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

CONTROL CIRCUIT

C101	.47 MFD	R101	80 OHM 12 W	Q101	2N5655
C102	50 MFD	R102	68K OHM	Q102	MJ3029
C103	.047 MFD	R104	10K OHM 2 W	Q103	2N4123
C104	.047 MFD	R105	39K OHM	Q104	2N4123
C106	.047 MFD	R106	4.7K OHM	Q105	2N4123
C107	.1 MFD	R107	15K OHM	Q106	2N5816
C108	1 MFD	R108	22K OHM	Q107	2N5816
C110	1 MFD	R109	10K OHM	Q108	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	22K OHM	QU101	2N6027
C118	.02 MFD	R114	10K OHM	QU103	UJT
C119	.02 MFD	R115	100 OHM		
C120	.02 MFD	R117	47 OHM		
C121	1 MFD	R118	6.8K OHM		
C122	.02 MFD	R119	6.8K OHM		
		R120	680 OHM	LED 1A	RED LIGHT EMITTING DIODE
D101	16 A	R121	2.7K OHM	LED 1B	RED LIGHT EMITTING DIODE
D102	16 A	R122	47K OHM	LED 1C	RED LIGHT EMITTING DIODE
D103	16 A	R123	100 OHM	LED 1D	RED LIGHT EMITTING DIODE
D104 THRU D114, D116, D117	1 A	R124	100 OHM	LED 1E	RED LIGHT EMITTING DIODE
		R125	10K OHM		
		R126	680 OHM		
		R127	4.7K OHM		
		R128	47K OHM	SCR101	8A 600V
		R129	47K OHM	SCR102	8A 600V
DZ101	25V	R131	10K OHM 2 W	SCR103	12A 400V
DZ102	3V	R132	10K OHM	SCR104	12A 400V
		R133	27K OHM		

TP101	TRANSIENT PROTECTOR	PT101	PULSE TRANSFORMER
F101	1/2A SLOW BLOW FUSE	PT104	PULSE TRANSFORMER
F102	2/10A FUSE	PT105	PULSE TRANSFORMER

LOGIC CIRCUIT

C201	.02 MFD	R201	1.5K OHM	R234	470 OHM
C202	2 MFD	R202	4.7K OHM	R235	470 OHM
C203	.02 MFD	R203	15K OHM	R236	4.7K OHM
C204	10 MFD	R204	47 OHM	R237	330 OHM
C205	10 MFD	R205	10K OHM		
C206	.02 MFD	R206	50K OHM TRIMMER		
C207	50 MFD	R207	1.5K OHM		
C208	2 MFD	R208	1K OHM	X201	QUAD 2 INPUT NANDGATE
C209	4.7 MFD	R209	10K OHM		
C210 THRU C215	.02 MFD	R210	5K OHM TRIMMER	X202	QUAD 2 INPUT NANDGATE
		R211	1K OHM		
		R212	2.7K OHM	X203	HEX INVERTER
		R213	47K OHM	X204	QUAD 2 INPUT NANDGATE
D201 THRU D213, D216, D217, D218	1 A	R214	4.7K OHM		
		R215	4.7K OHM	X205	QUAD 2 INPUT NANDGATE
		R216	4.7K OHM		
		R217	4.7K OHM		
		R218	1.5K OHM		
		R219	2.7K OHM		
		R220	4.7K OHM	L201	5.6mH
LED 2B THRU LED 2F, LED 2H, LED 2J THRU LED 2M	RED LIGHT EMITTING DIODE	R221	1.5K OHM		
		R222	1K OHM		
		R223	10K OHM	DZ201	16V
		R224	2.7K OHM	DZ202 THRU DZ205	3V
		R225	1.5K OHM		
		R226	6.8K OHM		
		R227	1.5K OHM		
		R228	4.7K OHM		
Q201	2N5655	R229	100 OHM		
Q202	2N5657	R230	100 OHM		
Q203	2N4123	R231	100 OHM		
Q204	2N5657	R232	47 OHM		
Q205	0.5A 300V	R233	100 OHM		
QU201	UJT				

VARIABLE VOLTAGE CIRCUIT

FOR VARIABLE VOLTAGE P.C. BOARDS L5394-2 OR HIGHER USE M16966 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

C301	2 MFD	R316	33K OHM
C302	.1 MFD	R317	10K OHM
C303	.01 MFD	R318	560 OHM
C304	.02 MFD	R319	2.7M OHM
C305	.01 MFD	R320	100 OHM
C306	2 MFD		
C307	.47 MFD		
C308	.22 MFD	LED 3A	RED LIGHT EMITTING DIODE
C309	.02 MFD	LED 3B	RED LIGHT EMITTING DIODE
C310	.01 MFD		
		OC1301	OPTO-ISOLATOR
D301 THRU D304	1 A	OC1302	OPTO-ISOLATOR
		Q301	2N4123
D305 THRU D312	1 A	Q302	2N5815
		Q303	MPS A13
		QU301	UJT
R301	47K OHM	TP301	TRANSIENT PROTECTOR
R302	3.3K OHM 2 W	TP302	TRANSIENT PROTECTOR
R303	6.8K OHM	PT301	PULSE TRANSFORMER
R304	68K OHM		
R305	100K OHM	S301	SPDT TOGGLE SWITCH
R306	4.7K OHM 2 W		
R307	100 OHM	T301	24V TRANSFORMER
R308	10K OHM TRIMMER		
R309	15 OHM	DZ301	5.1V
R310	75 OHM	DZ302	10V
R311	68 OHM	DZ303	25V
R312	5.6K OHM 2 W	DZ304	15V
R313	6.8K OHM	DZ305	3V
R314	10K OHM	DZ306	3V
R315	1K OHM 12 W		

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
R5	2 OHM 25 W
R6	5K OHM 2 W TRAVEL SPEED CONTROL
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.

A.N.S.I. ELECTRICAL SYMBOLS PER E1537.

N.A. TO OPERATE UNIT WITHOUT VARIABLE VOLTAGE BOARD JUMPER 637 TO 539 AND 635 TO 636.

N.B. X201 THRU X205 - PIN 7 CONNECTED TO 539, PIN 14 CONNECTED TO 515

N.C. WHEN CONTROLS ARE USED WITH R3S POWER SOURCES OF THE TYPE WHICH USES 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".

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.

UNLESS OTHERWISE SPECIFIED TOLERANCE ON HOLE SIZES PER E2056 ON 2 PLACE DECIMALS IS ±.02 ON 3 PLACE DECIMALS IS ±.002 ON ALL ANGLES IS ±.5 OF A DEGREE MATERIAL TOLERANCE ("t") TO AGREE WITH PUBLISHED STANDARDS.

Orig. Sht. No. 10-23-920 | 6-14-85N | 2-12-69M | 5-8-92L | 7-30-92M | 9-25-92J

THE LINCOLN ELECTRIC CO. CLEVELAND, OHIO U.S.A.
EQUIP. TYPE: LT-7 TRACTOR
SUBJECT: OPERATING SCHEMATIC
SCALE: NONE
DR DAD/JLY DATE 6-4-92 CHK THP
SUP'S'D'G 01369
SHT. NO. G 1452