

ESCAPE

Instruction manual

ROYAL

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GAME ADJUSTMENTS

CREDITS

S5	S4	S3	S2	S1	Left Coin Chute				
S13	S12	S11	S10	S9	Center Coin Chute				
S21	S20	S19	S18	S17	Right Coin Chute				
0	0	0	0	0	credits/coins				
0	0	0	0	1	1/1				
0	0	0	1	0	2/1				
0	0	0	1	1	3/1				
0	0	1	0	0	4/1				
0	0	1	0	1	5/1				
0	0	1	1	0	6/1				
0	0	1	1	1	7/1				
0	1	0	0	0	8/1				
0	1	0	0	1	9/1				
0	1	0	0	1	10/1				
0	1	0	1	0	1/2				
0	1	0	1	1	2/2				
0	1	1	0	0	3/2				
0	1	1	0	1	4/2				
0	1	1	1	0	5/2				
0	1	1	1	1	6/2				
1	0	0	0	0	7/2				
1	0	0	0	1	8/2				
1	0	0	1	0	9/2				
1	0	0	1	1	10/2				
1	0	1	0	0	1/3				
1	0	1	0	1	2/3				
1	0	1	1	0	1/4				
1	0	1	1	1	3/4				
1	1	0	0	0	1/5				
					coin/credit given				total coins/credits
1	1	0	0	1	1st/1	2nd/2			2/3
1	1	0	1	0	1st/0	2nd/1	3rd/1	4th/1	4/3
1	1	0	1	1	1st/0	2nd/1	3rd/0	4th/2	4/3
1	1	1	0	0	1st/1	2nd/1	3rd/1	4th/2	4/5
1	1	1	0	1	1st/1	2nd/2	3rd/1	4th/3	4/7
1	1	1	1	0	1st/1	2nd/2	3rd/2	4th/2	4/7
1	1	1	1	1	1st/1	2nd/0	3rd/1	4th/0	5th/1
									5/2

S15	S14	Balls/Game
0	0	2
0	1	3
1	0	4
1	1	5

S23	S22	Credits/HS
0	0	0
0	1	1
1	0	2
1	1	3

S24	Match
0	no
1	yes

S8	ENABLE Clear bookkeeping
0	no
1	yes

CREDIT LIMIT

S7	S6	Maximum Credits
0	0	10
0	1	15
1	0	25
1	1	40

REMARKS

"0" = OFF
"1" = ON

SELF TEST AND BOOKKEEPING

Get in and step through Self Test and Bookkeeping by pressing the Test switch inside the front door.

To get out of the Test and Bookkeep procedure
turn power off and on.

The sequence of Test and Bookkeep functions is listed in table below. The step number is displayed in the Match display and all other information appears in the player displays.

STEP FUNCTION

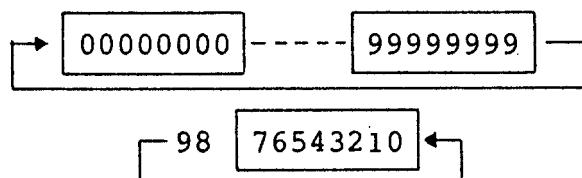
1	DISPLAY TEST	SELF TEST
2	SWITCH TEST	SELF TEST
3	LAMP TEST	SELF TEST
4	SOLENOID TEST	SELF TEST
5	HIGH SCORE LEVEL 1	SELF TEST
6	HIGH SCORE LEVEL 2	SELF TEST
7	HIGH SCORE LEVEL 3	SELF TEST
8	HIGH GAME TO DATE SCORE LEVEL	SELF TEST
9	GREEN SPECIAL AWARD	SELF TEST
10	RED SPECIAL AWARD	SELF TEST
11	COINS IN LEFT CHUTE	BOOKKEEPING
12	COINS IN CENTER CHUTE	BOOKKEEPING
13	COINS IN RIGHT CHUTE	BOOKKEEPING
14	TOTAL PLAYS	BOOKKEEPING
15	TOTAL PLAYS	BOOKKEEPING
16	REPLAYS HIGH SCORE LEVEL 1	BOOKKEEPING
17	REPLAYS HIGH SCORE LEVEL 2	BOOKKEEPING
18	REPLAYS HIGH SCORE LEVEL 3	BOOKKEEPING
19	TIMES HGTD AHS BEEN BEATEN	BOOKKEEPING
20	REPLAYS SPECIAL	BOOKKEEPING
21	REPLAYS MATCH	BOOKKEEPING
22	EXTRA BALLS	BOOKKEEPING

NOTE: AFTER STEP 22 THE TESTPROCEDURE IS ENDED.

STEP SPECIFICATION TEST

1. DISPLAY TEST

All displays show:
Press start button.
All displays rotate:



2. SWITCH TEST

All Playfield switches are tested. If one (or more) is closed it's number is displayed and a sound can be heard. As soon as the switch opens, the number is still in the displays but the sound disappears.

3. LAMP TEST

All lamps turn on and off in 2 groups.

4. SOLENOID TEST

The solenoids are pulsed and their numbers are displayed.

5. ...8 SCORE LEVEL ADJUSTMENT

The present score is displayed in the player displays.
Press start button will zero this score.
Then press and hold start button untill desired score is reached (score increment with 100.000).

Notes for steps 5,6 and 7:

1. To be recognized the 2nd score level (step 6) must be higher then the 1st score level (step 5), also the 3rd score level (step 7) must be higher then the 2nd score level.
2. Set not used score levels to zero.
3. If score level 1 (step 5) is zero, no score levels are recognized.

9-10 SPECIALS

To change award press the startbutton see table below

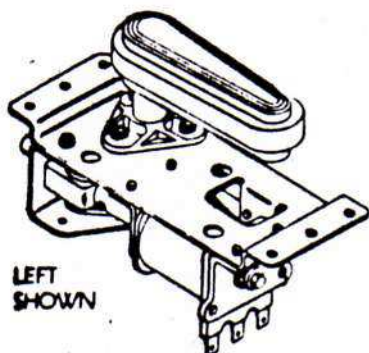
Startbutton pressed	1x	2x	3x	4x
Displayed number	0	1	2	3
Award	500.000 Pnts	1.000.000 Pnts	X-Ball	Replay

BOOKKEEPING

Bookkeeping can only be cleared if 'enable clear book-keeping' switch 8 is in "on" position.

Push the startbutton for each test step that must be cleared.

Note: After bookkeeping has been cleared always set 'enable clear bookkeeping' switch 8 in "off" position so bookkeeping can not be cleared unwanted.



Flipper unit with
jumbo flipper
left No. AS10-L,
right No. AS10-R

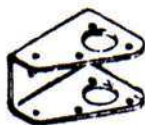


Old model lever arms
Left No. F 06-00
Right No. F 15-00

Flipper unit with
small flipper
left no. AS15-L
right no. AS15-R



Left No. A 12051
Right No. A 12052



Bearing bracket
No. C15528



Bearing
No. A15529



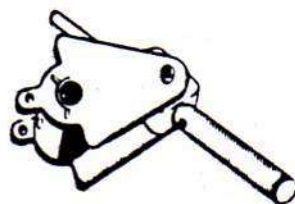
Lever arm
No. A16361



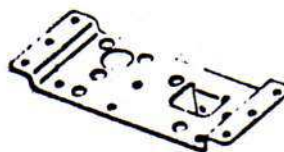
Plunger and tip
No A16360



Jumbo flipper
No. A13150



Lever arm assy.
No. A16362



Mounting bracket
No. B16363
Left no. C16355
right no. C16354



Jumbo Flipper Shaft & Shoe
No. A15531



No. A15531-1 (white)
No. A15531-12 (red)

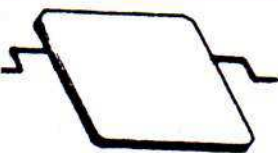


Switch Assembly
No. B16363



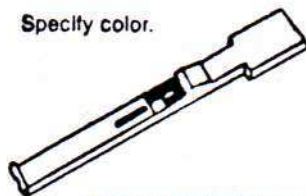
Coil stop
No. A17908

MECHANICAL PARTS INFORMATION

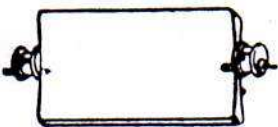


Metal Swinging Targets
No. A 14270

Specify color.



Plastic target arm (blank) for drop
target unit
No. A-11905



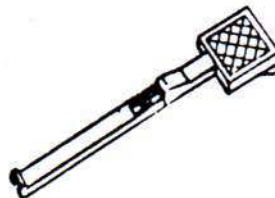
Plastic swinging targets
No. A-17175

Plastic Mini-Post Rollover Guides



Centers 1½" No. C15646
Centers 2" No. C15647
Centers 2½" No. C15648

Only in white



Black drop target
No. A 19838

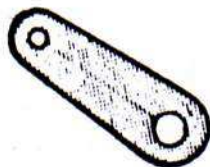
Single Apron



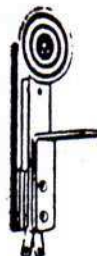
Specify Color



Double Apron



Fiber reset link
No. A-2820



Target switch
No. 22-1033



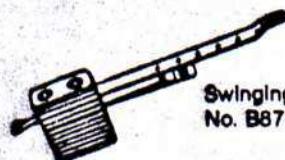
Trigger shaft for drop target unit
4-position, 6" long No. A-13402
5-position, 7¼" long No. A-13403
7-position, 9¾" long No. A-14527



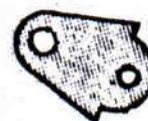
Reset arm return spring for drop
target assembly
No. A13455



Flipper switch and bracket
Right No. A-10123
Left No. A-10122



Swinging target switch
No. B8707



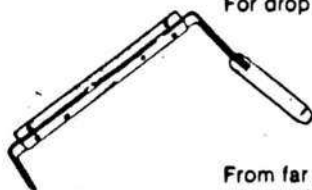
Fiber cam link
No. P7373

Plastic Flipper
Button Components



A. Button No. B16680
B. Housing No. C13900
Metal Plate No. A 13898

Reset Arm Assembly
For drop target unit



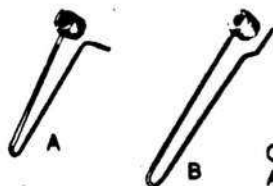
From far out (12-8-'74)
4 pos. No. A 15689
5 pos. No. A 15691
7 pos. No. A 15693
10 pos. No. A 15503



Flipper Bearing
No. A2408



Rebound Rubber &
Bracket Combination
No. A-9143



Gate wires
A. No. A13652
B. No. A14099



Ball Gate Assembly
No. A-3290

Ball shooter assembly
No. B-8835

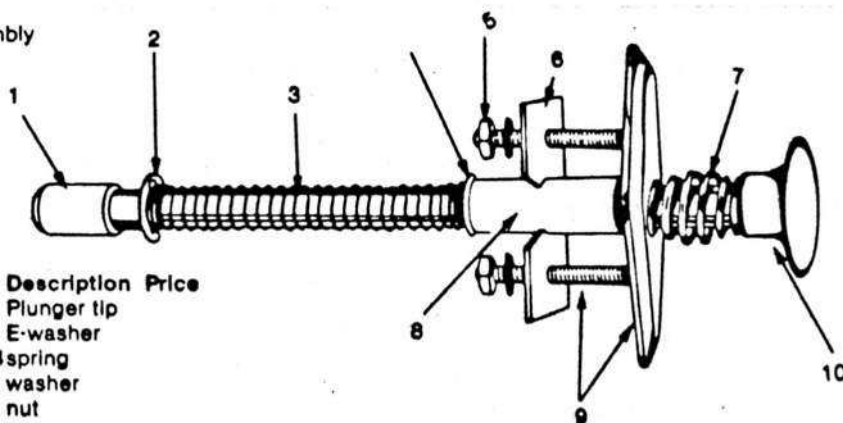
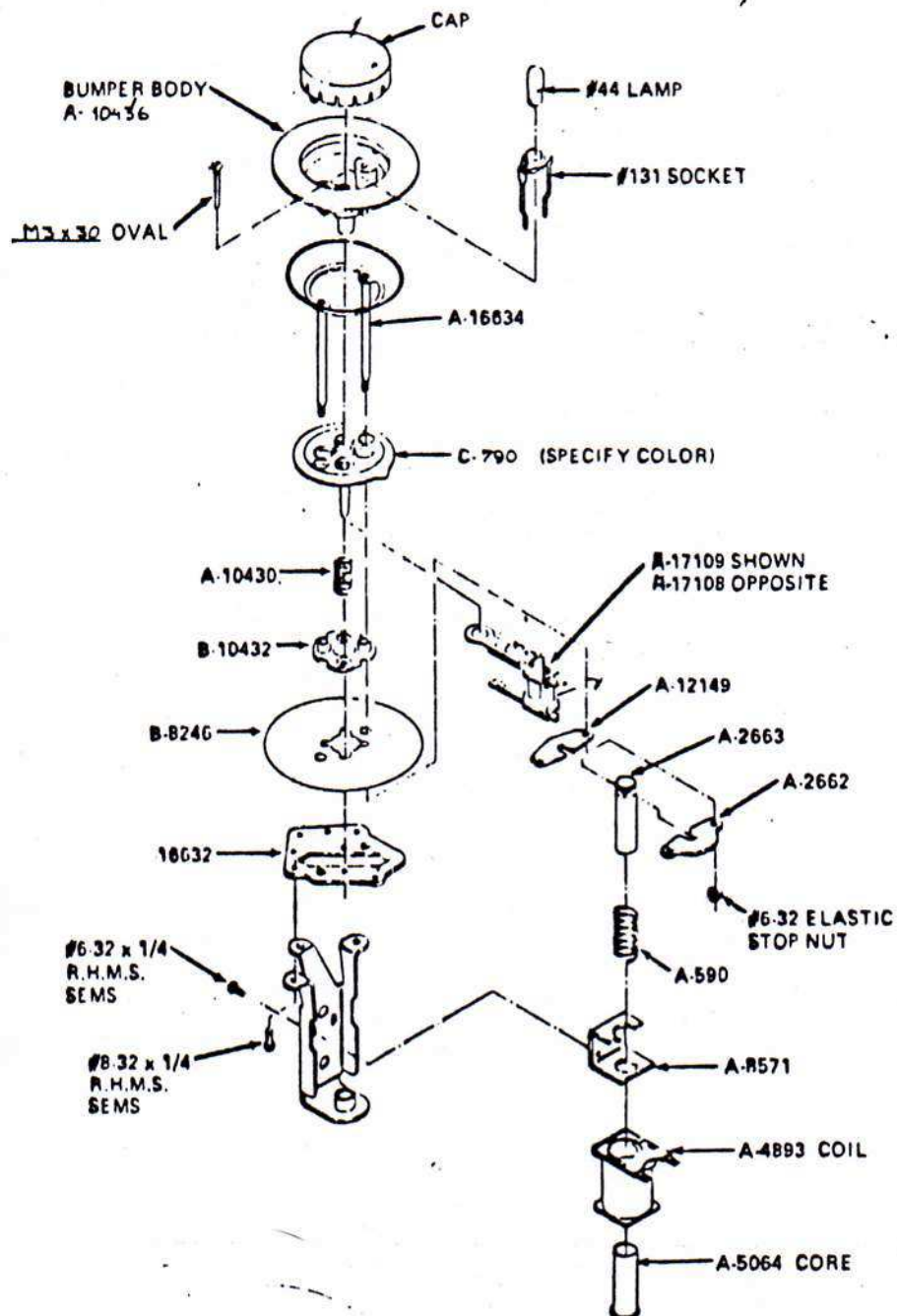


Fig.	Part No.	Description	Price
1	25-0231	Plunger tip	
2	1500-37	E-washer	
3	SP-200-24	spring	
4	A17596	washer	
5	H1032	nut	
6	A8829	plate	
7	SP247	spring	
8	B8834	housing	
9	B8831	trim plate	
10	A8833	shooter rod	

MECHANICAL PARTS INFORMATION



Pop Bumper Skin
8-Hole Style



No C790

For All Electronic Models
Metal Rod & Ring



No A 16634



Puppet bumper pad
No A 16632

Metal Slotted Yoke



No A-12149

Bakelite Insulated Yoke



No A-2662



Rubber contact assy
Shown no B 17842
opposite B 17843

Mini-Post only



A-14792

Bumper Bracket



No A17806



Bracket
No A 20597



Trim platter
No B6246



Bumper spring
No A 10430

Plunger
For Thumper Bumper



No A-2663

Bumper contacts for
pop bumper



Shown no A 17109
opposite A 17108

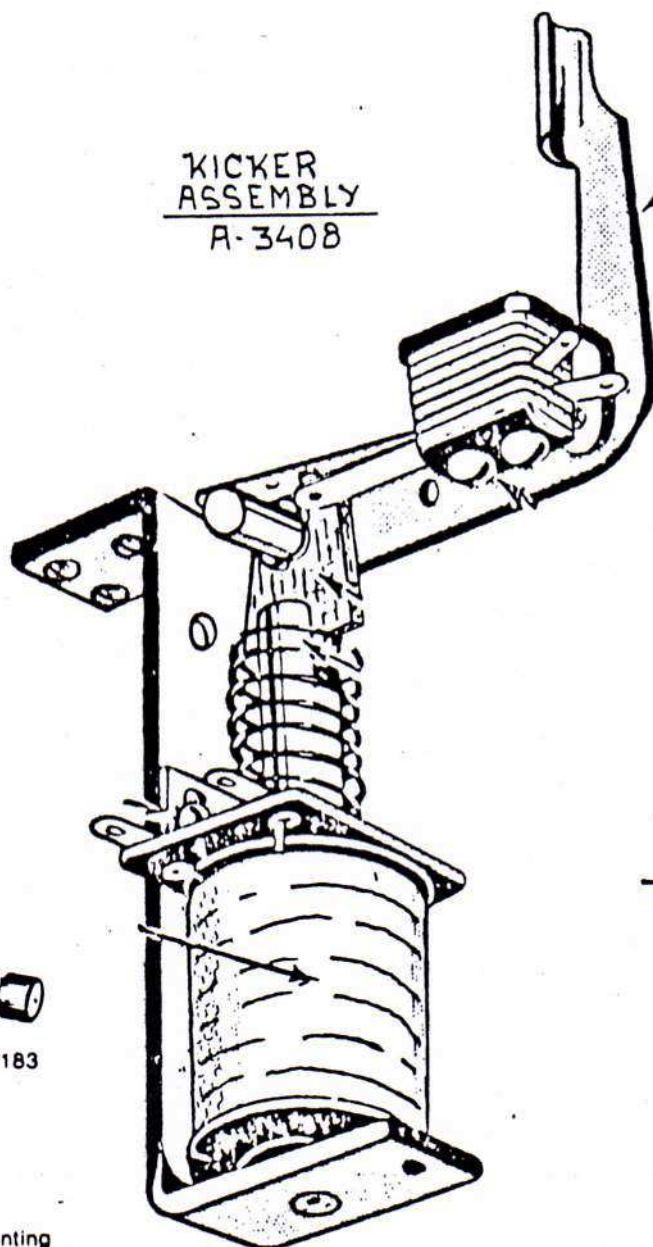
Post screw



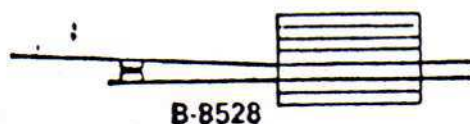
No A 8857

KICKER
ASSEMBLY
A-3408

KICKER
REPLACED BY
A-15834



SWITCH ASSEMBLY



Kicker arm

A15834



2 pin left	No. A15832
1 left 1 right	A15833
2 pin right	A15834
1 right 1 left	A15835

Kicker arm

A21366

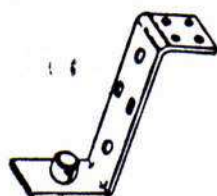


2 pin left	No. A16701
2 pin right	No. A21366



No. A-17183

Coil Mounting
Bracket with Stop



For AC & DC Pop Bumper
Replaces No. A-4634
No. A-17907

Trigger
For drop target unit

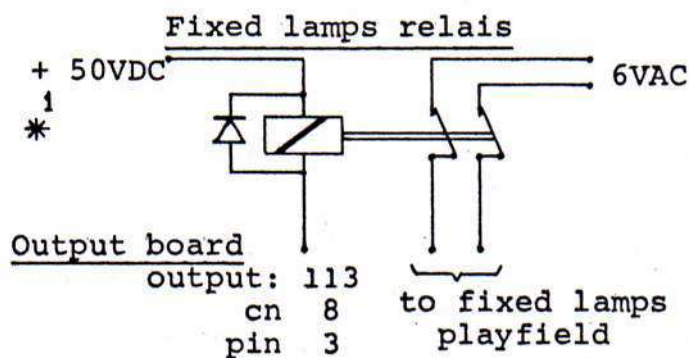


LAMPS PLAYFIELD ESCAPE

lamp	pin	connector	board	lamp	pin	connector	board
32	31	CN3	CPU	97	8	CN7	OUTPUT
33	30	CN3	CPU	98	7	CN7	OUTPUT
34	28	CN3	CPU	99	6	CN7	OUTPUT
35	26	CN3	CPU	100	5	CN7	OUTPUT
36	24	CN3	CPU	101	3	CN7	OUTPUT
37	25	CN3	CPU	102	2	CN7	OUTPUT
38	27	CN3	CPU	103	1	CN7	OUTPUT
39	29	CN3	CPU	104	13	CN8	OUTPUT
40	23	CN3	CPU	105	12	CN8	OUTPUT
41	22	CN3	CPU	106	11	CN8	OUTPUT
42	20	CN3	CPU	107	10	CN8	OUTPUT
43	18	CN3	CPU	108	9	CN8	OUTPUT
44	16	CN3	CPU	109	8	CN8	OUTPUT
45	17	CN3	CPU	110	7	CN8	OUTPUT
46	19	CN3	CPU	111	6	CN8	OUTPUT
47	21	CN3	CPU	112	5	CN8	OUTPUT
48	15	CN3	CPU	113 *	3	CN8	OUTPUT
49	14	CN3	CPU	114	2	CN8	OUTPUT
50	12	CN3	CPU	115	1	CN8	OUTPUT
51	10	CN3	CPU	116	13	CN9	OUTPUT
52	8	CN3	CPU				
53	9	CN3	CPU				
54	11	CN3	CPU				
55	13	CN3	CPU				
27	33	CN3	CPU				
28	32	CN3	CPU				
29	34	CN3	CPU				
30	2	CN2	CPU				
31	4	CN2	CPU				

LAMPS HEAD ESCAPE

lamp	pin	connector	board
game over			
98	9	CN2	OUTPUT
tilt			
90	8	CN2	OUTPUT
highest score to date			
91	7	CN2	OUTPUT
chopper			
92	6	CN2	OUTPUT
casino club			
93	5	CN2	OUTPUT



SOLENOIDS PLAYFIELD ESCAPE

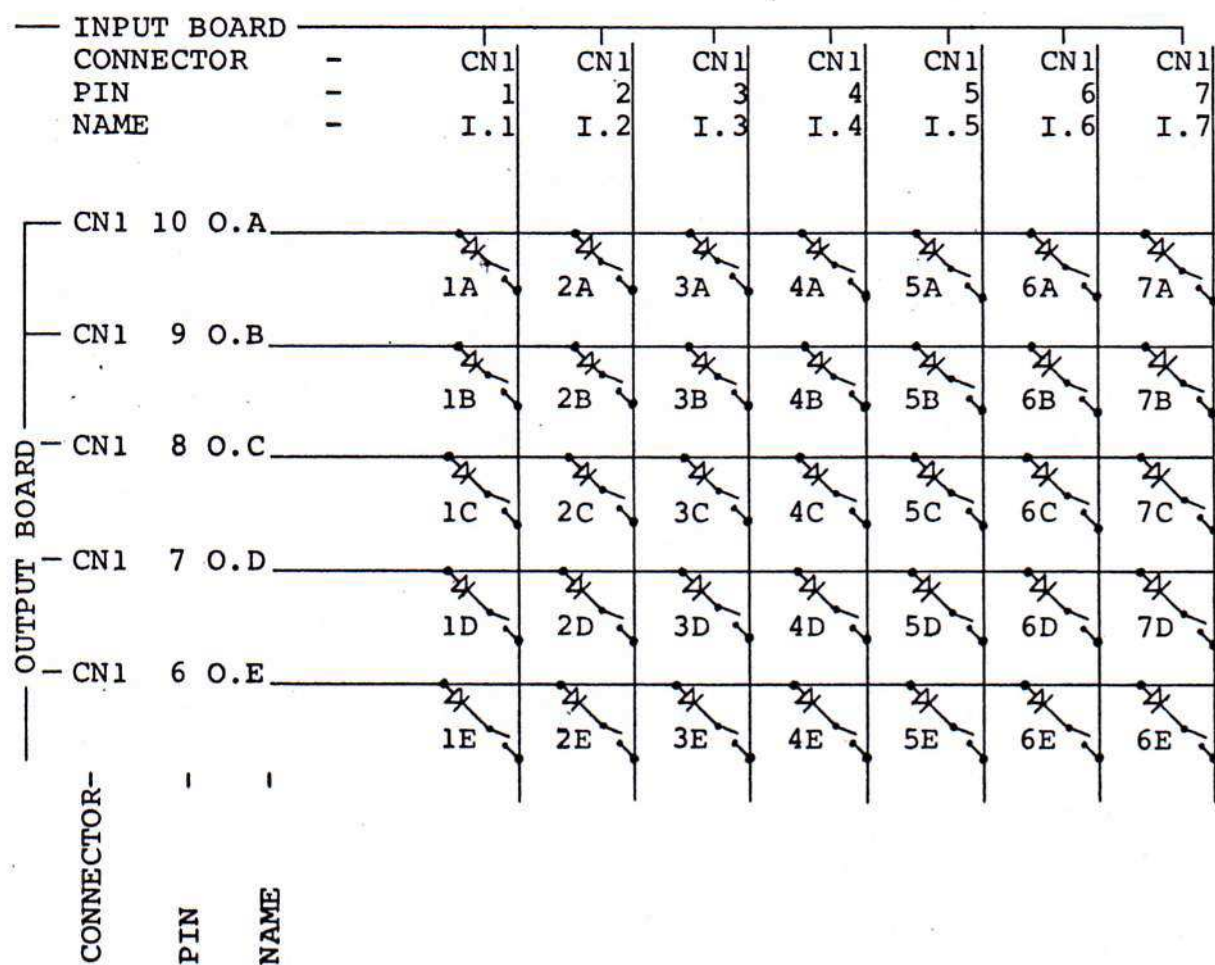
<u>solenoid</u>	<u>pin</u>	<u>connector</u>	<u>board</u>
119	10	CN9	OUTPUT
120	9	CN9	OUTPUT
121	8	CN9	OUTPUT
122	7	CN9	OUTPUT
123	5	CN9	OUTPUT
124	4	CN9	OUTPUT
125	3	CN9	OUTPUT
126	2	CN9	OUTPUT
127	1	CN9	OUTPUT

SOLENOIDS CABINET ESCAPE

<u>solenoid</u>	<u>pin</u>	<u>connector</u>	<u>board</u>	<u>function</u>
117	12	CN9	OUTPUT	Lock out coins
118	11	CN9	OUTPUT	Nocker free game

INPUTS "ESCAPE"

PLAYFIELD MULTIPLEXED SWITCHES



COIN INPUTS

INPUT	FUNCTION	PIN	CONNECTOR	BOARD
8	coin left	24	2	CPU
9	coin middle	26	2	CPU
10	coin right	28	2	CPU

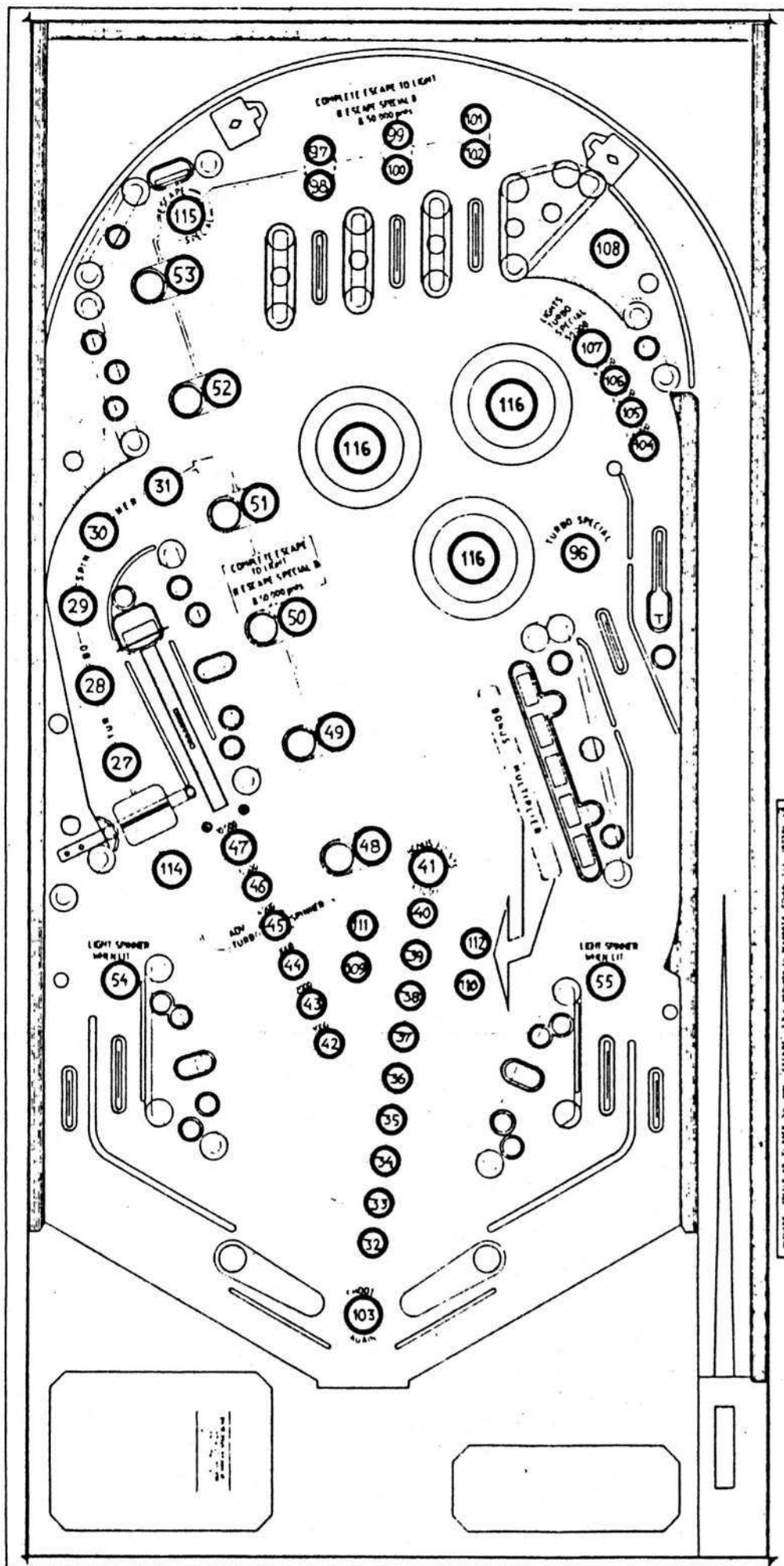
CABINET INPUTS

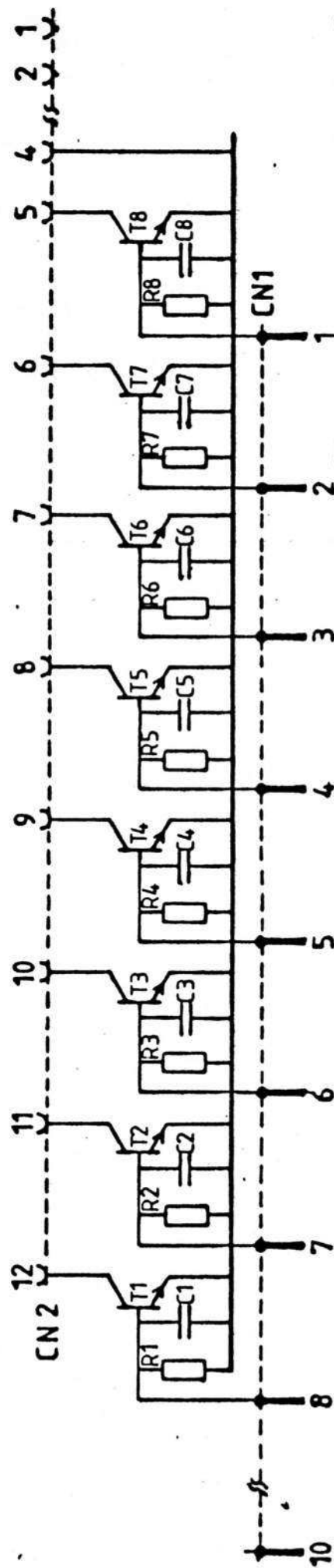
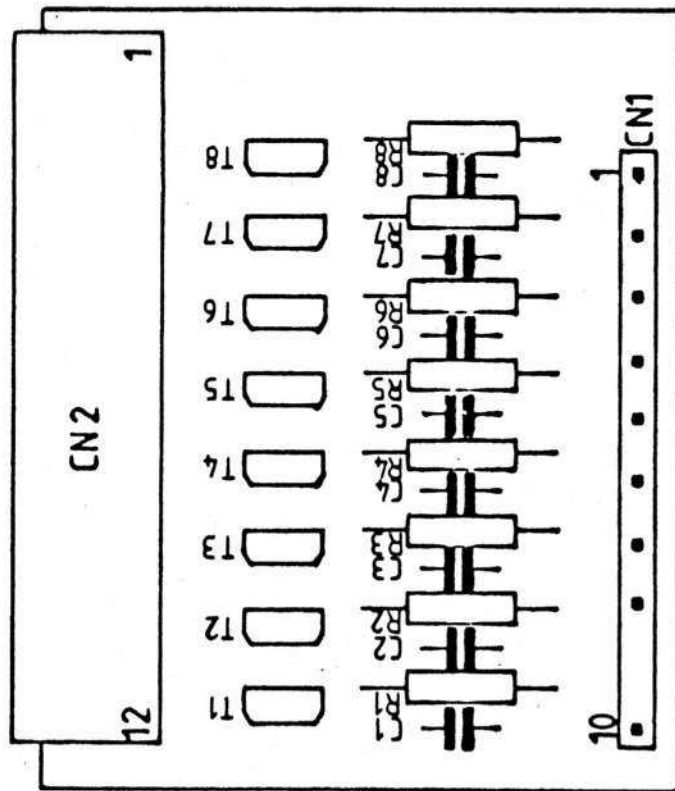
INPUT	FUNCTION	PIN	CONNECTOR	BOARD
16	test	16	2	CPU
17	start	18	2	CPU
18	multi tilt	20	2	CPU
19	door tilt	22	2	CPU

COIL CHARTSOLENOID COILS

MANUFACTURER	GENERAL USE	WRAPPER COLOR	NUMBER OF TURNS	NUMBER ON WRAPP	V DC
royal	flippers	yellow	25/500	AQ 25-500 34-5050	50
royal	outhole	yellow	1200	A 26-1200 AN 26-1200	50
royal	pop bumpers	yellow	1200	A 26-1200 AN 26-1200	50
royal	kickers	yellow	1200	A 26-1200 AN 26-1200	50
royal	5-bank reset	yellow	1900	A 360-00209 -0000 NO 26-1900	50

NOTE : FIXED LAMPS RELAIS — OUTPUT 113



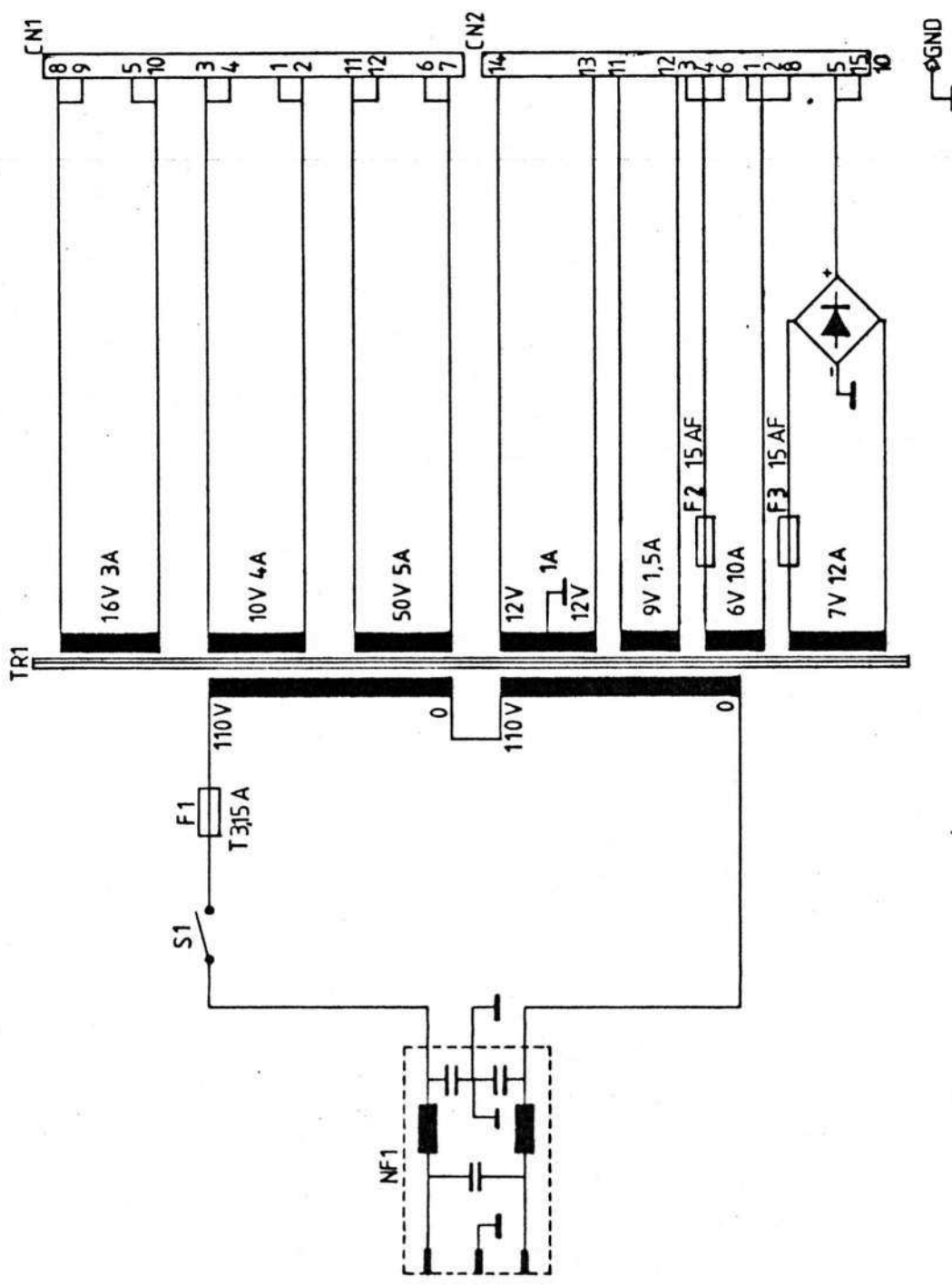


alle transistors BCX 38
 alle weerstanden 4K7 1/4W
 alle condensators 1000pF

INPUT CONVERTER JH851107

SCHAAL 2:1 COMPONENTOPSTELLING

GET KvG 11-11"85 IGFW





DOUGHERTY

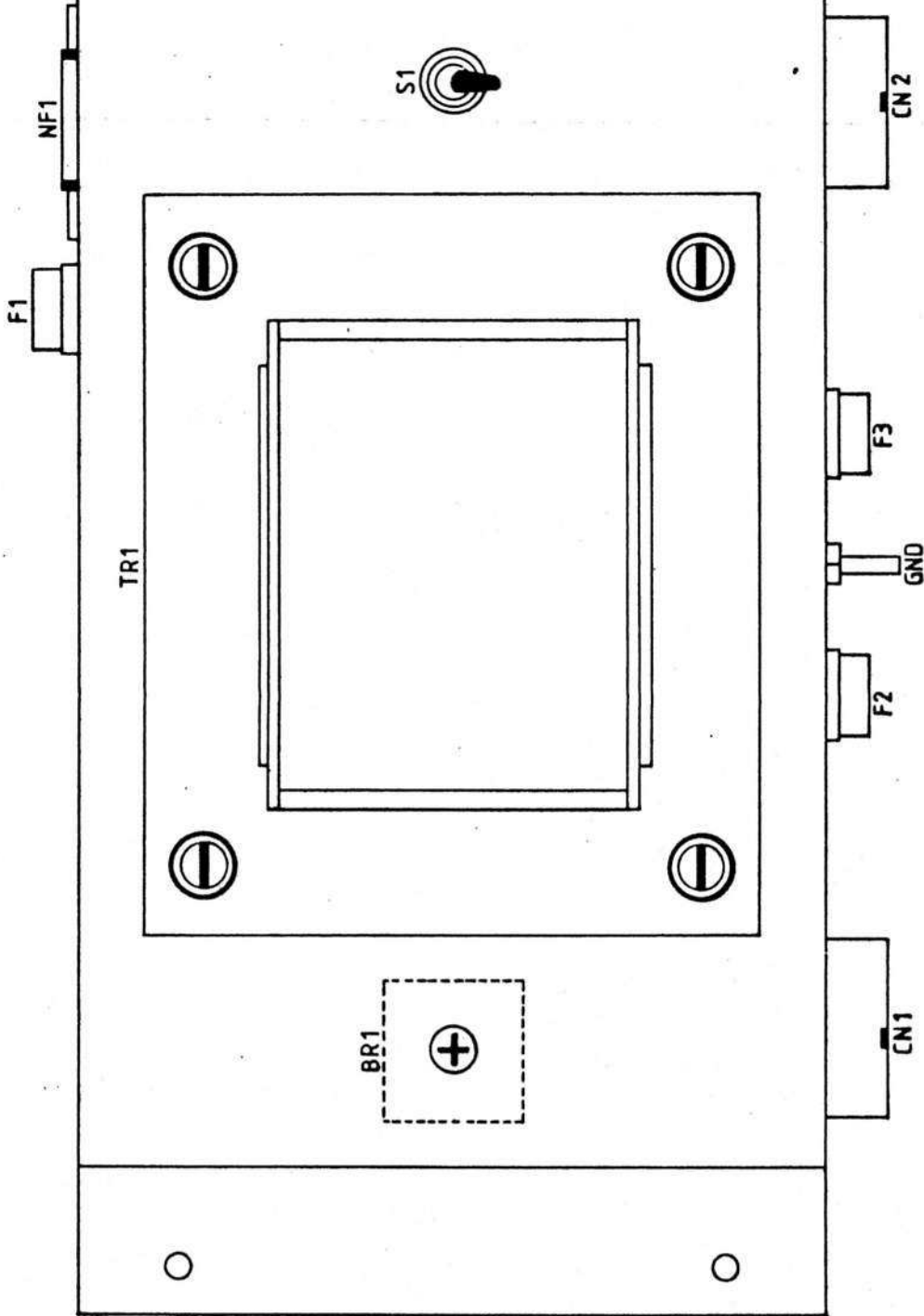
TITLE: **TRAFOUNIT**

DATE: 20-2-76

REV: 1

DATE: 15-06-76

NOTES: ELECTRICAL DIAGRAM

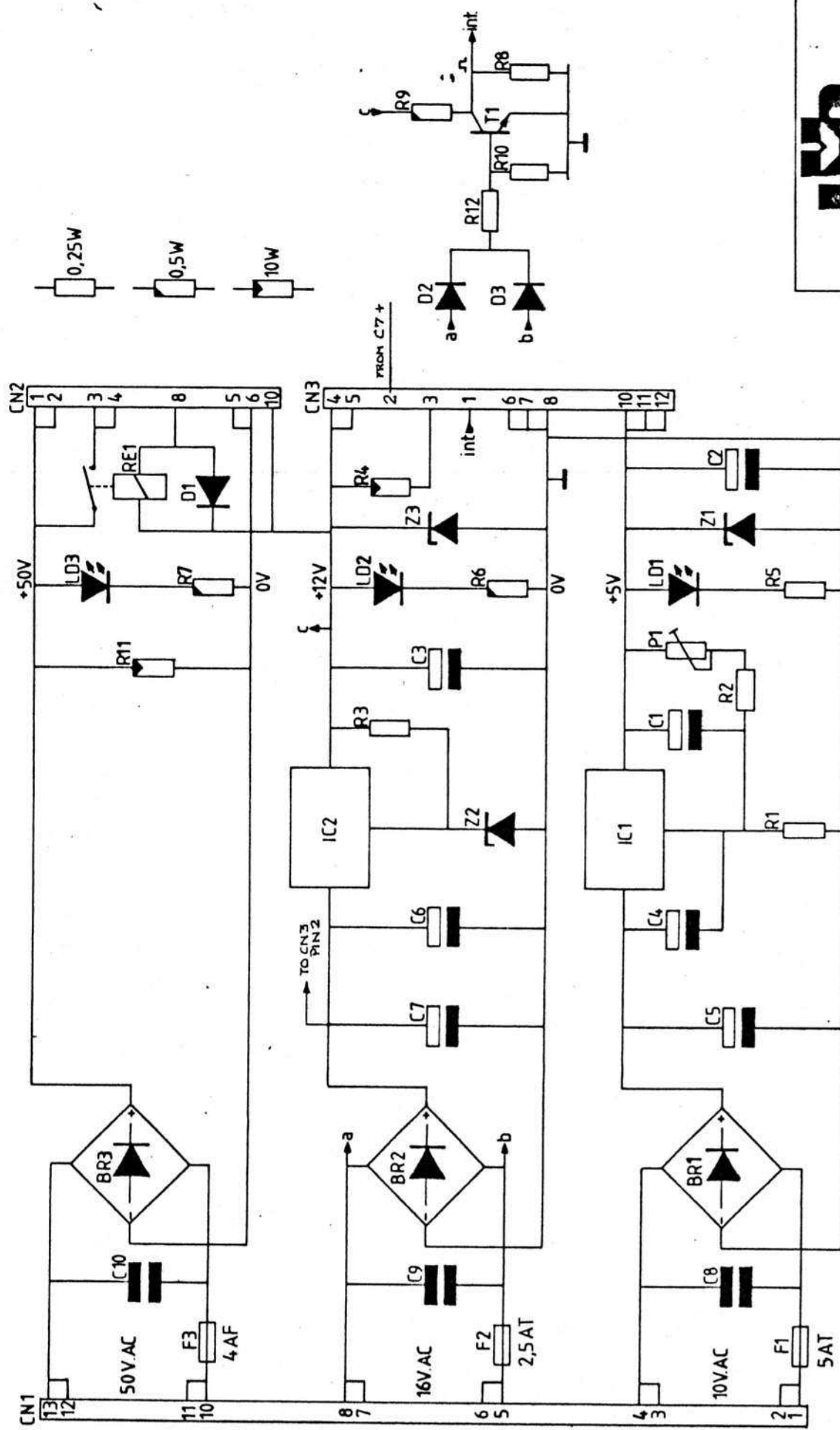


TITLE: TRAFQ UNIT			
DATE: 2-7-86	REV: 1	DATE: 2-7-86	REV: 1
NOTES: MECHANICAL LAYOUT			

15	14	13	12	11
10	9	8	7	6
5	4	3	2	1

FRONT VIEW

COMP	DESCRIPTION	COMP	DESCRIPTION
R1	Resistor 10R 1/4W	T1	Transistor BC 548
R2	Resistor 120R 1/4W	IC1	Regulator 78H05
R3	Resistor 68R 1/4W		
R4	Resistor 4R7 10W	IC2	Regulator LM350
R5	Resistor 470R 1/4W	BR1,2	Bridge rectifier KBPC 802
R6,9	Resistor 1K 1/2W		
R7	Resistor 5K6 1/2W	BR3	Bridge rectifier KBPC 10-02
R8	Resistor 100K 1/4W	RE1	Relay Coil 12V contact 16A
R10	Resistor 10K 1/4W		
R11	Resistor 680R 10W	F1	Fuse 5 AT
R12	Resistor 22K 1/4W		
C1	Capacitor 0,1 uF 35V	F2	Fuse 2,5 AT
C2-6	Capacitor 0,33 uF 35V	F3	Fuse 4 AF
C5	Capacitor 4700 uF 25V	CN1	Wafer 14 way
C7	Capacitor 10.000 uF 16V		
C8-10	Capacitor 0,1 uF 250V		
D1-3	Diode IN4004		
Z1	Suppressordiode PFZ6V8A	CN2	Wafer 10 way
Z2	Zenerdiode BZX85C11	CN3	Wafer 12 way
Z3	Suppressordiode PFZ15A		
LD1-3	LED Rood		



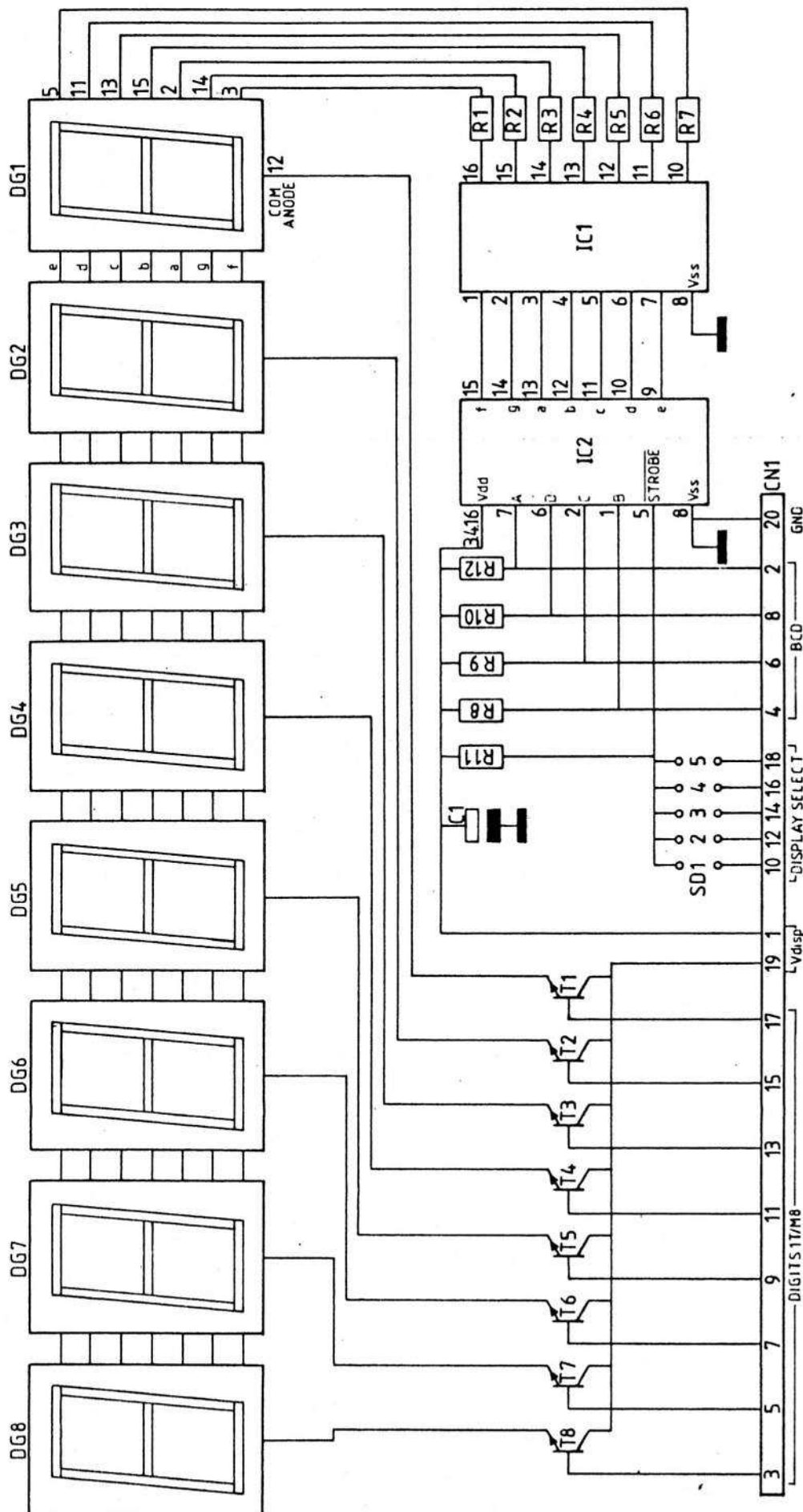
TITLE POWER SUPPLY JVH851127

DWN. KVG DATE 2-12-85 REV DATE

NOTES ELECTRICAL DIAGRAM

DISPLAYJvH 850531

Comp.	Description
R1-7 R8-11	Resistor 39R 1/4W Resistor 1K 1/4W
C1	Capacitor 10 uF 25V
T1-8	Transistor BCX38
IC 1 IC 2	Buffer ULN 2003 7 Segment decoder CD4511
DG1-8	Red led display DL3401
CN1	Header 90° 20 way



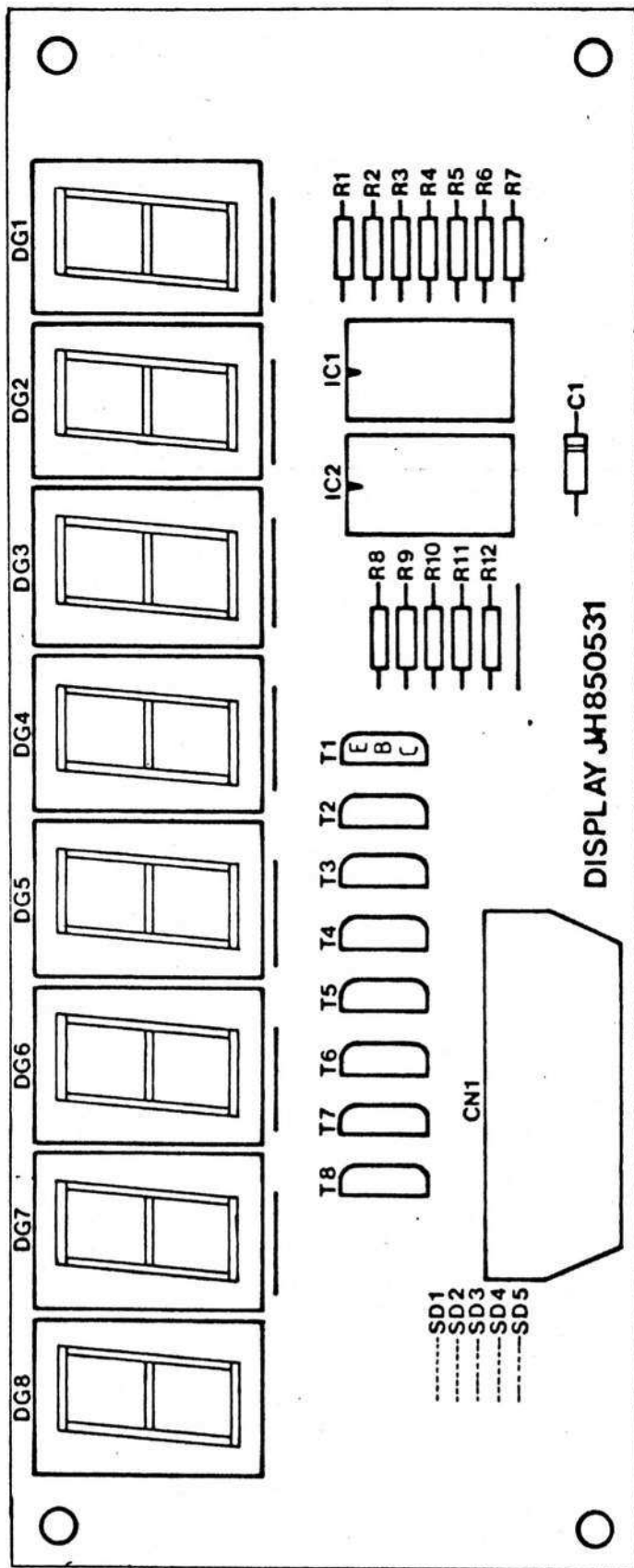


JVC
JANAM-SON

TITLE
DISPLAY JVH850531

DOWN	DATE	REV
KvG	22-1-86	

NOTES: ELECTRICAL DIAGRAM



TITLE

DISPLAY JVH850531

DATE 1-12-76

REV.

DATE

NOTES: COMPONENT LOCATION

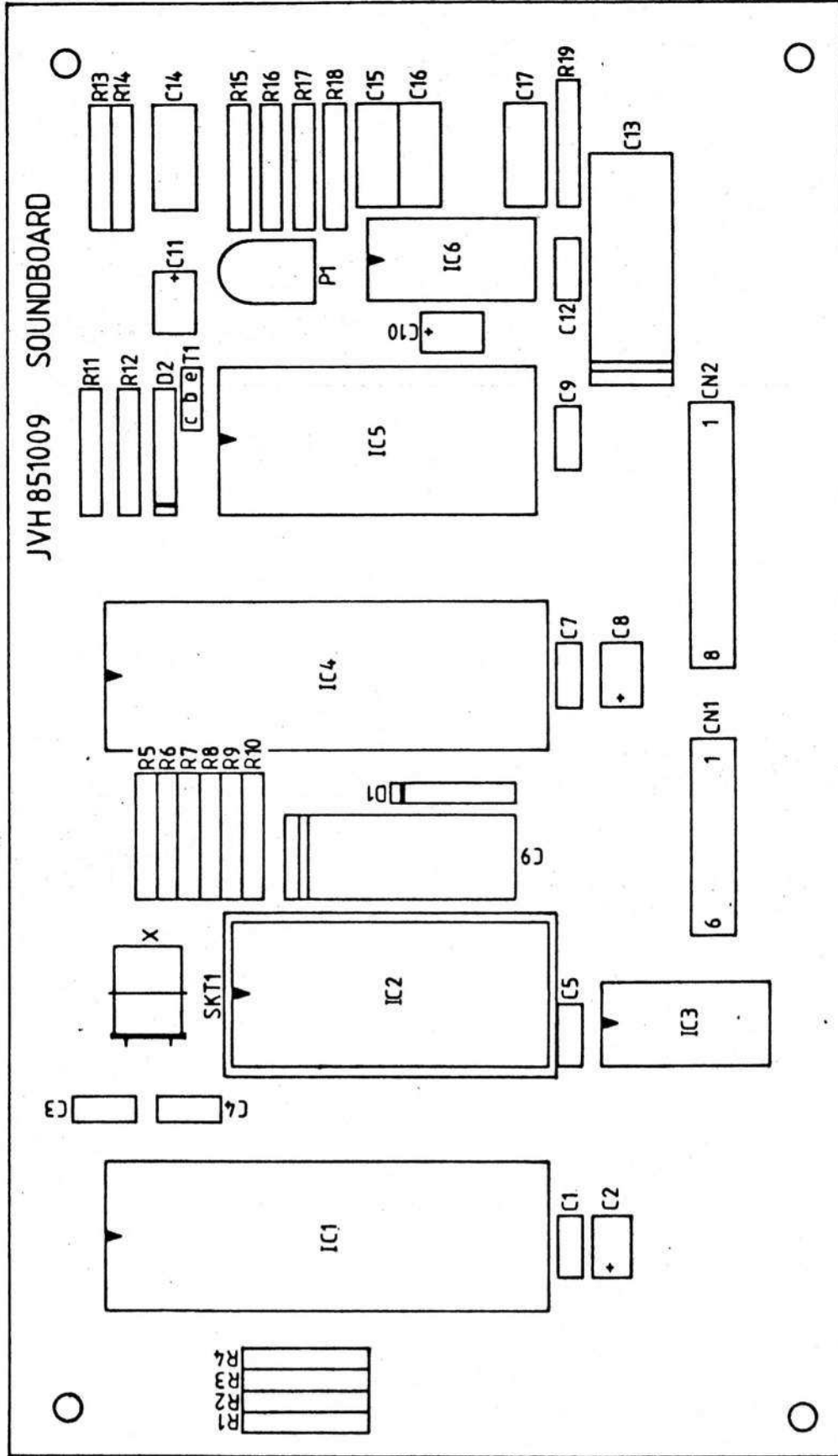
SOUNDBOARDJvH 851009

Comp.	Description
R1-4 R5-10,13,14,16 R11,18 R12 R15,17 R19	Resistor 3K3 1/4W Resistor 1K, 1/4W Resistor 10K, 1/4W Resistor 100K 1/4W Resistor 2K2 1/4W Resistor 2R2 1/4W
P1	Resistor preset 1K
C1,5,7,9,12 C2,8,11 C3,4 C10 C14,15,17 C16	Capacitor 22 nF cer Capacitor 10 uF 25V tant Capacitor 470 uF 16V Capacitor 47 uF 16V Capacitor 0,1 uF MKT Capacitor 0,22 uF MKT
D1 D2	Diode 1N4004 Diode 1N4148
T1	Transistor BCX38
IC1 IC2 IC3 IC4 IC5 IC6	Processor 6802 Eprom 2764 Quard 2 input NAND 74LS00 Via 6522 Prog. Sound Gen AY-3-8912 Audio Amp. LM384

SOUNDBOARDJvH 851009

Comp.	Description
X	X-tal HC18/u 4MHz
CN1 CN2	Wafer 3,96mm 6 way Wafer 3,96mm 8 way
SKT1	Socket DIL 28 way

JVH 851009 SOUNDBOARD



TITLE

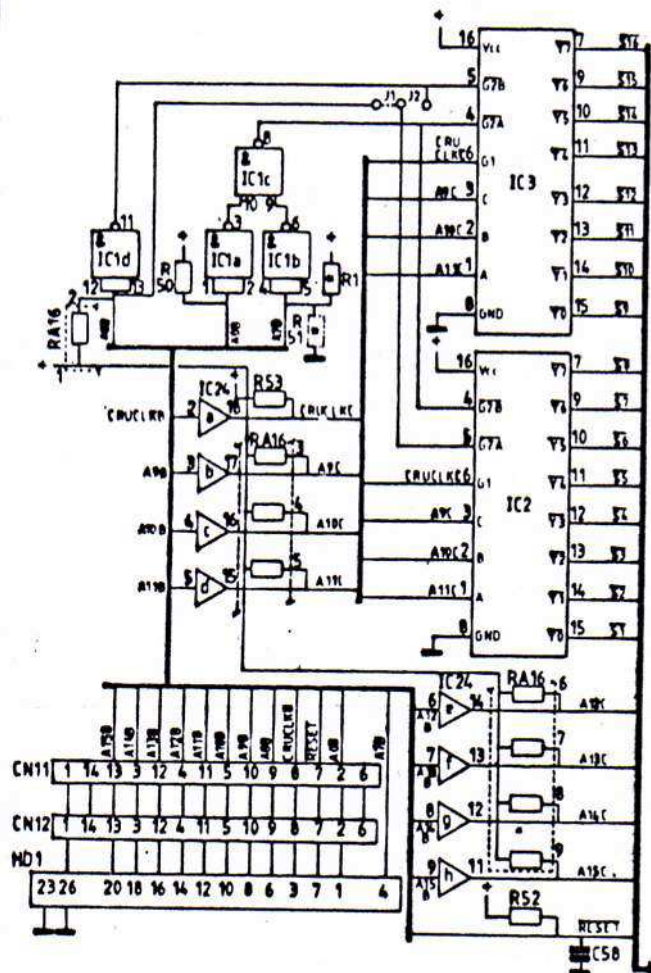
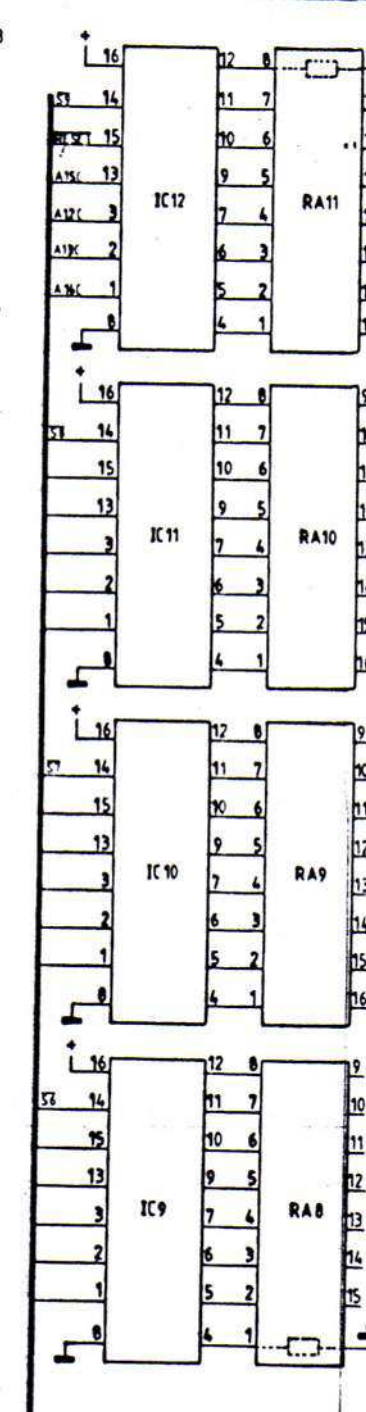
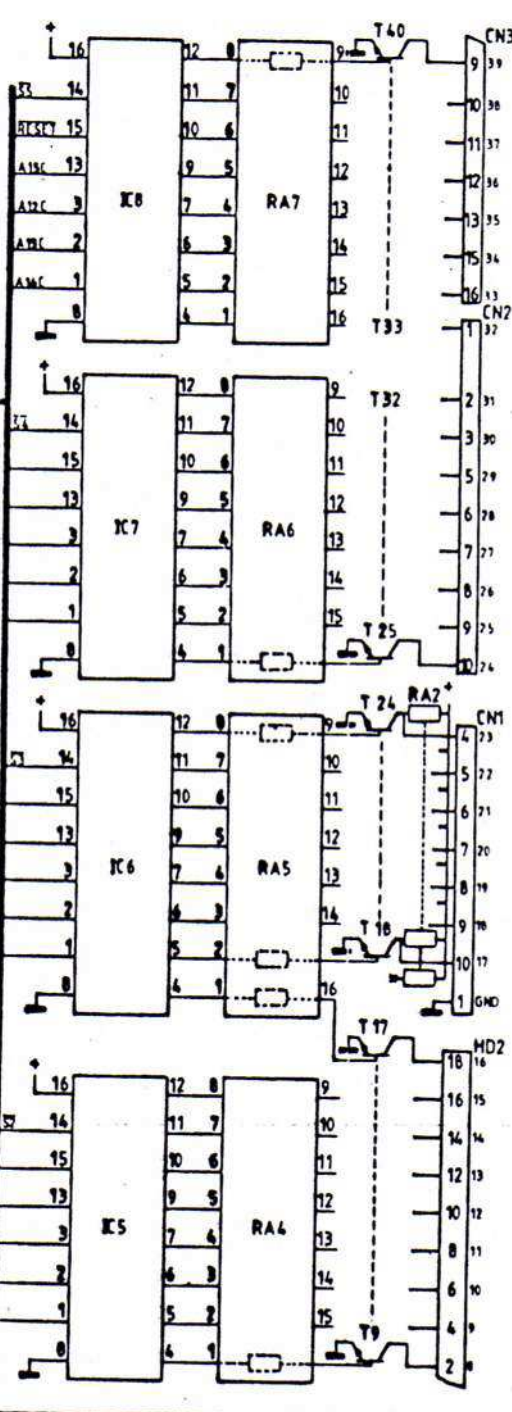
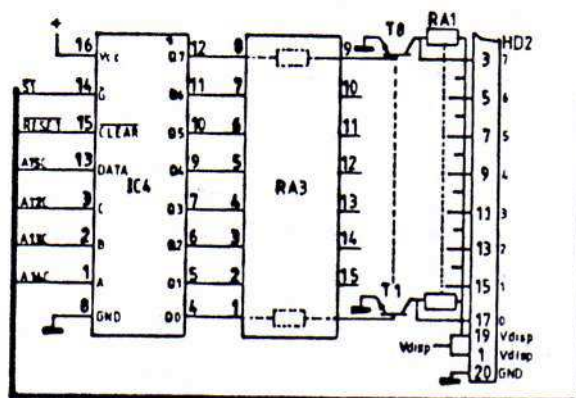
SOUNDBOARD JVH851009

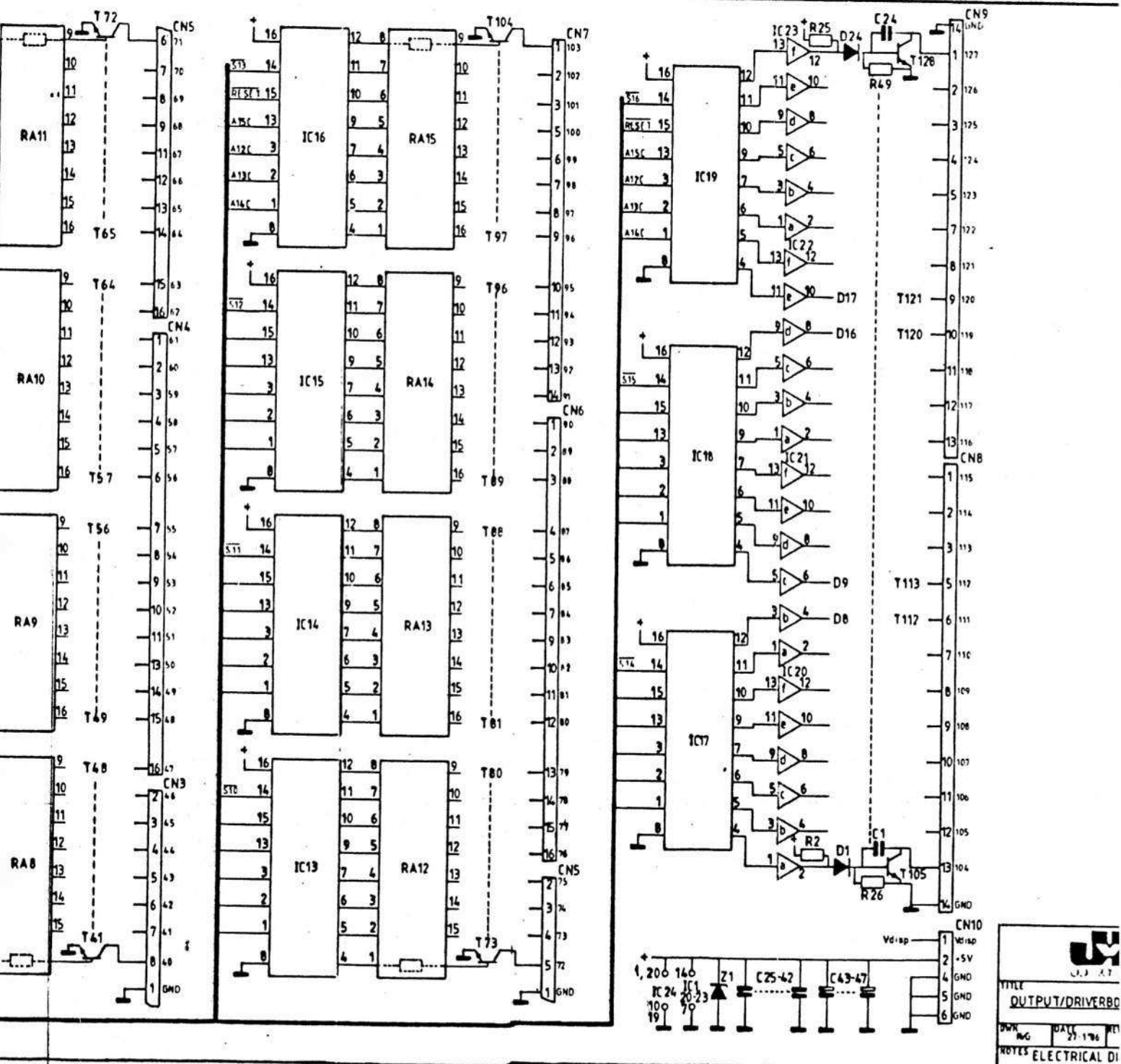
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KvG	15-1-86		

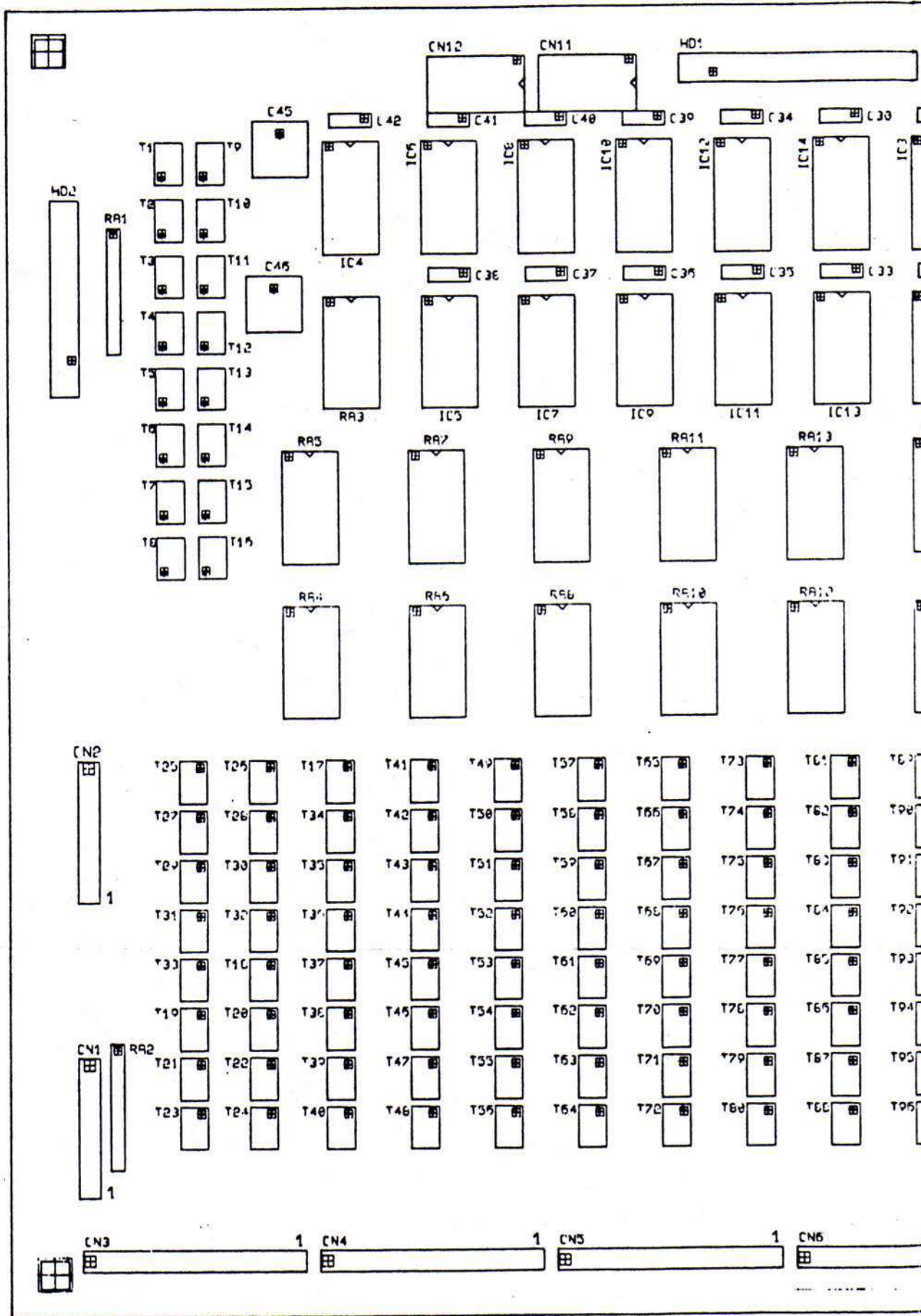
NOTES: COMPONENT LOCATION

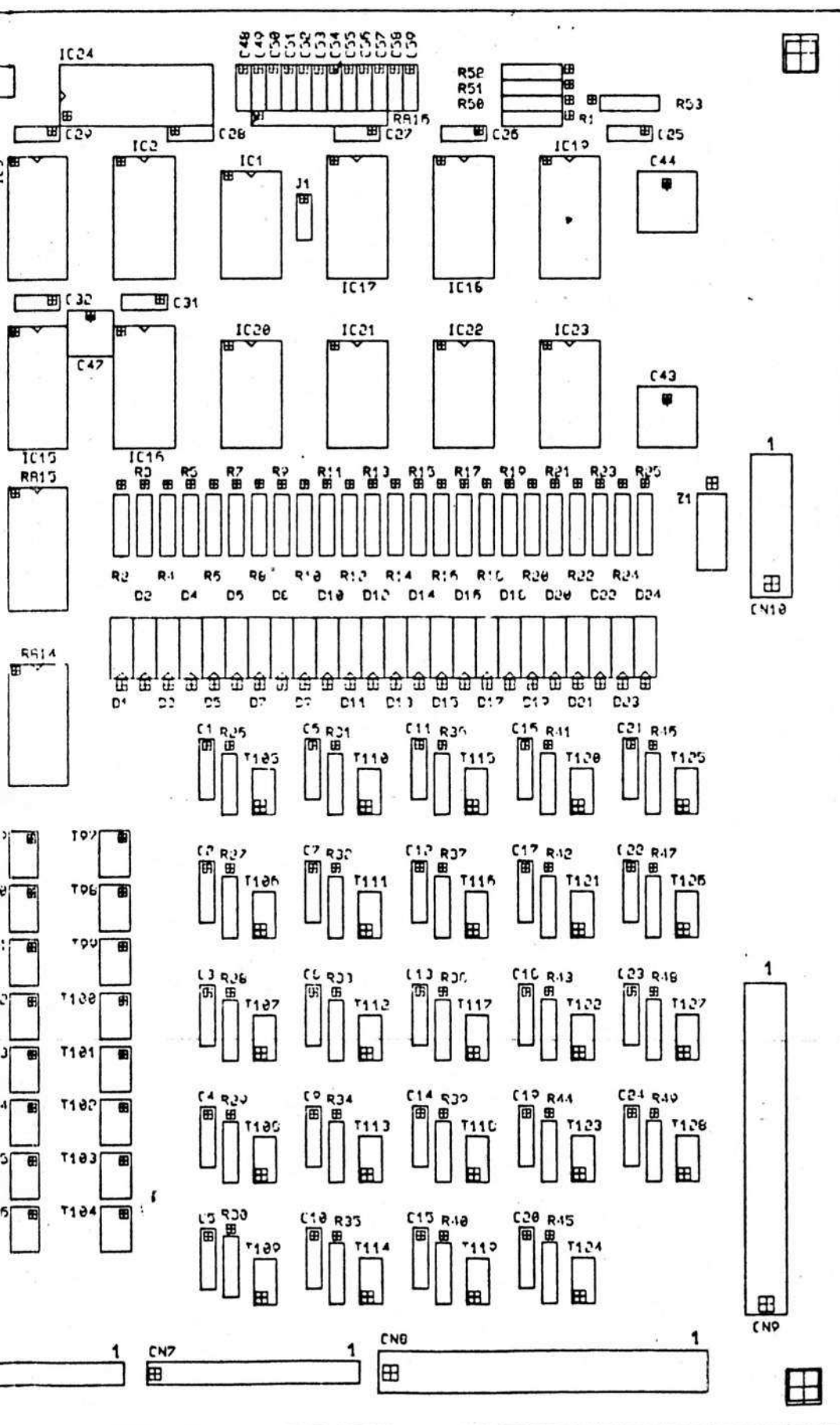
Comp.	Description
R1,51 R2-25 R26-49 R50,52,53 RA1,2 RA3-15 RA16	Resistor 1K5 $\frac{1}{2}$ W Resistor 150R $\frac{1}{2}$ W Resistor 390 R $\frac{1}{2}$ W Resistor 1K5 $\frac{1}{2}$ W SIL Resistor 8 x 1K5 to common DIL Resistor 8 x 5K6 separate SIL Resistor 8 x 10K to common
C1-24 C25-42 C43-47 C58	Capacitor 2N2 MKT Capacitor 0,1 uF cer Capacitor 10 uF tant Capacitor 2u2 tant
D1-24 Z1	Diode IN4004 Suppressordiode PF2 6V8A
T1-104 T105-128	Transistor BCX38 Transistor BD649
IC1 IC2,3 IC4-19 IC24	Quad 2 input NAND 74LS00 Decoder 74LS138 Addressable latch 74LS259 Octal buffer 74LS245
CN1,2 CN3-6 CN4-7 CN8,9 CN10 CN11,12 HD1 HD2	Wafer 2,54 mm 10 way Wafer 2,54 mm 16 way Wafer 2,54 mm 14 way Wafer 3,96 mm 14 way Wafer 8,96 mm 6 way Socket DIL 14 way Header 90° 26 way Header 90° 20 way

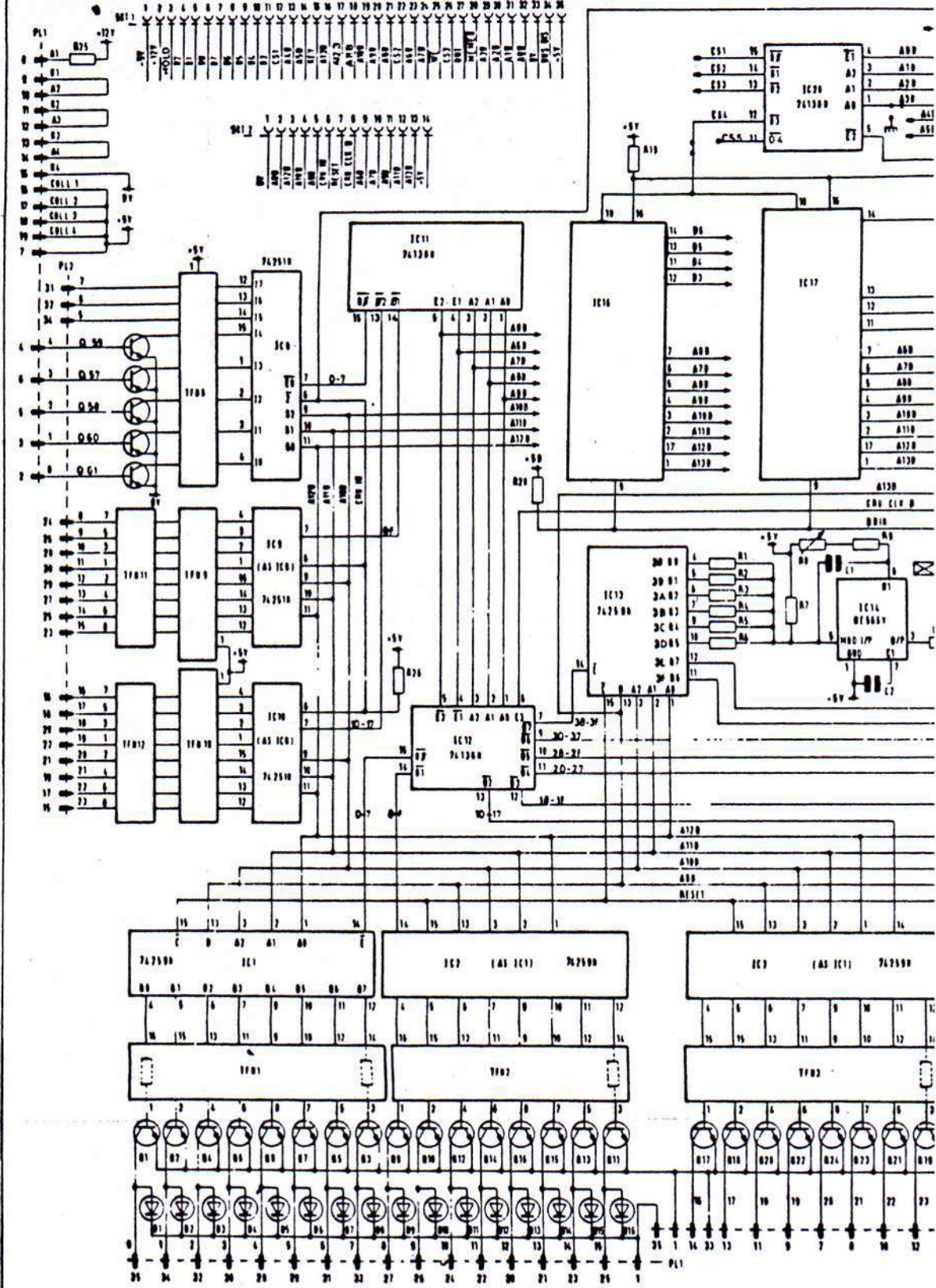
Comp.	Description
R1,51	Resistor IK5 $\frac{1}{4}$ W
R2-25	Resistor 150R $\frac{1}{4}$ W
R26-49	Resistor 390 R $\frac{1}{4}$ W
R50,52,53	Resistor IK5 $\frac{1}{4}$ W
RA1,2	SIL

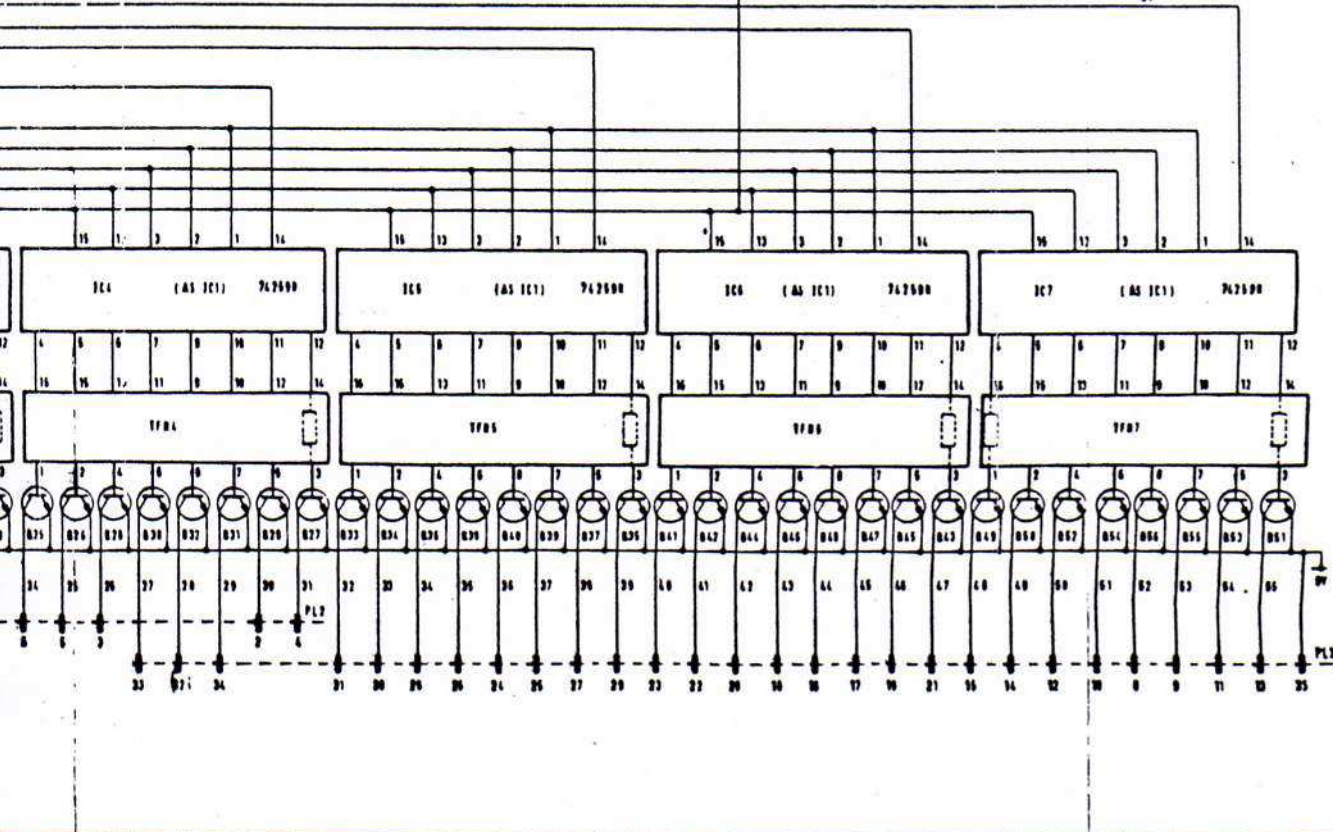
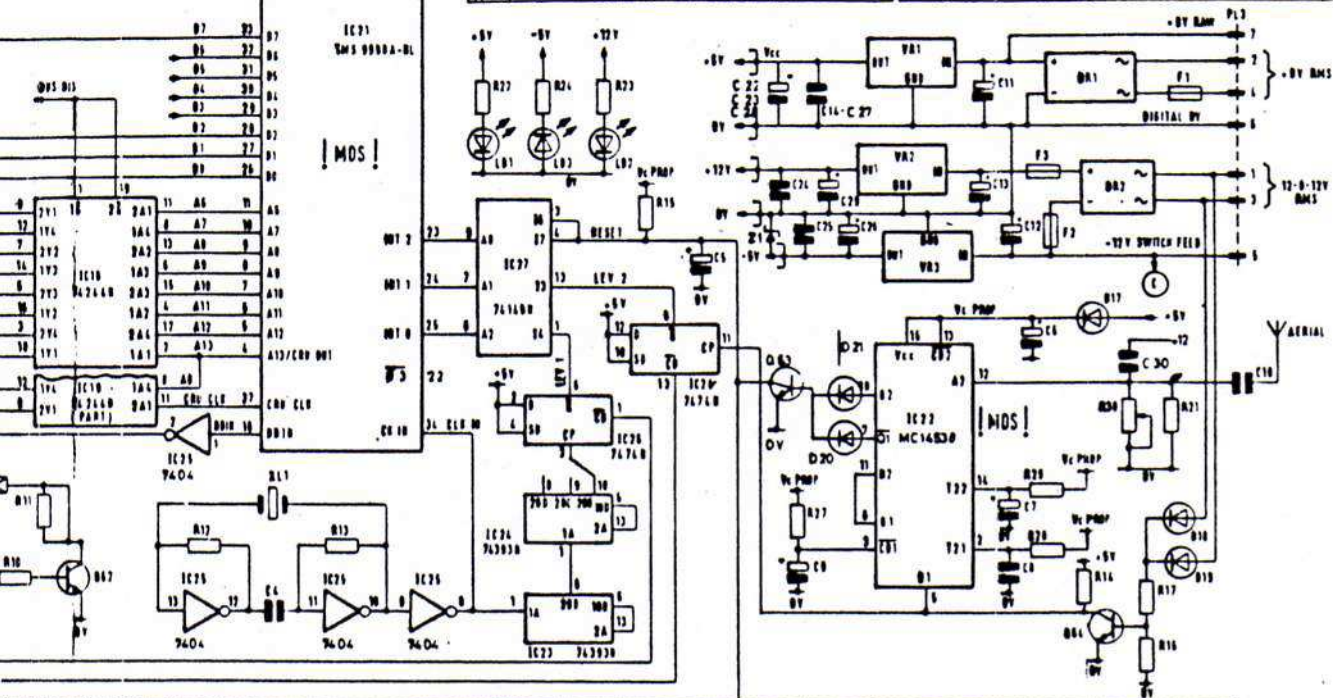
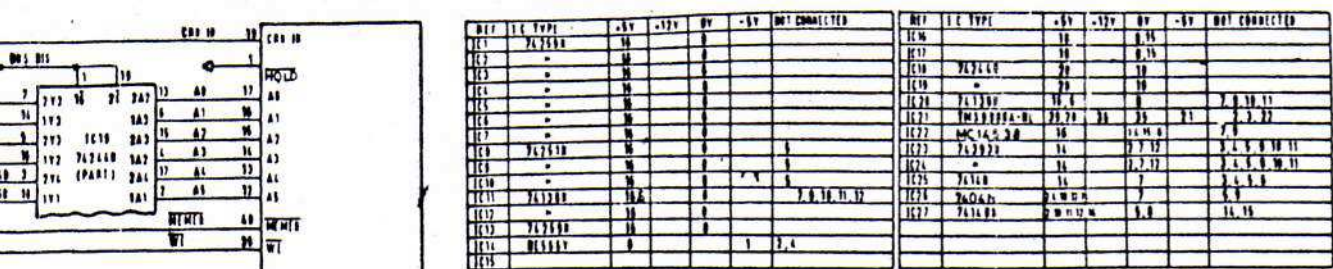












Main Board layout

