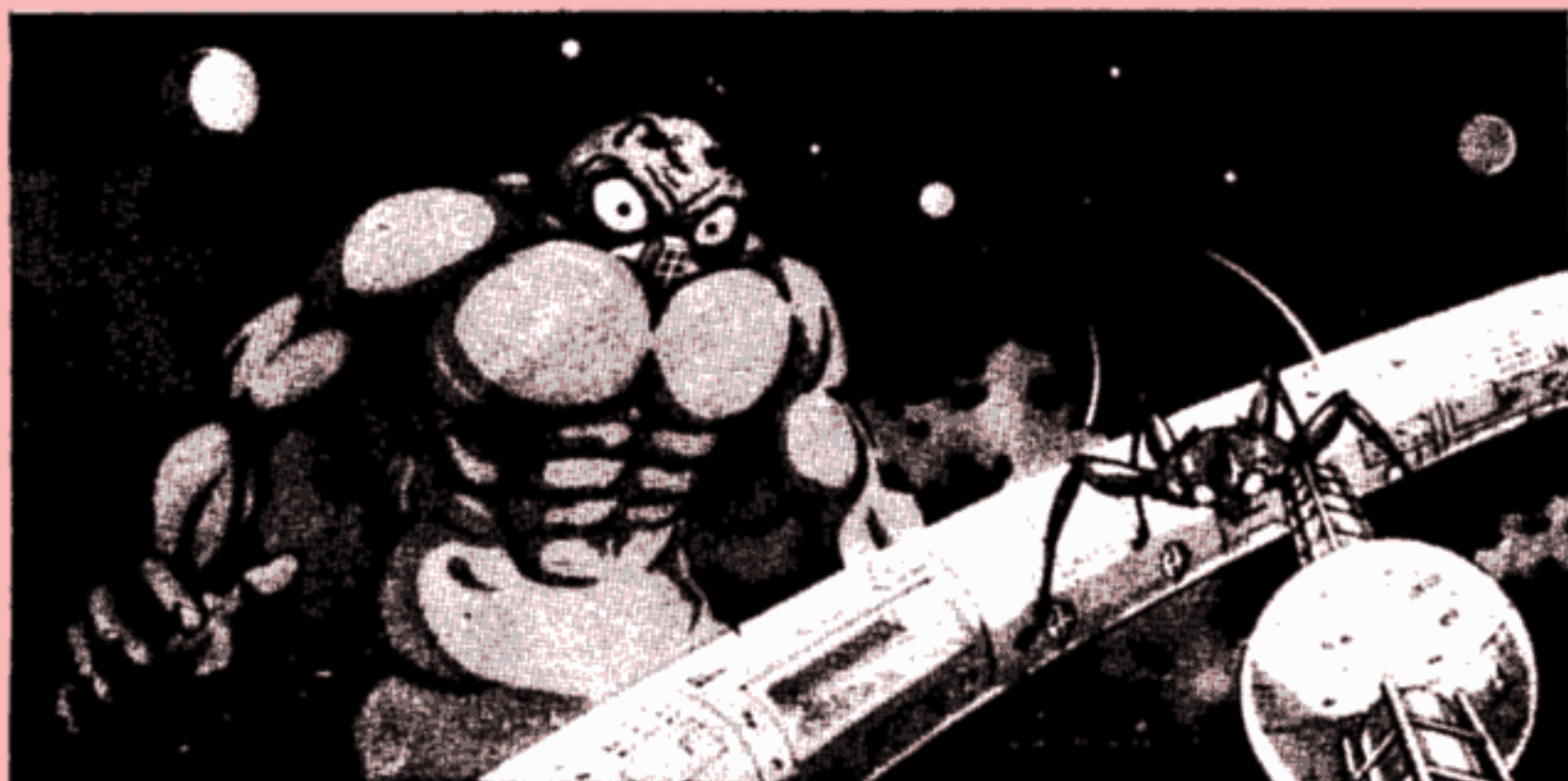


COSMIC SERIES

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.

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— 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



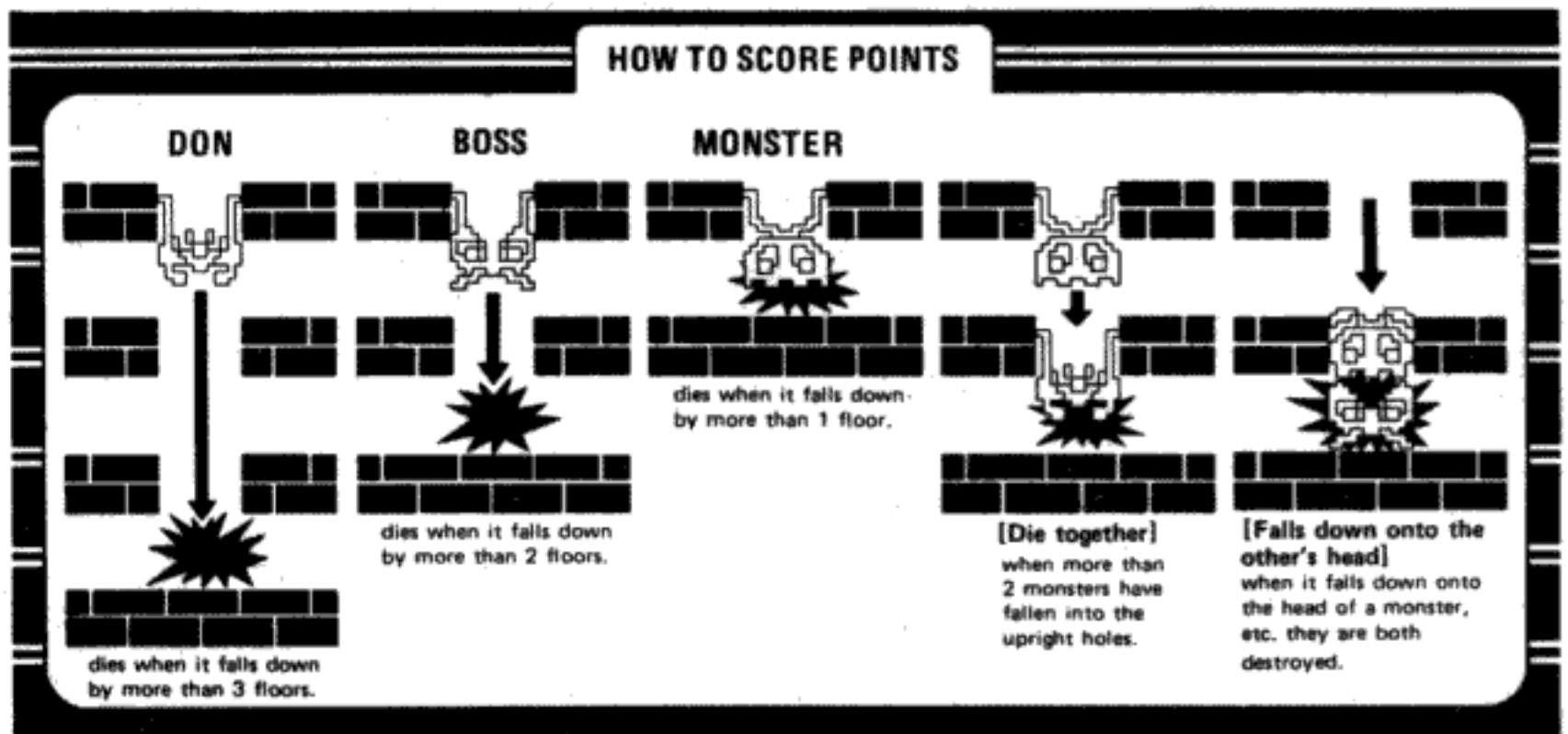
BOSS

300~1,200



DON

800~2,000



IV. VARIOUS OPTIONAL SETTINGS

A. POSITIONS OF DIP SWITCHES

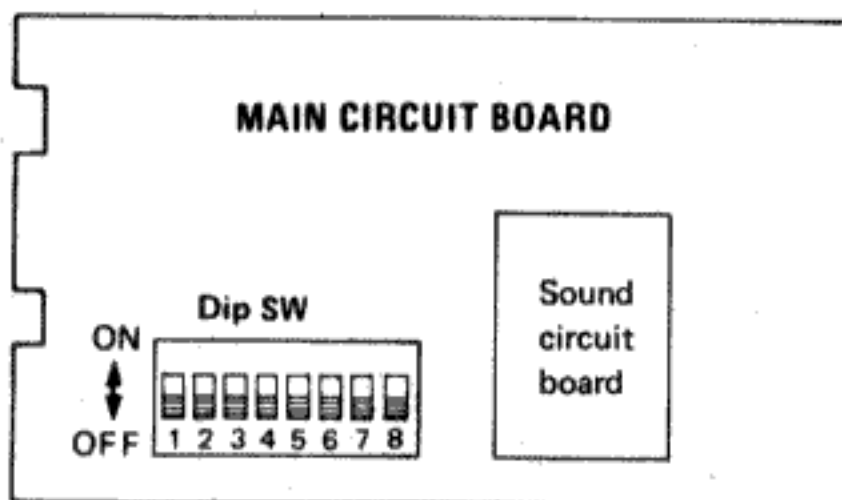


Fig. 1 Positions of Dip Switches

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 dredit/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

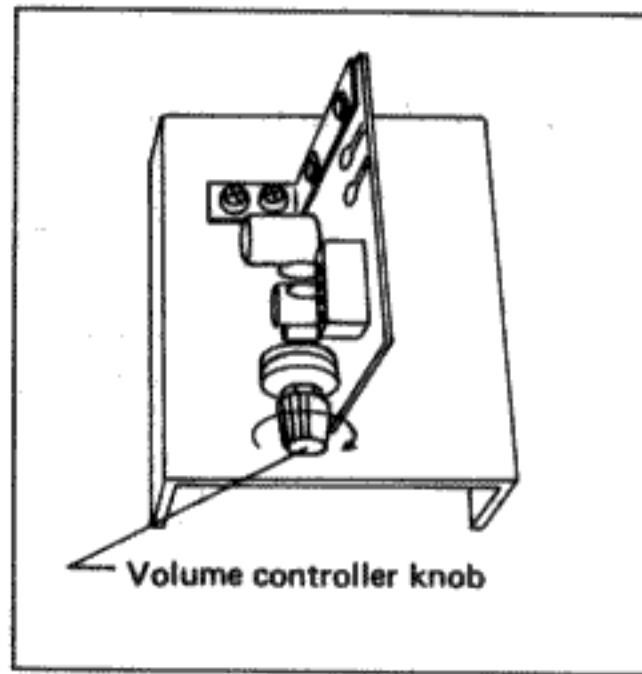
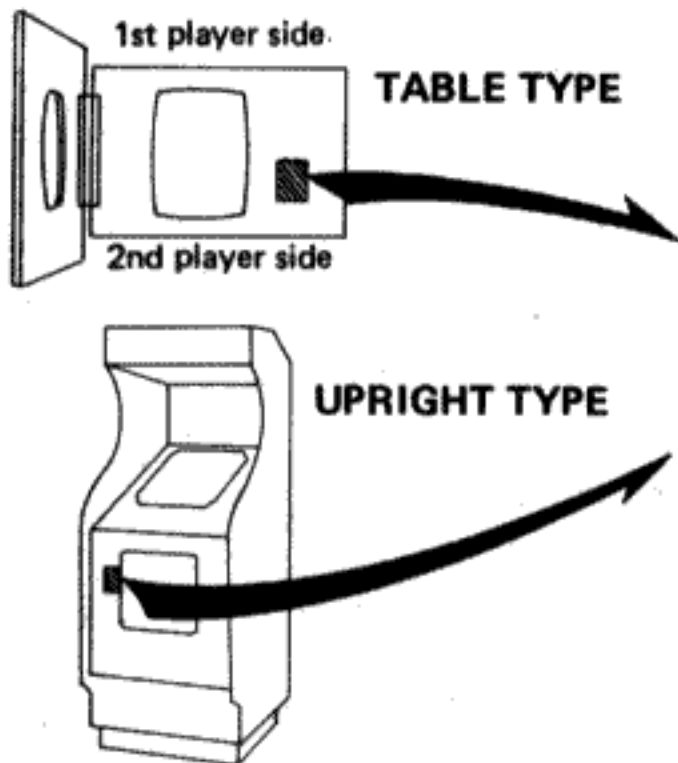


Fig. 2 Positions of Volume Controller Knob

V. TV MONITOR

A. ADJUSTMENT OF TV PICTURE SCREEN

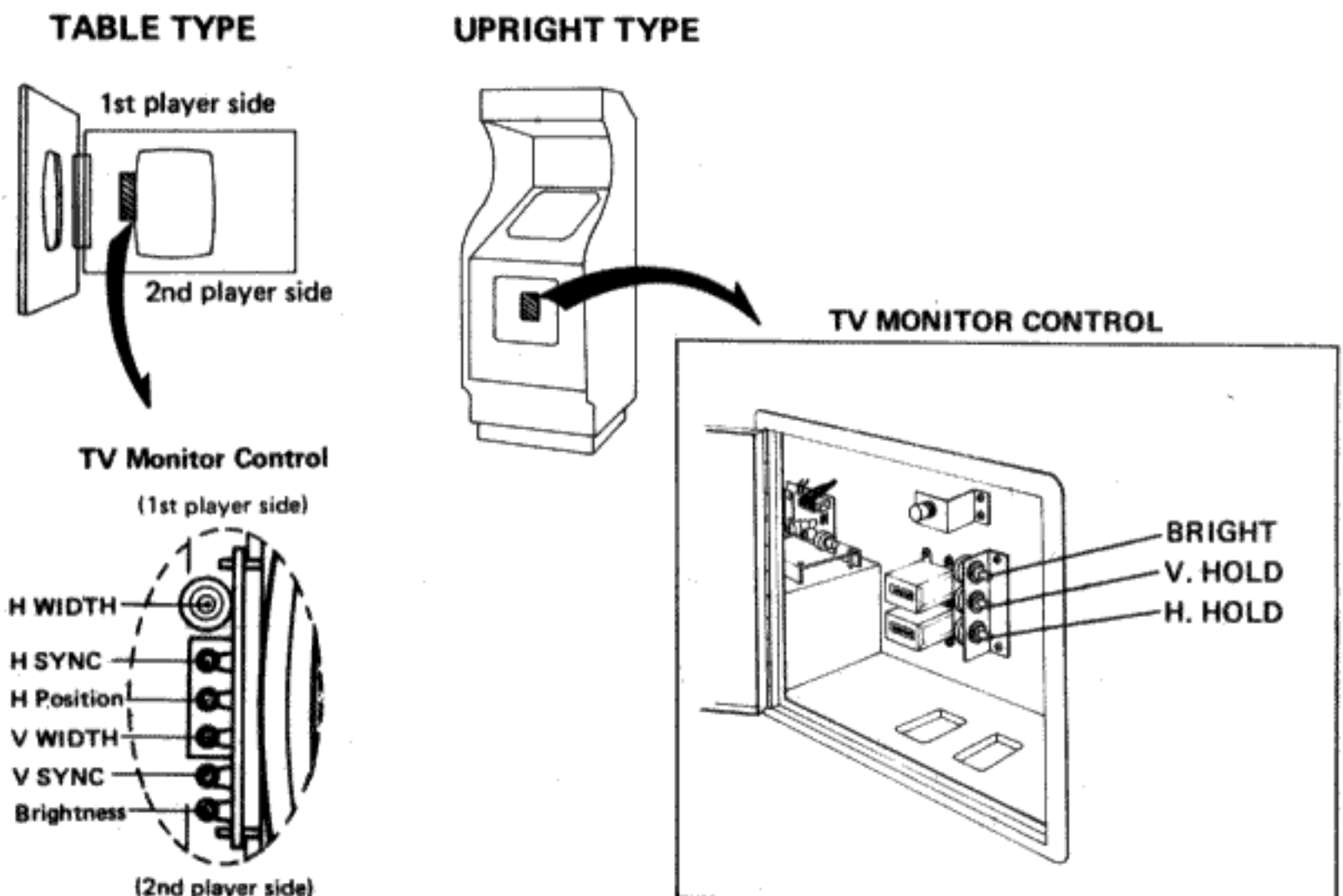
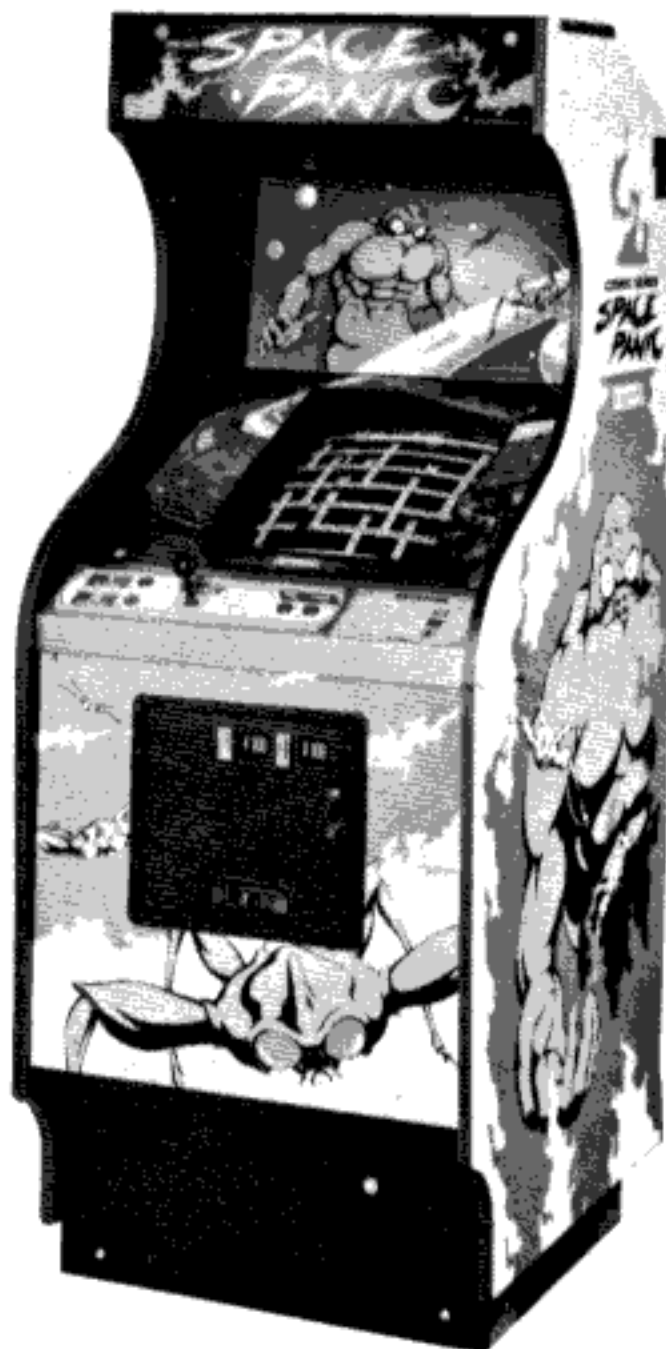


Fig. 3 Positions of TV Monitor Controller Knobs

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)

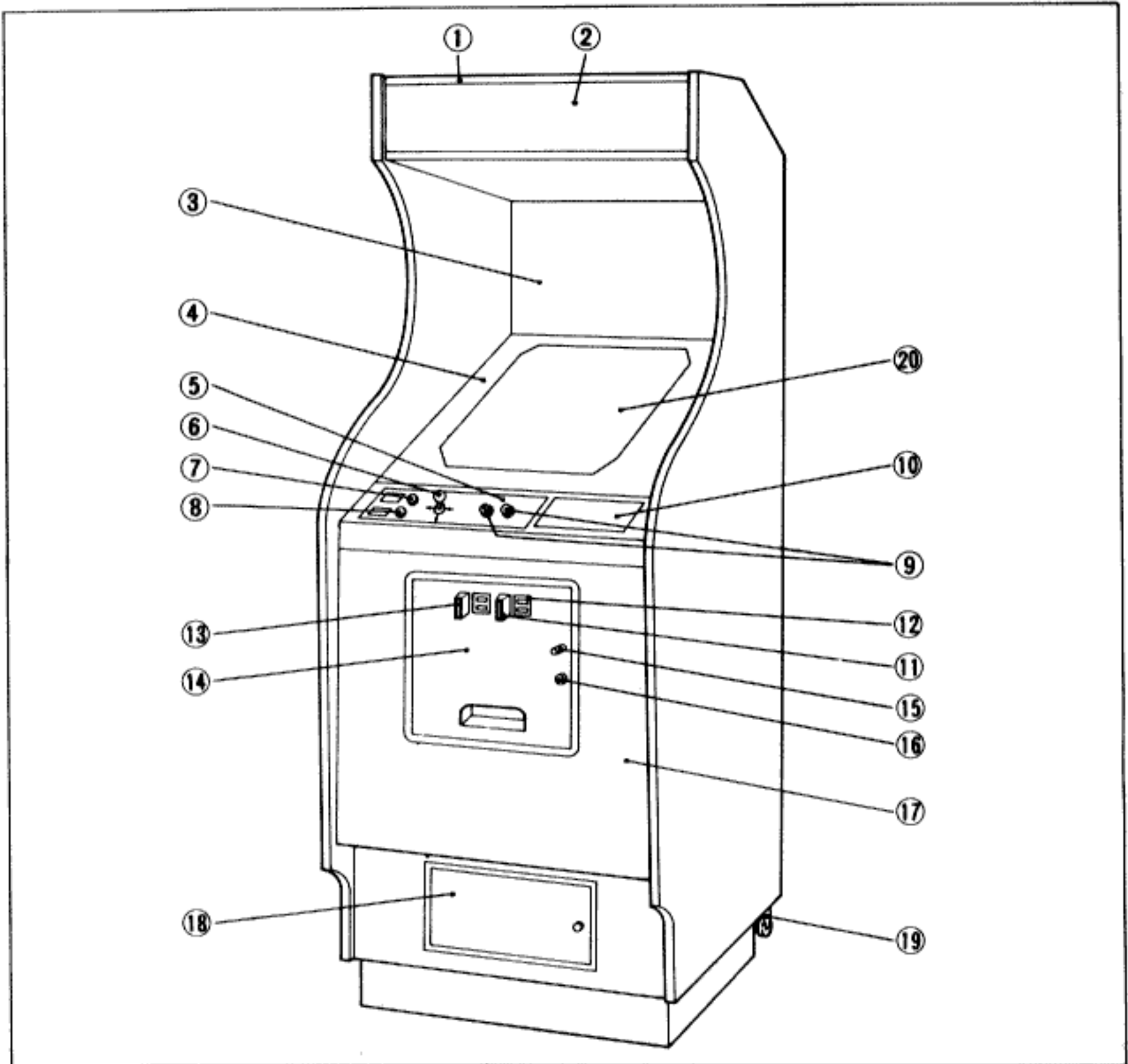


Fig. 4 Component Parts Related to Cabinet (Outside)

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 (Holing and closing) | 19 | Caster |
| 10 | Sticker for game rules | 20 | CRT (20" color) |

B. DRAWING OF CIRCUIT BOARD MOUNTING POSITIONS

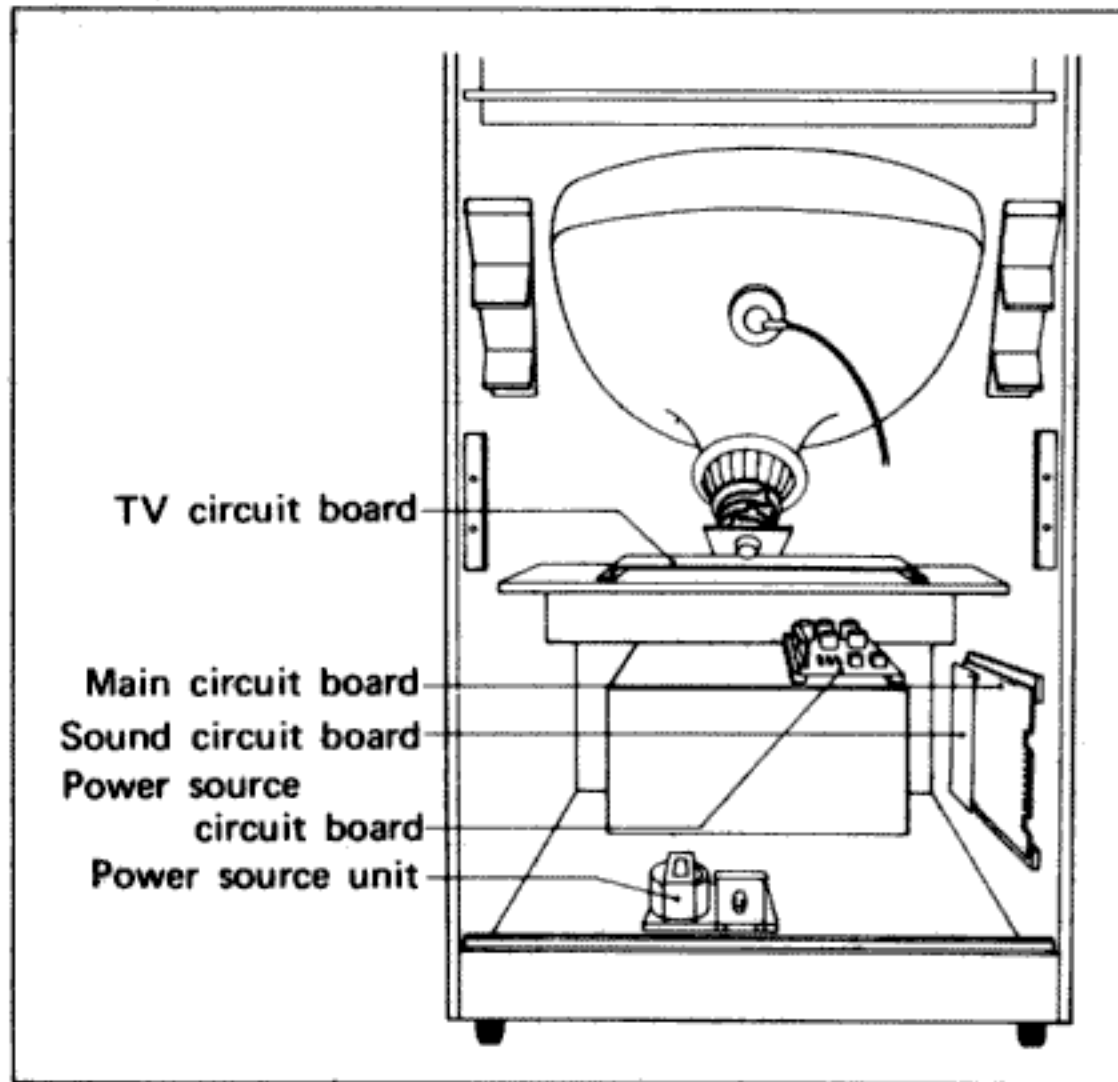


Fig. 5 Circuit Board Mounting Positions

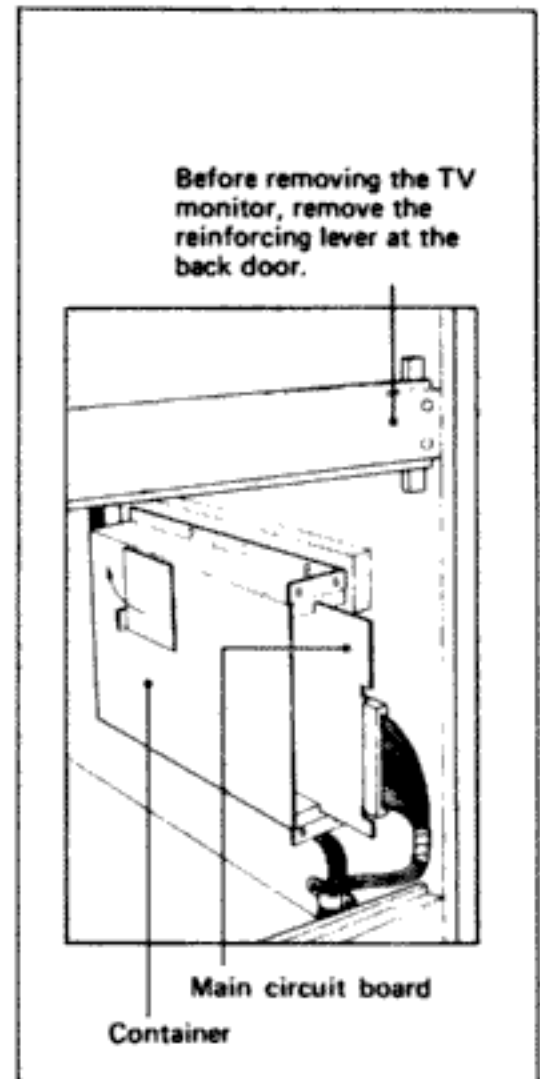


Fig. 6 Side View of Circuit Board Mounting Positions

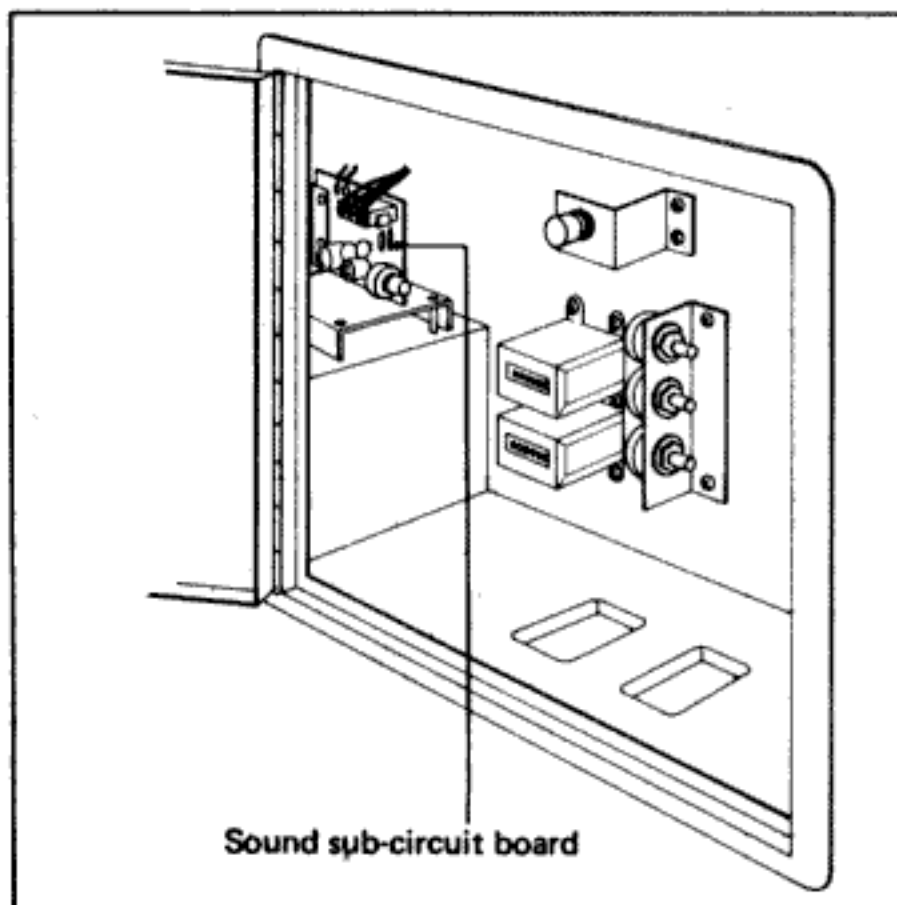


Fig. 7 Position of Sound Sub-circuit Board

C. FUSES

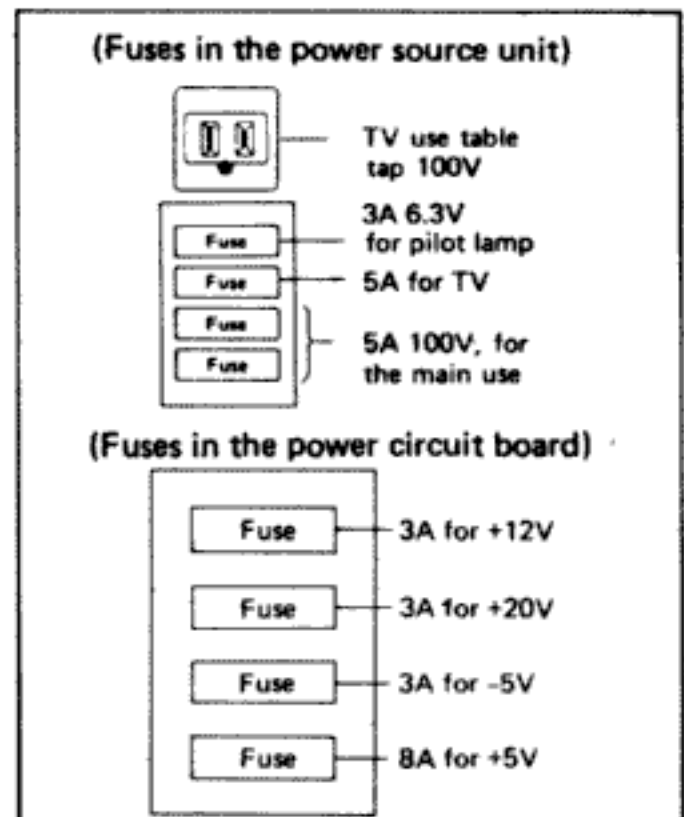
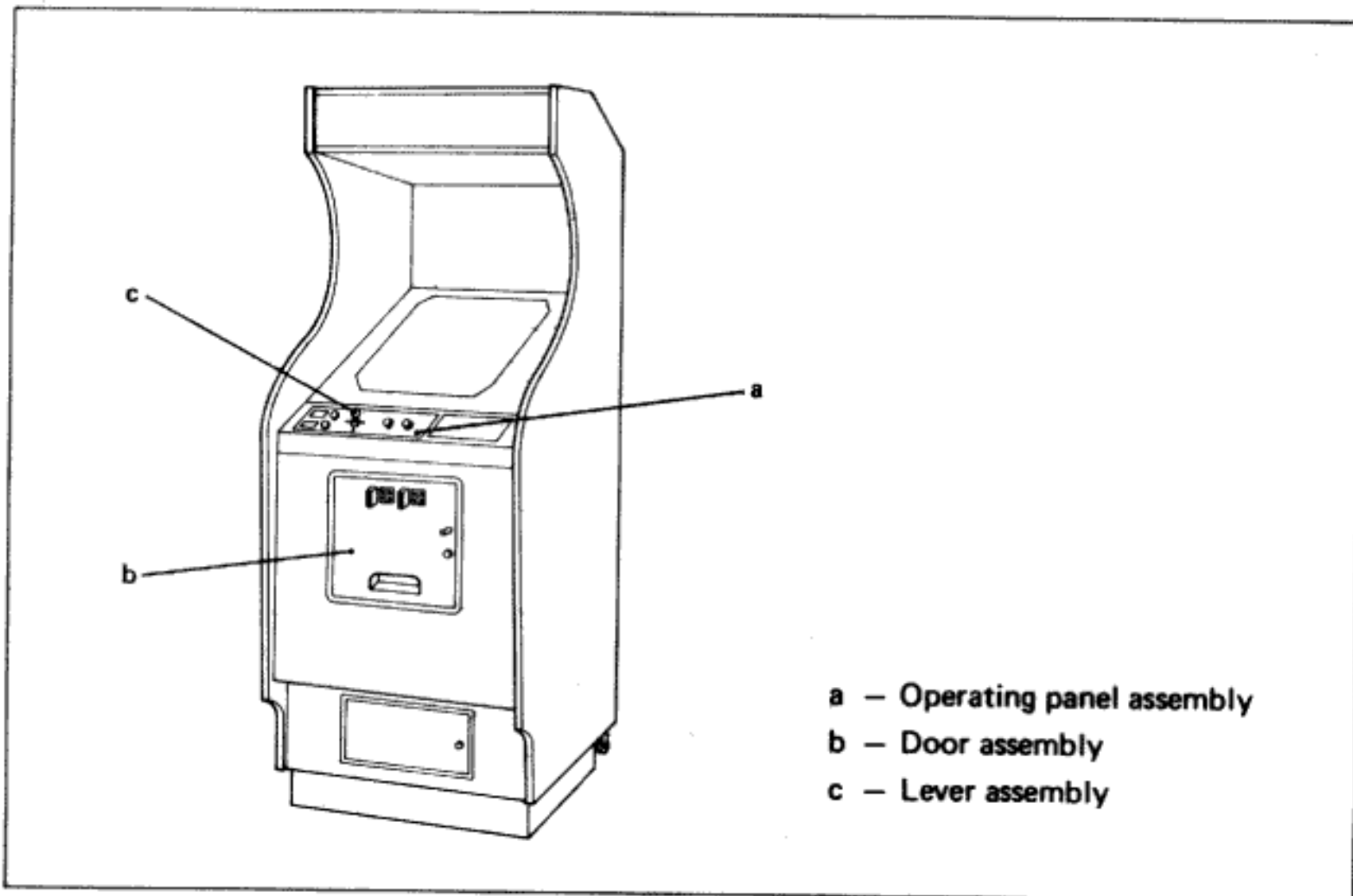


Fig. 8 Fuses

D. COMPONENT PARTS RELATED TO CABINET (INSIDE)



- a - Operating panel assembly
- b - Door assembly
- c - Lever assembly

Fig. 9 Component Parts Related to Cabinet (Inside)

a) Operating panel assembly

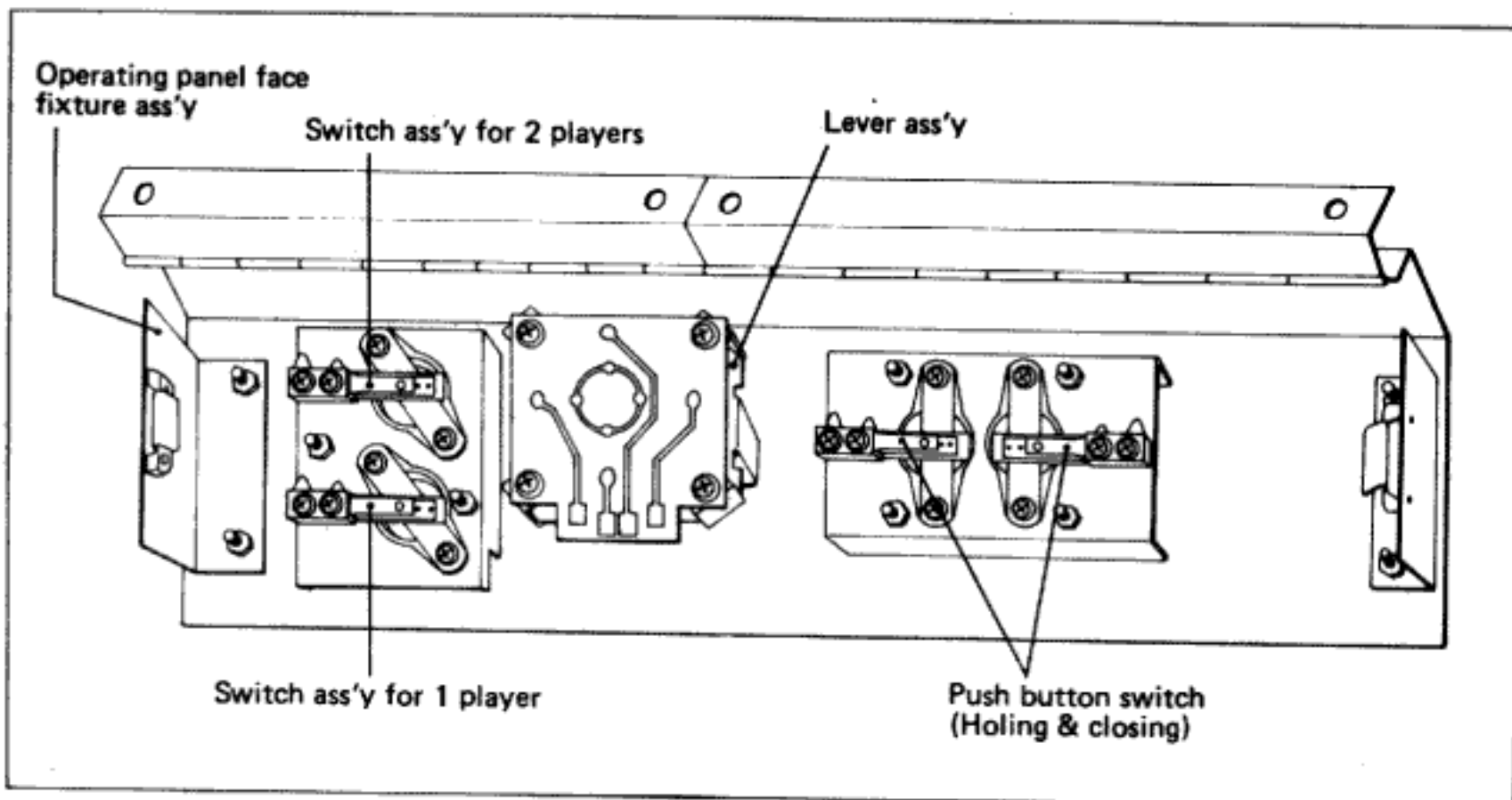


Fig. 10 Operating Panel Assembly

b) Door assembly and parts list

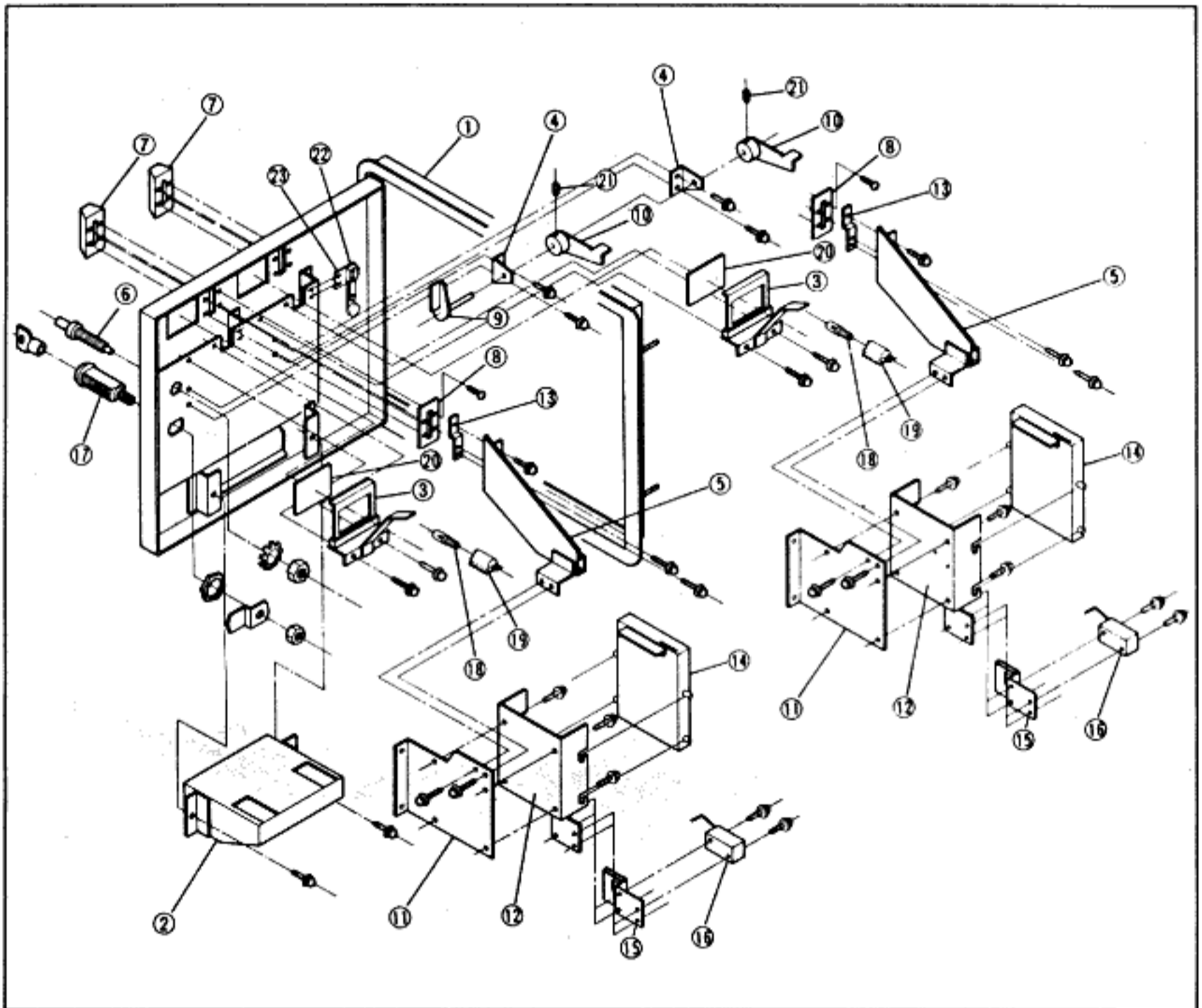


Fig. 11 Inside View of Door Assembly

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

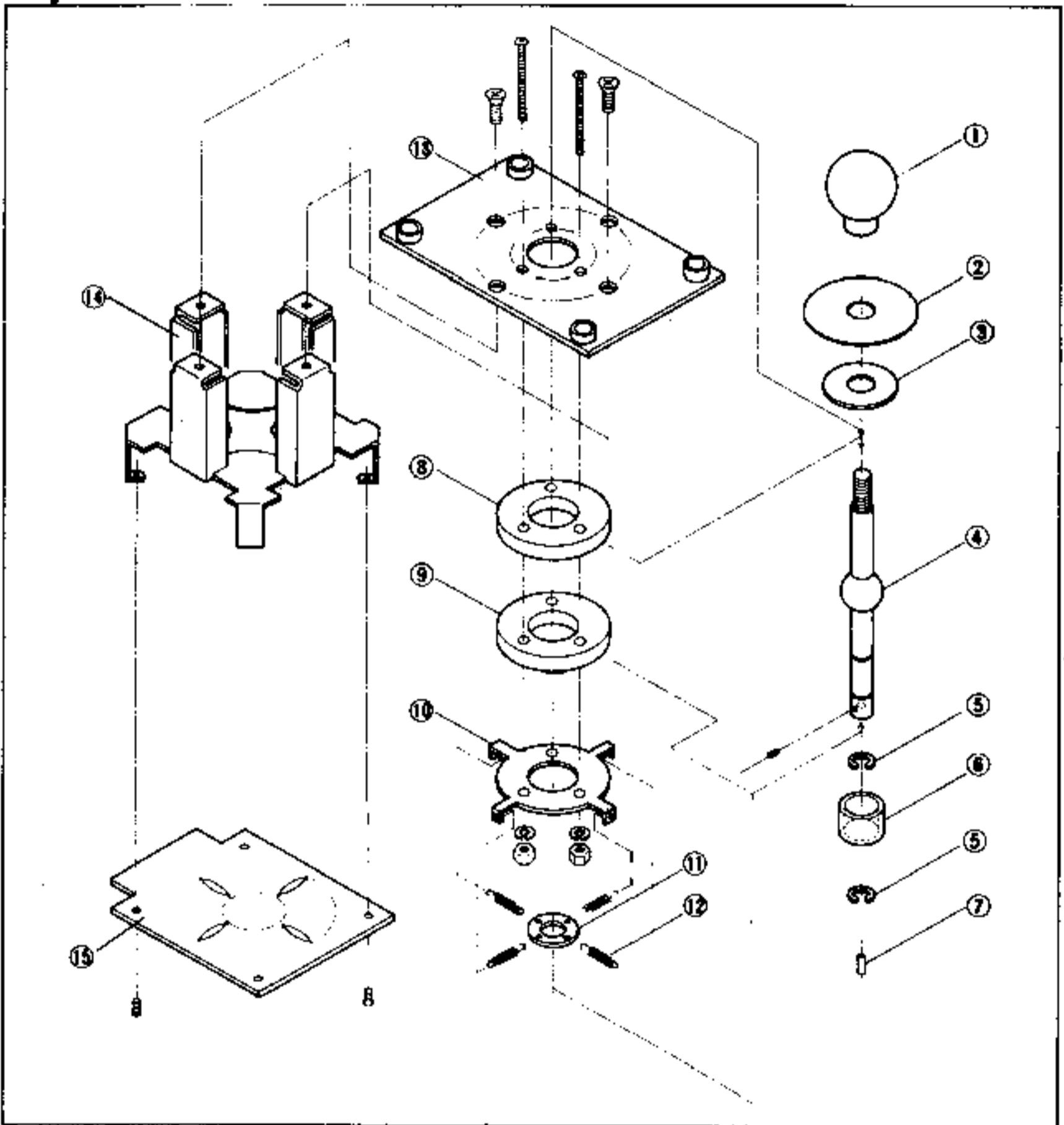


Fig. 12 Lever Assembly

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

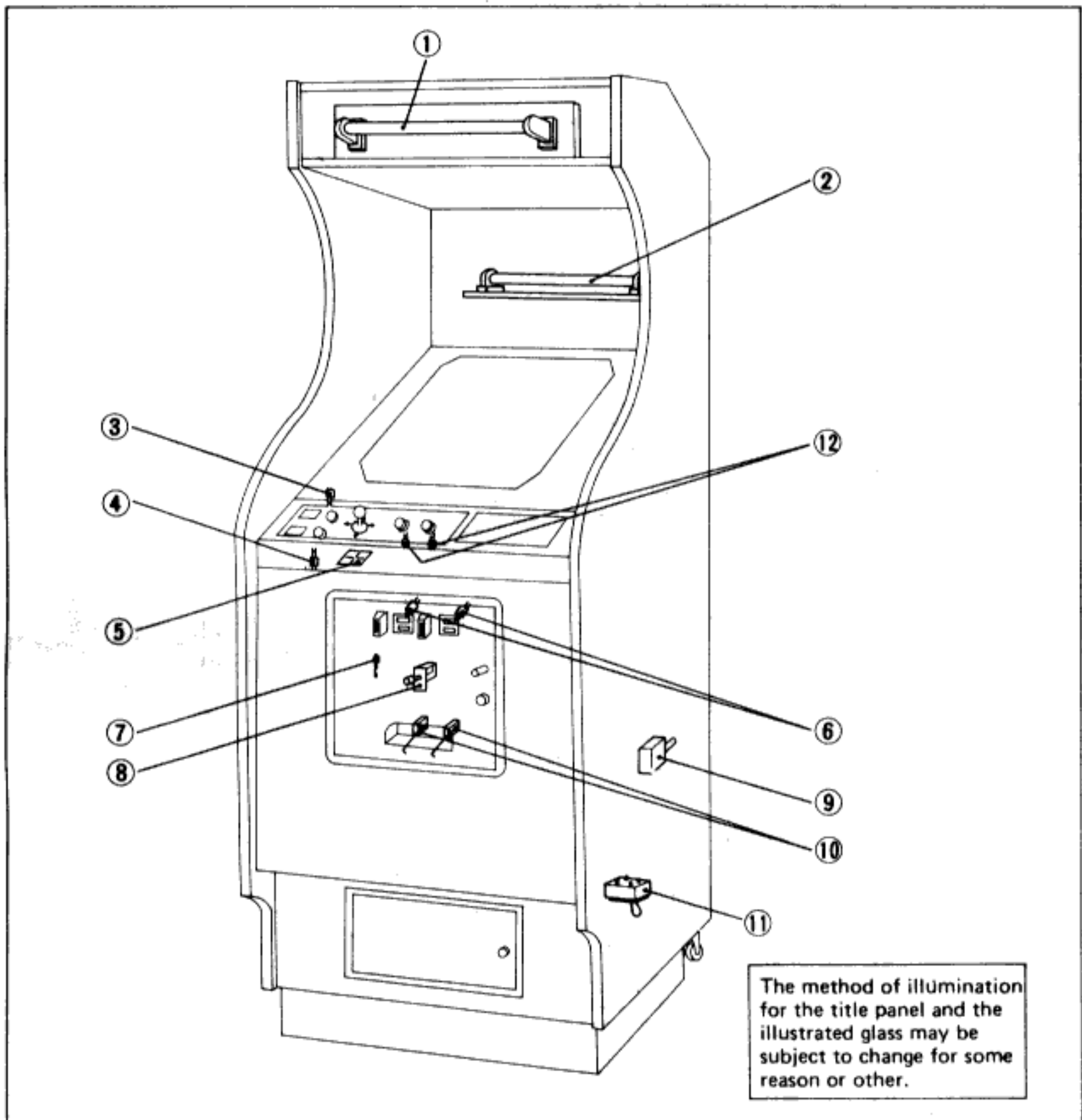


Fig. 13 Component Parts Related to Switches in the Cabinet

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 |

VII. CIRCUIT BOARD

A. CIRCUIT BOARD IC LOCATION AND PARTS LIST

a) Main circuit board IC location and parts list

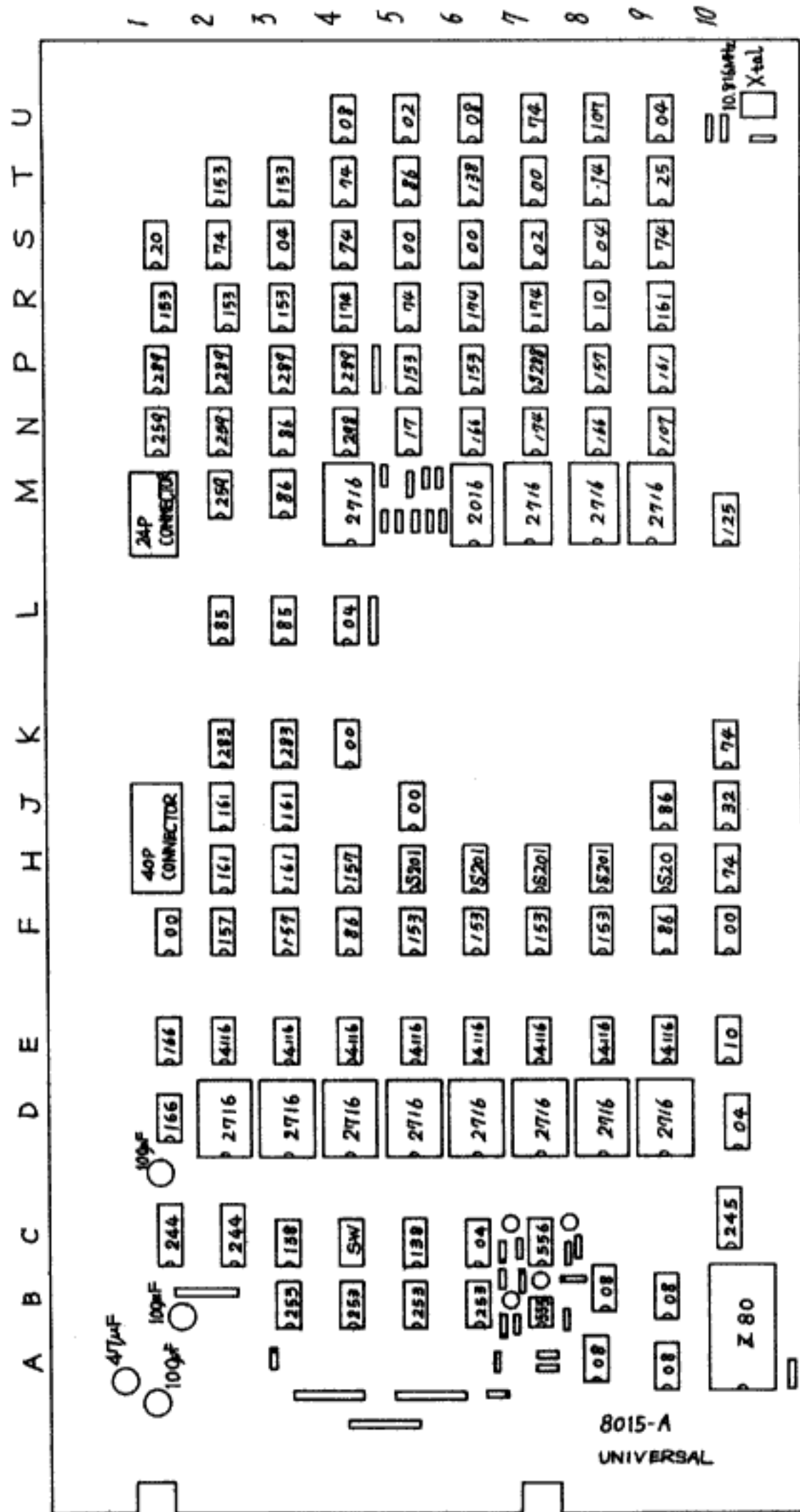


Fig. 14 Main Circuit Board

[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 /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 |

b) Sound circuit board IC location and parts list

8015-S2 UNIVERSAL

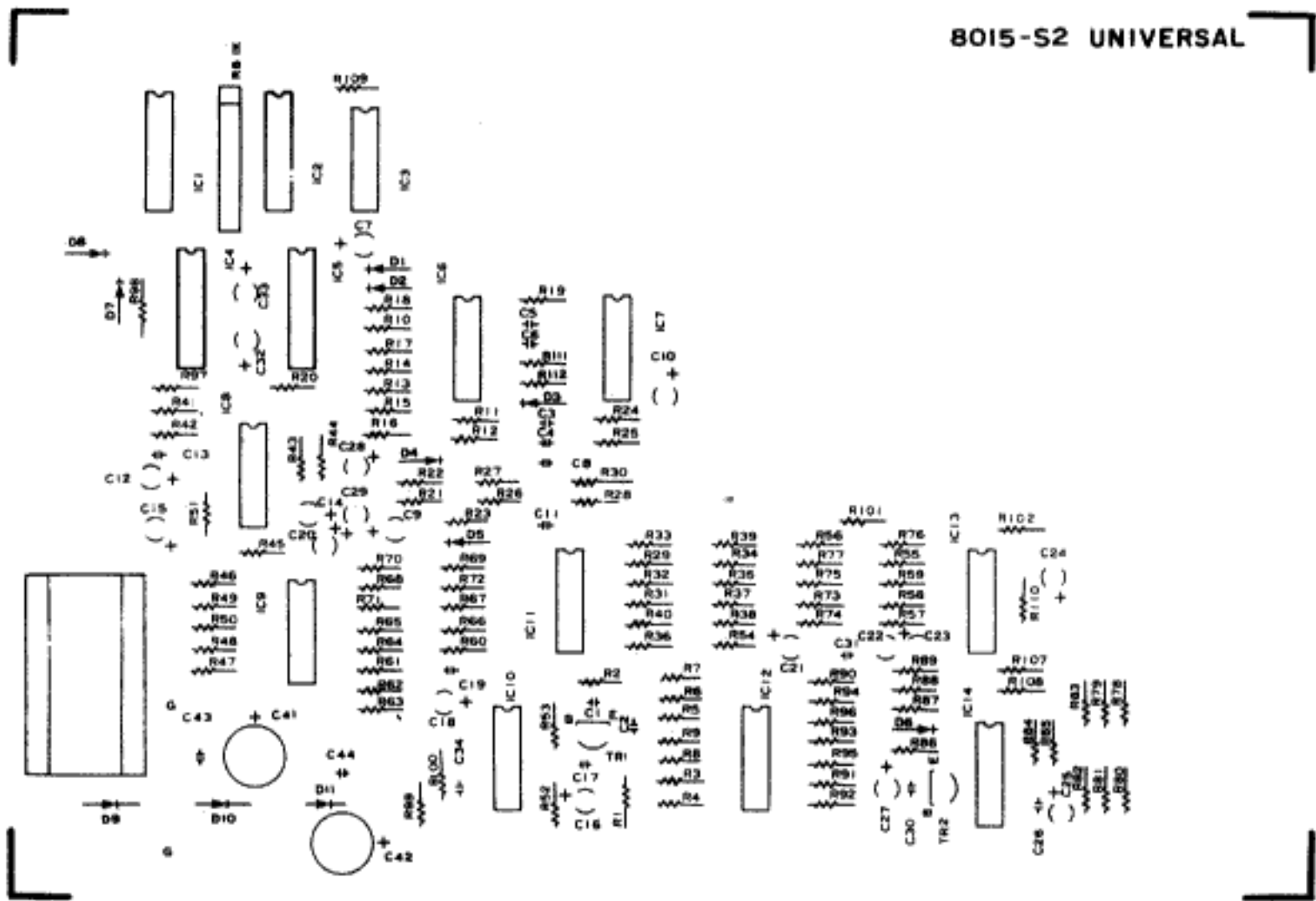


Fig. 15 Sound Circuit Board

| 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 " | " |

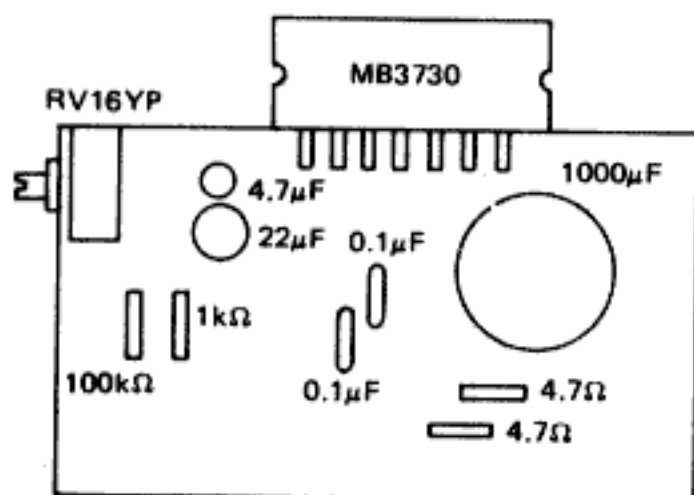
| Location | Rating | Description |
|----------|--------|-----------------------|
| R61 | 1K ¼W | Carbon Solid Resistor |
| 62 | 1M " | " |
| 63 | 1K " | " |
| 64 | 100K " | " |
| 65 | 100K " | " |
| 66 | 100K " | " |
| 67 | 33K " | " |
| 68 | 330K " | " |
| 69 | 68K " | " |
| 70 | 120K " | " |
| 71 | 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 |

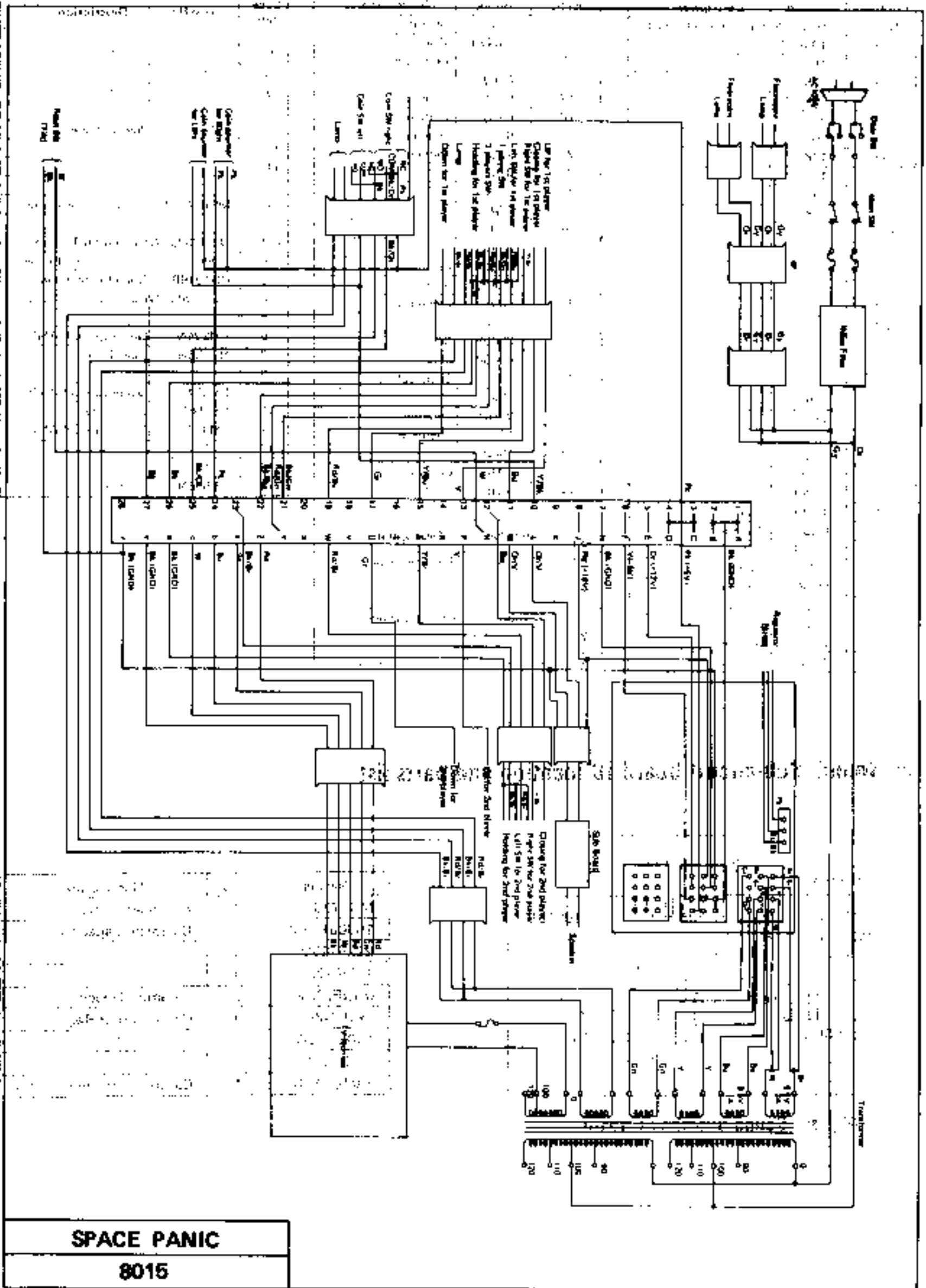
e) Sound Sub-circuit board IC location and parts list



| 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. 16 Sound Sub-circuit Board

WIRING DIAGRAM (CONNECTOR)



4S-14B/20B CCTV CIRCUIT DIAGRAM

PRINCE ELECTRONIC INDUSTRY CO., LTD.

FACTORY: NO 29 SEC-1, KUANGFU ROAD SANCHUNG

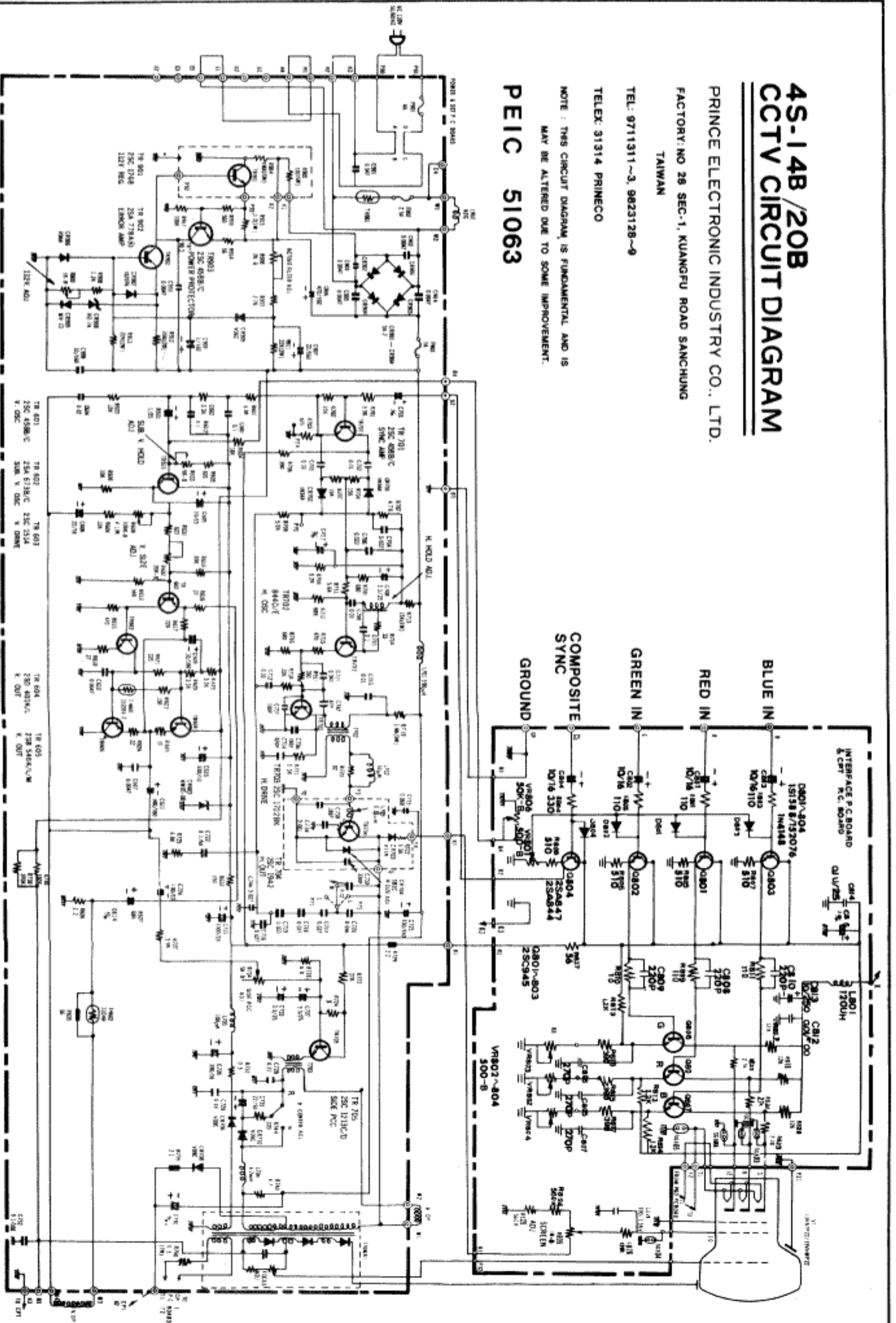
TAIWAN

TEL: 9711311~3, 9823128~9

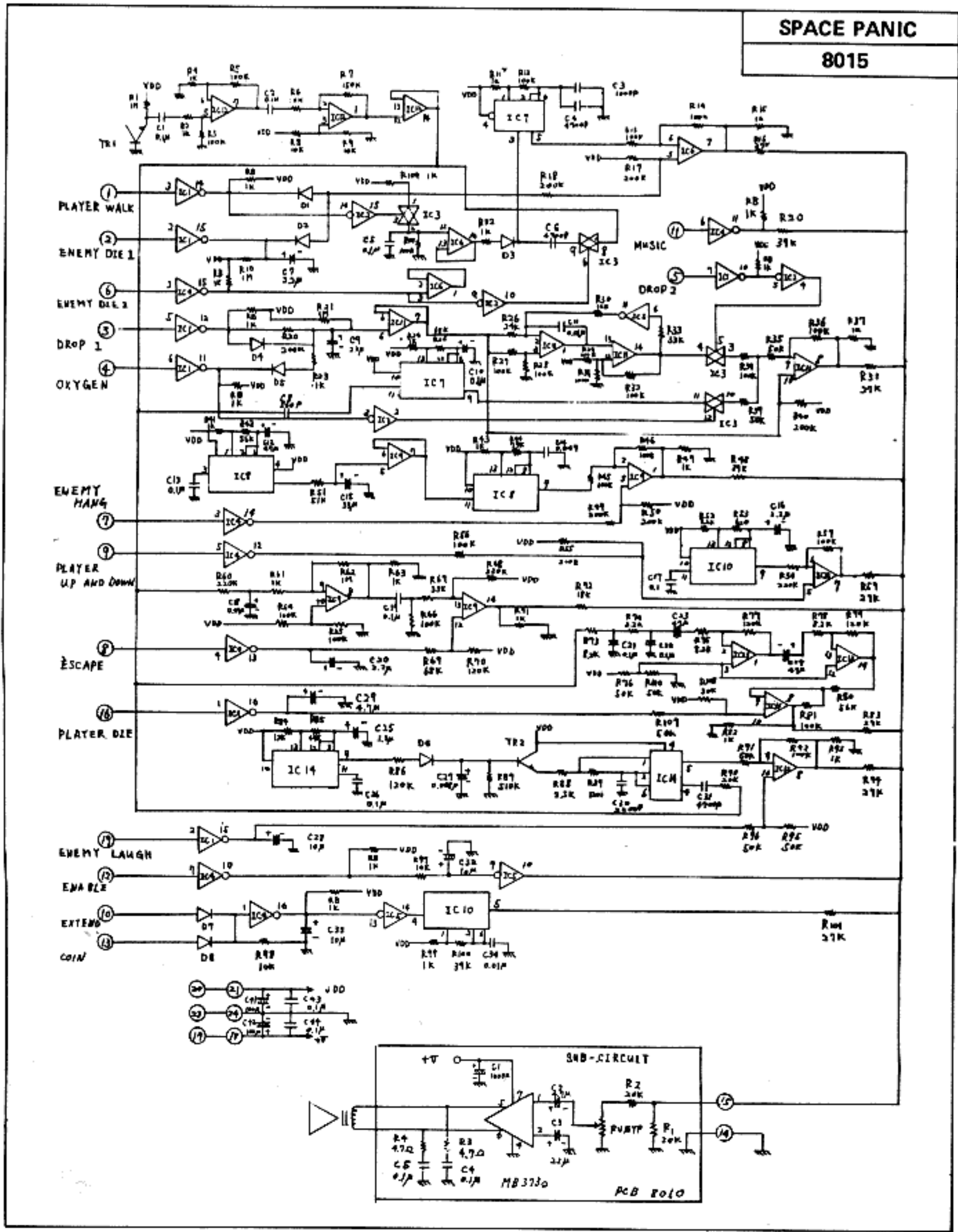
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NOTE: THIS CIRCUIT DIAGRAM IS FUNDAMENTAL AND IS
MAY BE ALTERED DUE TO SOME IMPROVEMENT.

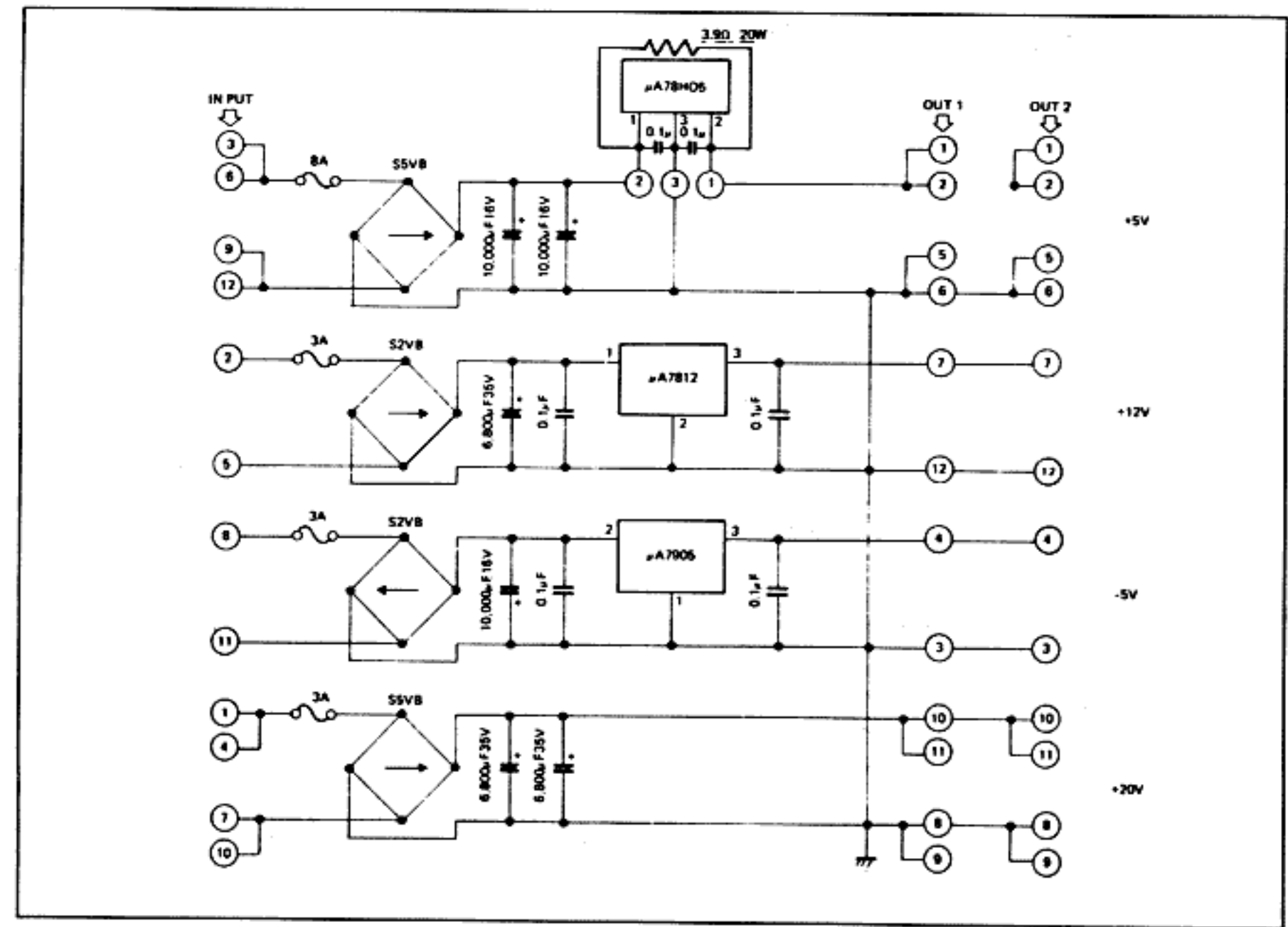
PEIC 51063



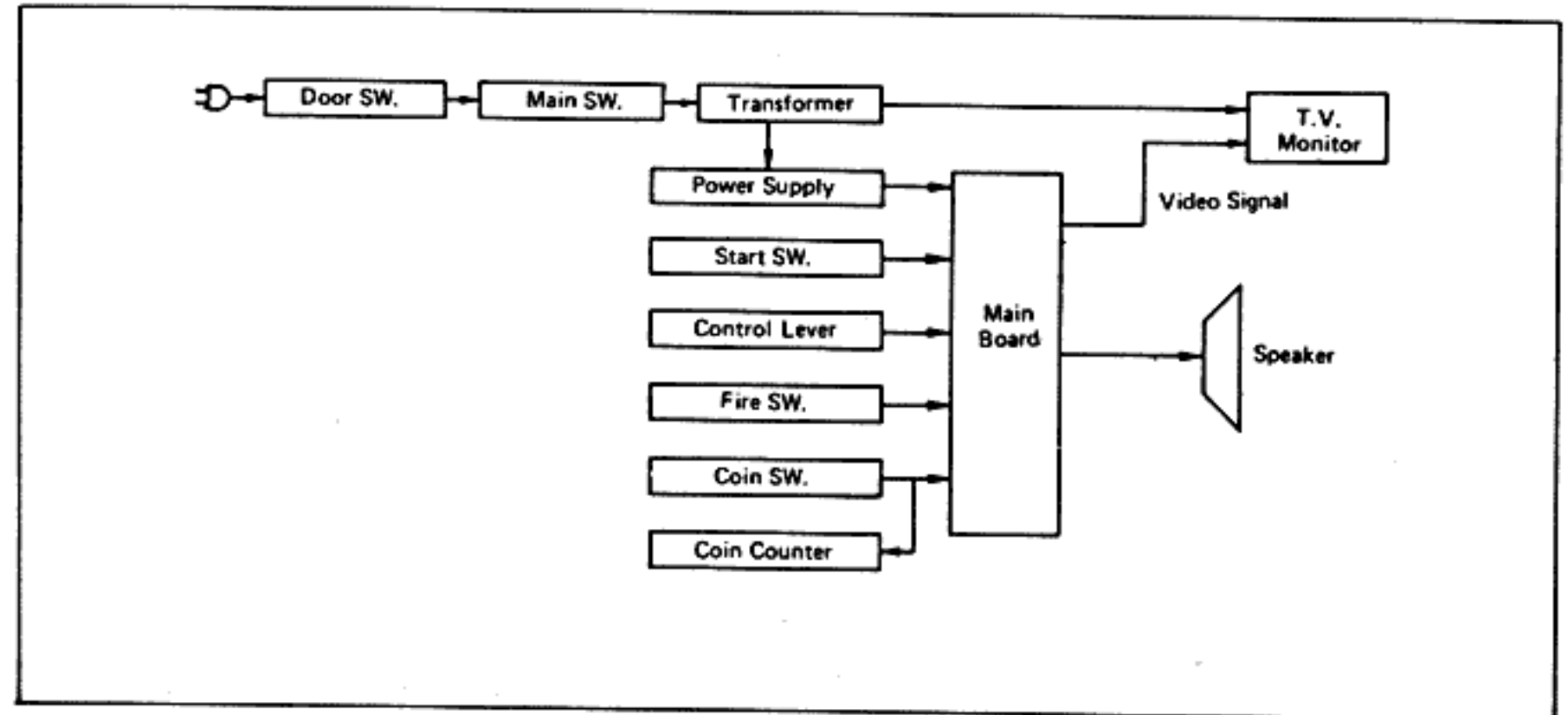
SOUND BLOCK DIAGRAM



POWER SOURCE BLOCK DIAGRAM



BLOCK DIAGRAM

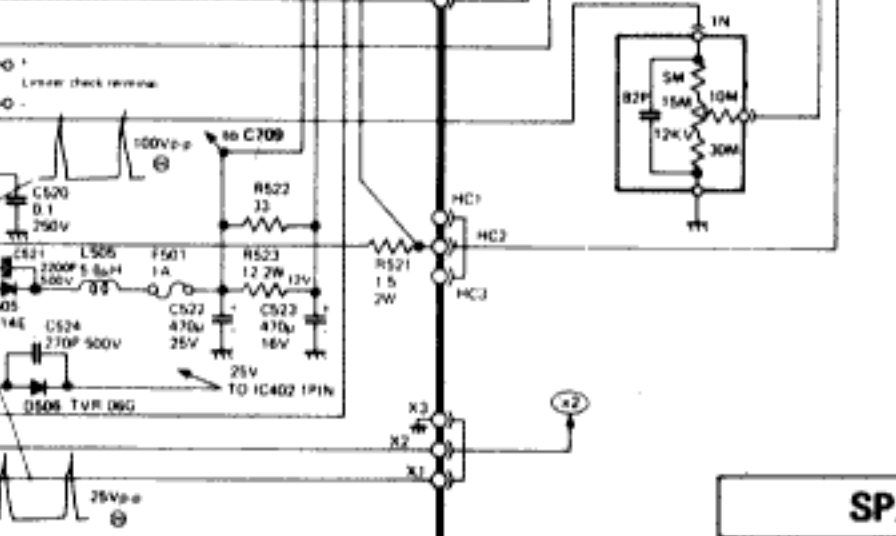
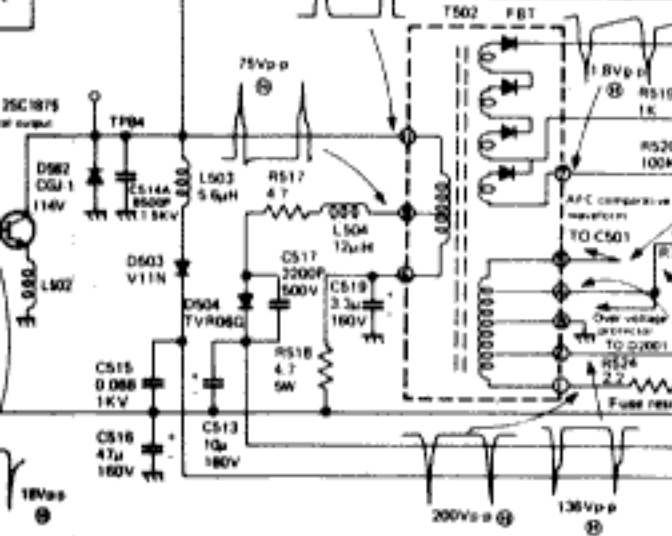
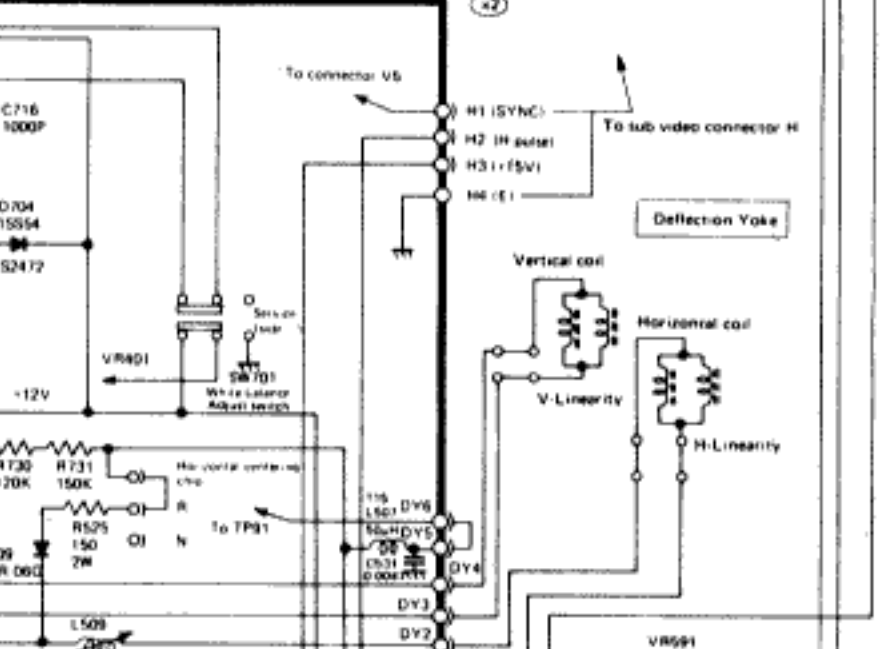
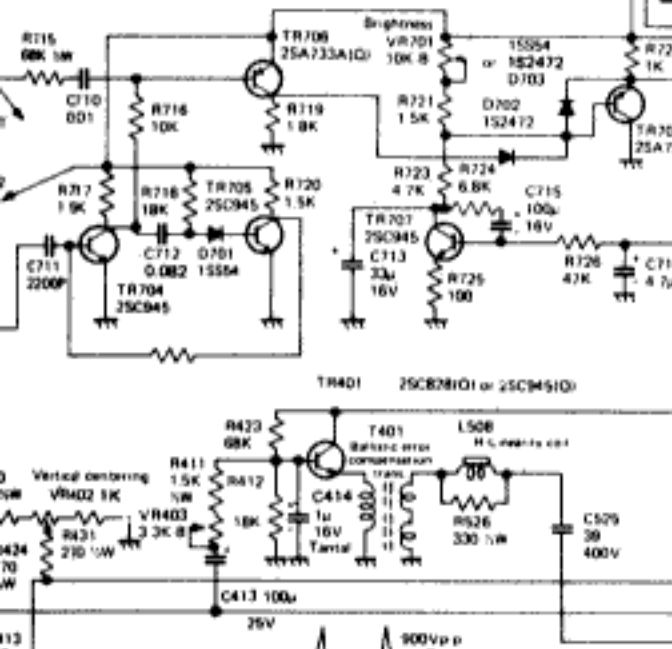
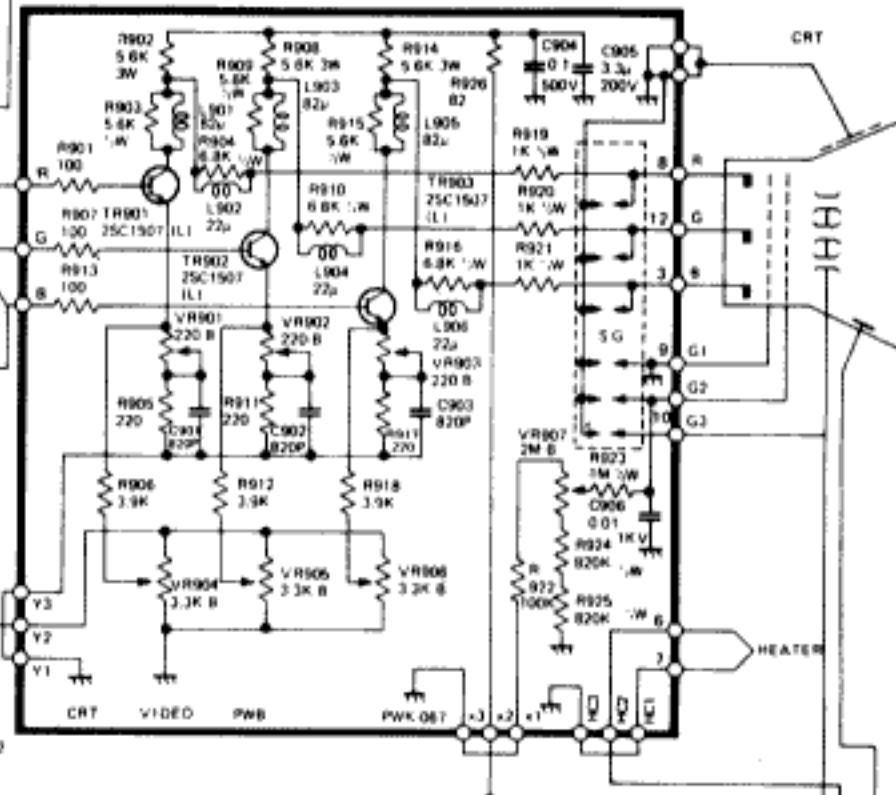
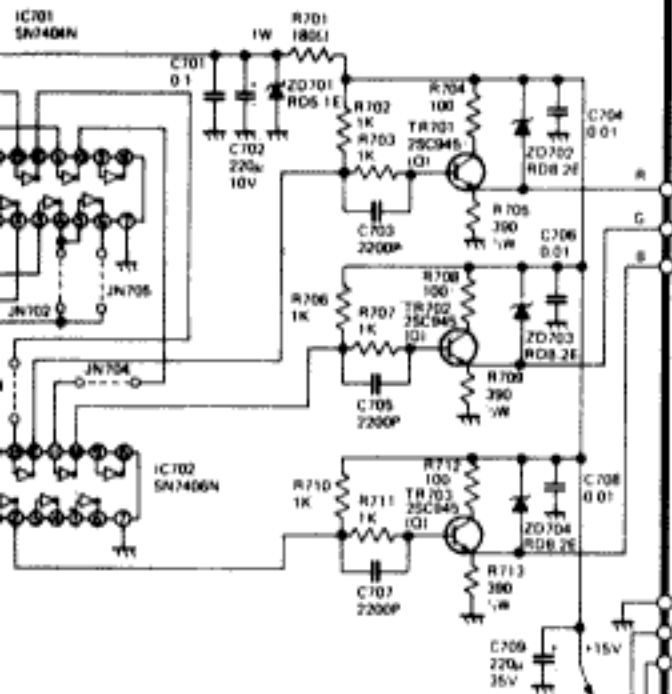


Sub VIDEO
YA-161398
PWK-068

SUB VIDEO
Connector H

510 LC822

CRT

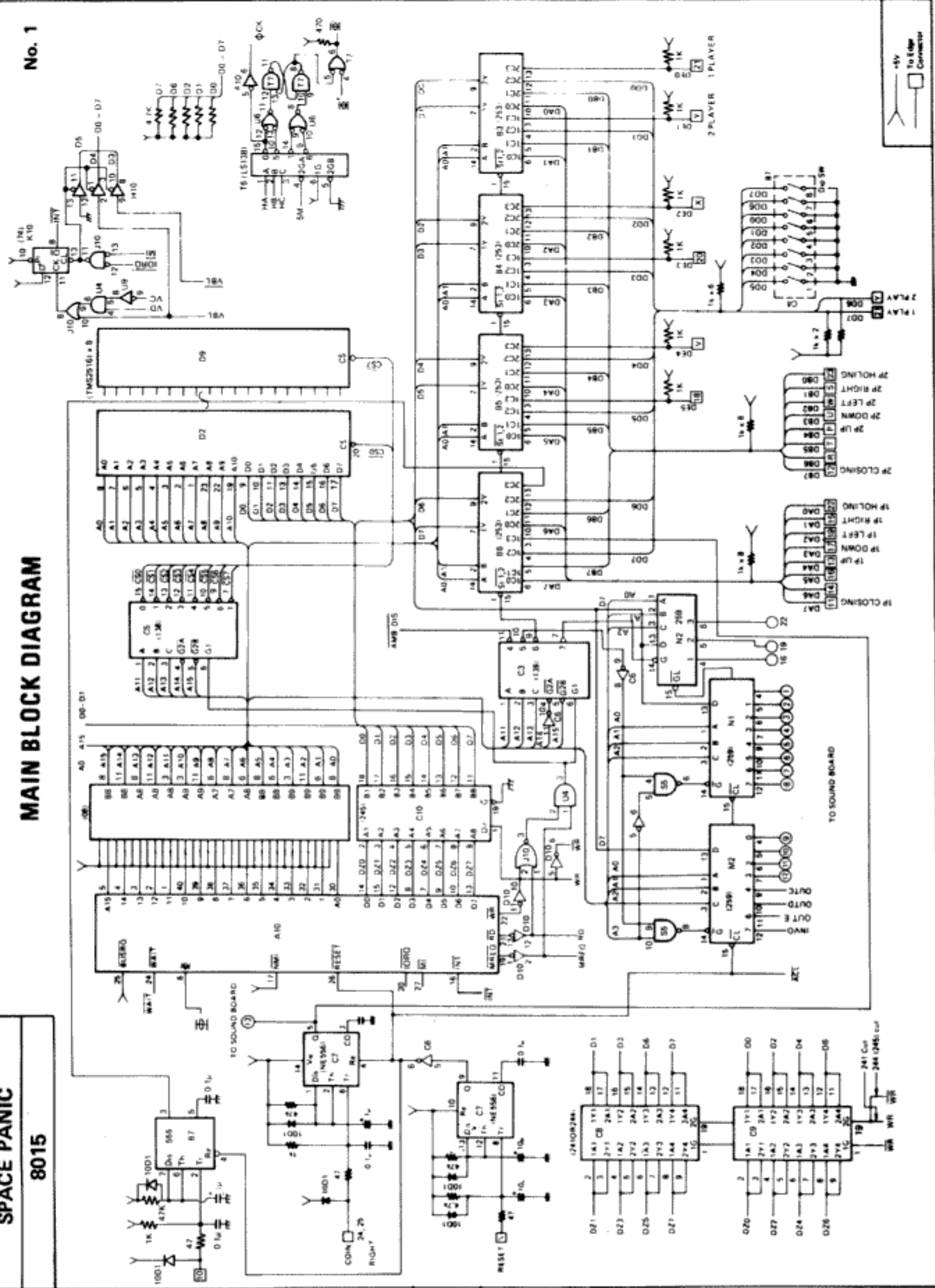


SPACE PANIC
8015

SPACE PANIC
8015

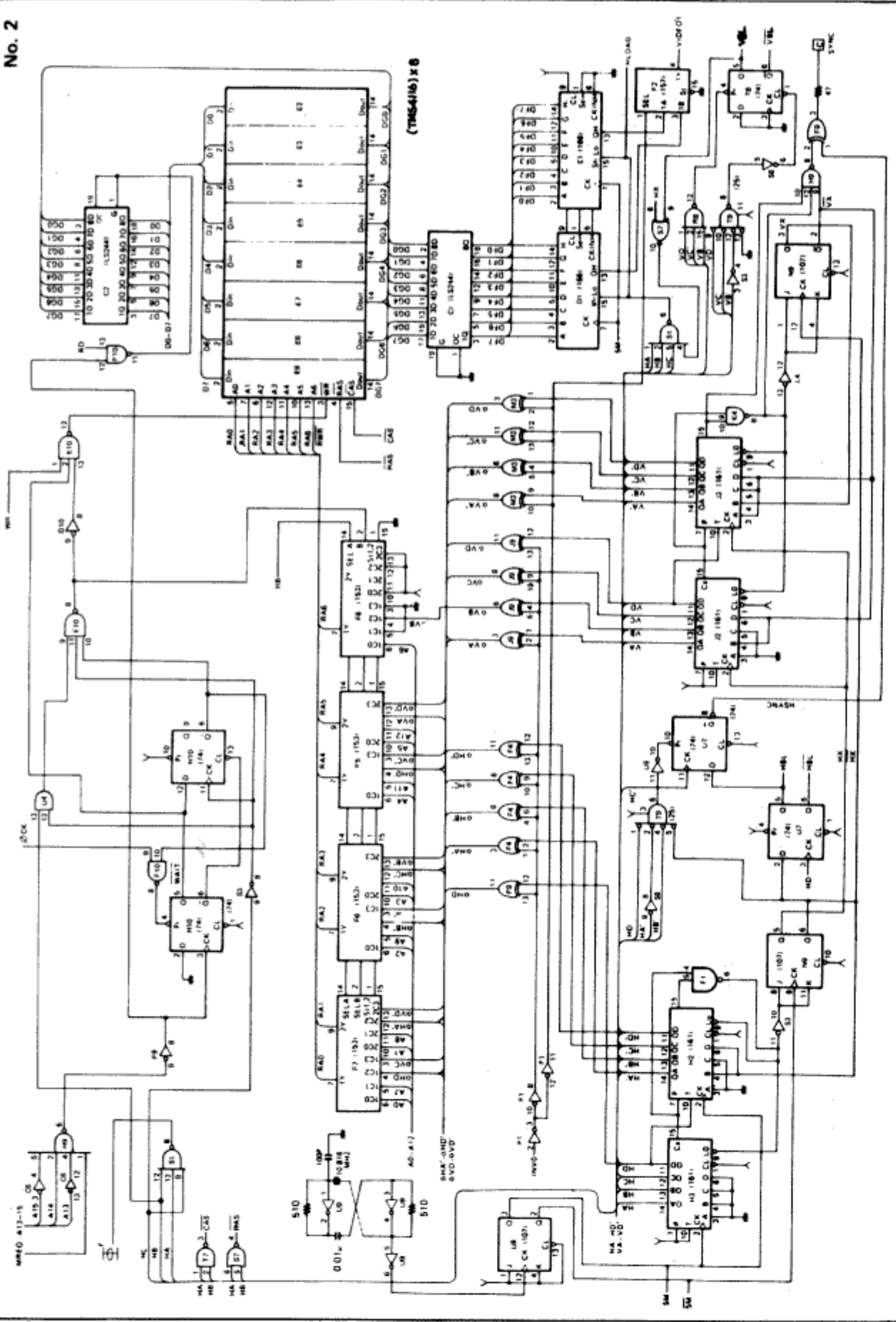
MAIN BLOCK DIAGRAM

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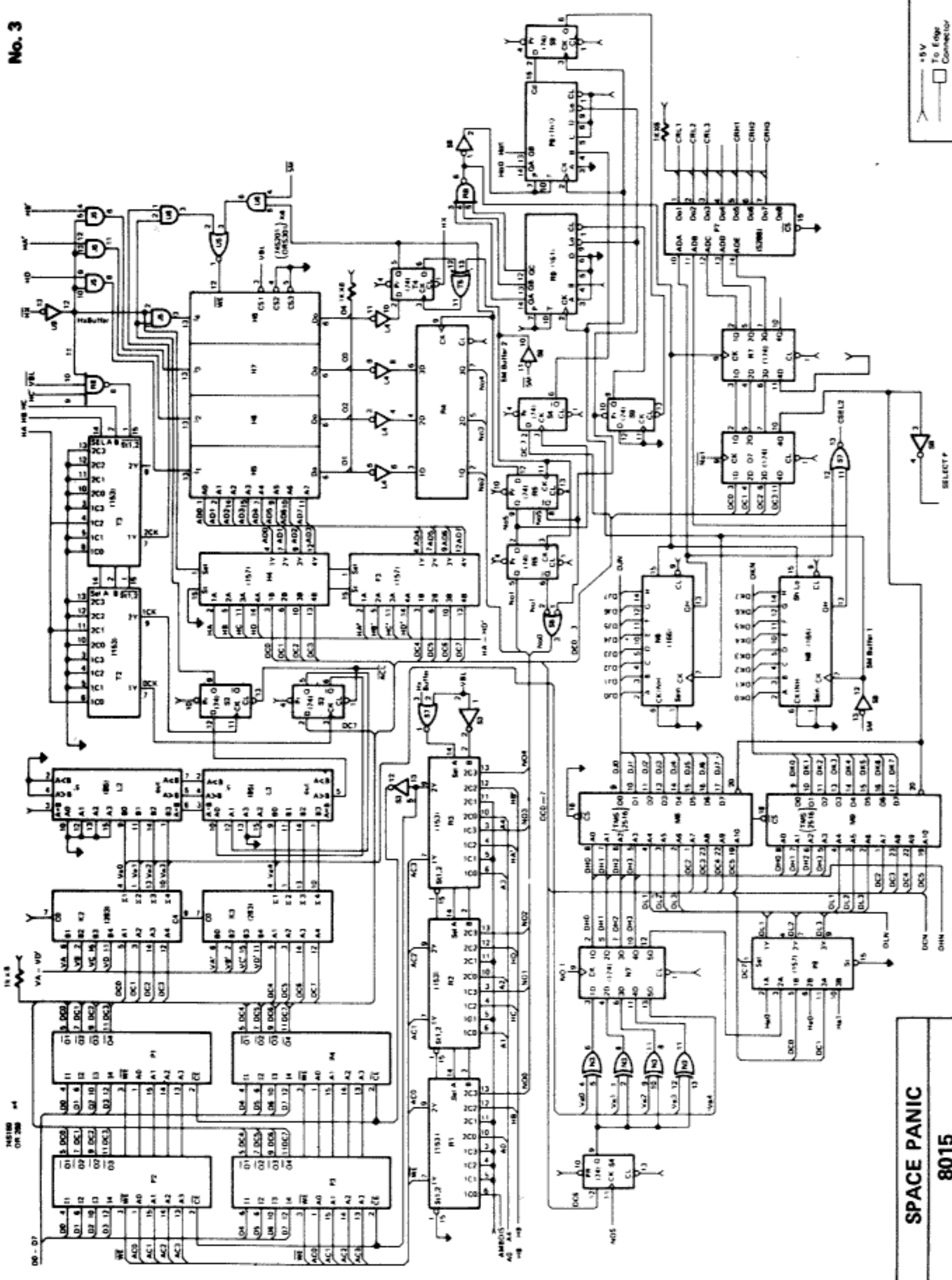


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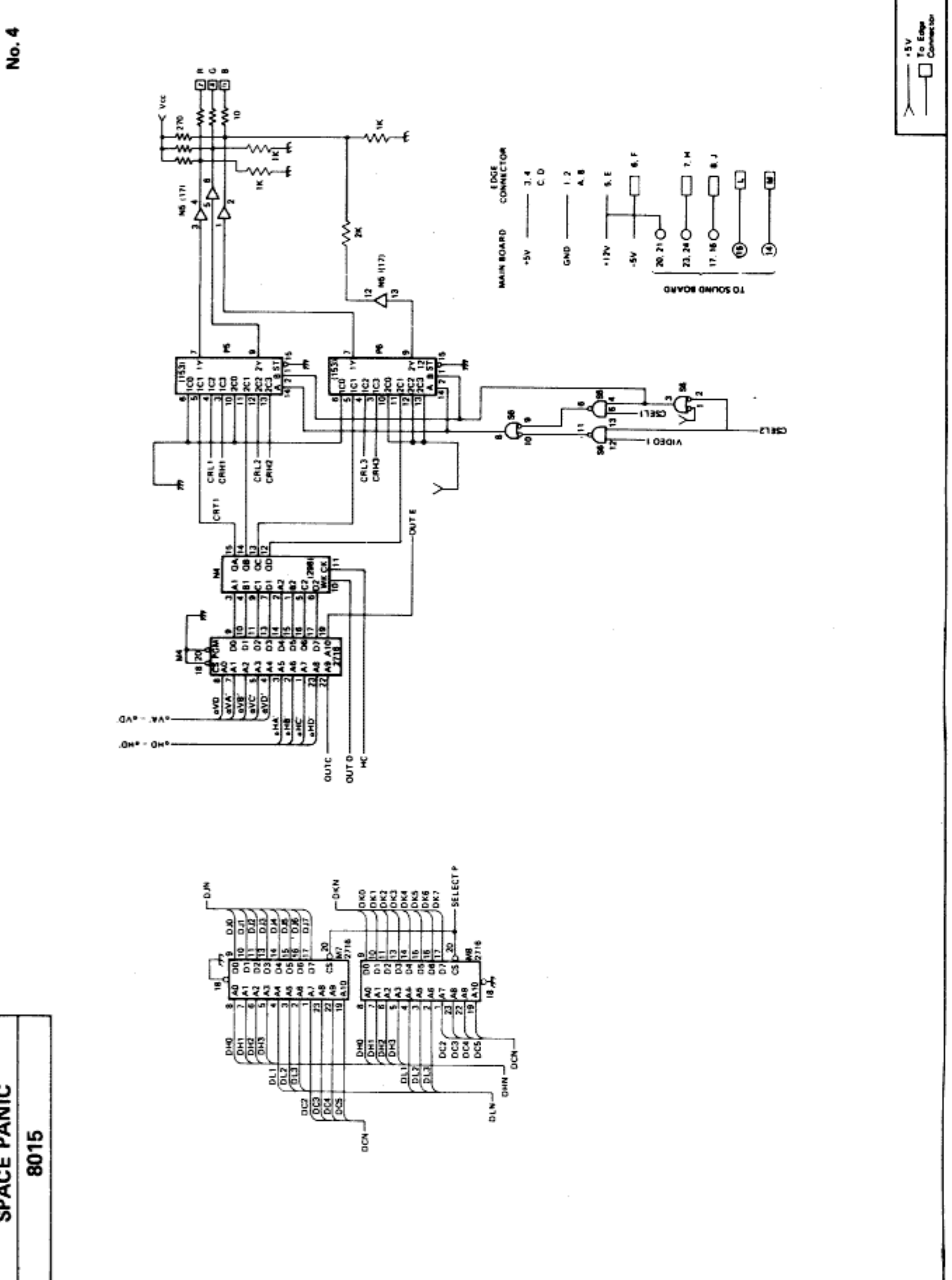
No. 3



SPACE PANIC
8015

+5V To Edge Connector

No. 4



SPACE PANIC
8015

+5V To Edge Connector



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261348. (TELEX G)