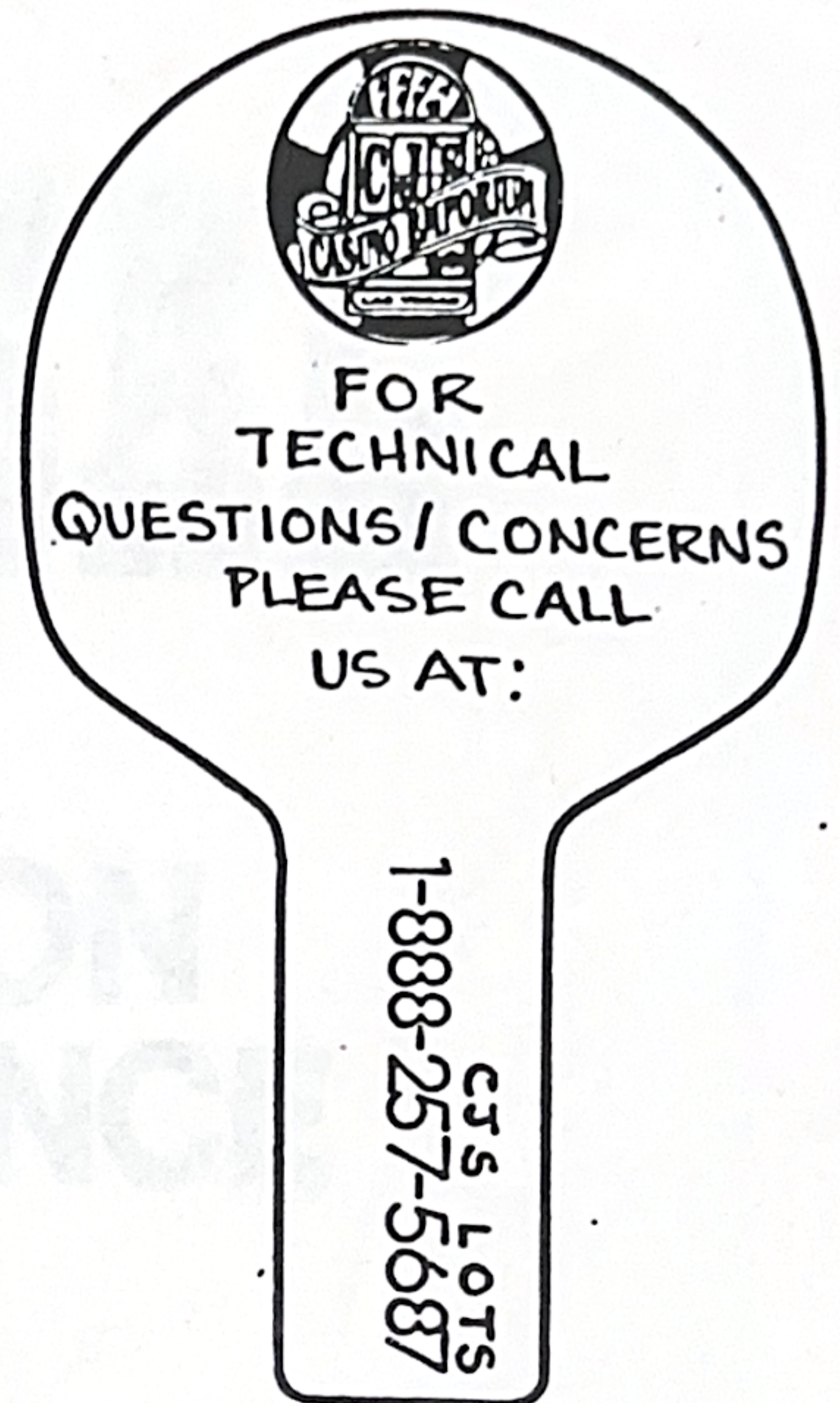




UNIVERS

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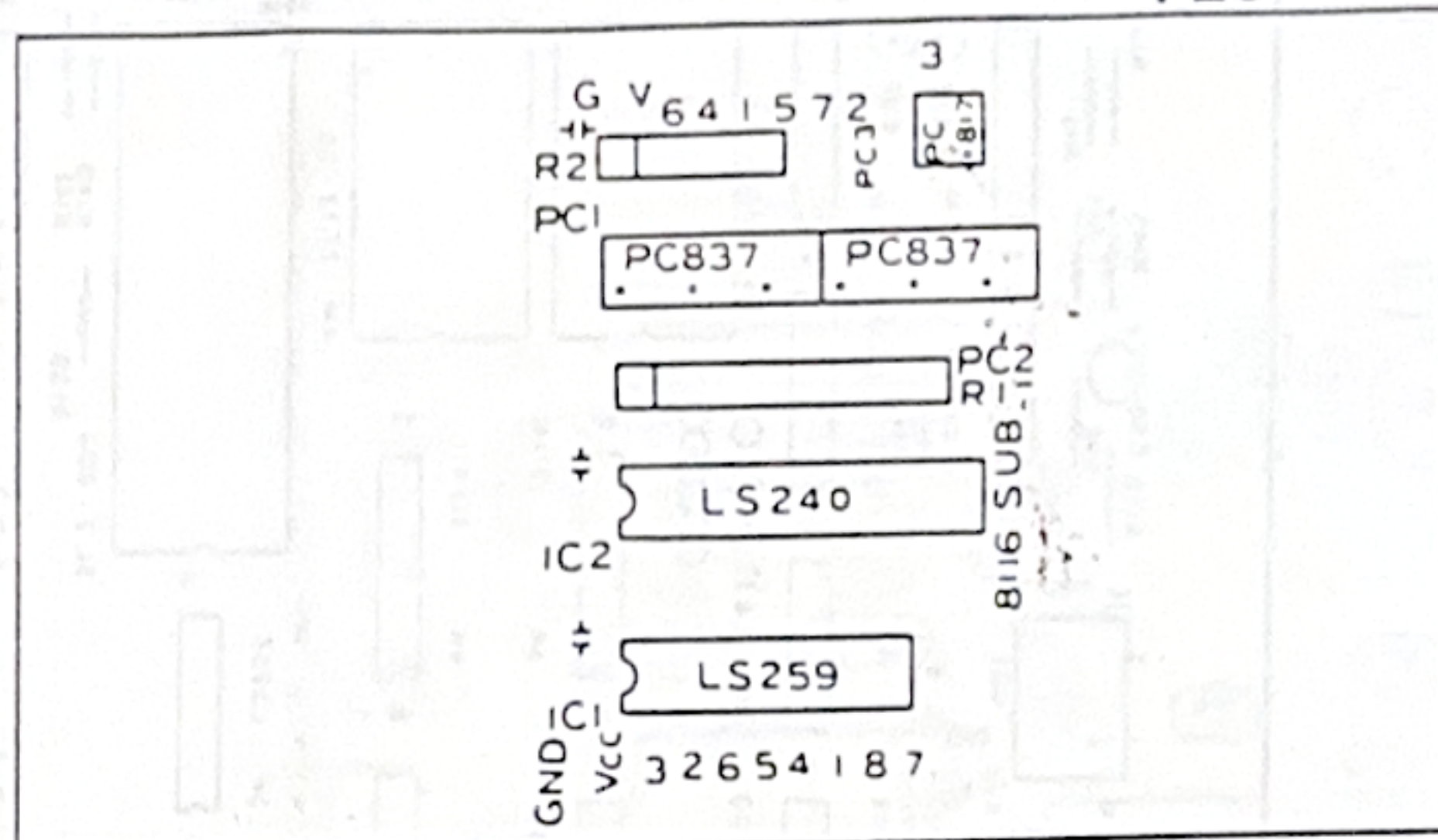
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SUB P.C.B.

Sub PCB Location & Parts List

P28

Location No.	Parts No.
1, 64	E5116227
56, 57	E5150105
6, 13, 14, 58	E5116106
5, 8, 9	E5416106
140 (Parallel with 61)	E5225104
50, 66, 67, 68, 69	E5212103
20~25, 28~33, 37~41, 45~49	E5212101
4, 7, 11, 12, 15, 16, 17, 51, 52, 53, 54, 55, 71~91, 93~139	E5212104
92	E5212221
65	E5125227



Location No.	Parts No.
88~92, 174	E412242
173	E412472
111~117, 132~138	E414680
155~157, 119	E414101
1, 2, 3, 20	E414221
54~73	E414241
34~53, 74~76, 79~86, 93~97, 102	E414271
29~33	E414471
101	E414151
22	E414511
4, 18, 98~100, 140, 141, 169, 19, 178, 172, 171, 170	E414102
8	E414112
5, 9, 21, 24, 103~110, 120~131, 139, 6, 7	E414202
118, 152, 153, 154	E414222
158, 159, 162, 163, 164, 168	E414333
27, 142	E414512
23	E414622
11, 26, 28, 145, 151, 160, 161, 165, 166, 167, 14~17, 12, 146	E414103
10	E414203
143, 144, 147	E414104
25	E414204
13	E414514

Sub PCB Parts List

Item No.	Qty	Description	Location No.	Parts No.
74LS259	1	TTL	IC1	E312259
74LS240	1	"	IC2	E312240
PC837	2	Photo coupler	PC1, PC2	E24837
PC817	1	"	PC3	E24817
12V 104	3	Ceramic	C1, C2, C3	E5212104

Name	Qty	Rating	Location No.	Parts No.
Resistor Array	1	1028	R1	E4601028
"	1	1024	R2	E4601024

OTHER ELECTRIC PARTS

A Complete Set of Wiring Harness

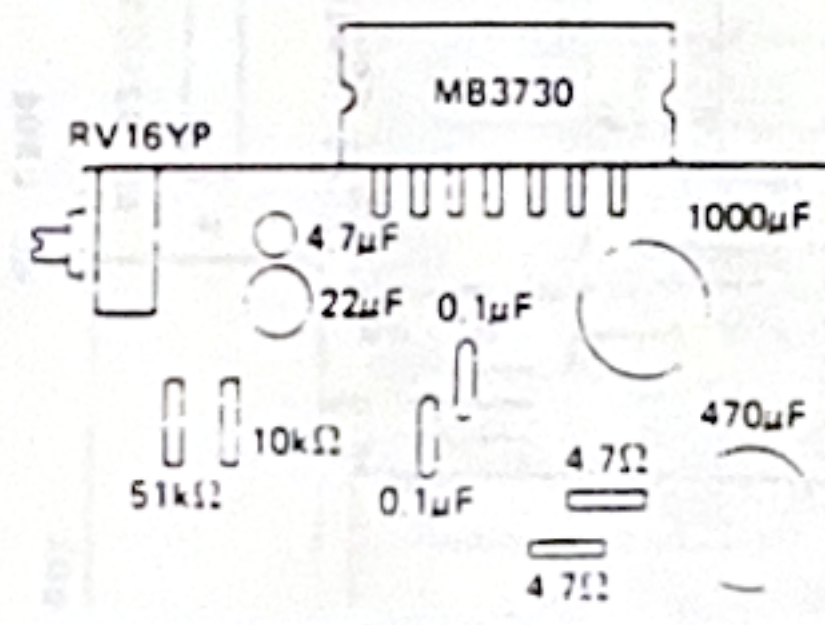
Fuses

Multiplier Type	3 Reel	4 Reel	5 Reel
W001103			
W001104			
W001105			
Line Pay Type	3 Reel	4 Reel	5 Reel
W001106			
W001107			
W001108			

2A	E17002
3A	E17003
5A	E17005

SOUND AMP. P.C.B.

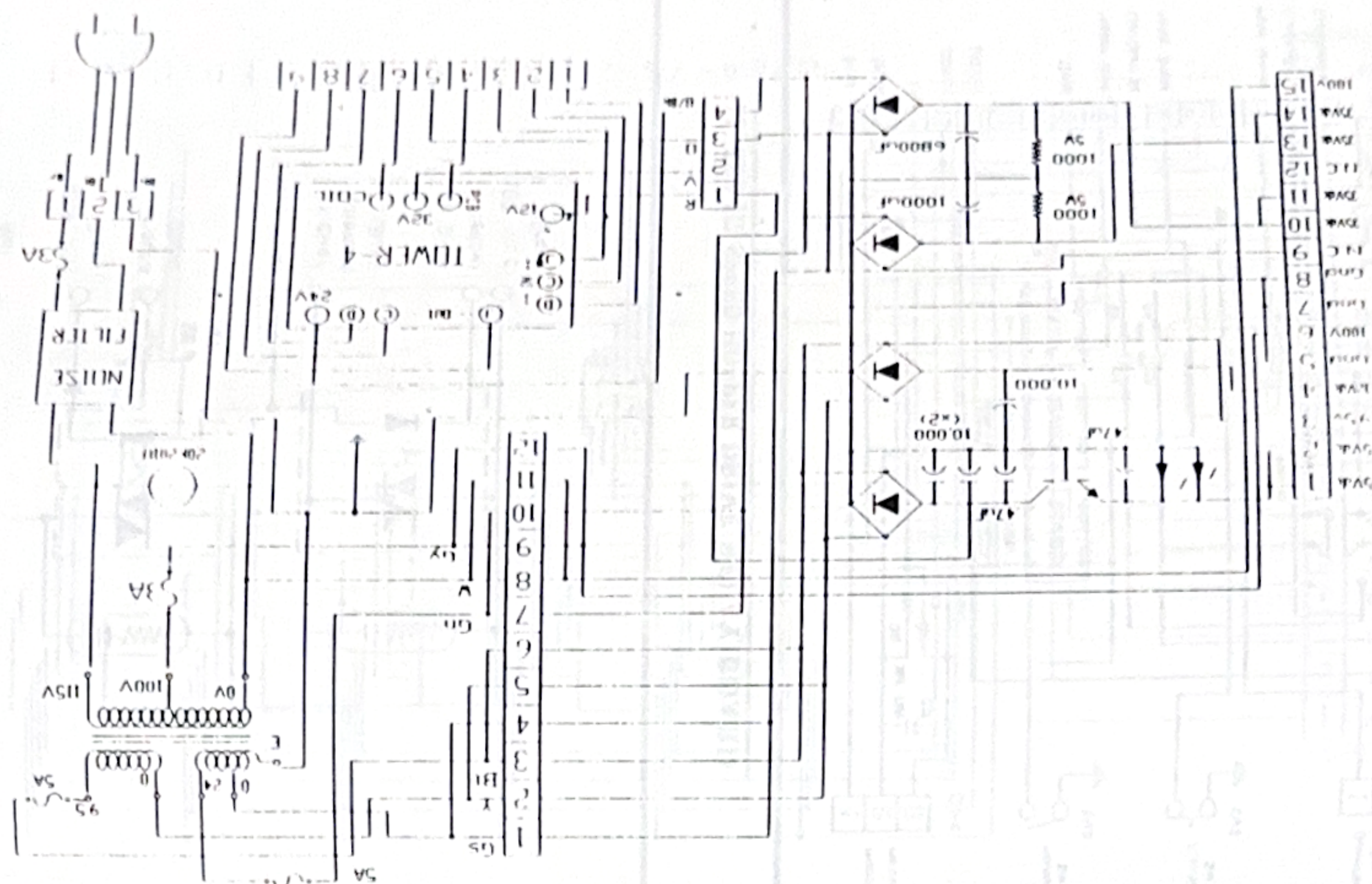
Sound AMP P.C.B IC Location and Parts List



Rating	Qty	Description	Part No.
MB3730	1	Audio Amplifier	E333730
1000uF 25V	1	Electronic Capacitor	E5125108
22uF 25V	1	"	E5125226
4.7uF 25V	1	"	E5125475
0.1uF 25V	2	Ceramic Capacitor	E5225104
10kΩ 1/4W	1	Carbon Solid Resistor	E414103
51kΩ 1/4W	1	"	E414513
4.7kΩ 1/4W	2	"	E41447
RV16YP1kΩ	1	Carbon Variable Resistor	E47016102
470uF 16V	1	Electronic Capacitor	E5116477

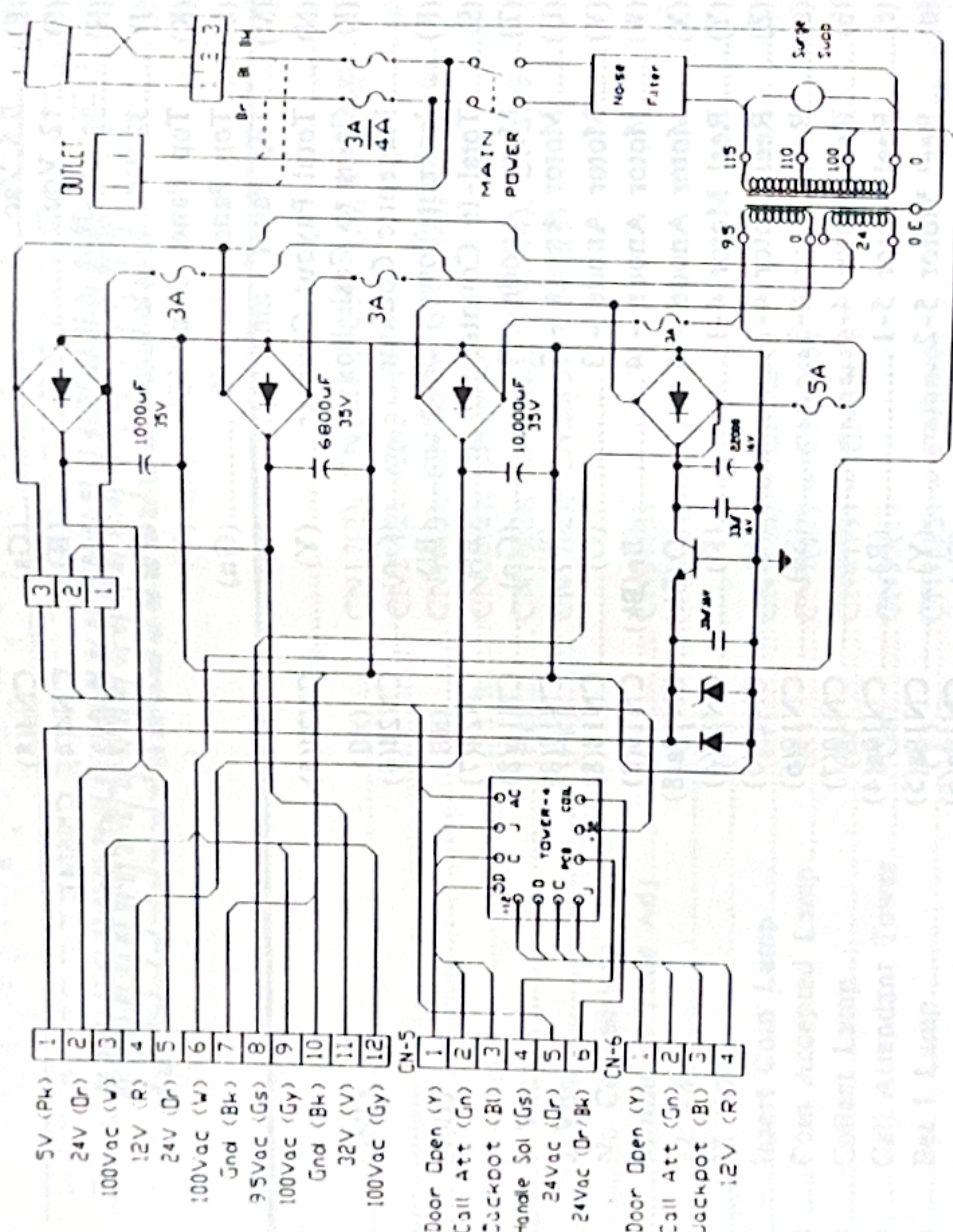
Location No.	Parts No.
L3~L8, L12~L18	E71005106
RM1, RM2	E4601028
RM3, RM4	E4602228
	E6401092
BAT1	E010503
X1	E0118200
1A, 2A, 3A, 4A, 3M, 4M	E950024
5A, 5L	E950040
5D	R950016

10. NARROW / INTERMEDIATE POWER SUPPLY



Schematic Illustrations

9. "RED DOT" POWER SUPPLY



NOTES:

The GREEN DOT power supply (as described in Section VI) uses a TOWER-3 P.C. board instead on the TOWER-4 shown in the schematic above. Also, the configurations for Pins 4, 5 and 6 are different than on the RED DOT (Refer to the Handle Wiring diagram in Section VI).

The YELLOW DOT power supply is identical to the RED DOT with the one exception that across Pins 6 and 12 of the 12-Pin connector, 24Vac will be measured as opposed to the 100Vac measured on the RED DOT.

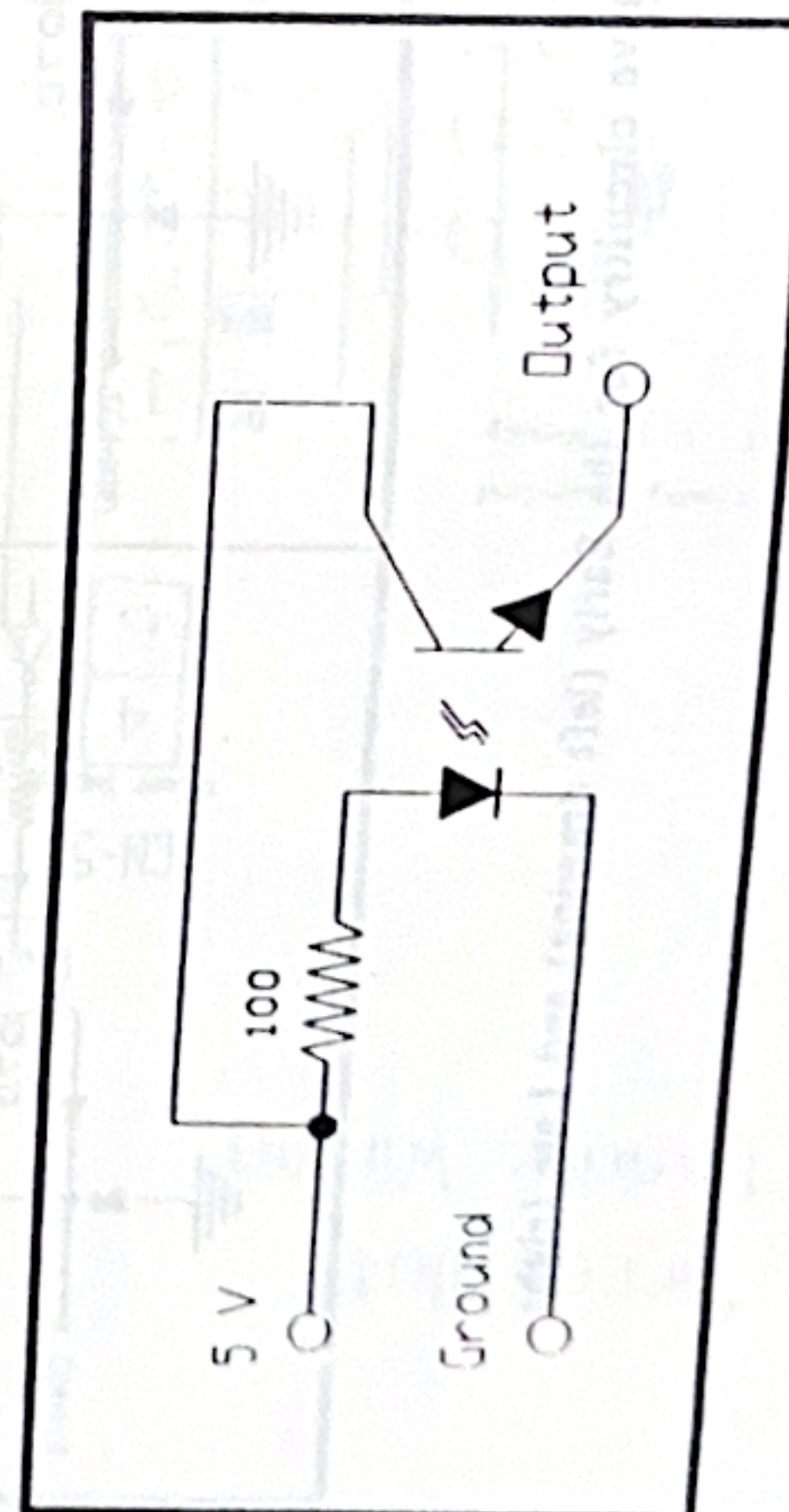
5. STEPPER MOTOR CONTROL

The Universal Slot Machine uses hybrid bifilar stepper motors in the reel mechanism. The continuous rotation of the motor is produced by sequential excitations of the phase windings in a clockwise manner. The bifilar wound motors are controlled with unipolar drive transistors Q17-Q29 which receive latched output signals from I.C.'s 6L, 6M, 6N, and 7M on pins 4, 5 and 6. The input index pulses are monitored through Q7-Q9 and fed to data selectors 6B, 7A and 7B via inverter 7C. Each stepper motor pulse 200 Hz to make one complete revolution. Reel position is monitored by the CPU through an optic which is mounted on the reel bracket. The optic interrupter signals the CPU upon optic interruption, the reel is at reference point 0. After the optic has been interrupted twice, the program then orders the reel to its randomly selected stop position.

6. OPTICS

In a Universal Slot Machine, any one of three types of optic systems can be used. They are described as follows:

- 1) Conventional Large Black Optic - This type of optic has a standard photo-transistor / photo-diode configuration. Each optic uses three (3) wires - one for 5 Vdc, one for ground and one for the signal. When not in an interrupted state the signal is seen as a logic HI. When interrupted, it is seen as a logic LO.
- 2) Gray TTL Plastic Encased Optic - This type of optic operates in exactly the same manner as the conventional large black optic and is fully interchangeable and compatible with same.
- 3) Black Plastic Encased Optic - This type of optic operates in the same manner as the Gray TTL except that in the interrupted state, the signal line is seen as a logic HI.



Schematic diagram for the conventional optic

5A. STEPPER MOTOR CONTROL CIRCUIT

