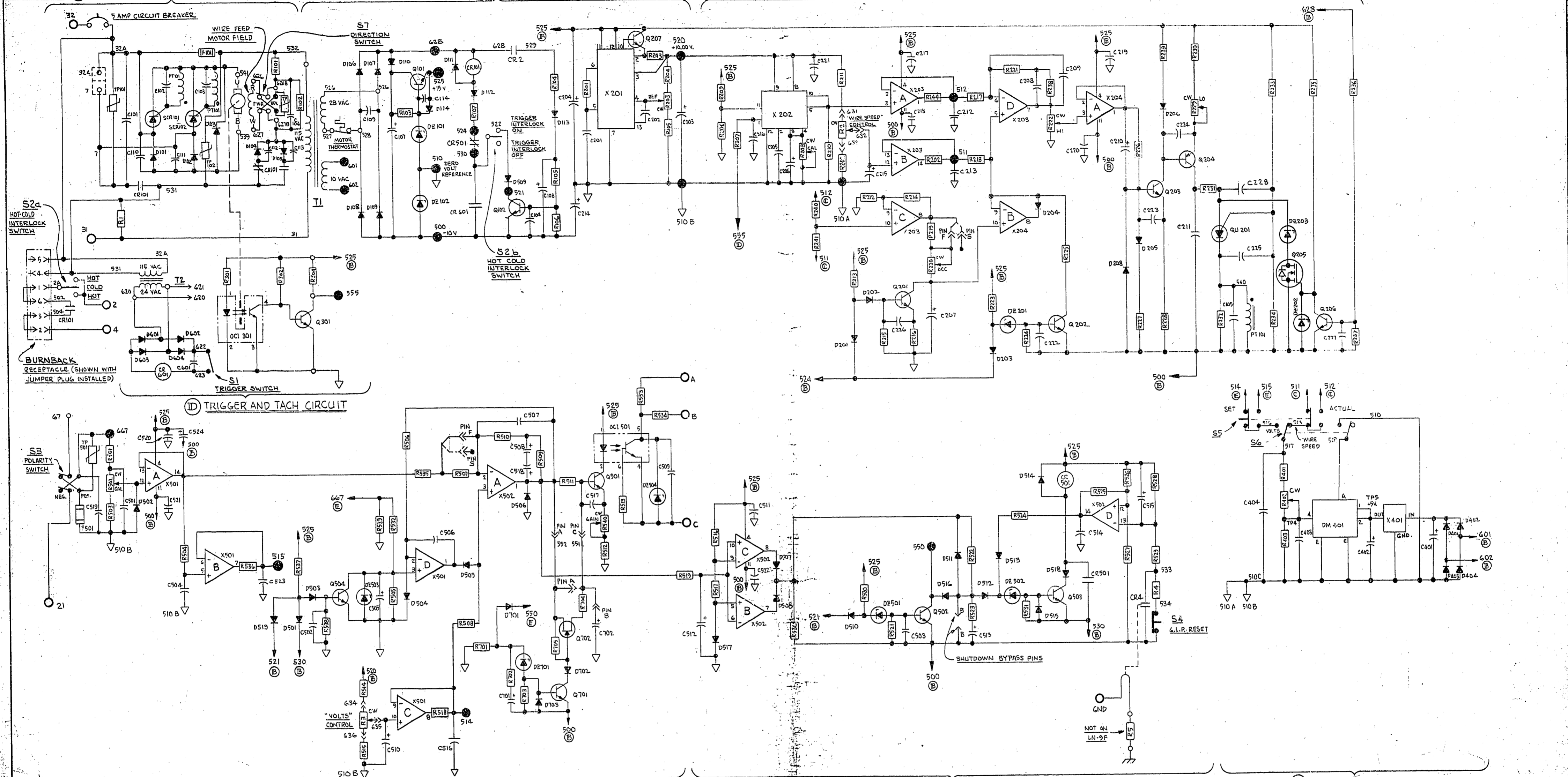


LS91-5 (A) INPUT AND MOTOR POWER CIRCUIT

(B) CONTROL POWER SUPPLY AND RELAY CIRCUIT

(C) MOTOR CONTROL CIRCUIT



POWER CIRCUIT

C101	.005 MFD	R101	40 Ω 12 W
C102	.047 MFD	R102	100 K Ω
C103	.047 MFD	R103	330 Ω
C104	.022 MFD	R104	1 K Ω
C105	.01 MFD	R105	10 K Ω
C106	.50 MFD		
C107	150 MFD		
C108	2.7 MFD		
C109	.15 MFD	R106	100 K Ω
C110	.005 MFD	R107	10 Ω
C111	.205 MFD		
C112	.02 MFD		
C113	.02 MFD		
C115	.022 MFD		
D101	16 A	SCR101	12 A, 400 V
D102	16 A	SCR102	12 A, 400 V
D103	16 A		
D104	1 A, 1000 V	Q101	2N5655
D105	1 A, 1000 V	Q102	2N5655
D106	THRU D114	*PT101	1:1 PULSE TRANSFORMER
D2101	15 V, 5 W		
D2102	10 V, 5 W		
F101	1/2 A		
*C105 AND PT101 PRIMARY ARE SHOWN IN SECTION C.			

CONTROL CIRCUIT

C201	.022 MFD	R201	1 K Ω
C202	.022 MFD	R202	270 Ω
C203	.15 MFD	R203	500 Ω TRIMMER
C204	4.7 MFD	R204	100 K Ω
C205	.0033 MFD	R205	10 K Ω
C206	.47 MFD	R206	15 K Ω
C207	18 MFD	R207	10 K Ω
C208	4 MFD	R208	100 K Ω TRIMMER
C209	.047 MFD	R209	33 K Ω
C210	4.7 MFD	R210	10 K Ω
C211	.15 MFD	R211	5.6 K Ω
C212	.022 MFD	R212	15 K Ω
C213	.022 MFD	R213	47 K Ω
C214	4.7 MFD	R214	15 K Ω
C215	18 MFD	R215	100 K Ω
C216	100 pF	R216	1 K Ω
C217	.022 MFD	R217	1 K Ω
C218	.022 MFD	R218	1 K Ω
C219	.022 MFD	R219	1 K Ω
C220	.022 MFD	R220	1 K Ω
C221	.022 MFD	R221	1 K Ω
C222	.022 MFD	R222	1 K Ω
C223	.022 MFD	R223	1 K Ω
C224	.022 MFD	R224	1 K Ω
C225	.022 MFD	R225	1 K Ω
C226	.022 MFD	R226	1 K Ω
C227	.022 MFD	R227	1 K Ω
C228	.022 MFD	R228	1 K Ω
C229	.022 MFD	R229	1 K Ω
C230	.022 MFD	R230	1 K Ω
C231	.022 MFD	R231	1 K Ω
C232	.022 MFD	R232	1 K Ω
C233	.022 MFD	R233	1 K Ω
C234	.022 MFD	R234	1 K Ω
C235	.022 MFD	R235	1 K Ω
C236	.022 MFD	R236	1 K Ω
C237	.022 MFD	R237	1 K Ω
C238	.022 MFD	R238	1 K Ω
C239	.022 MFD	R239	1 K Ω
C240	.022 MFD	R240	1 K Ω
C241	.022 MFD	R241	1 K Ω
C242	.022 MFD	R242	1 K Ω
C243	.022 MFD	R243	1 K Ω
C244	.022 MFD	R244	1 K Ω
C245	.022 MFD	R245	1 K Ω
C246	.022 MFD	R246	1 K Ω
C247	.022 MFD	R247	1 K Ω
C248	.022 MFD	R248	1 K Ω
C249	.022 MFD	R249	1 K Ω
C250	.022 MFD	R250	1 K Ω

TACH CIRCUIT

Q201	2N4123
Q202	2N4123
Q203	2N4123
Q204	2N4123
Q205	2N4123
Q206	2N4123
Q207	2N4123
Q208	2N4123
Q209	2N4123
Q210	2N4123
Q211	2N4123
Q212	2N4123
Q213	2N4123
Q214	2N4123
Q215	2N4123
Q216	2N4123
Q217	2N4123
Q218	2N4123
Q219	2N4123
Q220	2N4123
Q221	2N4123
Q222	2N4123
Q223	2N4123
Q224	2N4123
Q225	2N4123
Q226	2N4123
Q227	2N4123
Q228	2N4123
Q229	2N4123
Q230	2N4123
Q231	2N4123
Q232	2N4123
Q233	2N4123
Q234	2N4123
Q235	2N4123
Q236	2N4123
Q237	2N4123
Q238	2N4123
Q239	2N4123
Q240	2N4123
Q241	2N4123
Q242	2N4123
Q243	2N4123
Q244	2N4123
Q245	2N4123
Q246	2N4123
Q247	2N4123
Q248	2N4123
Q249	2N4123
Q250	2N4123

METER CIRCUIT

D401	DM401
D402	DM401
D403	DM401
D404	DM401
D405	DM401
D406	DM401
D407	DM401
D408	DM401
D409	DM401
D410	DM401
D411	DM401
D412	DM401
D413	DM401
D414	DM401
D415	DM401
D416	DM401
D417	DM401
D418	DM401
D419	DM401
D420	DM401
D421	DM401
D422	DM401
D423	DM401
D424	DM401
D425	DM401
D426	DM401
D427	DM401
D428	DM401
D429	DM401
D430	DM401
D431	DM401
D432	DM401
D433	DM401
D434	DM401
D435	DM401
D436	DM401
D437	DM401
D438	DM401
D439	DM401
D440	DM401

VOLTAGE CIRCUIT

C501	.1 MFD	R501	44.2 K Ω 1/4 W
C502	.022 MFD	R502	500 Ω TRIMMER
C503	.022 MFD	R503	4.75 K Ω 1/4 W
C504	4.0 MFD	R504	100 K Ω
C505	.47 MFD	R505	22 K Ω
C506	.022 MFD	R506	10 K Ω
C507	.022 MFD	R507	10 K Ω
C508	.39 MFD	R508	2.2 K Ω
C509	.012 MFD	R509	2.7 M Ω
C510	1.8 MFD	R510	4.7 K Ω
C511	.022 MFD	R511	10 K Ω
C512	4.7 MFD	R512	470 Ω
C513	.50 MFD	R513	2.7 M Ω
C514	.012 MFD	R514	5.6 K Ω
C515	1 MFD	R515	1.8 K Ω
C516	.022 MFD	R516	6.8 K Ω
C517	.022 MFD	R517	2.7 K Ω
C518	.39 MFD	R518	270 Ω
C519	.005 MFD	R519	10 K Ω
C520	.022 MFD	R520	33 K Ω
C521	.022 MFD	R521	100 K Ω
C522	.022 MFD	R522	15 K Ω
C523	.022 MFD	R523	1 K Ω
C524	4.7 MFD	R524	4.7 K Ω
C525	.022 MFD	R525	4.7 K Ω
C526	.022 MFD	R526	4.7 K Ω
C527	.022 MFD	R527	4.7 K Ω
C528	.022 MFD	R528	4.7 K Ω
C529	.022 MFD	R529	4.7 K Ω
C530	.022 MFD	R530	4.7 K Ω
C531	.022 MFD	R531	4.7 K Ω
C532	.022 MFD	R532	4.7 K Ω
C533	.022 MFD	R533	4.7 K Ω
C534	.022 MFD	R534	4.7 K Ω
C535	.022 MFD	R535	4.7 K Ω
C536	.022 MFD	R536	4.7 K Ω
C537	.022 MFD	R537	4.7 K Ω
C538	.022 MFD	R538	4.7 K Ω
C539	.022 MFD	R539	4.7 K Ω
C540	.022 MFD	R540	4.7 K Ω

TRIGGER CIRCUIT

A CR 601	SPDT 24 VDC	
D601	THRU D604	1A, 600 V
C601	.15 MFD	
C602	.15 MFD	
C603	.15 MFD	
C604	.15 MFD	
C605	.15 MFD	
C606	.15 MFD	
C607	.15 MFD	
C608	.15 MFD	
C609	.15 MFD	
C610	.15 MFD	
C611	.15 MFD	
C612	.15 MFD	
C613	.15 MFD	
C614	.15 MFD	
C615	.15 MFD	
C616	.15 MFD	
C617	.15 MFD	
C618	.15 MFD	
C619	.15 MFD	
C620	.15 MFD	
C621	.15 MFD	
C622	.15 MFD	
C623	.15 MFD	
C624	.15 MFD	
C625	.15 MFD	
C626	.15 MFD	
C627	.15 MFD	
C628	.15 MFD	
C629	.15 MFD	
C630	.15 MFD	
C631	.15 MFD	
C632	.15 MFD	
C633	.15 MFD	
C634	.15 MFD	
C635	.15 MFD	
C636	.15 MFD	
C637	.15 MFD	
C638	.15 MFD	
C639	.15 MFD	
C640	.15 MFD	

START CIRCUIT

C701	.18 MFD
C702	.39 MFD
C703	.18 MFD
C704	.18 MFD
C705	.18 MFD
C706	.18 MFD
C707	.18 MFD
C708	.18 MFD
C709	.18 MFD
C710	.18 MFD
C711	.18 MFD
C712	.18 MFD
C713	.18 MFD
C714	.18 MFD
C715	.18 MFD
C716	.18 MFD
C717	.18 MFD
C718	.18 MFD
C719	.18 MFD
C720	.18 MFD
C721	.18 MFD
C722	.18 MFD
C723	.18 MFD
C724	.18 MFD
C725	.18 MFD
C726	.18 MFD
C727	.18 MFD
C728	.18 MFD
C729	.18 MFD
C730	.18 MFD
C731	.18 MFD
C732	.18 MFD
C733	.18 MFD
C734	.18 MFD
C735	.18 MFD
C736	.18 MFD
C737	.18 MFD
C738	.18 MFD
C739	.18 MFD
C740	.18 MFD

COMPONENTS NOT ON P.C. BOARDS

R1	2 A 50 W
R2	10 K Ω 2 W POT
R3	10 K Ω 2 W POT
R4	22 K Ω
R5	0.1 Ω
CR2	WELD CURRENT REED SWITCH
CR4	G.L.P. REED SWITCH
S1	SPST TRIGGER SWITCH
S2	DPDT HOT-COLD
S3	DPDT POLARITY SWITCH
S4	SPST G.L.P. RESET SWITCH
S5	DPDT SET-ACTUAL SWITCH
S6	DPDT VOLTS-WIRE SPEED SWITCH
S7	DPDT DIRECTION SWITCH
TP1	150 VAC 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
- U-BLUE
- W-WHITE

ELECTRICAL SYMBOLS PER E-1537

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

Chg. Sht. No. 12-81A 7-16-84
12-11-80 12-21-82 11-9-80
12-1-80 12-21-82
12-21-82 12-21-82
12-21-82 12-21-82
12-21-82 12-21-82

EQUIP. TYPE LN-9 & LN-9F
SUBJECT OPERATING SCHEMATIC
DATE 2-8-80 CHK'D BY G.M.P. NO. G-1557