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SEGA



NAOMI CABINET VERSION
OWNER'S MANUAL

SEGA ENTERPRISES, INC. USA

MANUAL NO. 999-0891



Warranty

Your new Sega Product is covered for a period of 90 days from the date of shipment. This certifies that the Printed Circuit Boards, Power Supplies and Monitor are to be free of defects in workmanship or materials under normal operating conditions. This also certifies that all Interactive Control Assemblies are to be free from defects in workmanship and materials under normal operating conditions. No other product in this machine is hereby covered.

Sellers sole liability in the event a warranted part described above fails shall be, at its option, to replace or repair the defective part during the warranty period. For Warranty claims, contact your Sega Distributor.

Should the Seller determine, by inspection that the product was caused by Accident, Misuse, Neglect, Alteration, Improper Repair, Installation or Testing, the warranty offered will be null and void.

Under no circumstances is the Seller responsible for any loss of profits, loss of use, or other damages.

This shall be the exclusive written Warranty of the original purchaser expressed in lieu of all other warranties expressed or implied. Under no circumstance shall it extend beyond the period of time listed above.

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SPECIFICATIONS

Installation space:	38 in.(L) x 30 in.(W)
Height:	82 in.
Weight:	Approx. 274 lbs.
Power maximum current:	2.24 Amp AC 120V 60 Hz
MONITOR:	29" NANAO MONITOR

INTRODUCTION OF THE OWNERS MANUAL

SEGA ENTERPRISES, LTD., has for more than 30 years been supplying various innovative and popular amusement products to the world market. This Owners Manual is intended to provide detailed descriptions together with all the necessary installation, game settings and parts ordering information related to VIRTUA NBA U/R Naomi Cabinet type, a new SEGA product.

This manual is intended for those who have knowledge of electricity and technical expertise, especially in ICs, CRTs, microprocessors, and circuit boards. Read this manual carefully to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior system. Should the need arise, contact our main office, or the closest branch office listed below.

SEGA ENTERPRISES, INC. (USA)

Customer Service

45133 Industrial Drive

Fremont, CA 94538

Phone 415-701-6580

Fax 415-701-6594

7:30 am - 4:00 pm, Pacific Standard Time

Monday thru Friday

General Precautions

Follow Instructions: All operating and use instructions should be followed.

Attachments: Do not use attachments not recommended by the product manufacturer as they may cause hazards.

Accessories: Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use only mounting accessories recommended by the manufacturer.

Moving the Product: This product should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product to overturn.

Ventilation: Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product and to protect it from overheating; these openings must not be blocked or covered. The openings should never be blocked by placing the product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

Power Sources: This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location, consult your local power company. For products intended to operate from battery power or other sources, refer to the operating instructions.

Grounding or Polarization: This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

Power Cord Protection: Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

Overloading: Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

Object and Liquid Entry: Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

Servicing: Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service: Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- a) If the power cord or plug is damaged;
- b) If liquid has been spilled, or objects have fallen into the product;
- c) If the product has been exposed to rain or water;
- d) If the product does not operate normally when following the operating instructions. Adjust only those controls that are explained in the operating instructions. An improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation;
- e) If the product has been dropped or damaged in any way;
- f) When the product exhibits a distinct change in performance; this indicates a need for service.

Replacement Parts: When replacement parts are required, be sure the service technician has used replacements parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

Safety Check: Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Heat: The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Lithium Battery- Dispose of batteries only in accordance with the battery manufacturer's recommendations. Do not dispose in an open flame condition, since the battery may explode.

Cleaning: When cleaning the monitor glass, use water or glass cleaner and a soft cloth. Do not apply chemicals such as benzene, thinner, etc.

Location: This is an indoor game machine, DO NOT install it outside. To ensure proper usage, avoid installing indoors in the places mentioned below:

- Places subject to rain/water leakage, or condensation due to humidity;
- In close proximity to a potential wet area;
- Locations receiving direct sunlight;
- Places close to heating units or hot air;
- In the vicinity of highly inflammable/volatile chemicals or hazardous matter;
- On sloped surfaces;
- In the vicinity of emergency response facilities such as fire exits and fire extinguishers;
- Places subject to any type of violent impact;
- Dusty places.

INSTALLATION PRECAUTIONS

- Verify the amperage of the branch circuit outlet before plugging in the power plug. Do not overload the circuit.
- Avoid using an extension cord. If one is required, use an extension cord of type SJT, 16/3 AWG rated min. 120 VAC, 7A.
- Moving this unit requires a minimum clearance (of doors, etc.) of 32" (W) by 77" (H).
- For the operation of this machine, secure a minimum area of 32" (W) by 42" (D).

REGULATORY APPROVALS

This game has been tested and found to comply with the Federal Communications Commission Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This game has been tested and listed by Underwriters Laboratories, Inc., to ANSI/UL22.



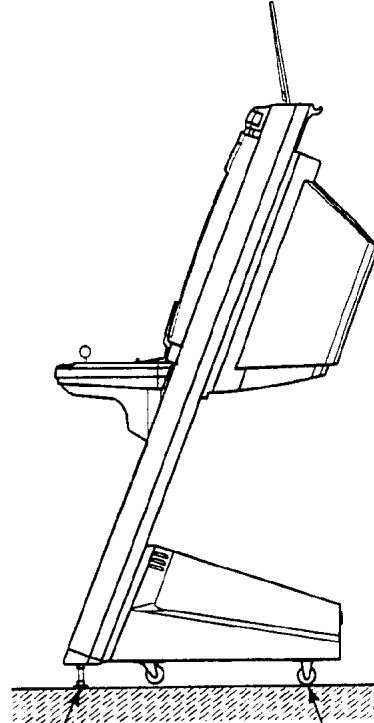
1 . PRECAUTIONS TO BE HEEDED FOR OPERATION

In order to prevent accidents, be sure to comply with the following points before and during operation.

PRECAUTIONS TO BE HEEDED FOR OPERATION BEFORE STARTING THE OPERATION



- In order to avoid accidents, check the following before starting the operation:
Check if all of the adjusters are in contact with the surface. If they are not, the cabinet can move and cause an accident.



- Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step.
- To avoid electric shock, check to see if door & cover parts are closed.
- To avoid electric shock, short circuit and or parts damage, do not put the following items on or in the periphery of the product:
- Flower vases, flower pots, cups, water tanks, cosmetics, and receptacles/containers/vessels containing chemicals and water.



To avoid injury, be sure to provide sufficient space by considering the potentially crowded situation at the installation location. Insufficient installation space can cause the player to come into contact with or hit others and result in injury or trouble.

PRECAUTIONS TO BE HEEDED DURING OPERATION



CAUTION!

To avoid injury and accidents, those who fall under the following categories are not allowed to play the game:

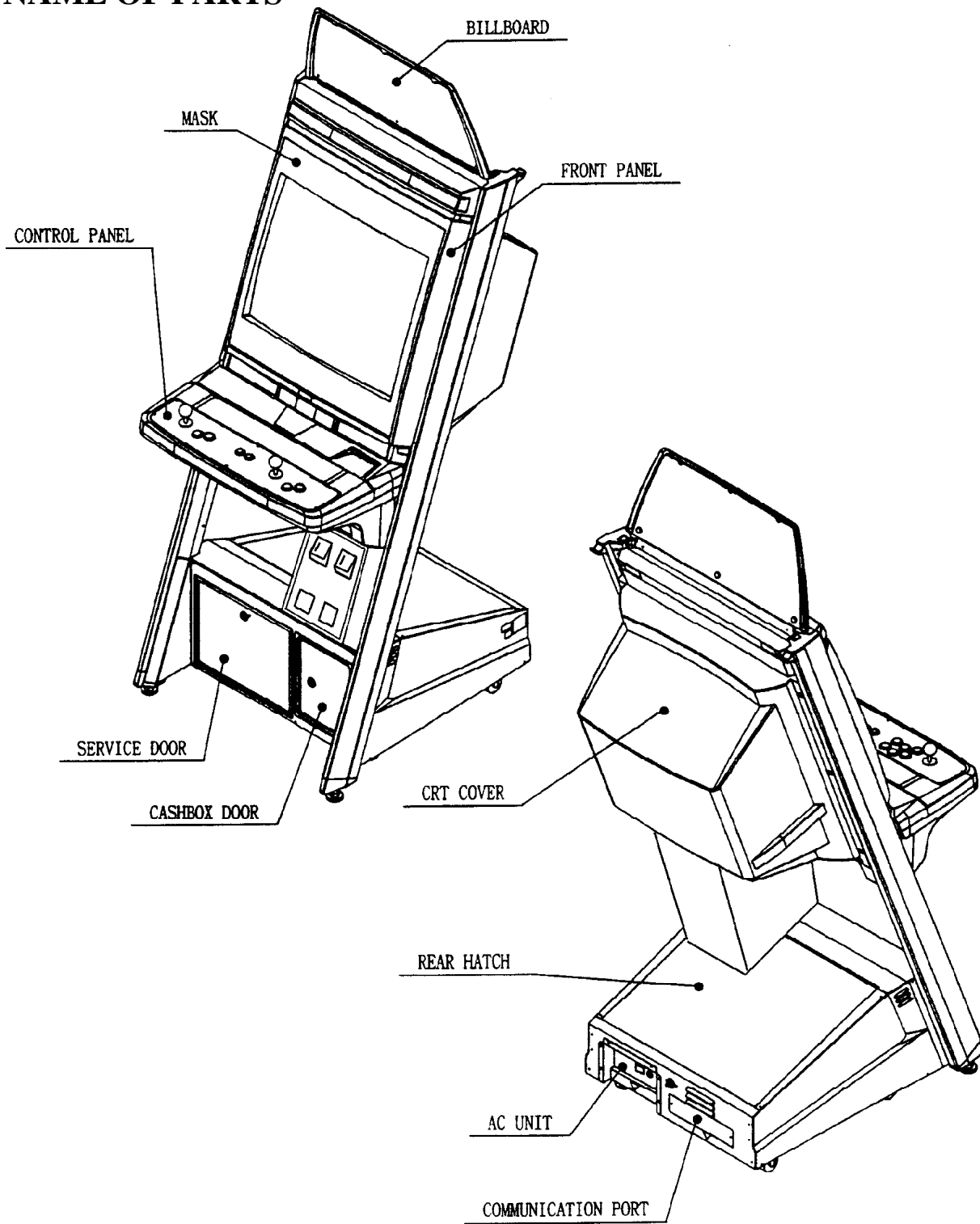
- * Intoxicated persons
- * Those who have high blood pressure or heart problems.
- * Those who have experienced muscle convulsion or loss of consciousness when playing video games, etc.
- * Persons susceptible to motion sickness.
- * Persons whose acts runs counter to the products warning displays.
- * Instruct those who wear high-heeled shoes to refrain from playing the game by explaining that playing the game with high-heeled shoes is very dangerous and likely to cause a potentially hazardous situation.



CAUTION!

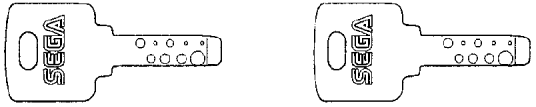
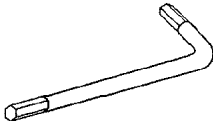
- To avoid electric shock and short circuit, do not allow customers to put hands and fingers or extraneous matter in openings of the product or small openings in or around doors.
- To avoid electric shock and short circuit, do not allow the customers to unplug the power plug without a justifiable reason.
- Although this product has the accident preventive covering attached to potentially hazardous places where hand and fingers could be caught, small children are unable to perceive hazards. Use care so that small children do not come close to the product when in play.
- Immediately stop such violent acts as hitting and kicking the product. Such violent acts can cause parts damage and/or falling down, resulting in injury due to fragments and falling down.

2 . NAME OF PARTS



GAME SPECIFICATIONS	WIDTH in.		LENGTH in.		HEIGHT in.	WEIGHT lbs.
<i>DURING SHIPPING</i>	40"	X	70"	X	100"	~ 425 LBS.
CABINET	30"	X	41"	X	71"	325 LBS.
BILLBOARD	30"	X	0.5"	X	12"	2 LBS.
WHEN ASSEMBLED	30"	X	58"	X	88"	380 LBS.

3 . ACCESSORIES

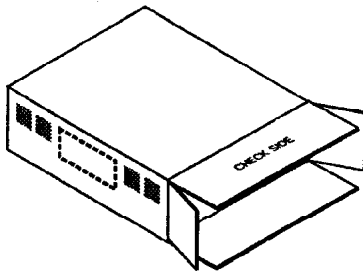
<p>DESCRIPTION OWNERS MANUAL Part No. (Qty.) 999-0891 Note Figures If Part No. has no description, the Number has not been registered or can not be registered. Such a part may not be obtainable even if the customer desires to purchase it. Therefore, ensure that the part is in safekeeping with you.</p>	<p>KEY MASTER 220-5576 (2) For opening/closing the doors</p>	<p>KEY (2) For the CASHBOX DOOR</p>
<p>TAMPERPROOF WRENCH M8 540-0009-01 (1) TOOL</p>		
		



THE SHIPMENT METHOD DESCRIBED BELOW APPLIES TO ALL 'MODEL 3' OR 'NAOMI' BOARDS CONTAINED IN THE FOLLOWING GAMES:

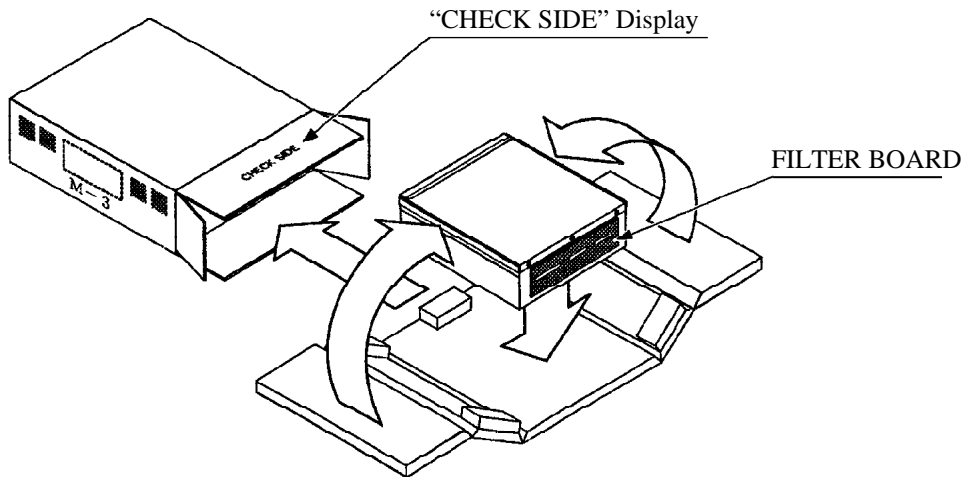
LOST WORLD, VIRTUA FIGHTER 3, SUPER GT, SEGA BASS FISHING, STRIKER 2 HARLEY DAVIDSON, RALLY 2, DAYTONA 2, DIRT DEVILS, HOUSE OF THE DEAD 2, OCEAN HUNTER, STAR WARS TRILOGY, ZOMBIE REVENGE, CRAZY TAXI, JAMBO SAFARI, F355, VIRTUA TENNIS, VIRTUA NBA

!!NEVER SHIP MODEL 3 / NAOMI GAME BOARDS OUTSIDE OF CAGE!!



CARTON BOX
601-8928 (1)
Used for transporting the GAME BOARD.
{SUPPLIED WITH YOUR GAME}

DO NOT SHIP GAME BOARD WITHOUT THIS BOX AS IT MAY DAMAGE THE GAME BOARD AND VOID YOUR WARRANTY.



NO OTHER GAMES BOARDS ARE TO BE SHIPPED IN THE CAGE AS THEY MAY BE DAMAGED BEYOND REPAIR. PLEASE SHIP THEM WITHOUT CAGE PROPERLY PROTECTED DURING SHIPPING.

4 . ASSEMBLING AND INSTALLATION



CAUTION!

Assembling should be performed as per this manual. Since this is a complex machine, erroneous assembling may cause damage to the machine, or malfunctioning to occur.

When assembling, be sure to perform work by plural persons. Depending on the assembly work, there are some cases in which performing the work by a single person can cause personal injury or parts damage.

When carrying out the assembly work, follow the procedure in the following 5-item sequence:

- 1 ASSY OF BILLBOARD
- 2 SECURING IN PLACE (ADJUSTER ADJUSTMENT)
- 3 POWER SUPPLY
- 4 ASSEMBLING CHECK

Note that the tools such as a phillips screwdriver and wrench for M16 hexagon bolt w/24 mm width across flats are required for the assembly work.



CAUTION!

Perform conector connection securely. Insufficient insertin can cause electrical shock or short circuit.

Be careful so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.

1

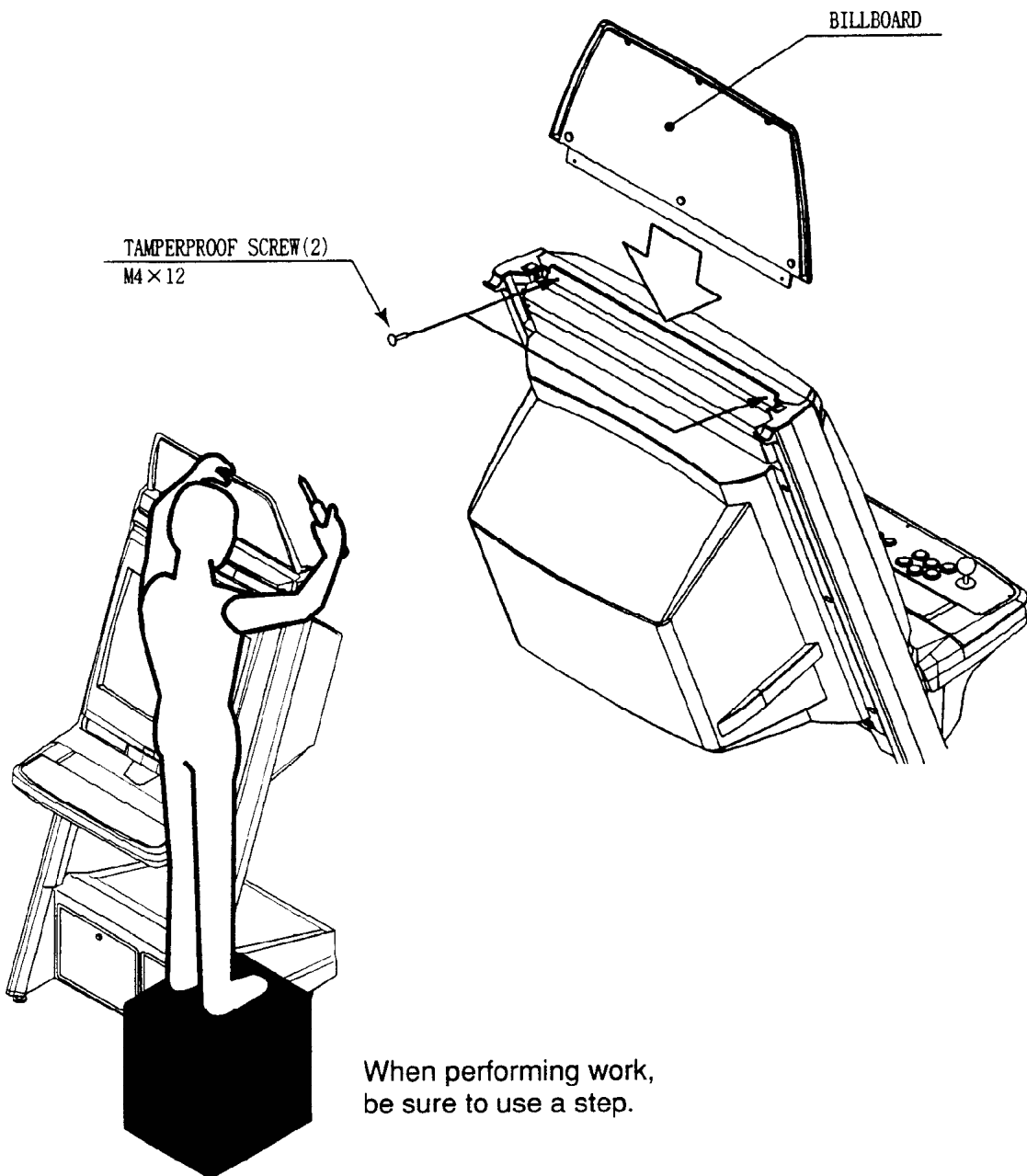
ASSY OF BILLBOARD



WARNING!

Due to its large size, it is very difficult for one person alone to install the billboard, Make sure 2 or more persons are available to perform this work. Attempting to perform the installation alone can cause an accident.

- ① Mount Billboard on cabinet by ensuring the front lip of the Billboard is securely placed under the mounting bracket already installed on the cabinet. Fasten with the 3 hexagon bolts.
- ② Connect all of the 4 connectors inside the Billboard box (This needs to be done prior to final installation of Billboard Assy).



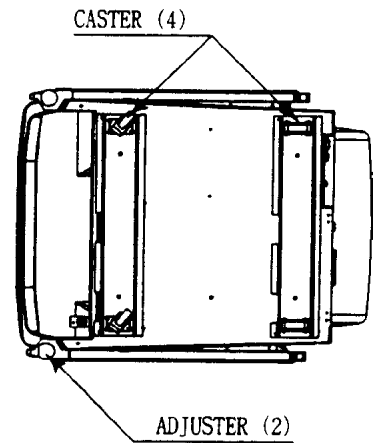
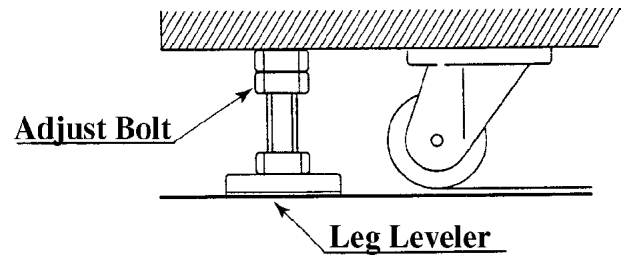
2 SECURING IN PLACE (ADJUSTER ADJUSTMENT)



Be sure to have all the Adjusters make contact with the surface. Unless the Adjusters come into contact with the surface, the Cabinet can move of itself, causing an accident.

This machine has 4 each of casters and adjusters (shown below). When the installation position is determined, cause the adjusters to come into contact with the floor directly, make adjustments in a manner so that the casters will be raised approximately 5mm. from the floor and make sure that the machine position is level.

- 1 Move the machine to the installation position.
- 2 Cause all of the leg levelers to make contact with the floor. By using a wrench, make adjustments in the height of the leg adjusters to ensure that the machine's position is level.
- 3 After making adjustments, fasten the leg adjuster nut upward and secure the height of the leg adjuster.



3

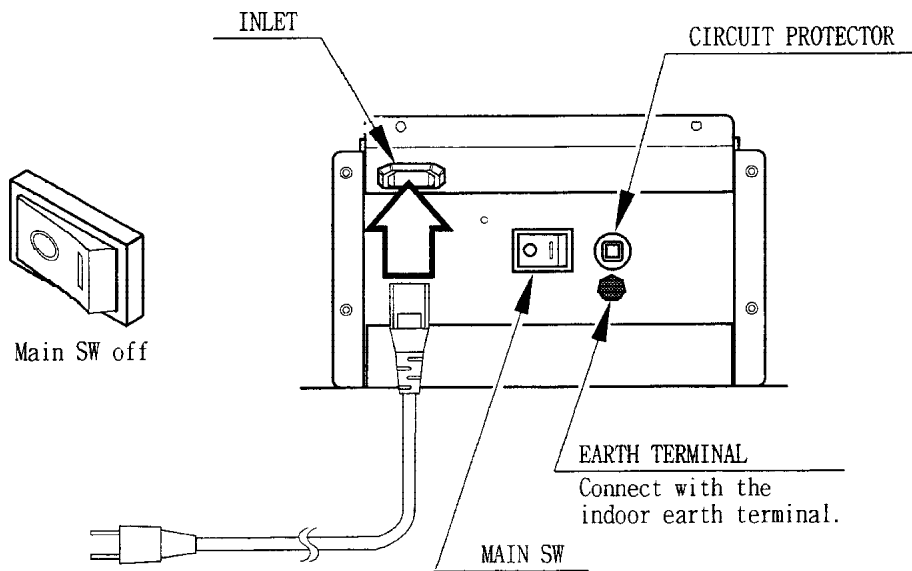
POWER SUPPLY



- Ensure that the power cord is not exposed on the surface (passage, etc.). If exposed, they can be caught and are susceptible to damage. If damaged, the cord can cause an electric shock or short circuit.
- Ensure that the wiring position is not in the customer's passage way or the wiring has protective covering.

Connect the game to the power supply and turn on power to the game. Before connecting power supply be sure that power switch is off

- ① Turning the AC unit's main switch on will cause the machine to start the power check and network check automatically.



4

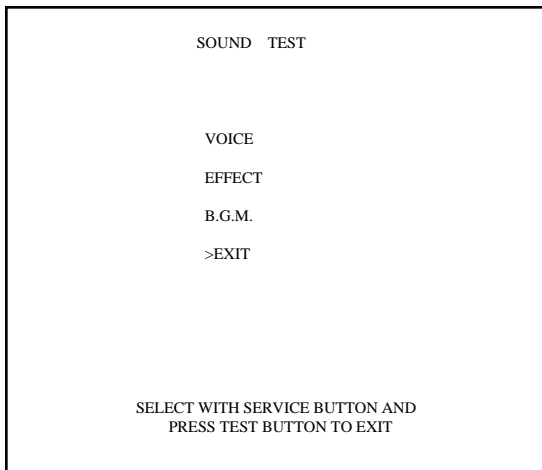
ASSEMBLING CHECK

The TEST MENU allows for each part of the cabinet to be checked, the Monitor to be adjusted, and the coin and game related various functions to be performed.

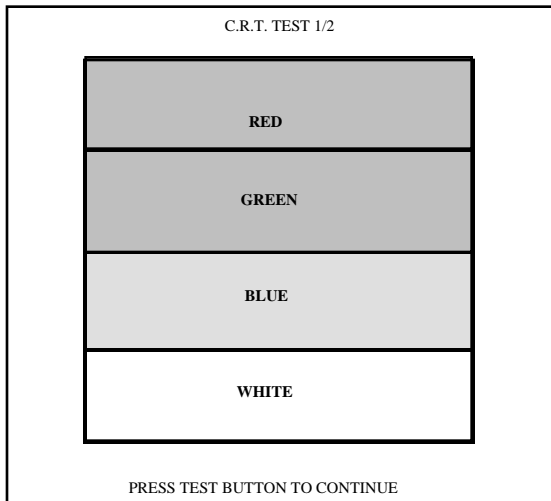
Selecting the MEMORY TEST on the test mode menu screen causes the on-board memory to be tested automatically. The game board is satisfactory if the display beside each IC No. shows GOOD.

Selecting the INPUT TEST on the Test Mode menu screen causes the screen (on Which each switch and V.R. are tested) to be displayed. Press each switch. For the coin switch test, insert a coin from the coin inlet with the coin chute door being open. If the display beside each switch indicates "ON", the switch and wiring connections are satisfactory. Check the display of V.R. value for steering wheel and accelerator & brake. If the V.R. values are not satisfactory, make adjustments as necessary.

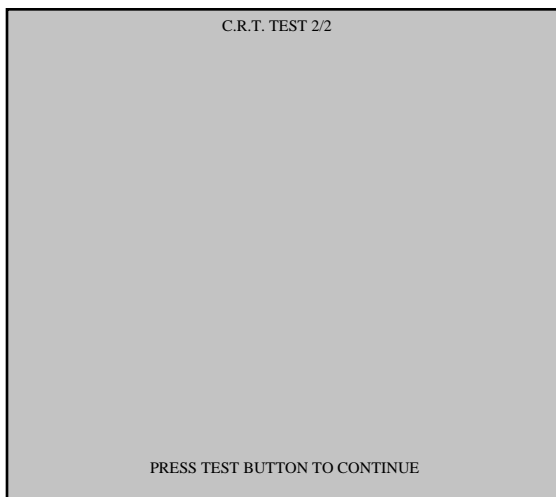
In the OUTPUT TEST mode, carry out lamp test to ensure that each lamp lights up satisfactorily.



In the TEST mode, selecting SOUND TEST causes the screen, on which sound related BD and wiring connections are tested, to be displayed. Be sure to check if the sound is satisfactorily emitted from each of speaker and the sound volume is appropriate.



In the TEST mode menu, selecting C.R.T. TEST allows the screen (on which the projector is tested) to be displayed. Although the projector adjustments have been made at the same time of shipment from the factory, color deviation, etc., may occur due to the effect caused by geomagnetism, the location building's steel frames and other game machines in the periphery. By watching the test mode screen, make judgement as to whether an adjustment is needed. If it is necessary, adjust the projector by referring to Section 9.



Perform the above inspections also at the time of monthly inspection.

5 . PRECAUTIONS TO BE HEEDED WHEN MOVING THE MACHINE



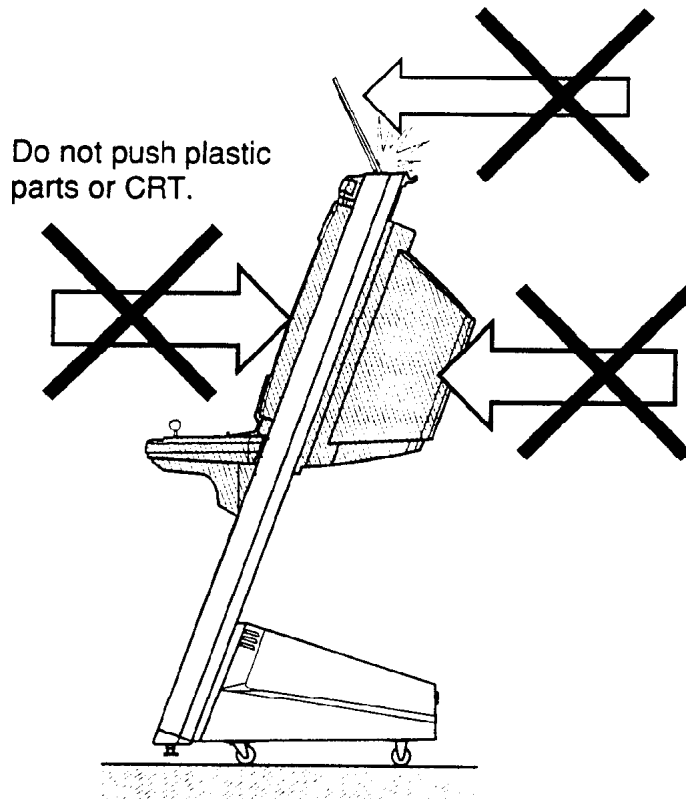
WARNING!

- When moving the machine, be sure to pull out the plug from the power supply. Moving the machine with the plug as is inserted can damage the power cord and cause a fire or electric shock.
- When moving the machine on the floor, retract the Adjusters and ensure that Casters make contact with the floor. During transportation, pay careful attention so that Casters do not tread power cords. Damaging the power cords can cause an electric shock and/or short circuit.
- When lifting the cabinet, be sure to hold the catch portions or bottom part. Lifting the cabinet by holding other portions can damage parts and installation portions, due to the empty weight of the cabinet, and cause personal injury.



CAUTION!

Use care when handling glass made parts. When the glass is damaged, fragments of glass can cause injury



6 . CONTENTS OF GAME

The following explanations apply to the case the product is functioning satisfactorily. Should there be any moves different from the following contents, some sort of faults may have occurred. Immediately look into the cause of the fault and eliminate the cause thereof to ensure satisfactory operation.

OUTLINE OF GAME

FROM AMONG THE 29 NBA TEAMS, SELECT YOUR FAVORITE TEAM

When a single play mode is selected, you battle against the computer controlled players in a tournament imagined real NBA playoffs.

If the score you have earned is greater than that of the opposing team at the game end, you can proceed to the next stage. In case of a tie score or less the game is over.

A player can buy into play a versus game, and the game can be continued up to the 4th quarter. Upon finishing a quarter, the player who has earned greater score can proceed to the next game. The player who lost the game can also play the game by executing a continue.

In case that a quarter ends in a tie, the player who has earned greater score in that quarter can proceed to the next quarter.

HOW TO OPERATE

Operate the lever and the 2 buttons to play the game.

LEVER:	movement
BLUE BUTTON:	(offense) pass (defense) steal
RED BUTTON:	(offense) shoot (defense) block shot/rebound

HOW TO PLAY

OFFENSE:

JUMP SHOT

When standing still, keep pressing down the shoot button to jump. Release the shoot button to shoot the ball.

RUNNING JUMPER

Press the shoot button to do a running jumper while dribbling.

If the defense stops your dribble, you will shoot a regular jump shot. You can perform a dunk shot depending on the distance to the goal or the timing of a shot.

PASS:

You can pass to any of your teammates by inclining the Lever in the direction of the intended player, and then pressing the pass button.

DEFENSE:

BLOCK SHOT

You can interrupt an opposing player's shot if you press the block button timely in accordance to his jump. You can decrease the probability of making the shot, even if you can not block the shot.

STEAL

When you are very close to the opposing player dribbling, if you press the steal button timely, you can steal the ball. You can also steal the ball if you timely press the steal button at a certain position when an opposing player is passing the ball.

7 . EXPLANATION OF TEST AND DATA DISPLAY

By operating the switch unit, periodically perform the tests and data check. When installing the machine initially or collecting cash, or when the machine does not function correctly, perform checking in accordance with the explanations given in this section. The following shows tests and modes that should be utilized as applicable.

TABLE 7 EXPLANATION OF TEST MODE

ITEMS	DESCRIPTION	SECTIONS
INSTALLATION OF MACHINE	When the machine is installed, perform the following: 1. Check to see that each setting is as per standard setting made at the time of shipment. 2. In the INPUT TEST mode, check each SW and VR. 3. In the OUTPUT TEST mode, check each of lamps. 4. In the MEMORY TEST mode, check ICs on the IC Board.	7 - 10, 7 - 11 7 - 6 7 - 7 7 - 3, 7 - 4
MEMORY	Choose MEMORY TEST in the MENU mode to allow the MEMORY test to be performed. In this test, PROGRAM RAMs, ROMs, and ICs on the IC Board are checked.	7 - 3, 7 - 4
	Periodically perform the following: 1. MEMORY TEST 2. Ascertain each setting. 3. In the INPUT TEST mode, test the CONTROL device 4. In the OUTPUT TEST mode, check each of lamps.	7 - 10, 7 - 11 7 - 6 7 - 7
CONTROL SYSTEM	1. In the INPUT TEST mode, check each SW and VR. 2. Adjust or replace each SW and VR. 3. If the problem can not be solved yet, check the CONTROL's moves.	7 - 6 8
MONITOR	In the MONITOR ADJUSTMENT mode, check to see if the MONITOR adjustment is appropriately made.	12
IC BOARD	1. MEMORY TEST 2. In the SOUND TEST mode, check the sound related ROMs.	7 - 2 7 - 8
DATA CHECK	Check such data as game play time and histogram to adjust the difficulty level, etc	7 - 15

7 - 1 SWITCH UNIT AND COIN METER

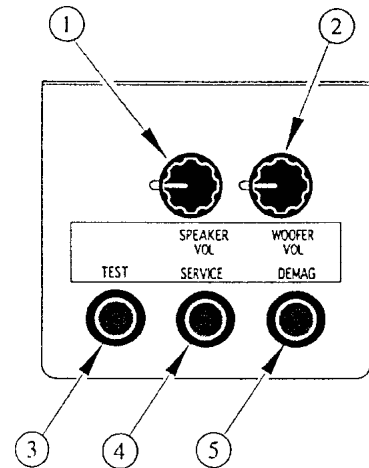


Never touch places other than those specified. Touching places not specified can cause electric shock and short circuit.



- Adjust to the optimum sound volume by considering the environmental requirements of the installation location.
- If the COIN METER and the game board are electrically disconnected, game play is not possible.

Open COIN CHUTE DOOR, and the switch unit shown appears. The function of each switch is as follows:



SWITCH UNIT

- ① **SPEAKER VOLUME:** Sound Volume can be adjusted for the 2 Speakers.
- ② **WOOFER VOLUME:** Sound Voume can be adjusted for the WOOFER.
- ③ **TEST BUTTON:** For the handling of the TEST BUTTON, refer to the following pages.
- ④ **SERVICE BUTTON:** Gives credits without registering on the coin meter.
- ⑤ **DEMAG. SWITCH:** Eliminates the on-screen color unevenness due to magnetization of CRT. First use this SW before performing the monitor's color adjustment.

7 - 2 SYSTEM TEST MODE



The contents of settings changed in the TEST mode are stored when the TEST mode is finished from EXIT in the MENU mode. If the power is turned off before the TEST mode is finished, the contents of setting change become ineffective.

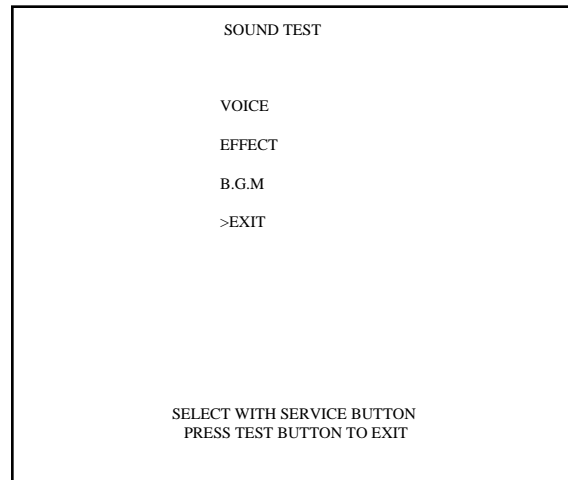
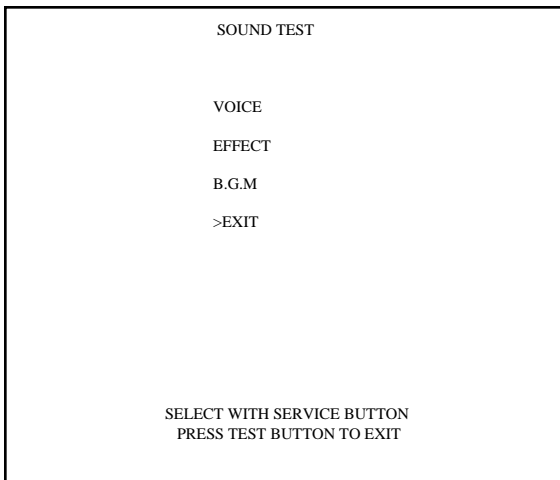
Executing "BACKUP DATA CLEAR" in the SYSTEM TEST MODE does not clear the BOOKKEEPING data in the GAME TEST MODE.

Entering the TEST mode clears fractional number of coins less than one credit and BONUS ADDER data.

The SYSTEM TEST mode mainly allows for IC Board functioning check, monitor adjustment, coin assignments, etc. For details, refer to NAOMI SERVICE MANUAL. The following assignments, however, should be designated for this product.

CABINET TYPE: 1 PLAYER (S)
MONITOR TYPE: HORIZONTAL
COIN CHUTE TYPE: COMMON

7 - 3 GAME TEST MODE



- Press the TEST button to display the SYSTEM TEST MODE MENU.
- By pressing the SERVICE button, move the arrow (->) to select the GAME TEST MODE.
- Press the TEST button to enter GAME TEST MODE. The screen displays the GAME TEST MODE MENU.
- By pressing the SERVICE button, move the arrow (->) to select the desired item. Press the TEST button to execute the selected item.
- Select EXIT and press the TEST button to exit from the GAME TEST MODE and return to the SYSTEM TEST MODE MENU. Further, select EXIT and press the TEST button to finish SYSTEM TEST MODE and return to the normal mode.

7 -4 INPUT TEST

Select INPUT TEST to have the screen shown below appear and to observe the status of each switch and the value of each V.R. on the Control Panel. Periodically check the status of each switch and V.R. on this screen.

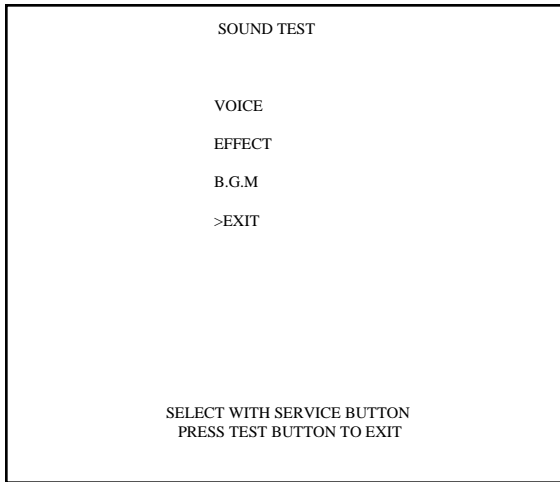


FIG. 7.4 INPUT TEST

- By pressing each switch, if the display on the right-hand side of the name of each switch changes to ON from OFF, the SW and the wiring connections are satisfactory.
- To check CHUTE 1 & CHUTE 2 coin switches, open the COIN CHUTE DOOR and insert a coin(s) in the slot.
- Press either the TEST BUTTON and the START BUTTON to return to the test menu.

As a standard, refer to the following for each of the Volume's adjustment. By operating the Handle (Steering Wheel) and Pedal, if the V of each Volume gauge smoothly moves as the corresponding value varies in a natural manner, then it is satisfactory.

7 - 5 OUTPUT TEST

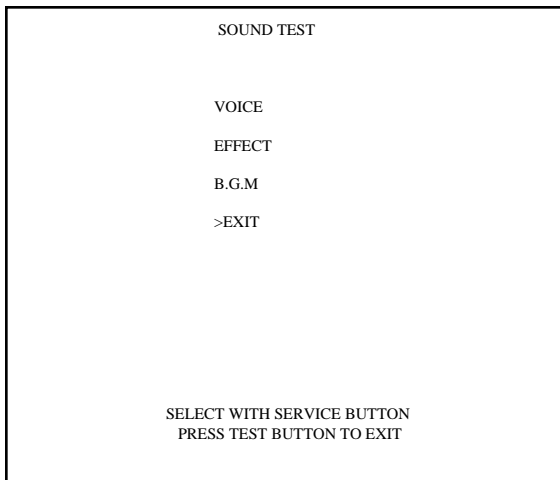


FIG. 7.5 OUTPUT TEST

Choose OUTPUT TEST to cause the following lower screen to appear. In this test, check the status of each lamp.

The right-hand side "ON" & "OFF" display of START LAMP automatically alternates. The lamp lights up when "ON" is displayed and goes off when "OFF" is displayed. Check to ensure that the lamp lights up and goes off in consistency with the display of "ON" and "OFF".

Press the TEST button to return to the TEST MENU.

7 - 6 SOUND TEST

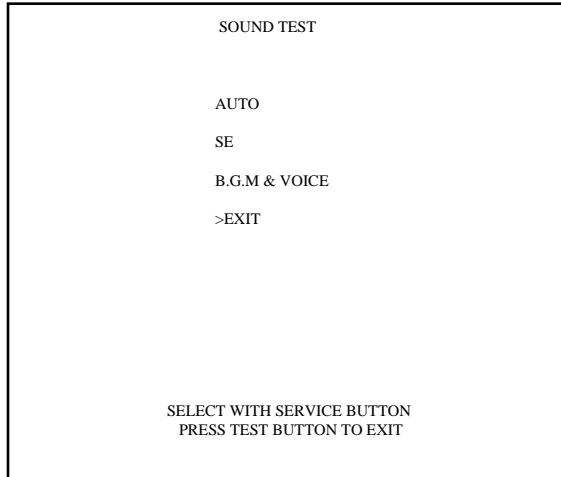
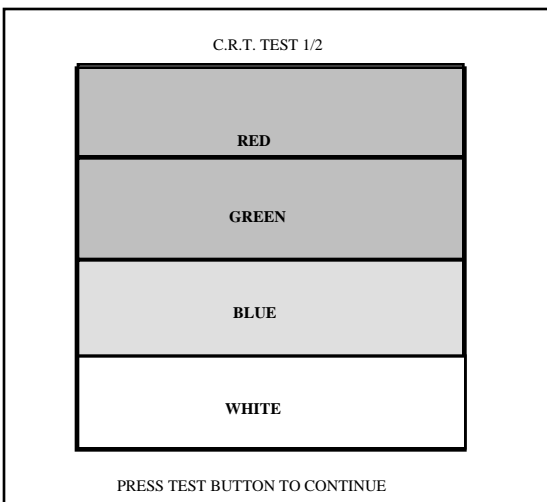


FIG. 7.6 SOUND TEST

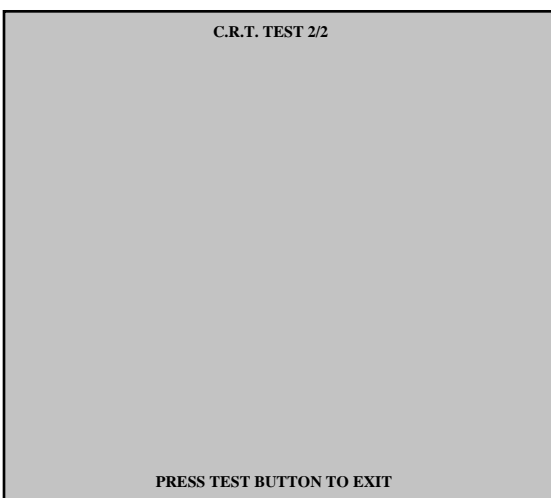
This test mode allows each sound related board and speaker to be checked.

- Press the Service Button to select the sound to be tested, and press the Test Button to have the selected Sound Test screen appear.
- Select EXIT and press the Test Button to return to the Test Menu.

7 - 7 C.R.T. TEST



- Select C.R.T. TEST to cause the MONITOR to display the screen shown left, allowing MONITOR adjustment status to be checked.
- Periodically check the MONITOR adjustment status on this screen.
- The screen (1/2) enables color adjustment check to be performed. The color bar of each of the 4 colors, i.e., red, green, blue, and white, is the darkest at the extreme left and becomes brighter towards the extreme right.



- Press the TEST BUTTON to shift to the next screen (2/2).
- The screen (2/2) allows screen size and distortion to be tested.
- Check if the CROSSHATCH FRAME LINE goes out of the screen and if the crosshatch lines are distorted.
- Press the TEST BUTTON to return to the MENU mode.

FIG. 7.7 C.R.T. TEST

7 - 8 VS. TEAM DATA

In this test, the Team Data in the VS. mode can be checked.

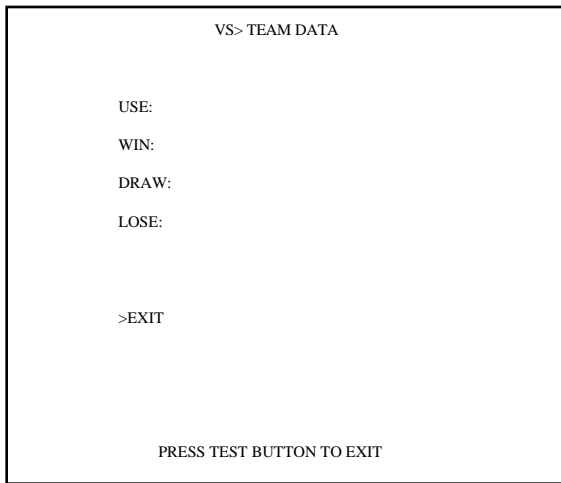


FIG. 7.8 VS. TEAM DATA

USE:

Displays team selection frequency.

WIN:

Displays each team's total number of victories in versus games.

DRAW:

Displays each team's total number of draws in versus games.

LOSE:

Displays each team's total number of losses in versus games.

7 - 9 GAME ASSIGNMENTS

Selecting the GAME ASSIGNMENTS in the MENU mode causes the present game settings to be displayed and also the game settings changes (game difficulty, etc.) can be made. Each item displays the following content.

SETTING CHANGE PROCEDURE

- ① Press the SERVICE BUTTON to move the “>” to the desired item.
- ② Choose the desired setting change item by using the TEST BUTTON.
- ③ To return to the MENU mode, move the arrow to EXIT and press the TEST BUTTON.

GAME ASSIGNMENTS	
START TIME	50
TIME DIFICULTY	4/8
GAME DIFFICULTY	4/8
>EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON TO EXIT	

- **TIME SET**
The time for one play can be set within a range of 1'15" and 3'00".
- **ONE MATCH MODE**
Select from among OFF, 1 GAME, and FULL GAME.
OFF- This is the standard setting
1 GAME- Game is over when one game is finished. This option is for some sorts of event such as game competition, etc.
FULL GAME- Regardless of communication mode 1P (against the computer) mode, the game starts at the 1st quarter.
- **GAME DIFFICULTY**
Sets the difficulty level in 4 categories, i.e., EASY, NORMAL, HARD, and HARDEST.

CONTINUE TYPE

Game continue setting. “CHARGE” and “WINNER NO CHARGE” settings are available. The standard setting is WINNER NO CHARGE.

WINNER NO CHARGE>The player who wins the versus game can continue to play.

CHARGE>In this option, each time game is finished, the player who plays the game against the computer is urged to continue whether he wins or not. In versus game, the players are urged to continue each time quarter ends regardless of win or loss.

VS. WIN TO CHARGE>In this option, when played against a computer, the player is urged to continue each time when game is finished. When played in VS. mode, the player who wins the game can continue the game.

7 - 10 COIN ASSIGNMENTS

The “COIN ASSIGNMENTS” mode permits you to set the start number of credits, as well as the basic numbers of coins and credits. This mode expresses “how many coins correspond to how many credits.”

SETTING CHANGE PROCEDURE



IMPORTANT!

Setting changes cannot be stored unless the TEST BUTTON is pressed while the arrow is on EXIT.

- ① Press the SERVICE BUTTON to move the arrow to the desired item.
- ② Choose the desired setting change item by using the TEST BUTTON.
- ③ To return to the MENU mode, move the arrow to EXIT and press the TEST BUTTON.

7 - 10 COIN ASSIGNMENTS

COIN ASSIGNMENTS		
COIN/CREDIT SETTING	#1	
CHUTE#1	1 COIN	1 CREDIT
CHUTE#2	1 COIN	1 CREDIT
ADDITIONAL SETTING		
MANUAL SETTING		
>EXIT		
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON		

- **COIN/CREDIT SETTING**
Sets the CREDITS increase increment per coin insertion. There are 27 settings from #1 to #27, expressed in XX CREDIT as against XX COINS inserted. (TABLE 7.10a, 7.10b) #27 refers to FREE PLAY.
When the COIN CHUTE TYPE is set to INDIVIDUAL, there are some setting numbers not displayed as indicated in TABLE 7.10b.
- **MANUAL SETTING**
This allows credit increase setting as against coin insertion to be further set in the manner finer than COIN/CREDIT SETTING (refer to TABLE 7.10c).

TABLE 7.10a COIN/CREDIT SETTING (COIN CHUTE COMMON TYPE)

SETTING	FUNCTIONING OF CHUTE#1	
SETTING #1	1 COIN	1 CREDIT
SETTING #2	1 COIN	2 CREDITS
SETTING #3	1 COIN	3 CREDITS
SETTING #4	1 COIN	4 CREDITS
SETTING #5	1 COIN	5 CREDITS
SETTING #6	1 COIN	2 CREDITS
SETTING #7	1 COIN	5 CREDITS
SETTING #8	1 COIN	3 CREDITS
SETTING #9	1 COIN	4 CREDITS
SETTING #10	1 COIN	5 CREDITS
SETTING #11	1 COIN	6 CREDITS
SETTING #12	2 COINS	1 CREDIT
SETTING #13	1 COIN	1 CREDIT
SETTING #14	1 COIN	2 CREDITS
SETTING #15	1 COIN	1 CREDIT
	2 COINS	3 CREDITS
SETTING #16	1 COIN	3 CREDITS
SETTING #17	3 COINS	1 CREDIT
SETTING #18	4 COINS	1 CREDIT
SETTING #19	1 COIN	1 CREDIT
	2 COINS	2 CREDITS
	3 COINS	3 CREDITS
	4 COINS	5 CREDITS
SETTING #20	1 COIN	5 CREDITS
SETTING #21	5 COINS	1 CREDIT
SETTING #22	1 COIN	2 CREDITS
SETTING #23	2 COINS	1 CREDIT
	4 COINS	2 CREDITS
	5 COINS	3 CREDITS
SETTING #24	1 COIN	3 CREDITS
SETTING #25	1 COIN	1 CREDIT
	2 COINS	2 CREDITS
	3 COINS	3 CREDITS
	4 COINS	4 CREDITS
	5 COINS	6 CREDITS
SETTING #26	1 COIN	1 CREDITS
SETTING #27	FREE PLAY	

MANUAL SETTING

Selecting MANUAL SETTING in the COIN ASSIGNMENTS mode displays the following screen.

MANUAL SETTING

COIN TO CREDIT 1 COIN 1 CREDIT --- ①

BONUS ADDER NO BONUS ADDER --- ②

COIN CHUTE #1 MULTIPLIER --- ③

1 COIN COUNTS 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 COUNTS AS 1 COIN

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

>EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

FIG. 7.11b MANUAL SETTING

- ① Determines Coin/Credit setting.
- ② This sets how many coins should be inserted to obtain one Service Coin.
- ③ This sets how many tokens one coin represents.

Table 7.10c 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 MULTIPLIER	1 COIN COUNTS AS 1 COIN	
	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	

7 - 11 BOOKKEEPING

Choosing BOOKKEEPING in the MENU mode displays the data of operating status up to the present are shown on 2 pages. Press the TEST BUTTON to proceed to PAGE 2/2.

BOOKKEEPING		PAGE1/5
COIN CHUTE #1		XXXXXXXXXX
COIN CHUTE #2		XXXXXXXXXX
TOTAL COINS		XXXXXXXXXX
COIN CREDITS		XXXXXXXXXX
SERVICE CREDITS		XXXXXXXXXX
TOTAL CREDITS		XXXXXXXXXX
NUMBER OF GAMES		XXXXXXXXXX
TOTAL	TIME	XDXHXXMXXS
1P PLAY	TIME	XDXHXXMXXS
VS. PLAY	TIME	XDXHXXMXXS
AVERAGE PLAY	TIME	XXMXXS
LONGEST PLAY	TIME	XXMXXS
SHORTEST PLAY	TIME	XXMXXS
PLAY TIME RATE		XXX
VS. PLAY RATE		XXX
PRESS TEST BUTTON TO CONTINUE		

FIG. 7.11a BOOKKEEPING (1/5)

- COIN CHUTE#*:
Number of coins put in each Coin Chute.
- TOTAL COINS:
Total number of activations of Coin Chutes.
- COIN CREDITS:
Number of credits registered by inserting coins.

In Page 2/5, Histogram of Number of Play as against Play Time is displayed. For setting the DIFFICULTY, refer to this histogram.

BOOKKEEPING PAGE 2/5			
TIME HISTOGRAM			
COURSE	BEGINNER	ADVANCED	EXPERT
~2M29S	0	0	0
2M30S~2M44S	0	0	0
2M45S~2M59S	0	0	0
3M00S~3M14S	0	0	0
3M15S~3M29S	0	0	0
3M30S~3M44S	0	0	0
3M45S~3M59S	0	0	0
4M00S~4M14S	0	0	0
4M15S~4M29S	0	0	0
4M30S~	0	0	0
PRESS TEST BUTTON TO CONTINUE			

FIG. 7.11b BOOKKEEPING (2/5)

BOOKKEEPING 3/5	
TOTAL GAME COUNT	XXX
CONTINUE GAME COUNT	XXX
PLAYER 1 GAME COUNT	XXX
PLAYER 2 GAME COUNT	XXX
PRESS TEST BUTTON TO CONTINUE	

FIG. 7.11c BOOKKEEPING (3/5)

BOOKKEEPING PAGE 4/5	
DRAW COUNT	XX
VS. WINS MAXIMUM	XX
VS. WINS HISTOGRAM	XX
PRESS TEST BUTTON TO CONTINUE	

FIG. 7.11d BOOKKEEPING (4/5)

BOOKKEEPING 5/5	
TOURNAMENT REPORT	
>EXIT	
SELECT WITH SERVICE BUTTON PRESS TEST BUTTON TO EXIT	

FIG. 7.11e BOOKKEEPING (5/5)

7 - 12 BACKUP DATA CLEAR

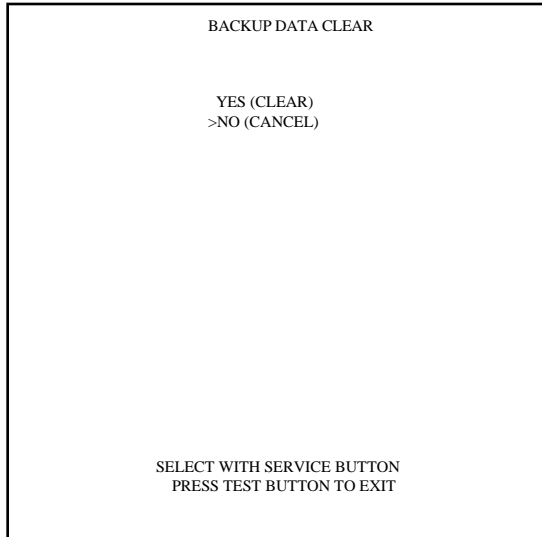


FIG. 7.12 BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING and high score player ranking entry.

- When clearing, bring the arrow to “YES” and when not clearing, to “NO”, by using the SERVICE BUTTON, and push the TEST BUTTON.
- When the data has been cleared, “COMPLETED” will be displayed. Bring the arrow to “NO” and press the TEST BUTTON to cause the MENU mode to return on to the screen.
- Note that the contents of the GAME SETTING, COIN SETTING, and BOARD SETTING are not affected by BACKUP DATA CLEAR operation.

8. CONTROL PANEL



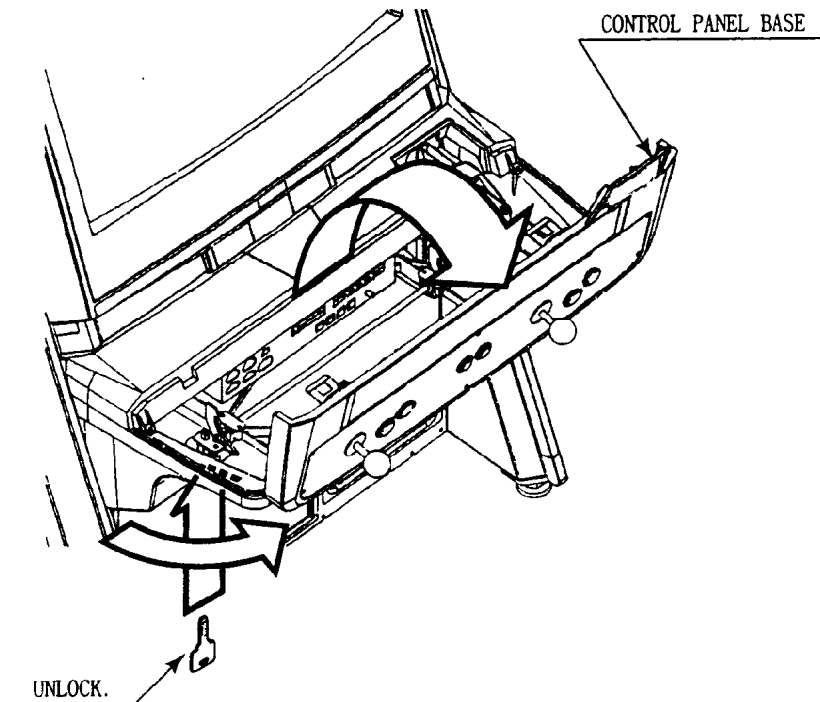
- In order to prevent an electric shock and short circuit, be sure to turn power off before performing work by touching the interior parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.
- Do not touch undesignated areas. Touching undesignated areas can cause electrical shock or short circuit.
- This work should be performed by the Location's Maintenance Man or Serviceman. Performing work by non-technical personnel can cause electric shock hazard.



When closing the Control Panel, be very careful so as not to have hand and fingers pinched in.

8 - 1 ADJUSTING AND REPLACING THE VOLUME

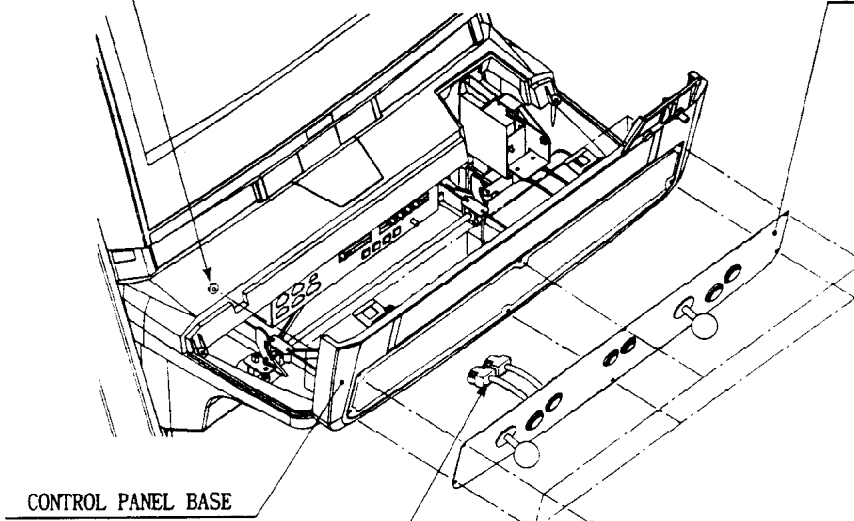
- ① Turn power OFF by using the Main SW of AC Unit or SUB PWR SPLY SW inside the SERVICE DOOR.
- ② Unlock the lock on the back of the Control Panel Base, and open the Control Panel Base.
- ③ There are 6 Connectors on the monitor side of the Base interior. Disconnect all of the 6 Connectors. Depending on the game used, however, not all of the 6 connectors may have been connected.
- ④ By removing the 6 sets of Carriage bolts and Flange Nuts, the Control Panel can be removed from the Base. At this time, be very careful so as not to damage wiring.



FLANGE NUT (6)

M4

CONTROL PANEL



Disconnect the Connector.

CARRIAGE BOLT (6)

M4 x 16

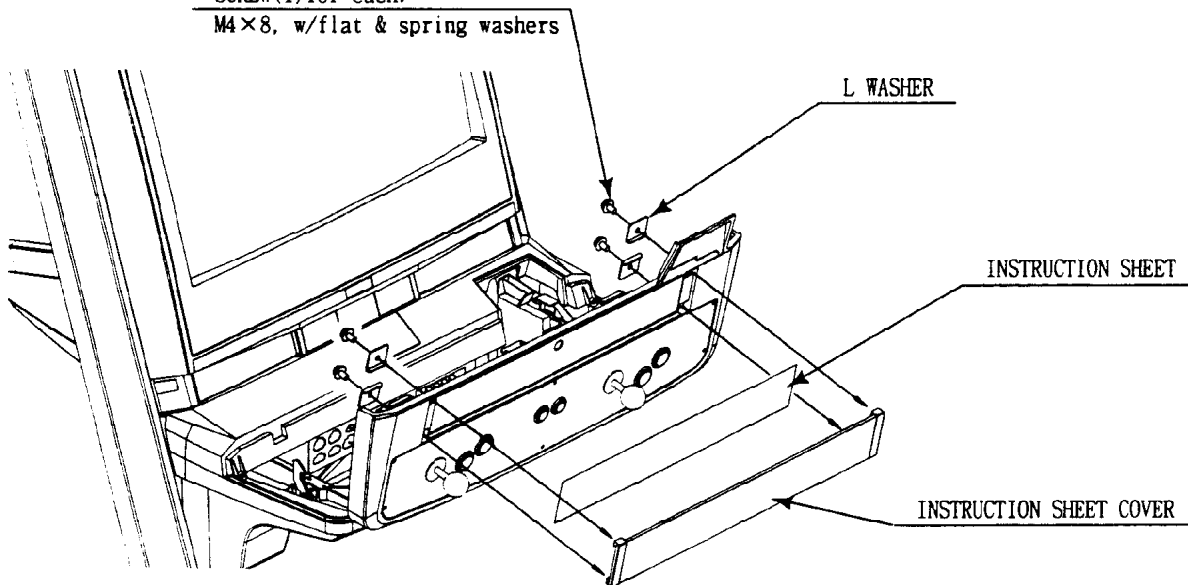
HOW TO REPLACE INSTRUCTION SHEET

- ① Turn power OFF by using the Main SW of AC Unit or the SUB PWR SUPPLY SW inside the SERVICE DOOR.
- ② Unlock the lock on the back of the Control Panel Base, and open the Control Panel Base.
- ③ From inside the Control Panel Base, remove the 4 L WASHERS from both sides of INSTRUCTION COVER by removing the screw from each.
- ④ Remove the Instruction Cover to replace the Instruction Sheet.

By using their reversed procedure, install the Instruction Cover by securing the 4L WASHERS. Pay careful attention to the method securing the L WASHERS.

SCREW(1) for each.

M4 x 8, w/flat & spring washers



9 . COIN SELECTOR

HANDLING THE COIN JAM

If the coin is not rejected when the REJECT BUTTON is pressed, open the coin chute door and open the selector gate. After removing the jammed coin, put a normal coin in and check to see that the selector correctly functions.

CLEANING THE COIN SELECTOR

The coin selector should be cleaned once every 3 months. When cleaning, follow the procedure below:

- ① Turn the power for the machine OFF. Open the coin chute door.
- ② Open the gate and dust off by using a soft brush (made of wool, etc.).
- ③ Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then squeezed dry.
- ④ Remove the CRADLE. When removing the retaining ring(E-ring), be very careful so as not to bend the shaft.
- ⑤ Remove stain from the shaft and pillow portions by wiping off with a soft cloth, etc.
- ⑥ After wiping as per #5 above, further apply a dry cloth, etc. to cause the coin selector to dry completely.

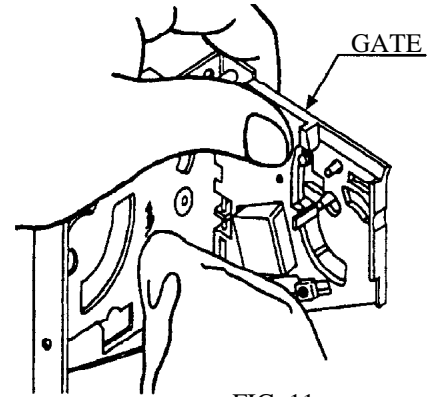


FIG. 11a

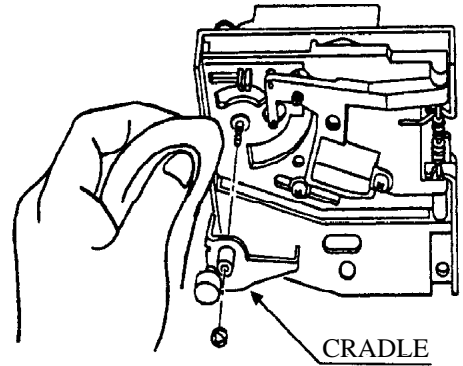


FIG.11b



IMPORTANT!

- Never apply machine oil, etc. to the coin selector
- After cleaning the Coin Selecting, Insert a regular coin in the normal working status and ensure that the Selector correctly functions.

COIN INSERTION TEST

Once a month, when performing the COIN SW TEST, simultaneously check the following:

- Does the Coin Meter count satisfactorily?
- Does the coin drop into the Cashbox correctly?
- Is the coin rejected when inserted while keeping the REJECT BUTTON is pressed down?

Insert a coin while keeping the Reject Button pressed down and check if it is rejected.

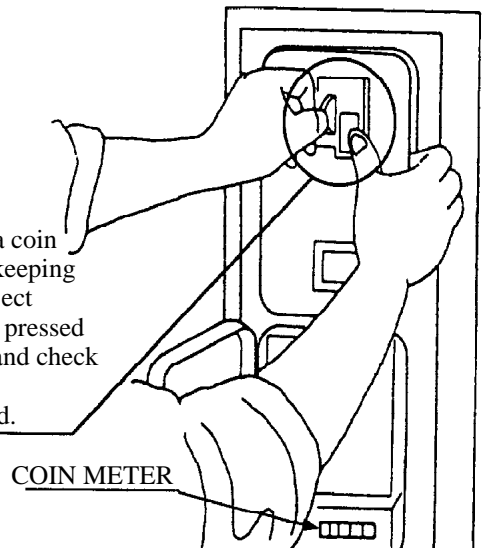


FIG. 11c

OPTIONAL DOLLAR BILL ACCEPTOR

- THE COIN DOOR ASSEMBLY USED ON VIRTUA TENNIS COMES EQUIPPED TO ACCEPT A DOLLAR BILL ACCEPTOR. ALL NEEDED WIRING CONNECTIONS ARE CONVIENENTLY LOCATED INSIDE THE GAME FOR THIS APPLICATION.
- THE COIN DOOR CAN ACCCOMMODATE THE FOLLOWING VALIDATORS:

HOLE POSITION#1 (FORWARD-MOST POSITION)	Mars 2000 series
HOLE POSITION#2	Mars 2000 series DBV45 (JCM)
HOLE POSITION #3	CURRENTLY NOT USED
HOLE POSITION #4	DSIO1*

*The back flange on the chute can be removed for hold position #4. If the flange is not removed, it may interfere with the back of the cabinet.

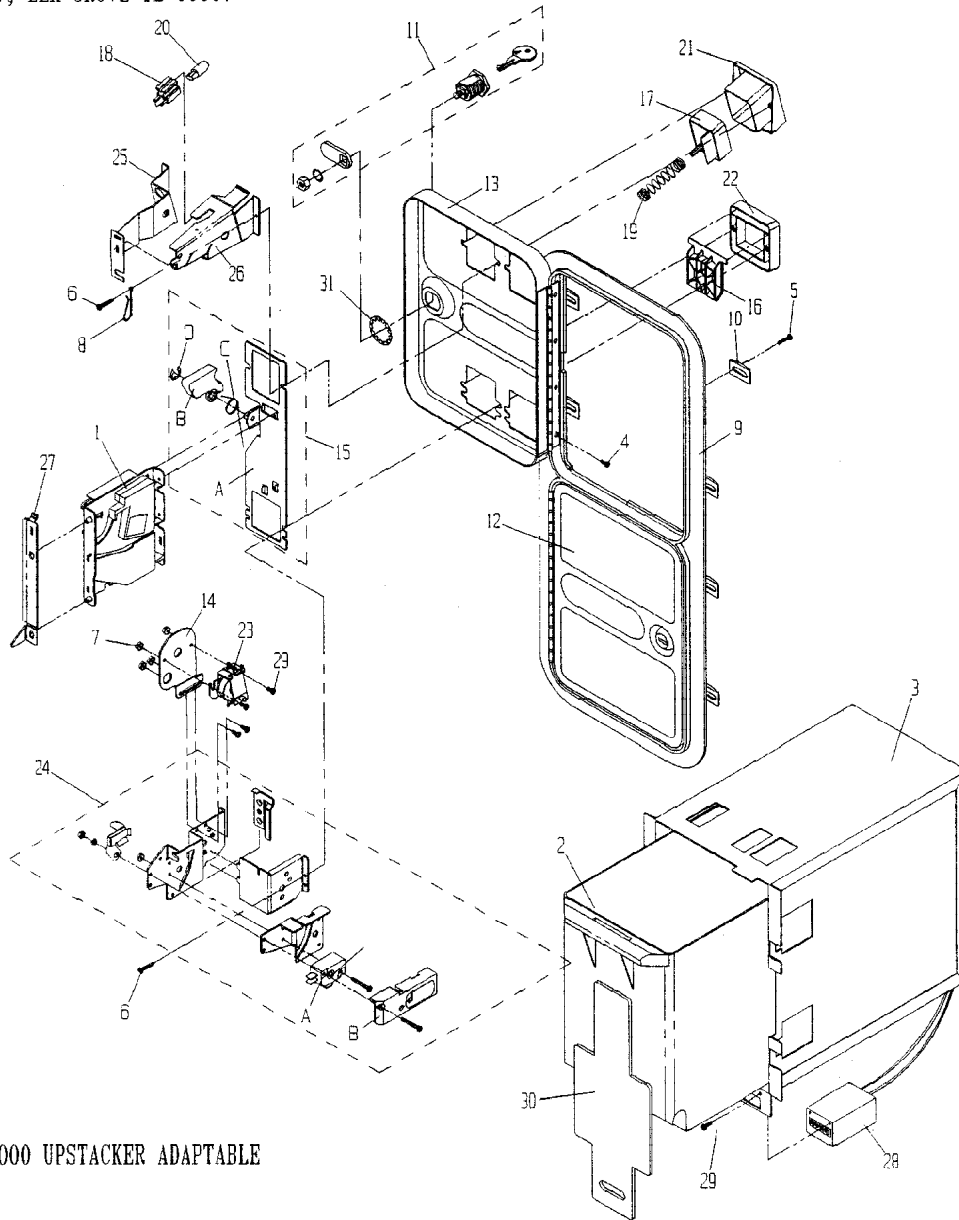
The frame and cashbox enclosure on this coindoor has been modified to accomodate a Mars 2000 series upstacker. A 2000 series stacker can be added by simply removing the top two entry door and replacing it with a one entry door with a cut-out for a stacker. This one entry door can be ordered through Coin Controls or one of Coin Controls authorized distributors. The part number is 91-4000-01. The Mars stacker can be obtained through an authorized Mars distibutor.

It should also be noted that this unit comes equipped with security hasp that surrounds the two bottom doors where the cash box is located. This is to ensure that the monies within are not tampered with, except by the operator.

COIN CONTROLS INTERNATIONAL

1850 HOWARD ST., ELK GROVE IL 60007
(847) 228-1810

OVER/UNDER TWO ENTRY COIN DOOR*



* MARS SERIES 2000 UPSTACKER ADAPTABLE

PART #	DESCRIPTION	COST	PART #	DESCRIPTION	COST	PART #	DESCRIPTION	COST
1)	12-4050-XX S-10 ACCEPTOR	19.50	16)	91-1109-16 REJECT FLAP NYLON, BLACK	2.70	28)	23-1011-00 12V DC METER	8.50
	12-4150-011 S-7 US #.25	12.00	17)	91-1113-01 ENTRY/REJECT BUTTON 25c	4.45		23-1103-00 4.5V DC METER	8.50
2)	20-4177-00 PLASTIC CASHBOX	7.40	18)	91-1117-00 LAMPHOLDER	1.40	29)	90-1032-01 METER & LOCKOUT SCREW	.25
3)	20-4189-00 ENCLOSURE, Z2000	27.50	19)	91-1121-00 E/R BUTTON SPRING	.80	30)	22-1400-00 LOCKING BAR	7.00
4)	90-1002-00 HINGE SCREW	.25	20)	91-1118-00 6V LAMP WEDGE BASE	.95	31)	90-1019-00 3/4" LOCKWASHER	.25
5)	90-1003-00 CLAMP SCREW	.95	21)	91-1311-16 BUTTON BEZEL BLACK	2.70			
6)	90-1017-00 SCREW BEZEL NYLON	.25	22)	91-1312-16 REJECT BEZEL BLACK	2.70			
7)	90-1206-02 #4-40 KEP NUT	.25	23)	91-2125-00 12V LOCKOUT COIL ASSEMBLY	12.85			
8)	90-1300-00 KEYHOOK	.35	24)	91-2216-16 MICROSWITCH ASSEMBLY	15.00			
9)	91-0508-16 FRAME	30.00	24A)	91-1116-16 MICROSWITCH BLACK	5.40			
10)	91-0506-00 CLAMP	.45		91-1116-11 MICROSWITCH WHITE	5.40			
11)	91-0547-00 DOUBLE D CAM LOCK	5.25		91-1116-10 MICROSWITCH RED	5.40			
12)	91-0603-16 BLACK MINI DOOR	8.40	24B)	91-1125-00 MICROSWITCH PLASTIC COVER	.85			
13)	91-0604-16 2 ENTRY UPPER DOOR	10.00	25)	92-1002-01 COIN INLET LAMP SIDE	1.80			
14)	91-1008-039 LOCKOUT BRACKET	4.30	26)	92-1002-021 COIN INLET COVER SIDE	1.80			
15)	91-1008-107 BASEPLATE ASSEMBLY	5.00	27)	92-1002-10 HOLD DOWN BRACKET	1.50			

10. MONITOR



CAUTION!

When performing such work as installing and removing the monitor, inserting and disconnecting the external connectors to and from monitor, be sure to disconnect the power connector (plug) before starting work. Proceeding the work without following this instruction can cause electric shock or malfunctioning.

Using the monitor by converting it without obtaining a prior permission is not allowed. SEGA shall not be liable for any malfunctioning and accident caused by said conversion.

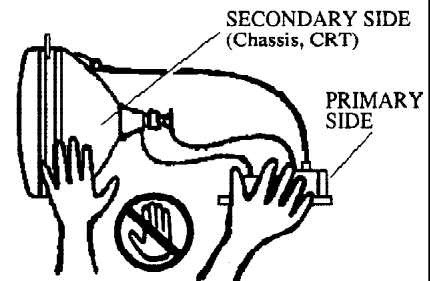


WARNING!

Primary side and secondary side

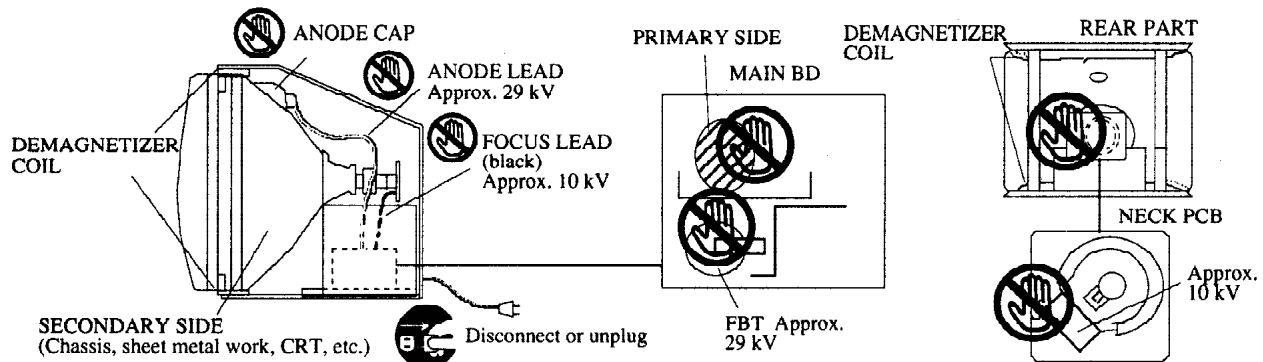
The monitor's circuit which is divided into the Primary side and secondary side, is electrically isolated. Do not touch the primary side and the secondary side simultaneously. Failing to observe the instruction can cause electric shock, and this is very dangerous.

When making monitor adjustments, use a non-conductive driver and make adjustment without touching any other part other than the Adjustment V.R. and Knob. Also, be sure not to cause a short-circuit to the Primary side and the Secondary side. If short-circuited, it can cause electric shock or malfunctioning, which is very dangerous.



High tension Voltage

Some of the parts inside the monitor are subject to high-tension voltage in excess of 20,000 volts and very dangerous. Therefore, do not touch the monitor interior. Should soldering & paper wastes, etc. be mixed in the monitor, turn the power off so as not to cause malfunctioning or fire hazard.



Connecting the CRT and PCB

For combining the CRT and PCB, use the specified part No. to maintain the status of adjustments made at the factory. The anode of the CRT itself will be accumulatively charged as time elapses, generating high tension voltage which is very dangerous. The monitor should be used with the Chassis, CRT and PCB assembled. When repair, etc. is required at the time of malfunctioning, be sure to send it in an "as assembled" condition. If these are disassembled, what's charged to said high tension voltage can be discharged, causing a very hazardous situation. Therefore, under no circumstances should it be disassembled.



CAUTION!

Static Electricity

Touching the CRT surface sometimes causes you to slightly feel electricity. This is because the CRT surfaces are subject to static and will not adversely affect the human body.

Installation and removal

Ensure that the Magnetizer Coil, FBT (Fly-Back Transformer), Anode Lead and Focus Lead are not positioned close to the sheet metal work's sharp edges, etc. and avoid damaging the insulated portions so as not to cause an electric shock and malfunctioning. (For the name of parts, refer to the above figures.)



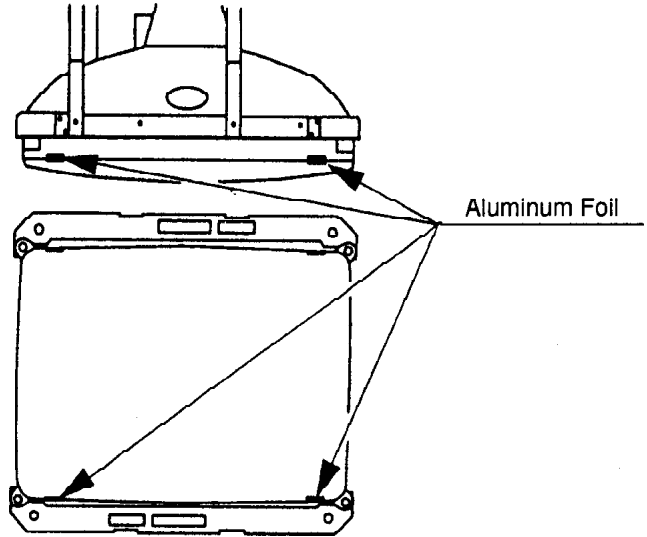
CAUTION!

For the purpose of static prevention, special coating is applied to the CRT face of this product. To protect the coating, pay attention to the following points. Damaging the coating film can cause electric shock to the customers. For the caution to be heeded when clearing, refer to the Section of Periodic inspection Table.

Do not apply or rub with a hard item (a rod with pointed edge, pen, etc.) to or on C.R.T. surfaces.

Avoid applying stickers, seals, etc. on the C.R.T. face.

Do not remove aluminum foils from the C.R.T. corners. Removing the aluminum foils can cause static prevention effects to be lowered.



CAUTION!

Monitor adjustments have been made at the time of shipment. Therefore do not make further adjustment without a justifiable reason.

Adjusting the monitor which contains high tension parts is dangerous work. Also, an erroneous adjustment can cause deviated synchronization and image fault, resulting in malfunctioning.

When making adjustment, utilize a resinous Alignment Rod. Servicing with bare hands or using conductive tools can cause electric shock.



When performing such work as monitor installation/removal, or inserting /disconnecting the external Connector connected to the monitor and its interior, first be sure to disconnect the power connector (plug). Working with the power plug as is connected can cause electric shock or malfunctioning.

When performing work, be very careful. To avoid electric shock accidents, etc., personnel other than those who have technical expertise are not allowed to perform this work.

Perform work by following the procedure herein stated. Failing to comply with these instructions can cause an electric shock accident.

Be sure to use 2 or more workers for this work. Performing work by one person can cause injury or parts damage.

To ensure performing the work safely, provide sufficient space.

Working in places with narrow space can cause injury or working errors.

Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.

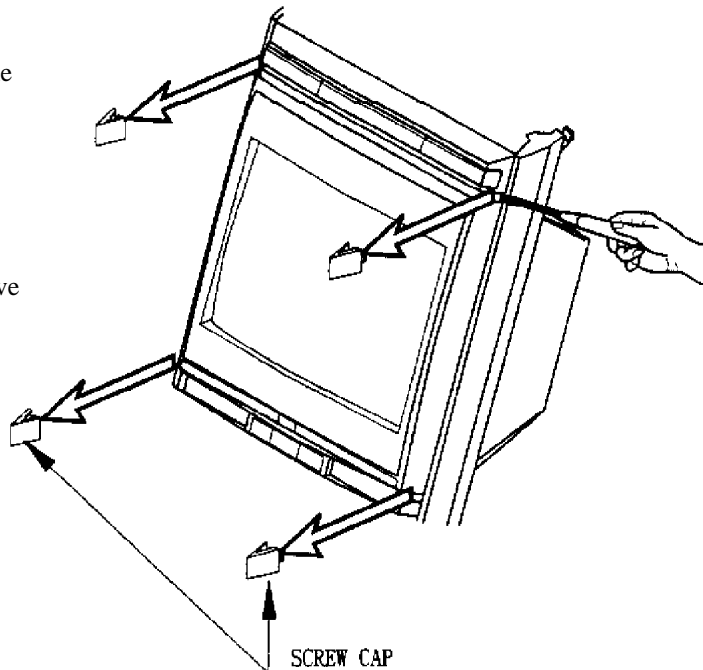
Do not touch places other than those specified. Touching places other than those specified can cause an electric shock or short circuit accident.



After the vertical/horizontal transposition of the MONITOR (GAME BOARD replacement), monitor adjustments may be required.

For performing the monitor's vertical/horizontal transposition in the manner consistent with the Game Board, follow the procedure below:

- ① After turning power off by using the Main SW of AC Unit or the SUB PWR SPLY SW inside the SERVICE DOOR, unplug the power plug from the socket outlet.
- ② Open the Control Panel Base.
- ③ By using a flat blade type screwdriver, etc., remove the 4 Screw Caps from the Front Panel.



① Take out the 4 tamperproof screws and the 2 screws, and remove the Front Panel.

② Disconnect the 2 Connectors for the speakers.

③ Take out the 6 Tamperproof screws, and remove the CRT Cover.

④ Disconnect the 2 Connectors connected to the frame on the back side of CRT and the Connector connected to the Printed Circuit Board to loose the secured wiring.

⑤ Remove the nuts securing the corners of the monitor.

⑥ By holding the monitor's sheet metal frame portion, pull out from the cabinet. At this time, be very careful so as not to damage wiring. Since the monitor is a heavy item, lift up by 2 persons and another person is to support the monitor from the rear.

⑦ Install the monitor to the cabinet. When placing the cabinet horizontally, the 2 Connectors connected to the aforementioned frame are on the right-hand side facing the CRT face. When placing the cabinet vertically, the 2 Connectors are underside.

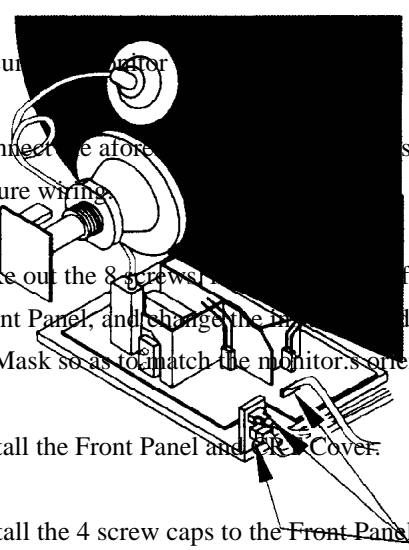
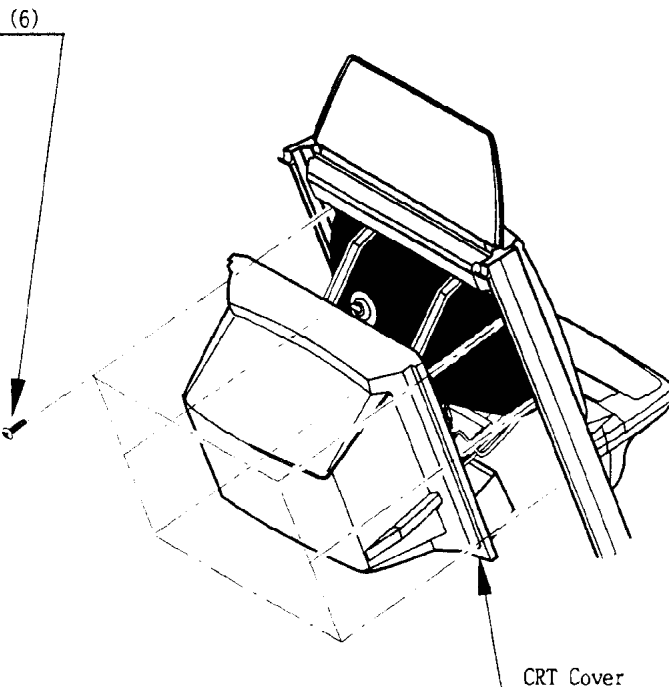
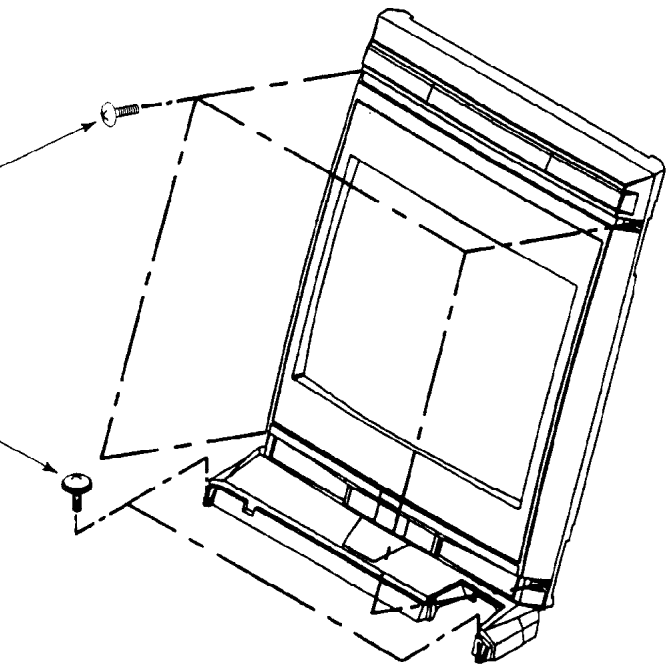
⑧ Secure the connector.

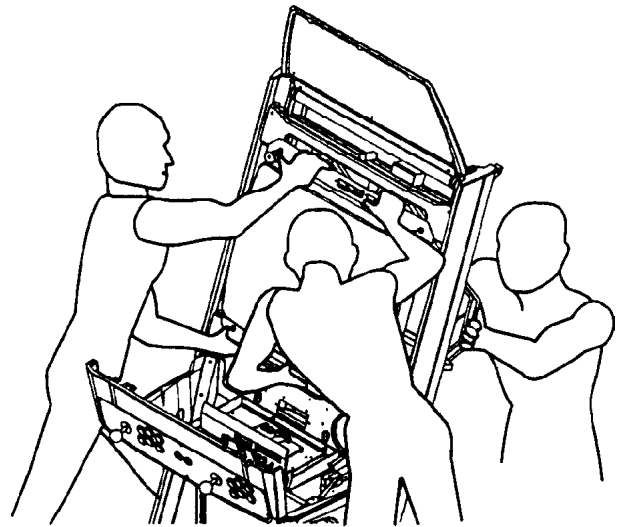
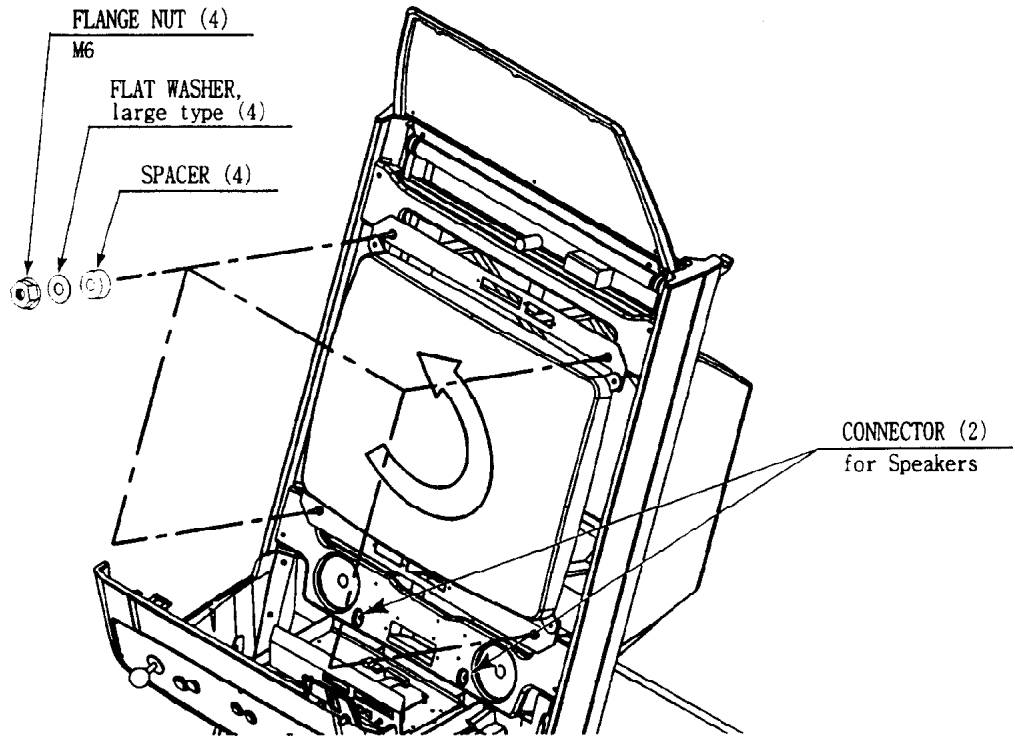
⑨ Connect the aforementioned connectors, and secure wiring.

⑩ Take out the 8 screws from the Front Panel, and change the direction of Mask so as to match the monitor's orientation.

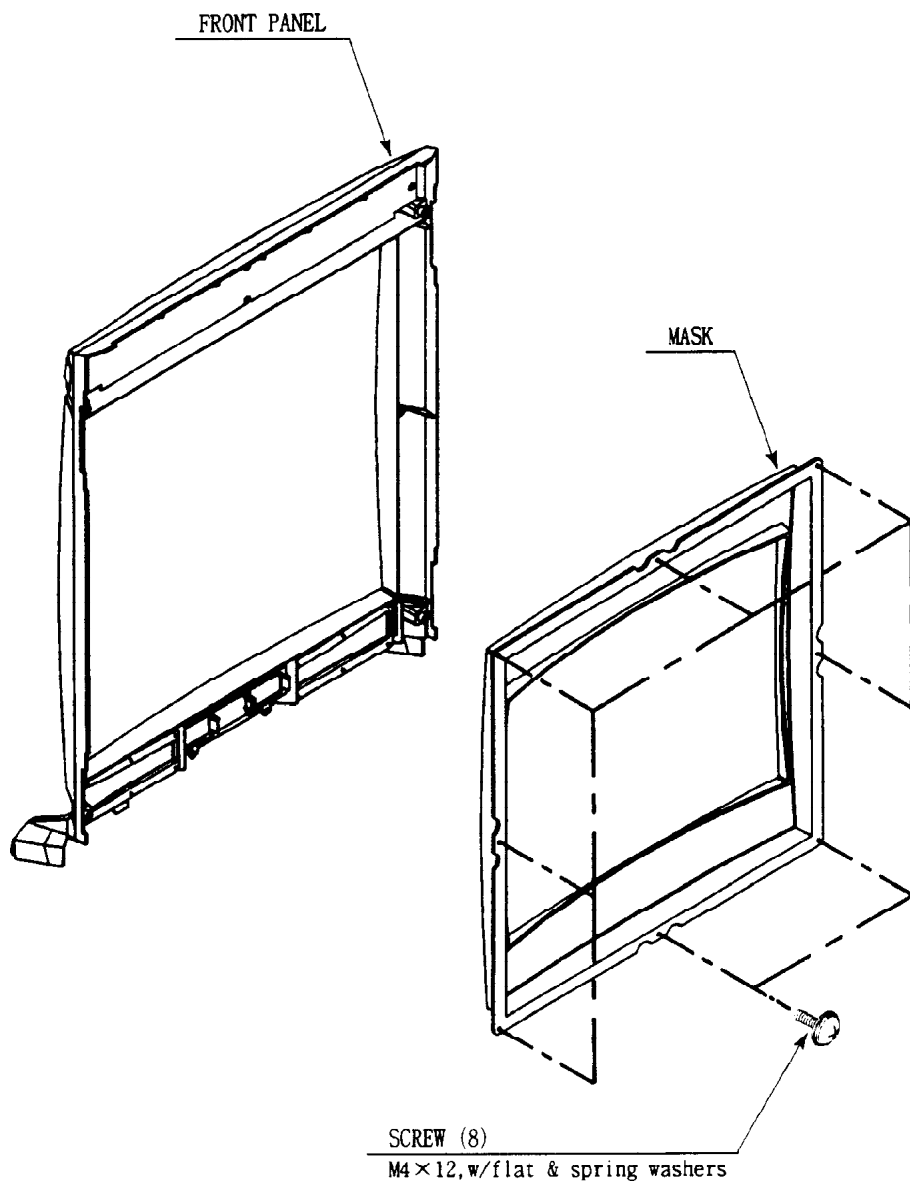
⑪ Install the Front Panel and CRT Cover.

⑫ Install the 4 screw caps to the Front Panel.





For performing work, use 3 workers.



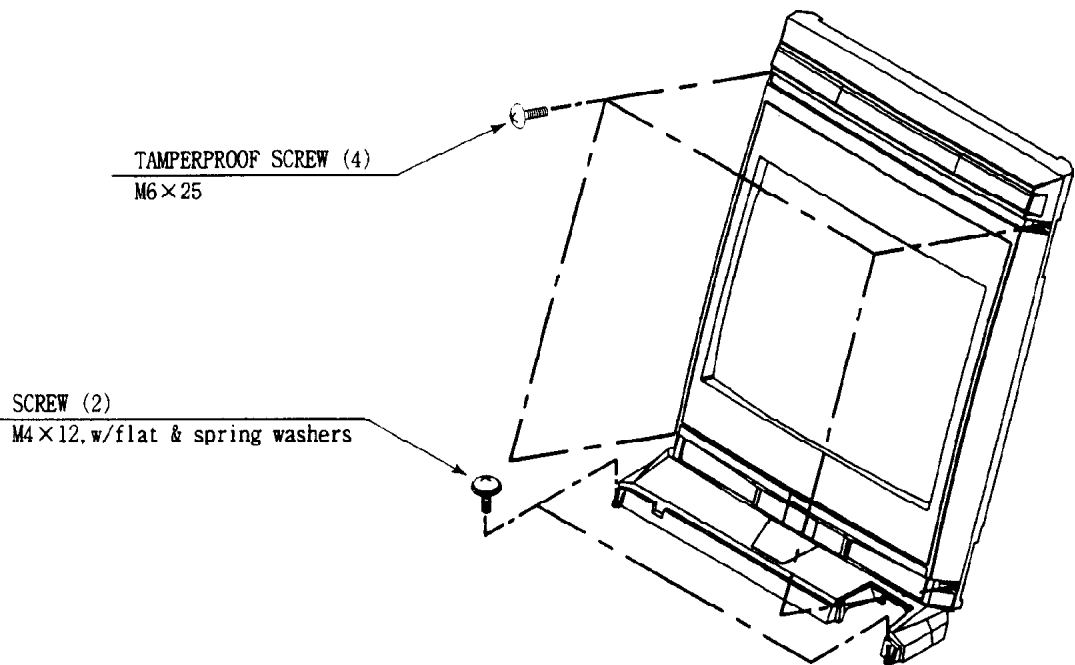
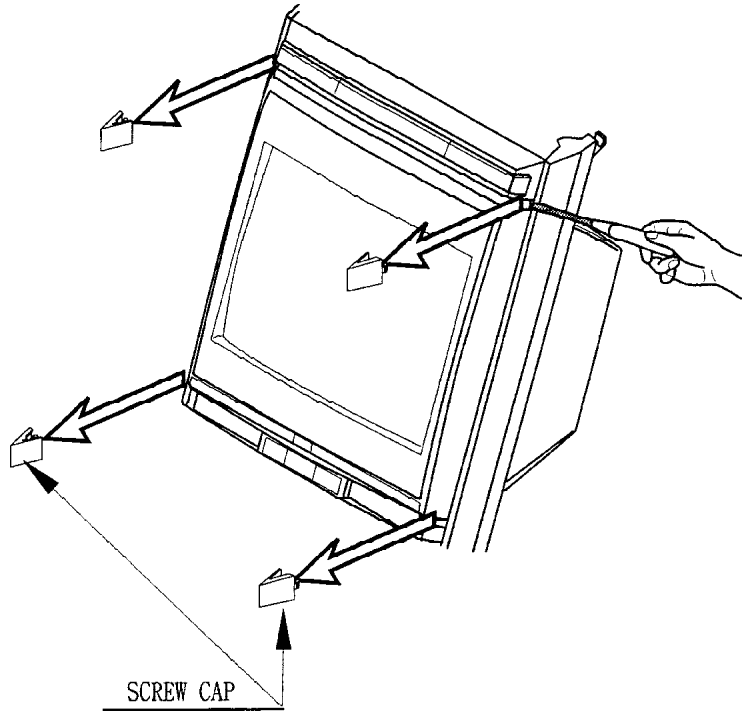
11. REPLACEMENT OF FLUORESCENT LAMP



- When performing the work, be sure to turn power off. Working with power on can cause an electric shock or short circuit accident.
- The Fluorescent Lamp, when it gets hot, can cause burns. Be very careful when replacing the Fluorescent Lamp.

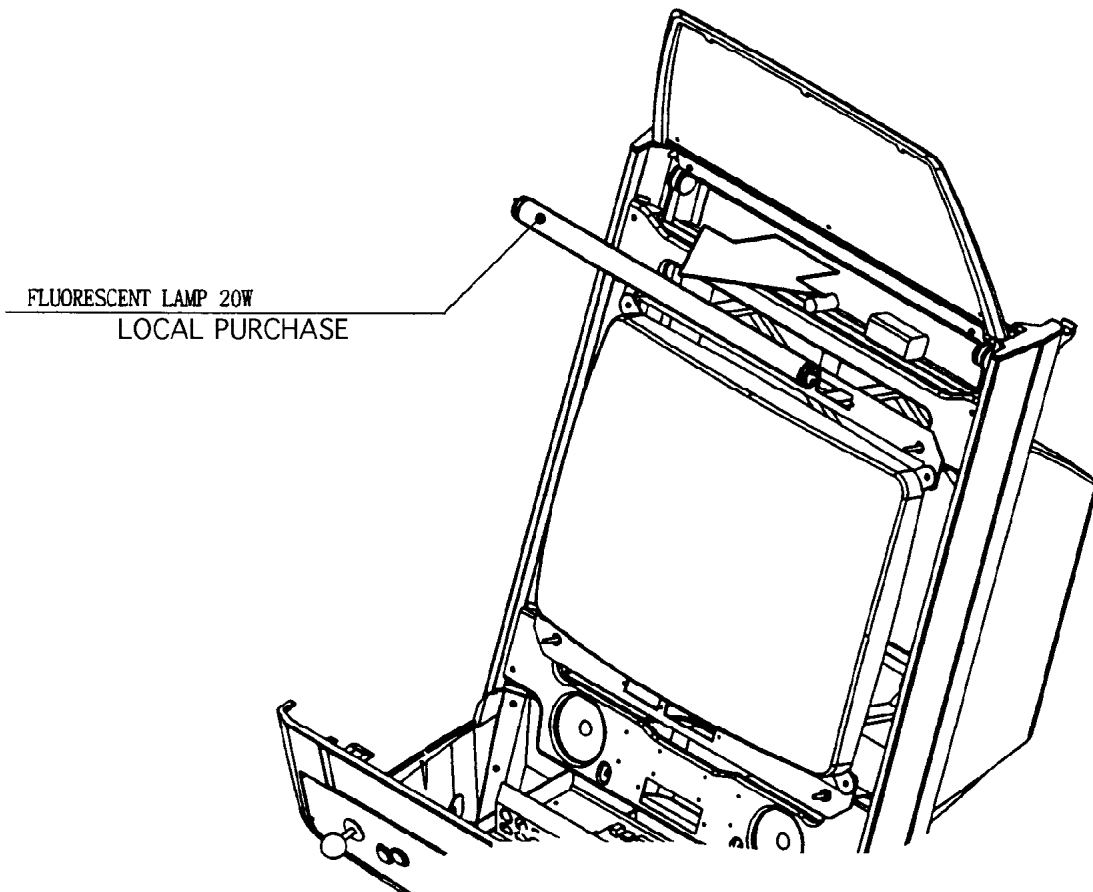
11 -1 REPLACEMENT OF FLUORESCENT LAMP

- ① Turn power OFF by using the Main SW or the SUB PWR SPLY SW inside the SERVICE DOOR.
- ② Open the Control Panel.



- ③ By using a Flat-blade screwdriver, etc.remove the 4 Screw Caps from the Front Panel.

- ④ Take out the 4 Tamperproof screws and 2 screws, and remove the Front Panel to replace the Fluorescent Lamp.



12. PERIODIC INSPECTION TABLE

The items listed below require periodic check and maintenance to retain the performance of this machine and ensure safe operation.



WARNING!

- Be sure to check once a year to see if Power Cords are damaged, the plug is securly inserted, dust is accumulated between the Socket Outlet and the Power Plug, etc. Using the product with dust as is accumulated can cause a fire or electrical shock.
- Periodically once a year, request the place of contact herin stated or the Distributer, etc. where the product was purchased from, as regards to the interior cleaning. Using the product with dust as is accumulated in the interior without cleaning can cause a fire or short circuit accident. Note that cleaning the interior parts can be performed on a pay-basis.

	Item	Interval	Reference
CABINET	Check Adjusters' contact with surface.	Daily	3
CONTROL PANEL	Check lamps.	Monthly	9
	Check VOLUME value.	Monthly	9
	Greasing	Trimonthly	10-2
ACCEL. & BRAKE	Check VOLUME value.	Monthly	9
	Greasing	Trimonthly	12-3
SHIFT LEVER	Check switches.	Monthly	9
	Greasing	Trimonthly	11-3
COIN SELECTOR	Check COIN SW.	Monthly	9
	Coin insertion test.	Monthly	13
	Cleaning of COIN SELECTOR.	Trimonthly	13
MONITOR	Check adjustments.	Monthly or when moving.	6, 9, 14
	Cleaning of CRT surfaces.	Weekly	14-2
GAME BD	MEMORY TEST.	Monthly	SERVICE MANUAL
	Check settings.	Monthly	9
Cabinet surfaces	Cleaning	As necessary.	See below.
INTERIOR	Cleaning	Annually	See above.
POWER SUPPLY PLUG	Inspection and cleaning		

CLEANING CABINET SURFACES

If the cabinet is badly stained, use a cloth which is dipped in the chemical detergent liquid diluted with water and then squeezed dry. Do not use thinner, benzine, alcohol or chemical dustcloth as these can damage Cabinet surfaces.

13. TROUBLESHOOTING

Should trouble occur, first check connector connections.

PROBLEMS	CAUSE	COUNTERMEASURES
With Main SW ON, no activation	Power is not supplied. Power supply/voltage is not correct. AC main fuse causes the power to be cut off due to momentary overload.	Plug in correctly Make sure that power supply/voltage is correct. Check fuse. Remove the cause of overload and replace fuse
Operation is unsatisfactory	Volume Setting Failure Poor mesh of V.R. gear. Spring failure due to secular change of Accelerator and Brake Mecha.	Perform Volume setting Adjust or replace V.R. Adjust Gear mesh.. Replace the Spring.
Sound from Speakers and woofer not emitted	Incorrect volume adjustment Malfunctioning bd and AMP.	Adjsut SW UNIT's sound adjsutment volume. Perform Sound test.
The image on MON.. screen has color deviation.	Affected by the magnetic field of installation location.	Make CONVERGENCE adjustment. (Refer to Section 12.)
No sound is emitted.	Sound Volume adjustment is not appropriate. Sound BD and speaker are malfunctioning.	Adjust sound volume. (see Section 7). Perform sound test to find and replace defective parts.(Refer to Section 7).
Joystick controller does not operate.	Switch malfunctioning.	Replace the SW.
The Fluorescent lamp does not light up.	The Fluorescent tube is burnt out.	Replace the Fluorescent tube (Refer to Section 11).

14. GAME BOARD



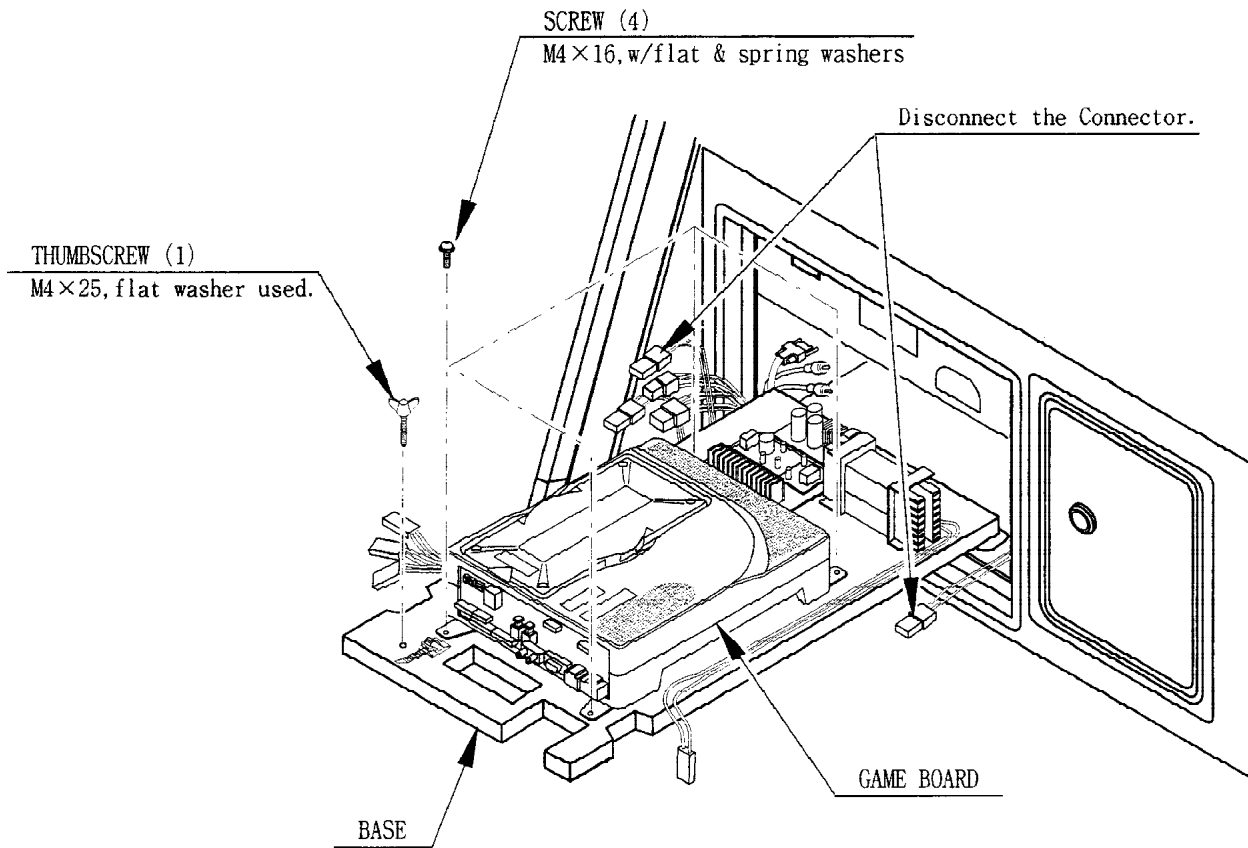
- In order to prevent an electrical shock, be sure to turn power off before performing work by touching the interior parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.



Do not expose the Game BD, etc. without a good reason. In this product, setting changes are made during the test mode. The Game BD need not be operated. Use the Game BD, etc. as is with the same setting made at the time of shipment.

14-1 REMOVING THE GAME BOARD

- ① Turn main switch off.
- ② Disconnect all of the Connectors connected to the Filter Board at the front of the Shield Case, 3 connectors on the left hand side facing the Shield Case and the right-hand side Connector.
- ③ Take out the thumbscrew securing the Base, and remove the Base from the cabinet with the Shield Case as is mounted. When removing the Base first withdraw the Base towards you up to the notch portions allowing for evading the fitting which secures the Base. From that position, lift up and remove the Base. At this time, be very careful so as not to damage wiring.
- ④ Take out the 4 screws and remove the Shield Case.



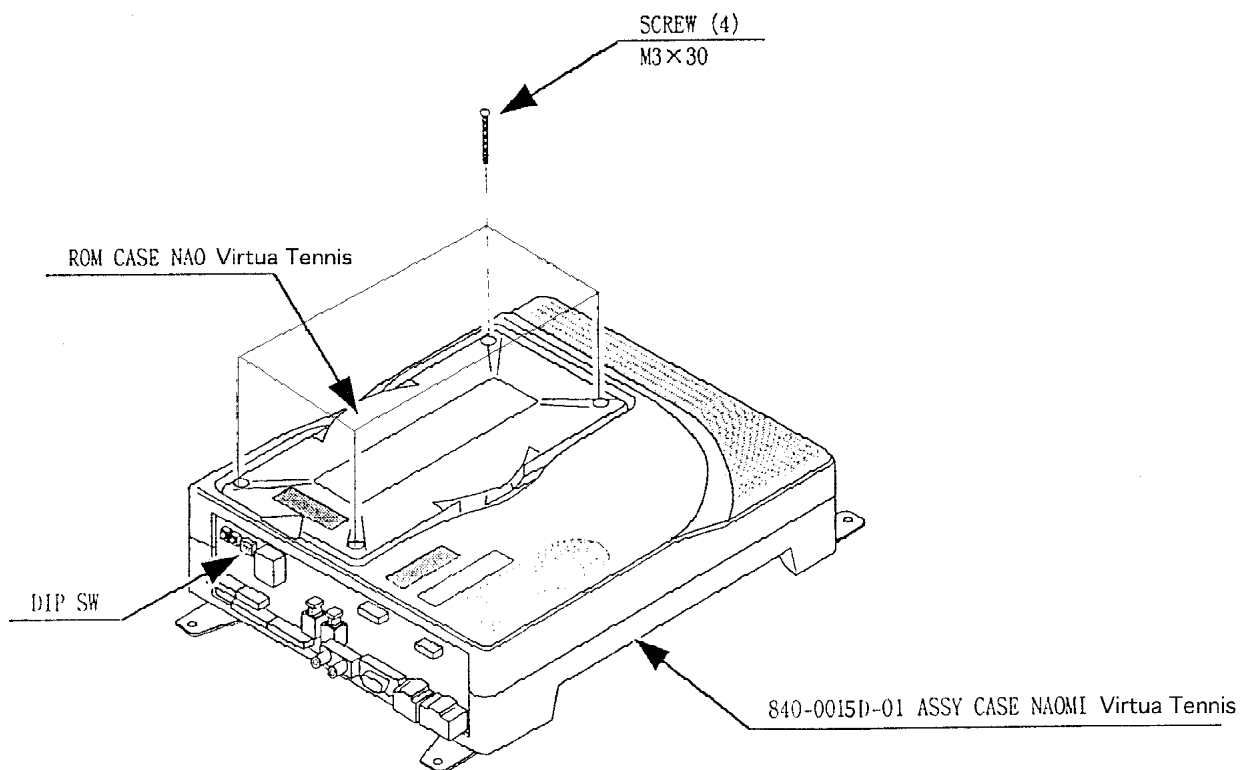
14 - 3 COMPOSITION OF GAME BOARD



IMPORTANT!

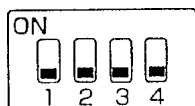
Ensure that the DIP SW setting is performed as designated as designated. Failure to observe this may cause functioning not suitable for the operation, or malfunctioning.

ASSY CASE NAO USA (840-0021D-01) :USA

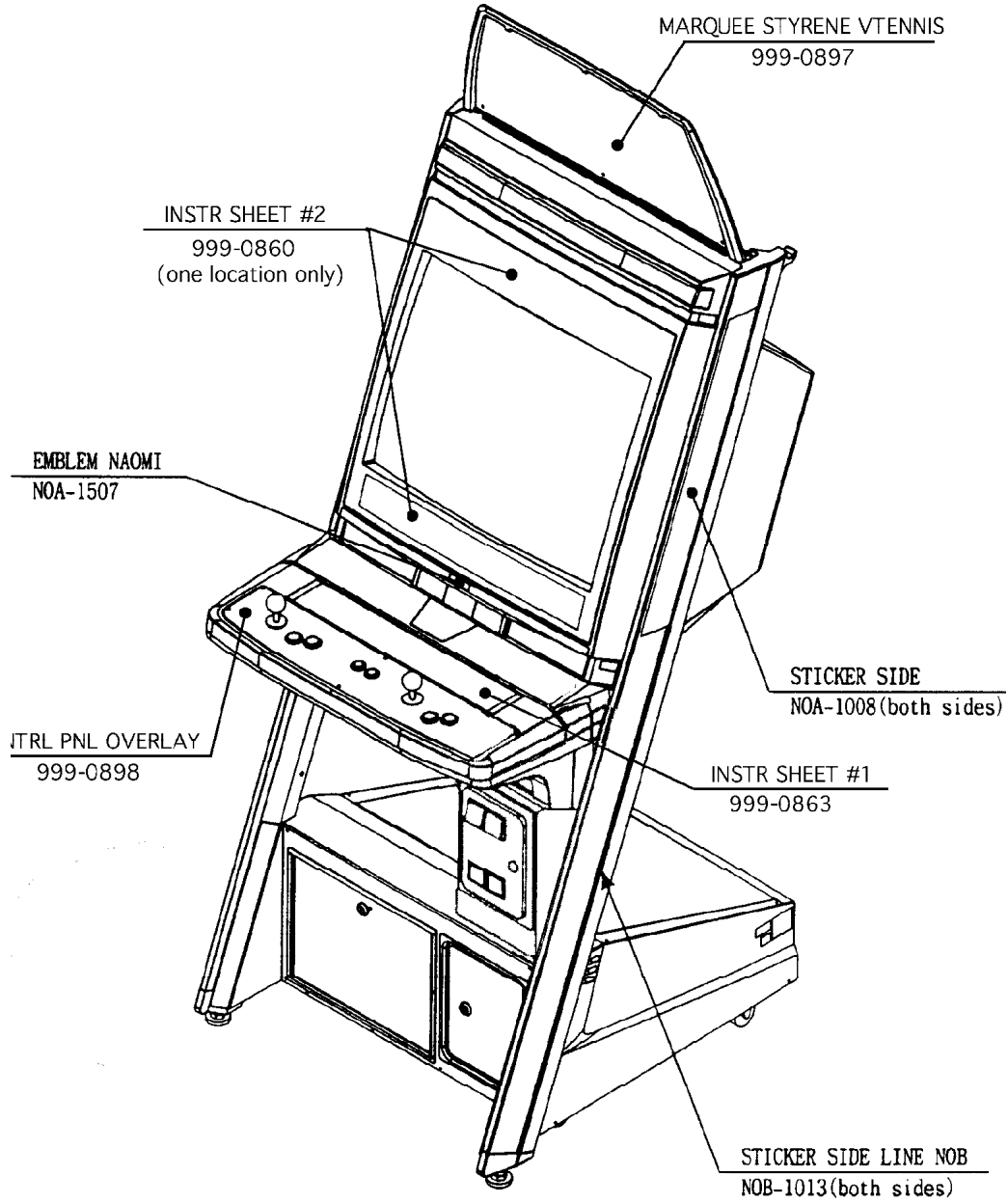


DIP SW SETTING

IN the product, set all of the DIP SWes to OFF.



15. DESIGN RELATED PARTS

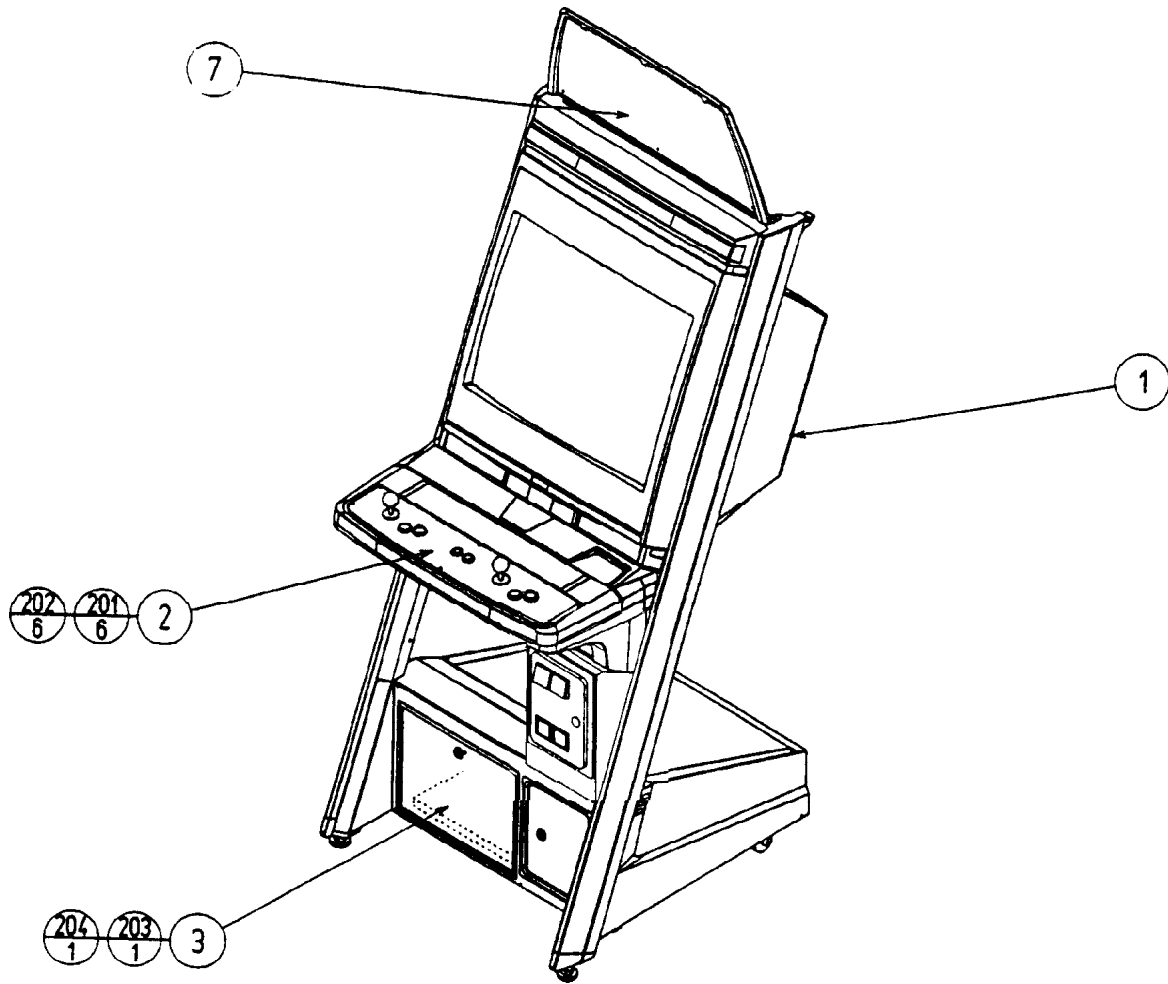


DESIGN RELATED PARTS

ITEM NO.	PART NO.	DESCRIPTION
1	XXX	PLAY INSTRUCTION SH NBA
2	XXX	SUB INSTR SH NBA
3	XXX	POP NBA
4	XXX	STICKER SIDE L
5	XXX	STICKER SIDE R
6	NOA-1507	EMBLEM NAOMI
7	XXX	STICKER FRONT
8	XXX	STICKER F
9	XXX	SHEET EMBLEM
10	XXX	GUARD PLATE CENTER
13	XXX	STICKER CONTROL PANEL OVERLAY
14	XXX	STICKER ??????

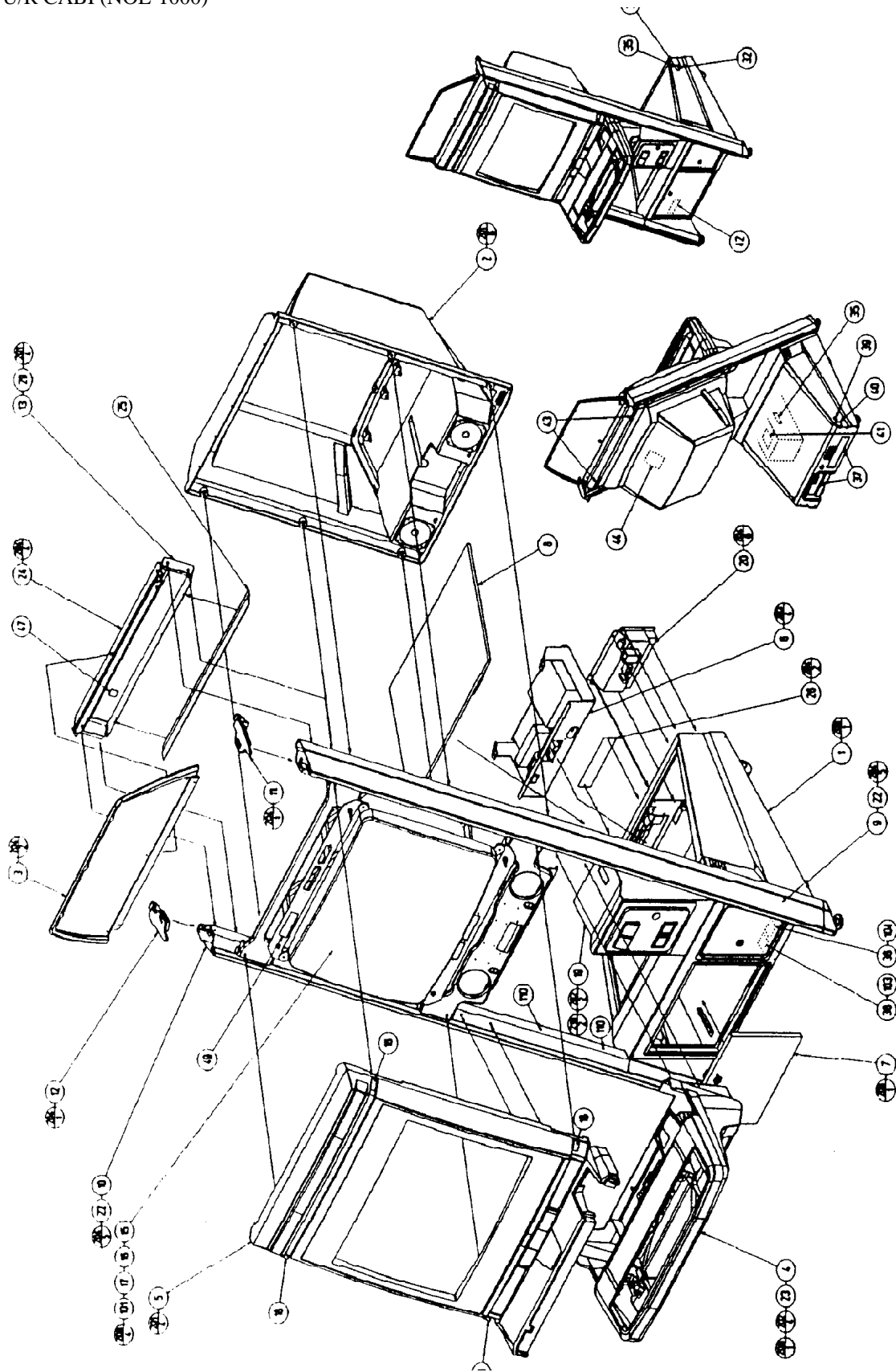
16. PARTS LIST

TOP ASSY VIRTUA NBA



ITEM NO.	PART NO.	DESCRIPTION
1	NOE-1000	ASSY U/R CABI
2	NOA-2000	ASSYCONTROL PANEL
3	NOA-0001	WOODEN BASE MAIN
7	NOA-1300	ASSY BILLBOARD
201	031-0S0416	CRG BLT STN M4X16
202	050-F00400	FLG NUT M4
203	032-000425	WING BLT M4X25
204	068-441616	FLT WSHR 4.4-16X1.6

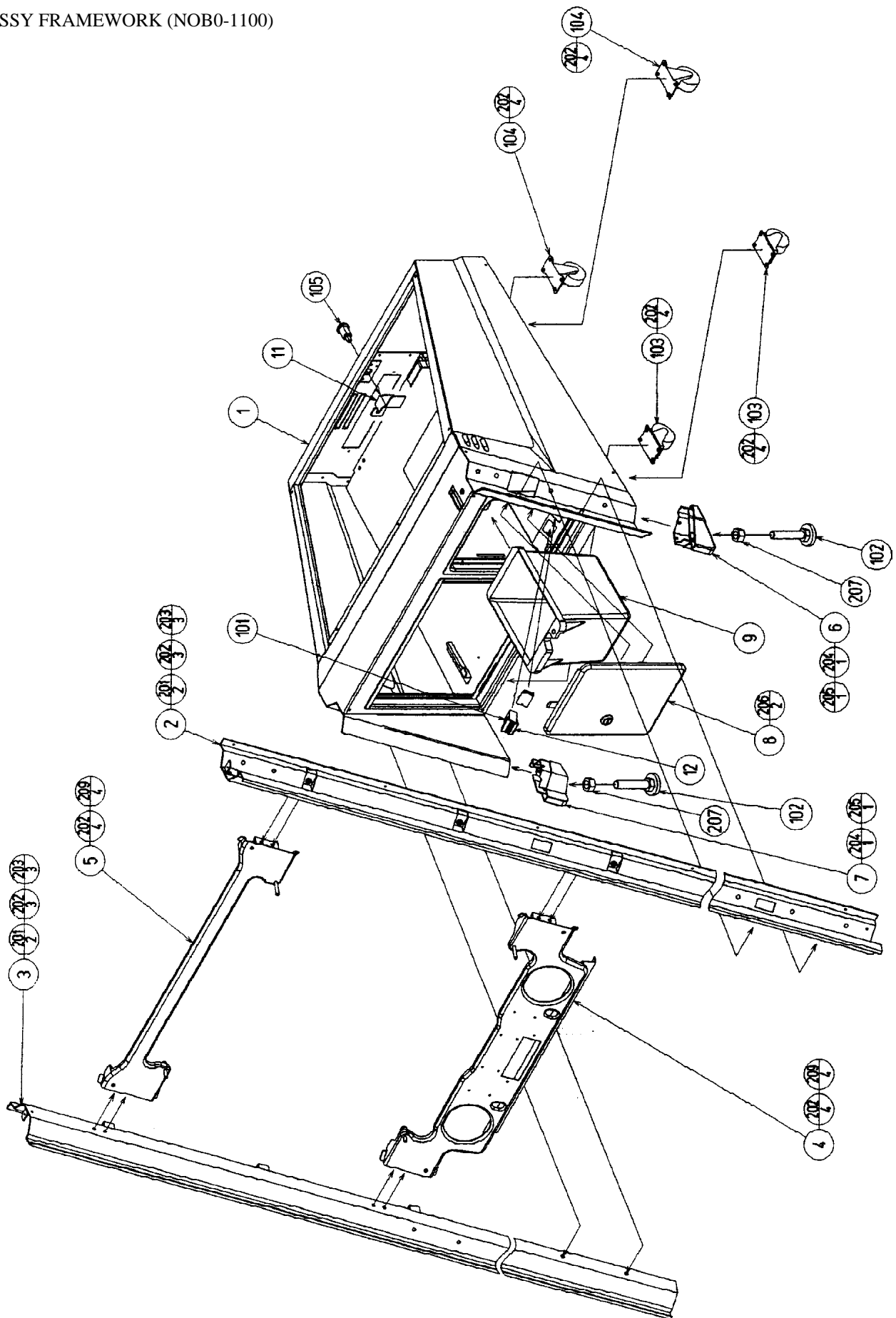
ASSY U/R CABI (NOE-1000)



ASSY U/R CABI (NOE-1000)

ITEM NO.	PART NO.	DESCRIPTION
1	NOB-1100	ASSY FRAMEWORK UR
2	NOA-1200	ASSY CRT COVER
3	NOA-1300	ASSY BILLBOARD
4	NOA-1400	ASSY CONTROL BOX W/CC
5	NOA-1500	ASSY FRONT PANEL
6	NOA-4000	ASSY ELEC
7	NOA-1750	ASSY SERVICE DOOR
8	NOA-1801	REAR HATCH
9	NOB-1001	FRAME COVER U/R R
10	NOB-1002	FRAME COVER U/R L
11	NOA-1003	ENDCAP R
12	NOA-1004	ENDCAP L
13	NOA-1005	REAR COVER UPPER
14	HOT-1007	LID COIN CNTR
15	280-5112	BUSH FOR TV
16	280-5113	COLLAR FOR TV
17	280-5114	SPACER 6.4-25X2
18	CTA-1006	SCR CAP
19	CTA-1150	ASSY CC BOX WW
20	NOC-1700	AC UNIT UL
21	LOCAL PURCHASE	FL HOLDER
23	NOA-1009	WSHR PLATE
24	NOA-1010	BILLBOARD HOLDER
25	NOA-1011	FL BRKT
26	NOA-1116	LID COMMUNI PORT
27	NOA-4100	ASSY XFMR
29	NOA-1014	CUCHION SPONGE 580
30	NOE-1480	COIN SELECTOR UNIT
101	200-5787	ASSY CLR DSPL 29TYPE 31K 100V
102	LOCAL PURCHASE	ASSY FL 20W W/CONN HIGH
110	601-6231-01	EDGING NEW TYPE
201	008-T00625-0C	TMP PRF SCR TH CRM M6X25
202	030-000620-S	HEX BLT W/S M6X20
203	010-P00408-F	S-TITE SCR PH W/F M4X8
204	008-T00412-0C	TMP PRF SCR TH CRM M4X12
205	008-T00412-0C	TMP PRF SCR TH CRM M4X12
206	050-F00600	FLG NUT M6
207	000-P00430-W	M SCR PH W/FS M4X30
208	000-P00320	M SCR PH M3X20
209	032-000425	WING BLT M4X25
210	068-441616	FLT WSHR 4.4-16X1.6
211	008-B00820-0C	TMP PRF SCR BH CRM M8X20
212	031-000626-0C	CRG BLT CRM M6X20
213	060-F00800	FLT WSHR M8
214	000-P00412-W	M SCR PH W/FS M4X12
215	008-B00620-0B	TMP PRF SCR BH BLK M6X20
216	060-F00500	FLT WSHR M5
217	060-S00500	SPR WSHR M5
218	050-H00500	HEX NUT M5
219	000-P00308-W	M SCR PH W/FS M3X8

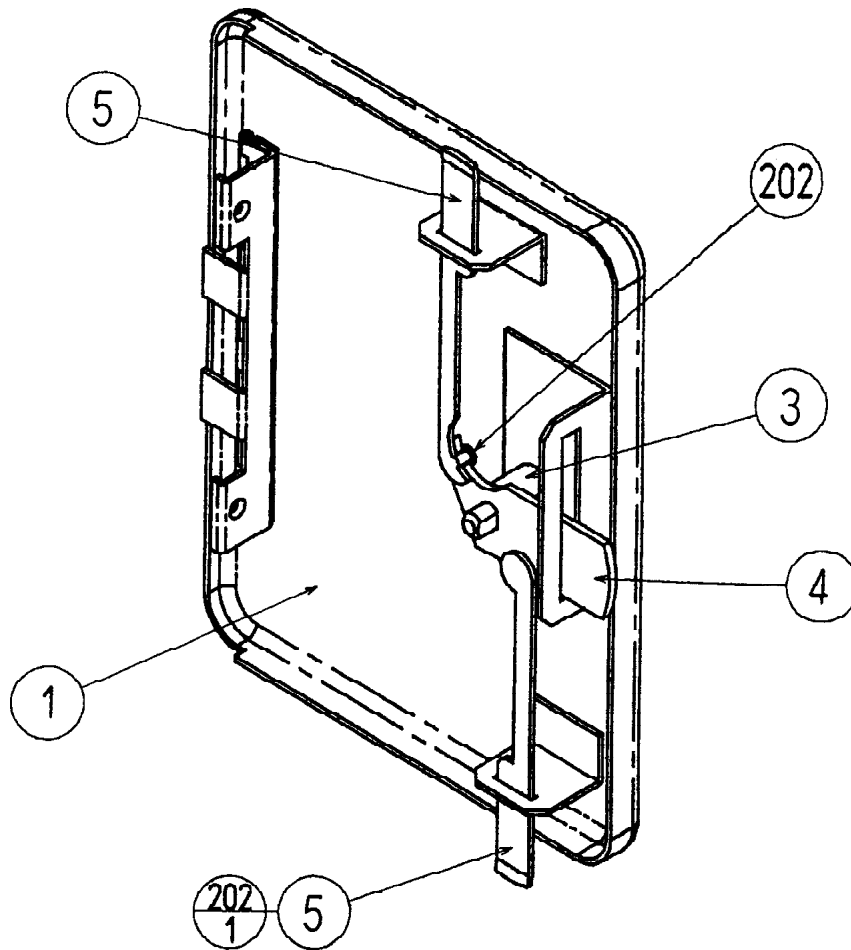
ASSY FRAMEWORK (NOB0-1100)



ASSY FRAMEWORK (NOB0-1100)

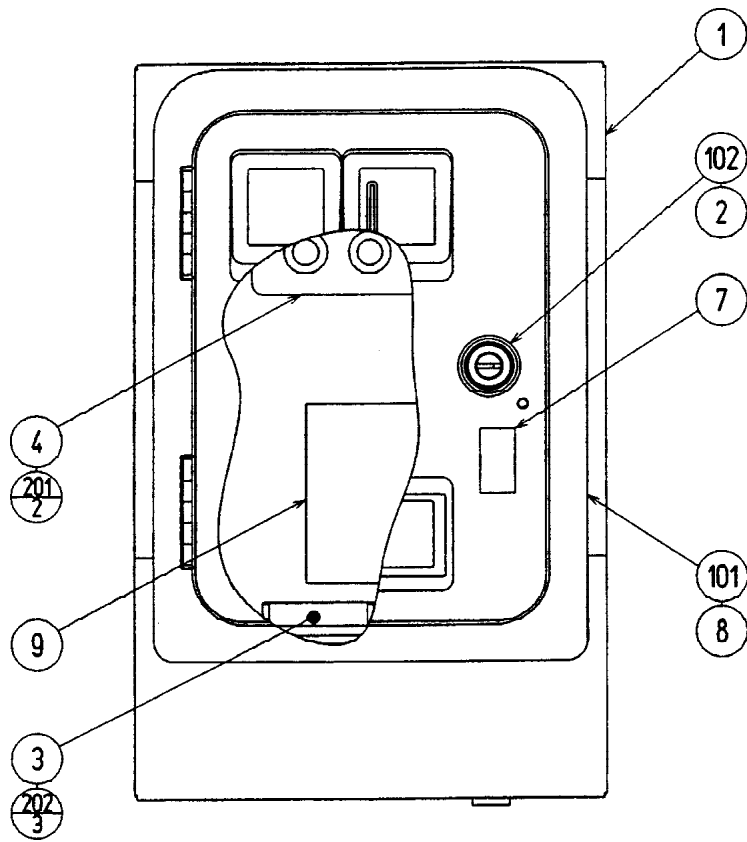
ITEM NO.	PART NO.	DESCRIPTION
1	NOA-1601	BASE BOX
2	NOB-1101	MAIN FRAME UR R
3	NOB-1102	MAIN FRAME UR L
4	NOA-1111X	LOWER BEAM
5	NOA-1112X	UPPER BEAM
6	NOA-1113	HOOF R
7	NOA-1114	HOOF L
8	HOT-1200	ASSY CASH BOX DOOR
9	253-5366	CASH BOX
11	NOA-1115	TNG REAR HATCH
102	601-5699X	LEG ADJUSTER BOLT M16X75
103	601-10461	CASTER D51H66 FREE
104	601-10462	CASTER D51H73 FIX
105	220-5575	CAM LOCK MASTER W/O KEY
201	050-F00600	FLG NUT 6
202	030-000620-S	HEX BLT W/S M6X20
203	068-652016	FLT WSHR 6.5-20X1.6
204	050-F00400	FLG NUT M4
205	010-P00408-F	S-TITE SCR PH W/F M4X8
206	000-F00310	M SCR FH M3X10
207	050-HO1600	HEXNUT M16

ASSY CASH BOX DOOR (HOT-1200)



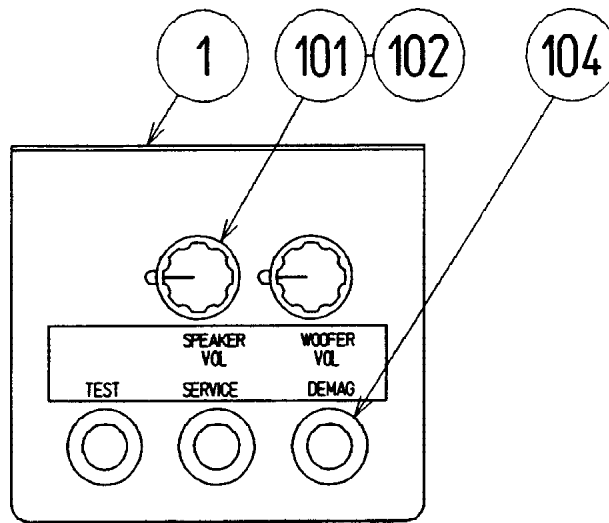
ITEM NO.	PART NO.	DESCRIPTION
1	HOT-1201	CASH BOX DOOR
3	220-5574	CAM LOCK W/KEYS
4	HOT-1203	CENTER TNG
5	HOT-1204	SIDE TNG
202	065-E00300	E RING 3MM

ASSY CC BOX WW (CTA-1150)



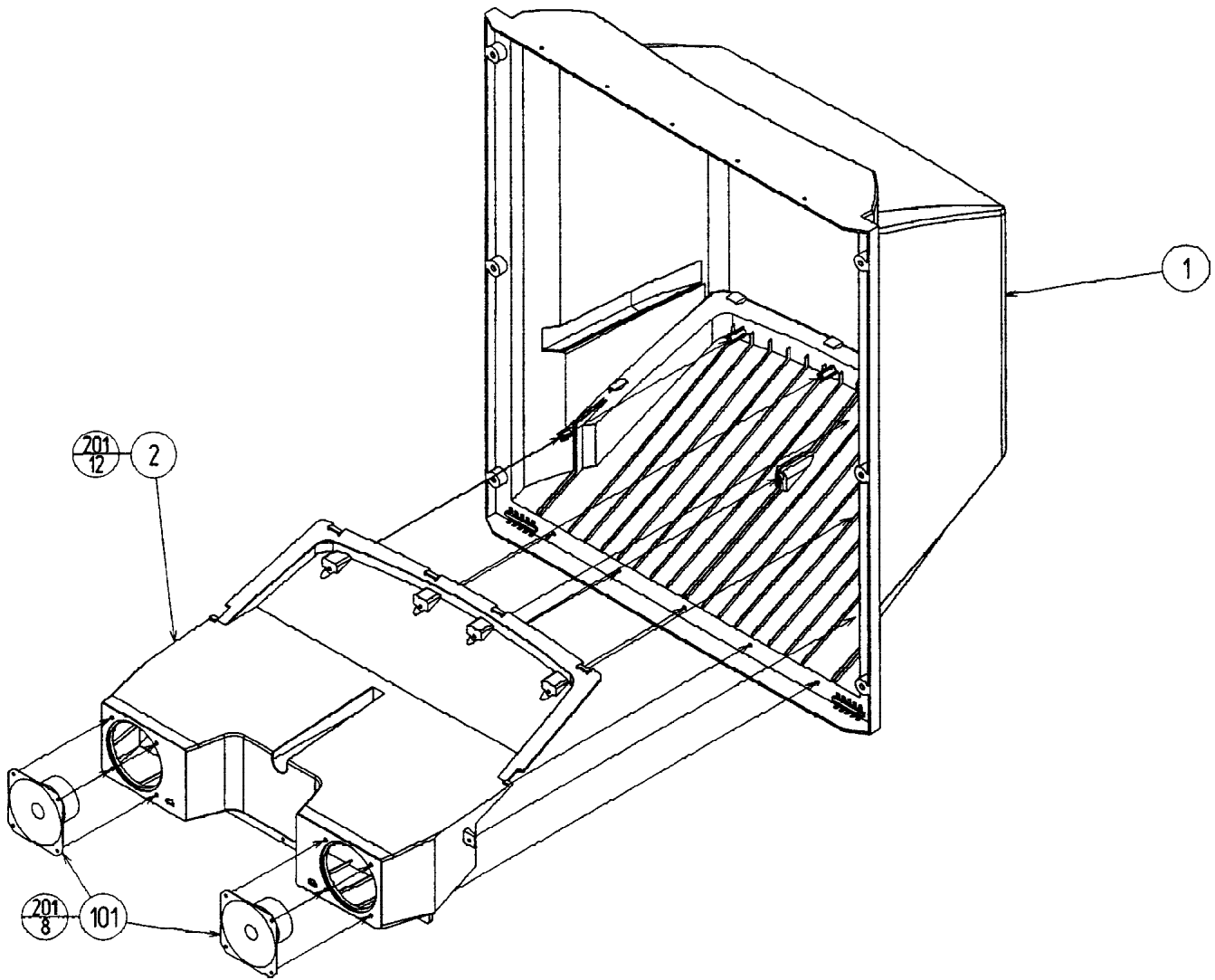
ITEM NO.	PART NO.	DESCRIPTION
1	CTA-1151	CC BOX WW
2	DP-1167	TNG LKG
3	CTA-1153	CHUTE W
4	CTA-1160	SW UNIT
101	97-1003-05	ASSY C.C.CHUTE DOOR
102	220-5575	CAM LOCK MASTER W/O KEY

ASSY SW UNIT (CTA-1160)



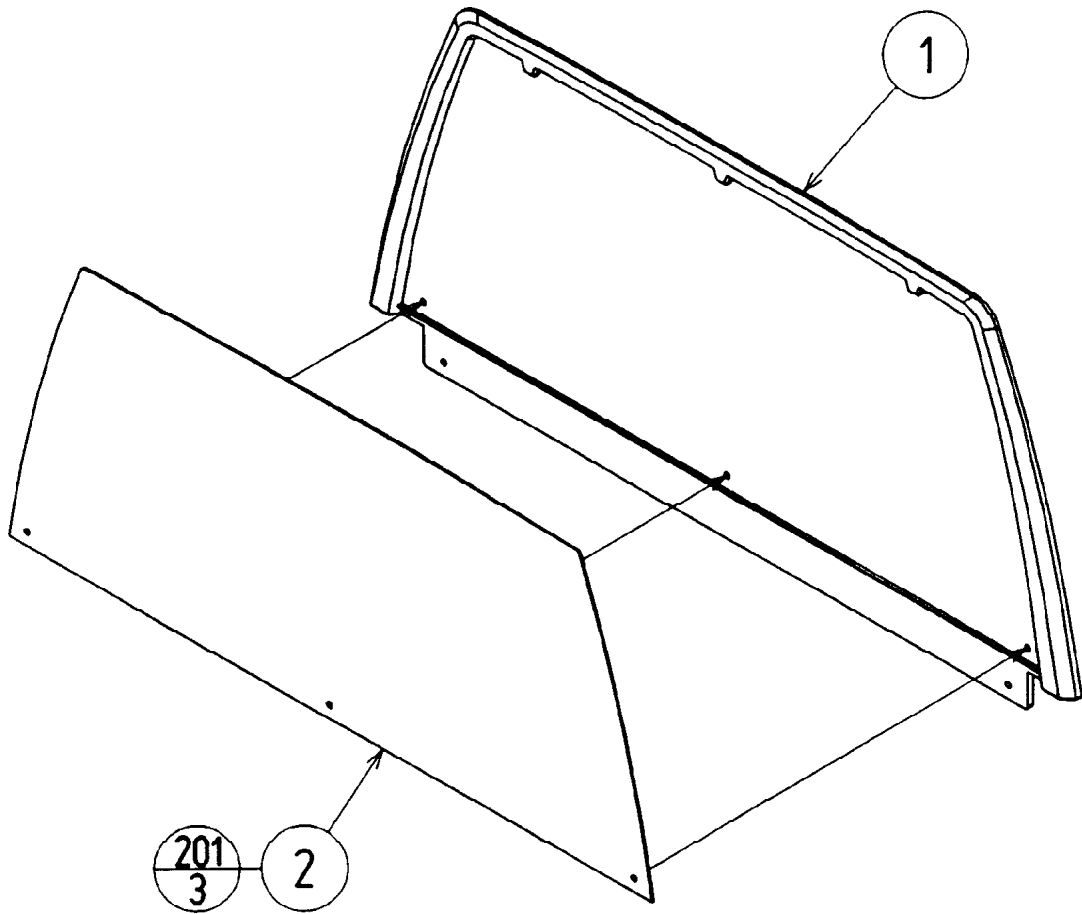
ITEM NO.	PART NO.	DESCRIPTION
1	CTA-1161	SW BRKT
101	220-5179	VOL CONT B-5K OHM
102	601-0042	KNOB 22MM
104	509-5028	SW PB 1M

ASSY CRT COVER (NOA-1200)



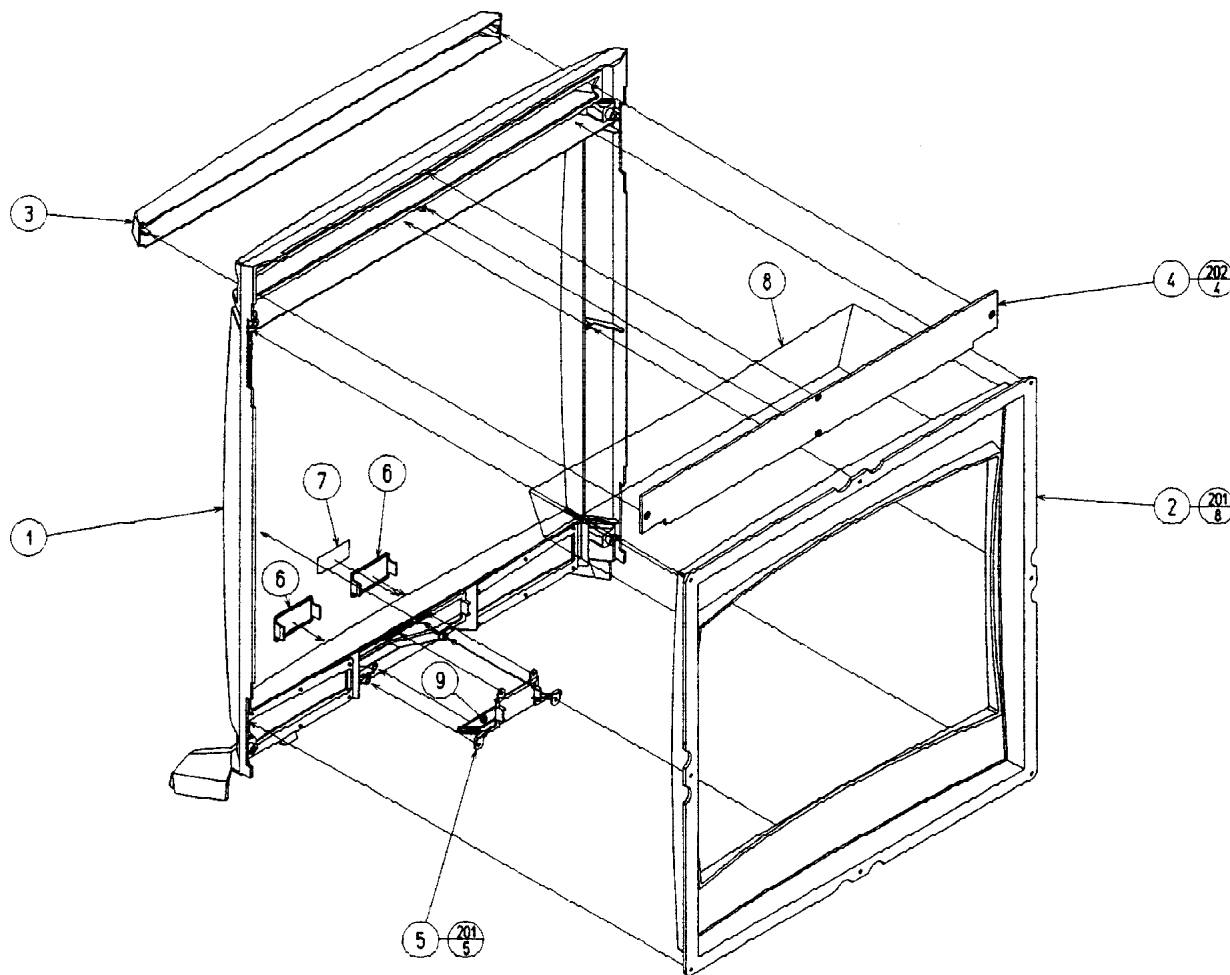
ITEM NO.	PART NO.	DESCRIPTION
1	NOA-1201	CRT COVER
2	NOA-1202	SPEAKER BOX
101	130-5205	SPEAKER 4OHM 10W 100 W/SHIELD
201	000-P00410-W	M SCR PH W/FS M4X10

ASSY BILLBOARD (NOA-1300)



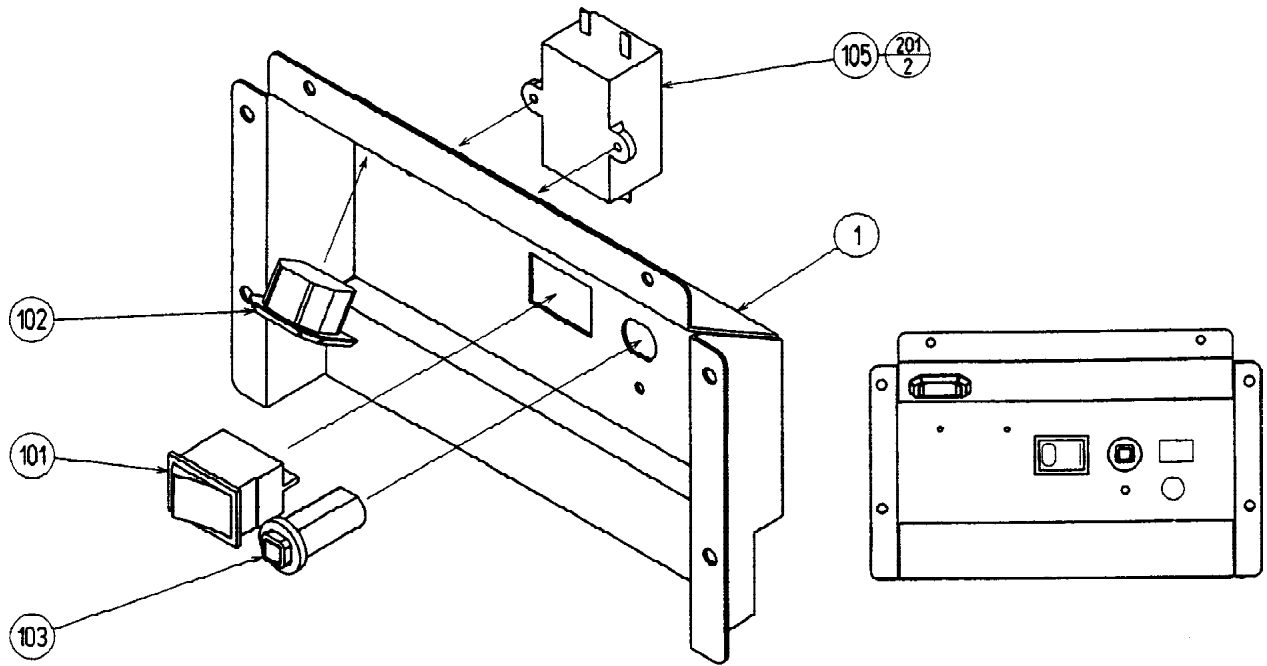
ITEM NO.	PART NO.	DESCRIPTION
1	NOA-1301	BILLBOARD PLATE
2	NOA-1302	BILLBOARD SHEET
201	008-t00408-0C	TMP PRF SCR TH CRM M4X8

ASSY FRONT PANEL (CTA-1400)



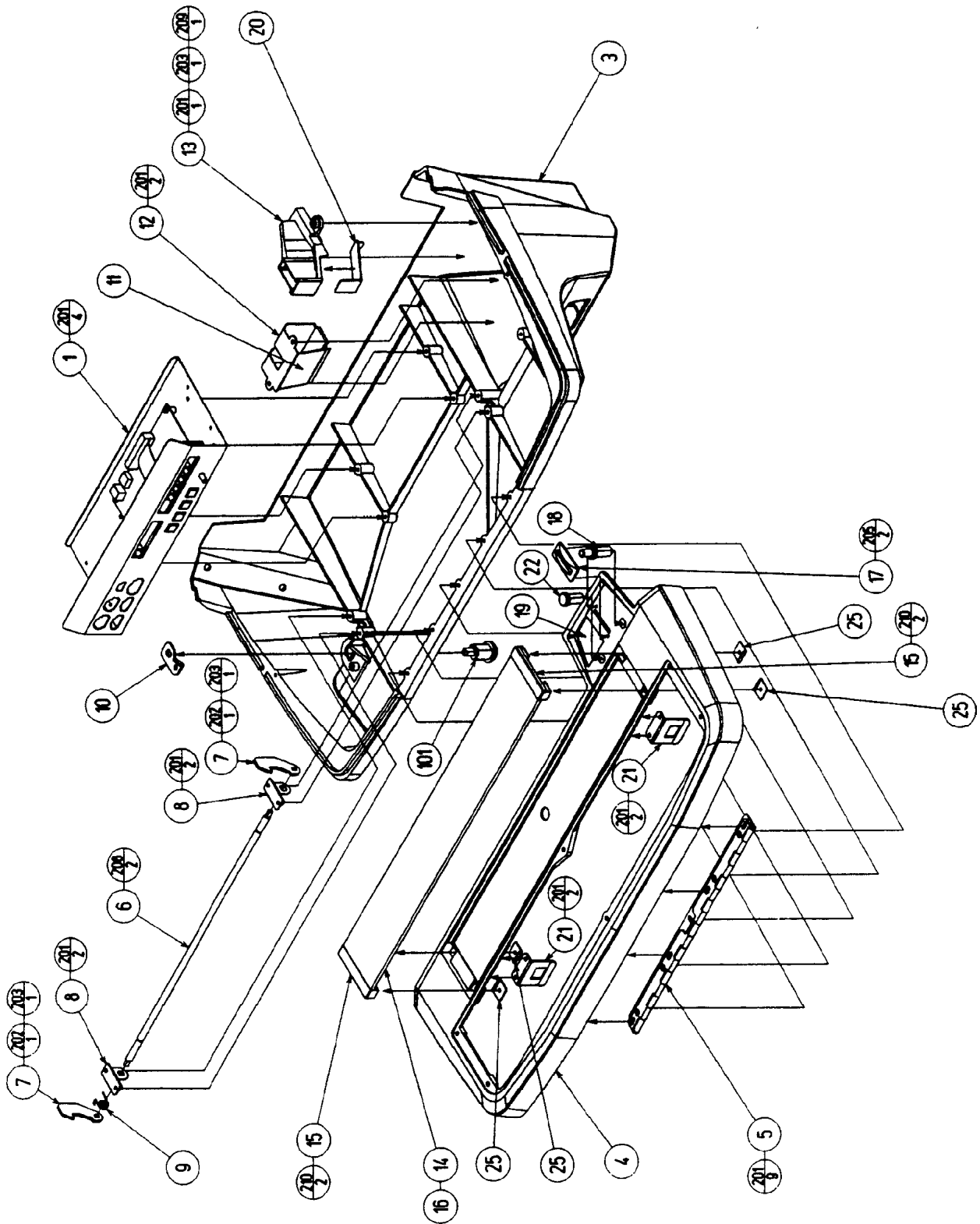
ITEM NO.	PART NO.	DESCRIPTION
1	NOA-1501	FRONT PANEL
2	NOA-1502-01	MASK MS9
3	NOA-1503	LIGHT COVER
4	NOA-1504	PRISM PLATE
5	NOA-1505	LID GCS
6	NOA-1506	LID VMS
7	NOA-1507	EMBLEM NAOMI
201	000-P00416-W	M SCR PH W/FS M4X12
202	012-P00416	TAP SCR #2 PH 4X16

ASSY AC UNIT (NOC-1700)

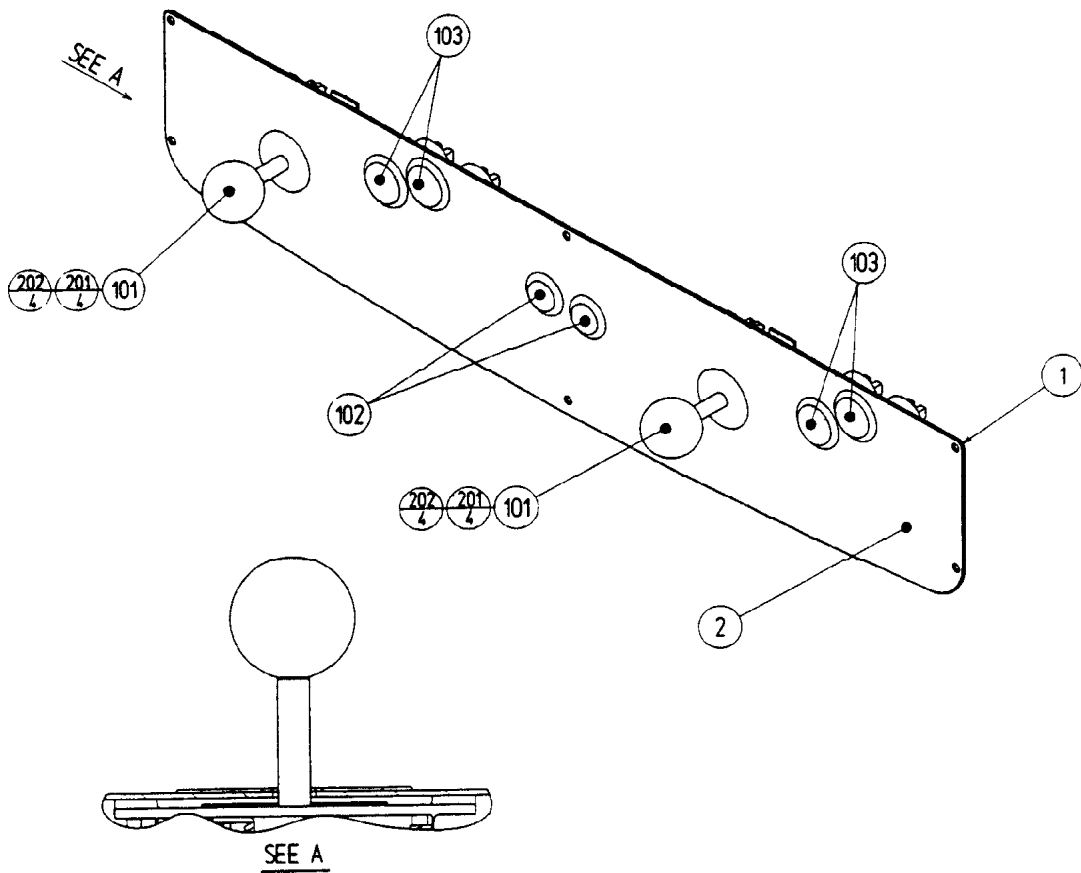


ITEM NO.	PART NO.	DESCRIPTION
1	NOB-1701	AC BRKT
101	509-5876	LOCKER SW JW-L21RKK
102	214-0202	AC INLET PANEL TYPE
103	512-5046-5000	C.P. 5000MA CE UL
201	000-P00308-W	M SCR PH W/FS M3X8
202	050-H00400	HEX NUT M4
203	060-F00400	FLT WSHR M4
204	060-S00400	SPR WSHR M4

ASSY CONTROL BOX ()

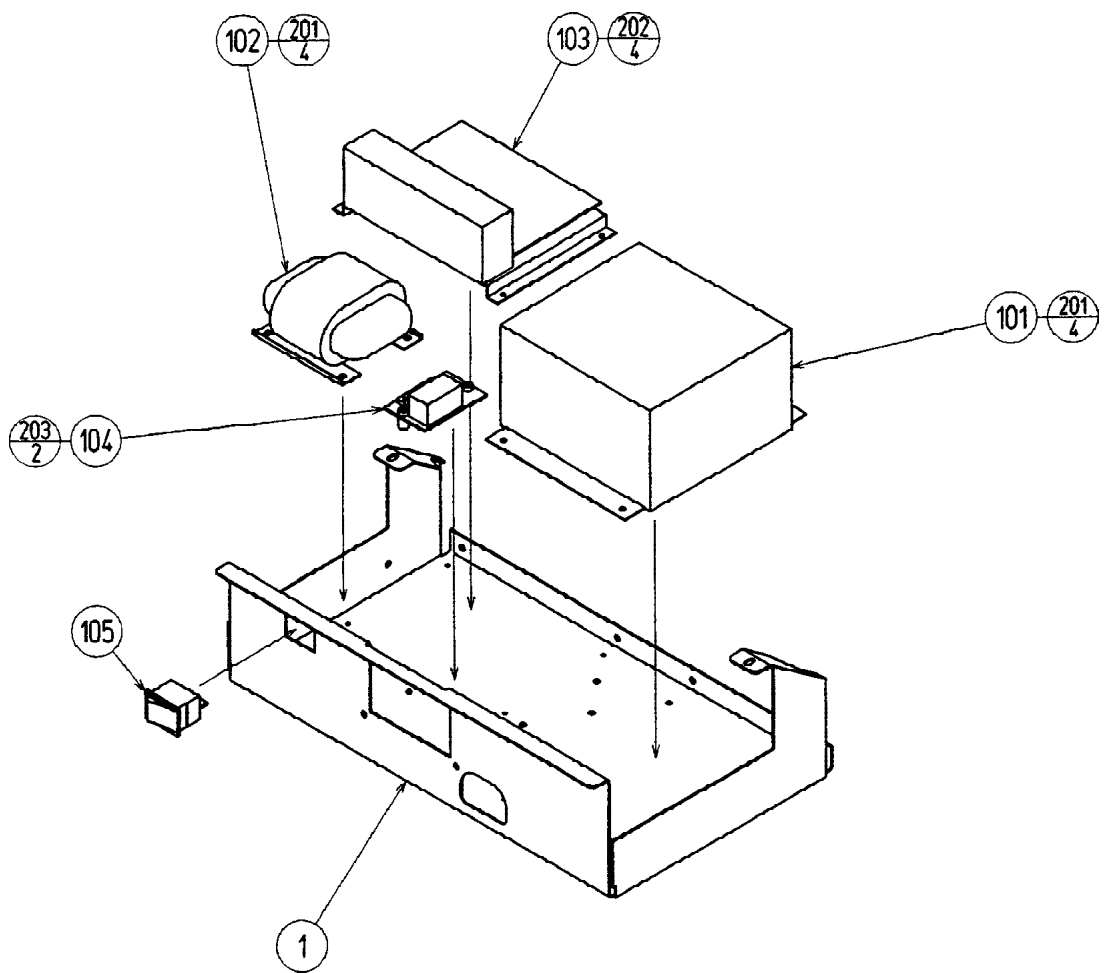


ASSY CONTROL PANEL (NOA- 20001)



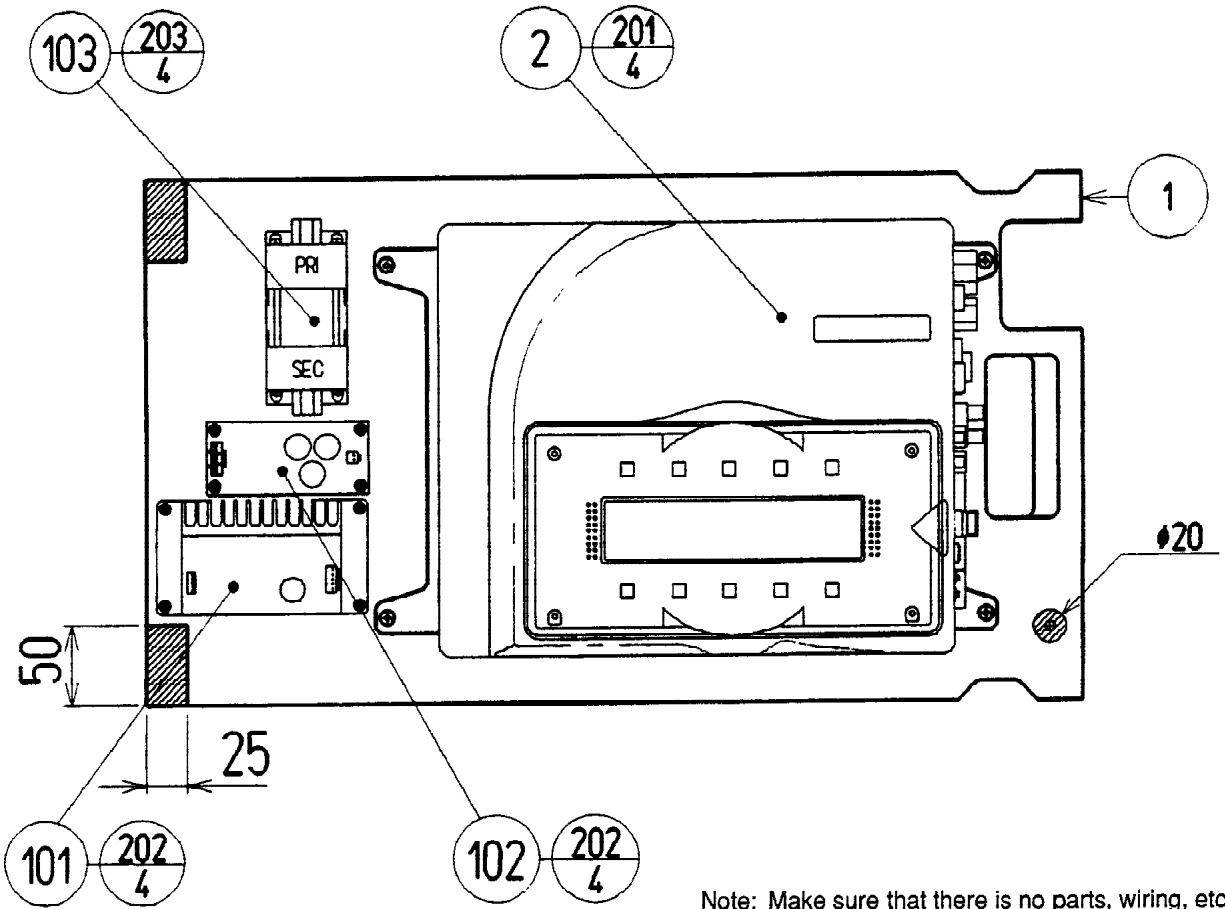
ITEM NO.	PART NO.	DESCRIPTION
1	NOA-2002	CTRL PNL BASE 2A6B
2	NOA-2003	CTRL PNL PLATE 2A6B
101	610-6723-4C01	ASSY ANALOG JOY 4C GREEN
102	509-5756-01	SW PB D24 YELLOW
103	509-5755-01	SW PB D30 GREEN
201	050-U00400	U NUT M4
202	060-F00400	FLT WSHR M4
203	060-S00400	SPR WSHR M4
204	050-H00400	HEX NUT M4

ASSY ELEC (NOA-4000)



ITEM NO.	PART NO.	DESCRIPTION
1	NOA-4001	ELEC BASE
101	400-5397	SW REGU FOR JVS
102	560-5407-UL	AUDIO XFMR 120V 17V2.1AX2
103	838-13616	AUDIO POWER AMP 2 CH
104	838-11856-UL	CONNECT BD UL
105	509-5876	LOCKER SW JW-L21RKK
108	601-6231-B60	EDGING NEW TYPE L=60
201	010-P00406-F	S-TITE SCR PH W/F M4X6
202	010-P00306-F	S-TITE SCR PH W/F M3X6
203	010-P00320-F	S-TITE SCR PH W/F M3X20

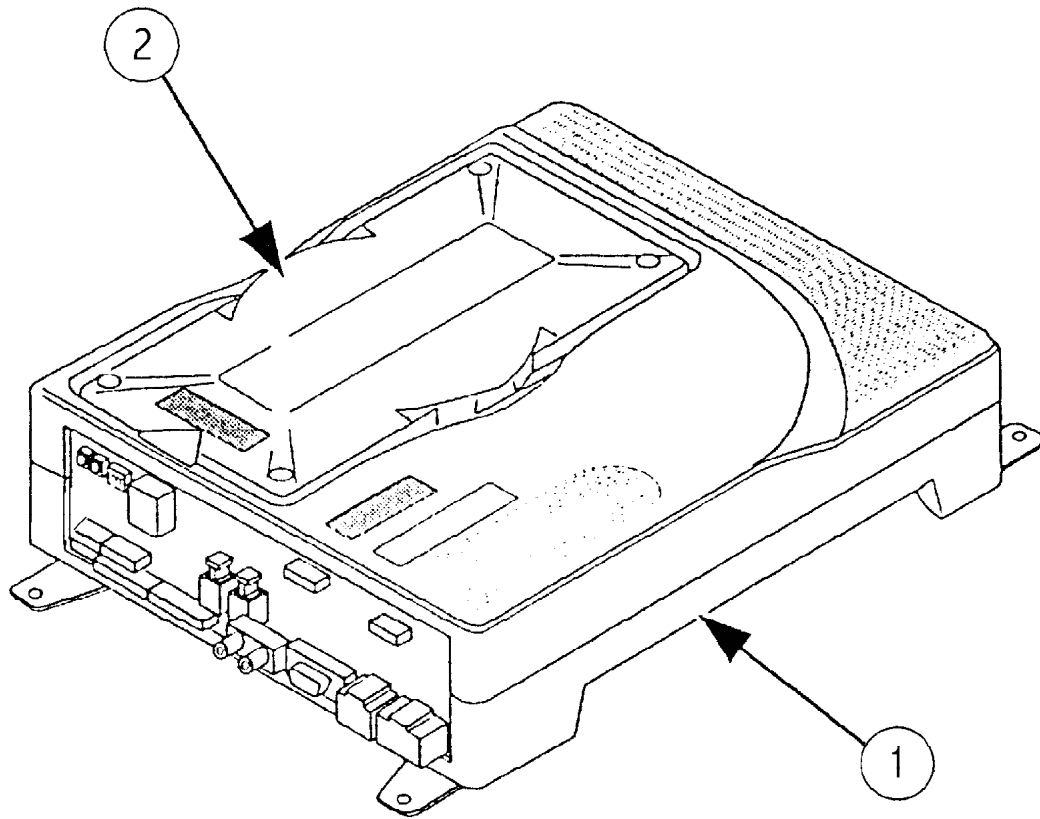
ASSY MAIN BD (CTA-4100)



Note: Make sure that there is no parts, wiring, etc. in the slash mark portions.

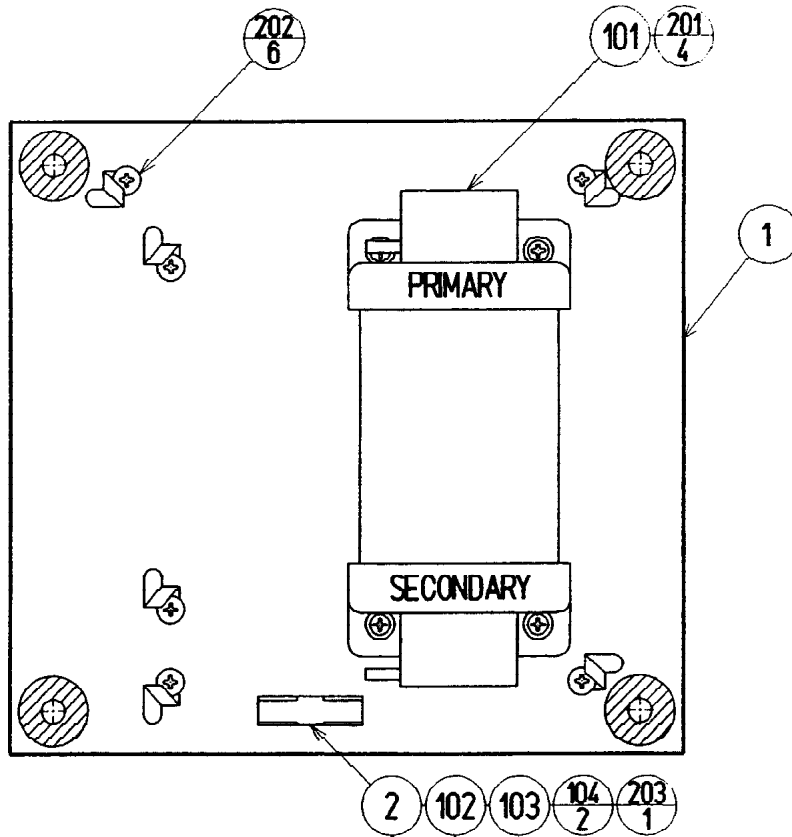
ITEM NO.	PART NO.	DESCRIPTION
1	NOA-4101	WOODEN BASE MAIN
2	840-0021D-01	ASSY CASE NAO NBA USA
101	838-13616	AUDIO POWER AMP 2CH
102	838-13739	SW BD NAOMICABINET
103	560-5413-V	XFMR 100V 12.8V6.3A
201	000-P00408-W	M SCR PH W/FS M4X8

ASSY SHIELD CASE NAO NBA (840-0021D-01)



ITEM NO.	PART NO.	DESCRIPTION
1	840-0021A-01	SHIELD CASE NBA NAO USA
2	840-0021C	ROM CASE NAO

ASSY XFMR (NOA-4100)



Note: Make sure that there is no parts, wiring, etc. in the slash mark portions.

ITEM NO.	PART NO.	DESCRIPTION
1	NOB-4101	XFMR BASE
101	560-5426-V	XFMR 100-120V 100V5.5A
102	514-5093	FUSE HOLDER F-64AB COVER
103	LOCAL PURCHASE	FUSE 5000MA
201	000-P00416-W	M SCR PH W/FS M4X16
202	011-T03512	TAP SCR TH 3.5X12
203	011-P00312	TAP SCR PH 3X12

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WHAT'S NEW
MANUALS
BULLETINS
PART NUMBERS
GAME MONITORS
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