

COSMIC SERIES

SPACE PANIC

Operation, Maintenance
and Service Manual



UNIVERSAL

Thank you very much for your purchase of the SPACE PANIC. Carrying a CPU, the SPACE PANIC is a game machine of the newest type with many features and functions.

This manual describes how to make the most of such features and functions, so please read it carefully in order to make the best use of the machine.

CONTENTS

I. Features of this machine	1
II. How to handle and maintain this machine	2
III. How to play	3
IV. Various optional settings	4
A. Positions of dip switches	4
B. Setting the option (dip switches)	4
C. Volume controller knob	5
V. TV monitor	5
A. Adjustment of TV picture screen	5
VI. Upright type parts catalog	6
A. Component parts related to cabinet (outside)	6
B. Drawing of circuit board mounting positions	7
C. Fuses	7
D. Component parts related to cabinet (inside)	8
a) Operating panel assembly	8
b) Door assembly and parts list	9
c) Lever assembly and part list	10
E. Component parts related to switches and lamps in the cabinet	11
VII. Table type parts catalog	12
A. Component parts related to cabinet (outside)	12
B. Component parts related to cabinet (inside)	13
a) Inside cabinet	13
b) Fuses	14
c) Operating panel assembly	14
VIII. Circuit board	15
A. Circuit board IC location and parts list	15
a) Main circuit board IC location and parts list	15
b) Sound circuit board IC location and parts list	17
c) Sound sub-circuit board IC location and parts list	18
Wiring diagram (connector)	19
Sound block diagram	20
Power source block diagram	20
Block diagram	20
Schematic diagram (20" color)	21
Schematic diagram (14" color)	22
Main block diagram	23, 24
Postface	25

REFERENCE DRAWING

Fig. 1	Positions of Dip Switches	4
Fig. 2	Positions of Volume Controller Knob	5
Fig. 3	Positions of TV Monitor Controller Knobs	5
Fig. 4	Component Parts Related to Cabinet (Outside)	6
Fig. 5	Circuit Board Mounting Positions	7
Fig. 6	Side View of Circuit Board Mounting Positions	7
Fig. 7	Position of Sound Sub-circuit Board	7
Fig. 8	Fuses	7
Fig. 9	Component Parts Related to Cabinet (Inside)	8
Fig. 10	Operating Panel Assembly	8
Fig. 11	Inside View of Door Assembly	9
Fig. 12	Lever Assembly	10
Fig. 13	Component Parts Related to Switches in the Cabinet	11
Fig. 14	Component Parts Related to Cabinet (Outside)	12
Fig. 15	Component Parts Related to Cabinet (Inside)	13
Fig. 16	Fuses in the Power Source Unit	14
Fig. 17	Fuses in the Power Circuit Board	14
Fig. 18	Operating Panel Assembly	14
Fig. 19	Main Circuit Board	15
Fig. 20	Sound Circuit Board	17
Fig. 21	Sound Sub-circuit Board	18

— WHEN ORDERING PARTS —

Since each component part is indicated by block, definitely specify both the corresponding Fig. No. and part No. within the Fig. when placing an order for it.

I. FEATURES OF THIS MACHINE

1. The game packs in excellent features capturing the hearts of players.
2. The lever control system is simple to handle.
3. At the flick of a dip switch, you can select among extended play, the number of tanks and time of appearance of an additional tank, etc.
4. High score for the day is always displayed on the screen.
5. Finely designed cabinet and fascinating acoustic effects.

II. HOW TO HANDLE AND MAINTAIN THIS MACHINE

1. Since the UNIVERSAL's SPACE PANIC employs a color TV receiving set, be careful not to shake it during transit and when carrying it about.
2. Install it at a location which is not exposed to direct sunlight. In order to prevent the inside temperature rising, avoid as much as possible a location near a heater, etc.
3. Since the grounding terminal is visible, be sure to connect it to a grounding conductor.
4. Insert the power cord into the outlet and turn on the switch.
5. Even if the solid-state module seems to be out of order, do not check the circuit by means of a circuit tester, etc., since the internal voltage of the tester, etc. may sometimes break down the IC.
6. Make sure the machine is well ventiated. If the temperature of the IC and transistor is lower than 60°C, the function normally and may be considered reliable. If it exceeds 60°C, their performance cannot be guaranteed.
7. Make sure that the connector, etc. is not disconnected.
8. Whenever connecting the power cord of the solid-state module to, or disconnecting it from, the outlet, be sure to turn the power off.
9. Although the products of UNIVERSAL are manufactured with the utmost care, they may develop malfunctions when used for long periods. So, be sure to chek this machine daily.

III. HOW TO PLAY

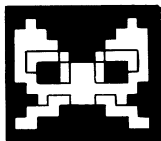
1. Make the man dig holes! When a space monster has fallen through a hole to a lower floor, if you cover it over before the monster creeps out of it, you are awarded points.
2. A monster, boss, or don does not die unless they drop more than 1, 2 or 3 floors, respectively. Additionally, when more than 2 space monsters drop into the holes, or when a boss or a don is dropped onto a monster below, they die together. The larger the number of floors a monster drops, the higher the score awarded.
3. The man can move quickly down to a lower floor through the hole he has dug, and he can lure the monsters down through the hole to the lower floor.
4. When the man has been bitten by a monster or when all the oxygen has been used up, the man dies. When the oxygen display becomes "0", the man's face reddens, and the warning buzzer activates.
5. If oxygen has not been reduced to zero when the screen has been cleared, you are awarded bonus points corresponding to the amount of remaining oxygen.
6. The highest scorer can register his name on the screen.
 - Push the hole-digging button for each alphabetical letter you want to register.

SCORE



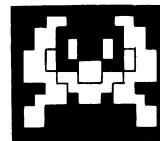
MONSTER

100~800



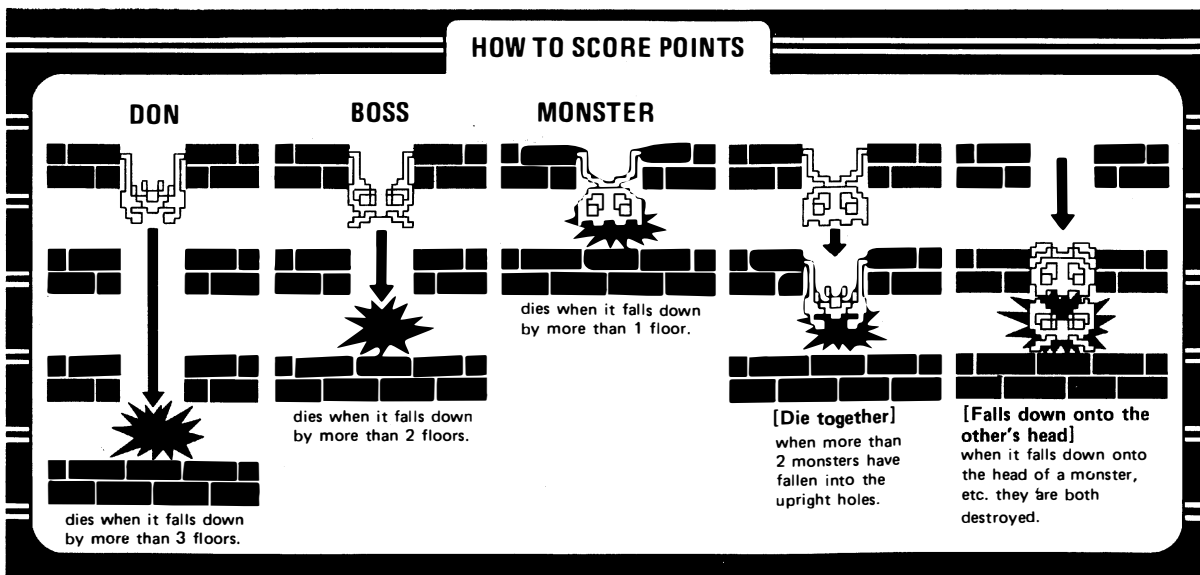
BOSS

300~ 1,200



DON

800~ 2,000



IV. VARIOUS OPTIONAL SETTINGS

A. POSITIONS OF DIP SWITCHES

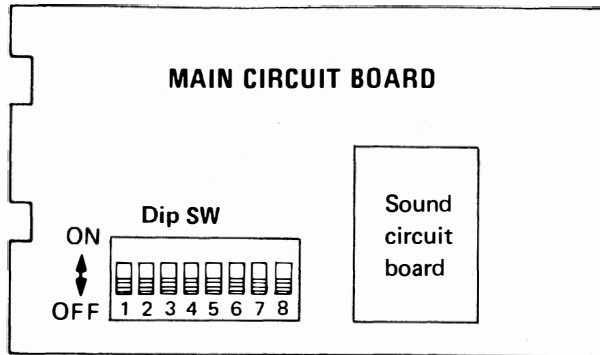


Fig. 1 Positions of Dip Switches

B. SETTING THE OPTION (DIP SWITCHES)

1. Setting the number of panic men for game (SW1)

Number of panic men	SW1
3 men	ON
4 men	OFF

2. Extra points (SW2)

Extra points	SW2
3,000 pts	ON
5,000 pts	OFF

3. Change-over setting of the mode of game (SW3)

Style	SW3
Upright	ON
Table	OFF

4. Coin/s and credit/s for the left chute (SW4, 5, 6)

Coin	Credit	SW4	SW5	SW6
1	1	ON	ON	ON
1	2	ON	ON	OFF
1	3	ON	OFF	ON
1	4	ON	OFF	OFF
1	5	OFF	ON	ON
2	3	OFF	ON	OFF

5. Coin/s and credit/s for the right chute (SW7, 8)

Coin	Credit	SW7	SW8
2	1	ON	ON
1	1	ON	OFF
1	2	OFF	ON
1	3	OFF	OFF

C. VOLUME CONTROLLER KNOB

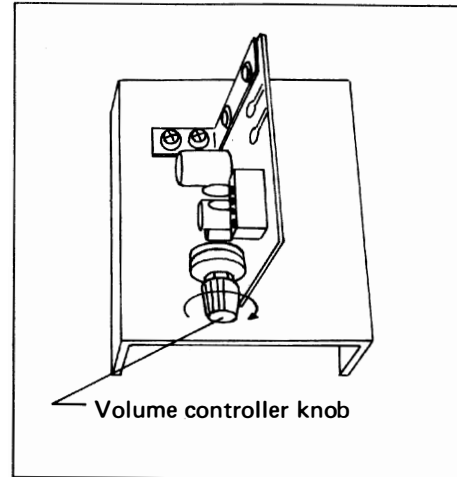
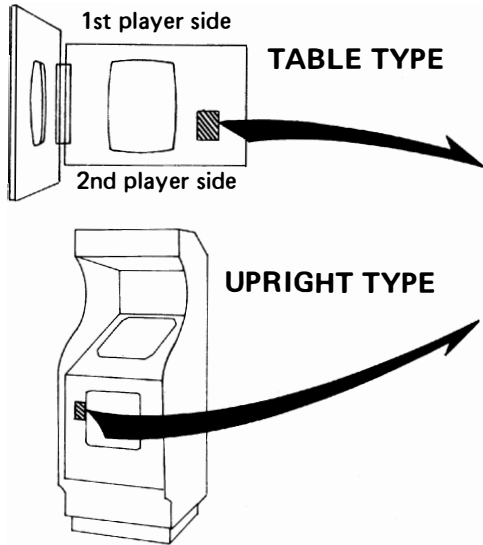


Fig. 2 Positions of Volume Controller Knob

V. TV MONITOR

A. ADJUSTMENT OF TV PICTURE SCREEN

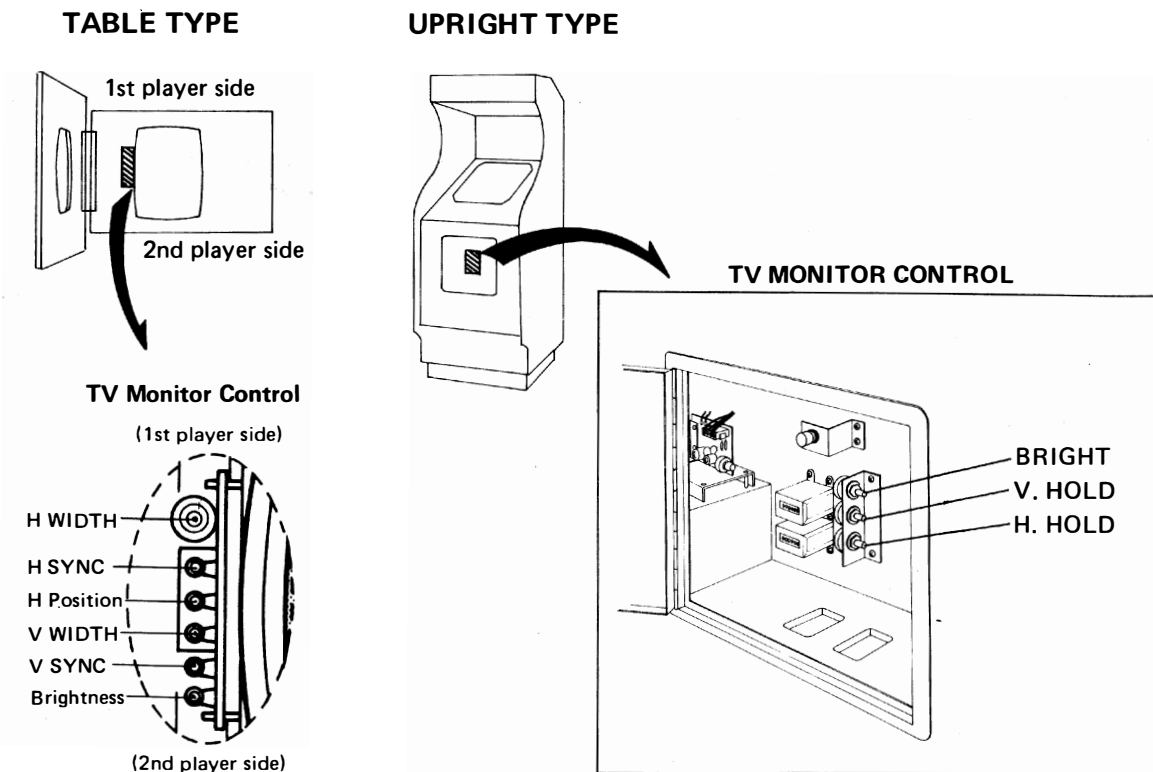
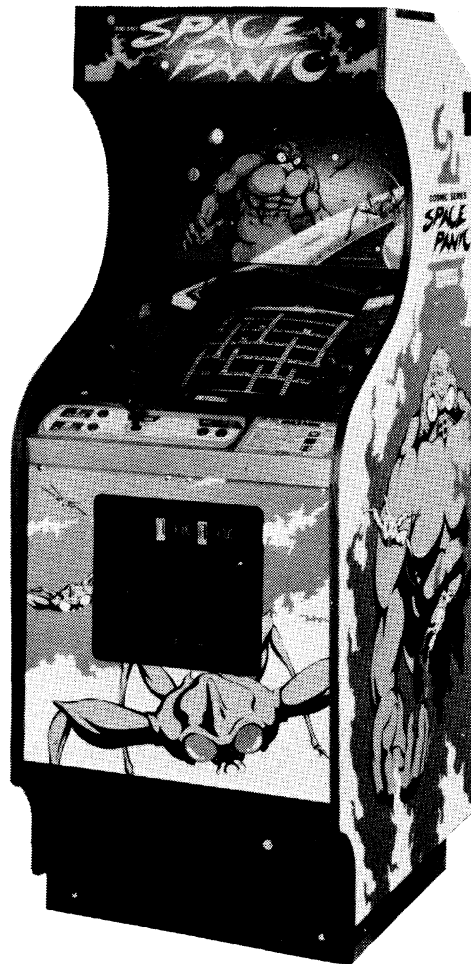


Fig. 3 Positions of TV Monitor Controller Knobs

UPRIGHT TYPE



This documentation provides standard information.
Universal reserves the right to change without notice.

VI. UPRIGHT TYPE PARTS CATALOG

A. COMPONENT PARTS RELATED TO CABINET (OUTSIDE)

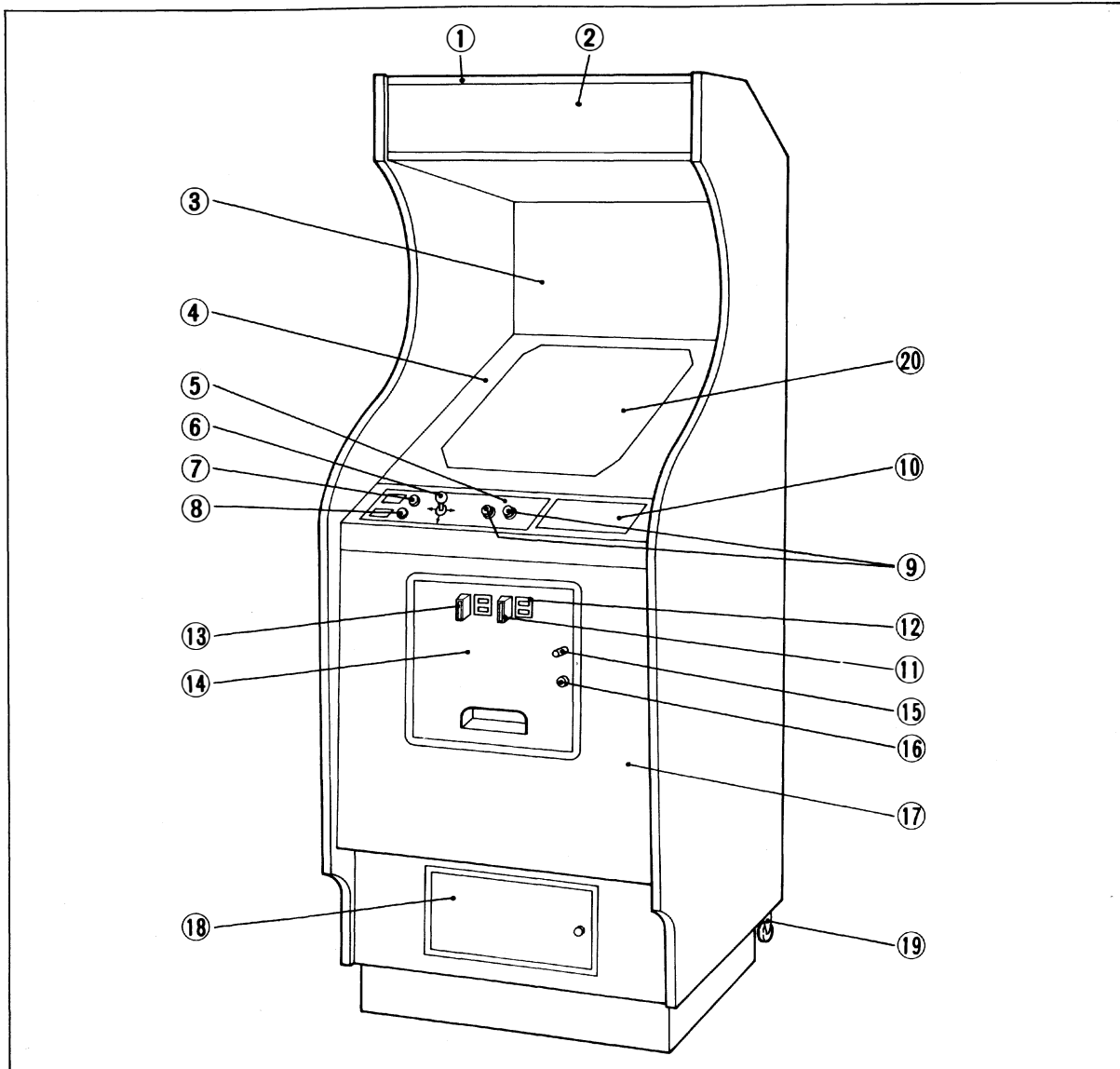


Fig. 4 Component Parts Related to Cabinet (Outside)

OUTSIDE CABINET PARTS LIST

Ref. No.	Name	Ref. No.	Name
1	Title panel fixture	11	Coin slot (1)
2	Title panel	12	Coin indication panel (1)
3	Illustrated glass (B)	13	Coin slot (2)
4	Illustrated glass (A)	14	Coin indication panel (2)
5	Operating indication panel	15	Cancel button
6	Control lever (general name)	16	Door key
7	Push button (for 1 player)	17	Main door
8	Push button (for 2 players)	18	Cash box door
9	Push button (Holding and closing)	19	Caster
10	Sticker for game rules	20	CRT (20" color)

B. DRAWING OF CIRCUIT BOARD MOUNTING POSITIONS

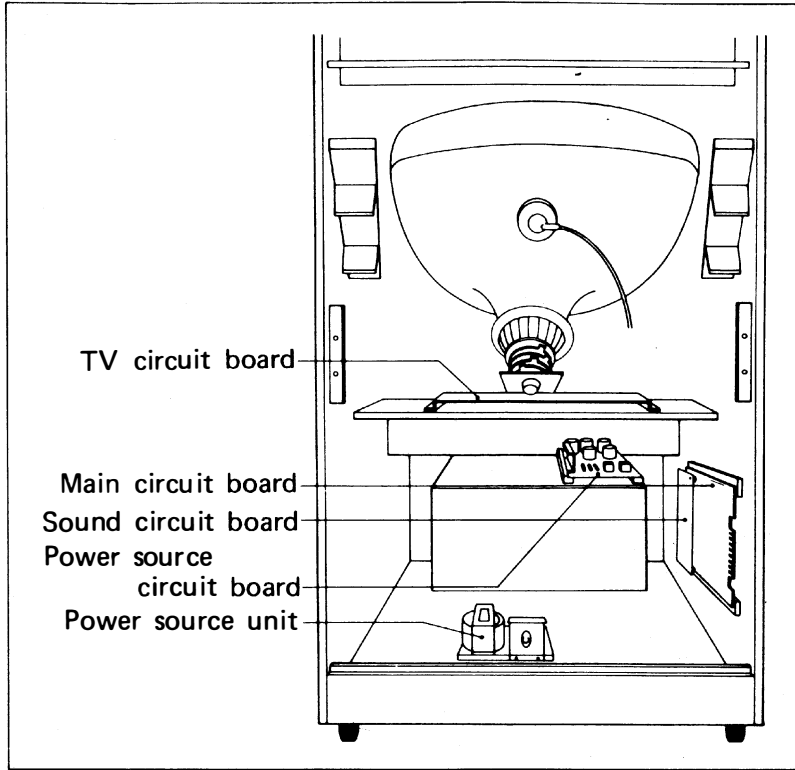


Fig. 5 Circuit Board Mounting Positions

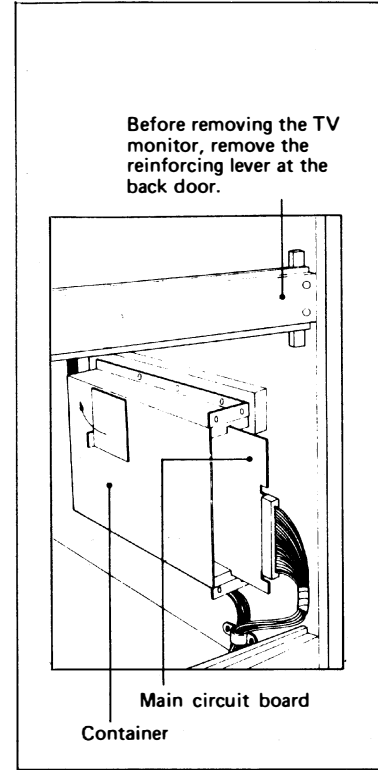


Fig. 6 Side View of Circuit Board Mounting Positions

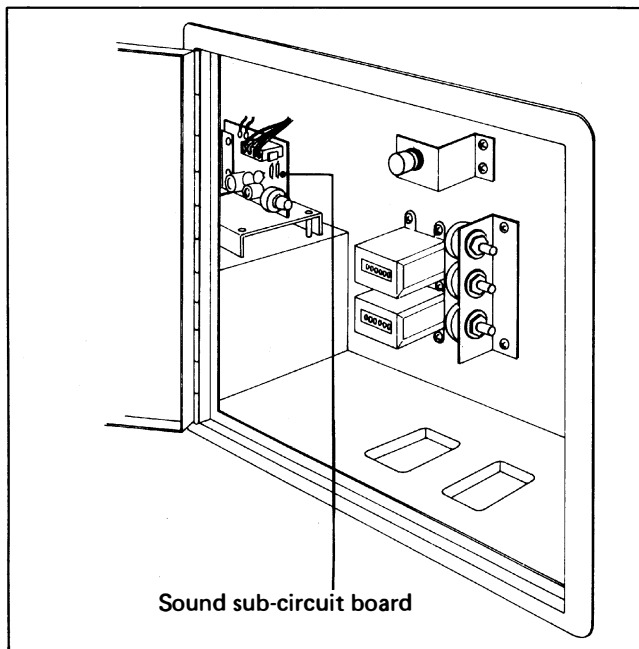


Fig. 7 Position of Sound Sub-circuit Board

C. FUSES

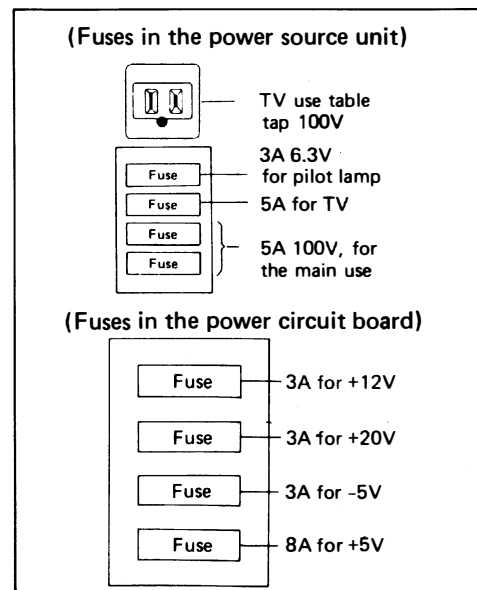


Fig. 8 Fuses

D. COMPONENT PARTS RELATED TO CABINET (INSIDE)

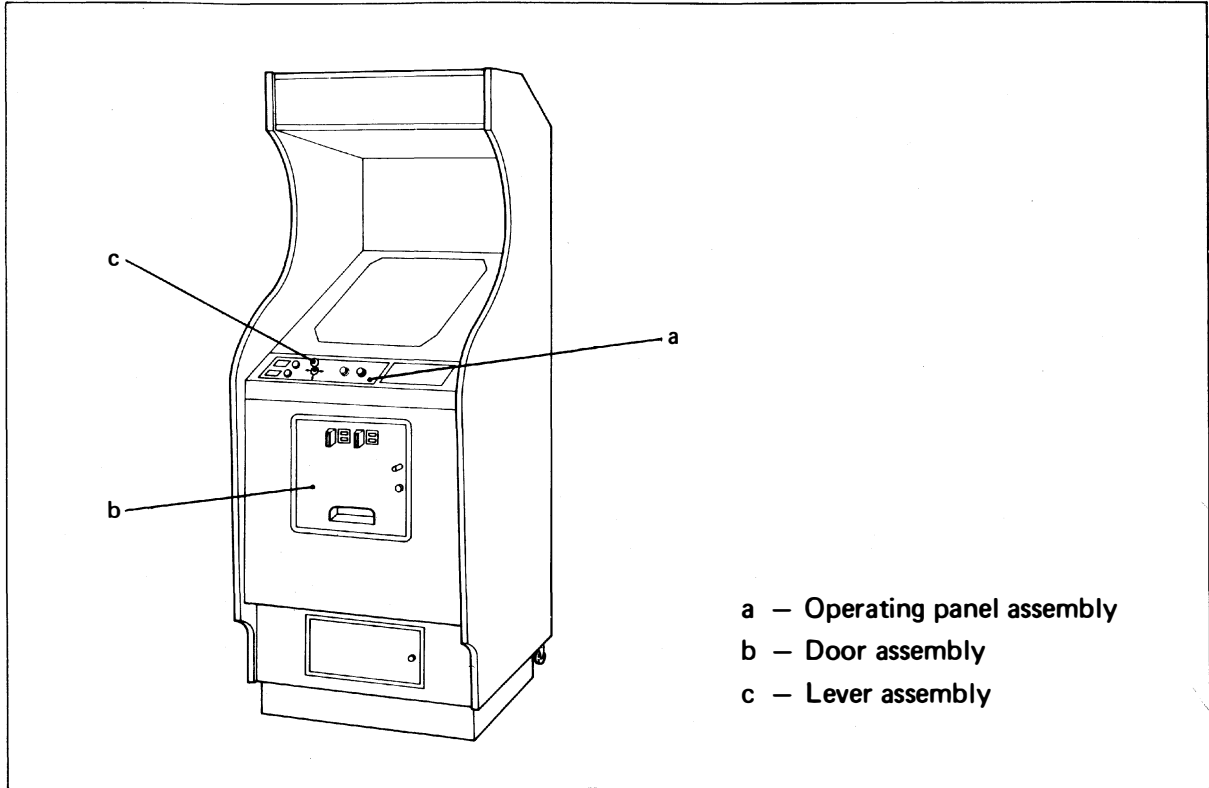


Fig. 9 Component Parts Related to Cabinet (Inside)

a) Operating panel assembly

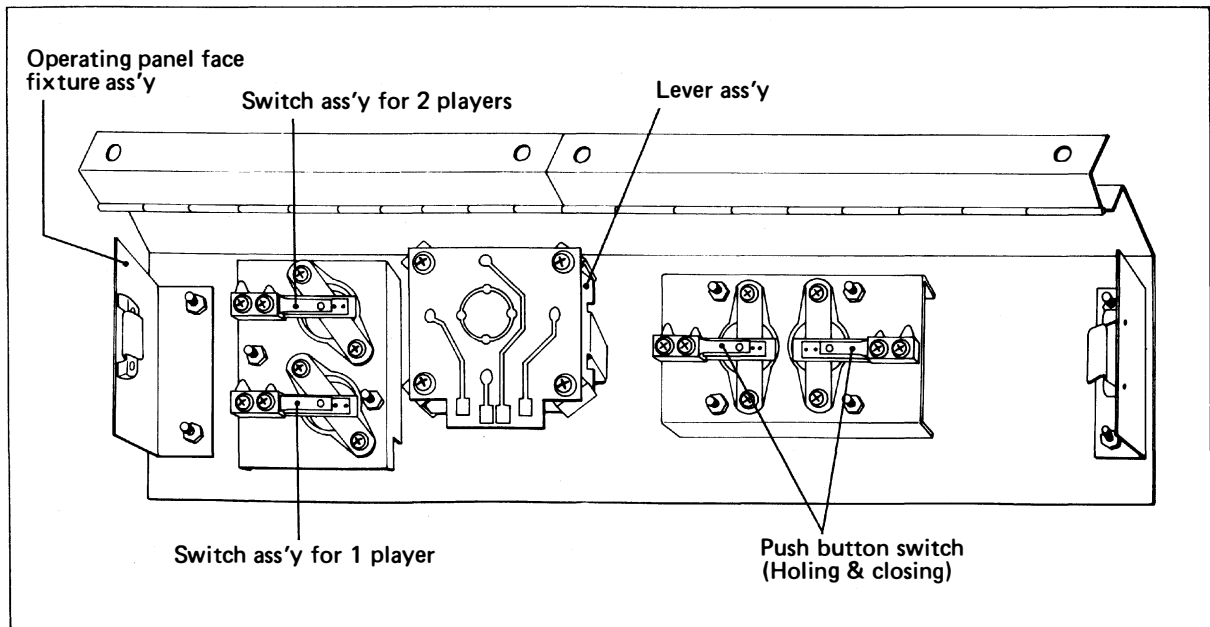


Fig. 10 Operating Panel Assembly

b) Door assembly and parts list

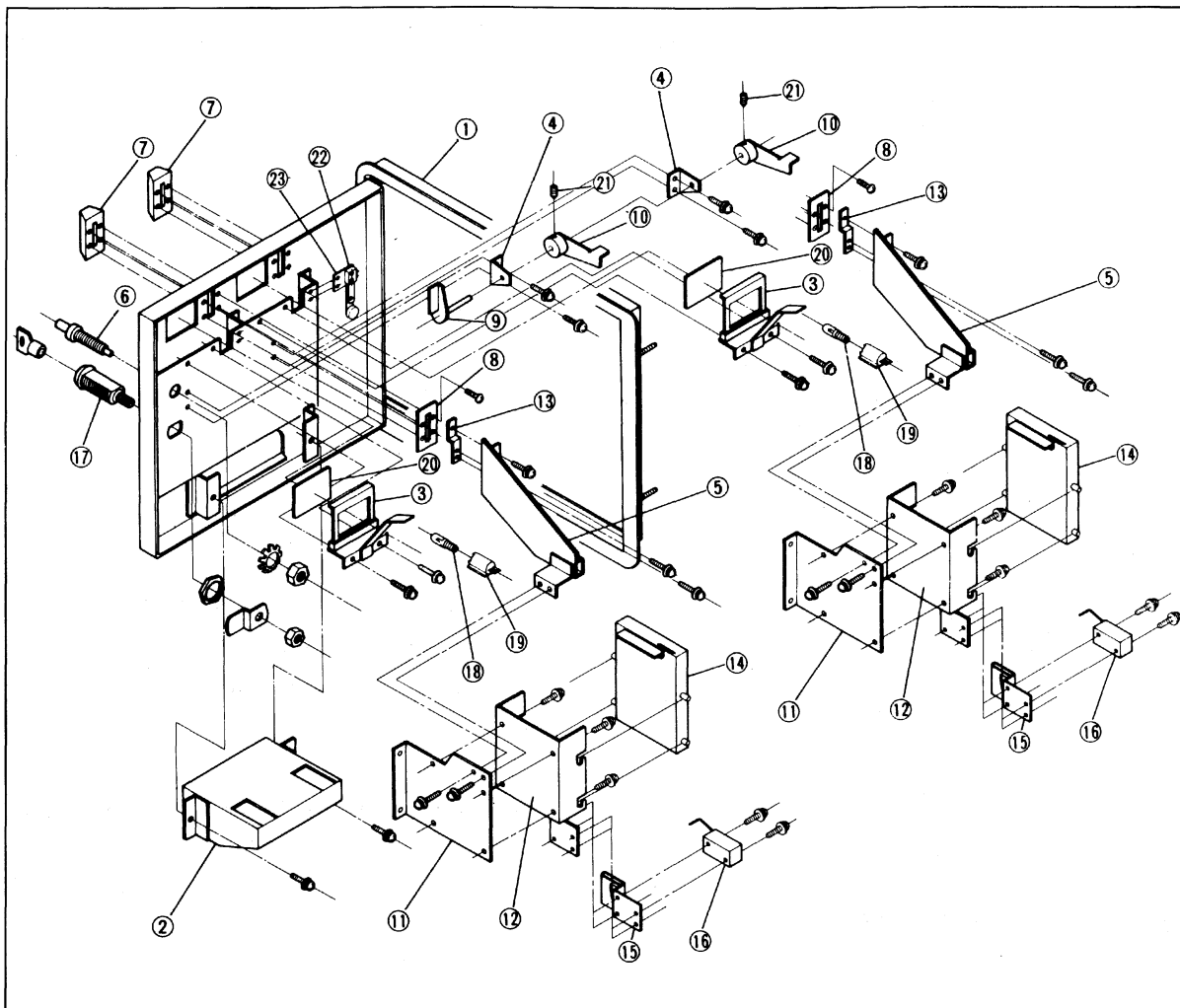


Fig. 11 Inside View of Door Assembly

DOOR ASSEMBLY PARTS LIST

Ref. No.	Name	Ref. No.	Name
1	Main door	13	Coin slot shute holder
2	Returning soucer	14	Rejector
3	Lamp & plastic plate bracket	15	Sensor slot
4	Rearing	16	Micro switch
5	Coin slot shute	17	Key sets
6	Returning button	18	Miniature lamp
7	Coin slot	19	Miniature lamp socket
8	Slot plate	20	Coin indication panel
9	Transmission shaft	21	Hexagon socket head screw
10	Rotary bracket	22	Slam switch
11	Rejector bracket	23	Slam switch holder
12	Rejector case		

c) Lever assembly and parts list

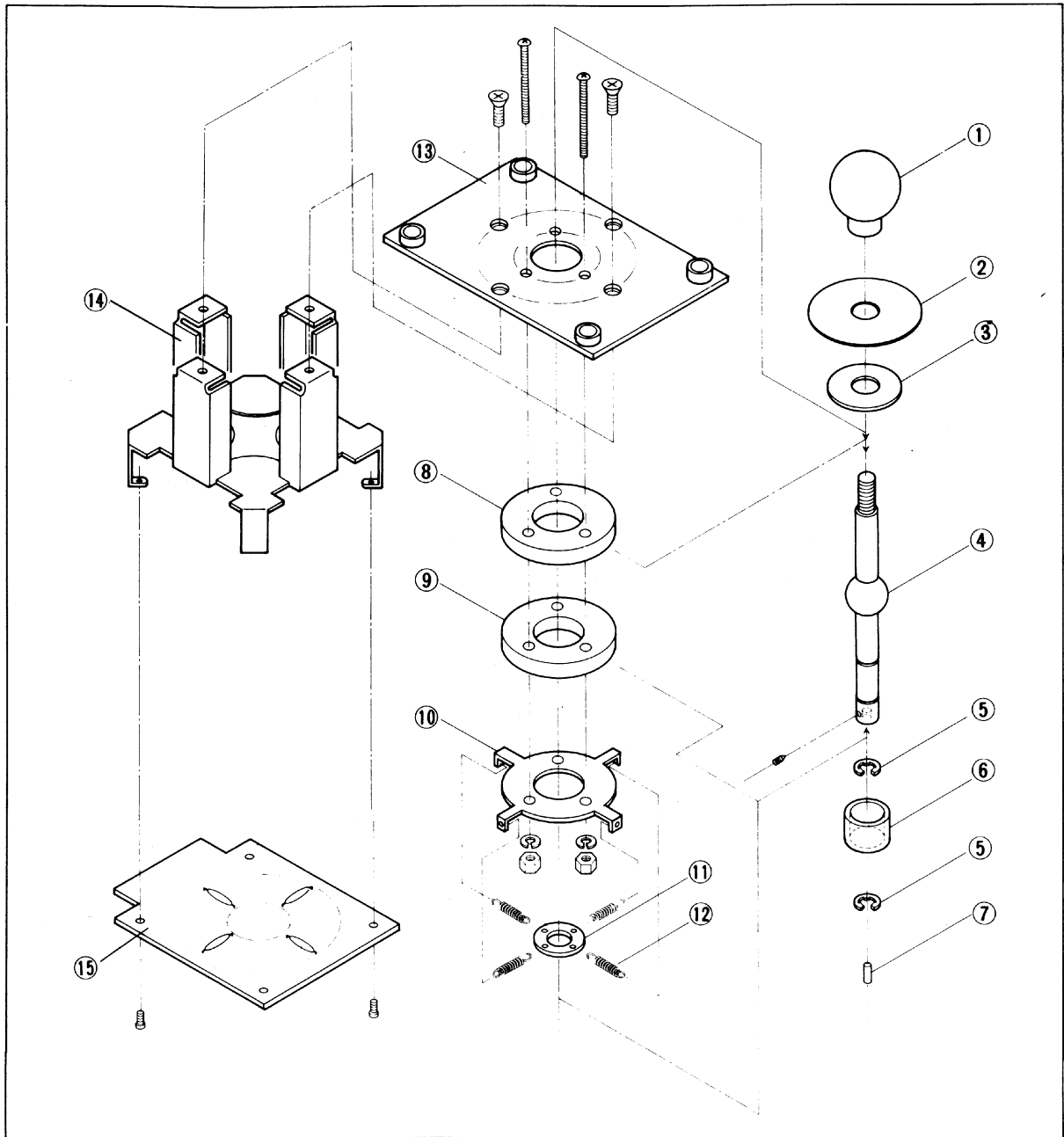


Fig. 12 Lever Assembly

LEVER ASSEMBLY PARTS LIST

Ref. No.	Name	Ref. No.	Name
1	Knob. 24 or 32 Dim.	9	Bracket (B)
2	Resin board	10	Spring hook
3	Resin board	11	Spring fixture
4	Lever shaft	12	Spring
5	E-ring	13	Mounting base
6	Collar	14	Guide
7	Magnet	15	Reed SW circuit board
8	Bracket (A)		

E. COMPONENT PARTS RELATED TO SWITCHES IN THE CABINET

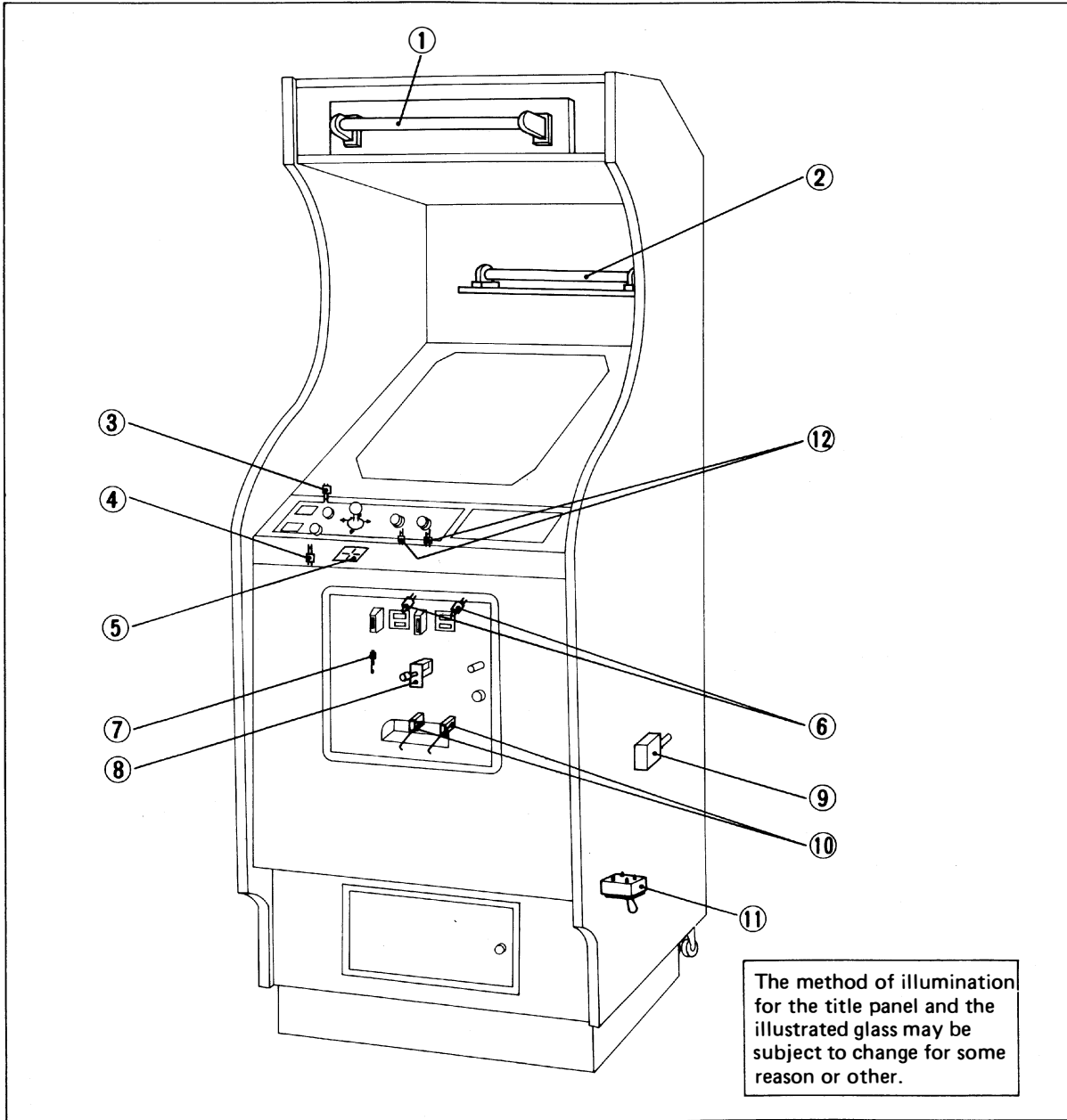


Fig. 13 Component Parts Related to Switches in the Cabinet

INSIDE CABINET PARTS LIST

Ref. No.	Name	Ref. No.	Name
1	Fluorescent lamp for title panel	7	Blades SW for tilt_SW
2	Fluorescent lamp for illustrated glass	8	Micro SW for resetting
3	1-player select button blade SW	9	Door SW
4	2-players select button blade SW	10	Micro SW for rejector x 2
5	Control lever 4-directional use reed SW x 4	11	Toggle SW
6	Miniature lamp for money display x 2	12	Blade SW for holding and closing

TABLE TYPE



This documentation provides standard information.
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VII. TABLE TYPE PARTS CATALOG

A. COMPONENT PARTS RELATED TO CABINET (OUTSIDE)

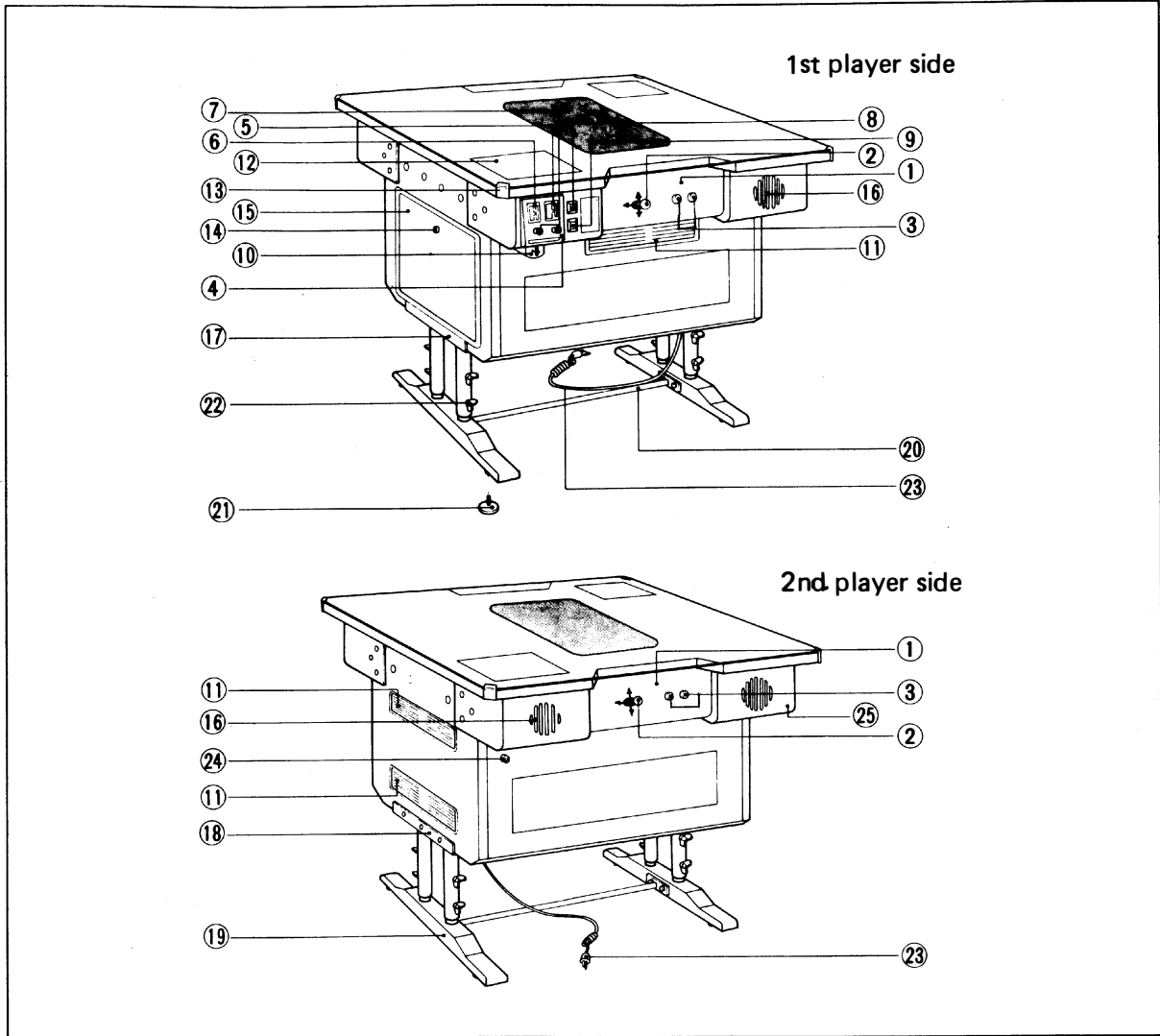


Fig. 14 Component Parts Related to Cabinet (Outside)

OUTSIDE CABINET PARTS LIST

Ref. No.	Name	Ref. No.	Name
1	Operating indication illustrated panel	13	Glass fittings
2	Control lever	14	Cash box door key
3	Push button (for holing and closing)	15	Cash box door
4	Coin slot frame	16	Speaker (x2)
5	Selector plate (1)	17	Leg (left)
6	Selector plate (2) [not used in case of 1-way]	18	Leg (right)
7	Cancel.button	19	Foot
8	Push button ass'y (for 1 player)	20	Foot support
9	Push button ass'y (for 2 players)	21	Leg adjuster
10	Cancel coin receptacle	22	Thumbscrew (x8)
11	Ventilating panel (x3)	23	Power cord (AC)
12	Sticker for game rules (x2)	24	Door key
		25	Cabinet corner box

B. COMPONENT PARTS RELATED TO CABINET (INSIDE)

a) Inside cabinet

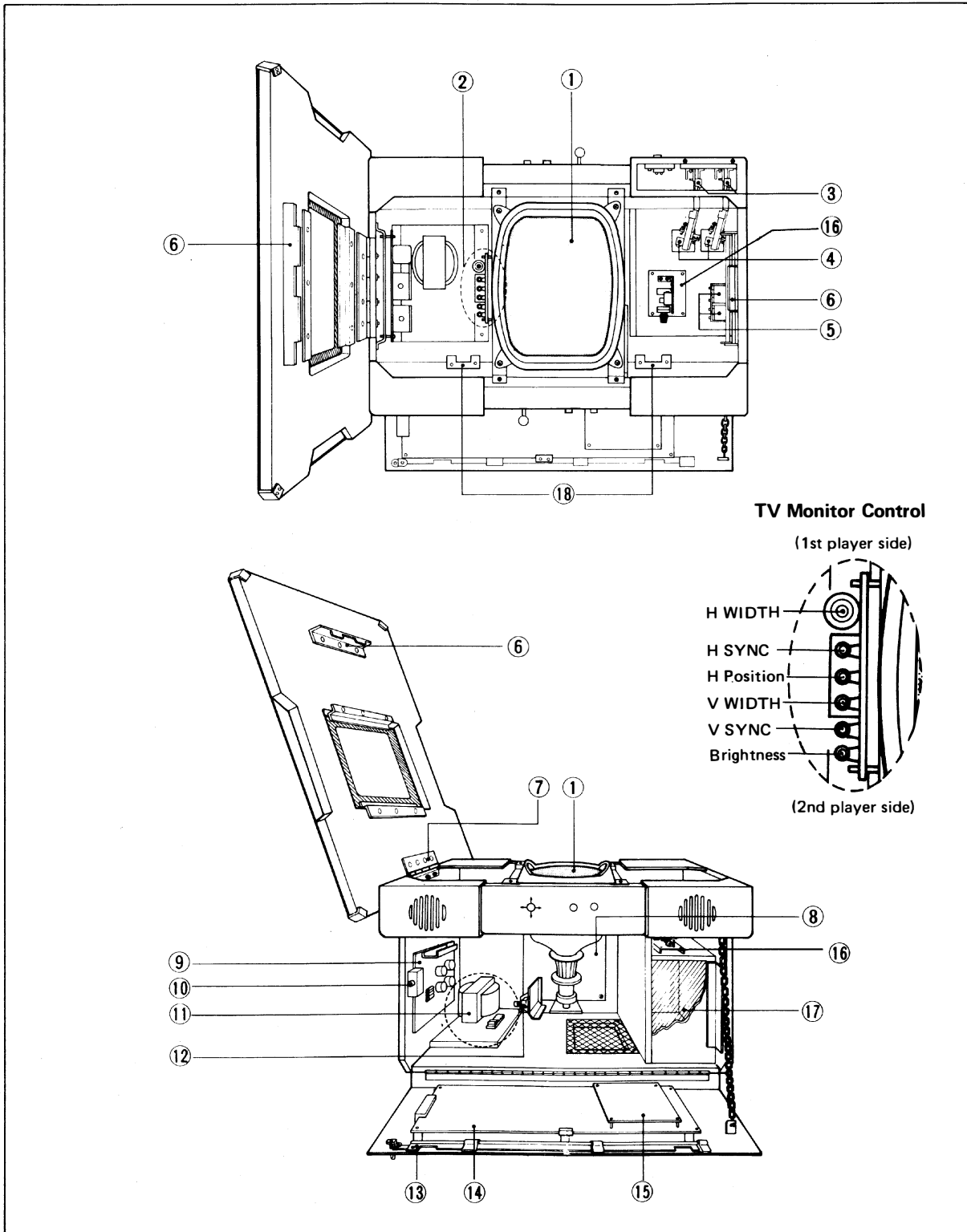


Fig. 15 Component Parts Related to Cabinet (Inside)

INSIDE CABINET PARTS LIST

Ref. No.	Name	Ref. No.	Name
1	CRT (14" color)	10	Door switch
2	TV monitor control	11	Power source unit
3	Rejector ass'y	12	Demagnetization switch
4	Coin micro switch	13	Door lock ass'y
5	Coin counter	14	Main circuit board
6	Table lock mechanism ass'y	15	Sound circuit board
7	Butterfly plate ass'y	16	Sound sub-circuit board
8	TV monitor circuit board	17	Cash box
9	Power source circuit board	18	Metal door fixture

b) Fuses

Fuses in the power source unit

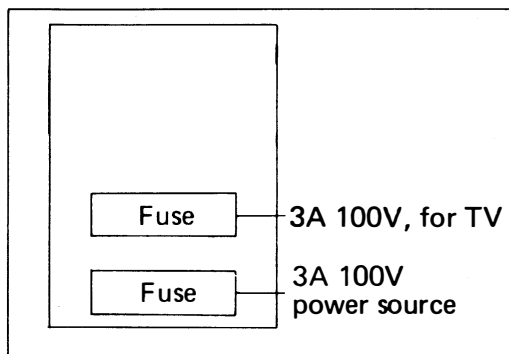


Fig. 16 Fuses in the Power Source Unit

Fuses in the power circuit board

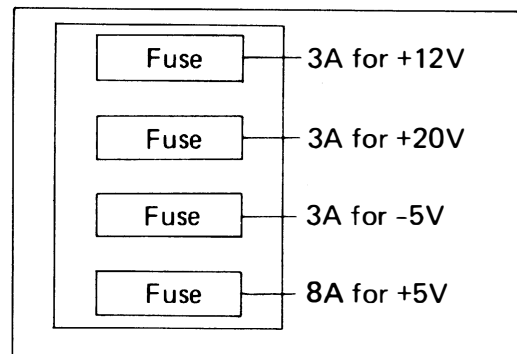


Fig. 17 Fuses in the Power Circuit Board

c) Operating panel assembly

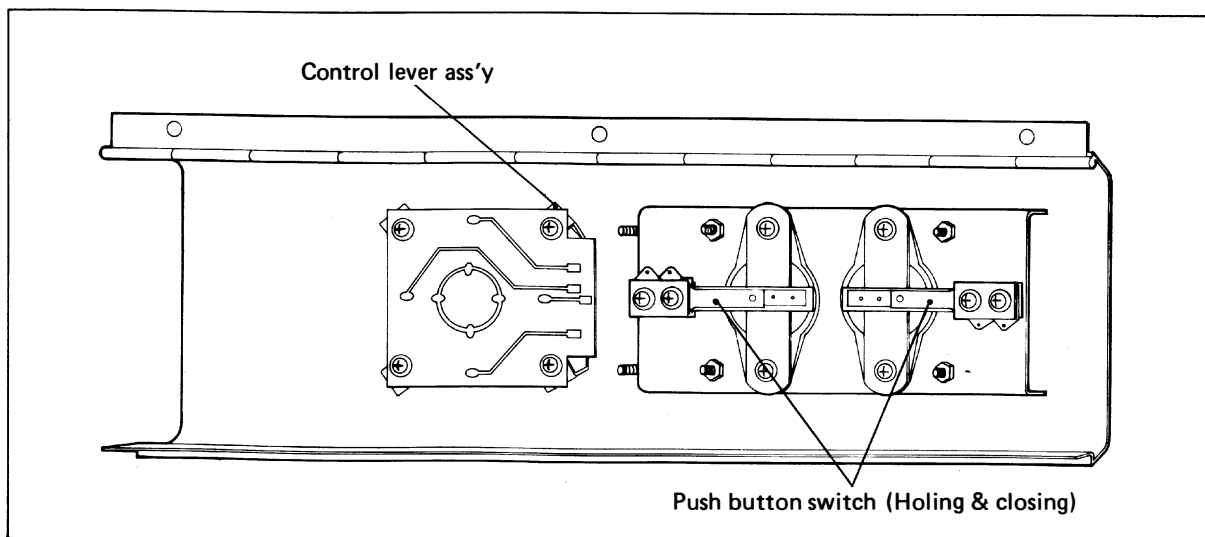


Fig. 18 Operating Panel Assembly

VIII. CIRCUIT BOARD

A. CIRCUIT BOARD IC LOCATION AND PARTS LIST

a) Main circuit board IC location and parts list

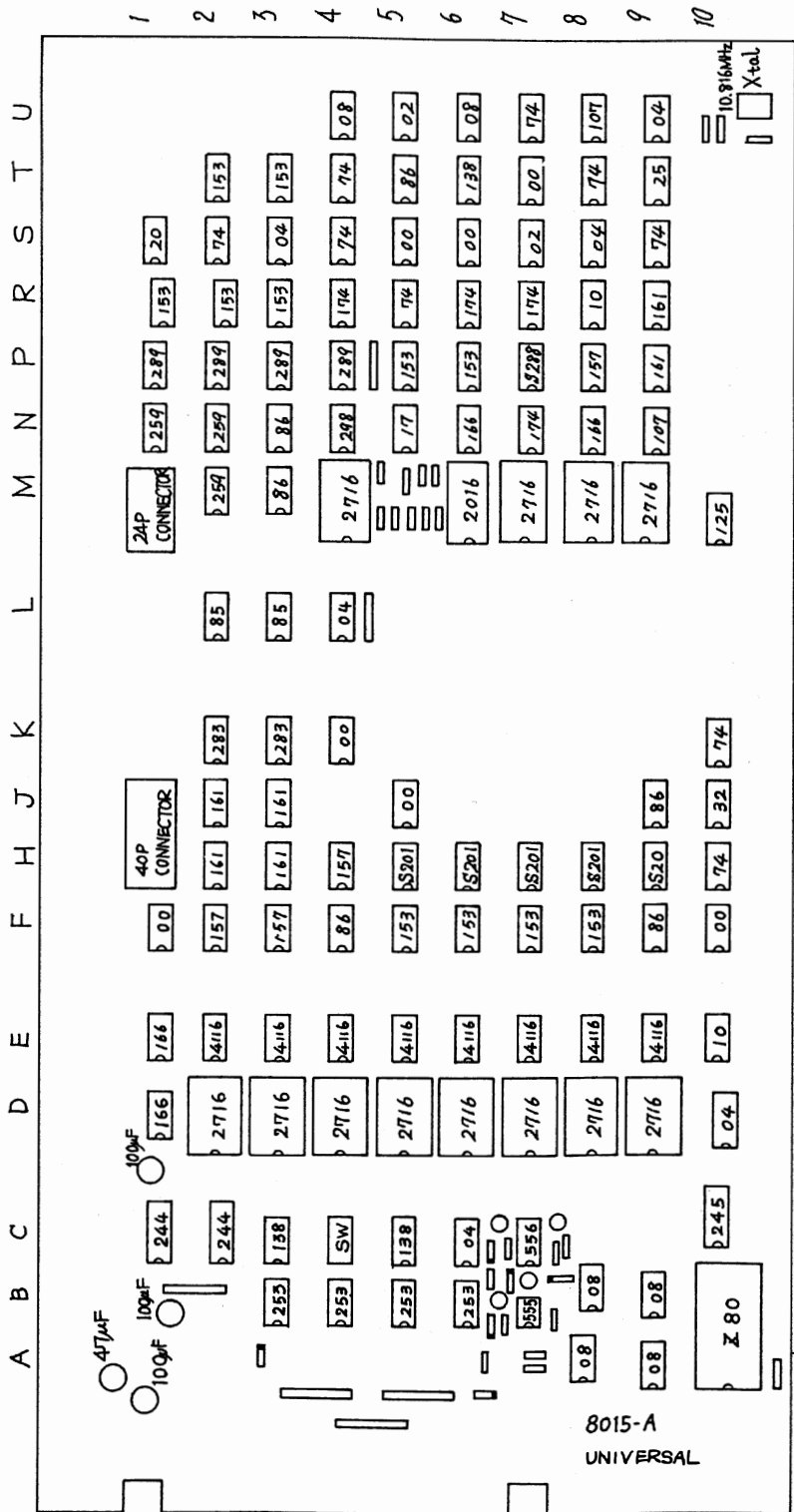


Fig. 19 Main Circuit Board

[1] Integrated Circuit

Item No.	Q'ty	Description
7400N	6	Transistor Logic
7402N	2	"
7404N	6	"
7408N	6	"
7410N	2	"
7417N	1	"
7420N	2	"
7425N	1	"
7432N	1	"
7474N	9	"
7485N	2	"
7486N	6	"
74107N	2	"
74125N	1	"
74138N	3	"
74153N	11	"
74157N	4	"
74161N	6	"
74166N	4	"
74174N	4	"
74253N	4	"
74259N	3	"
74244N	2	"
74245N	1	"
74283N	2	"
74289N	4	64 Bit Bipolar RAM
74298N	1	Transistor Logic
2716	12	Nch MOS ROM
NE555	1	Timer
NE556	1	"
74S288	1	256 Bit Bipolar ROM

Item No.	Q'ty	Description
4116	8	Nch MOS 16K Bit RAM
Z80	1	Nch MOS CPU

[2] Other Semiconductor Devices

Item No.	Q'ty	Description
10D-1	6	Diode

[3] Capacitors

Rating	Q'ty	Description
100 μ F/25V	3	Chemical Capacitor
47 μ F/35V	1	"
10 μ F/16V	2	"
1 μ F/50V	2	"
0.1 μ F	65	Ceramic Capacitor
100PF	1	"

[4] Resistors

Rating	Q'ty	Description
MS1028AM	4	1K Ω Resistor Array
MS4728AM	1	47K Ω "
47 Ω	4	Carbon Solid Resistor
470 Ω	3	"
1K Ω	5	"
270 Ω	6	"
2K Ω	1	"
47K Ω	4	"

[5] Misc

Name	Q'ty	Description
Dip SW	1	8 Elements Switch Array
X'-tal	1	10.816MHz

c) Sound circuit board IC location and parts list

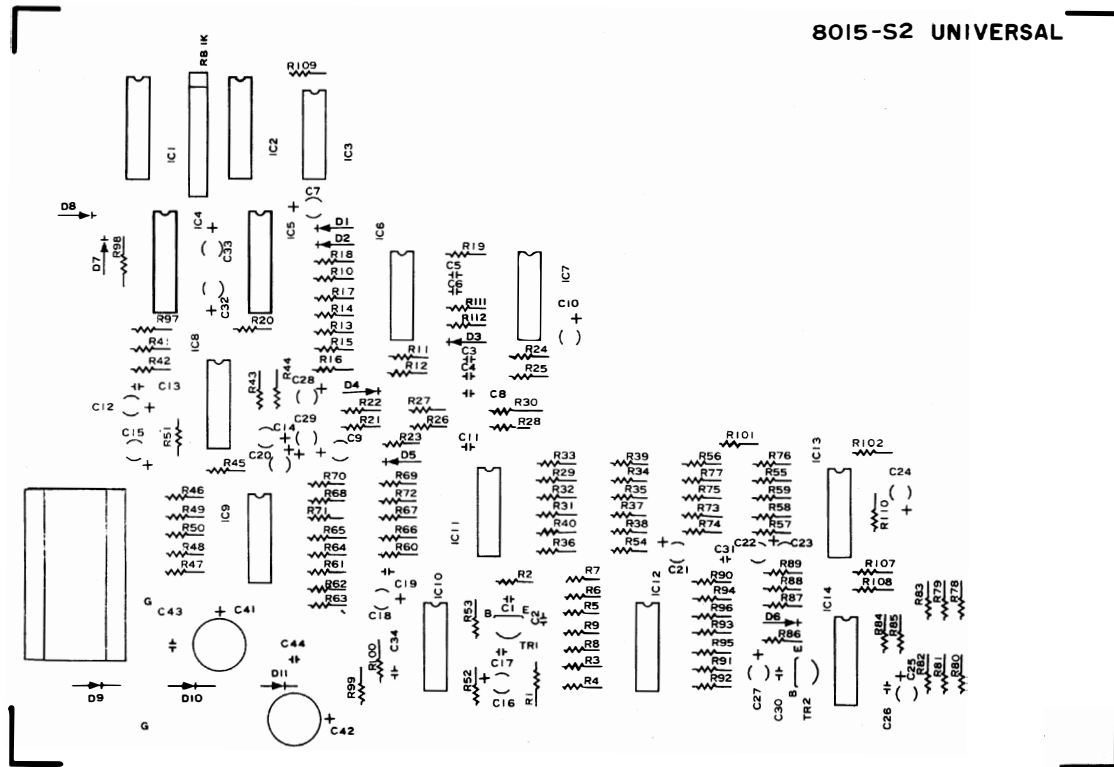


Fig. 20 Sound Circuit Board

Location	Rating	Description
R1	1M ¼W	Carbon Solid Resistor
2	1K "	"
3	100K "	"
4	1K "	"
5	100K "	"
6	10K "	"
7	150K "	"
8	10K "	"
9	10K "	"
10	1M "	"
11	1K "	"
12	100K "	"
13	100K "	"
14	100K "	"
15	1K "	"
16	27K "	"
17		
18	200K "	"
19	2K "	"
20	39K "	"
21	1M "	"
22	200K "	"
23		
24	1K "	"
25	68K "	"
26	24K "	"
27	100K "	"
28	100K "	"
29	100K "	"
30	12K "	"

Location	Rating	Description
R31	100K ¼W	Carbon Solid Resistor
32	100K "	"
33	33K "	"
34	100K "	"
35	50K "	"
36	100K "	"
37	1K "	"
38	100K "	"
39	50K "	"
40	200K "	"
41	1K "	"
42	56K "	"
43	1K "	"
44	75K "	"
45	100K "	"
46	100K "	"
47	1K "	"
48	220K "	"
49	200K "	"
50	200K "	"
51		
52	8.2K "	"
53	620K "	"
54	220K "	"
55	200K "	"
56	100K "	"
57	100K "	"
58	1K "	"
59	27K "	"
60	220K "	"

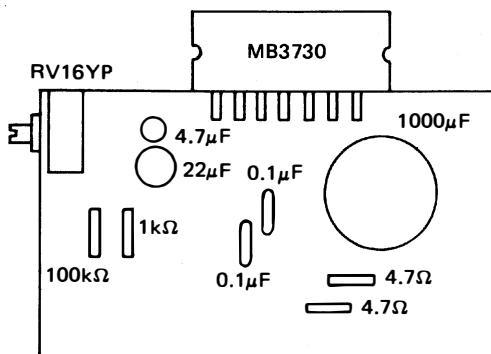
Location	Rating	Description
R61	1K ¼W	Carbon Solid Resistor
62	1M "	"
63	1K "	"
64	100K "	"
65	100K "	"
66	100K "	"
67	33K "	"
68	330K "	"
69	68K "	"
70	120K "	"
71	1K "	"
72	18K "	"
73	8.2K "	"
74	3.2K "	"
75	8.2K "	"
76	50K "	"
77	120K "	"
78	8.2K "	"
79	120K "	"
80	56K "	"
81	100K "	"
82	1K "	"
83	27K "	"
84	1.2K "	"
85	47K "	"
86	120K "	"
87	510K "	"
88	2.5K "	"
89	120K "	"
90	20K "	"

Location	Rating	Description
R91	50K ¼W	Carbon Solid Resistor
92	100K "	"
93	1K "	"
94	27K "	"
95	50K "	"
96	50K "	"
97	10K "	"
98	10K "	"
99	1K "	"
100	39K "	"
101	27K "	"
102		
103		
104		
105		
106		
107		
108		
109		
110		
111	100K¼W	"
112	1K "	"
C1	0.1µ	Ceramic
2	0.1µ	"
3	1000P	"
4	4700P	Mila
5	0.1µ	Ceramic
6	4700P	Mila
7	2.2µ	Tantalum
8	560P	Ceramic
9	2.2µ	Tantelum
10	0.1µ	Mila
11	0.01µ	Ceramic
12	4.7µ	Chemical

Location	Rating	Description
C13	0.1µ	Ceramic
14	0.047µ	Mila
15	33µ	Tantalum
16	0.47µ	"
17	0.1µ	Ceramic
18	0.47µ	Tantalum
19	0.1µ	Ceramic
20	2.2µ	Tantalum
21	0.1µ	"
22	0.1µ	"
23	47µ	"
24	47µ	"
25	3.3µ	"
26	0.1µ	Ceramic
27	0.068µ	Mila
28	10µ	Chemical
29	4.7µ	"
30	2200P	Ceramic
31	4700P	Mila
32	10µ	Chemical
33	10µ	"
34	0.01µ	Ceramic
41	100µ	Chemical
42	100µ	"
43	0.1µ	Ceramic
44	0.1µ	"
Location	Item No.	Description
TR1	2SC945	NPN Transistor
2	"	"
D1	1S1588	Switching Diode
2	"	"
3	"	"

Location	Item No.	Description
4	"	"
5	"	"
6	"	"
7	"	"
8	"	"
9	10D-1	Power Diode
10	"	"
11	"	"
RB	MS1028AM	1KΩ Resistor Array
IC1	ULN2003AN	Darlington Tr Array
2	CD4049CN	Hex Inverting Buffer
3	CD4016B	Quad Bilateral Switch
4	ULN2003AN	Darlington Tr Array
5	"	"
6	LM324N	Quadruple OP AMP
7	NE556N	Dual Timer
8	"	"
9	LM324N	Quadruple OP AMP
10	NE556N	Dual Timer
11	LM324N	Quadruple OP AMP
12	"	"
13	"	"
14	NE556N	Dual Timer

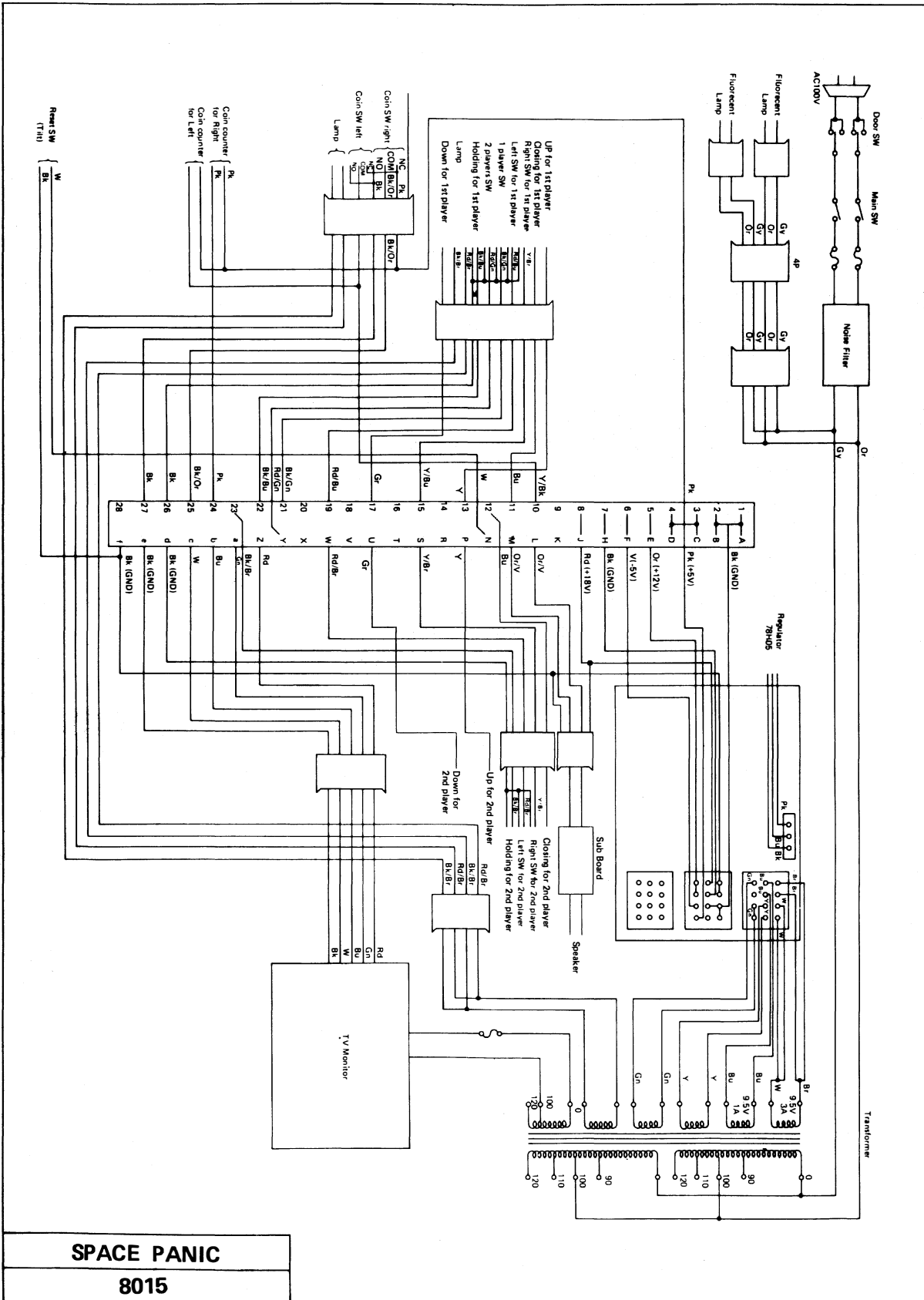
d) Sound Sub-circuit board IC location and parts list



Rating	Q'ty	Description
MB3730	1	Audio Amplifier
1000µF/25V	1	Chemical Capacitor
22µF/25V	1	"
4.7µF/25V	1	"
0.1µF/25V	2	Ceramic Capacitor
1kΩ ¼W	1	Carbon Solid Resistor
100kΩ ¼W	1	"
4.7Ω ¼W	2	"
RV16YP 1kΩ	1	Carbon Variable Resistor

Fig. 21 Sound Sub-circuit Board

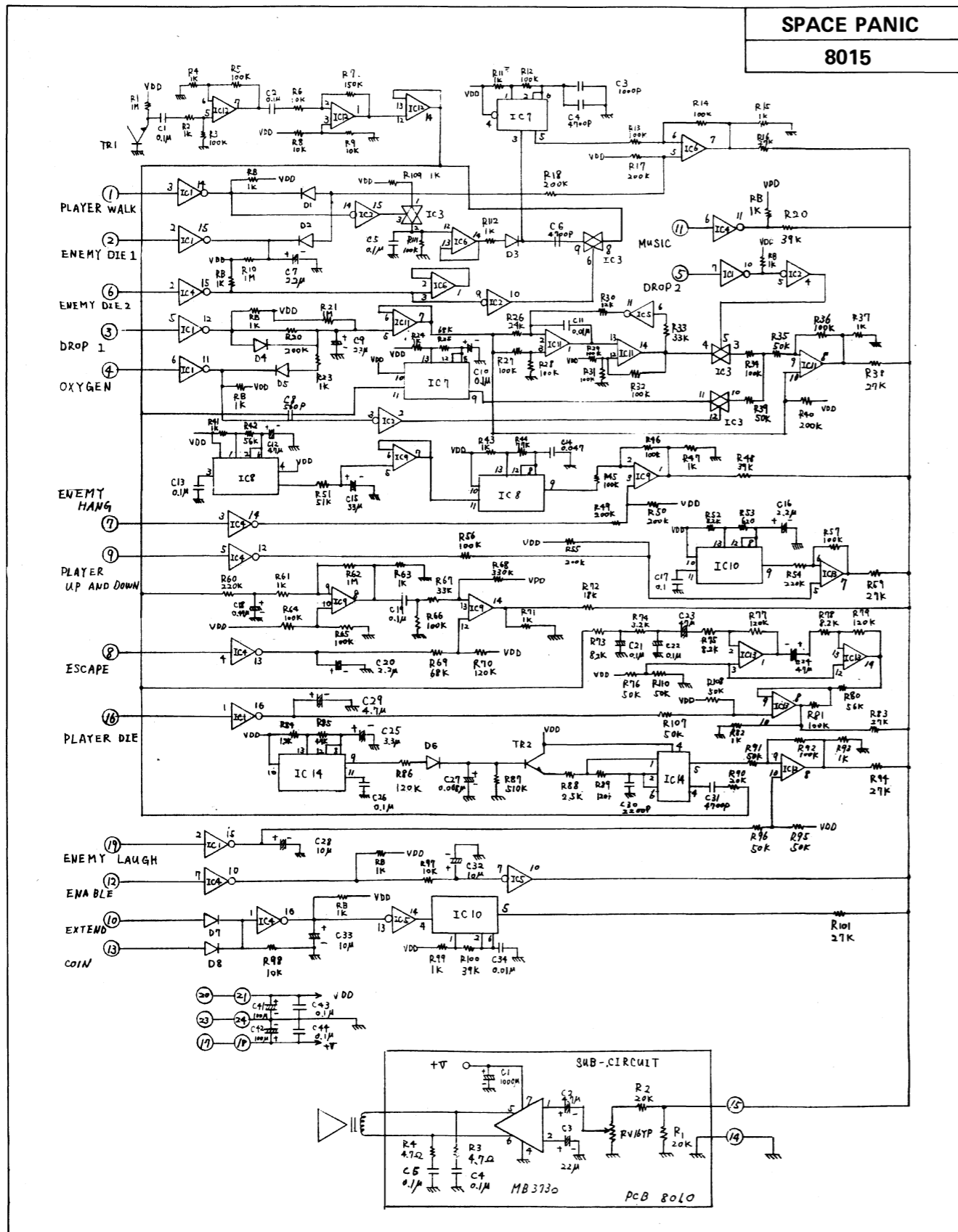
WIRING DIAGRAM (CONNECTOR)



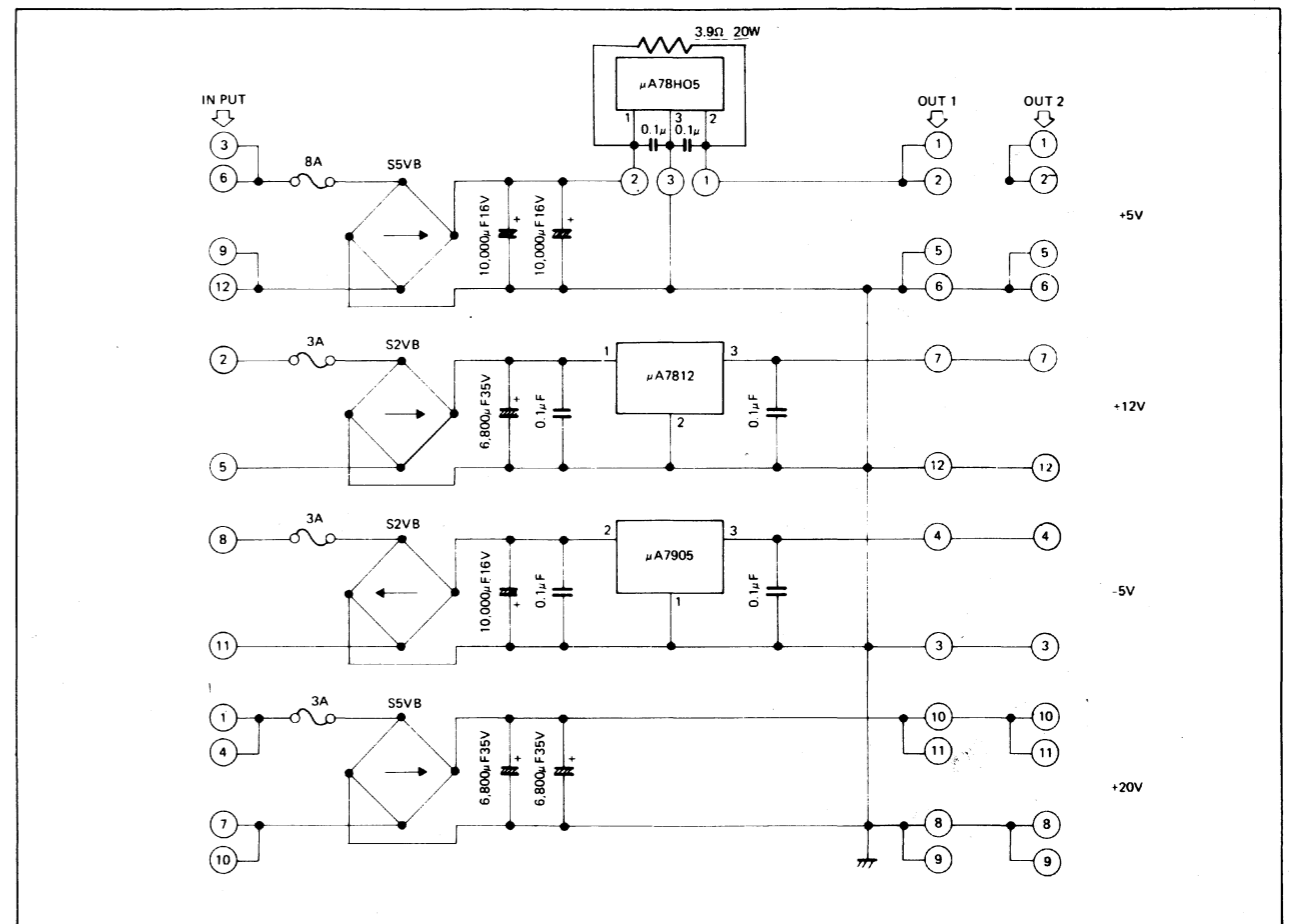
SPACE PANIC

8015

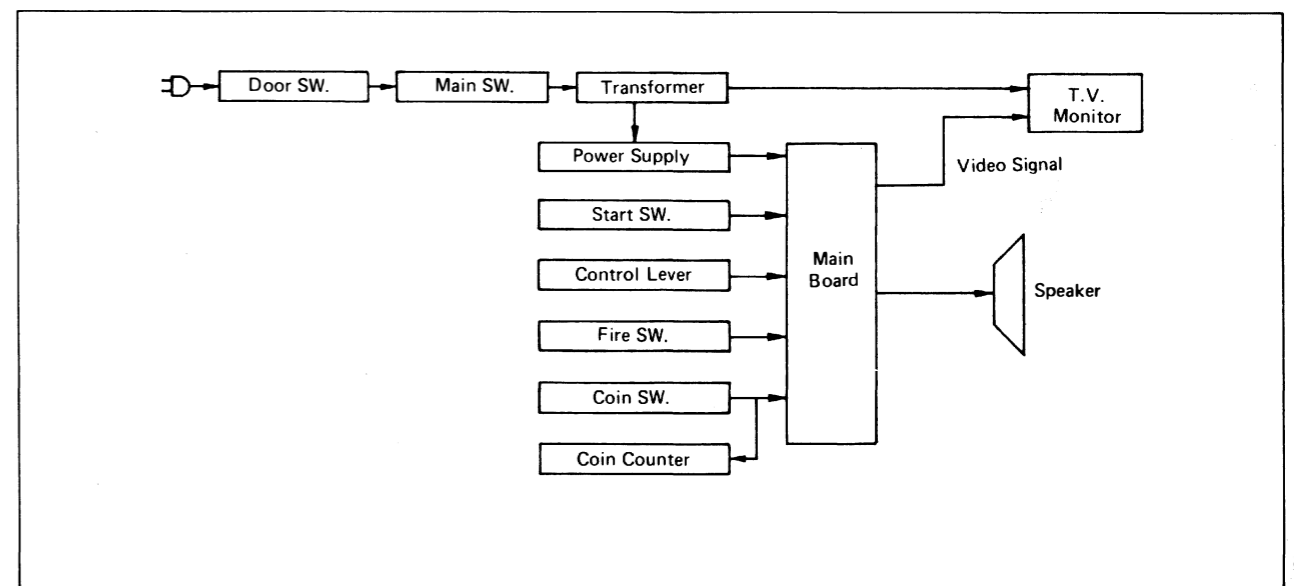
SOUND BLOCK DIAGRAM



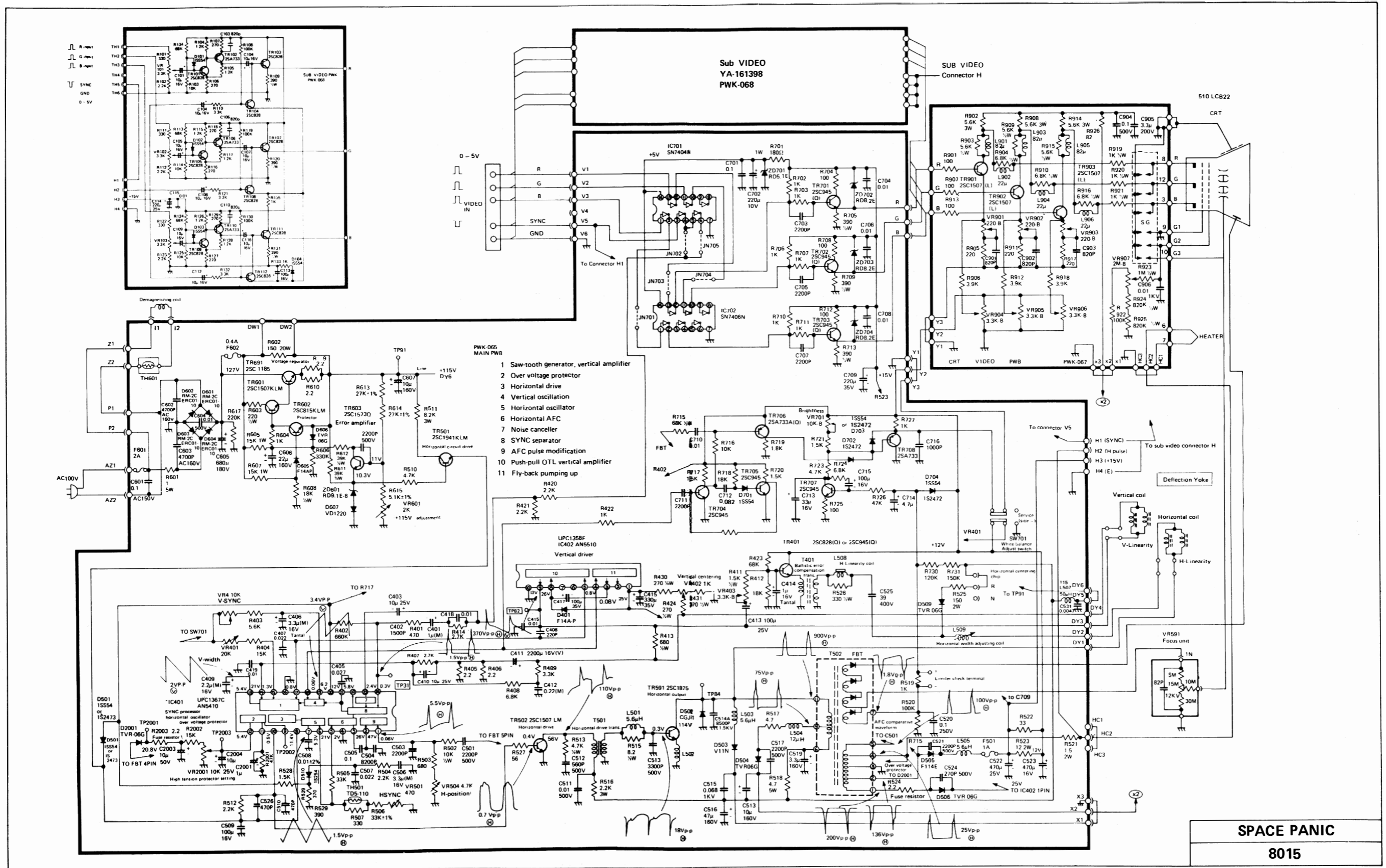
POWER SOURCE BLOCK DIAGRAM



BLOCK DIAGRAM



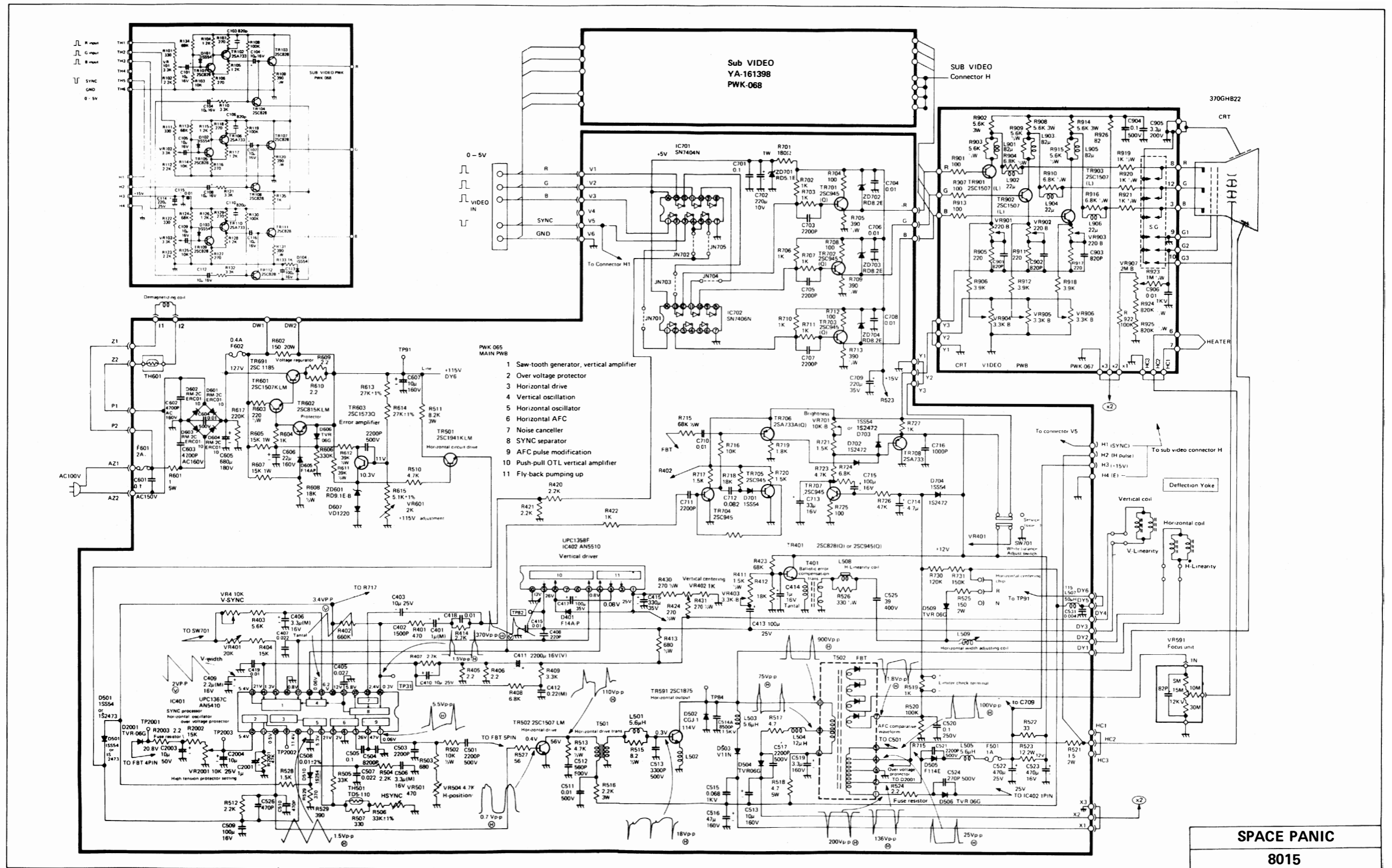
SCHEMATIC DIAGRAM (20" color)



- 1 Saw-tooth generator, vertical amplifier
- 2 Over voltage protector
- 3 Horizontal drive
- 4 Vertical oscillation
- 5 Horizontal oscillator
- 6 Horizontal AFC
- 7 Noise canceller
- 8 SYNC separator
- 9 AFC pulse modification
- 10 Push-pull OTL vertical amplifier
- 11 Fly-back pumping up

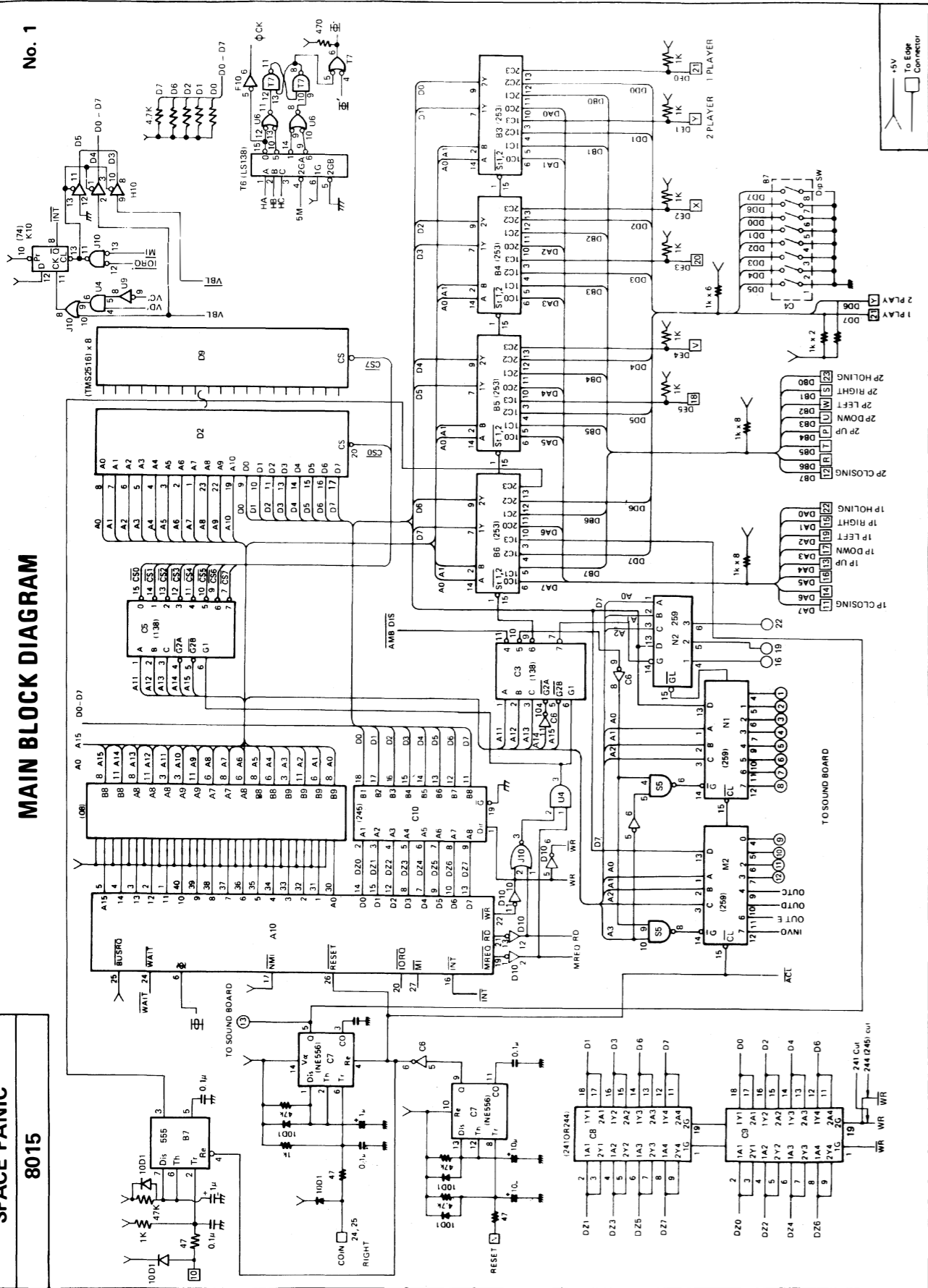
SPACE PANIC
8015

SCHEMATIC DIAGRAM (14" color)

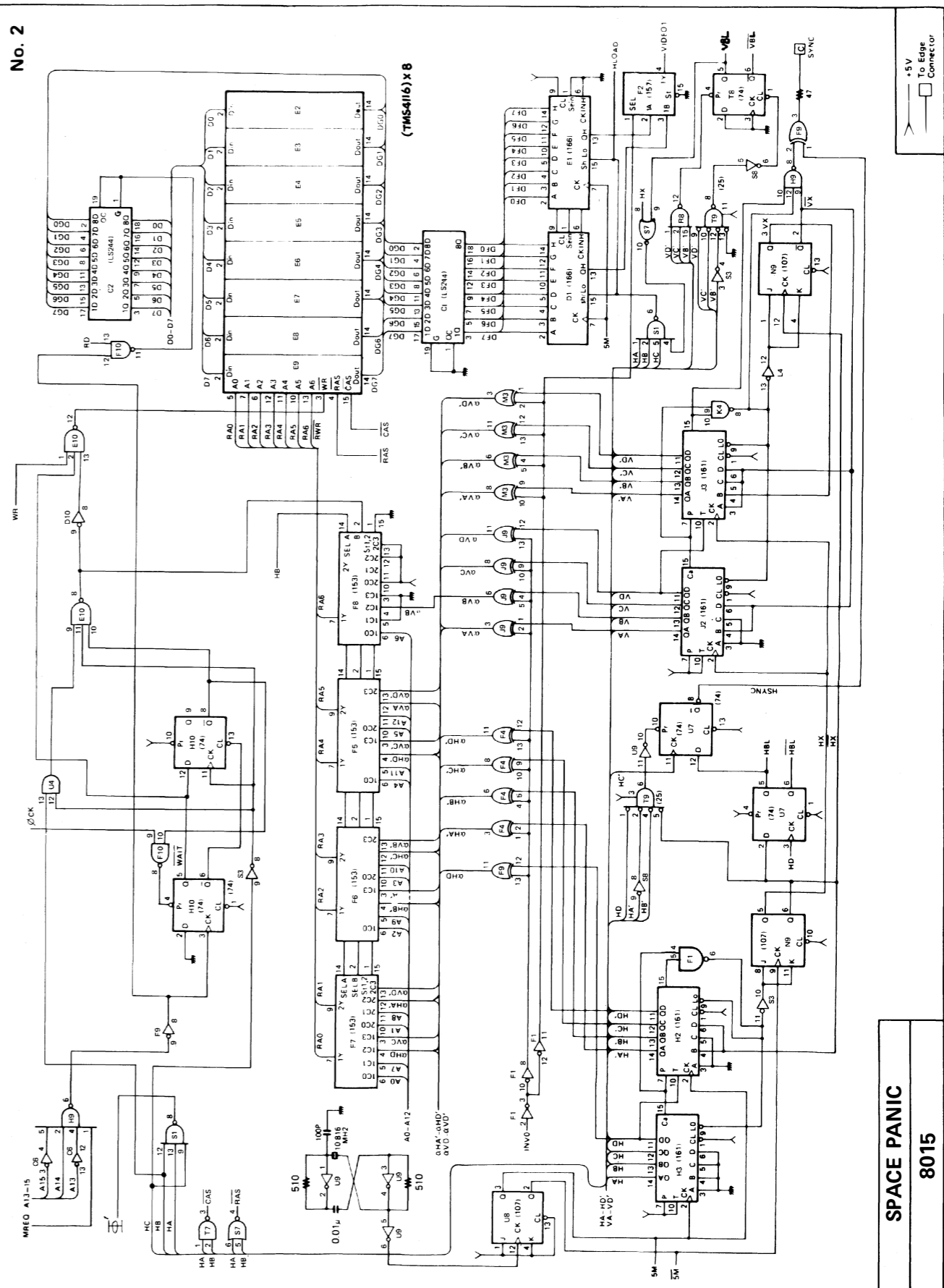


MAIN BLOCK DIAGRAM

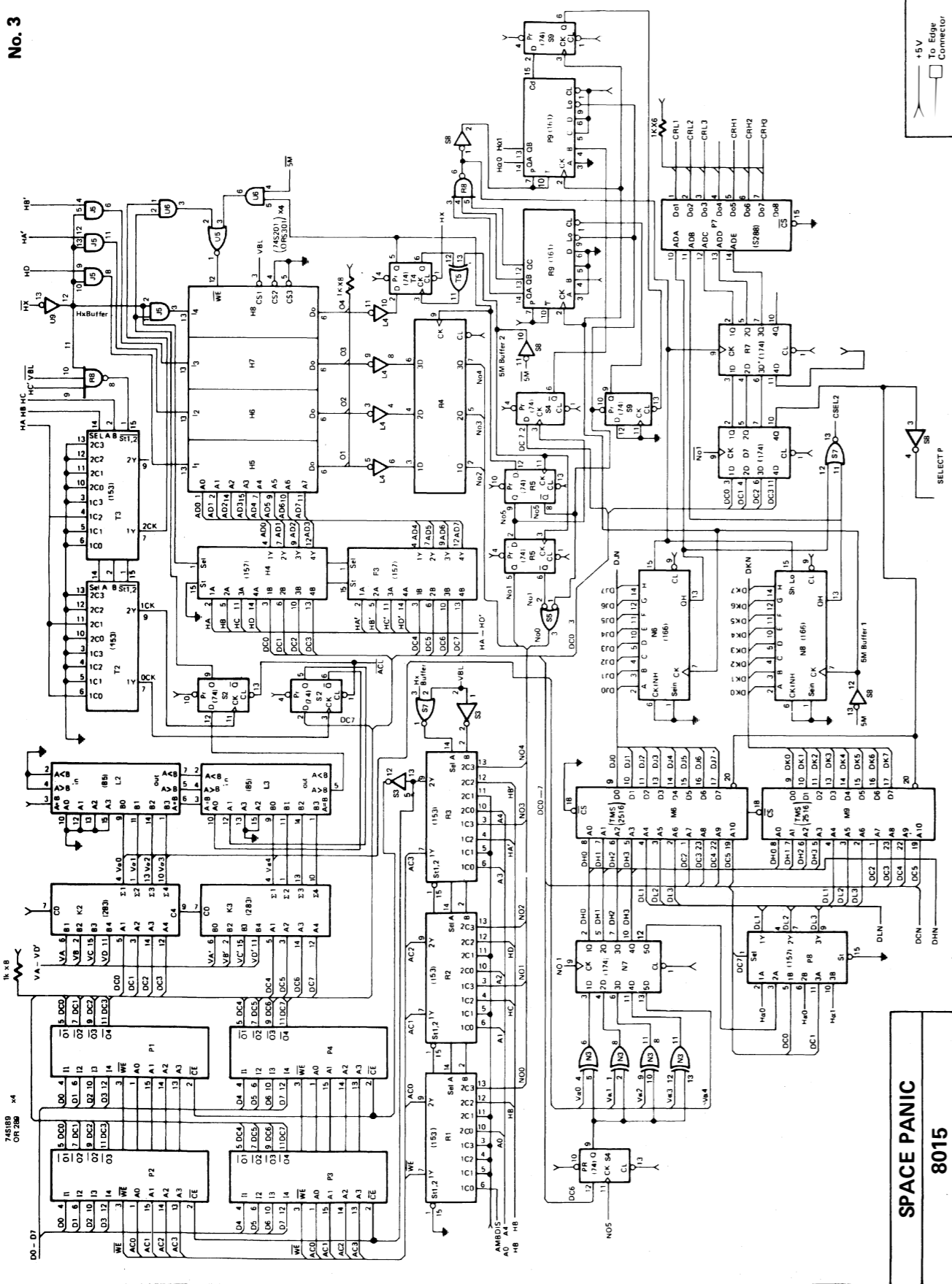
No. 1



No. 2

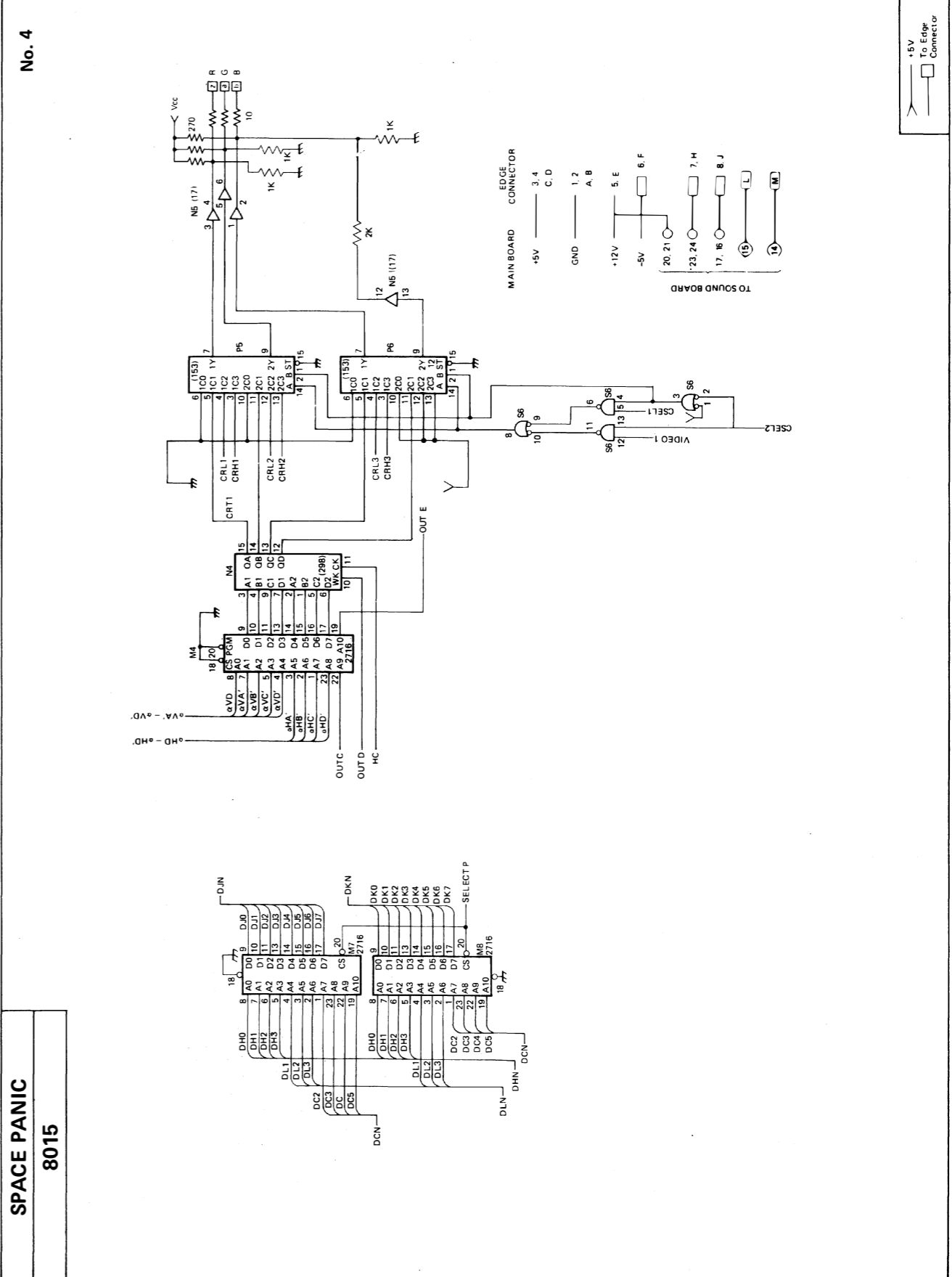


No. 3



SPACE PANIC
8015

No. 4



SPACE PANIC
8015

POSTFACE

Although the products of UNIVERSAL have been manufactured with the utmost care, if you are at all dissatisfied, please contact either the head office or any of the sales offices of UNIVERSAL.

Please note that the specifications may be subject to change along with quality improvement.

MEMO

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**HEAD OFFICE:
UNIVERSAL CO., LTD.**

1-7-3, Nihonbashi Horidome-cho, Chuoh-ku,
Tokyo 103, Japan

Phone : (03) 661-1447, 6004

Cable : UNM NIFACT

Telex : J27348 (UNICO)

UNIVERSAL U.S.A. INC.

- 3250 Victor Street, Santa Clara,
California 95050, U.S.A.
Phone : 408-727-4591 - 5
Telex : 172247 (UNI USA SNTA)

European Office:

- 106 Harley House Upper Harley Street
London, N.W. 1, England
Phone : (01) 631-1495
Telex : 21879, 25247, 21866
261348. (TELEX.G)