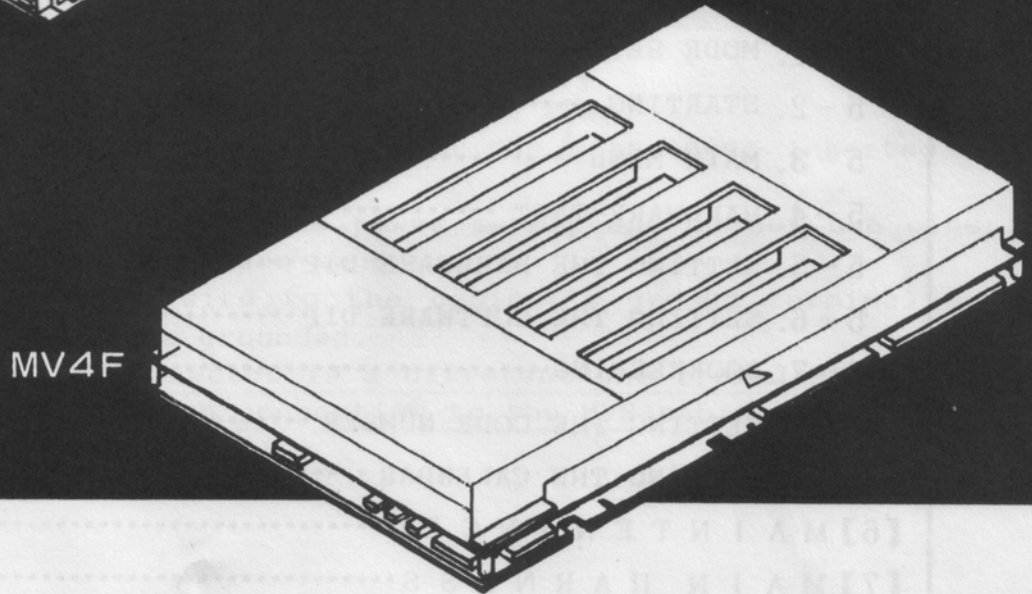
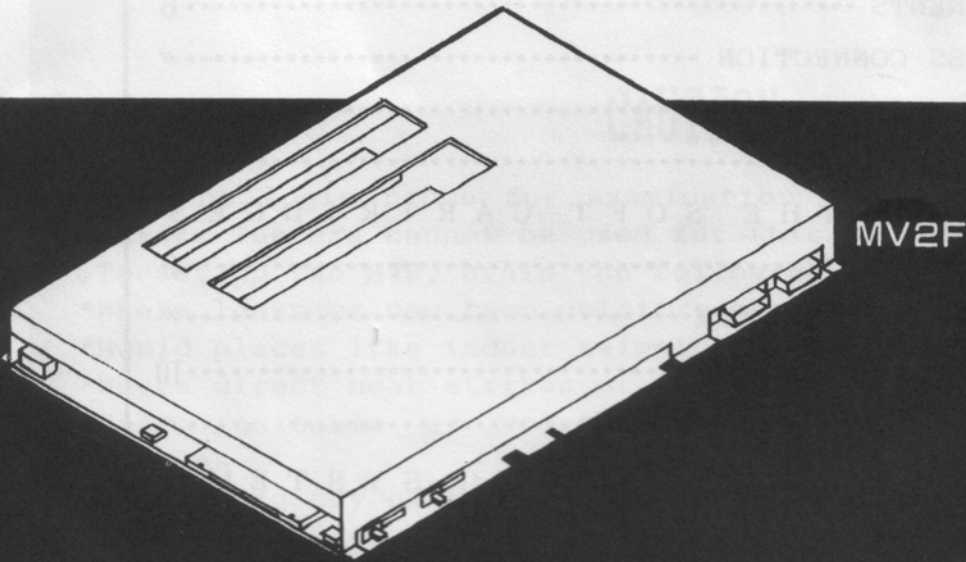


NEO-GEO[®]

SERVICE
MANUAL

MV2F / MV4F



SNK

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INTRODUCTION

Welcome to the NEO-GEO MULTI VIDEO SYSTEM. This system can hold two (MV-2) or four (MV-4) different NEO-GEO games in one cabinet, which enables you to save space and maximize your income. Only one compact set of P.C. boards with 2/4 slots for different games are required in one cabinet. The game cartridges can be easily inserted or removed from the slots. This is one of the remarkable advantages of our MVS.

Please read this service manual carefully before starting to use the MVS and keep it at your side for further reference.

CAUTION

- ◇Use the logic probe for examination of the circuit on the IC boards. Testers cannot be used for this purpose.
- ◇To set up the MVS, avoid the following places:
 - *Where leaks or dew from moisture may be caused
 - *Humid places like indoor swimming pools and showers
 - *Where direct heat strikes or in the hot air
 - *Near ignitable or volatile chemicals and other dangerous articles
 - *Near emergency exits or fire extinguishers
 - *Inclined places or near vibrating places
 - *Dusty places
- ◇Keep the temperature between 5°C and 40°C .
- ◇Do not put heavy objects on top of the PCBs.
- ◇Do not transport the cabinet with the cartridges inserted in the main PCB.
- ◇Use AC95V to AC105V for the power supply and do not use other devices from the same power source.
- ◇Connect the ground wire to the cabinet's ground terminal and the cabinet should be grounded.
- ◇The 56 pin main connector is a different one from JAMMA 56 pin and should be used with connection to the MVS cabinet.

[1] MV-2

1-1. COMPONENTS

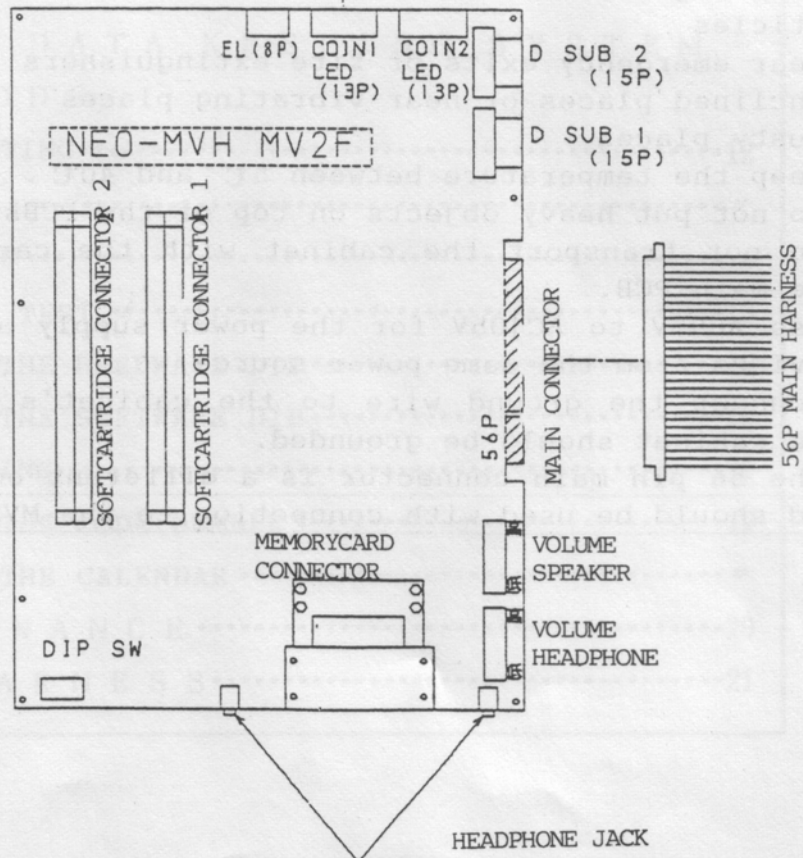
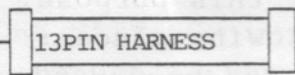
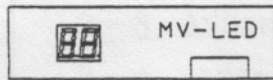
MVS consists of 2 P.C. boards.

MV2.....Main programming, character display

MV-LED...Credit indicator

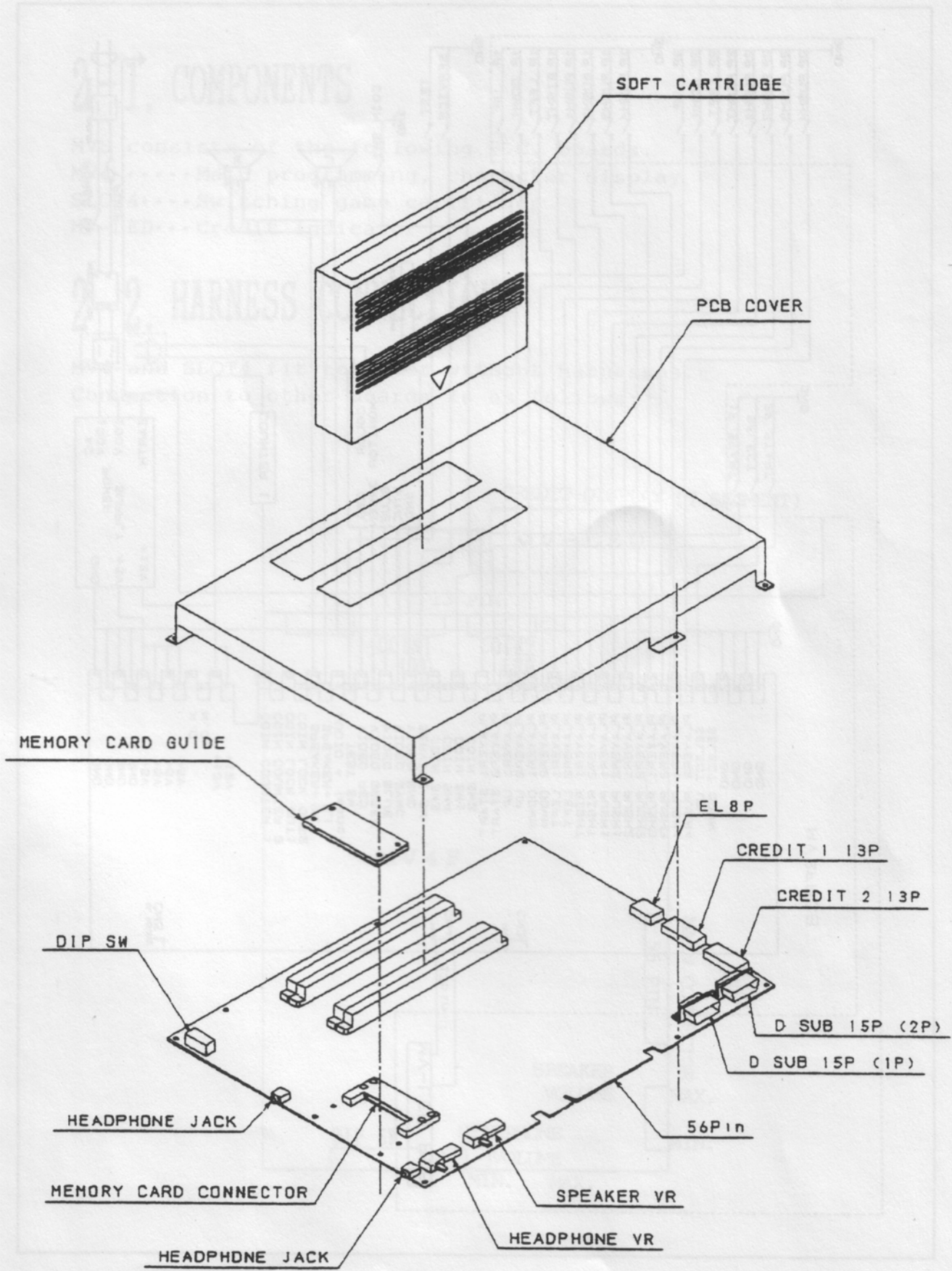
1-2. HARNESS CONNECTION

CREDIT DISPLAY PCB
(7 SEGMENT)

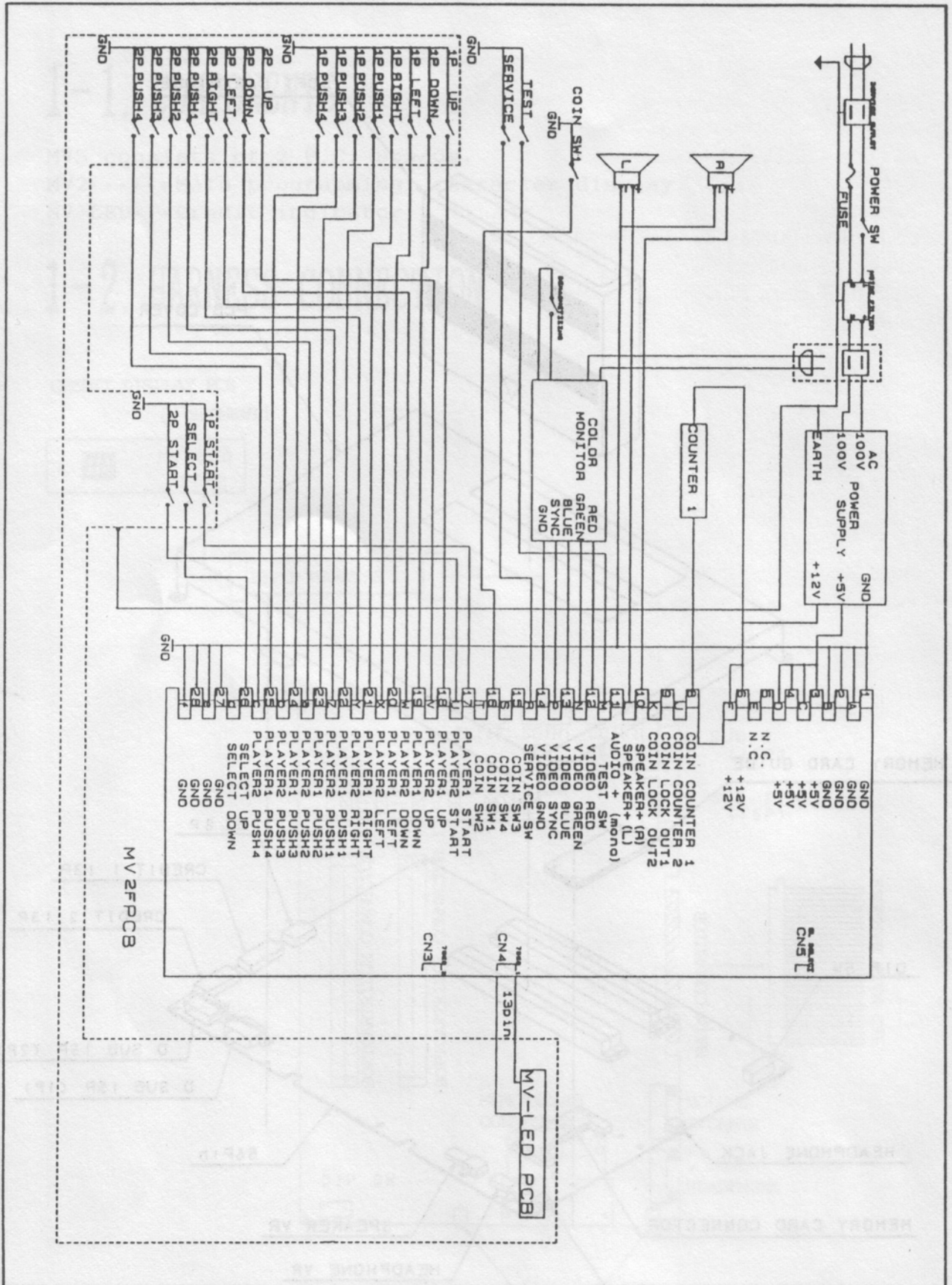


1-3. ASSEMBLY

1-4. WIRING DIAGRAM



1-4. WIRING DIAGRAM



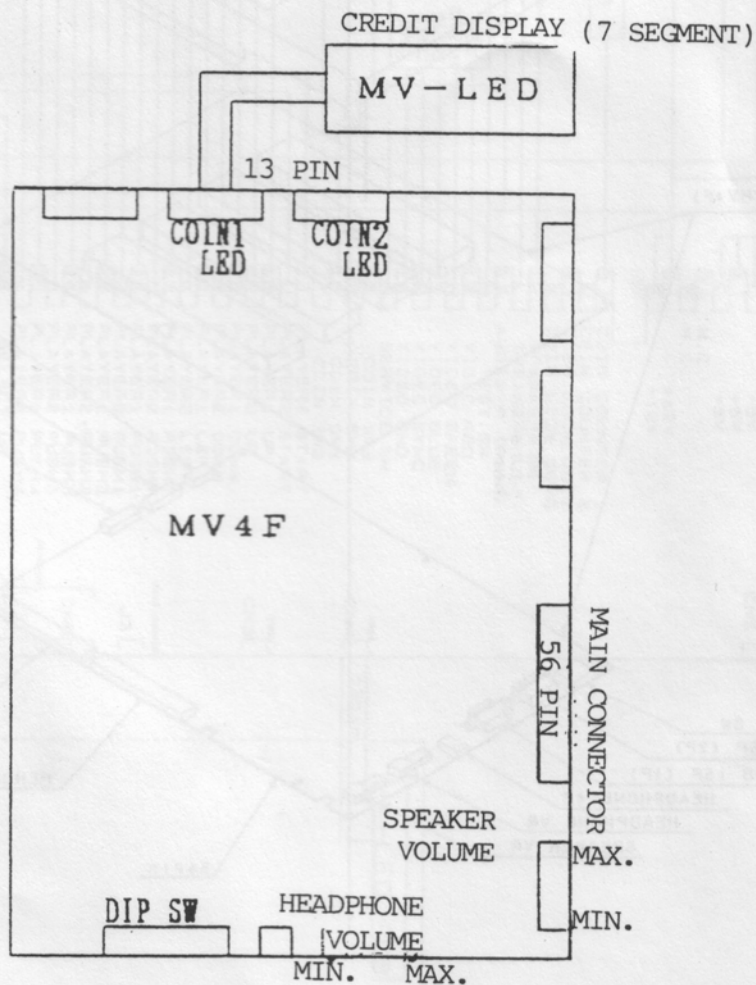
【2】MV-4

2-1. COMPONENTS

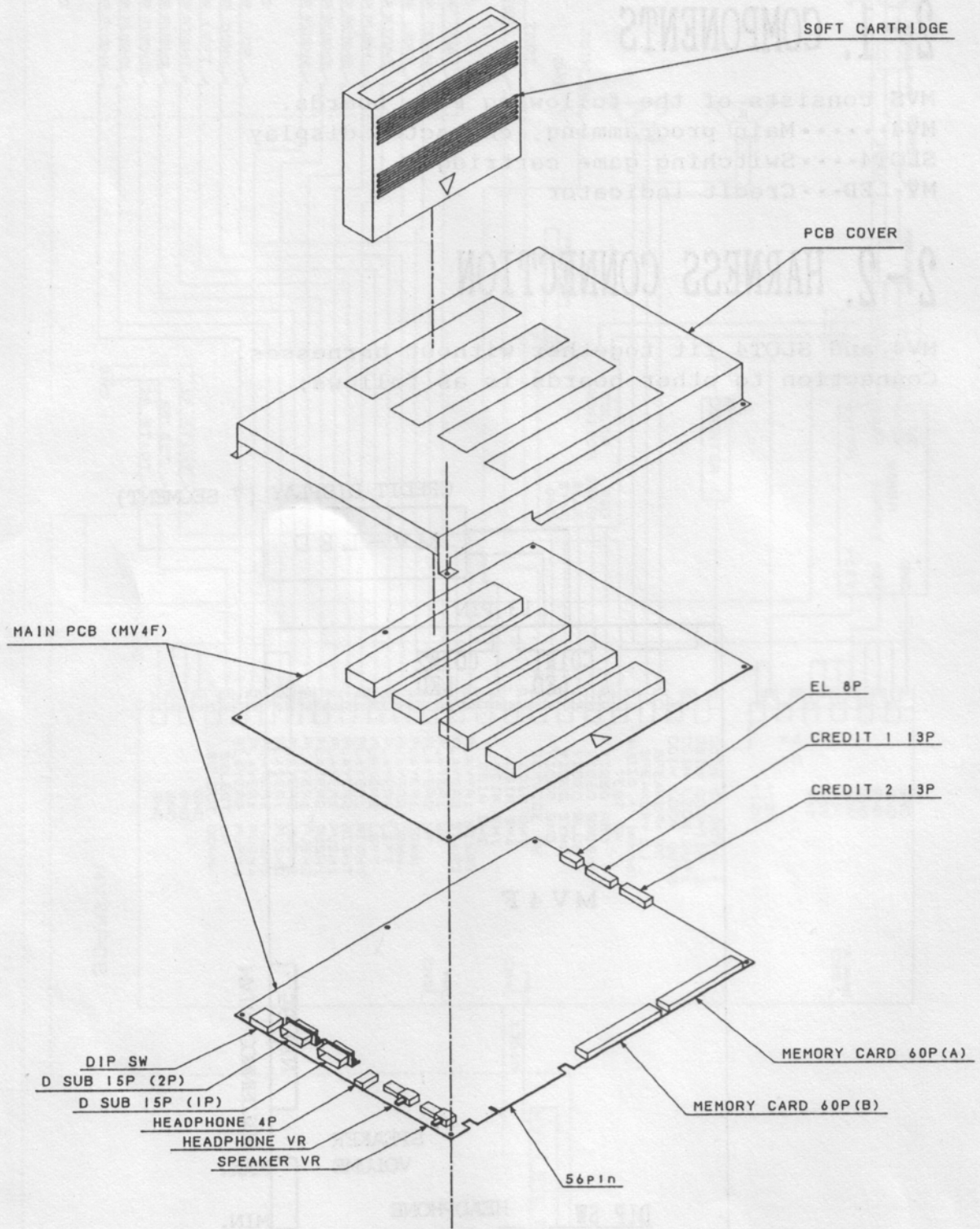
MVS consists of the following P.C. boards.
MV4.....Main programming, character display
SLOT4....Switching game cartridges
MV-LED...Credit indicator

2-2. HARNESS CONNECTION

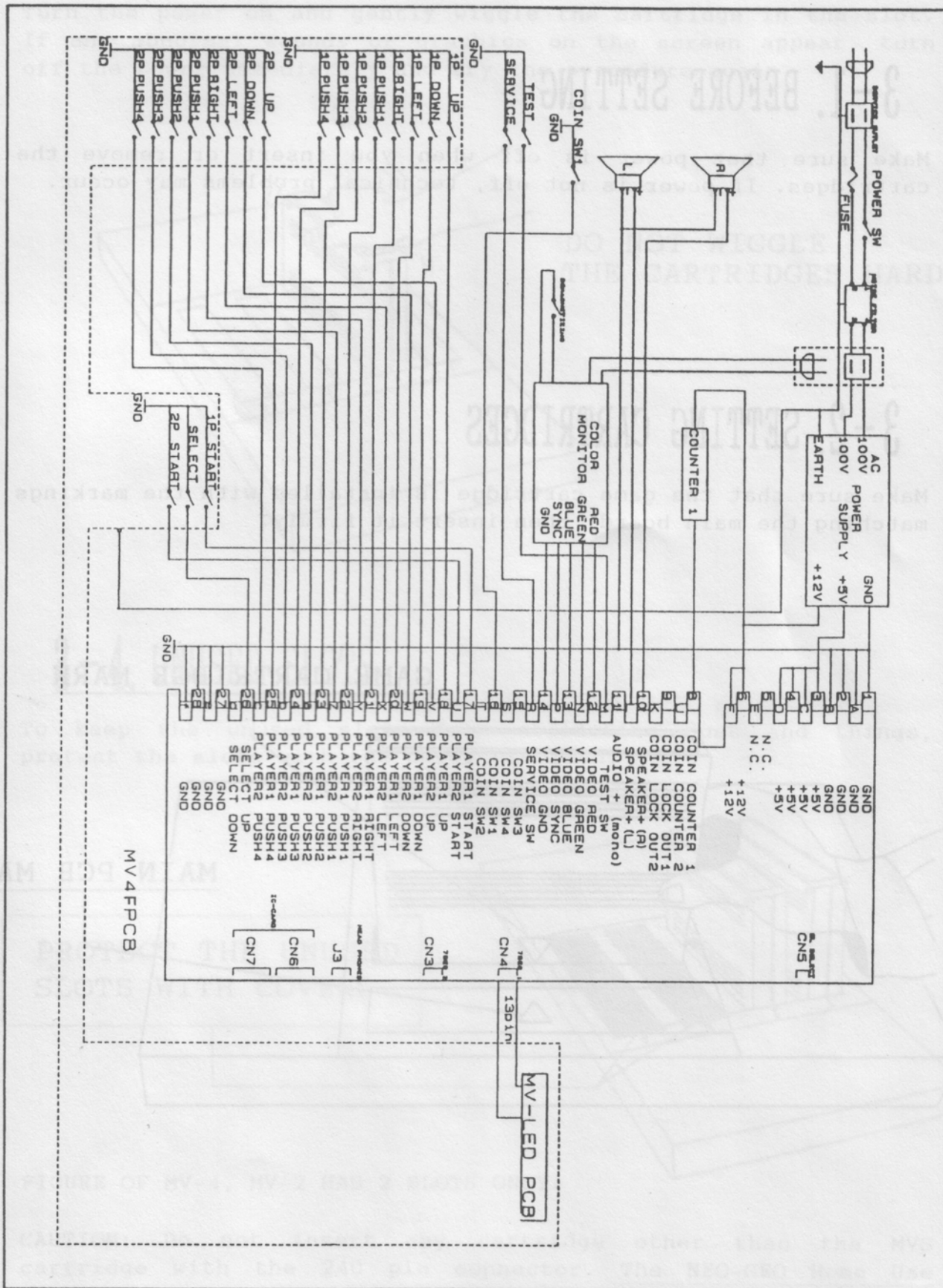
MV4 and SLOT4 fit together without harnesses.
Connection to other boards is as follows;



2-3. ASSEMBLY



2-4. WIRING DIAGRAM



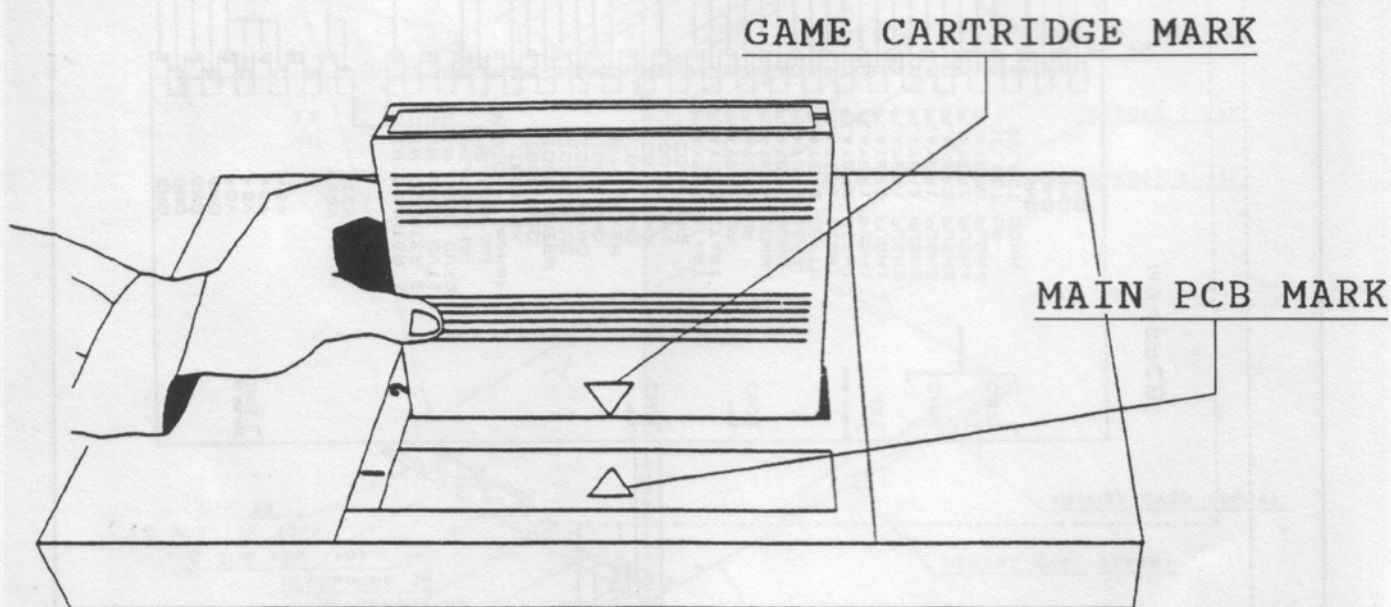
[3] SETTING THE SOFT CARTRIDGES

3-1. BEFORE SETTING

Make sure that power is off when you insert or remove the cartridges. If power is not off, technical problems may occur.

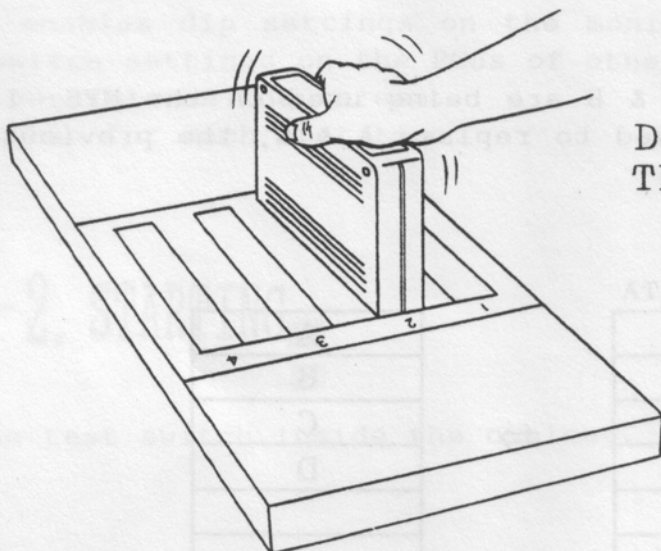
3-2. SETTING CARTRIDGES

Make sure that the game cartridge is installed with the markings matching the main board, then insert it firmly.



3-3. POWER ON

Turn the power on and gently wiggle the cartridge in the slot. If any abnormal sounds or graphics on the screen appear, turn off the power immediately and try the procedure again.



DO NOT WIGGLE
THE CARTRIDGES HARD

3-4. UNUSED SLOTS

To keep the unused slots from collecting dust and things, protect the slots with the cover provided.

PROTECT THE UNUSED
SLOTS WITH COVERS.

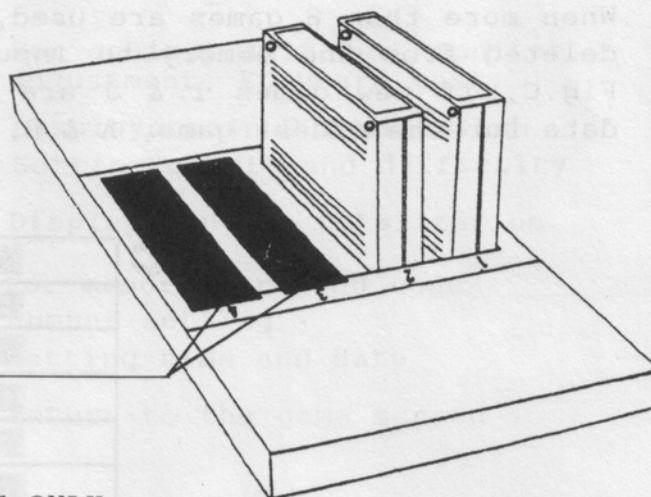


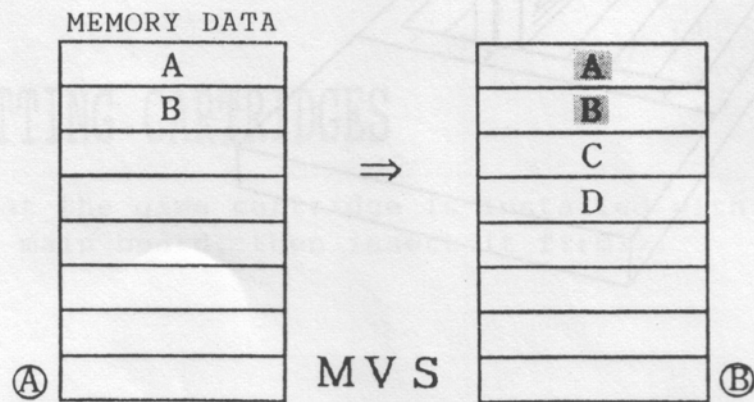
FIGURE OF MV-4, MV-2 HAS 2 SLOTS ONLY.

CAUTION: Do not insert any cartridge other than the MVS cartridge with the 240 pin connector. The NEO-GEO Home Use Cartridge will not fit on this connector.

【4】INCOME DATA KEEPING SYSTEM

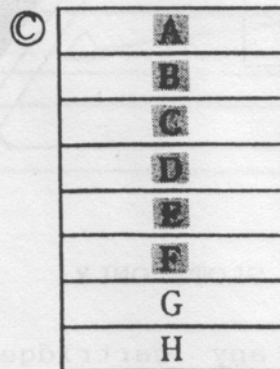
The MVS can keep income data of a maximum 8 games even when the power is off or the game cartridges are removed from the PCB.

For example: 2 games, A & B are being used on the MVS. If new game titles C & D are used to replace A & B, the previous data for A & B will remain.



When the game cartridges, once removed, are set again later, new data will be added to the previous data.

When more than 8 games are used, the oldest game's data will be deleted from the memory to input data for newest game. In the Fig.C, if new games I & J are used to replace any games, the data for the oldest game, A & B, will be deleted.



【5】TEST MODE

5-1. MODE SETTING

The MVS enables dip settings on the monitor screen instead of the dipswitch settings on the PCBs of other systems. Bookkeeping is also possible on the screen. Read further for each operation.

5-2. STARTING

Press the test switch inside the cabinet.

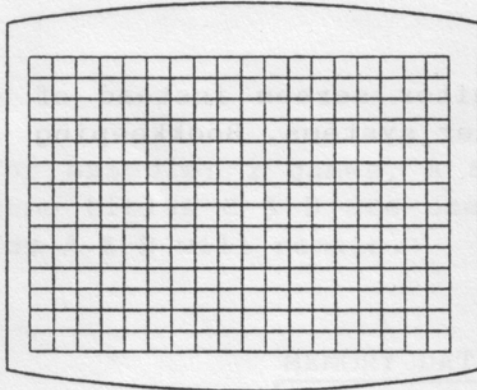
5-3. MAIN MENU

MAIN MENU

- | | | |
|----------------------------|---|--|
| ▶HARDWARE TEST | ; | For cabinet switches, monitor adjustment, EL board test. |
| SETTING UP THE HARD DIP | ; | Displays main PCB dipswitch |
| SETTING UP THE SOFT DIP | ; | Setting credit and difficulty |
| BOOK KEEPING | ; | Displays income totalization |
| SETTING UP THE CODE NUMBER | ; | For memory card and code number setting |
| SETTING UP THE CALENDAR | ; | Setting time and date |
| EXIT | ; | Return to the game screen |

5-4. HARDWARE TEST

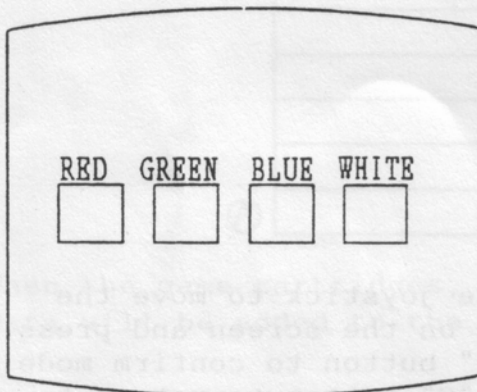
HARDWARE TEST



; Cross Hatch



☞ Press the 1 player start button



☞ For adjusting color on the screen



☞ Press the 1 player start button

		I/O CHECK		
		P1	P2	12345678
UP	0	0		00000000
DOWN	0	0		
LEFT	0	0		
RIGHT	0	0		COIN1 0
PUSH1	0	0		COIN2 0
PUSH2	0	0		SERVICE 0
PUSH3	0	0		TEST 0
PUSH4	0	0		EL LED1 LED2
START	0	0		0 00 00
SELECT	0	0		

☞ "1" stands for "on" and "0" for "off" of the dipswitch.

☞ Check if the no. of LED1 is the same as the credit display. Disregard the display of LED2.

5-6. SETTING THE SOFTWARE DIP



SOUND TEST
SOUND OFF
RIGHT
LEFT
CENTER

☞ Press the 1 player start button

☞ Move the joystick up and down to select type of the sound.
RIGHT...right speaker is louder.
LEFT...left speaker is louder.
CENTER..in stereo



MEMORY CARD TEST
* INSERT MEMORY CARD

☞ Press the 1 player start button

☞ You can check if the memory card works properly by inserting it into the memory card slot.
NOTE: Saved data on the card will be erased.



BACKUP CLEAR
OK=PUSH A, B, C BUTTON

☞ Press the 1 player start button

☞ You can clear previous data (income data, etc.) by pressing A, B & C buttons at the same time.

5-4. HARDWARE TEST



☞ Press 1P button to start

SETTING UP THE CALENDAR
 CURRENT TIME
 17/ 2/90 SAT
 19:30:41
 THE TIME TO BE SET UP
 A BUTTON, JOYSTICK=SELECT
 17/ 2/90 19:30:41

☞ The time and date have already been set from the factory. If needed, you can change the numbers indicated in red color. ("A" button to increase, "B" button to decrease.) Press "D" button to confirm setting.
 NOTE: Calender setting is not available right after the BACKUP CLEAR operation (see P.14) .

☞ Press 1P button to start

RETURN TO CROSS HATCH

5-5. SETTING THE HARDWARE DIP

HARD DIP SETTING

SETTING UP THE HARD DIP

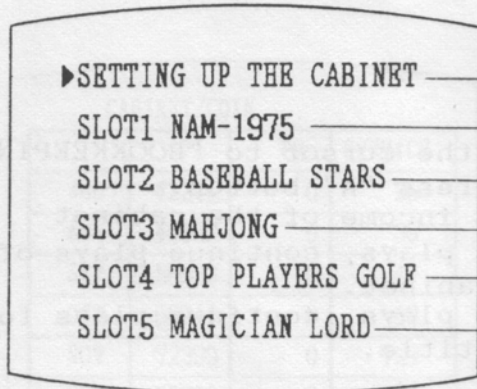
	12345678	
SETTING MODE	1.....	ON
COMMUNICATION	...000..	OFF
FREE PLAY0.	OFF
COIN SWITCH	..0.....	2
STOP MODE0	OFF
	0=OFF 1=ON	

☞ Present status of the dipswitch is displayed.

SETTING MODE...Test Mode / Game Mode
 CONTROLLER.....Mah-jong Controller / Normal Controller
 COMMUNICATION..Communication plays
 FREE PLAY.....Game start without inserting coins.
 STOP MODE.....Function to pause game

5-6. SETTING THE SOFTWARE DIP

SETTING UP THE SOFT DIP

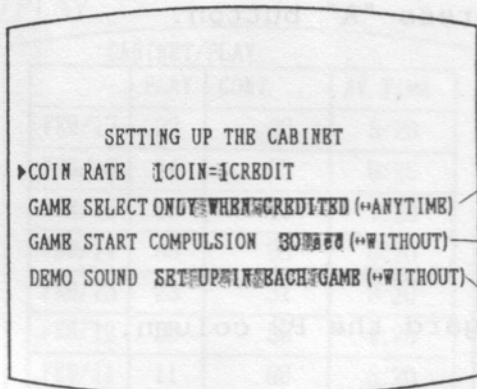


☞ Cabinet setting

; Software setting



SETTING UP THE CABINET



☞ Move the cursor to "CABINET SETTING" and press "A" button.

☞ Use the joystick to move the cursor for each setting.

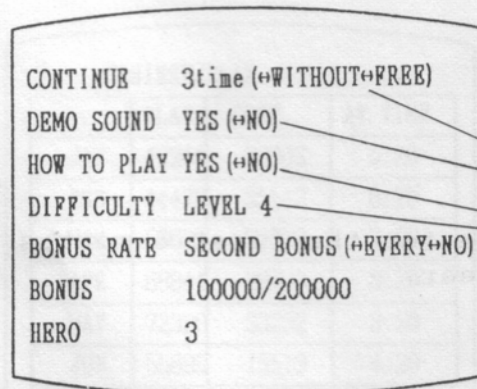
☞ On "FREE PLAY", selection button works without credits. (Change mode with "A" button)

☞ Setting the time limit for game selection. (Increase time with "A" button, decrease with "B")

☞ "WITHOUT" is selected, no sound for any game. (Change mode with "A" button)



SETTING UP THE SOFT DIP



☞ Press "C" button to return to the previous menu. Move cursor to the game you wish to set and press "A" button.

☞ The screen shows example for NAM-1975. Some of the menu differs in other games.

; Setting the number of CONTINUE PLAYS.

☞ With or without demo sound.

; With or without "HOW TO PLAY" screen.

; Setting difficulty of the game. The higher the number, the more difficult the game.

☞ Press "C" button to confirm the setting and the SOFT DIP SETTING menu will appear again. Press "C" button once more to get to the Main menu.

5-7. BOOKKEEPING

BOOK KEEPING

▶ CABINET/COIN
CABINET/PLAY
SLOT1 NAM1975
SLOT2 BASEBALL STARS
SLOT3 TOP PLAYERS GOLF
SLOT4 MAHJONG
SLOT5 MAGICIAN LORD

- ☞ Move the cursor to "BOOKKEEPING" and press "A" button.
- ; Total income of the cabinet
- ; Total plays, continue plays of the cabinet.
- ; Total plays, continue plays for each title.



CABINET/COIN

CABINET/COIN			
	P1	P2	SERVICE
FEB/17	02244	0	25
FEB/16	04422	0	36
FEB/15	06633	0	47
FEB/14	08844	0	48
FEB/13	02399	0	29
FEB/12	05699	0	94

- ☞ Move the cursor to "CABINET/COIN" and press "A" button.

- ☞ Weekly income chart.
- Disregard the P2 column.



CABINET/COIN			
	P1	P2	SERVICE
JAN	42244	0	25
FEB	44422	0	36
MAR	56633	0	47
APR	68844	0	48
MAY	72399	0	129
JUN	55699	9	294

- ☞ Press "A" button

Income for the first 6 months of the year.



CABINET/COIN			
	P1	P2	SERVICE
JUL	42244	0	25
AUG	44422	0	36
SEP	56633	0	47
OCT	68844	0	48
NOV	72399	0	129
DEC	55699	0	294

☞ Press "A" button

Income for the second 6 months of the year.



CABINET/PLAY

CABINET/PLAY			
	PLAY	CONT.	AV. TIME
FEB/17	22	33	5:20
FEB/16	44	55	6:20
FEB/15	66	77	7:20
FEB/14	88	99	8:20
FEB/13	23	32	9:20
FEB/12	56	55	4:20
FEB/11	11	88	5:20

☞ Press "A" button



CABINET/PLAY			
	PLAY	CONT.	AV. TIME
JAN	42244	33363	5:20
FEB	44422	35543	6:20
MAR	56633	37773	7:20
APR	68844	39983	8:20
MAY	72399	33232	9:20
JUN	55699	15519	4:20

☞ Press "A" button

5-7. BOOKKEEPING



☞ Press "A" button

CABINET/PLAY			
	PLAY	CONT.	AV. TIME
JUL	42244	33363	5:20
AUG	44422	35543	6:20
SEP	56633	37773	7:20
OCT	68844	39983	8:20
NOV	72399	33232	9:20
DEC	55699	15519	4:20

☞ Retrieve the bookkeeping information for each title in the same way as "CABINET/COIN" and "CABINET/PLAY".



SETTING UP THE CODE NUMBER

CODE NUMBER SETTING
 2408
 D BUTTON:SET
 CODE NUMBER WILL BE SET INTO
 *MEMORY CARD WHEN INSERTED
 DURING THIS MODE.

☞ Press "C" button twice to return to the Main menu. Move the cursor to "CODE NUMBER" and press "A" button.

☞ Move the cursor with the joystick. To change numbers, press "A" button to increase and "B" to decrease. The code number is set by pressing "D" button.

5-9. SETTING THE CALENDAR

To set the calendar, refer to 5-4, HARDWARE TEST.

[6] MAINTENANCE Please note the following:

◇Voltage of the power supply should be A/C between 95 and 105.
Note: A malfunction may occur if it exceeds the electrical capacity in the cases below;

*If a machine is consuming a large capacity of electricity when connected to the same power supply as the cabinet.

*If several cabinets were connected to the outlet on the backside of the cabinet.

◇When you turn the power on and the MVS will not work, check the status of the outlet, power supply and fuses.

◇Keep the Main PCB away from dust and other objects, it may cause a breakdown or damage to the PCB.

⓪If you cannot correct any malfunctions that may be occurring, contact the selling agency of the MVS for assistance.

⓪Do not try to repair the PCBs at users' side. Electric testers might damage the IC because of their internal voltage.

⓪When you send the defective PCBs to the agency, please mention the malfunction that is occurring.

⓪Be careful to pack them firmly for shipment.

[7] MAIN HARNESS

SOLDER SIDE	PIN #		PART SIDE
GND	A	1	GND
GND	B	2	GND
+5V	C	3	+5V
+5V	D	4	+5V
	E	5	
+12V	F	6	+12V
KEY	H	7	KEY
COIN COUNTER 2	J	8	COIN COUNTER 1
COIN LOCK OUT 2	K	9	COIN LOCK OUT 1
SPEAKER+ (L)	L	10	SPEAKER+ (R)
TEST SWITCH	M	11	AUDIO + (mono)
VIDEO GREEN	N	12	VIDEO RED
VIDEO SYNC	P	13	VIDEO BLUE
SERVICE SW	R	14	VIDEO GND
COIN SW 4 (PLAYER2)	S	15	COIN SW 3 (PLAYER1)
COIN SW 2 (PLAYER2)	T	16	COIN SW 1 (PLAYER1)
START 2	U	17	START 1
PLAYER 2 UP	V	18	PLAYER 1 UP
PLAYER 2 DOWN	W	19	PLAYER 1 DOWN
PLAYER 2 LEFT	X	20	PLAYER 1 LEFT
PLAYER 2 RIGHT	Y	21	PLAYER 1 RIGHT
PLAYER 2 PUSH 1	Z	22	PLAYER 1 PUSH 1
PLAYER 2 PUSH 2	a	23	PLAYER 1 PUSH 2
PLAYER 2 PUSH 3	b	24	PLAYER 1 PUSH 3
PLAYER 2 PUSH 4	c	25	PLAYER 1 PUSH 4
SELECT DOWN	d	26	SELECT UP
GND	e	27	GND
GND	f	28	GND

MEMO

Blank lined area for writing a memo.

[7] MAIN HARNESS

MEMO

NO.	CONNECTION	NO.	CONNECTION	
1	GRD	A	1	GRD
2	GRD	B	2	GRD
3	GRD	C	3	GRD
4	GRD	D	4	GRD
5	GRD	E	5	GRD
6	GRD	F	6	GRD
7	GRD	G	7	GRD
8	GRD	H	8	GRD
9	GRD	I	9	GRD
10	GRD	J	10	GRD
11	GRD	K	11	GRD
12	GRD	L	12	GRD
13	GRD	M	13	GRD
14	GRD	N	14	GRD
15	GRD	O	15	GRD
16	GRD	P	16	GRD
17	GRD	Q	17	GRD
18	GRD	R	18	GRD
19	GRD	S	19	GRD
20	GRD	T	20	GRD
21	GRD	U	21	GRD
22	GRD	V	22	GRD
23	GRD	W	23	GRD
24	GRD	X	24	GRD
25	GRD	Y	25	GRD
26	GRD	Z	26	GRD
27	GRD	AA	27	GRD
28	GRD	AB	28	GRD
29	GRD	AC	29	GRD
30	GRD	AD	30	GRD
31	GRD	AE	31	GRD
32	GRD	AF	32	GRD
33	GRD	AG	33	GRD
34	GRD	AH	34	GRD
35	GRD	AI	35	GRD
36	GRD	AJ	36	GRD
37	GRD	AK	37	GRD
38	GRD	AL	38	GRD
39	GRD	AM	39	GRD
40	GRD	AN	40	GRD
41	GRD	AO	41	GRD
42	GRD	AP	42	GRD
43	GRD	AQ	43	GRD
44	GRD	AR	44	GRD
45	GRD	AS	45	GRD
46	GRD	AT	46	GRD
47	GRD	AU	47	GRD
48	GRD	AV	48	GRD
49	GRD	AW	49	GRD
50	GRD	AX	50	GRD
51	GRD	AY	51	GRD
52	GRD	AZ	52	GRD
53	GRD	BA	53	GRD
54	GRD	BB	54	GRD
55	GRD	BC	55	GRD
56	GRD	BD	56	GRD
57	GRD	BE	57	GRD
58	GRD	BF	58	GRD
59	GRD	BG	59	GRD
60	GRD	BH	60	GRD
61	GRD	BI	61	GRD
62	GRD	BJ	62	GRD
63	GRD	BK	63	GRD
64	GRD	BL	64	GRD
65	GRD	BM	65	GRD
66	GRD	BN	66	GRD
67	GRD	BO	67	GRD
68	GRD	BP	68	GRD
69	GRD	BQ	69	GRD
70	GRD	BR	70	GRD
71	GRD	BS	71	GRD
72	GRD	BT	72	GRD
73	GRD	BU	73	GRD
74	GRD	BV	74	GRD
75	GRD	BW	75	GRD
76	GRD	BX	76	GRD
77	GRD	BY	77	GRD
78	GRD	BZ	78	GRD
79	GRD	CA	79	GRD
80	GRD	CB	80	GRD
81	GRD	CC	81	GRD
82	GRD	CD	82	GRD
83	GRD	CE	83	GRD
84	GRD	CF	84	GRD
85	GRD	CG	85	GRD
86	GRD	CH	86	GRD
87	GRD	CI	87	GRD
88	GRD	CJ	88	GRD
89	GRD	CK	89	GRD
90	GRD	CL	90	GRD
91	GRD	CM	91	GRD
92	GRD	CN	92	GRD
93	GRD	CO	93	GRD
94	GRD	CP	94	GRD
95	GRD	CQ	95	GRD
96	GRD	CR	96	GRD
97	GRD	CS	97	GRD
98	GRD	CT	98	GRD
99	GRD	CU	99	GRD
100	GRD	CV	100	GRD
101	GRD	CW	101	GRD
102	GRD	CX	102	GRD
103	GRD	CY	103	GRD
104	GRD	CZ	104	GRD
105	GRD	DA	105	GRD
106	GRD	DB	106	GRD
107	GRD	DC	107	GRD
108	GRD	DD	108	GRD
109	GRD	DE	109	GRD
110	GRD	DF	110	GRD
111	GRD	DG	111	GRD
112	GRD	DH	112	GRD
113	GRD	DI	113	GRD
114	GRD	DJ	114	GRD
115	GRD	DK	115	GRD
116	GRD	DL	116	GRD
117	GRD	DM	117	GRD
118	GRD	DN	118	GRD
119	GRD	DO	119	GRD
120	GRD	DP	120	GRD
121	GRD	DQ	121	GRD
122	GRD	DR	122	GRD
123	GRD	DS	123	GRD
124	GRD	DT	124	GRD
125	GRD	DU	125	GRD
126	GRD	DV	126	GRD
127	GRD	DW	127	GRD
128	GRD	DX	128	GRD
129	GRD	DY	129	GRD
130	GRD	DZ	130	GRD
131	GRD	EA	131	GRD
132	GRD	EB	132	GRD
133	GRD	EC	133	GRD
134	GRD	ED	134	GRD
135	GRD	EE	135	GRD
136	GRD	EF	136	GRD
137	GRD	EG	137	GRD
138	GRD	EH	138	GRD
139	GRD	EI	139	GRD
140	GRD	EJ	140	GRD
141	GRD	EK	141	GRD
142	GRD	EL	142	GRD
143	GRD	EM	143	GRD
144	GRD	EN	144	GRD
145	GRD	EO	145	GRD
146	GRD	EP	146	GRD
147	GRD	EQ	147	GRD
148	GRD	ER	148	GRD
149	GRD	ES	149	GRD
150	GRD	ET	150	GRD
151	GRD	EU	151	GRD
152	GRD	EV	152	GRD
153	GRD	EW	153	GRD
154	GRD	EX	154	GRD
155	GRD	EY	155	GRD
156	GRD	EZ	156	GRD
157	GRD	FA	157	GRD
158	GRD	FB	158	GRD
159	GRD	FC	159	GRD
160	GRD	FD	160	GRD
161	GRD	FE	161	GRD
162	GRD	FF	162	GRD
163	GRD	FG	163	GRD
164	GRD	FH	164	GRD
165	GRD	FI	165	GRD
166	GRD	FJ	166	GRD
167	GRD	FK	167	GRD
168	GRD	FL	168	GRD
169	GRD	FM	169	GRD
170	GRD	FN	170	GRD
171	GRD	FO	171	GRD
172	GRD	FP	172	GRD
173	GRD	FQ	173	GRD
174	GRD	FR	174	GRD
175	GRD	FS	175	GRD
176	GRD	FT	176	GRD
177	GRD	FU	177	GRD
178	GRD	FV	178	GRD
179	GRD	FW	179	GRD
180	GRD	FX	180	GRD
181	GRD	FY	181	GRD
182	GRD	FZ	182	GRD
183	GRD	GA	183	GRD
184	GRD	GB	184	GRD
185	GRD	GC	185	GRD
186	GRD	GD	186	GRD
187	GRD	GE	187	GRD
188	GRD	GF	188	GRD
189	GRD	GG	189	GRD
190	GRD	GH	190	GRD
191	GRD	GI	191	GRD
192	GRD	GJ	192	GRD
193	GRD	GK	193	GRD
194	GRD	GL	194	GRD
195	GRD	GM	195	GRD
196	GRD	GN	196	GRD
197	GRD	GO	197	GRD
198	GRD	GP	198	GRD
199	GRD	GQ	199	GRD
200	GRD	GR	200	GRD

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