



POWER CIRCUIT

C101	.005 MFD	R101	40 Ω 12 W.
C102	.047 MFD	R102	100 Ω 1/2 W.
C103	.047 MFD	R103	320 Ω 1/2 W.
C104	.022 MFD	R104	1 K Ω 1/2 W.
C105	.01 MFD	R105	10 K Ω 1/2 W.
C106	.5 MFD		
C107	150 MFD	R106	100 K Ω 1/2 W.
C108	2.7 MFD	R107	10 Ω 1/2 W.
C109	.15 MFD	R108	22 K Ω 1/2 W.
C110	.205 MFD	R109	15 K Ω 1/2 W.
C111	.005 MFD	R110	3POT 24 V.D.C.
C112	.02 MFD		
C113	.02 MFD		
C114	.022 MFD		
C115	.02 MFD		
C116	.022 MFD		
D101	16 A.	SCR101	12 A. 400 V.
D102	16 A.	SCR102	12 A. 400 V.
D103	16 A.		
D104	17A. 1000 V.	Q101	2N 5655
D105	1A. 1000 V.	Q102	2N 5655
		Q103	MPS A92

* PT101 110V PULSE TRANSFORMER
* TP101 TRANSIENT PROTECTOR

DZ101 15 V. 5W.
DZ102 10 V. 5W.

F101 1/2 A. SLOW BLOW FUSE

* C105 AND PT101 PRIMARY ARE SHOWN IN SECTION C.

CONTROL CIRCUIT

C201	.022 MFD	R201	1 K Ω	R226	10 K Ω	Q201	
C202	.012 MFD	R202	270 Ω	R227	6.8 K Ω	Q202	2N 4123
C203	.18 MFD	R203	200 Ω	R228	10 K Ω	Q203	7805
C204	4.7 MFD	R204	1.00 K Ω 1/4 W. 1%	R229	20 K Ω TRIMMER	Q204	2N 4123
C205	.0033 MFD	R205	2.94 K Ω 1/4 W. 1%	R230	27 K Ω	Q205	2N 4123
C206	.47 MFD	R206	15 K Ω	R231	15 Ω	Q207	2N 5916
C207	.18 MFD	R207	10 K Ω	R232	100 Ω	Q2101	2N 6027
C208	4 MFD	R208	100 K Ω TRIMMER	R233	6.8 K Ω		
C209	.047 MFD	R209	33 K Ω	R234	2.7 K Ω		
C210	4.7 MFD	R210	10 K Ω	R235	10 K Ω		
C211	.15 MFD	R211	5.6 K Ω	R236	15 K Ω		
C212	.022 MFD	R212	15 K Ω	R237	10 K Ω		
C213	.022 MFD	R213	47 K Ω	R238	1 M Ω		
C214	4.7 MFD	R214	15 K Ω	R239	15 K Ω		
C215	.18 MFD	R215	100 K Ω	R240	5.6 K Ω		
C216	100 pF	R216	1 K Ω	R241	15 K Ω		
C217		R217	1 K Ω	R242	50 Ω TRIMMER		
T201	.022 MFD	R218	1 K Ω	R243	10 Ω		
T202		R219	33 K Ω	R244	270 Ω		
T203		R220	50 K Ω TRIMMER				

D201 1A.
D202 1A.
D203 1A.
DZ201 6.8 V.

TACH CIRCUIT

QZ301	1 K Ω	R301	15 K Ω
QZ302	15 K Ω	R302	1.5 K Ω
QZ303	1.5 K Ω		
OC1	301 OPTO INTERRUPTER		
Q301	2N 4123		

METER CIRCUIT

C401	500 MFD	R401	24.3 K Ω 1/4 W. 1%
C402	4.7 MFD	R402	2 K Ω TRIMMER
C403	27 MFD	R403	2.80 K Ω 1/4 W. 1%
C404		R404	13.7 K Ω 1/4 W. 1%
THRU	.022 MFD	R405	2 K Ω TRIMMER
C407		R406	3.74 K Ω 1/4 W. 1%
D401		R407	500 Ω TRIMMER
THRU	1A.	R408	61.9 K Ω 1/4 W. 1%
D404		R409	5 K Ω TRIMMER
D401	VOLTAGE REGULATOR		
DM401	DIGITAL METER		

VOLTAGE CIRCUIT

C501	.1 MFD	CR501	SPDT 24V.D.C.	R501	44.2 K Ω 1/4 W. 1%	R526	22 K Ω
C502	.022 MFD	D501	1N4123	R502	500 Ω TRIMMER	R527	22 K Ω
C503	.022 MFD	D502	1N4123	R503	4.75 K Ω 1/4 W. 1%	R528	22 K Ω
C504	4.0 MFD	D503	1N4123	R504	100 K Ω	R529	2.2 K Ω
C505	.47 MFD	D504	1N4123	R505	22 K Ω	R530	15 K Ω
C506	.022 MFD	D505	1N4123	R506	10 K Ω	R531	100 K Ω
C507	.022 MFD	D506	1N4123	R507	10 K Ω	R532	27 K Ω
C508	.39 MFD	D507	1N4123	R508	2.2 K Ω	R533	10 K Ω
C509	.012 MFD	D508	1N4123	R509	2.0 V. 1W.	R534	100 Ω
C510	1.8 MFD	D509	1N4123	R510	4.7 K Ω	R535	1 K Ω
C511	.022 MFD	D510	1N4123	R511	10 K Ω	R536	270 Ω
C512	.022 MFD	D511	1N4123	R512	470 Ω	R537	22 K Ω
C513	.50 MFD	D512	1N4123	R513	270 M Ω	R538	100 K Ω
C514	.022 MFD	D513	1N4123	R514	9.6 K Ω	R539	27 K Ω
C515	1 MFD	D514	1N4123	R515	1.8 K Ω	R540	2 K Ω TRIMMER
C516	.022 MFD	D515	1N4123	R516	6.8 K Ω		
C517	.022 MFD	D516	1N4123	R517	270 Ω		
C518	.39 MFD	D517	1N4123	R518	270 Ω		
C519	.005 MFD	D518	1N4123	R519	10 K Ω		
C520		D519	1N4123	R520	32 K Ω		
C521	.022 MFD	D520	1N4123	R521	100 K Ω		
C522	4.7 MFD	D521	1N4123	R522	15 K Ω		
C523		D522	1N4123	R523	27 K Ω		
C524	4.7 MFD	D523	1N4123	R524	15 K Ω		
C525		D524	1N4123	R525	4.7 K Ω		
C526		D525	1N4123	R526	4.7 K Ω		

Q501 2N 4123
Q502 2N 4123
Q503 2N 5916
Q504 2N 4123

X501 I.C. QUAD OPAMP
X502 I.C. QUAD OPAMP
TP501 TRANSIENT PROTECTOR

* D509 AND CR501 MC CONTACT ARE SHOWN IN SECTION D.

TRIGGER CIRCUIT

CR601	SPDT 24V.D.C.	R601	10 K Ω	R626	22 K Ω
D601	1A. 600 V.	R602	10 K Ω	R627	22 K Ω
D602	1A. 600 V.	R603	4.75 K Ω 1/4 W. 1%	R628	22 K Ω
C601	.15 MFD	R604	100 K Ω	R629	2.2 K Ω
CR601	NO CONTACT IS SHOWN IN SECTION E.	R605	22 K Ω	R630	15 K Ω

START CIRCUIT

C701	15 MFD	R701	27 K Ω	R706	27 K Ω
C702	.39 MFD	R702	15 K Ω	R707	1 K Ω
D701	1A.	R703	100 K Ω	R708	15 K Ω
D702	1A.	R704	6.8 K Ω	R709	100 K Ω
D703	1A.	R705	100 K Ω		
D704	1A.				

SHUTDOWN CIRCUIT

C516	.022 MFD	R516	6.8 K Ω	R521	100 K Ω
C517	.022 MFD	R517	270 Ω	R522	15 K Ω
C518	.39 MFD	R518	270 Ω	R523	27 K Ω
C519	.005 MFD	R519	10 K Ω	R524	15 K Ω
C520		R520	32 K Ω		
C521	.022 MFD	R521	100 K Ω		
C522	4.7 MFD	R522	15 K Ω		
C523		R523	27 K Ω		
C524	4.7 MFD	R524	15 K Ω		
C525		R525	4.7 K Ω		
C526		R526	4.7 K Ω		

METER CIRCUIT

DM401	DIGITAL METER
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COMPONENTS NOT ON P.C. BOARDS

COMPONENT	CIRCUIT
R1	2.5 FJ W.
R2	10K A 2W POT
R3	10K A 2W POT
R4	22 K Ω
R5	0.1 Ω
CR2	WELD CURRENT REED SWITCH
CR4	W.L.F. REED SWITCH
S1	SPST TRIGGER SWITCH
S2	DPDT HOT-COLD (CENT. OFF) INTERLOCK SWITCH
S3	DPDT POLARITY SWITCH
S4	SPST G.L.P. RESET SWITCH
S5	DPDT SET-ACTUAL SWITCH
S6	3POLE VOLTS-SPEED SELECTOR SWITCH
S7	DPDT DIRECTION SWITCH
TP1	150VAC TRANSIENT PROTECTOR
T1	POWER SUPPLY TRANSFORMER
T2	TRIGGER SUPPLY TRANSFORMER

KEY TO SYMBOLS

- INPUT CABLE CONNECTION
- POWER OR SIGNAL SOURCE POINT
- REMOVABLE CONNECTION
- ▽ COMMON CONNECTION
- ⊕ THRU SOURCE POINT CIRCUIT LOCATION

LEAD COLOR CODING

- B - BLACK
- R - RED
- W - BLUE
- W - WHITE

ELECTRICAL SYMBOLS PER E-1537

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

EQUIP. TYPE: LN-9H & LN-9FH (METRIC)
OPERATING SCHEMATIC

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