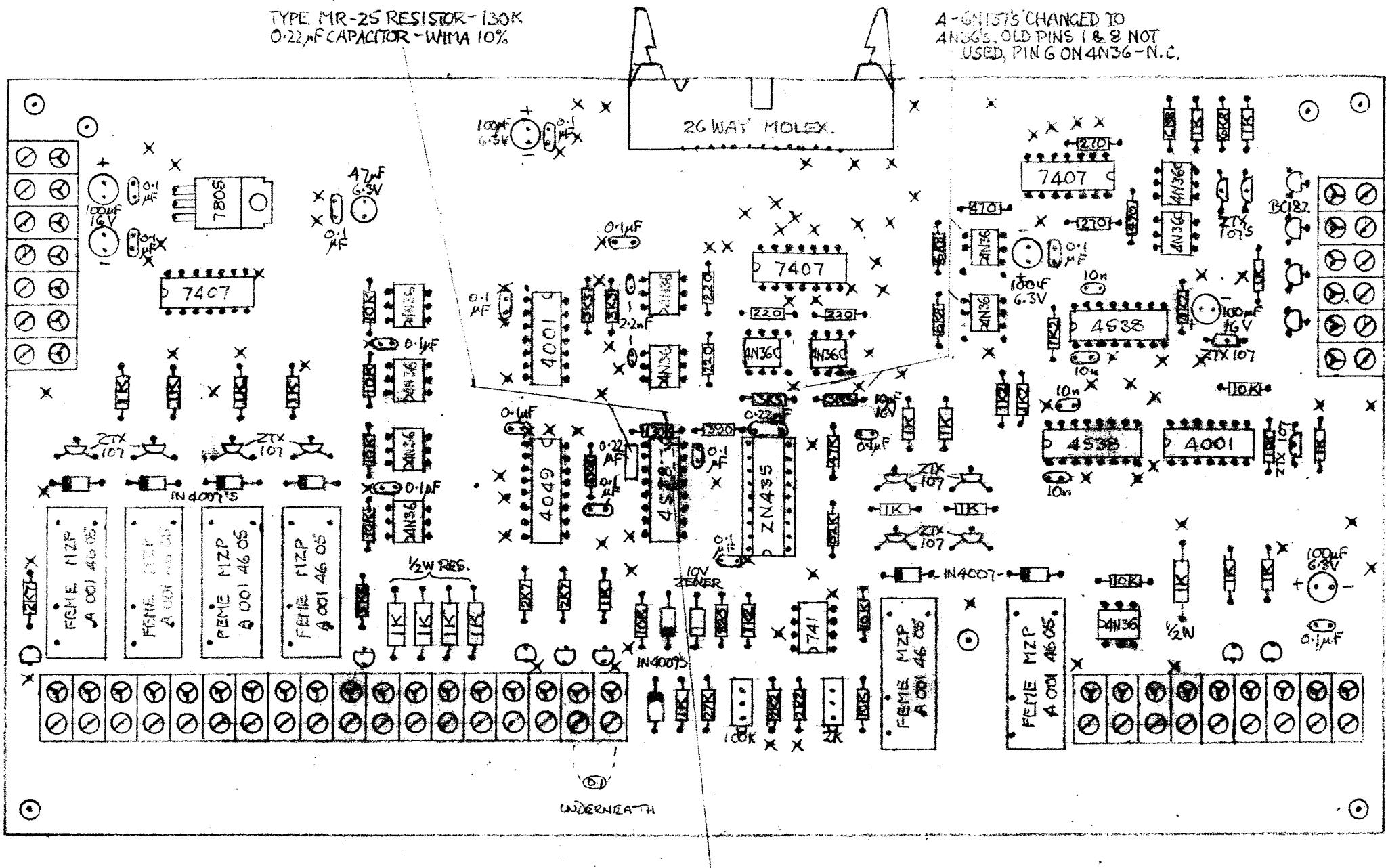
14.2.65

**COMPONENT LAYOUT & CIRCUIT DIAGRAM
FOR PC 1942 - ORAC GUARD SWITCH PCB.**

CON-VENTION LTD. One No.

ANSWER: GOOD 201011
ANSWER: BAD 201011

S194A



| COLOUR CODE | |
|-------------------|--|
| RESISTOR VALUE | R B W G Y B R O V K L C M N P S D U T F H J X Z |
| 220 | R R BR |
| 270 | R V BR |
| 390 | O W BR |
| 470 | Y V BR |
| 1K | BR BK R |
| 2K2 | R R R |
| 2K7 | R V R |
| 3K3 | O O R |
| 4K7 | Y V R |
| 5K6 | G BL R |
| 6K8 | BL GY R |
| 10K | BR BK O |
| 27K | R V O |
| 47K | Y V O |
| 82K | GY R O |
| 330K | O O Y |
| 130K | BR O Y |

10K 1W RESISTOR CONNECTED
BETWEEN PINS 1&8 ON 4538
BACK OF BOARD

REVISIONS: VARIOUS DELETIONS & ALTERATIONS
TO BOARD. 30. 8. 83

470R REPLACED BY 3K5
28. 11. 84

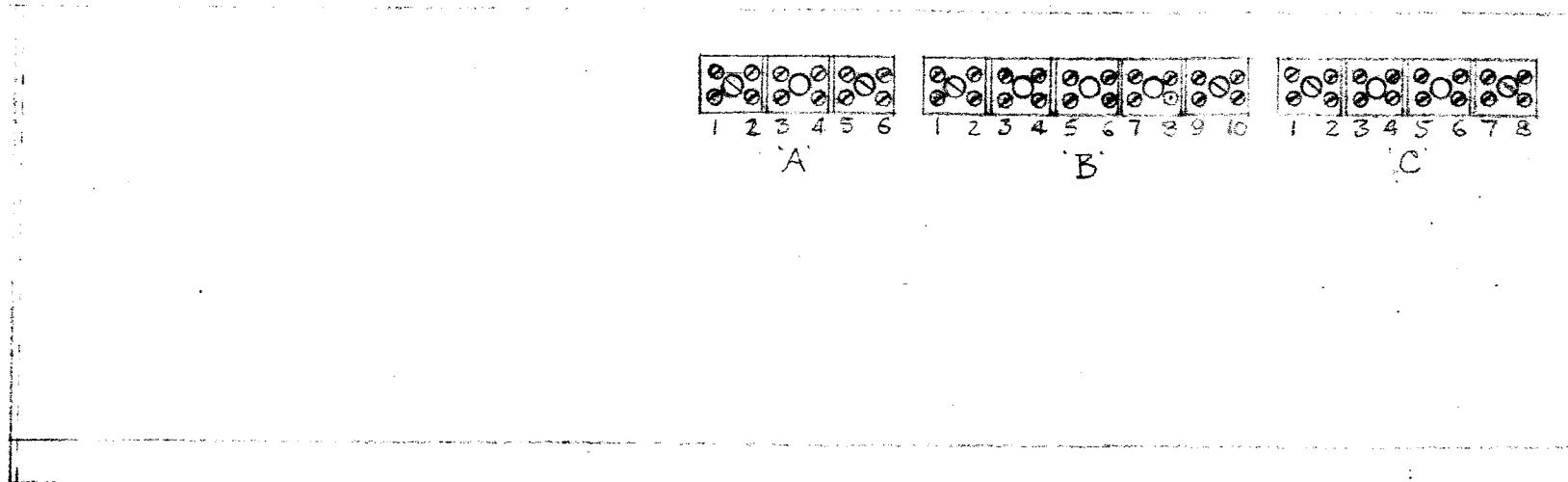
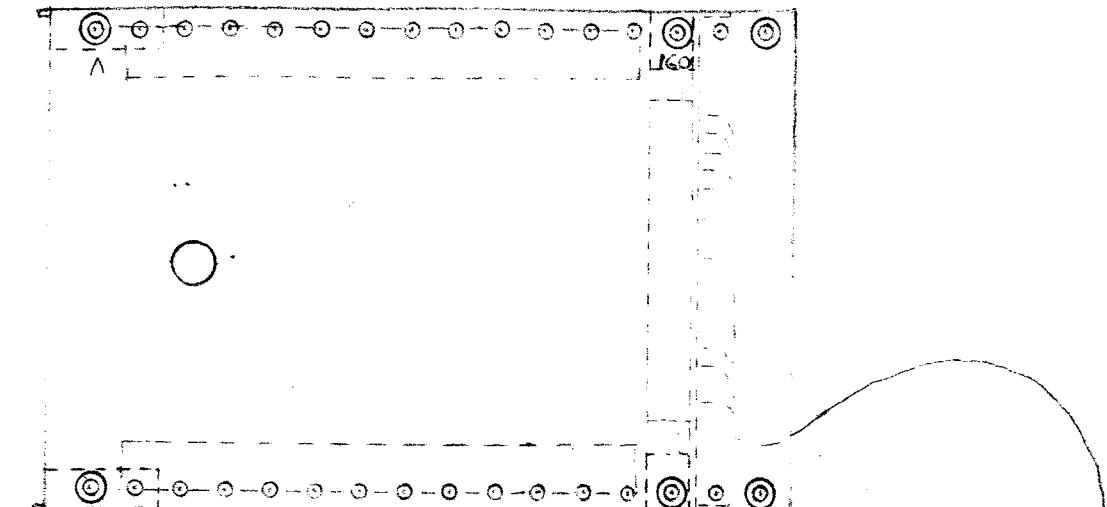
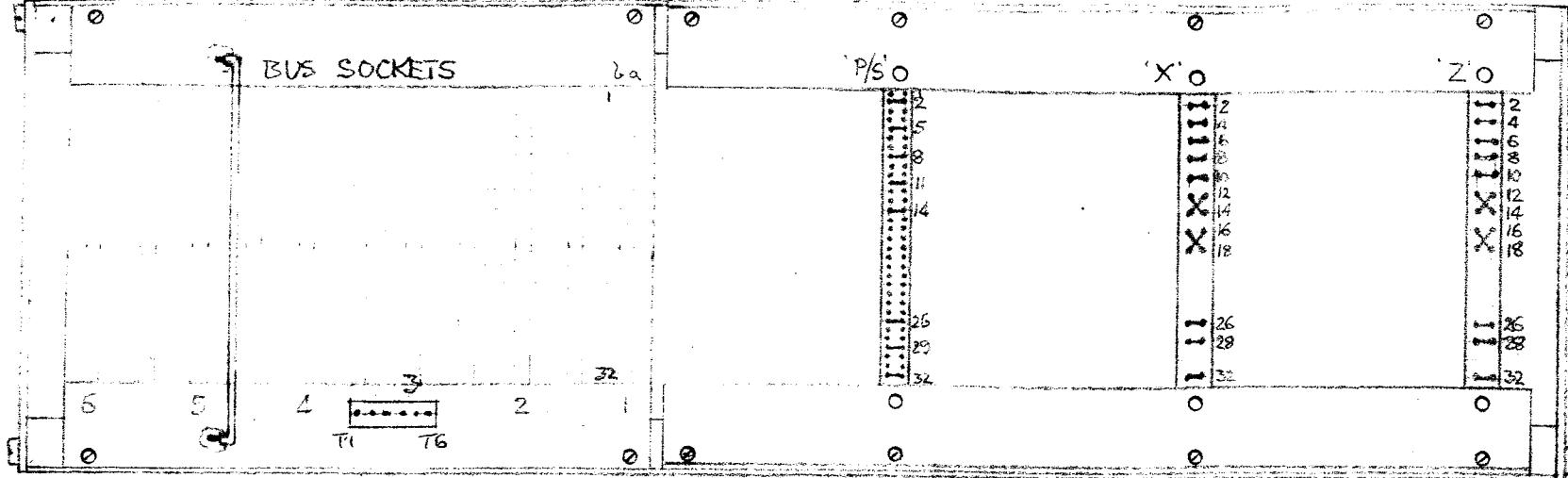
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| DRN. |
| CVD. |
| DATE |

GSM ELECTRICAL CONTROLS LTD.
VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3P
PHONE 0484 351012

DRG. NO.
M 17

COMPONENT LAYOUT FOR PC 1690
SYNTSELECT MKIII COMPUTER INTERFACE BOARD.

1. Engr.
Green/Yellow



| | | |
|-------------------------------|------------------|--------------------------------|
| A1 - P/S5 | (ORANGE 0.75) | B1 - X26 (RED 2 CORE SCREENED) |
| P/S5-BUS T3 | (" " | B2 - X28 (BLUE " |
| A2 - P/S2 | (RED " | B3 - Z28 (BLUE " |
| P/S2-BUS T6 | (" " | B4 - Z26 (RED " |
| A3 - P/S11 | (GREEN/YELLOW " | B5 - BOTH EARTH SCREENS |
| P/S11 - P/S8 | (" " | B6 - Z10 (RED 0.75) |
| A3 - SCREEN FROM 4 CORE BELOW | (GREEN/YELL 1.5) | B6 - X10 " |
| P/S8-BUS T1 | (YELLOW 0.75) | B8 - X32 (BLACK 1.5) |
| P/S14-BUS T4 | (GREEN 4 CORE) | B8 - Z32 " |
| P/S32-AA | (BLUE " | X32 - X16&18 " |
| A5 - P/S29a&b | (RED " | Z32 - Z16&18 " |
| A6 - P/S26a&b | (PURPLE 0.75) | X16 - Z16 " |
| C1 - Z4 | (BLUE " | B9 - Z12&14 (RED " |
| C2 - Z2 | (GREEN " | B10 - X12&14 (BROWN " |
| C3 - Z6 | (YELLOW " | |
| C4 - Z8 | (ORANGE " | |
| C5 - X4 | (RED " | |
| C6 - X2 | (BROWN " | |
| C7 - X6 | (BLACK " | |
| C8 - X8 | | |

BUS EARTH LINK ACROSS MOTHER BOARD AS ABOVE
ON X & Z, CUT OFF PINS 20,22,24,30 (8 PINS).
CUT REMAINING PINS HALF-WAY DOWN.
JOIN TOGETHER BOTH PINS AT 2,4,6,8,10,26,28,32
JOIN TOGETHER 4 PINS AT 12,14 & 16,18
AS SHOWN ABOVE.

REVISIONS: 2 WAY CHASSIS PLUG-T'
ADDED - 10.8.83

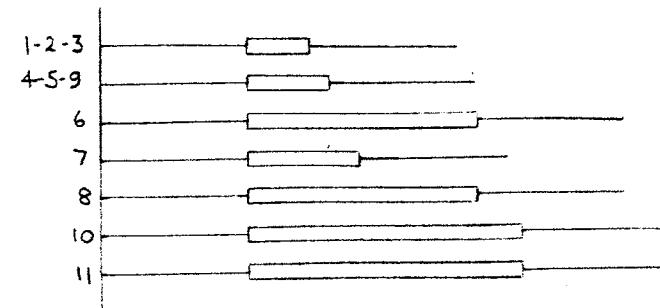
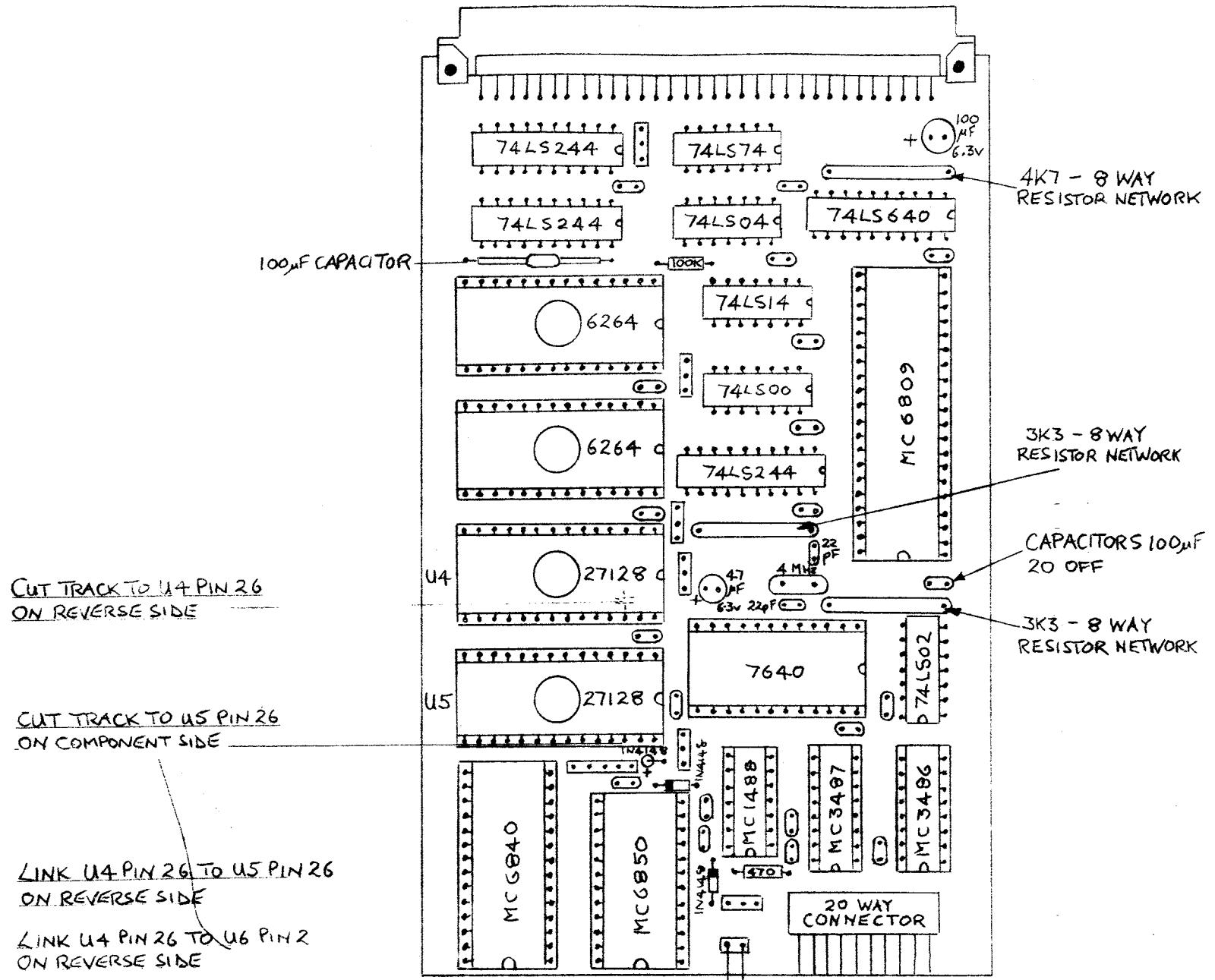
ORAC COMPUTER RACK WIRING DIAGRAM

HALF SCALE

| REV | |
|------|--------|
| 2006 | |
| MIN. | 142 |
| OKD. | |
| DATE | 9.9.82 |

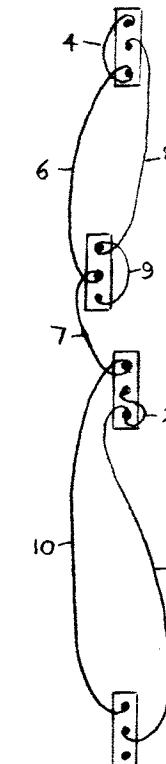
GSM ELECTRICAL CONTROLS LTD.
VICTORIA WORKS,
QUEENS MILL ROAD,
HARROGATE,
W. YORKSHIRE HG1 3PJ
PHONE 0484 351012

M161



1,2,3,8,11 ARE BLUE

4,5,6,7,9,10 ARE RED



DETAILS OF WIRE WRAP LINKS ON
PCB CONNECTION PINS

REVISIONS

TITLE

COMPONENT LAYOUT FOR MPO9 CARD FOR ORAC MK III

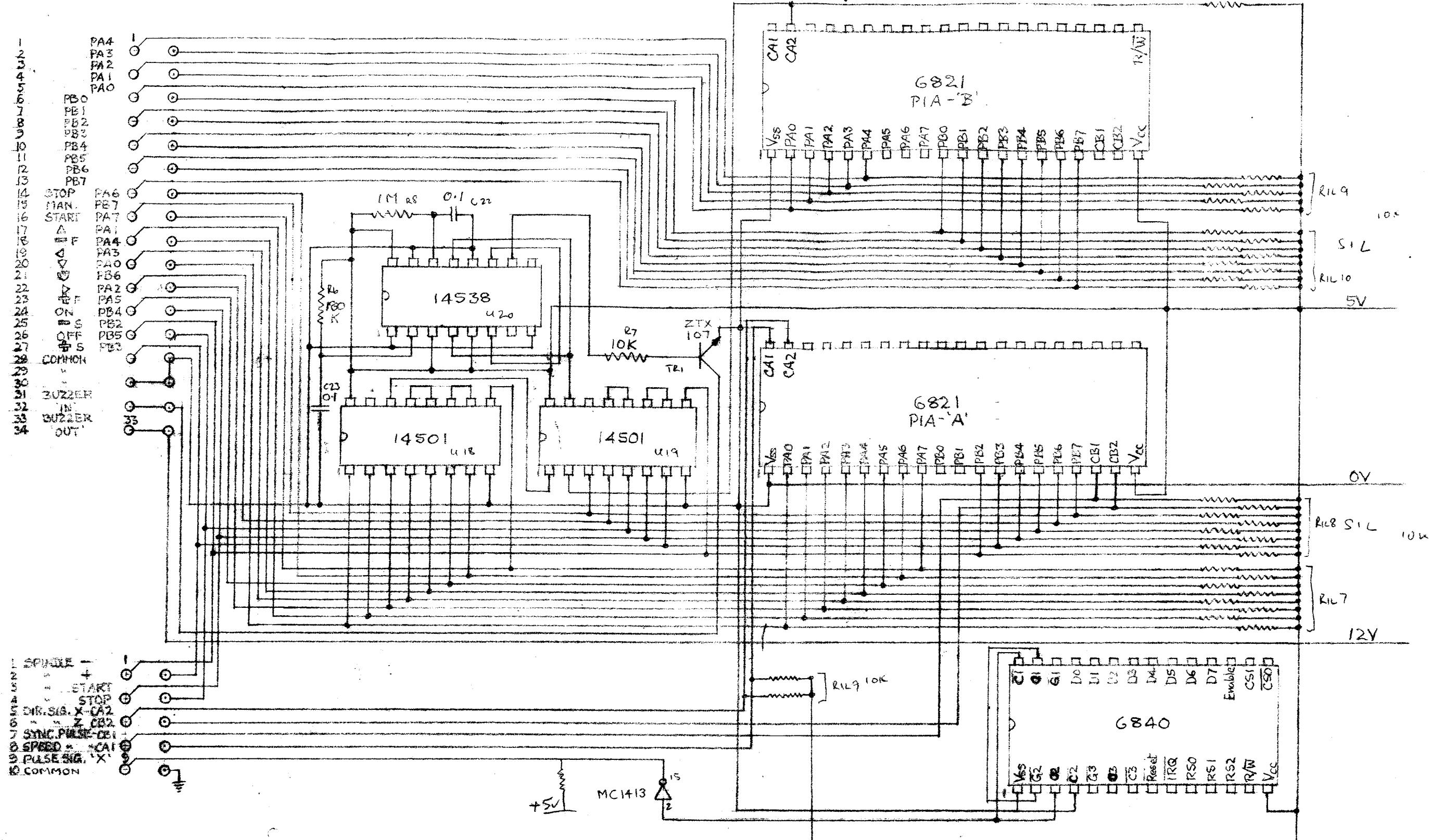
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| JOB | |
| CODE | |
| DRN. | A.C.H. |
| CKD. | |
| DATE | 13.10.83 |

GSM ELECTRICAL CONTROLS LTD.
VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W.YORKS. HD1 3PJ
PHONE 0484 351012



DRG. No.

M1768



REVSIONS

TITLE

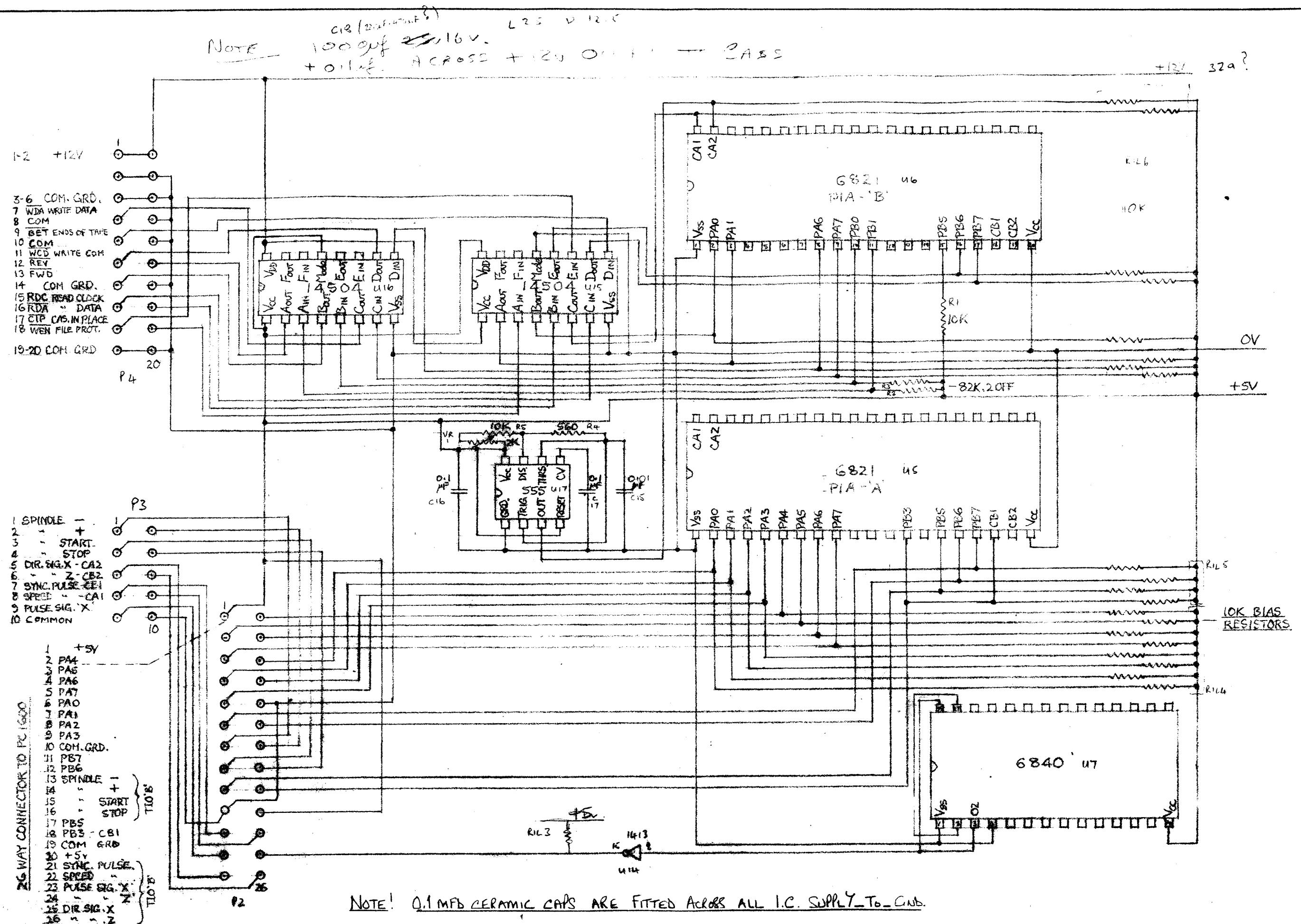
CIRCUIT DIAGRAM FOR MK3-TIO-'B' BOARD
WITH BEEPER INTERFACE

| JOB | CODE |
|------|---------|
| DRN. | Y8 |
| DATE | 23.3.83 |

GSM ELECTRICAL CONTROLS LTD.
VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W.YORKS. HD1 3PJ
PHONE 0484 351012

DRG. NO.

M166



REVISIONS

TITLE

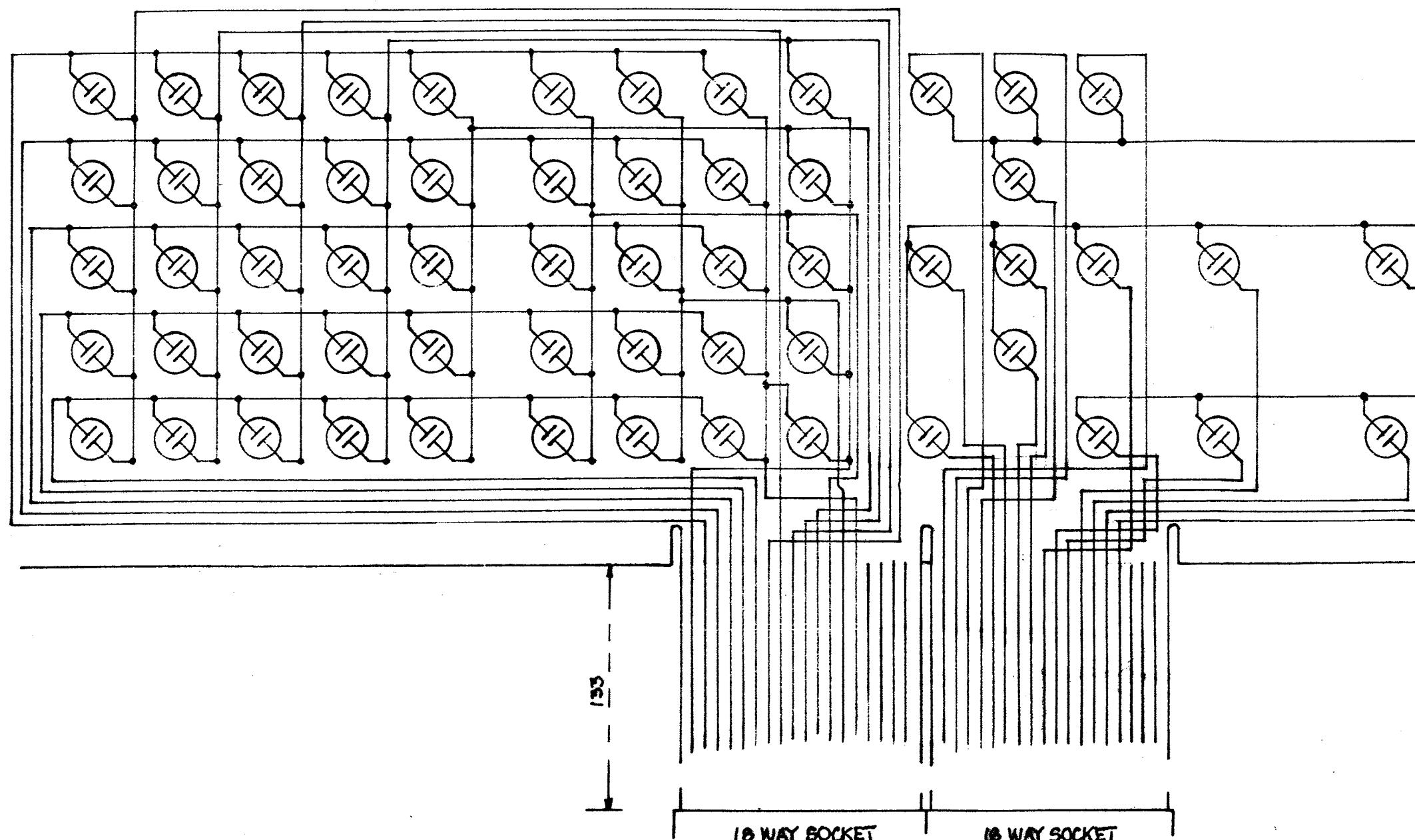
CIRCUIT DIAGRAM FOR MK3-TIO'A' BOARD WITH
CASSETTE INTERFACE

| JOB | |
|------|------|
| CODE | |
| DRN. | 18 |
| DATE | 2/83 |

GSM ELECTRICAL CONTROLS LTD.
 VICTORIA WORKS,
 QUEENS MILL ROAD,
 HUDDERSFIELD,
 W. YORKS. HD1 3PJ
 PHONE 0484 35101/2

DRAWN BY

M 1678



16 WAY SOCKET

16 WAY SOCKET

REVISIONS

TITLE

KEYBOARD MEMBRANE CONNECTION DIAGRAM FOR MK3 ORAC

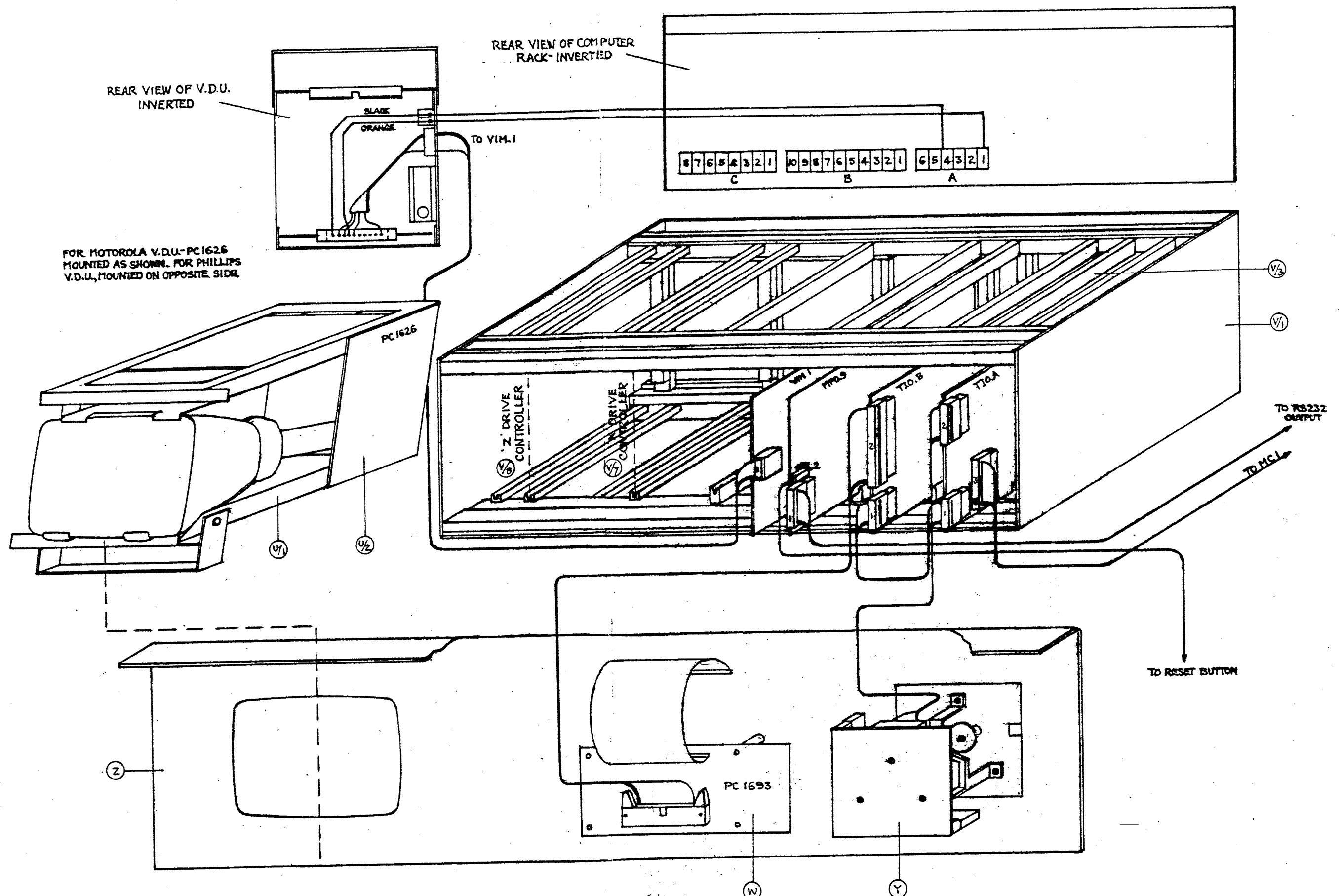
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|------|-----------|
| JOB | |
| CODE | |
| DRN. | J.3. |
| CKD. | |
| DATE | 22. 8. 84 |

GSM ELECTRICAL CONTROLS LTD:
VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3PJ
PHONE 0484 35101/2



DRG. No.

M1918



| REVISIONS | RED. SCALE | JOB |
|-------------------------------|------------|----------------|
| | CODE | |
| RIBBON CABLE INTERCONNECTIONS | | DRN. J.B. |
| | CKD. | |
| | | DATE 16. 8. 83 |

GSM ELECTRICAL CONTROLS LTD. DRG. No.

M VICTORIA WORKS, QUEENS MILL ROAD, HUDDERSFIELD, W. YORKS. HD2 4PZ. PHONE 0484 391021.

L 1723