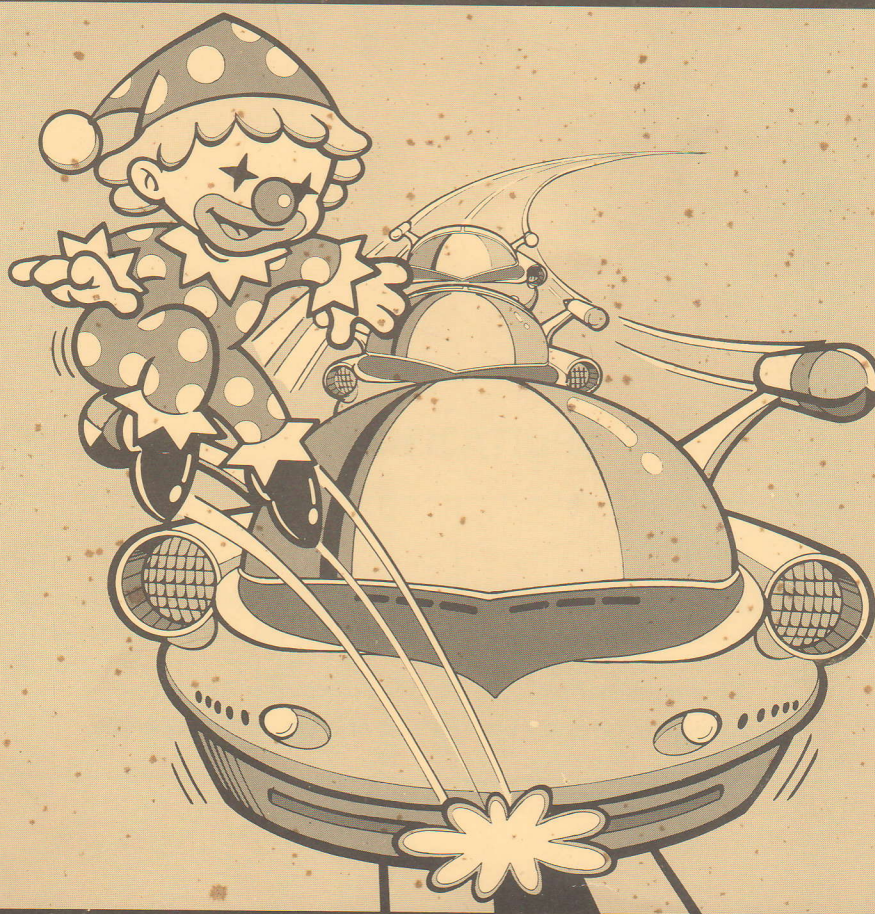


MR. DO'S WILD RIDE™

Service Manual



UNIVERSAL®

Thank you very much for your purchase of the Mr. Do's WILD RIDE. Carrying a CPU, the Mr. Do's WILD RIDE 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.

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

CONTENTS

I. How to play	1
II. Various optional settings	2
III. How to conduct self-testing	3-4
IV. Main circuit board IC location and parts list	5-6
V. Wiring diagram (Connector)	7
Caution I. (to prevent X-ray exposure from the CRT)	8
Caution II. (to prevent interference to radio and TV reception)	8

REFERENCE DRAWINGS

Fig. 1 Main Circuit Board IC Location	5
Fig. 2 Wiring Diagram (Connector)	7
Fig. 3 Block Diagram	7

SPECIFICATIONS

TABLE TYPE		UPRIGHT TYPE	
564 m/m (D)	AC100V/115V/230V	800 m/m (D)	AC100V/115V/230V
863 m/m (W)	50/60Hz	640 m/m (W)	50/60Hz
570 - 680 m/m (H)	140W (18")	1750 m/m (H)	180W (20")
▽ 95-2447		▽ 95-1653	

I. HOW TO PLAY

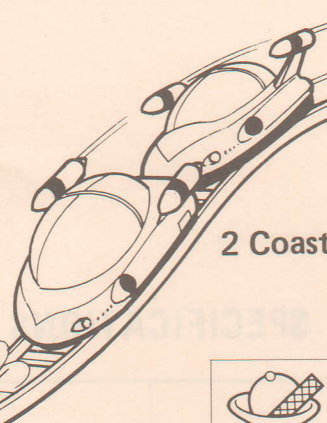
- Advance to the goal going along on the coaster lane.
- Dodge the coaster coming towards you by the ladder along the lane. When climbing it, be careful of the coaster above the head.
- Quickly pass dangerous spots by operating the acceleration button! (When using the button, bonus points will decrease more than usual.)
- When removing the fruit on the ladder, you can change two targets at the goal.
- Remove all of (E) (X) (T) (R) (A) appearing above the goal, and you are awarded another Mr. Do!
- If you make a goal when  has appeared at the goal, you are awarded a replay.
- The points on hand are fixed (4,500), and they begin to decrease when the game starts. The number of points remaining at the time when he made a goal, is added as bonus points. (You will lose a Mr. Do! when the number of points on hand has become zero.)

POINTS

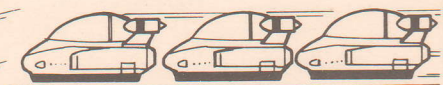


Coaster

1 Coaster 100 PTS



2 Coasters 300 PTS



3 Coasters 500 PTS

Goal Targets

			
100	200	300	400
			
500	600	500	10,000

II. VARIOUS OPTIONAL SETTINGS

DESCRIPTIONS OF DIP SWITCHES

• Dip Switch A

1. Number of Mr. Do! Given (SW1)

No. of Mr. Do!	SW1
3	OFF
5	ON

2. Special (SW2)

Given or not	SW2
Given	OFF
Not	ON

3. Game Style (SW3)

Style	SW3
Table	OFF
Upright	ON

4. Difficulty of EXTRA (SW4)

Difficulty	SW4
Easy	OFF
Difficult	ON

5. Screen Direction (SW5)

Direction	SW5
Forward	OFF
Reverse	ON

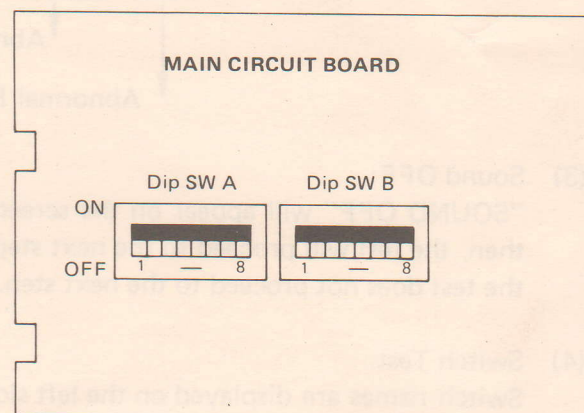
6. Automatic Renewal of Screen (SW6)

Automatic renewal	SW6
Made	OFF
Not made	ON

7. Difficulty of the Games (SW7, 8)

Difficulty	SW7	SW8
1 (Beginner)	OFF	OFF
2	OFF	ON
3	ON	OFF
4 (Advanced)	ON	ON

• Positions of Dip Switches



• Dip Switch B (Coin & Credit)

Coin	Credit	Left-side chute				Right-side chute			
		SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
1	1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	.2	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
1	3	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
1	4	OFF	OFF	ON	ON	OFF	OFF	ON	ON
1	5	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
2	1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2	3	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3	1	OFF	ON	ON	ON	OFF	ON	ON	ON
3	2	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
4	1	ON	OFF	OFF	ON	ON	OFF	OFF	ON
1	1	ON	OFF	ON	OFF	ON	OFF	ON	OFF
1	1	ON	OFF	ON	ON	ON	OFF	ON	ON
1	1	ON	ON	OFF	OFF	ON	ON	OFF	OFF
1	1	ON	ON	OFF	ON	ON	ON	OFF	ON
1	1	ON	ON	ON	OFF	ON	ON	ON	OFF
Free play		ON	ON	ON	ON	ON	ON	ON	ON

Standard and Custom Price Settings

The game price set by a combination of dip SWs is displayed on the monitor when coin credit is 0.

- When the settings for right and left chutes are the same, "1 coin - 1 credit", "2 coins - 3 credits", etc. are displayed.
- When the settings for right and left chutes are provided differently, their respective contents can be displayed.

III. HOW TO CONDUCT SELF-TESTING

★ This machine has a self-testor which locates any abnormalities with the machine should they occur.

[Self-Testing Procedure]

Turn power ON while pressing either 1-player or 2-player button, and self-testing will follow automatically.

[Self-Testing Items]

(1) RAM Test:

When normal — "RAM OK" will appear on the screen, and the test will proceed to the next step.

When abnormal — "RAM ☐ " will appear, and the test will be suspended.

↓
Abnormal RAM No.

(2) ROM Test:

When normal — "ROM OK" will appear on the screen, and the test will proceed to the next step.

When abnormal — "ROM ☐ . ☐ ☐ " will appear, and the test will be suspended.

↓
Abnormal ROM data
↓
Abnormal ROM No.

(3) Sound OFF:

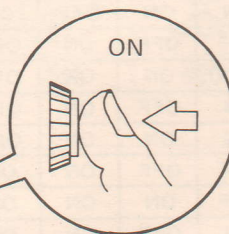
"SOUND OFF" will appear on the screen, and the sound that has been made to that time will stop, then, the test will proceed to the next step. The machine is out of order if the sound does not stop or the test does not proceed to the next step.

(4) Switch Test:

Switch names are displayed on the left side of the screen, while input conditions will be displayed on the right side. When the switch is ON, "0" is displayed for input, and when it is OFF, "1" is displayed. Conduct test while turning each switch ON-OFF — the test will advance to the next step after a minute.

Switch name	Input condition
2P DOWN	1
LEFT	1
UP	1
RIGHT	1
1P DOWN	1
LEFT	1
UP	1
RIGHT	1
2P START	1
NOT USED	1
2P JUMP	1
FIRE	1
1P START	1
NOT USED	1
1P JUMP	1
FIRE	0
NOT USED	1
NOT USED	1

Switch name	Input condition
COIN LEFT	1
COIN RIGHT	1
PAUSE	1
SERVICE	1
TEST	1
TILT	1



"0" will appear when pushing the pushbutton on the 1st player's side.

Dip switch A	1	0	1	1	0	1	1	1
" B	1	1	1	1	1	1	1	0

(5) TV Monitor Test:

Cross hatch pattern will appear on the entire screen. Monitor adjustment can be done by means of the pattern.

- Self-testing will stop at this point. Turn power ON again when you want to resume game or execute self-test again.

* In case you have found any abnormality as a result of the self-test, contact the dealer who sold the machine to you.

IV. MAIN CIRCUIT BOARD IC LOCATION AND PARTS LIST

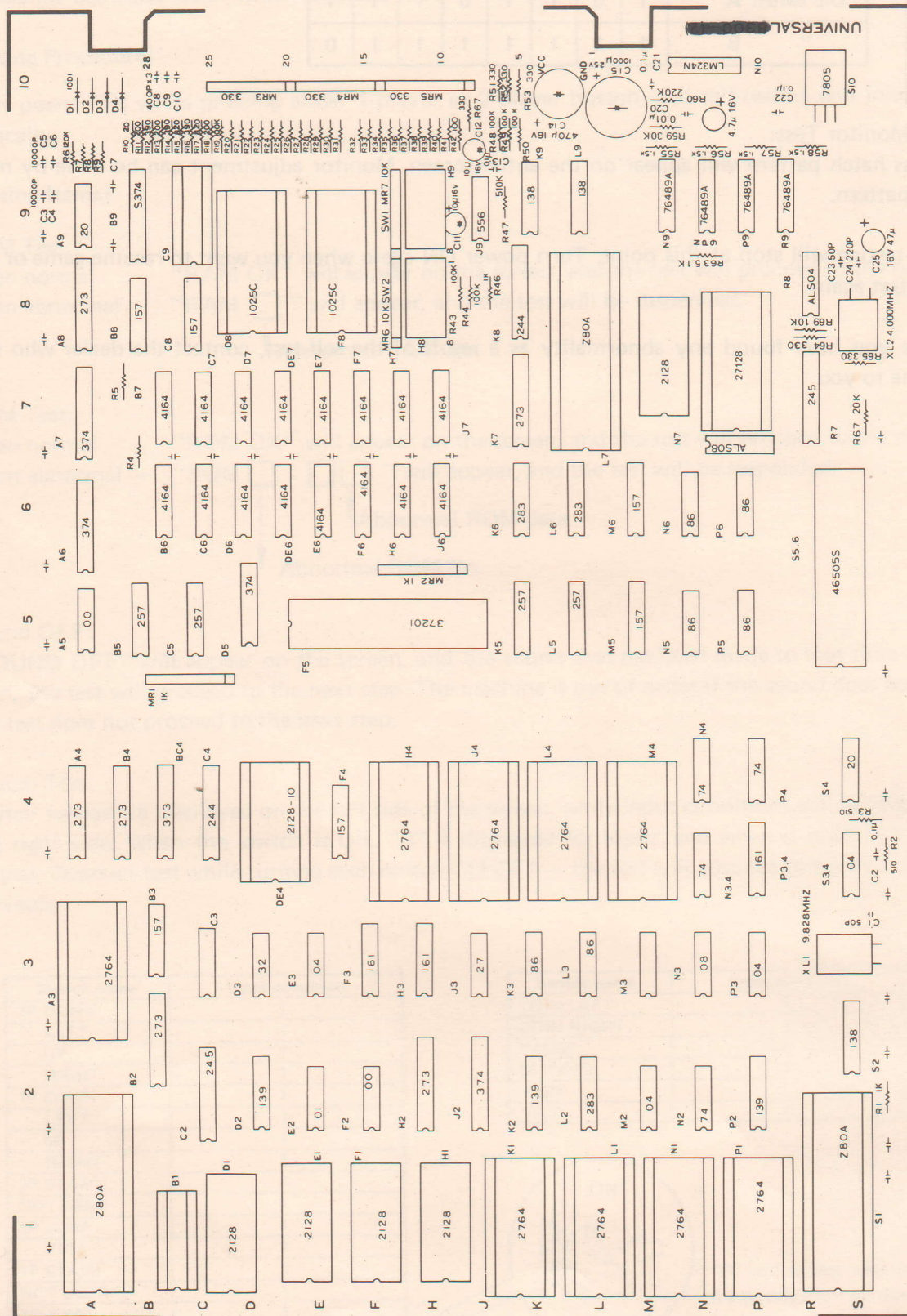


Fig. 1 Main Circuit Board IC Location

[1] Integrated Circuit

Item No.	Q'ty	Description
74LS 00N	2	TTL
74LS 01	1	"
74LS 04	4	"
74LS 08	1	"
74LS 20	2	"
74LS 27	1	"
74LS 32	1	"
74LS 74	5	"
74LS 86	7	"
74LS138	3	"
74LS139	3	"
74LS157	6	"
74LS161	3	"
74LS244	2	"
74LS245	2	"
74LS257	4	"
74LS273	6	"
74LS283	3	"
74LS373	1	"
74LS374	4	"
74ALS04N	1	"
74ALS08	1	"
74S374N	1	"
Z80A	3	NMOS CPU (4MHz)
2764-300	8	NMOS 64K bits EP ROM (Access 300nsec)
27128-300	2	NMOS 128K bits ROM (Access 300 nsec)
N82S147	2	4096 bits Fuse ROM
TMS4164-200	16	64K DRAM
MB8128-150	5	NMOS 16K bits Static RAM (Access 150nsec)
MB8128-100	1	NMOS 16K bits Static RAM (Access 100nsec)
CF37201N	1	Custom Function
NE556	1	Timer
LM342N	1	Audio Amplifier
SN76489AN	4	Programable Sound Generator
TMS1025N2CL	2	CMOS
HD46505SP	1	CRTC
10D1	4	Diode
UA7805	1	Regulator

[2] Capacitors

Rating	Q'ty	Description
50PF50V	2	Ceramic Capacitor
220PF50V	1	"
390PF50V	3	"
0.01 μ F50V	5	"
0.1 μ F12V	25	"
4.7 μ F25V	1	ES Capacitor
10 μ F16V	1	"
47 μ F16V	2	"
470 μ F16V	1	"
1000 μ F16V	1	"

[3] Registers

Rating	Q'ty	Description
22 Ω	1	Carbon Solid
100 Ω	1	"
200 Ω	3	"
330 Ω	6	"
390 Ω	3	"
470 Ω	2	"
820 Ω	2	"
1K Ω	2	"
5.1K Ω	1	"
10K Ω	1	"
20K Ω	1	"
24K Ω	4	"
30K Ω	1	"
100K Ω	28	"
120K Ω	4	"
220K Ω	1	"
510K Ω	1	"
330 x 8	3	Resistor Array
1K x 8	2	"
10K x 8	2	"

[4] Misc

Name	Q'ty	Description
Dip SW	2	8 Elements Switch Array
X tal	1	9.828MHz
"	1	4.000MHz
20P	2	IC Socket
28P	10	"

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

V. WIRING DIAGRAM (CONNECTOR)

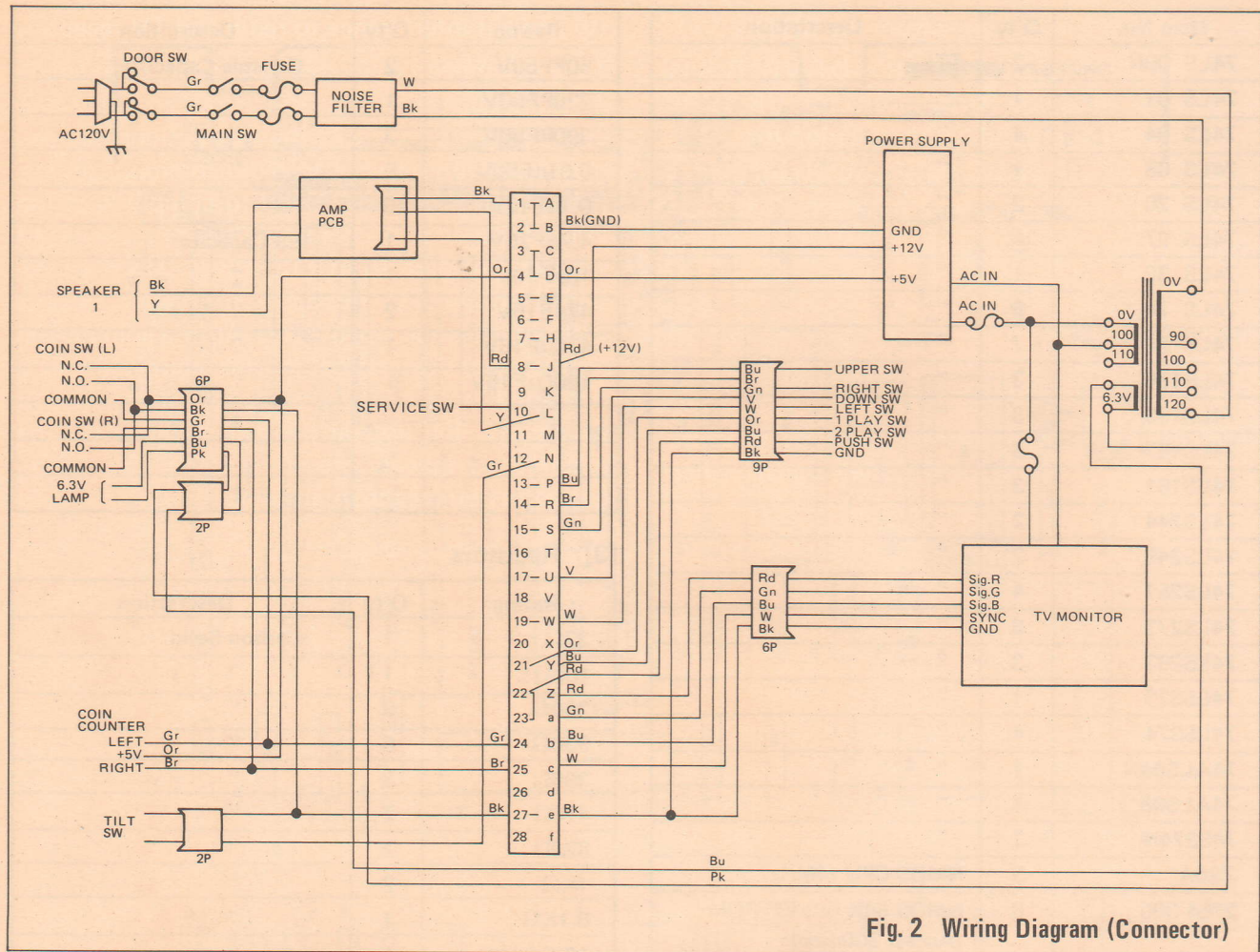


Fig. 2 Wiring Diagram (Connector)

VI. BLOCK DIAGRAM

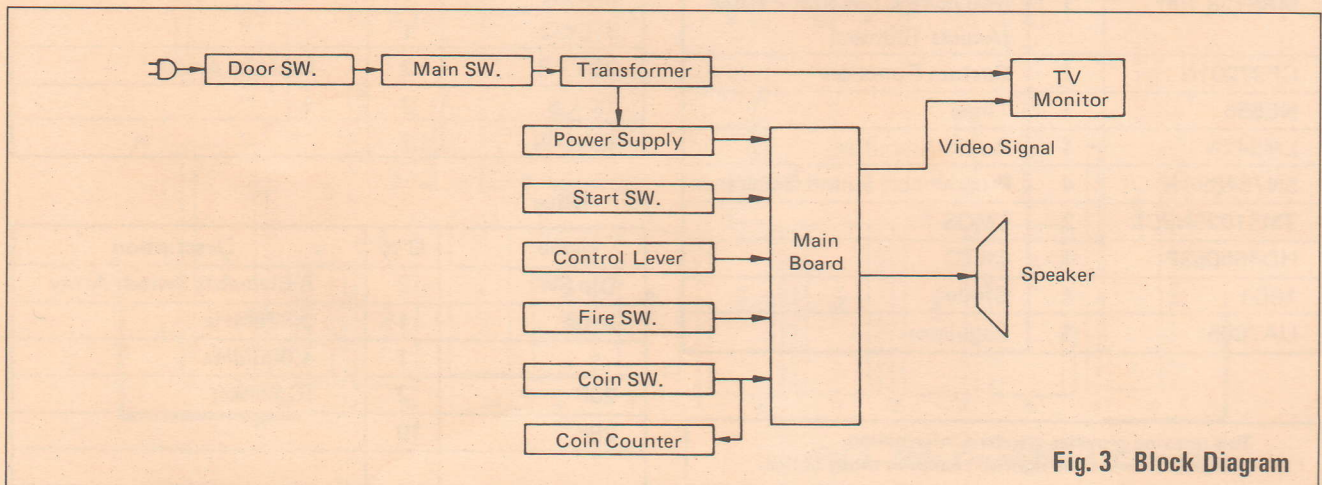


Fig. 3 Block Diagram

CAUTION I.

(to prevent X-ray exposure from the CRT)

Two variable resistors, the +B ADJ VR (VR11 8-1K ohm) and the X-ray protector VR (VR8 B-10K ohms) are found within the monitor.

They are rigidly adhered for both safety and to prevent X-ray exposure from the CRT.

(IMPORTANT: Please do not remove or change them!)

When a component has to be replaced due to damage to the VR(s) please follow the following procedure when exchanging it.

(IMPORTANT: The monitor must be synchronized with the signal when adjusting.)

1. To set for +B ADJ VR (VR11)

+B line voltage is to be set at 107V DC $\pm$ 1V
When adjusting VR11.

2. To set for X-ray protector VR8

- (1) Place VR in a counterclockwise position to stop it before turning the monitor power switch to "ON" and decrease AC power supply voltage by approximately 10%.
- (2) To be shorted for resistor of 220 ohms 20W R201 which is installed on heat sink plate.
- (3) Power supply should be placed in the "ON" position to keep the surface of the CRT slightly fluorescent — i.e. bright.
- (4) +B line voltage is to be set at 123V DC $\pm$ 1V while increasing AC power supply voltage.
- (5) When the VR8 to be fixed is in the horizontal oscillation position it may be stopped by slowly rotating it clockwise.
- (6) Once the power supply switch is turned "OFF" and AC power has decreased approximately 10% it can be turned "ON" again. Horizontal oscillation may then be confirmed by stopping +B line voltage at 123V DC $\pm$ 1V while slowly increasing AC voltage.

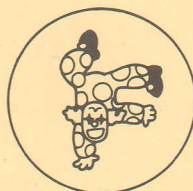
3. The VR must again be rigidly adhered thus making any further adjustments impossible.

CAUTION II.

(to prevent interference to radio and TV reception)

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a class A computing device pursuant to subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

If you have any question about the above, please feel free to contact us directly or your nearest Universal distributor at any time.



Head Office:

Universal Co., Ltd.

1-7-7, Nihonbashi Horidome-cho, Chuo-ku, Tokyo 103, Japan
Phone: 03-661-6004, 6005 Cable: UNMANIFACT
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)
Main Line of Business: Development, manufacture, sales, and
exports & imports of amusement machines

European Office

81 Tottenham Court Road, London W1A 1EY
Phone: 01-631-1713 Telex: 892989 ELCOIN