



FOR CONTROL P.C. BOARDS L6959-2 OR HIGHER USE L8943 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

FOR LOGIC P.C. BOARDS L5927-2 OR HIGHER USE L9015 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

FOR VARIABLE VOLTAGE P.C. BOARDS L-5394-2 OR HIGHER USE M16966 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

CONTROL CIRCUIT		
C101 .47 MFD	R101 80 Ω, 12W	R128 47 K Ω
C102 50 MFD	R102 68 K Ω	R129 47 K Ω
C103 .047 MFD	R104 10 K Ω, 2W	R131 10 K Ω, 2W
C104 .047 MFD	R105 39 K Ω	R132 10 K Ω
C106 .047 MFD	R106 4.7 K Ω	R133 27 K Ω
C107 .1 MFD	R107 15 K Ω	Q101 2N5655
C108 1 MFD	R108 22 K Ω	Q102 MJ 3029
C110 1 MFD	R109 10 K Ω	Q103 2N4123
C113 .15 MFD	R110 1.5 K Ω	Q104 2N4123
C114 .15 MFD	R111 5 K Ω TRIMMER	Q105 2N4123
C116 .047 MFD	R112 4.7 K Ω	Q106 2N5816
C117 .02 MFD	R113 22 K Ω	Q107 2N5816
C118 .02 MFD	R114 10 K Ω	Q108 2N4123
C119 .02 MFD	R115 100 Ω	Q109 2N4123
C120 .02 MFD	R117 47 Ω	Q110 2N6027
C121 .1 MFD		Q113 47 Ω
C122 .02 MFD		
D101 16A	R118 6.8 K Ω	LED1A RED
D102 16A	R119 6.8 K Ω	LED1B RED
D103 16A	R120 100 Ω	LED1C LIGHT EMITTING DIODE
D104 THRU D117 1A	R121 2.7 K Ω	LED1D DIODE
D118 1A	R122 47 K Ω	LED1E
DE101 25V	R123 100 Ω	SCR101 8A, 600V
DE102 3V	R124 100 Ω	SCR102 8A, 600V
	R125 10 K Ω	SCR103 12A, 400V
	R126 68 Ω	SCR104 12A, 400V
	R127 4.7 K Ω	
PT101 PULSE TRANSFORMER	PT104 PULSE TRANSFORMER	
F101 1/2 A SLOW BLOW FUSE	PT105 PULSE TRANSFORMER	
F102 3/8 A FUSE		

LOGIC CIRCUIT		
C201 .02 MFD	R201 1.5 K Ω	R226 6.8 K Ω
C202 2 MFD	R202 4.75 K Ω	R227 1.5 K Ω
C203 .02 MFD	R203 15 K Ω	R228 4.75 K Ω
C204 10 MFD	R204 4.75 Ω	R229 100 Ω
C205 10 MFD	R205 10 K Ω	R230 100 Ω
C206 .02 MFD		R231 100 Ω
C207 50 MFD	R206 50K Ω TRIMMER	R232 47.5 Ω
C208 2 MFD	R207 1.5 K Ω	R233 100 Ω
C209 4.7 MFD	R208 1 K Ω	R234 475 Ω
C210	R209 10 K Ω	R235 475 Ω
THRU C215 .02 MFD	R210 5K Ω TRIMMER	R236 4.75 K Ω
D201 THRU D218 1A	R211 1 K Ω	R237 332 Ω
	R212 2.67 Ω	X201 QUAD 2 INPUT NANDGATE
	R213 47.5 K Ω	X202 QUAD 2 INPUT NANDGATE
	R214 4.75 K Ω	X203 HEX INVERTER
	R215 4.75 K Ω	X204 QUAD 2 INPUT NANDGATE
		X205 QUAD 2 INPUT NANDGATE
LED2B THRU LED2F RED	R216 4.75 K Ω	L201 5.6 mH
LED2H LIGHT	R217 4.75 K Ω	DZ201 16V
LED2J EMITTING THRU DIODE	R218 1.5 K Ω	DZ202 THRU DZ205 3V
LED2M	R219 2.67 K Ω	
Q201 2N5655	R220 4.75 K Ω	
Q202 2N5657	R221 1.5 K Ω	
Q203 2N4401	R222 1 K Ω	
Q204 2N5657	R223 10 K Ω	
Q205 0.5A 300V	R224 2.67 K Ω	
Q206 1.5 K Ω	R225 1.5 K Ω	
QU201 UJT		

VARIABLE VOLTAGE CIRCUIT		
C301 2 MFD	R311 68 Ω	
C302 .1 MFD	R312 5.6 K Ω, 2W	
C303 .01 MFD	R313 6.8 K Ω	
C304 .02 MFD	R314 10 K Ω	
C305 .01 MFD	R315 1 K Ω, 12W	
	R316 33 K Ω	
C306 2 MFD	R317 10 K Ω	
C307 .47 MFD	R318 560 Ω	
C308 .22 MFD	R319 2.7 M Ω	
C309 .02 MFD	R320 100 Ω	
C310 .01 MFD		
D301 THRU D304 1A	Q301 2N4123	
	Q302 2N5815	
	Q303 MPS-A13	
	Q304 UJT	
D305 THRU D312 1A	TP301 TRANSIENT PROTECTOR	
	TP302 TRANSIENT PROTECTOR	
	PT301 PULSE TRANSFORMER	
	S301 SPDT DOUBLE SWITCH	
	T301 24V TRANSFORMER	
R301 47 K Ω	DZ301 5.1V	
R302 3.3 K Ω, 2W	DZ302 10V	
R303 6.8 K Ω	DZ303 25V	
R304 68 K Ω	DZ304 15V	
R305 100 K Ω	DZ305 3V	
R306 4.7 K Ω, 2W	DZ306 3V	
R307 100 Ω		
R308 10 K Ω TRIMMER		
R309 15 Ω		
R310 75 Ω		

TRAVEL CIRCUIT		
C401 18 MFD	R419 40 Ω, 12W	
C402 1.8 MFD	R420 470 Ω	
C403 .005 MFD		
C404 1 MFD		
C405 .1 MFD	D401 1A	
C406 .01 MFD	D402 1A, 1000 V	
C407 .047 MFD	D403 1A, 1000 V	
C408 .047 MFD	D404 16A	
C409 39 MFD	D405 16A	
C410 50 MFD	D406 16A	
C411 .02 MFD	D407 1A, 1000V	
C412 .005 MFD	D408 1A, 1000V	
C413 .02 MFD	D409 1A	
	D410 1A	
	D411 1A	
R401 10 K Ω	SCR TRAVEL REVERSING RELAY	
R402 10 K Ω	TP401 TRANSIENT PROTECTOR	
R403 4.7 K Ω	PT401 1:1:1 PULSE TRANSFORMER	
R404 3.9 K Ω	DZ401 20V	
R405 27 K Ω	DZ402 10V	
R406 15 K Ω	SCR401 12A, 400V SCR	
R407 4.7 K Ω	SCR402 12A, 400V SCR	
R408 4.7 K Ω, 5W	Q401 2N4123	
R409 4.7 K Ω	Q402 2N4123	
R410 2 K Ω TRIMMER	Q403 2N6027	
R411 20 K Ω TRIMMER	F401 1/2A SLOW BLOW FUSE	
R412 27 K Ω		
R413 47 Ω		
R414 6.8 K Ω		
R415 10 K Ω		
R416 10 K Ω		
R418 100 K Ω		

COMPONENTS NOT ON P.C. BOARD		
R1 2 Ω, 50W		
R2 10K Ω, 2W POWER SOURCE OUTPUT CONTROL		
R3 5K Ω, 2W WIRE FEED SPEED CONTROL		
R4 250 Ω, 25W		
R5 2 Ω, 25W		
R6 5K Ω, 2W TRAVEL SPEED CONTROL		
R7 1.3 Ω, 10W		
S1 DPST CONTROL POWER SWITCH		
S2 SPDT TRAVEL CONTROL SWITCH		
S3 SPST INCH UP SWITCH		
S4 SPST INCH DOWN SWITCH		
S5 SPST START SWITCH		
S6 SPST STOP SWITCH		
S7 DPDT (REV) TRAVEL DIRECTION SWITCH		
1CR SPST, 110 VDC COIL		
2CR SPST, 110 VDC COIL		
3CR REED SWITCH ACTUATED BY WELDING CURRENT		
4CR REED SWITCH ACTUATED BY FAULT CURRENT THRU GROUNDING LEAD TO POWER SOURCE FRAME		

ELECTRICAL SYMBOLS PER E-1537

N.A. TO OPERATE UNIT WITHOUT VARIABLE VOLTAGE BOARD JUMPER G37 TO 539 & G35 TO G36.

N.B. X201 THRU X205 - PIN 7 CONNECTED TO 539. PIN 14 CONNECTED TO 516.

N.C. WHEN CONTROLS ARE USED WITH RES POWER SOURCES OF THE TYPE WHICH USES TRAPS CONNECTED WITH TRIMMER RATE FOR MAJOR VOLTAGE ADJUSTMENTS, JUMPER TO BE CONNECTED TO PIN "L". FOR ALL OTHER POWER SOURCES JUMPER TO BE CONNECTED TO PIN "H".

NOTE: SINCE COMPONENTS OF 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 CASE NUMBER.

THE LINCOLN ELECTRIC CO. CLEVELAND, OHIO, U.S.A.

TYPE LT-56 - TRACTOR

SUBJECT D.C. OPERATING SCHEMATIC

DATE 11-11-78 SCALE 1:1

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