



# NAOMI<sup>TM</sup>

## SERVICE MANUAL



IMPORTANT!

- Before using this product, read this OWNER'S MANUAL carefully to understand the contents herein stated.
- After reading this manual, be sure to keep it available nearby the product or elsewhere convenient for referring to it anytime when necessary.

### SEGA ENTERPRISES, LTD.

MANUAL NO. 420 - 6455 - 01

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# BEFORE USING THE PRODUCT, BE SURE TO READ THE FOLLOWING:

## To maintain the safety:

To ensure the safe usage of the product, be sure to read the following before using the product. The following instructions are intended for the users, operators and the personnel in charge of the operation of the product. After carefully reading and sufficiently understanding the warning displays and cautions, handle the product appropriately. Be sure to keep this manual nearby the product or elsewhere convenient for referring to it when necessary.

Herein, explanations which require special attention are enclosed with dual lines. Depending on the potentially hazardous degrees, the terms of DANGER!, WARNING!, CAUTION!, etc. are used. Be sure to understand the contents of the displays before reading the text.



Indicates that mishandling the product by disregarding this pictograph will cause severe injury or death.



Indicates that mishandling the product by disregarding this caution will cause a slight hazardous situation which can result in personal injury and or material damage.



Indicates that mishandling the product by disregarding this warning will cause a potentially hazardous situation which can result in death or serious injury.



Indicates that mishandling the product by disregarding this display can cause the product's intrinsic performance not to be obtained, resulting in malfunctioning.

## For the safe usage of the product, the following pictographs are used:



Indicates "HANDLE WITH CARE." In order to protect the human body and equipment, this display is attached to places where the Owner's Manual and or Service Manual should be referred to.



Indicates a "Protective Earth Terminal." Before operating the equipment, be sure to connect it to the Ground.

- **Perform work in accordance with the instructions herein stated.**  
Instructions for work are explained by paying attention to the aspect of accident prevention. Failing to perform work as per the instructions can cause accidents. In the case where only those who have technical expertise should perform the work to avoid hazardous situation, the instructions herein state that the serviceman should perform such work.
- **Be sure to turn off power before working on the machine.**  
To prevent electric shock, be sure to turn off power before starting the work in which the worker touches the interior of the product. If the work is to be performed in the power-on status, the Instruction Manual herein always states to that effect.
- **Be sure to ground the Earth Terminal** (this, however, is not required in the case where a power cord with earth is used).  
This product is equipped with the Earth Terminal. When installing the product, Connect the Earth Terminal to the "accurately grounded indoor earth terminal" by using an earth wire. Unless the product is grounded appropriately, the user can be subject to electric shock. After performing repair, etc. for the Control equipment, ensure that the Earth Wire is firmly connected to the Control equipment.
- **Ensure that the Power Supply used is equipped with an Earth Leakage Breaker.**  
This product does not incorporate the Earth Leakage Breaker. Using a power supply which is not equipped with the Earth Leakage Breaker can cause a fire when earth leakage occurs.
- **Be sure to use fuses which meet the specified rating.** (only for the machines which use fuses).  
Using fuses exceeding the specified rating can cause a fire and electric shock.



- **Specification changes (removal of equipment, conversion and addition) not designated by SEGA are not allowed.**

The parts of the product include warning labels for safety, covers for personal protection, etc. It is very hazardous to operate the product by removing parts and or modifying the circuits. Should doors, lids and protective parts be damaged or lost, refrain from operating the product, and contact where the product was purchased from or the office herein stated.

- **Ensure that the product meets the requirements of appropriate Electrical Specifications.**

Before installing the product, check for Electrical Specifications. SEGA products have a nameplate on which Electrical Specifications are described. Ensure that the product is compatible with the power supply voltage and frequency requirements of the location. Using any Electrical Specifications different from the designated Specifications can cause a fire and electric shock.

- **Install and operate the product in places where appropriate lighting is available, allowing warning labels to be clearly read.**

To ensure safety for the customers, labels and printed instructions describing potentially hazardous situation are applied to places where accidents can be caused. Ensure that where the product is operated has sufficient lighting allowing the warnings to be read. If any label is peeled off, apply it again immediately. Please place an order with where the product was purchased from or the office herein stated.

- **When handling the Monitor, be very careful. (Applies only to the product w/ monitor).**

Some of the monitor (TV) parts are subject to high tension voltage. Even after turning off power, some portions are still subject to high tension voltage sometimes. Monitor repair and replacement should be performed only by those technical personnel who have knowledge of electricity and technical expertise.

- **When transporting or reselling this product, be sure to attach this manual to the product.**

In the case where commercially available monitors and printers are used in this product, only the contents relating to this product are explained herein. Some commercially available equipment has functions and reactions not stated in this manual. Read this manual together with the specific Instruction Manual of such equipment.

- Descriptions herein contained may be subject to improvement changes without notice.
- The contents described herein are fully prepared with due care. However, should any question arise or errors be found, please contact SEGA.

## **INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION.**

Normally, at the time of shipment, SEGA products are in a status allowing for usage immediately after transporting to the location. Nevertheless, an irregular situation may occur during transportation. Before turning on power, check the following points to ensure that the product has been transported in a satisfactory status.

- ☐ Are there any dented portions or defects (cuts, etc.) on the external surfaces of the cabinet?
- ☐ Are Casters and Adjusters, damaged?
- ☐ Do the power supply voltage and frequency requirements meet with those of the location?
- ☐ Are all wiring connectors correctly and securely connected? Unless connected in the correct direction, connector connections can not be made accurately. Do not insert connectors forcibly.
- ☐ Do power cords have cuts and dents?
- ☐ Do the fuses used meet specified rating? Is the Circuit Protector in an energized status?
- ☐ Are all accessories available?
- ☐ Can all Doors and Lids be opened with the Accessory keys? Can Doors and Lids be firmly closed?



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## 1. HANDLING PRECAUTIONS



WARNING!

- To prevent electric shock or IC Board malfunctioning, be sure to turn off the power for the cabinet when installing or removing the IC Board.
- Extraneous matter such as dust on the IC Board can cause the IC Board to generate heat and result in a fire due to short circuit, etc. Ensure the IC Board surfaces are always kept clean.



IMPORTANT!

- Be sure to connect the IC Board and connectors completely. Insufficient insertion can damage IC Board, etc.
- For the IC Board circuit inspection, only the use of Logic Tester is permitted. The use of ordinary testers is not permitted as these can damage the IC Board.
- Do not subject the IC Board to static electricity when installing the IC Board in the cabinet or when connecting wire harness connectors to the IC Board.
- When soldering buttons, etc. to the wire harnesses, be sure to remove the wire harnesses from the IC Board so as not to subject the IC Board to heat.
- Using NAOMI without the Shield Case can cause electric wave trouble. Be sure to use NAOMI together with the accessory Shield Case.
- The monitor frequency corresponding to NAOMI is 15kHz or 31kHz. NAOMI can not be used for the cabinet incorporating a monitor or projector not corresponding to 15kHz or 31kHz.
- Use NAOMI for the cabinets compatible with JVS. Using NAOMI for the cabinets other than those compatible with JVS can cause generation of heat and a fire.

- Concerning the display of JAMMA VIDEO STANDARD:  
JAMMA VIDEO STANDARD adopted by NAOMI is referred to as JVS. As against this Standard, the conventional JAMMA STANDARD which employs 56P Edge Connectors adopted by ST-V, etc. is displayed as Old JAMMA STANDARD.

The specific Manual attached to each game sometimes displays JVS as JV STANDARD, New JAMMA STANDARD, or JAMMA 2 STANDARD against Old JAMMA STANDARD as JAMMA STANDARD, JS, etc.

- The contents herein described are subject to change without notice.



## 2. NAOMI SPECIFICATIONS

### ① CABINET

- Use NAOMI for the cabinet compatible with JVS.
- To use NAOMI for a cabinet of Old JAMMA STANDARD, it is necessary to prepare such parts as Power Supply, I/O BD, Audio Amplifier, etc. for conversion to JVS.
- For inquiry as regards whether the cabinet used is compatible with JVS or convertible for JVS, contact the Maker or Distributor of the specific cabinet.
- Even if JVS compatible, the game may not be usable if it requires a special Control Panel.



## ② CASE AND FILTER BOARD

- NAOMI Main BD is contained in the Shield Case.  
Use NAOMI in the status with the Main BD as is contained in the Shield Case.
- When using NAOMI, ensure that the Ventilation Ports and Heat Exhaust Fan opening are not obstructed.

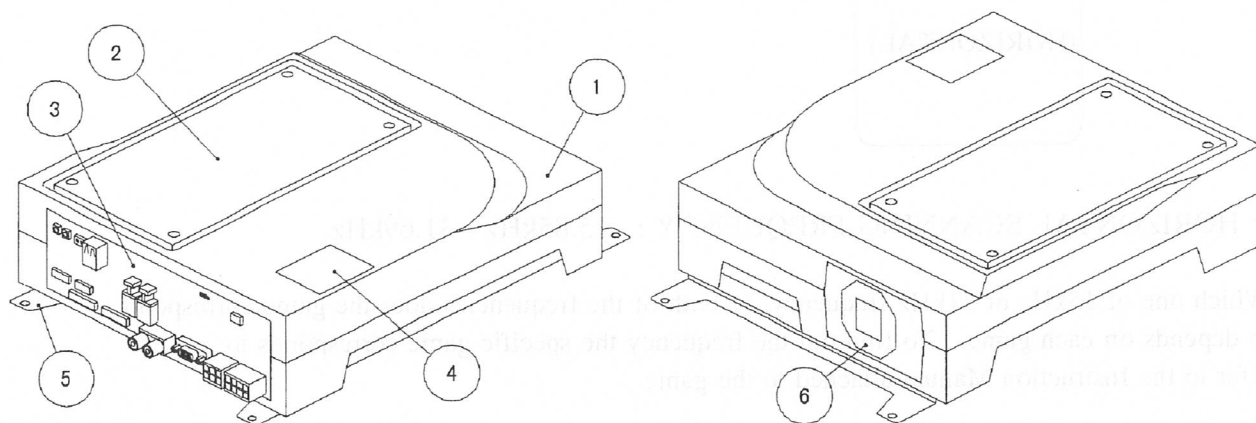


FIG. 2-2a EXTERIOR VIEW, NAOMI CASE

- |                     |                            |
|---------------------|----------------------------|
| ① NAOMI SHIELD CASE | ④ VENTILATION PORT         |
| ② ROM BOARD CASE    | ⑤ LEG BRACKET              |
| ③ FILTER BOARD      | ⑥ HEAT EXHAUST FAN OPENING |

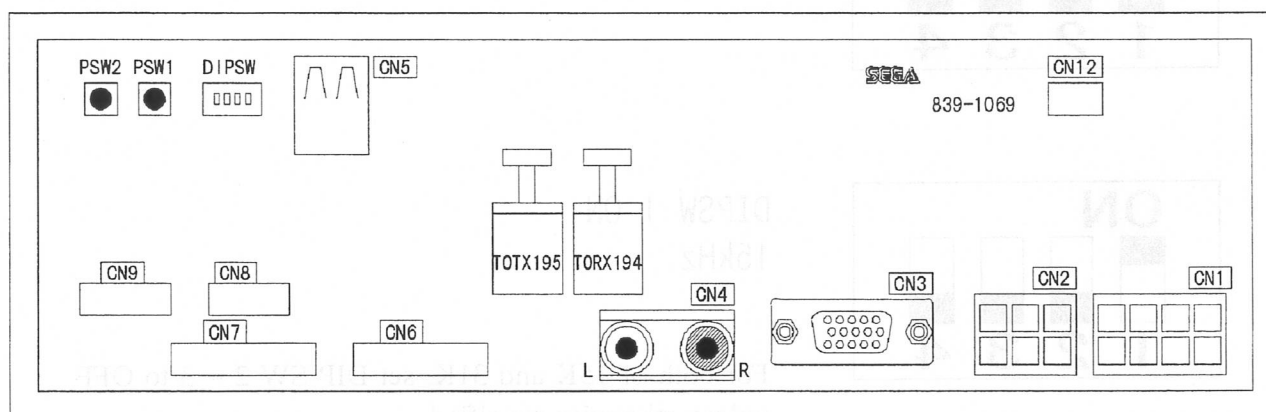


FIG. 2-2b FILTER BOARD (839-1069 FLT BD NAOMI)

CN1: POWER SUPPLY (JST VL 8P) 1:(N.C.) 2:+3.3V 3:+5V 4:+12V 5 ~ 8:GND

CN2: POWER SUPPLY (JST VL 6P) 1:(N.C.) 2:+3.3V 3:+5V 4 ~ 6:GND

CN3: VIDEO OUTPUT (MINI D-SUB 15P)

CN4: STEREO-AUDIO OUTPUT (RCA PIN JACK FEMALE) RED: RIGHT WHITE: LEFT

CN5: STANDARD I/O (SERIES A TYPE) Connected to I/O BD via. USB Cable.

CN6 ~ 9,12 :Normally not used.

TORX194, TOTX195: OPTIC FIBER CONNECTOR

Used for communication in-between plural NAOMI.

For application, refer to the Instruction Manual of the game for communication play.

PSW1: Functions as TEST Button.

PSW2: Functions as SERVICE Button.

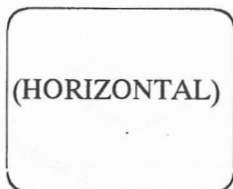
DIPSW: Used for image Frequency change, etc. Refer to ③ MONITOR DIRECTION AND HORIZONTAL SCANNING FREQUENCY.



### ③ MONITOR DIRECTION AND HORIZONTAL SCANNING FREQUENCY

#### • MONITOR DIRECTION

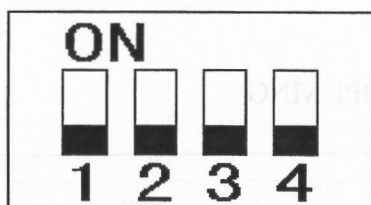
Install the monitor in the positional direction (horizontal or vertical as applicable) suitable for each game. For the monitor direction, refer to the attached manual of the specific game. If the attached Instruction Manual does not refer to the monitor direction, position the monitor in the horizontal direction.



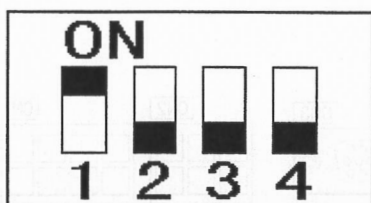
#### • HORIZONTAL SCANNING FREQUENCY : 15.85kHz / 31.69kHz

Which one of 15kHz or 31kHz frequency, or both of the frequencies does the game correspond to depends on each game. To find out the frequency the specific game corresponds to, refer to the Instruction Manual attached to the game.

The frequency output can be designated by No. 1 SW of DIP SW on the Filter BD.



DIPSW 1 OFF  
31kHz



DIPSW 1 ON  
15kHz

For both of 15K and 31K, set DIP SW 2 ~ 3 to OFF unless otherwise specified.

FIG. 2-3a FILTER BOARD DIP SW

The actual DIP SW may differ from the above Figure.

Note that due to a certain flickering and blurring, the Interlace display may be slightly inferior as compared to Non-interlace display.

Also, if the cabinet monitor is not corresponding to Interlace display, on-screen noise may appear and display is not satisfactory.

Among the games corresponding to both 15k and 31k, there are some games for which the use of 31k is strongly recommended. If such a game is displayed in 15k, WARNING may be displayed at the time power is turned on.

At the time of the shipment of NAOMI Main BD, which one of 15k or 31k the DIP SW is set to depends on the games contained in the same package. Before installing in the cabinet, be sure to check the setting contents of DIP SW, and change the DIP SW setting if necessary.



#### ④ ERROR MESSAGE

In the following cases, ERROR MESSAGE is displayed at the time power is turned on and the test mode is finished, and the game is not playable.

##### ERROR 01

(DISPLAY)

ERROR 01

THIS GAME IS NOT ACCEPTABLE  
BY MAIN BOARD.

(CAUSE) The ROM BOARD is not connected correctly to the MAIN BD.

(COUNTERMEASURES) First, turn power off, connect the ROM BD correctly.

If the status is not improved yet, the board may be malfunctioning.

##### ERROR 02

(DISPLAY)

ERROR 02

THIS GAME IS NOT ACCEPTABLE  
BY MAIN BOARD.

(CAUSE) A game of a certain country's version which is not compatible with the Main BD is connected to the Main BD.

(COUNTERMEASURES) Connect a game of a country's version which is compatible with the Main BD. Country setting change can not be performed in the TEST mode.

##### ERROR 03

(DISPLAY)

ERROR 03

BOARD MALFUNCTIONING.

(CAUSE) BOOT ROM program cannot read the Main Board's serial ID.

(COUNTERMEASURES) Board malfunctioning.

Ask for the repair/servicing of ROM BD and MAIN BD.

##### ERROR 04

(DISPLAY)

ERROR 04

BOARD MALFUNCTIONING.

(CAUSE) BOOT ROM program cannot read the Main Board's serial ID.

(COUNTERMEASURES) Board malfunctioning.

Ask for the repair/servicing of ROM BD and MAIN BD.



CAUTION 51

(DISPLAY)

CAUTION 51

GAME ASSIGNMENTS ARE  
INCORRECT.

SET CORRECTLY IN SYSTEM  
ASSIGNMENTS OF TEST MODE.

(CAUSE) CABINET TYPE setting is not correct for the game.

(COUNTERMEASURES) Enter the TEST mode and change the CABINET TYPE  
setting of SYSTEM ASSIGNMENTS to the setting suitable for the game.

For the correct setting, refer to the Instruction Manual attached to the game.

Certain games require the replacement of Control Panel.

CAUTION 52

(DISPLAY)

CAUTION 52

CHANGE VIDEO OUTPUT OF  
THIS GAME TO THE SETTING  
CORRESPONDING TO HORIZONTAL  
SCANNING FREQUENCY 15KHz.

(CAUSE) 31kHz is employed when the game is corresponding to Horizontal  
Scanning Frequency of 15kHz only.

(COUNTERMEASURES) Set the monitor to 15kHz, and set No. 1 of NAOMI  
FILTER BD DIP SW to ON.

For the setting method of monitor's Frequency, refer to the Instruction Manual of the cabinet.

If the monitor is not corresponding to 15kHz, the game is not playable.

CAUTION 53

(DISPLAY)

CAUTION 53

CHANGE VIDEO OUTPUT OF  
THIS GAME TO THE SETTING  
CORRESPONDING TO HORIZONTAL  
SCANNING FREQUENCY 31KHz.

(CAUSE) 15kHz is employed when the game is corresponding to Horizontal  
Scanning Frequency of 31kHz only.

(COUNTERMEASURES) Set the monitor to 31kHz, and set No. 1 of NAOMI  
FILTER BD DIP SW to OFF.

For the setting method of monitor's Frequency, refer to the Instruction Manual of the cabinet.

If the monitor is not corresponding to 31kHz, the game is not playable.

CAUTION 54

(DISPLAY)

CAUTION 54

GAME ASSIGNMENTS ARE  
INCORRECT.  
SET CORRECTLY IN SYSTEM  
ASSIGNMENTS OF TEST MODE.

(CAUSE) The setting of MONITOR TYPE differs from the correct setting of the game.

(COUNTERMEASURES) Enter the TEST mode, and change the MONITOR TYPE  
setting of MONITOR TYPE in SYSTEM ASSIGNMENTS to the correct setting suitable  
for the game. For the correct setting, refer to the Instruction Manual attached to the game.

If necessary, perform Horizontal/Vertical transposition of the monitor, as applicable.

## ⑤ REMOVING AND REINSTALLING THE ROM BOARD

Ensure that the power is off before performing work.

### • REMOVING

- 1) Disconnect all of the wirings connected to NAOMI , and remove NAOMI from inside the cabinet.
- 2) Remove the 4 screws (M3 x 30) which secure the ROM BD Case on NAOMI Case.
- 3) Remove ROM BD Case upward by holding both sides.

### • INSTALLING

- 1) Make sure that the connector direction is correct, and insert the ROM BD Case fully onto NAOMI Main BD.
- 2) By using the 4 screws (M3 x 30) previously removed as per REMOVING 2) above, secure ROM BD Case to NAOMI Case.

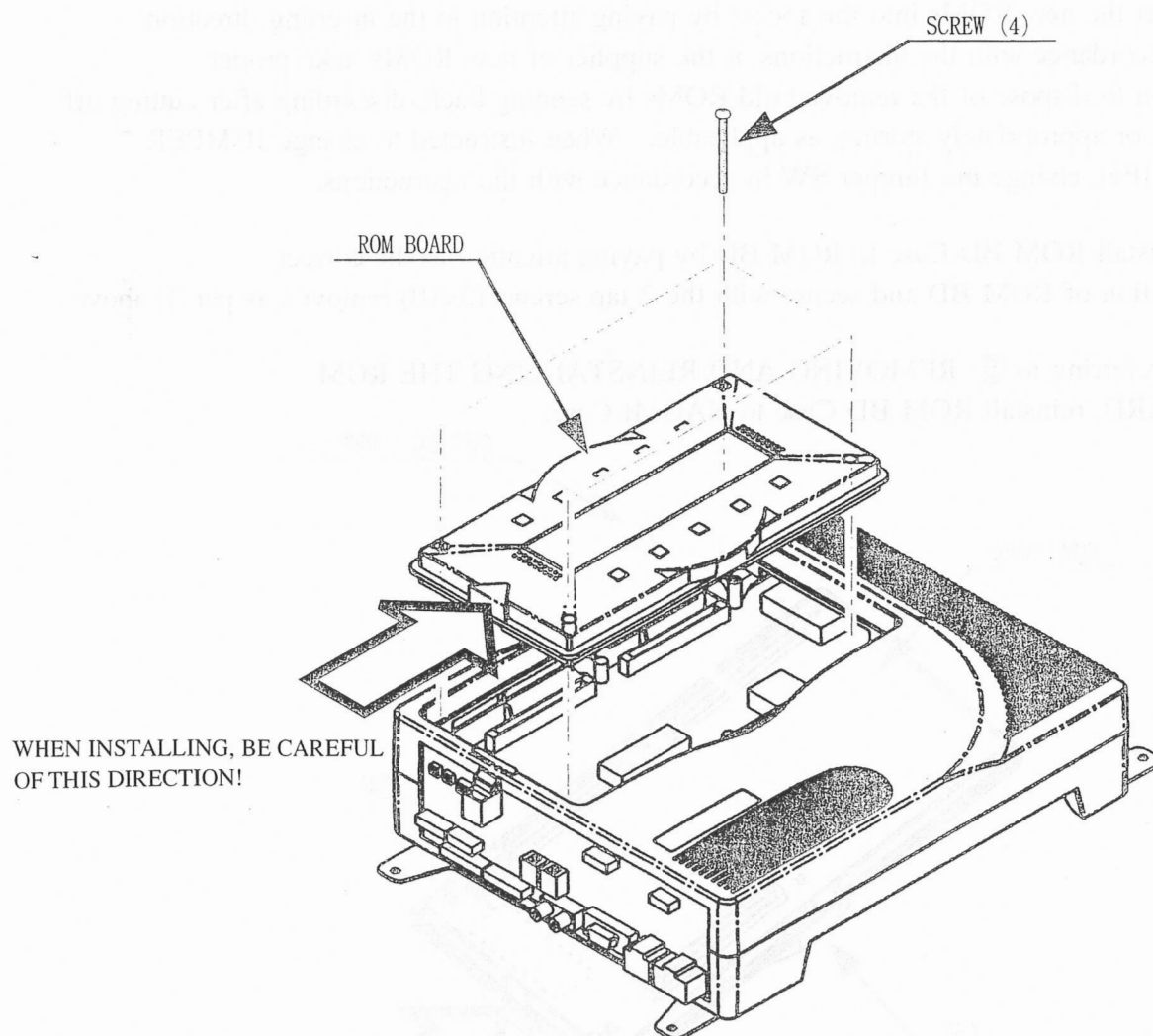


FIG. 1



## ⑥ ROM REPLACEMENT (ROM BD)

Do not perform this work unless otherwise particularly instructed due to game version change, etc.

- 1) Turn power off, and remove ROM BD Case from NAOMI Case by referring to ⑤ REMOVING AND REINSTALLING THE ROM BOARD above.
- 2) Remove the 2 tap screws (M3 x 10) from the back of ROM BD Case to remove the ROM BD Case from ROM BD.
- 3) Remove ROM BD surface side on-socket ROM (IC22) from the socket by using an IC EXTRACTOR.

To prevent tearing off on-board patterns, etc., do not use tools such as a flat-blade type screwdriver, etc. other than the IC EXTRACTOR. For malfunctioning resulting from using tools other than the IC EXTRACTOR, repair shall be performed on a pay-basis. Be careful of this point.

- 4) Insert the new ROMs into the socket by paying attention to the inserting direction. In accordance with the instructions of the supplier of new ROMs, take proper action to dispose of the removed old ROMs by sending back, discarding after cutting off pins, or appropriately storing, as applicable. When instructed to change JUMPER SW(JP1), change the Jumper SW in accordance with the instructions.
- 5) Reinstall ROM BD Case to ROM BD by paying attention to the correct direction of ROM BD and secure with the 2 tap screws (3x10) removed as per 2) above.
- 6) By referring to ⑤ REMOVING AND REINSTALLING THE ROM BOARD, reinstall ROM BD Case to NAOMI Case.

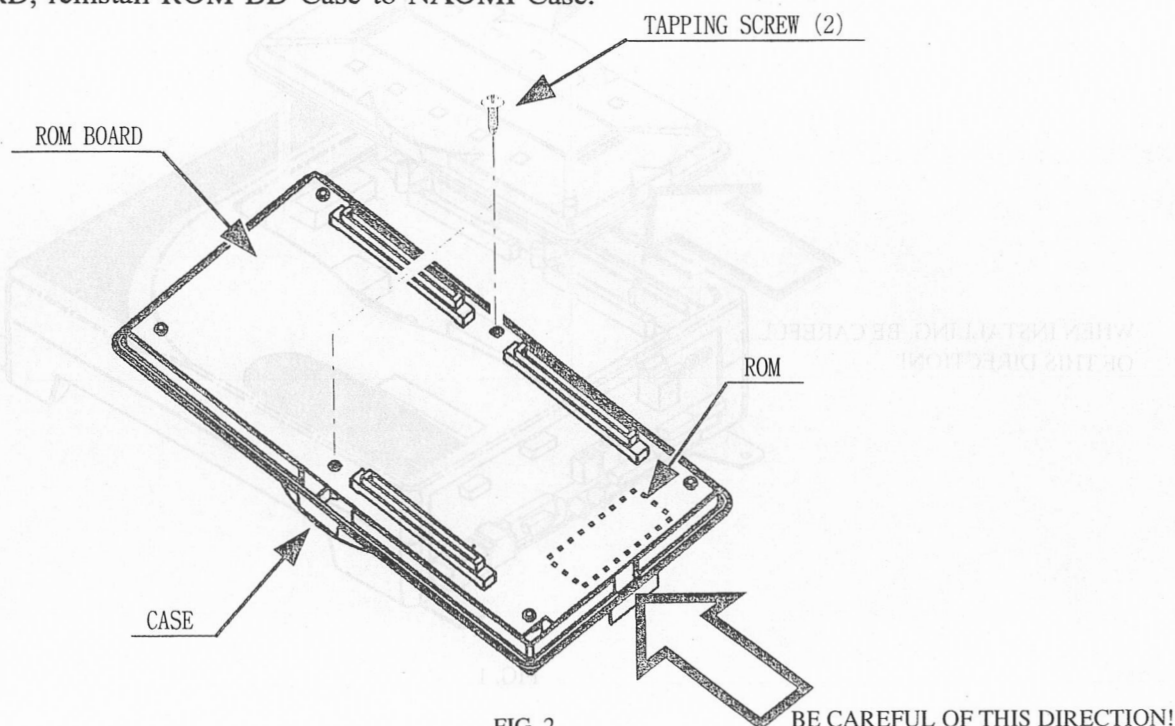


FIG. 2

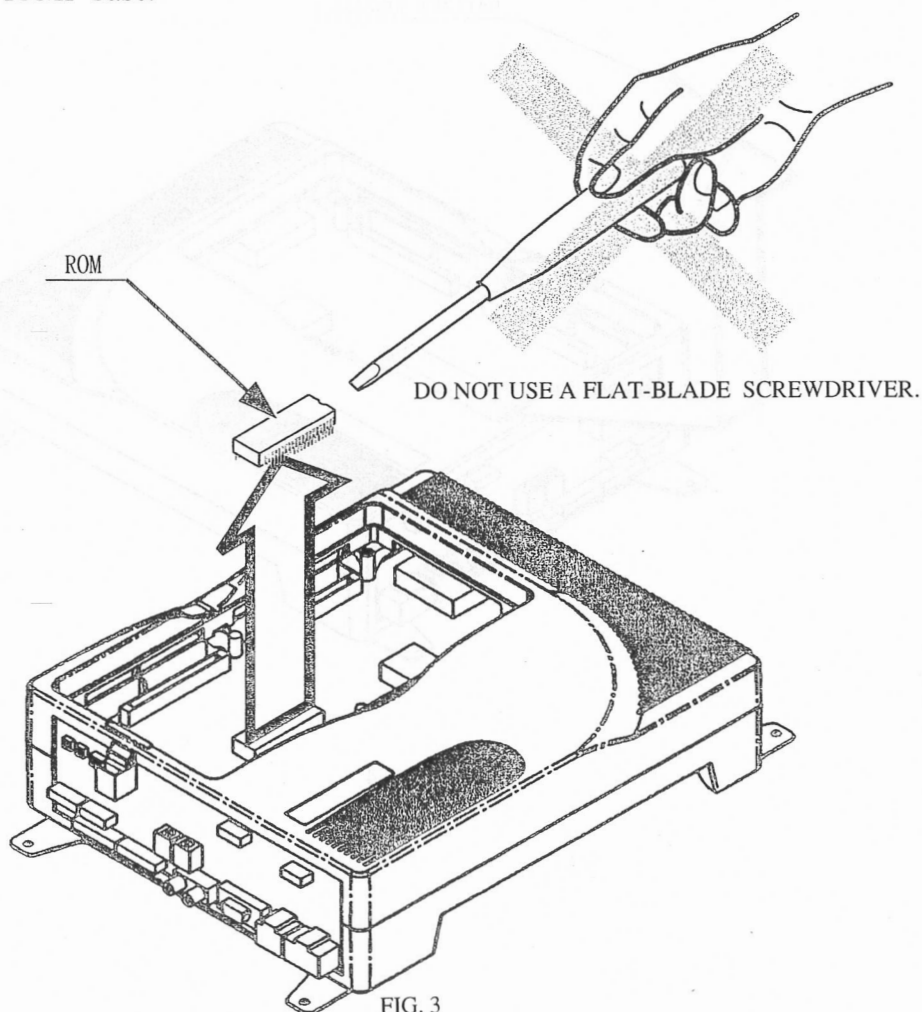
## ⑦ ROM REPLACEMENT (MAIN BD)

Do not perform this work unless otherwise particularly instructed due to BOOT ROM version change, etc.

- 1) Turn power off, and remove ROM BD Case from NAOMI Case by referring to ⑤ REMOVING AND REINSTALLING THE ROM BOARD above.
- 2) Remove on-socket ROM (IC27) of NAOMI Main BD from the socket by using an IC EXTRACTOR.

To prevent tearing off on-board patterns, etc., do not use tools such as a flat-blade type screwdriver, etc. other than the IC EXTRACTOR. For malfunctioning resulting from using tools other than the IC EXTRACTOR, repair shall be performed on a pay-basis. Be careful of this point.

- 3) Insert the new ROMs into the socket by paying attention to the inserting direction. In accordance with the instructions of the supplier of new ROMs, take proper action to dispose of the removed old ROMs by sending back, discarding after cutting off pins, or appropriately storing, as applicable.
- 4) By referring to ⑤ REMOVING AND REINSTALLING THE ROM BOARD, reinstall ROM BD Case to NAOMI Case.





## ⑧ BATTERY REPLACEMENT (MAIN BD)

Except for special cases such as using up the battery, etc., do not perform this work.

- 1) Turn power off, and remove ROM BD Case from NAOMI Case by referring to  
⑤ REMOVING AND REINSTALLING THE ROM BOARD above.
- 2) Carefully remove the battery on the Battery Holder of NAOMI Main BD.
- 3) With the positive pole facing upward, insert the new Battery (CR2032) into the Holder.
- 4) By referring to ⑤ REMOVING AND REINSTALLING THE ROM BOARD,  
reinstall ROM BD Case to NAOMI Case.

### BATTERY FOR NAOMI

SEGA PART No. 401-0054

SEGA PART NAME BATTERY CR2032/1F MATSUSHITA

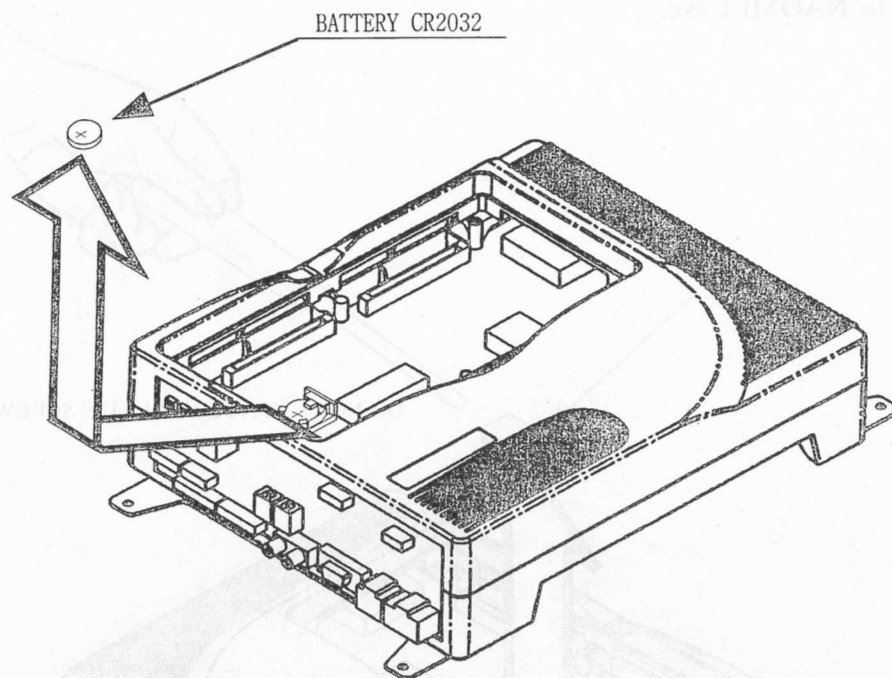


FIG. 4

## ⑨ REPAIR/SERVICING AND CARTON BOX

When transporting NAOMI for repair/servicing, follow the instructions below.

The accessory carton box is needed when transporting NAOMI for repair/servicing. Be sure to safely store the Carton Box.

- When sending for repair/servicing, remove all of the wire harnesses and cables from the Filter BD in front.
- When transporting NAOMI Main BD for the repair/servicing, ensure that the ROM BD used is in an as is installed status.
- When sending the NAOMI Main BD for repair/servicing, be sure to put it in the accessory carton box together with the Shield Case. The Main Board (Shield Case) and carton box have an identical serial number. When sending, ensure that the combination serial number is identical with each other.
- When putting NAOMI SHIELD CASE in the carton box, the Leg Bracket need not be removed.
- Where the repair /servicing is to be performed depends on the maker of each game on the ROM BD. Check this by referring to the attached Instruction Manual.

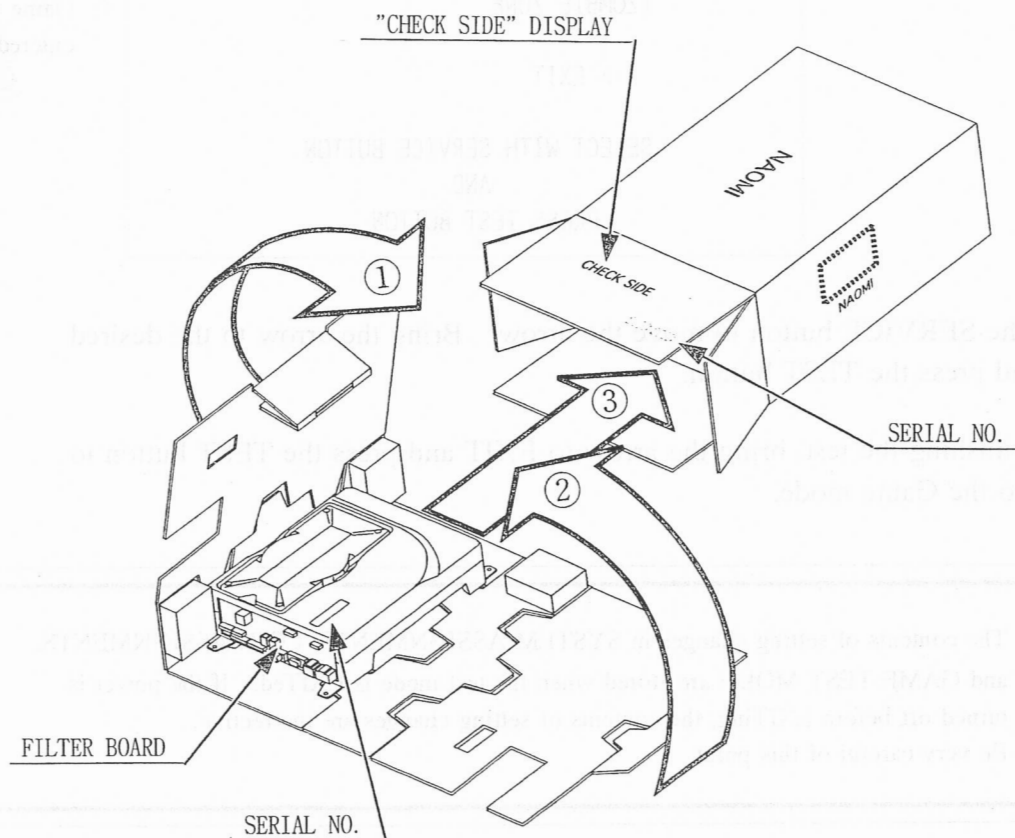


FIG. 5



### 3. SYSTEM TEST MODE

This test mode mainly allows the IC Board to be checked for accurate functioning, monitor color to be adjusted as well as COIN ASSIGNMENTS AND GAME ASSIGNMENTS to be adjusted.

#### TEST ITEM SELECT

- 1) After turning power on, press the TEST button to have the following test item menu displayed.

```
SYSTEM MENU
USA VERSION

RAM TEST
JVS TEST
SOUND TEST
C.R.T. TEST
SYSTEM ASSIGNMENTS
COIN ASSIGNMENTS
BOOKKEEPING
BACKUP DATA CLEAR
CLOCK SETTING

ROM BOARD TEST
GAME TEST MODE
[ZOMBIE ZONE      ]

-> EXIT

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
```

<- Game name is entered.

- 2) Press the SERVICE button to move the arrow. Bring the arrow to the desired item and press the TEST button.
- 3) Upon finishing the test, bring the arrow to EXIT and press the TEST button to return to the Game mode.



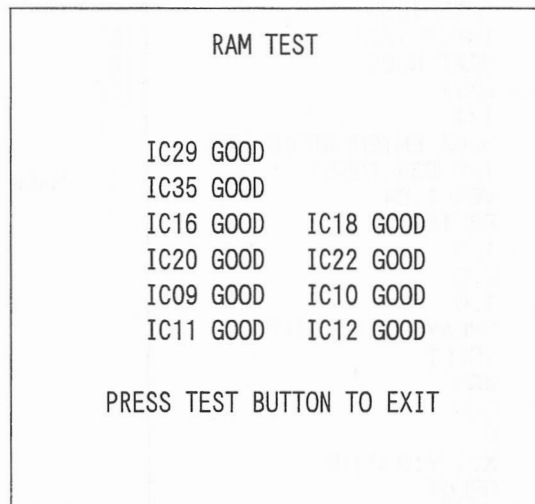
IMPORTANT!

The contents of setting changes in SYSTEM ASSIGNMENTS, COIN ASSIGNMENTS, and GAME TEST MODE are stored when the test mode is EXITed. If the power is turned off before EXITing, the contents of setting changes are ineffective. Be very careful of this point.

## ① RAM TEST

This allows for checking the functioning of the RAM on the NAOMI Main BD.

"GOOD" is displayed for satisfactory RAMs, and "BAD" is indicated for irregular RAMs, if any.



During test, "TESTING NOW" is displayed.

Press the TEST button to return to the menu mode.



## ② JVS TEST

In this test, Specifications of the I/O Board connected to NAOMI can be checked, and INPUT TEST can be performed. First, I/O Board Specifications are displayed.

```

JVS TEST
INPUT TEST
NEXT NODE
-> EXIT
NODE NAME 1/1
          SEGA ENTERPRISES, LTD.
          I/O 838-18683
          VER 1.04
          98/12
CMD VER 1.1
JVS VER 2.0
COM VER 1.0
SWITCH 2PLAYER(S) 11BITS
COIN    2SLOT
ANALOG  8CH
ROTARY  0CH
KEYCODE 0
SCREEN  X:0 Y:0 CH:0
CARD    0SLOT
HOPPER OUT 0CH
DRIVER OUT 8SLOT
ANALOG OUT 0CH
CHARACTER CHARA:0 LINE:0
BACKUP    0

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
  
```

(A)  
(B)  
(C)

} Name and version of I/O BOARD.

Select with the SERVICE button and press the TEST button.

(A) INPUT TEST: Proceeds to the INPUT TEST of I/O BOARD being displayed.

(B) NEXT NODE: In the case where more than 2 I/O Boards are connected,  
proceeds to the next I/O Board.

(C) EXIT: Returns to the menu mode.

## INPUT TEST SCREEN

```

JVS TEST
INPUT TEST
NEXT NODE
-> EXIT
NODE 1/1
SWITCH
SYSTEM 00000000
PLAYER1 00000000
        00000000
PLAYER2 00000000
        00000000
COIN    0000 0000
ANALOG  0000 0000 0000 0000
        0000 0000 0000 0000
SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
  
```

When INPUT is performed for the switches of Control Panel, etc., the value changes to 1 from 0.

If the Coin SW is inputted, the count starts. When the TEST MODE is finished, the count is cleared and returned to「0000」.

Analogue values are displayed between 0000 and FF00.

### ③ SOUND TEST

Sound Output test can be performed. Beep sounds can be emitted from each of left/right Speakers.

SOUND TEST		
RIGHT SPEAKER	OFF	<- Emitted from the right-hand side Speaker.
LEFT SPEAKER	OFF	<- Emitted from the left-hand side Speaker.
-> EXIT		<- Returns to the menu mode.
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON		

### ④ C.R.T. TEST

#### A) RGB COLOR ADJUSTMENT SCREEN

In this page, monitor color can be checked.

C.R.T. TEST 1/2	
1	32
RED	
GREEN	
BLUE	
WHITE	
PRESS TEST BUTTON TO CONTINUE	

Each of red, green, and blue is the darkest at the leftmost end, and becomes brighter towards the right-hand end in 31 gradations. Monitor brightness is satisfactory if the white color bar is black at the left end and if it is white at the right end. Press the TEST button to proceed to the next page.

#### B) MONITOR SIZE ADJUSTMENT SCREEN

In this page, monitor size can be checked.

C.R.T. TEST 2/2	
PRESS TEST BUTTON TO EXIT	

Adjust so that the crosshatches do not go beyond the screen. Press the TEST button to return to the menu mode.

## ⑤ SYSTEM ASSIGNMENTS

The settings of cabinet and board can be changed. Game related assignments such as game difficulty, etc. are performed in ⑪ GAME TEST MODE.

- 1) Press the SERVICE button to move the arrow. Bring the arrow to the desired item.
- 2) Press the TEST button to change the setting.
- 3) Upon finishing the setting, move the arrow to EXIT and press the TEST button.

SYSTEM ASSIGNMENTS

CABINET TYPE	2PLAYER(S)	(A)
ADVVERTISE SOUND	ON	(B)
MONITOR TYPE	HORIZONTAL	(C)
SERVICE TYPE	COMMON	(D)
-> EXIT		

SELECT WITH SERVICE BUTTON  
AND  
PRESS TEST BUTTON

(A) CABINET TYPE (1PLAYER(S), 2PLAYER(S), 3PLAYER(S), 4PLAYER(S))  
Sets the number of players between 1 and 4.

(B) ADVVERTISE SOUND (ON, OFF)  
Sets whether ADVVERTISE sound is to be emitted or not.

(C) MONITOR TYPE (HORIZONTAL, VERTICAL)  
Sets the on-screen display to the positional direction of monitor (HORIZONTAL/VERTICAL)

HORIZONTAL: Normal on-screen display

VERTICAL: On-screen display when the monitor is vertically positioned as against normal HORIZONTAL position.

(D) SERVICE TYPE (COMMON, INDIVIDUAL)  
Sets the functioning of when the Service Button is pressed, in case that several Service Buttons exist.

COMMON: By pressing any Service Button, Service credit can be obtained for all Players.

INDIVIDUAL: By pressing Service Button, Service credit can be obtained for the Player corresponding to the Service Button pressed.



IMPORTANT!

- If the settings of CABINET TYPE and MONITOR TYPE are not suitable for the connected game, Error Message is displayed after turning power on and upon finishing the TEST mode, and in this case, game is not playable.

### EXAMPLE

In the ZOMBIE ZONE, Error Message is displayed when CABINET TYPE is set other than to 2 PLAYERS, and also, when MONITOR TYPE is set to VERTICAL.

For the contents of settings suitable for each game, refer to the Instruction Manual attached to the game. Especially, when there is no special notes or descriptions, perform the settings as seen fit by judging from the statuses of cabinet and control panel Specifications.



## ⑥ COIN ASSIGNMENTS

In this mode, the setting of incremental credit increase as against coin insertion can be changed.

- 1) Press the SERVICE button to move the arrow. Bring the arrow to the desired item.
- 2) Press the TEST button to change the setting.
- 3) Upon finishing the setting, bring the arrow to EXIT and press the TEST button.

COIN ASSIGNMENTS

COIN CHUTE TYPE      COMMON

COIN/CREDIT SETTING      #1

COIN CHUTE #1

1 COIN 1 CREDIT

COIN CHUTE #2

1 COIN 1 CREDIT

MANUAL SETTING

SEQUENCE SETTING

->EXIT

SELECT WITH SERVICE BUTTON

AND

PRESS TEST BUTTON

FIG. 4-6A ( Setting to COMMON)

COIN ASSIGNMENTS

COIN CHUTE TYPE      INDIVIDUAL

COIN/CREDIT SETTING      #1

COIN CHUTE

1 COIN 1 CREDIT

MANUAL SETTING

SEQUENCE SETTING

->EXIT

SELECT WITH SERVICE BUTTON

AND

PRESS TEST BUTTON

FIG. 4-6B ( Setting to INDIVIDUAL)

### (A) COIN CHUTE TYPE (COMMON, INDIVIDUAL)

Perform setting in the manner corresponding to Coin Chute Specifications.

#### COMMON

This setting is for the cabinet which has a coin chute(s) for common use by plural players. Up to 2 Coin Chutes (#1 and #2) can be used and also, (B) COIN/CREDIT SETTING ratio can be set separately for #1 and #2.

#### INDIVIDUAL

This setting is for the cabinet in which each player uses an independent coin chute. Coins inserted by each player are handled as the player's credits. Depending on the CABINET TYPE setting in the SYSTEM ASSIGNMENTS and the functioning of the connected I/O Board, the number of Coin SW INPUT ports varies between 1 and 4. (B) COIN/CREDIT SETTING ratio is common for each Coin Chute.

### (B) COIN/CREDIT SETTING (#1 ~ #27)

Sets the credit increase increment per coin insertion. There are 27 settings from #1 to #27, expressed in ○○ credit(s) as against ○○ coins inserted. #27 refers to FREE PLAY.

For details, refer to Table 1 (COMMON) and Table 2 (INDIVIDUAL).

### (C) MANUAL SETTING

The Credit's incremental increase settings as against a coin insertion are shown in further details than in (B) above (refer to Table 3). Also, note that when this MANUAL SETTING is performed, (B) COIN CREDIT setting becomes ineffective.

### MANUAL SETTING

COIN ASSIGNMENTS MANUAL SETTING	
COIN TO CREDIT	1
BONUS ADDER	NO BONUS ADDER
COIN CHUTE #1 MULTIPLIER	
1 COIN COUNT AS 1 COIN	
COIN	1 2 3 4 5 6 7 8 9
CREDIT	1 2 3 4 5 6 7 8 9
COIN CHUTE #2 MULTIPLIER	
1 COIN COUNT AS 1 COIN	
COIN	1 2 3 4 5 6 7 8 9
CREDIT	1 2 3 4 5 6 7 8 9
SEQUENCE SETTING	
->EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

(D)

(E)

(F)

(G)

COIN ASSIGNMENTS MANUAL SETTING	
COIN TO CREDIT	1
BONUS ADDER	NO BONUS ADDER
COIN CHUTE MULTIPLIER	
1 COIN COUNT AS 1 COIN	
COIN	1 2 3 4 5 6 7 8 9
CREDIT	1 2 3 4 5 6 7 8 9
SEQUENCE SETTING	
->EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

FIG. 4-6C (Setting to COMMON)

FIG. 4-6D (Setting to INDIVIDUAL)

### (D) COIN TO CREDIT

Determines COIN/CREDIT setting.

### (E) BONUS ADDER

This sets how many coins should be inserted to obtain one SERVICE COIN.

### (F) COIN CHUTE (#1/#2) MULTIPLIER

This sets how many tokens one coin represents.

Table 1: COIN/CREDIT SETTING (COIN CHUTE COMMON TYPE)

NAME OF SETTING	COIN CHUTE 1	COIN CHUTE 2
SETTING # 1	1 COIN 1 CREDIT	1 COIN 1 CREDIT
SETTING # 2	1 COIN 2 CREDITS	1 COIN 1 CREDIT
SETTING # 3	1 COIN 3 CREDITS	1 COIN 1 CREDIT
SETTING # 4	1 COIN 4 CREDITS	1 COIN 1 CREDIT
SETTING # 5	1 COIN 5 CREDITS	1 COIN 1 CREDIT
SETTING # 6	1 COIN 2 CREDITS	1 COIN 2 CREDITS
SETTING # 7	1 COIN 5 CREDITS	1 COIN 2 CREDITS
SETTING # 8	1 COIN 3 CREDITS	1 COIN 3 CREDITS
SETTING # 9	1 COIN 4 CREDITS	1 COIN 4 CREDITS
SETTING # 1 0	1 COIN 5 CREDITS	1 COIN 5 CREDITS
SETTING # 1 1	1 COIN 6 CREDITS	1 COIN 6 CREDITS
SETTING # 1 2	2 COINS 1 CREDIT	2 COINS 1 CREDIT
SETTING # 1 3	1 COIN 1 CREDIT	2 COINS 1 CREDIT
SETTING # 1 4	1 COIN 2 CREDITS	2 COINS 1 CREDIT
SETTING # 1 5	1 COIN 1 CREDIT 2 COINS 3 CREDITS	1 COIN 1 CREDIT 2 COINS 3 CREDITS
SETTING # 1 6	1 COIN 3 CREDITS	1 COIN 1 CREDIT 2 COINS 3 CREDITS
SETTING # 1 7	3 COINS 1 CREDIT	3 COINS 1 CREDIT
SETTING # 1 8	4 COINS 1 CREDIT	4 COINS 1 CREDIT
SETTING # 1 9	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 5 CREDITS	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 5 CREDITS
SETTING # 2 0	1 COIN 5 CREDITS	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 5 CREDITS
SETTING # 2 1	5 COINS 1 CREDITS	5 COINS 1 CREDIT
SETTING # 2 2	1 COIN 2 CREDITS	3 COINS 1 CREDIT 5 COINS 2 CREDITS
SETTING # 2 3	2 COINS 1 CREDIT 4 COINS 2 CREDITS 5 COINS 3 CREDITS	2 COINS 1 CREDIT 4 COINS 2 CREDITS 5 COINS 3 CREDITS
SETTING # 2 4	1 COIN 3 CREDITS	2 COINS 1 CREDIT 4 COINS 2 CREDITS 5 COINS 3 CREDITS
SETTING # 2 5	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 4 CREDITS 5 COINS 6 CREDITS	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 4 CREDITS 5 COINS 6 CREDITS
SETTING # 2 6	1 COIN 6 CREDITS	1 COIN 1 CREDIT 2 COINS 2 CREDITS 3 COINS 3 CREDITS 4 COINS 4 CREDITS 5 COINS 6 CREDITS
SETTING # 2 7	FREE PLAY	FREE PLAY



Table 2: COIN/CREDIT SETTING (COIN CHUTE INDIVIDUAL TYPE)

NAME OF SETTING	EACH SEAT'S COIN CHUTE	NAME OF SETTING	EACH SEAT'S COIN CHUTE
SETTING # 1	1 COIN 1 CREDIT	SETTING # 2 1	5 COINS 1 CREDIT
SETTING # 2	1 COIN 2 CREDITS	SETTING # 2 3	2 COINS 1 CREDIT
SETTING # 3	1 COIN 3 CREDITS		4 COINS 2 CREDITS
SETTING # 4	1 COIN 4 CREDITS		5 COINS 3 CREDITS
SETTING # 5	1 COIN 5 CREDITS	SETTING # 2 5	1 COIN 1 CREDIT
SETTING # 1 1	1 COIN 6 CREDITS		2 COINS 2 CREDITS
SETTING # 1 2	2 COINS 1 CREDIT		3 COINS 3 CREDITS
SETTING # 1 5	1 COIN 1 CREDIT		4 COINS 4 CREDITS
	2 COINS 3 CREDITS		5 COINS 6 CREDITS
SETTING # 1 7	3 COINS 1 CREDIT	SETTING # 2 7	FREE PLAY
SETTING # 1 8	4 COINS 1 CREDIT		
SETTING # 1 9	1 COIN 1 CREDIT		
	2 COINS 2 CREDITS		
	3 COINS 3 CREDITS		
	4 COINS 5 CREDITS		

Table 3: MANUAL SETTING

COIN TO CREDIT	1 COIN 1 CREDIT
	2 COINS 1 CREDIT
	3 COINS 1 CREDIT
	4 COINS 1 CREDIT
	5 COINS 1 CREDIT
	6 COINS 1 CREDIT
	7 COINS 1 CREDIT
	8 COINS 1 CREDIT
	9 COINS 1 CREDIT

BONUS ADDER	NO BONUS ADDER
	2 COINS GIVE 1 EXTRA COIN
	3 COINS GIVE 1 EXTRA COIN
	4 COINS GIVE 1 EXTRA COIN
	5 COINS GIVE 1 EXTRA COIN
	6 COINS GIVE 1 EXTRA COIN
	7 COINS GIVE 1 EXTRA COIN
	8 COINS GIVE 1 EXTRA COIN
	9 COINS GIVE 1 EXTRA COIN

COIN CHUTE (#1/#2)	1 COIN COUNT AS 1 COIN
MULTIPLIER	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

## (G) SEQUENCE SETTING

Number of credits required for starting game, etc. can be set.

Function varies depending on the specific games. To find out what kind of functions are allotted to each sequence, or what is the initial value for each sequence, refer to the Instruction Manual of the game connected. Each sequence can be set between 1~5 credit(s).

COIN ASSIGNMENTS SEQUENCE SETTING	
SEQUENCE 1	1 CREDIT(S)
SEQUENCE 2	1 CREDIT(S)
SEQUENCE 3	1 CREDIT(S)
SEQUENCE 4	1 CREDIT(S)
SEQUENCE 5	1 CREDIT(S)
SEQUENCE 6	1 CREDIT(S)
SEQUENCE 7	1 CREDIT(S)
SEQUENCE 8	1 CREDIT(S)
-> EXIT	
[ZOMBIE ZONE ]	
DESCRIPTION OF SEQUENCE	
1	CREDIT TO START
2	CREDIT TO CONTINUE
3	NO USE
4	NO USE
5	NO USE
6	NO USE
7	NO USE
8	NO USE
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

This portion varies  
depending on specific games.

(EXAMPLE 1) In cases of video games such as ZOMBIE ZONE, etc. :

SEQUENCE 1: Number of credits required for game start (initial value=1)

SEQUENCE 2: Number of credits required for CONTINUE (initial value=1)

SEQUENCE 3 ~ 8: NOT USED.

(EXAMPLE 2) In the case NAOMI is used as vending machines:

SEQUENCE 1 ~ 4: Number of credits required for purchasing product 1~4 (Initial value=1)

SEQUENCE 5 ~ 8: Number of credits required for purchasing product 5~8 (Initial value=1)

## ⑦ BOOKKEEPING

### • BOOKKEEPING 1/2

This allows such data as operating time/No. of coins inserted/ No. of credits to be checked.

BOOKKEEPING 1/2		
TOTAL TIME		
OD 00H 00M 00S		
CREDIT 1	0	(A)
CREDIT 2	0	
COIN 1	0	(B)
COIN 2	0	
TOTAL COIN	0	
COIN CREDIT	0	
SERVICE CREDIT	0	
TOTAL CREDIT	0	
PRESS TEST BUTTON TO CONTINUE		

(A) CREDIT 1,2(,3,4)

(B) COIN 1,2(,3,4)

Number of Display Items vary depending on the setting of CABINET TYPE in the SYSTEM ASSIGNMENTS.

Press the TEST button to proceed to BOOKKEEPING 2/2.

### • BOOKKEEPING 2/2

Each sequence displays the frequency of functioning. The contents of each sequence vary depending on specific games. For the contents of each sequence, refer to the Instruction Manual of the game connected.

Display Items vary depending on the setting of CABINET TYPE in the SYSTEM ASSIGNMENTS.

BOOKKEEPING 2/2				
P1 SEQ 1	0	P2 SEQ 1	0	
P1 SEQ 2	0	P2 SEQ 2	0	
P1 SEQ 3	0	P2 SEQ 3	0	
P1 SEQ 4	0	P2 SEQ 4	0	
P1 SEQ 5	0	P2 SEQ 5	0	
P1 SEQ 6	0	P2 SEQ 6	0	
P1 SEQ 7	0	P2 SEQ 7	0	
P1 SEQ 8	0	P2 SEQ 8	0	
P3 SEQ 1	0	P4 SEQ 1	0	
P3 SEQ 2	0	P4 SEQ 2	0	
P3 SEQ 3	0	P4 SEQ 3	0	
P3 SEQ 4	0	P4 SEQ 4	0	
P3 SEQ 5	0	P4 SEQ 5	0	
P3 SEQ 6	0	P4 SEQ 6	0	
P3 SEQ 7	0	P4 SEQ 7	0	
P3 SEQ 8	0	P4 SEQ 8	0	
PRESS TEST BUTTON TO EXIT				

(EXAMPLE) In cases of video games such as ZOMBIE ZONE, etc. :

P1(P2) SEQ 1: Play frequency of Player 1 (Player 2)

P1(P2) SEQ 2: Frequency of CONTINUE by Player 1 (Player 2)

P1(P2) SEQ 3~8: NOT USED.



### ⑧ BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING.

BACKUP DATA CLEAR

YES(CLEAR)  
-> NO(CANCEL)

SELECT WITH SERVICE BUTTON  
AND  
PRESS TEST BUTTON

When clearing, bring the arrow to YES by using the SERVICE button and press the TEST button. Bring the arrow to NO and press the TEST button to have the menu mode return without clearing the data. COMPLETED is displayed when clearing is completed. Press the TEST button to return to the menu mode.

### ⑨ CLOCK SETTING

YEAR, MONTH, DAY, HOUR, and MINUTE are set for NAOMI Main BD.

CLOCK SETTIG

1998 12/02 14:30 33 WED

YEAR  
MONTH  
DAY  
HOUR  
MINUTE  
-> EXIT

SELECT WITH SERVICE BUTTON  
AND  
PRESS TEST BUTTON

Select the desired item with the SERVICE button and press the TEST button to increase the value. Upon finishing the SETTING, bring the arrow to EXIT and press the TEST button to return to the menu mode.

## ⑩ ROM BOARD TEST

In this test, on-ROM-BD ROM check is executed. Depending on the types of game, one of the following 2 screens is displayed. The IC NO. display is different. If GOOD is displayed below RESULT, it is satisfactory.

BYTE and WORD refers to the check sum of each unit.

GAME ROM TEST [XXXXXXXXXXXX]				
NO.	TYPE	RESULT	BYTE	WORD
IC22	16M	---	0123	4567
IC1	64M	GOOD	0123	4567
IC2	64M	GOOD	0123	4567
IC3	64M	GOOD	0123	4567
IC4	64M	GOOD	0123	4567
IC5	64M	GOOD	0123	4567
IC6	64M	GOOD	0123	4567
IC7	64M	GOOD	0123	4567
IC8	64M	GOOD	0123	4567
IC9	64M	GOOD	0123	4567
IC10	64M	GOOD	0123	4567
		:		
IC21	64M	GOOD	0123	4567
PRESS TEST BUTTON TO EXIT				

← Displays  
the name  
of game.

GAME ROM TEST [XXXXXXXXXXXX]				
NO.	TYPE	RESULT	BYTE	WORD
IC16	16M	---	0123	4567
IC17	64M	GOOD	0123	4567
IC18	64M	GOOD	0123	4567
IC19	64M	GOOD	0123	4567
IC20	64M	GOOD	0123	4567
		:		
		:		
		:		
		:		
		:		
IC36	64M	GOOD	0123	4567
IC37	64M	GOOD	0123	4567
IC38	64M	GOOD	0123	4567
PRESS TEST BUTTON TO EXIT				

← Displays  
the name  
of game.

In case of above screen, Program ROMs (IC22 or IC1) do not display GOOD or BAD.

In case of above screen, Program ROMs (IC 16 or IC17) do not display GOOD or BAD.

The number of ROMs depends on each game.

Press the TEST button to return to the menu mode.

## ⑪ GAME TEST MODE

Enters the TEST mode of the game connected. The TEST mode includes INPUT test, GAME ASSIGNMENTS such as game difficulty and others, BOOKKEEPING, etc. Depending on specific games, necessary items are added and unnecessary items removed. As such, the contents thereof may be changed. For details, refer to the attached Instruction Manual.



Exams the TEST mode of the game character. The TEST mode includes  
 INPT and DATA ASSOCIATION. It is a game difficulty and other  
 BOOKS FROM the "Working on specific game" necessary items are added and  
 necessary items removed. As such, the contents thereof may be changed. For  
 details, refer to the working book "Game Manual".



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