



FOR CONTROL P.C. BOARD L5224-5 OR HIGHER USE L8939 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

CONTROL CIRCUIT		
C101 .47 MFD	R101 40 OHM 12 W	O101 2N5655
C102 50 MFD	R102 68K OHM	O102 MJ3029
C103 .047 MFD	R104 10K OHM 2 W	O103 2N4123
C104 .047 MFD	R105 27K OHM	O104 2N4123
C106 .047 MFD	R106 4.7K OHM	O105 2N5816
C107 .1 MFD	R107 15K OHM	O106 2N5816
C108 4.7 MFD	R108 22K OHM	O107 2N5816
C110 1 MFD	R109 10K OHM	O108 2N4123
C113 .15 MFD	R110 1.5K OHM	
C114 .15 MFD	R111 5K OHM TRIMMER	
C116 .047 MFD	R112 4.7K OHM	
C117 .02 MFD	R113 33K OHM	OUI01 2N6027
C118 .02 MFD	R114 10K OHM	OUI03 UJT
C119 .02 MFD	R115 100 OHM	
C120 .02 MFD	R117 47 OHM	
C121 .02 MFD	R118 6.8K OHM	
	R119 6.8K OHM	
	R120 680 OHM	
	R121 2.7K OHM	
	R122 47K OHM	
	R123 100 OHM	
	R124 100 OHM	
	R125 10K OHM	
	R126 60K OHM	
	R127 4.7K OHM	
	R128 47K OHM	
	R129 47K OHM	
	R131 10K OHM 2 W	
	R132 10K OHM	
D101 16 A		LED1A RED LIGHT EMITTING DIODE
D102 16 A		LED1B RED LIGHT EMITTING DIODE
D103 16 A		LED1C RED LIGHT EMITTING DIODE
D104		LED1D RED LIGHT EMITTING DIODE
D104		LED1E RED LIGHT EMITTING DIODE
D114		
DZ101 25V		SCR101 8A 60V
DZ102 3V		SCR102 8A 60V
		SCR103 16A 400V
		SCR104 16A 400V
PT101		PT101 TRANSIENT PROTECTOR
F101		F101 1/2A SLOW BLOW FUSE
F102		F102 3/10A FUSE
F103		F103 3/10A FUSE
PT104		PT104 PULSE TRANSFORMER
PT105		PT105 PULSE TRANSFORMER

VARIABLE VOLTAGE CIRCUIT		
C301 2 MFD	R309 10K OHM TRIMMER	
C302 .1 MFD	R309 15 OHM	
C303 .01 MFD	R310 75 OHM	
C304 .02 MFD	R311 68 OHM	
C305 .01 MFD	R312 5.6K OHM 2 W	
C306 2 MFD	R313 6.8K OHM	
C307 .47 MFD	R314 10K OHM	
C308 .22 MFD	R315 1K OHM 12 W	
C309 .02 MFD	R316 33K OHM	
C310 .01 MFD	R317 10K OHM	
	R318 560 OHM	
	R319 2.7M OHM	
	R320 100 OHM	
D301		THRU D304 1 A
D305		THRU D312 1 A
OC1301		OPTO-ISOLATOR
OC1302		OPTO-ISOLATOR
DZ301 5.1V		
DZ302 10V		
DZ303 25V		
DZ304 15V		
DZ305 3V		
DZ306 3V		
O301		2N4123
O302		2N5815
O303		MPS A13
OU301		UJT
TP301		TRANSIENT PROTECTOR
TP302		TRANSIENT PROTECTOR
PT301		PULSE TRANSFORMER
S301		SPDT TOGGLE SWITCH
T301		24V TRANSFORMER

* OPTIONAL CIRCUIT	
C401 18 MFD	
C402 .02 MFD	
C403 .02 MFD	
C404 .02 MFD	
C405 .02 MFD (CRATER CKT. ONLY)	
CR401	DPST N.L.O. 24 VDC
D401	THRU D405 1A
LED4A	RED LIGHT EMITTING DIODE
LED4B	RED LIGHT EMITTING DIODE
LED4C	RED LIGHT EMITTING DIODE
LED4D	RED LIGHT EMITTING DIODE
R401	1.5K OHM
R402	6.8K OHM
R403	100K OHM 2 W
R404	4.7K OHM
R405	2.7K OHM
R406	1.5K OHM
R407	1K OHM
R408	10K OHM 2 W
R409	5K OHM 2 W
R410	50K OHM TRIMMER
R411	470 OHM
R412	6.8K OHM
O401	2N4123
X401	QUAD 2 INPUT NANDGATE

COMPONENTS NOT ON P.C. BOARD	
R1	2 OHM 50 W
R2	10K OHM 2 W POWER SOURCE OUTPUT CONTROL
R3	5K OHM 2 W WIRE FEED SPEED CONTROL
R4	250 OHM 25 W
S1	DPST CONTROL POWER SWITCH
S2	SPDT TRAVEL SWITCH
S3	SPST INCH UP SWITCH
S4	SPST INCH DOWN SWITCH
S5	SPST START SWITCH
S6	SPST STOP SWITCH
1CR	SPST 110 VDC COIL
2CR	SPST 110 VDC COIL
3CR	SPST 110 VDC COIL
4CR	REED SWITCH ACTUATED BY WELDING CURRENT
5CR	OPTIONAL - SPST, 110 VDC COIL ACTUATED BY 4 CR CIRCUIT
6CR	SOLID STATE RELAY FOR LINC-FILL STARTING RELAY OPERATION
7CR	LINC-FILL STARTING RELAY

METHODS OF TRAVEL	
START/STOP WITH SWITCHES	CONNECT LEAD #691 TO P6 LEAD #692 TO P5
START/STOP WITH CURRENT	CONNECT LEAD #691 TO P6 LEAD #692 TO P7
START WITH CURRENT STOP WITH STOP SWITCH	CONNECT LEAD #691 TO P5 LEAD #692 TO P7
START WITH START SWITCH STOP AFTER CRATER FILL (CRATER FILL BOARD INSTALLED)	CONNECT LEAD #691 TO P8 LEAD #692 TO P9

METHODS OF BURNBACK	
WIRE FEED STOP & CONTRACTOR DELAY	CONNECT LEAD #693 TO P3 LEAD #690 TO P4
INCH UP & CONTACTOR DELAY	CONNECT LEAD #693 TO P1 LEAD #690 TO P4
INCH UP & NO CONTACTOR DELAY	CONNECT LEAD #693 TO P1 LEAD #690 TO P2

USE OF CRATER FILL BOARD	
CRATER BOARD INSTALLED?	FOR EARLIER LOGIC P.C. BOARDS WITH JUMPERS
YES (REMOVE JUMPER CONNECTOR "B" FROM 584(C) TO 583(C))	CONNECT LEAD #694 TO P10
NO (INSTALL JUMPER CONNECTOR "B" FROM 584(C) TO 583(C))	CONNECT LEAD #694 TO P8

- N.A. TO OPERATE UNIT WITHOUT VARIABLE VOLTAGE BOARD JUMPER 637 TO 539 AND 635 TO 636.
- N.B. TO OPERATE UNIT WITHOUT OPTIONAL START BOARD JUMPER 583 (S) AND 584 (S).
- N.C. TO OPERATE UNIT WITHOUT CRATER FILL BOARD JUMPER 583 (C) AND 584 (C).
- N.D. X201 THRU X207 AND X401 - PIN 7 CONNECTED TO 539 - PIN 14 CONNECTED TO 515.
- N.E. WHEN CONTROLS ARE USED WITH R35 POWER SOURCES OF THE TYPE WHICH USE TAPS CONNECTED WITH A TRIANGLE PLATE FOR MAJOR VOLTAGE ADJUSTMENTS, JUMPER TO BE CONNECTED TO PIN "L". FOR ALL OTHER POWER SOURCES JUMPER TO BE CONNECTED TO PIN "H".
- N.F. THESE JUMPER LEADS ARE NOT PRESENT ON LOGIC P.C. BOARDS WITH DIP SWITCHES.

NOTE: SINCE COMPONENTS OR CIRCUITRY ON A PRINTED CIRCUIT BOARD 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 NUMBER.

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MANUFACTURING TOLERANCE PER ENGINEER UNLESS OTHERWISE SPECIFIED: DIMENSIONS ON 2 PLACE DECIMALS (0.02 IN. (0.51 MM)) ON 3 PLACE DECIMALS (0.002 IN. (0.051 MM)) ON ALL ANGLES IS ± 0.5 DEGREE MATERIAL TOLERANCE (1) TO AGREE WITH PUBLISHED STANDARDS	CONTROL CLEVELAND	SCALE: 1:1 IF PRINTED @ A1 SIZE UNITS: INCH	EQUIPMENT TYPE: NA-3S CCC	PAGE 1 OF 1
APPROVED: BS	ENGINEER: dsbrez	MATERIAL DISPOSITION: NA	SUBJECT: MACHINE SCHEMATIC	DOCUMENT NUMBER: G1385-1
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