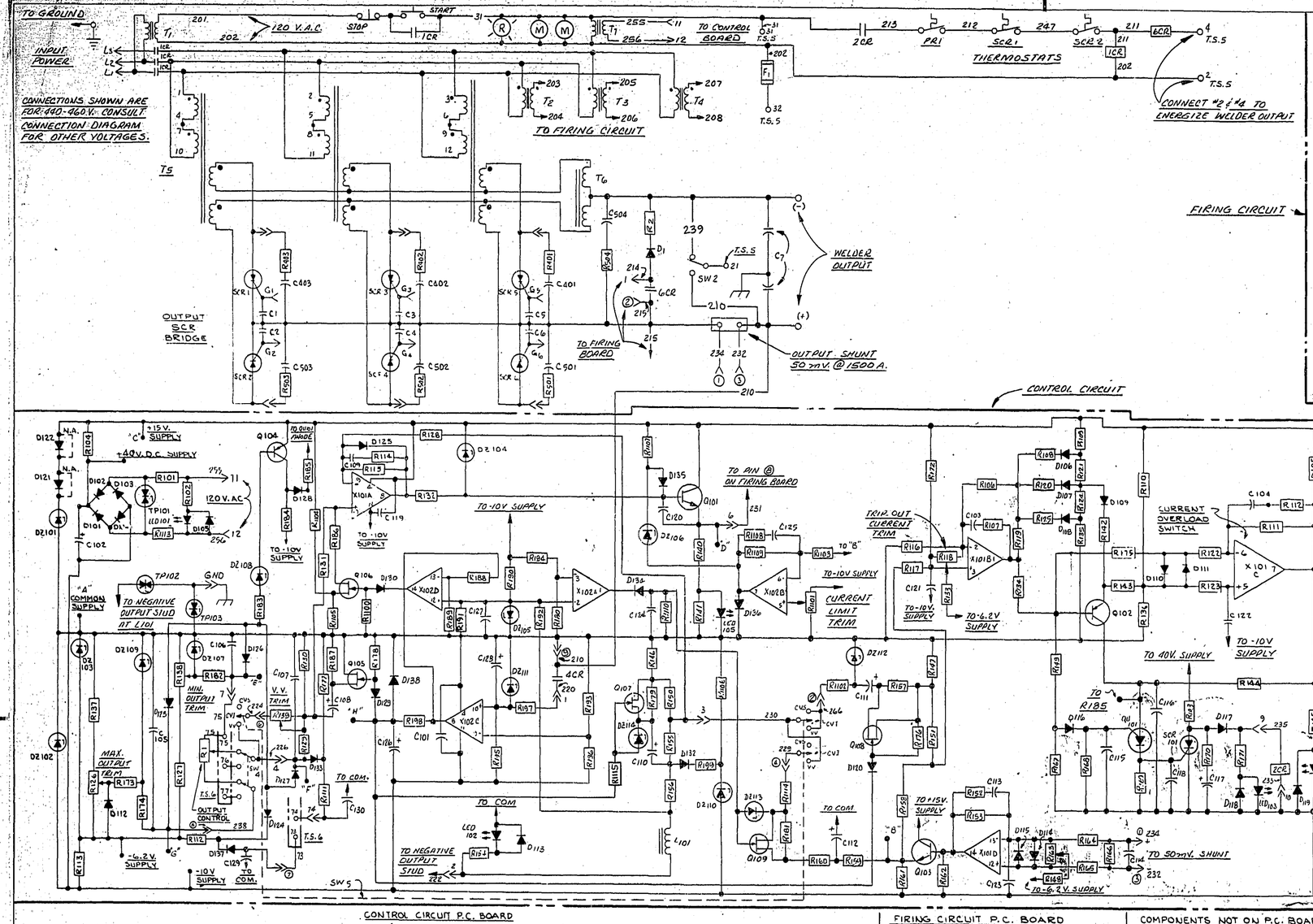





## CONTROL CIRCUIT P.C. BOARD

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| R101 | 200 Ω | R137 | 2.2 kΩ | R173 | 15 Ω | C101 | .02-.022 MFD | D112 | 1A. 400V. |
| R102 | 68 kΩ | R138 | 1 kΩ TRIMMER | R174 | 680 Ω | C102 | 50 MFD | D113 | 1A. 400V. |
| R103 | 390 Ω | R139 | 20 kΩ TRIMMER | R175 | 4.7 kΩ | C103 | .1 MFD | D114 | 1A. 400V. |
| R104 | 330 Ω | R140 | 1.5 kΩ | R176 | 220 kΩ | C104 | .022 MFD | D115 | 1A. 400V. |
| R105 | 47 kΩ | R141 | 270 Ω | R177 | 3.9 kΩ | C105 | .047 MFD | D116 | 1A. 400V. |
| R106 | 33 kΩ | R142 | 4.7 kΩ | R178 | 100 Ω | C106 | .047 MFD | D117 | 1A. 400V. |
| R107 | 15 kΩ | R143 | 22 kΩ | R179 | 100 Ω | C107 | .047 MFD | D118 | 1A. 400V. |
| R108 | 6.8 kΩ | R144 | 2.7 MΩ | R180 | 10 kΩ | C108 | .18 MFD | D119 | 1A. 400V. |
| R109 | 1 kΩ | R145 | 4.7 kΩ | R181 | 22 kΩ | C109 | .22 MFD | D120 | 1A. 400V. |
| R110 | 680 Ω | R146 | 330 Ω | R182 | 330 Ω | C110 | 2.7 MFD | D121 | 1A. 400V. |
| R111 | 1.5 MΩ | R147 | 270 Ω | R183 | 2.7 kΩ | C111 | .18 MFD | D122 | 1A. 400V. |
| R112 | 390 kΩ | R148 | 470 kΩ | R184 | 680 Ω | C112 | .18 MFD | D123 | 1A. 400V. |
| R113 | 330 Ω | R149 | 10 kΩ | R185 | 470 Ω | C113 | .047 MFD | D124 | 1A. 400V. |
| R114 | 47 kΩ | R150 | 1.3 kΩ | R186 | 1 kΩ | C114 | .022 MFD | D125 | 1A. 400V. |
| R115 | 1 MΩ | R151 | 270 Ω | R187 | 10 kΩ | C115 | .022 MFD | D126 | 1A. 400V. |
| R116 | 4.7 kΩ | R152 | 22 kΩ | R188 | 15 kΩ | C116 | 2 MFD | D127 | 1A. 400V. |
| R117 | 4.7 kΩ | R153 | 68 kΩ | R189 | 6.8 kΩ | C117 | 2 MFD | D128 | 1A. 400V. |
| R118 | 50 kΩ TRIMMER | R154 | 27 kΩ | R190 | 220 kΩ | C118 | .02-.022 MFD | D129 | 1A. 400V. |
| R119 | 6.8 kΩ | R155 | 82 kΩ | R191 | 68 kΩ | C119 | .02 MFD | D130 | 1A. 400V. |
| R120 | 1.5 kΩ | R156 | 82 kΩ | R192 | 68 kΩ | C120 | .02 MFD | | |
| R121 | 470 Ω | R157 | 15 kΩ | R193 | 68 kΩ | C121 | .02 MFD | D132 | 1A. 400V. |
| R122 | 2.2 kΩ | R158 | 2.2 kΩ | R194 | 10 kΩ | C122 | .02MFD | D133 | 1A. 400V. |
| R123 | 2.2 kΩ | R159 | 1 kΩ | R195 | 220 kΩ | C123 | .02 MFD | D134 | 1A. 400V. |
| R124 | 270 Ω | R160 | 1 kΩ | R196 | 220 kΩ | C124 | .047 MFD | D135 | 1A. 400V. |
| R125 | 680 Ω | R161 | 470 Ω | R197 | 270 Ω | C125 | .1 MFD | D136 | 1A. 400V. |
| R126 | 1 kΩ TRIMMER | R162 | 4.7 kΩ | R198 | 10 kΩ | C126 | .50 MFD | D137 | 1A. 400V. |
| R127 | 2.2 kΩ | R163 | 50 kΩ TRIMMER | R199 | 22 kΩ | C127 | .22 MFD | D138 | 1A. 400V. |
| R128 | 4.7 kΩ | R164 | 1.3 kΩ | R1100 | 100 kΩ | C128 | 1.8 MFD | | |
| R129 | 33 kΩ | R165 | 1.3 kΩ | R1101 | 10 kΩ TRIMMER | C129 | .047 MFD | SCR101 | 4A. |
| R130 | 47 kΩ | R166 | 47 Ω | R1102 | 15 Ω | C130 | .047 MFD | | |
| R131 | 4.7 kΩ | R167 | 47 kΩ | R1103 | 22 kΩ | | | X101 | QUAD OR AMP. |
| R132 | 10 kΩ | R168 | 1 MΩ | R1104 | 82 kΩ | | | X102 | QUAD OR AMP. |
| R133 | 68 kΩ | R169 | 47 Ω | R1105 | 12 Ω | | | | |
| R134 | 2.2 kΩ | R170 | 330 Ω | R1106 | 1 kΩ | | | | |
| R135 | 2.2 kΩ | R171 | 4.7 kΩ | R1107 | 1.3 kΩ | | | | |
| R136 | 1.8 kΩ | R172 | 33 kΩ | R1108 | 47 kΩ | | | | |
| | | | | R1109 | 150 kΩ | | | | |
| | | | | R1110 | 22 kΩ | | | | |
| | | | | R1111 | 100 Ω | | | | |
| | | | | R1112 | 150 Ω | | | | |
| | | | | R1113 | 200 Ω | | | | |
| | | | | R1114 | 15 Ω | | | | |
| | | | | R1115 | 1 MΩ | | | | |

| | |
|---|---|
| D101-D106 | 1A. 100V. |
| D105 | 1A. 400V. |
| D106 | 1A. 400V. |
| D107 | 1A. 400V. |
| D108 | 1A. 400V. |
| D109 | 1A. 400V. |
| D110 | 1A. 400V. |
| D111 | 1A. 400V. |

| | |
|---|---|
| L101 | 33 mH |
| LED1C1 | RED LIGHT EMITTING DIODE |
| LED102 | |
| LED103 | |
| LED104 | |
| LED105 | |
| TP101 | TRANSIENT SUPPRESSOR |
| TP102 | |
| TP103 | |

| | |
|---|---|
| Q101 | 2N5616 |
| Q102 | 2N5815 |
| Q103 | 2N5616 |
| Q104 | 2N5815 |
| Q105 | 2N4857 |
| Q106 | 2N4657 |
| Q107 | 2N4657 |
| Q108 | 2N4857 |
| Q109 | 2N4857 |
| QU101 | 2N6027 |
| DZ101 | 15V., 5W |
| DZ102 | 10V., 5W. |
| DZ103 | 6.2V., 4W. |
| DZ104 | 10V., 1W. |
| DZ105 | 8V., 5W |
| DZ106 | 12V., 1W. |
| DZ107 | 8V., 5W. |
| DZ108 | 25V., 5W. |
| DZ109 | 15V., 1W. |
| DZ110 | 5.1V., 5W |
| DZ111 | 8.1V., 5W. |
| DZ112 | 15V., 1W. |
| DZ113 | 15V., 1W. |
| DZ114 | 25V., 5W. |

## FIRING CIRCUIT P.C. BOARD

| | |
|---|---|
| R301-R306 | 500 Ω, 11W. |
| R307-R312 | 10 Ω |
| R313-R318 | 470 Ω |
| R319-R324 | 5.1 Ω |
| R325-R330, R361 | 100 Ω |
| R331-R336 | 150 Ω |
| R337-R339 | 4.7 kΩ |
| R340-R342 | 68 kΩ |
| R343-R345 | 1K Ω |
| R346-R348 | 1 MEG Ω |
| R349-R351 | 50 kΩ TRIMMER |
| R352-R354 | 47 kΩ |
| R355-R357 | 680 Ω, 2W |
| R358-R360 | 270 Ω |
| D301 THRU D345 | 1A. |
| DZ301 THRU DZ306 | 27V., 5W. |
| DZ307 THRU DZ309 | 25V., 5W. |
| DZ310 | 12V., 1W. |
| L301 | 33 mH |
| LED301 THRU 309 | RED LT. EMIT. DIODE |
| QU301 THRU QU303 | 2N6071 |
| PT301-PT303 | 1:1:1 PULSE TRANSF. |
| SCR301-SCR306 | 12A., 400V. |
| TP301-TP308 | TRANS. SUPPRESSOR |
| C301-C306 | .22 MFD |
| C307-C312 | 2.7 MFD |
| C313-C319 | .047 MFD |
| C320-C328 | .022 MFD |
| C329-C331 | .22 MFD |

## COMPONENTS NOT ON P.C. BOARD

| | |
|---|---|
| R1 | 10K Ω POT. |
| R2 | 30 Ω 100W. |
| C1-C6 | .15 MFD |
| C7 | .05+.05 MFD. |
| D1 | 16A. |
| F1 | 8A. SLOW BLOW |
| 1CR | INPUT STARTER |
| 2CR | FAULT PROTECTION RELAY |
| 4CR | CURRENT ACTIVATED REED SW |
| 6CR | STARTER PILOT RELAY |
| SW1 | INPUT POWER |
| SW2 | ELECT. POLARITY |
| SW4 | OUTPUT CONTROL |
| SW5 | WELDING MODE |
| T1 | AUX. POWER TRANSFORMER |
| T2-T4 | CONTROL POWER TRANSFORMER |
| T5 | MAIN POWER TRANSFORMER |
| T6 | INTERPHASE REACTOR |
| T7 | CONTROL TRANSFORMER |
| SCR1-SCR6 | 850A, 500V. |

## SNUBBER P.C. BD.

| | |
|---|---|
| R401-R403 | 47Ω, 2W. |
| R501-R503 | 47Ω, 2W. |
| R504 | 27Ω, 2W. |
| C401-C403 | .68 MFD |
| C501-C503 | .68 MFD |
| C504 | 1 MFD |

## NOTES

N.A. ONE OR BOTH DIODES (D121 & D122) MAY BE SHORTED WITH A JUMPER.

N.B. CIRCLED CONNECTION PIN NOS. ON CONTROL & FIRING BOARD INDICATE THE SMALLER OF THE TWO MOLEX CONNECTIONS

"ANSI" ELECTRICAL SYMBOLS PER C-537.2
SINCE COMPONENTS OR CIRCUITRY ON A PRINTED CIRCUIT MAY CHANGE WITHOUT AFFECTING THE INTERCHANGEABILITY OF A COMPLETE BOARD, THIS DIAGRAM MAY NOT SHOW THE EXACT COMPONENTS OR CIRCUITRY OF CONTROLS HAVING A COMMON CODE.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CAN 11-80 ERA 12-80 ARM CO | | | | | | | AUST |
| THE LINCOLN ELECTRIC CO. CLEVELAND, OHIO, U.S.A. | EQUIP. DC-1500 IDEALARC | | | | | | |
| DATE 7-14-80 | TYPE | | | | | | |
| DR. RHC | CHK. REC | SUPP'S G-1513 | SUBJECT: OPERATING SCHEMATIC | | | | |
| | | | | | | | G-1531 |