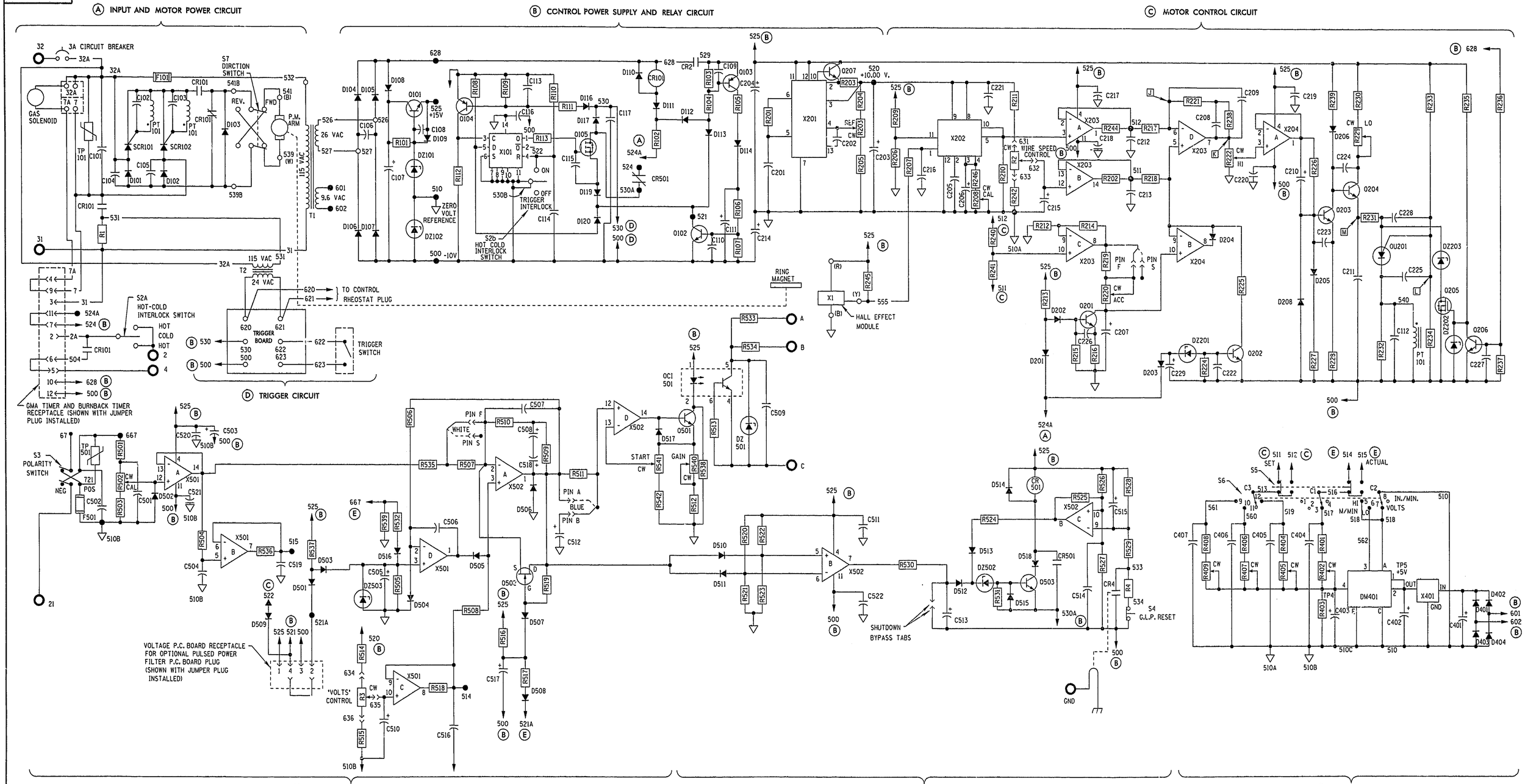
G1763



POWER CIRCUIT				FOR POWER BOARDS L7265-3 OR HIGHER USE SCHEMATIC L8871.
C101	.005/1400	D117	1A	
C102	.047/100	D119	1A	
C103	.047/100	D120	.15A	
C104	.005/1400	F101	4/10 SLOW BLOW FUSE	
C105	.005/1400	R101	330 OHM	
C106	.15/200	R102	10 OHM	
C107	150/50	R103	2.2K OHM	
C108	.022/25	R104	15K OHM	
C109	.022/25	R105	1K OHM	
C110	.022/25	R106	10K OHM	
C111	2.7/50	R107	100K OHM	
*C112	.01/100	R108	22K OHM	
C113	.022/25	R109	47K OHM	
C114	.022/25	R110	22K OHM	
C115	.022/25	R111	15K OHM	
C116	.022/25	R112	15K OHM	
C117	.15/200	R113	100 OHM	
D101	16A	CR101	3PDT 24 VDC	
D102	16A	SCR101	12A, 400V	
D103	16A	SCR102	12A, 400V	
D104 THRU D108	1A	0101	2N5655	
		0102	2N5655	
D109	.15A	0103	MPS A92	
D110	1A	0104	2N4125	
D111	1A	0105	BS170	
D112	.15A	* PT101	1:1:1 PULSE TRANS.	
D113	1A	TP101	TRANSIENT PROTECTOR	
D114	1A	X101	I.C. DUAL 'D' FLIP FLOP	
D116	.15A	DZ101	15V, 5W	
		DZ102	10V, 5W	

*C112 AND PT101 PRIMARY ARE SHOWN IN SECTION C

CONTROL CIRCUIT				FOR P.M. CONTROL BOARDS L10068-1 OR HIGHER USE SCHEMATIC L10069.
C201	.022/25	R208	100K OHM TRIMMER	
C202	.022/25	R209	33K OHM	
C203	18/15	R210	10K OHM	
C204	4.7/35	R211	5.6K OHM	
C205	.0033/200	R212	15K OHM	
C206	.33/50	R213	47K OHM	
C207	18/15	R214	15K OHM	
C208	4/50	R215	100K OHM	
C209	.04/100	R216	1K OHM	
C210	2.7/50	R217	1K OHM	
C211	.15/200	R218	1K OHM	
C212	.022/25	R219	33K OHM	
C213	.022/25	R220	50K OHM TRIMMER	
C214	4.7/35	R221	15K OHM	
C215	18/15	R222	10K OHM TRIMMER	
C216	100pf/100	R223	33K OHM	
C217 THRU C228	.022/25	R224	100K OHM	
		R225	1K OHM	
		R226	13.7K OHM	
C229	.47/50	R227	6.8K OHM	
D201 THRU D206	1A.	R228	10K OHM	
		R229	10K OHM TRIMMER	
D208	1A.	R230	22K OHM	
R201	1K OHM	R231	15 OHM	
R202	270 OHM	R232	100 OHM	
R203	500 OHM TRIMMER	R233	6.8K OHM	
R204	1.00K OHM 1/4W 1%	R234	2.7K OHM	
R205	2.94K OHM 1/4W 1%	R235	10K OHM	
R206	15K OHM	R236	15K OHM	
R207	10K OHM	R237	10K OHM	
		R238	1M OHM	
		R239	15K OHM	
		R240	5.6K OHM	
		R241	15K OHM	
		R242	560 OHM	
		R243	10 OHM	
		R244	270 OHM	
		R245	10K OHM	
		R246	68.1K OHM	
		X201	I.C. REGULATOR	
		X202	I.C. F/V CONVERTER	
		X203	I.C. QUAD OP-AMP	
		X204	I.C. QUAD OP-AMP	
		Q201 THRU Q202	2N4123	
		Q203 THRU Q204	2N4125	
		Q205	BS170	
		Q206	2N4123	
		Q207	2N5816	
		QU201	2N6027	
		DZ201	6.8V.	
		DZ202	16.0V.	
		DZ203	3.0V.	

METER CIRCUIT			
C401	500 MFD		
C402	4.7 MFD		
C403	27 MFD		
C404 THRU D401	.022 MFD		
D404 THRU X401	1A		
DM401	VOLTAGE REGULATOR DIGITAL METER		
R401	24.3K OHM 1/4W 1%		
R402	2K OHM TRIMMER		
R403	2.80K OHM 1/4W 1%		
R404	13.7K OHM 1/4W 1%		
R405	2K OHM TRIMMER		
R406	3.74K OHM 1/4W 1%		
R407	500 OHM TRIMMER		
R408	61.9K OHM 1/4W 1%		
R409	5K OHM TRIMMER		

FOR VOLTMETER P.C. BOARDS L6688-1 OR HIGHER USE S21146 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

VOLTAGE CIRCUIT					
C501	.1/100	Q501	2N4123	R525	4.7K OHM
C502	.005/1400	Q502	2N4857	R526	22K OHM
C503	4.7/35	Q503	MPSA42	R527	22K OHM
C504	4.0/50	X501	I.C. QUAD OP-AMP	R528	22K OHM
C505	.47/50	X502	I.C. QUAD OP-AMP	R529	2.2K OHM
C506	.022/25	TP501	TRANSIENT PROTECTOR	R530	27K OHM
C507	.022/25	R501	44.2K OHM 1/4W 1%	R531	100K OHM
C508	39/20	R502	500 OHM TRIMMER	R532	27K OHM
C509	.022/25	R503	4.75K OHM 1/4W 1%	R533	10K OHM
C510	1.8/20	R504	100K OHM	R534	100 OHM
C511	.022/25	R505	27K OHM	R535	1K OHM
C512	4.7/35	R506	15K OHM	R536	270 OHM
C513	27/35	R507	10K OHM	R537	33K OHM
C514	.022/50	R508	2.2K OHM	R538	56K OHM
C515	1/35	R509	2.7MEG OHM	R539	27K OHM
C516	.022/25	R510	4.7K OHM	R540	5K OHM TRIMMER
C517	.47/50	R511	100K OHM	R541	2K OHM TRIMMER
C518	39/20	R512	1K OHM	R542	5.6K OHM
C519 THRU C522	.022/25	R513	2.7MEG OHM		
		R514	5.6K OHM		
□CR501	S.P.D.T. 24VDC	R515	1.8K OHM		
△D501 THRU D518	1 AMP	R516	100K OHM		
		R517	1K OHM		
DZ501	20V, 1W	R518	270 OHM		
DZ502	15V, 1W	R519	100K OHM		
DZ503	5.1V	R520	15K OHM		
F501	1/8 AMP FAST BLOW FUSE	R521	56K OHM		
		R522	330K OHM		
OC1501	OPTO-ISOLATOR	R523	22K OHM		
		R524	4.7K OHM		

△ D509 NOT USED FOR GMA MODELS

□ CR501 N.C. CONTACT ARE SHOWN IN SECTION B

FOR VOLTAGE P.C. BOARDS L6084-4 OR HIGHER USE L8388 SCHEMATIC FOR COMPONENT VALUES AND CIRCUIT CONNECTIONS.

COMPONENTS NOT ON P.C. BOARD		
COMPONENTS		CIRCUIT
R1	2 OHM 50W	A
R2	10K OHM 2W POT.	C
R3	10K OHM 2W POT.	E
R4	22K OHM	F
CR2	WELD CURRENT-REED SWITCH	B
CR4	G.L.P. REED SWITCH	F
S1	SPST TRIGGER SWITCH	D
S2	DPDT HOT-COLD / CENT. OFF INTERLOCK SWITCH	B & D
S3	DPDT POLARITY SWITCH	E
S4	SPST G.L.P. RESET SWITCH	F
S5	DPDT SET-ACTUAL SWITCH	G
S6	3 POLE VOLTS-SPEED SELECTOR SWITCH	G
S7	DPDT DIRECTION SWITCH	A
T1	POWER SUPPLY TRANSFORMER	B
T2	TRIGGER SUPPLY TRANSFORMER	D
X1	HALL EFFECT MODULE	B

KEY TO SYMBOLS

- INPUT CABLE CONNECTION
- POWER OR SIGNAL SOURCE POINT
- REMOVABLE CONNECTION
- COMMON CONNECTION
- (A) THRU (G) SOURCE POINT CIRCUIT LOCATION
- (J) THRU (M) TEST POINTS

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.

NOTES

ELECTRICAL SYMBOLS PER E1537
CAPACITORS = MFD/VOLTS
RESISTORS = OHMS/WATTS *
* 1/2 WATT UNLESS OTHERWISE SPECIFIED.
OP - AMP = LM 224
REGULATOR = LM 723
F/V CONVERTER = LM 2907
DUAL 'D' FLIP FLOP = MC14013B

LEAD COLOR CODING

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

UNLESS OTHERWISE SPECIFIED TOLERANCE ON HOLE SIZES PER E2056 ON 2 PLACE DECIMALS IS ±.02 ON 3 PLACE DECIMALS IS ±.005 ON ALL ANGLES IS ±.5 OF A DEGREE MATERIAL TOLERANCE ("+") TO AGREE WITH PUBLISHED STANDARDS.

Ch'ge. Sht. No.	
12-21-89C	6-1-964
11-9-900	8-2-968
11-1-934	
1-25-941	
3-25-944	

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

EQUIP. TYPE LN-9 GMA AND LN-9F GMA

SUBJECT OPERATING SCHEMATIC

SCALE NONE

DR DAD 10 DATE 6-25-92 CHK REF. SUP'S'D'G 6-26-86

SHT. NO. G 1763