

TIME CRISIS

SD

PREFACE

Thank you for purchasing the “Time Crisis SD” game.

This operation manual describes how to safely operate, install, transport, move, maintain and dispose of the “Time Crisis SD” game, and it explains how to protect the safety of those playing the game as well as the nearby spectators.

Be sure to read this Operation Manual carefully before installing and operating the game machine to ensure safe and correct maintenance and operation of the machine.

This operation manual has been written for the staff of the game center, however the sections indicated in the table of contents with, “Should be performed by a technician”, have been written for a technician, and that work should only be performed by a trained technician. Those items should absolutely NOT be performed by someone other than a technician.

Technician refers to the following:

- Someone who has received credit in mechanical engineering or electrical engineering from a university, high school, or technical school, or someone with equipment knowledge, and who has experience in maintaining, managing and repairing amusement machines.

If the owner of this machine entrusts its operation, installation, transport, moving, maintenance or disposal to someone else, that person should be instructed to read the appropriate sections before performing the work and should be instructed to follow all precautions.

This operation manual should be kept in a safe place so that it can be referred to when necessary during daily operation.

If this machine is sold to another party, be sure to include this operation manual.

- Inquiries about the product and its repair:
Contact the dealer for inquiries regarding the “Time Crisis SD” and its repair.

TABLE OF CONTENTS

PREFACE

TABLE OF CONTENTS

1. SAFETY PRECAUTIONS - For using the equipment safety.....	1 to 7
1-1 EXPLANATION OF THE CAUTION SYMBOL Δ	1
1-2 EXPLANATION OF SIGNAL WORDS	1
(Δ DANGER, Δ WARNING, Δ CAUTION)	
1-3 EXPLANATION OF THE WARNING LABEL ON THIS GAME MACHINE	2
1-4 SAFETY PRECAUTIONS FOR THOSE OPERATING THE MACHINE	4
1-4-1 PEOPLE WHO SHOULD NOT PLAY THE GAME	4
1-4-2 NOTES REGARDING SAFETY DURING PLAY	4
1-4-3 OPERATING PRECAUTIONS.....	4
1-5 SAFETY PRECAUTIONS FOR THOSE PERFORMING INSTALLATION	5
- This should be performed by technicians.	
1-6 SAFETY PRECAUTIONS FOR THOSE MOVING OR	5
SHIPPING THE GAME MACHINE - This should be performed by technicians	
1-7 SAFETY PRECAUTIONS FOR THOSE PERFORMING MAINTENANCE.....	6
- This should be performed by technicians	
1-8 PRECAUTIONS RELATING TO FIRE, ABNORMAL SOUNDS,	7
VIBRATION AND NOISE	
1-9 SAFETY PRECAUTIONS RELATING TO DISPOSAL	7
2. CHECKING THE PACKAGE CONTENTS	8
3. COMPONENTS (Name of Each Part)	9 to 10
4. INSTALLATION - This should be performed by technicians	11 to 16
4-1 NOTES FOR INSTALLATION	11
4-1-1 PLACES THE GAME SHOULD NOT BE INSTALLED	11
4-1-2 INSTALLING CONDITIONS	12
4-2 REQUIRED DIMENSIONS OF THE DELIVERY DOORWAY	13
4-3 ASSEMBLY	14
4-3-1 INSTALLING THE SIGN ASSY	14
4-3-2 ADJUSTING THE LEVEL ADJUSTERS	15
4-3-3 INSTALLING THE PEDAL ASSY	15
4-4 CONNECTING THE POWER CABLE AND GROUND WIRE	16
5. MOVING AND SHIPPING	17 to 19
- This should be performed by technicians	
5-1 MOVING THE GAME (On the floor)	17
5-2 SHIPPING	17
5-2-1 DISASSEMBLY	17
5-2-2 LOADING/UNLOADING THE GAME MACHINE ON A TRUCK	17

5-2-3	CARRYING THE GAME BY HAND (Up and down stairs, etc.)	18
5-2-4	CARRYING THE GAME ON A TRUCK	19
6.	OPERATION.....	20 to 38
6-1	HOW TO PLAY	21
6-2	ADJUSTMENT	22
6-2-1	POWER ON	22
6-2-2	SWITCHES FOR ADJUSTMENT	22
6-3	TEST MODE	23
6-3-1	COIN OPTIONS	24
6-3-2	GAME OPTIONS	25
6-3-3	I/O TEST	26
(1)	Switch test	27
(2)	Solenoid test	27
6-3-4	MONITOR TEST	29
6-3-5	SOUND TEST	30
6-3-6	ADS DATA	30
6-4	OTHERS	31
6-5	GUN INITIALIZATION (GUN INIT.)	33
6-6	SELF TEST	38
6-7	INSPECTION	38
6-7-1	INSPECTION ITEMS BEFORE STARTING OPERATION	38
6-7-2	PERIOD INSPECTION ITEMS	38
7.	MAINTENANCE - This should be performed by technicians	39 to 60
7-1	MAINTENANCE AND INSPECTION	39
7-1-1	REMOVING THE REAR COVER	39
7-1-2	CLEANING INSIDE THE CABINET	40
7-1-3	CHECKING THE WEAR OF THE PLUNGER	42
7-1-4	GREASING THE PLUNGER	43
7-2	TROUBLESHOOTING	45
7-2-1	OVERALL PROBLEM	45
7-2-2	MAIN UNIT ASSY	46
7-2-3	SIGN ASSY	46
7-2-4	PEDAL ASSY	46
7-2-5	GUN ASSY	46
7-3	REMOVING AND REPLACING ASSY, PARTS	47
7-3-1	MAIN UNIT	47
(1)	Replacing the Monitor	47
(2)	Replacing the PCB Rack ASSY	49
(3)	Replacing the Game PC Board	50
(4)	Replacing the Fuse	51
7-3-2	SIGN ASSY	52

(1) Replacing the Fluorescent Lamp	52
7-3-3 PEDAL ASSY	53
(1) Replacing the Microswitch	53
(2) Replacing the Plunger	54
7-3-4 GUN ASSY	55
(1) Replacing the Gun ASSY	55
(2) Opening the Gun Slides	56
(3) Opening The Gun Cover	57
(4) Replacing the Solenoid	59
(5) Replacing the Microswitch	60
(6) Replacing the Tube	60
8. DISPOSAL	61
9. PARTS LIST	63 to 72
9-1 MAIN UNIT ASSY	63
9-2 SIGN ASSY	65
9-3 POWER BOARD ASSY	66
9-4 PEDAL ASSY	67
9-5 GUN ASSY	69
9-6 COIN ASSY	70
9-7 CORD BOX ASSY	71
9-9 PCB RACK ASSY	72
10. SPECIFICATIONS	73 to 74
11. WIRING DIAGRAM	75

 **WARNING**

- This game machine should not be altered without prior approval.
- Unauthorized changes or alterations are extremely dangerous.


[Note]


The contents of this operation manual are subject to change without prior notice.

1 SAFETY PRECAUTIONS




- For using the equipment safety

1-1 EXPLANATION OF THE CAUTION SYMBOL




The meaning of the caution symbol  used for this machine and in this operation manual are as follows:

- Caution symbol  : This symbol indicates danger, and is used as a general danger, warning or caution symbol.
All of the items with this mark are related to safety.

1-2 EXPLANATION OF THE SIGNAL WORDS (DANGER, WARNING, CAUTION)

The signal words ( DANGER,  WARNING,  CAUTION) used for this machine or in this operation manual indicates items that could result in human injury or property damage.

A description of each label is given below.

 DANGER	This word is used when there is a possibility of death or severe injury to the user if the game is not handled properly, and indicates that there is a high urgency or imminent danger.
 WARNING	This word is used when there is a possibility of death or severe injury to the user if the game is not handled properly.
 CAUTION	This word is used when there is a possibility of light injury to the user or property damage when the game is not handled properly.

■ Classification of injury:

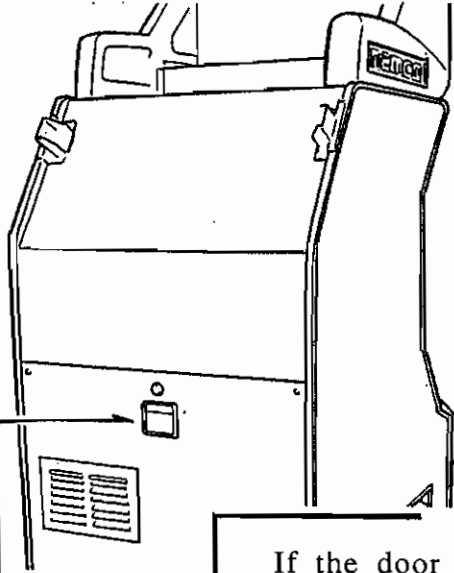
The levels of injury referred to above are classified as follows:

- Severe injury: Injury with lasting effects and which require a long hospital stay or hospital treatment, such as loss of sight, wounds, burns (high temperature, low temperature), electric shock, broken bones, poisoning, etc.
- Light injury: Injury that does not require a long hospital stay or hospital treatment.
- Property damage: Large-scale damage related to the building, property, animals or pets.

1-3 EXPLANATION OF THE WARNING LABEL ON THIS GAME MACHINE

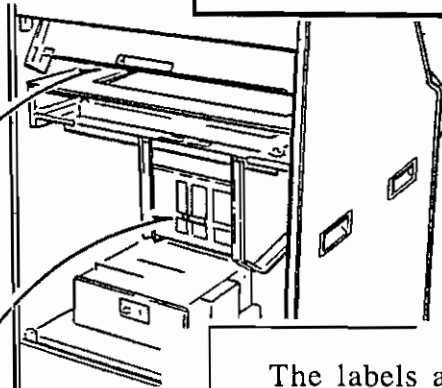
⚠ CAUTION

- The "Warning Labels" should be placed so that the player can always see them.
- If a label is damaged, it should be replaced immediately.
- Do NOT remove or alter any of the "Warning Labels".



⚠ WARNING

If the door is opened and maintenance and inspection work is performed by anyone other than a trained technician, there is a possibility of electric shock if any of the high-voltage parts is accidentally touched.



⚠ CAUTION

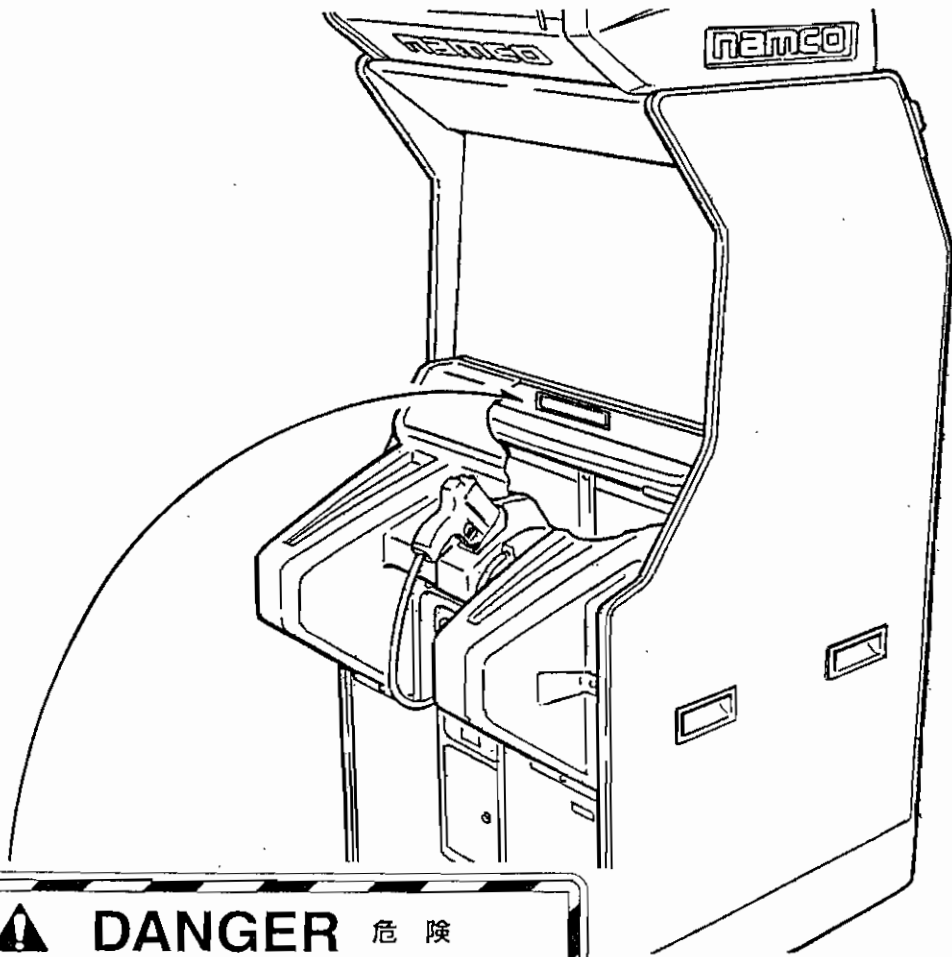
The labels are applied to glass and there is a possibility that the glass could break causing injury if the glass is bumped.



⚠ DANGER

There are high-voltage areas inside the monitor and there is a possibility of electric shock if any of these areas are touched.





⚠ DANGER 危険
HIGH VOLTAGE!! DO NOT TOUCH! ↓

⚠ DANGER

There are high-voltage areas near the labels and there is a possibility of electric shock if any of these areas is touched.

1-4 SAFETY PRECAUTIONS FOR THOSE OPERATING THE MACHINE

1-4-1 PEOPLE WHO SHOULD NOT PLAY THE GAME

Players such as described below should not be allowed to play the game.

- Those who are do not feel well.
- Those who are injured.
- Those who have been drinking alcohol.
- Players wearing unstable footwear such as sandals, slippers or the like.
- players who does not grip the gun correctly, or posture is very unstable.

1.4.2 NOTES REGARDING SAFETY DURING PLAY

- If the gun is flipped around, it could pose a danger to the surrounding customers.
If a player is handling the gun in such a manner, he/she should be cautioned.

1-4-3 OPERATING PRECAUTIONS

WARNING

- Use only the parts specified by Namco Ltd. when replacing consumables or replacement parts (including screws).
- Make sure that the game machine is installed properly (make sure that it meets all the conditions given in "4 Installation") before starting operation.
- The game machine can operate on a supply voltage which is within the range 10% of the rated voltage, but preferably the supply voltage should be adjusted so that it is as close as possible to the rated voltage.
- Ground the game machine to guard against electrical leakage in the case that the game machine breaks down.

CAUTION

- If the game machine breaks down or becomes damaged, stop operation immediately.
- Always keep the Warning Label clean so that the precautions written on it can be clearly seen. Replace it with a new Warning Label when the letters start to become illegible.
- When unplugging the power cable, do not pull on the cable. Hold the plug and pull it out from the power outlet.
- Do not touch the plug with the wet hand.

1-5 SAFETY PRECAUTIONS FOR THOSE PERFORMING INSTALLATION

- This should be performed by technicians.

WARNING

- Do not turn on the power switch on the game machine until the game machine has been properly installed (until it meets all the conditions set out in "4. Installation").
- Ground the game machine to guard against electrical leakage in the case that the game machine breaks down.
- Do not lay the power cable where players will walk over it. Doing so may result in a player tripping over the cable or a short-circuit occurring in the power cable.
- The projector weights about 135 kg. When removing it, make sure there are sufficient people to lift it and sufficient work space.

CAUTION

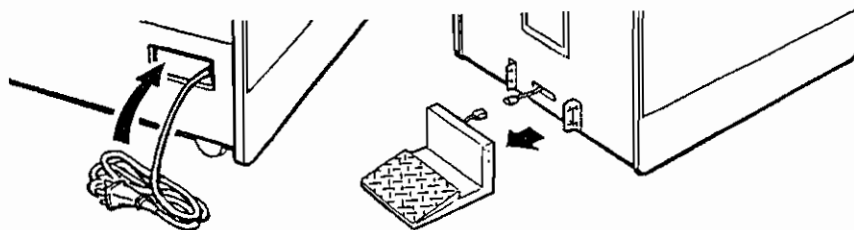
- A pathway should be made at least 1 m away from the machine so that the player leaving the machine do not bump into people passing by. (Refer to section 4.1.2, "Installation Conditions".)
- The Sign ASSY weighs about 11 kg. Its installation should be performed by an adequate number of people.

1-6 SAFETY PRECAUTIONS FOR THOSE MOVING OR SHIPPING THE GAME MACHINE

- This should be performed by technicians.

WARNING

- Be sure to put the power cord inside the cord box before moving or carrying the machine. If the machine is moved with the power cord dragged behind, it could cause an accident such as the machine to tipping over.
- Before moving the machine, be sure to disassemble the Pedal ASSY so that the machine is easy to carry. (Refer to section 4.3.3, "Installing the Pedal ASSY".)
- The Main Unit ASSY has been equipped with casters so it can easily be moved over the floor, however there are no stoppers for the casters so much care must be taken when moving it on a sloped floor.



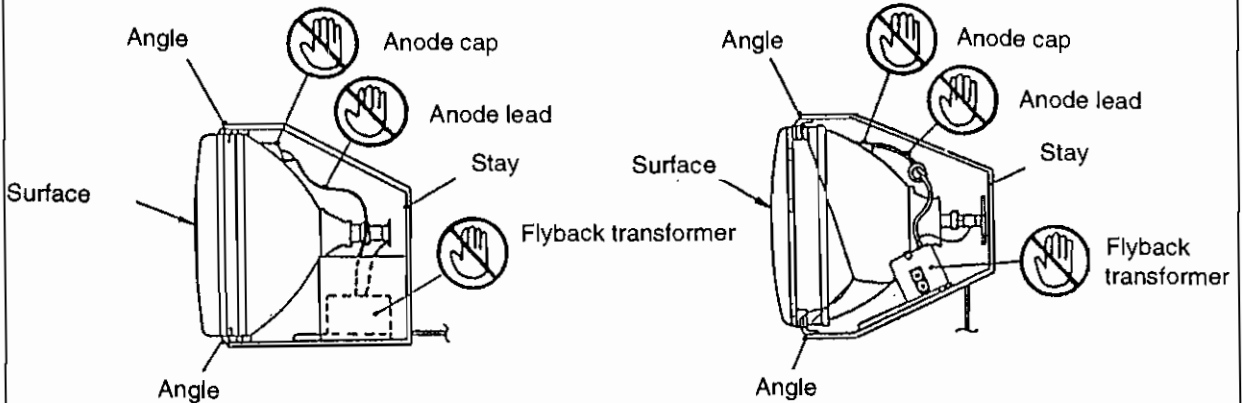
CAUTION

- When transporting this machine by truck, it should be secured to the truck so it does not move when the truck accelerates or decelerates.
- The total height of the Main unit ASSY is 1 m 78 cm. Be careful of doorways etc. when moving it (with the Sign ASSY installed, the height is 2 m 15 cm).

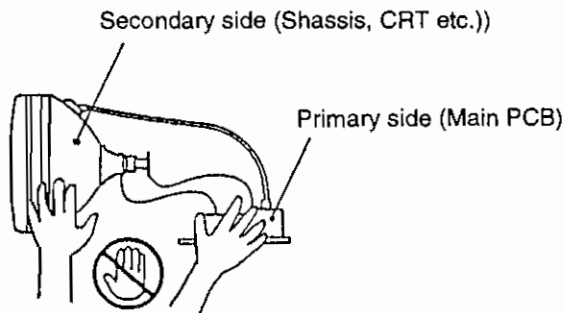
1-7 SAFETY PRECAUTIONS FOR THOSE PERFORMING MAINTENANCE (Troubleshooting and Repairs) - This should be performed by technicians.

DANGER

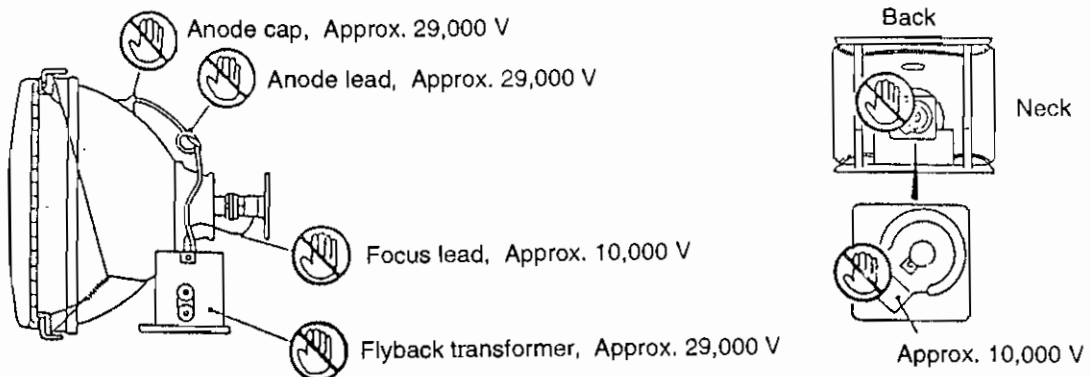
- Be sure to turn the power to the machine OFF before replacing the monitor. Failure to do so could be the cause of electric shock or other trouble.
- The anode cap, anode lead and flyback transformer retain high voltage even after the power has been turned OFF. There is a danger of electric shock so absolutely do not touch any of these areas.
- When replacing the monitor, be careful not to touch anywhere except the stay, angles or surface of the monitor CRT.



- The circuits within the monitor are separated into a primary side and secondary side, and they are electrically insulated. Do not touch the primary side or the primary side and secondary side at the same time. This could cause electric shock and is extremely dangerous.
- Do not short the primary side with the secondary side. This could cause electric shock or other trouble.



- There are places within the monitor where a voltage exceeding 20,000 volts is generated and there is a danger of electric shock, so do not touch anywhere inside the monitor.



- If there are any objects such as fragments of solder or paper inside the monitor, turn the power OFF. These could be the cause of trouble or fire.

WARNING

- Do not remodel the machine without permission. Remodeling it could bring unexpected dangers.
- Namco bears no responsibility for damage or accidents resulting from alterations to the machine.
- Use only the parts specified by Namco Ltd. when replacing consumables or replacement parts (including screws).
- When performing maintenance work (troubleshooting, repairs) be sure to turn the power OFF so the workers and others are not injured or receive electric shock.
- Before undertaking any operation that is not described in this operation manual, be sure to contact your dealer and follow the instructions and responses obtained.
Namco bears no responsibility for anything that happens if the dealer is not contacted and their instructions are not followed.
- If there is trouble with the monitor, immediately contact the dealer.
- The power board ASSY and PCB rack ASSY remain hot even after the power has been turned OFF, and could cause burns. Be very careful of them when performing work.
- It is very dangerous for the customer to perform repairs, and should not attempt to do so.

CAUTION

- If there is trouble with the monitor, immediately contact the dealer.

1-8 PRECAUTIONS RELATING TO FIRE, ABNORMAL SOUNDS, VIBRATION AND NOISE

WARNING

- The game machine contains a large amount of inflammable materials such as wood and resin. Take precautions in order to prevent a fire.

1-9 SAFETY PRECAUTIONS RELATING TO DISPOSAL

CAUTION

- When you wish to dispose of the game machine, consign the disposal operation to an authorized industrial waste treatment business.

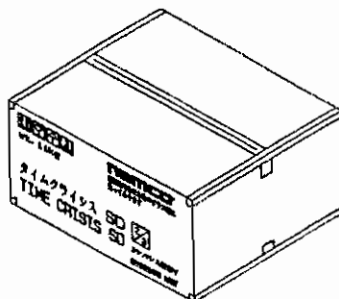
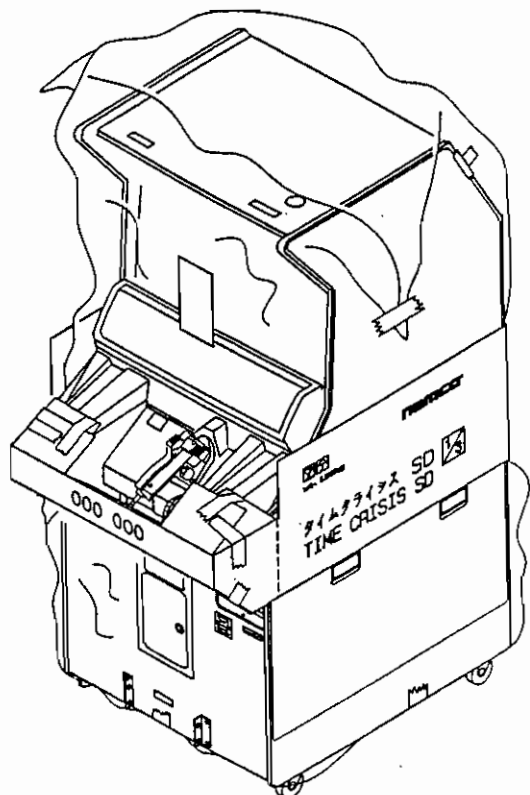
2. CHECKING THE PACKAGE CONTENTS



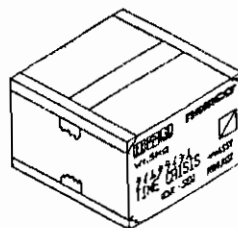
CAUTION

- Make sure that the package contains all of the items shown below.










- Main unit ASSY 1
- Sign ASSY 1



- Pedal ASSY 1

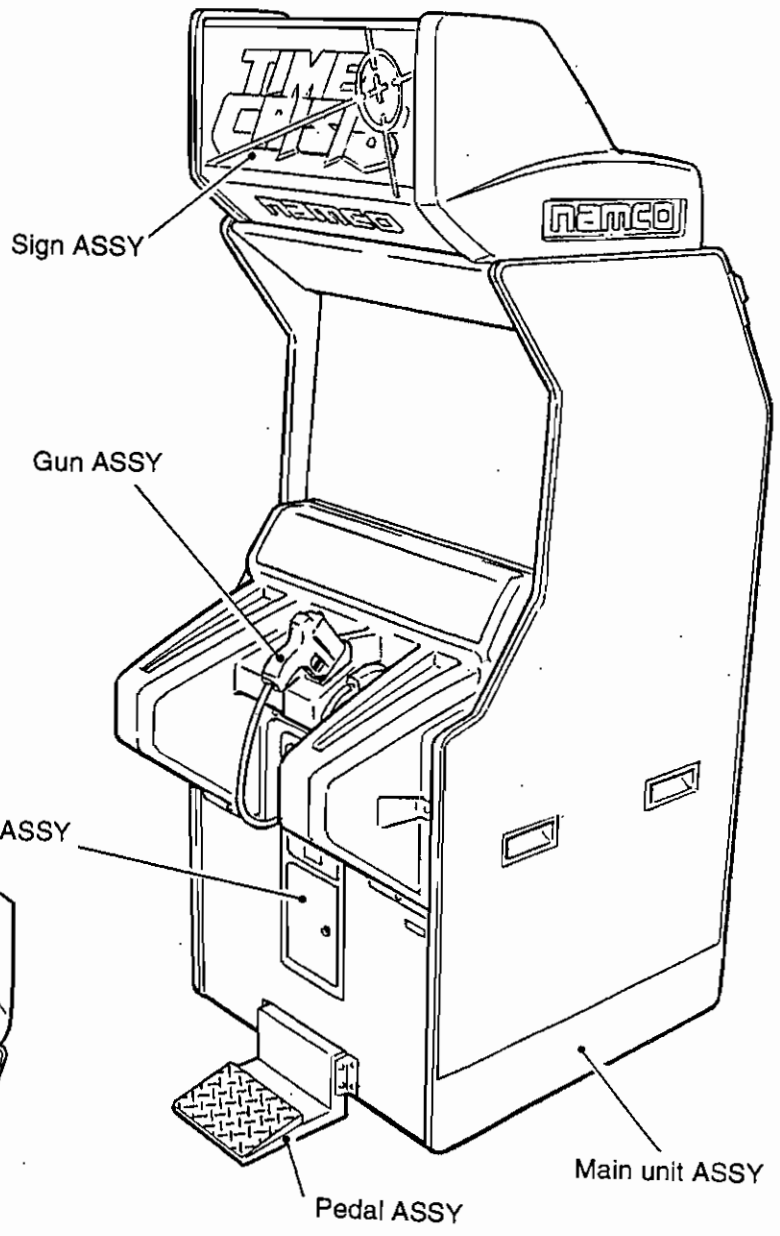


• List of accessories

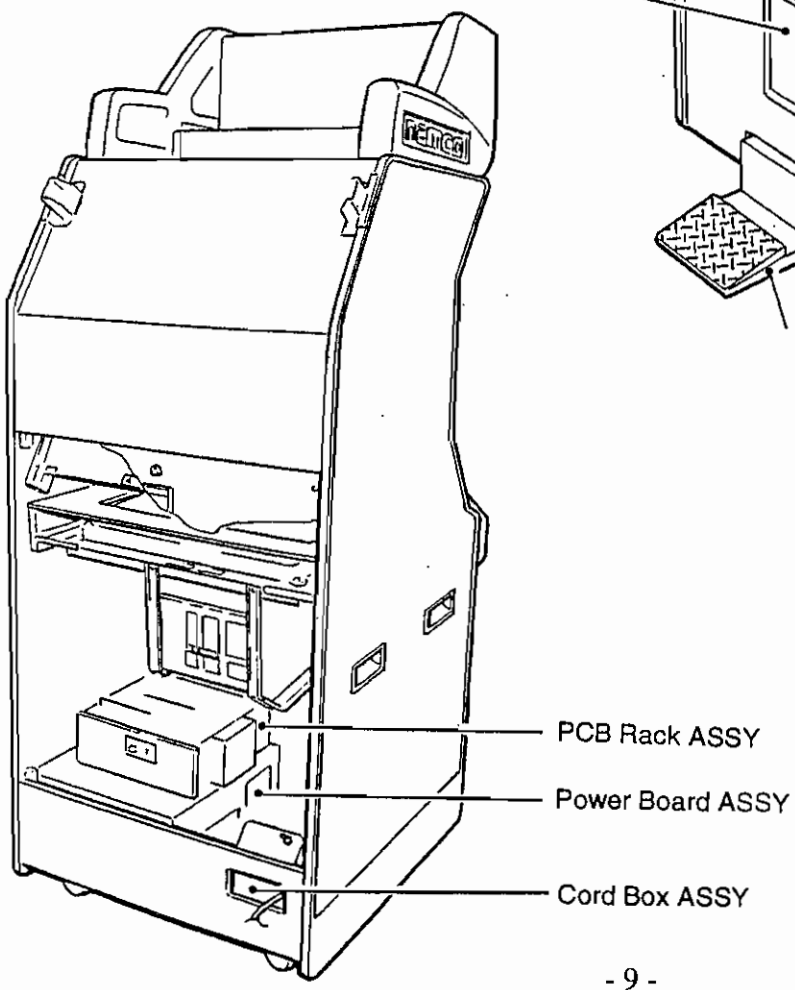
Name	Specification		Quantity
Operation manual (this manual)			1
Key for coin lock			2
Key for electric lock			2
Torque wrench	M5, 4 mm		1
Hexagonal wrench	5 mm		1
Flange socket	M6 × 12		4
(+) Hexagonal bolt (with flat and spring washer)	M6 × 16		2
Glass tube fuse	125V 4A (for AC 110 V power supply) or 250 V 8A (for AC 220 V power supply)		1

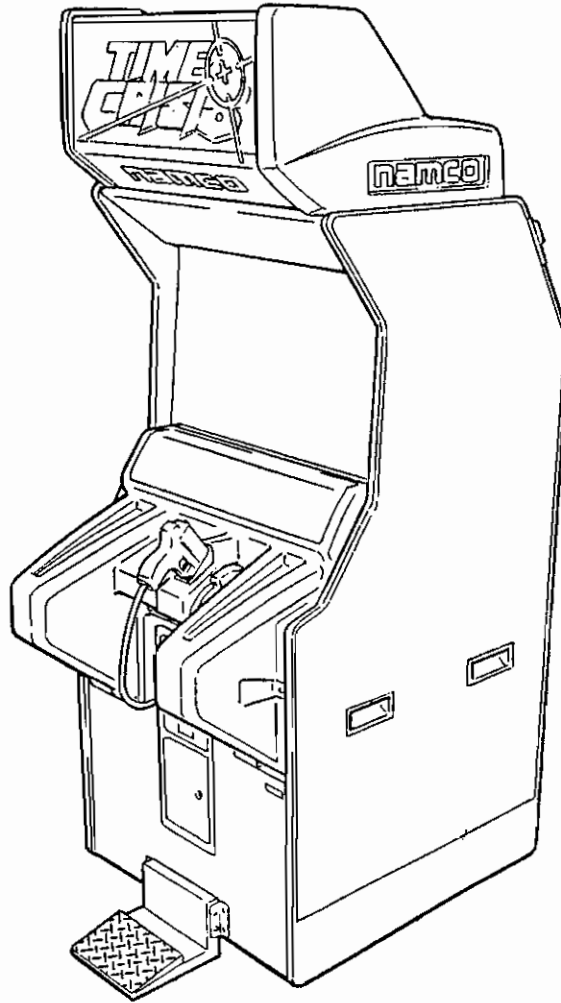
3. COMPONENTS (Name of Each Part)

Front view

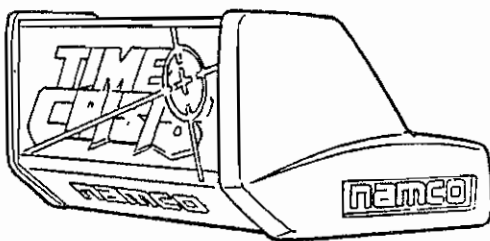


Rear view (main unit)

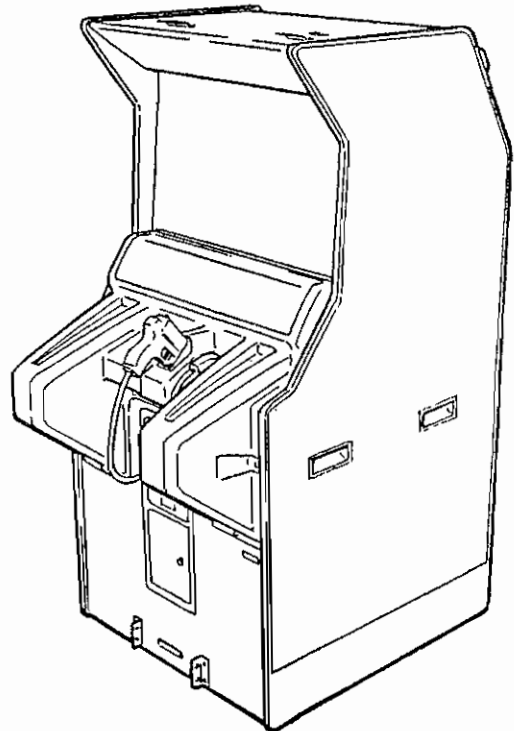




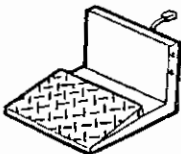
Sign ASSY



Main unit ASSY



Pedal ASSY



4. INSTALLATION

- This should be performed by technicians

4-1 NOTES FOR INSTALLATION

 **WARNING**

- Absolutely do NOT turn the power ON until installation work has been completely finished.
- Ground the game machine to guard against electrical leakage in the case that the game machine breaks down.

 **CAUTION**

- When dividing work among several people, make sure there are sufficient people present to carry out the work before starting.

4-1-1 PLACES THE GAME SHOULD NOT BE INSTALLED

This game machine is for indoor use. It should not be installed in the following places:

- Outdoors
 - Places in direct sunlight
- [Note] Do NOT aim the gun at the sun. It could cause damage or accidents.
- Places with excessive humidity
 - Places with dust
 - Places with water leakage
 - Places with heating equipment
 - Places where high temperature
 - Places where excessive cold.
 - Places where it will be in the way of emergency exit, or near fire extinguishing equipment.
 - Unstable place or a place with excessive vibration.

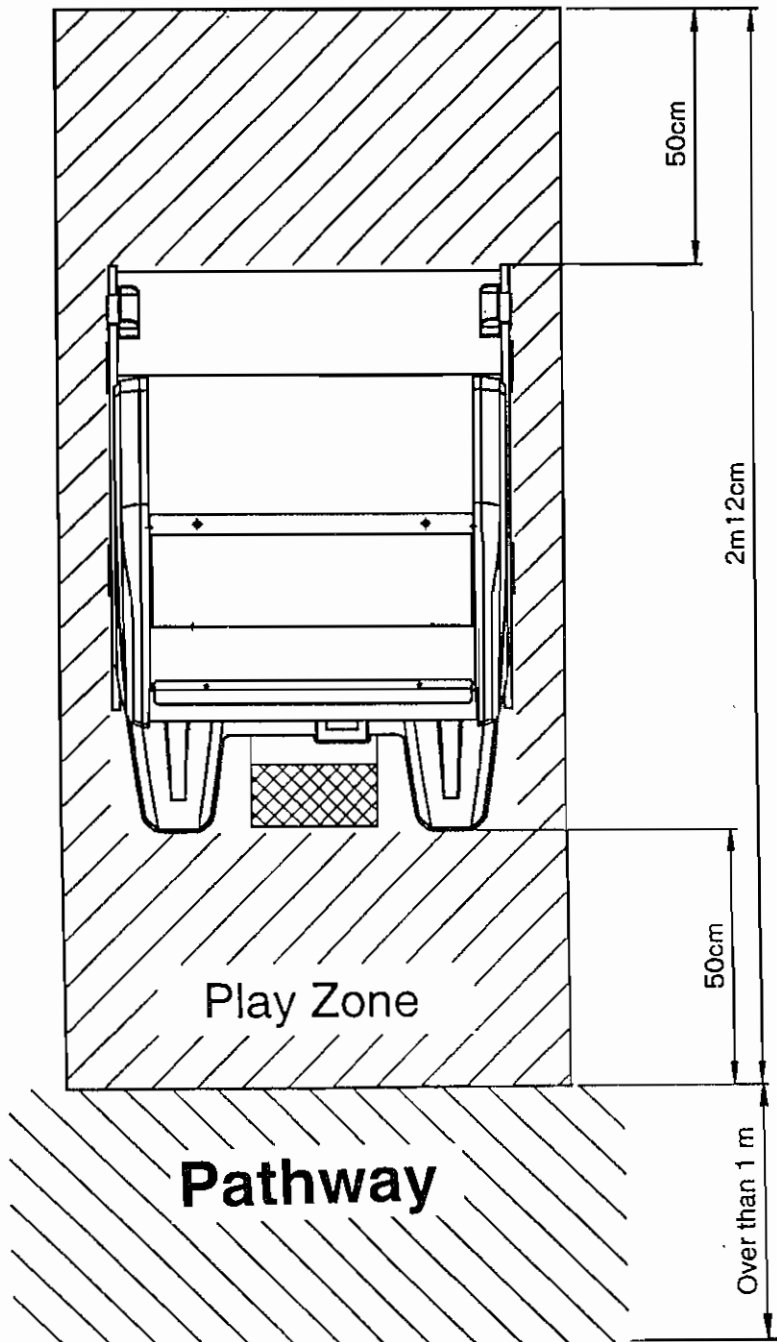
4-1-2 INSTALLING CONDITIONS

CAUTION

- Be sure to set up a play zone as shown in the figure below to prevent a player getting off the game machine from hitting against people nearby.
- A height to the ceiling of 2 m 30 cm is required.

[Precaution]

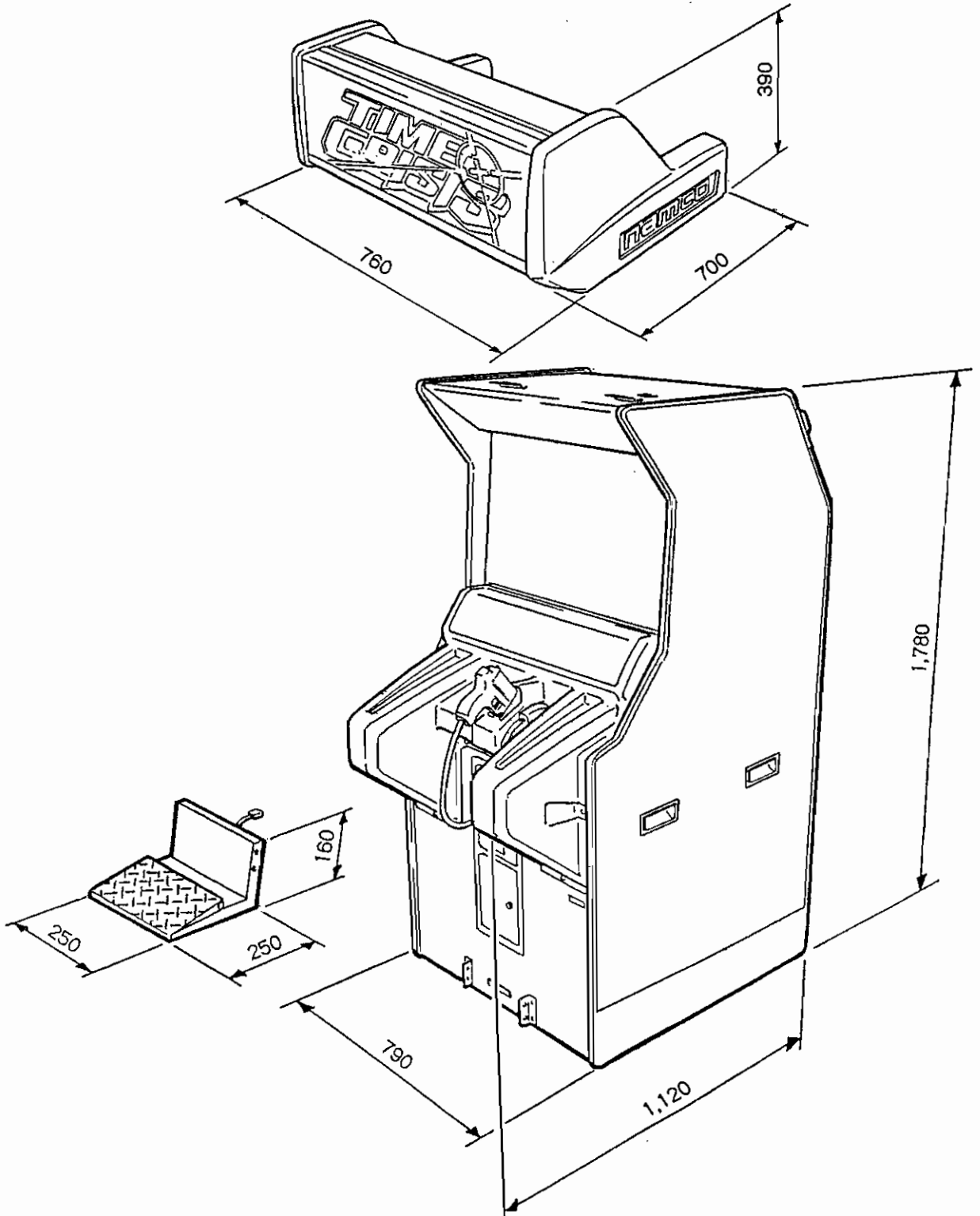
- When performing maintenance, in order to be able to remove the PCB rack Assy or power board Assy, there should be a space of at least 50 cm between the back surface of the machine and the wall or other machines.



4-2 REQUIRED DIMENSIONS OF THE DELIVERY DOORWAY

The game machine is disassembled into three ASSY's or units at the time of shipment. The dimensions of each ASSY or unit are as described below.

- Main unit ASSY Width 790 mm × Depth 1,120 mm × Height 1,780 mm
- Sign ASSY Width 760 mm × Depth 700 mm × Height 390 mm
- Pedal ASSY Width 250 mm × Depth 250 mm × Height 160 mm



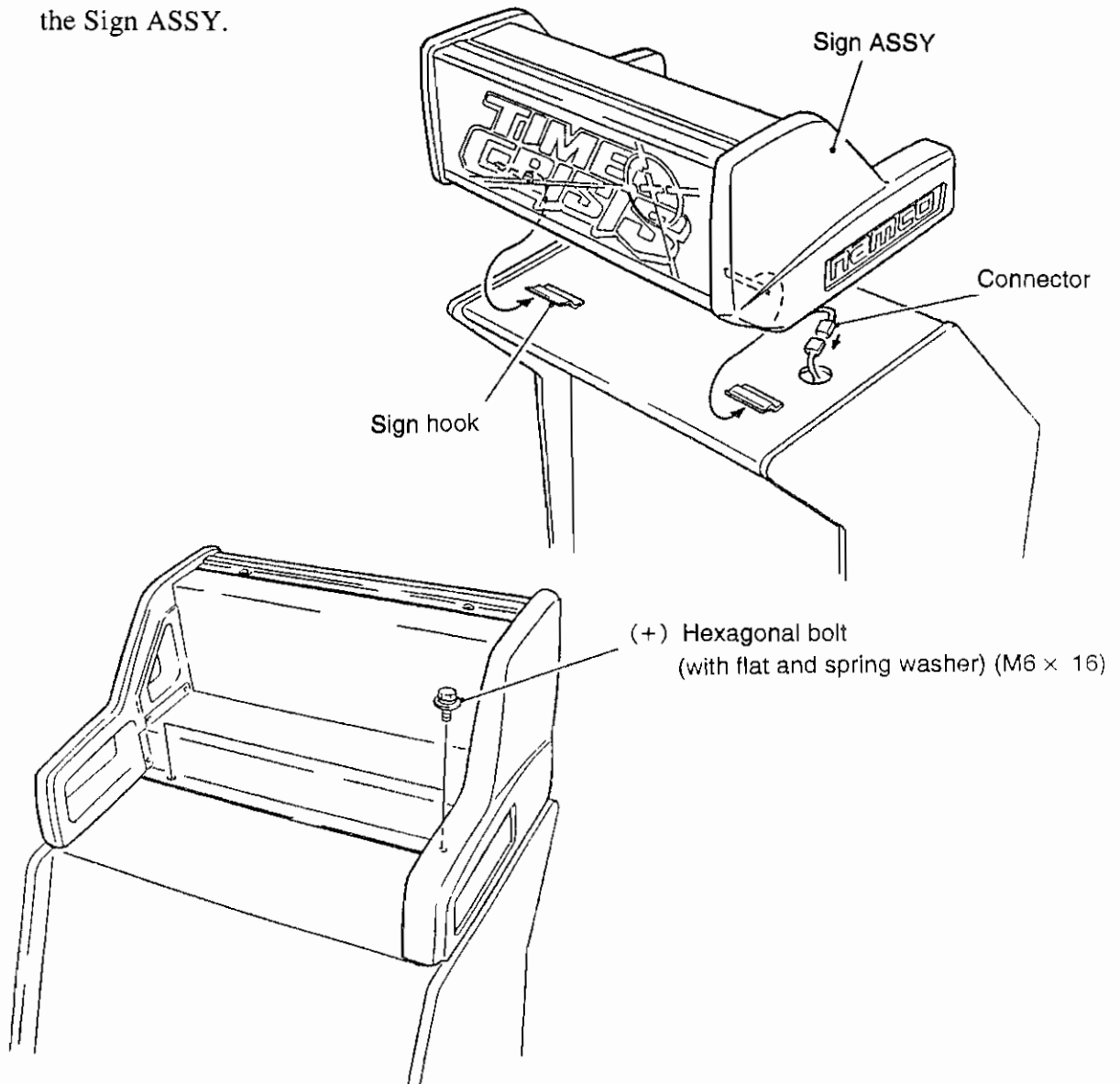
4-3 ASSEMBLY

4-3-1 INSTALLING THE SIGN ASSY



- The Sign ASSY weighs about 11 kg. It is located high up on the game machine and therefore work on this assembly is dangerous. Make sure there are sufficient workers before installing the Sign ASSY.

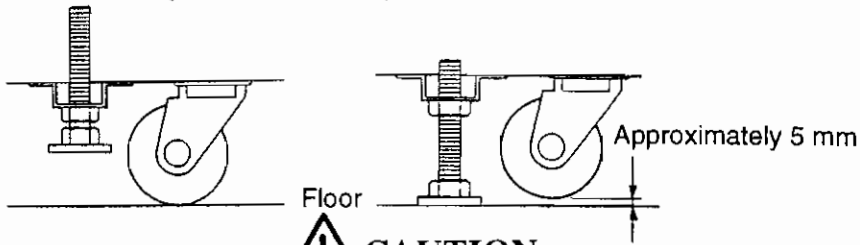
- 1) Place the Sign ASSY on the top of the Main Unit ASSY.
- 2) Lift up the right side (facing the sign) of the sign and connect the Sign ASSY connector (1 connector) to the Main Unit ASSY.
- 3) Place the holes on the bottom of the Sign ASSY on the sign hooks on the top surface of the Main Unit ASSY.
- 4) Use the two supplied (+) hexagonal bolts (with flat and spring washers) (M6 × 16) to fasten the Sign ASSY.



- 5) When removing the Sign ASSY, follow the above in the reverse order.

4.3.2 ADJUSTING THE LEVEL ADJUSTERS

- 1) After installing the machine as described in section 4.1.2, "Installation Conditions", lower the level adjusters (two locations), and raise the machine so the casters are about 5 mm above the floor (so they can rotate freely).

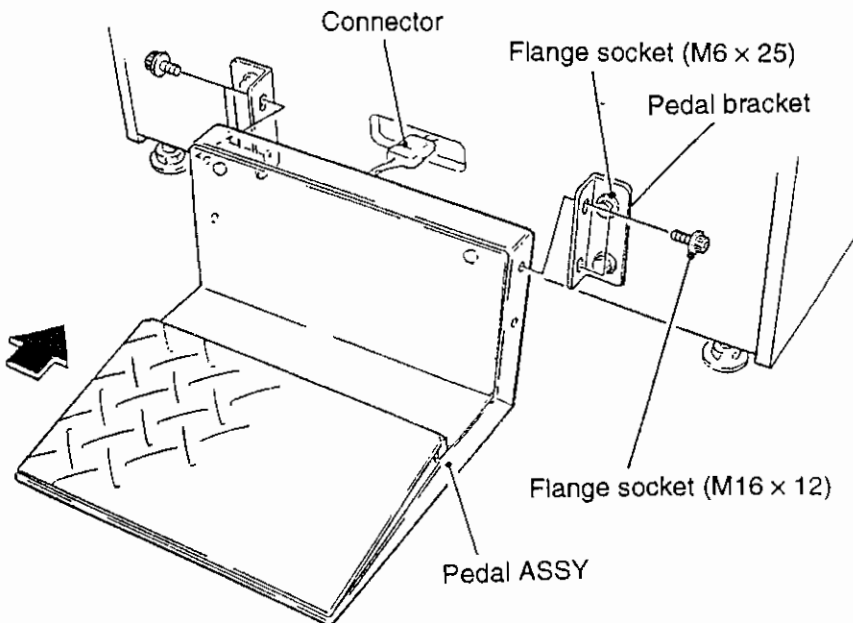


! CAUTION

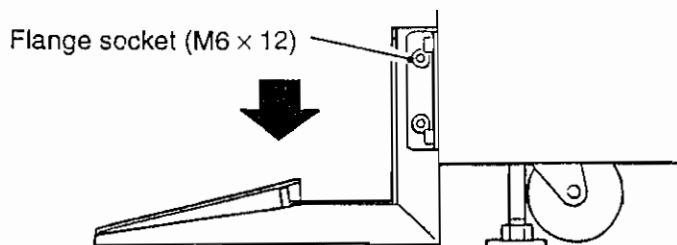
- Adjust the level adjusters to a proper height so the machine does not rock.

4.3.3 INSTALLING THE PEDAL ASSY

- 1) Loosen the four flange sockets (M6 × 25) on the main unit.
- 2) Connect the connector on the Pedal ASSY with the connector on the main unit, and insert the Pedal ASSY between the pedal brackets.



- 3) Place the Pedal ASSY between the pedal brackets, and tighten the flange sockets (M6 × 25) that were loosened in step 1).
- 4) Lower the Pedal ASSY so it rests on the floor, and firmly secure it with the four supplied flange sockets (M6 × 12). (Make sure that the Pedal ASSY is not off the floor.)



- 5) When removing the Pedal ASSY, follow the above in the reverse order.

4-4 CONNECTING THE POWER CABLE AND GROUND WIRE

 **WARNING**

- Ground the game machine to guard against electrical leakage in the case that the game machine breaks down.

5. MOVING AND SHIPPING

- This should be performed by technicians



WARNING

- Be sure to put the power cord inside the cord box before moving or carrying the machine. If the machine is moved with the power cord dragged behind, it could cause an accident such as the machine to tipping over.
- Before moving the machine, be sure to disassemble the Main Unit ASSY and Pedal ASSY so that the machine is easier to carry.
- The Main Unit ASSY has been equipped with casters so it can easily be moved over the floor, however there are no stoppers for the casters so much care must be taken when moving it on a sloped floor.

5-1 MOVING THE GAME (On the floor)



CAUTION

- The total height of the Main Unit ASSY is 1 m 78 cm. Be careful of doorways etc. when moving it (with the Sign ASSY installed, the height is 2 m 15 cm).

[Precautions]

- Carry the machine carefully so as not to damage it.
- The molded parts are very weak, so do not apply force to them.
- Be sure to raise the level adjusters all the way to the top even when moving the machine just a short distance.
- Disassemble the machine into the Main Unit ASSY and Pedal ASSY. (Refer to section 4.3, "Assembly".)

5-2 SHIPPING

5-2-1 DISASSEMBLY

Refer to section 4.3, "Assembly".



CAUTION

- When using a forklift, be sure to apply the fork to the position indicated by stickers.

5.2.2 LOADING/UNLOADING THE GAME MACHINE ON A TRUCK

[Precautions]

- Carry the machine carefully so as not to damage it.
- The molded parts are very weak, so do not apply force to them.
- Be sure to raise the level adjusters all the way to the top.
- Disassemble the machine into the Main Unit ASSY and Pedal ASSY. (Refer to section 4.3, "Assembly".)
- When lowering the machine down steps, be sure that it does not receive any large impact.

5.2.3 CARRYING THE GAME BY HAND (Up and down stairs, etc.)

 **WARNING**

- Disassemble the machine into the Main Unit ASSY, Sign ASSY and Pedal ASSY. (Refer to section 4.3, “Assembly”.)
- The Main Unit ASSY weighs about 135 kg. An adequate number of people should be used to carry it.

[Precautions]

- Carry the machine carefully so as not to damage it.
- The molded parts are very weak, so do not apply force to them.
- Be sure to raise the level adjusters all the way to the top.
- Disassemble the machine into the Main Unit ASSY and Pedal ASSY. (Refer to section 4.3, “Assembly”.)

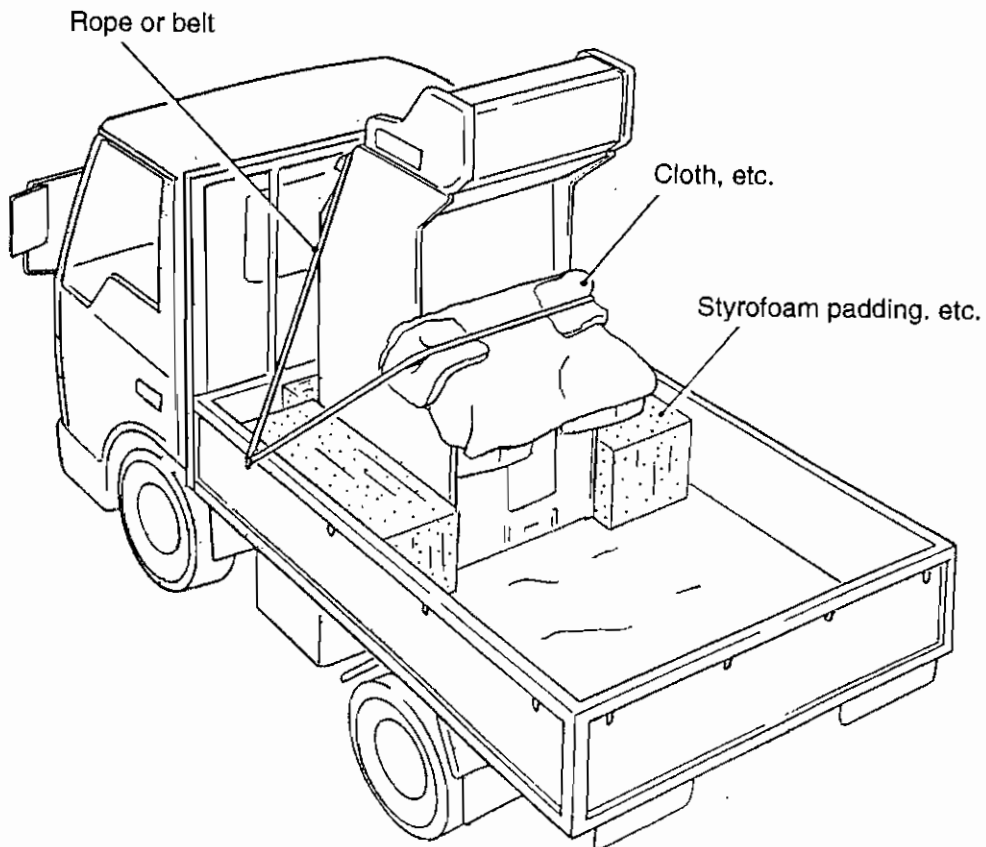
5.2.4 CARRYING THE GAME ON A TRUCK



- When transporting this machine by truck, it should be secured to the truck so it does not move when the truck accelerates or decelerates.

The following points should be observed when using a rope to hold the machine:

- Be sure to use the rope only in the places shown in the figure below.
- In order to protect the game surface, place padding such as Styrofoam between the truck bed and the cabinet.



6. OPERATION

WARNING

- Use only the parts specified by Namco Ltd. when replacing consumables or replacement parts (including screws).
- Make sure that the game machine is installed properly (make sure that it meets all the conditions given in "4 Installation") before starting operation.
- The game machine can operate on a supply voltage which is within the range 10% of the rated voltage, but preferably the supply voltage should be adjusted so that it is as close as possible to the rated voltage.
- Ground the game machine to guard against electrical leakage in the case that the game machine breaks down.

CAUTION

- If the game machine breaks down or becomes damaged, stop operation immediately.
- Always keep the Warning Label clean so that the precautions written on it can be clearly seen. Replace it with a new Warning Label when the letters start to become illegible.
- When unplugging the power cable, do not pull on the cable. Hold the plug and pull it out from the power outlet.
- Do not touch the plug with wet hand.

6-1 HOW TO PLAY

This machine is a shooting game in which the player uses the pedal to duck behind the protection to avoid attacks from the enemy and at the right time the player can emerge from the protection and shoot.

(1) Controls

- 1) Stepping on the pedal (offense): The player can shoot at the enemy. Also, the player may receive enemy attacks.
- 2) Releasing the pedal (defense): The player hides in the protection. In this state the player does not receive enemy attacks. Also, the player can reload.

(2) Modes

- 1) Story game: In this mode the player follows the game story and advances in order starting from stage one.
If the game is over before the game is finished, it is possible to continue.
- 2) Time-attack game: In this mode the player selects a stage and must clear that stage within a certain time. If the game is over, it is not possible to continue. Also, only the selected stage can be played.
 - The mode is selected on the "Mode Selection" screen after inserting the coin.

(3) Rules

- 1) The game is over when the time runs out.
The time is extended when the enemy is destroyed, and game advances to the next scene.
- 2) The game is over when the player's life runs out. The player's lives decreases by 1 each time the player is hit by the enemy. However, in the time-attack game, the player is invulnerable and there is only a time limit.
- 3) The players score is calculated according to his/her time to clear the game, and the shorter the time the better the score.

(4) Trailer

In the story mode, the trailers are shown during the game. The trailer can be omitted by pointing the gun and shooting at the demo screen.

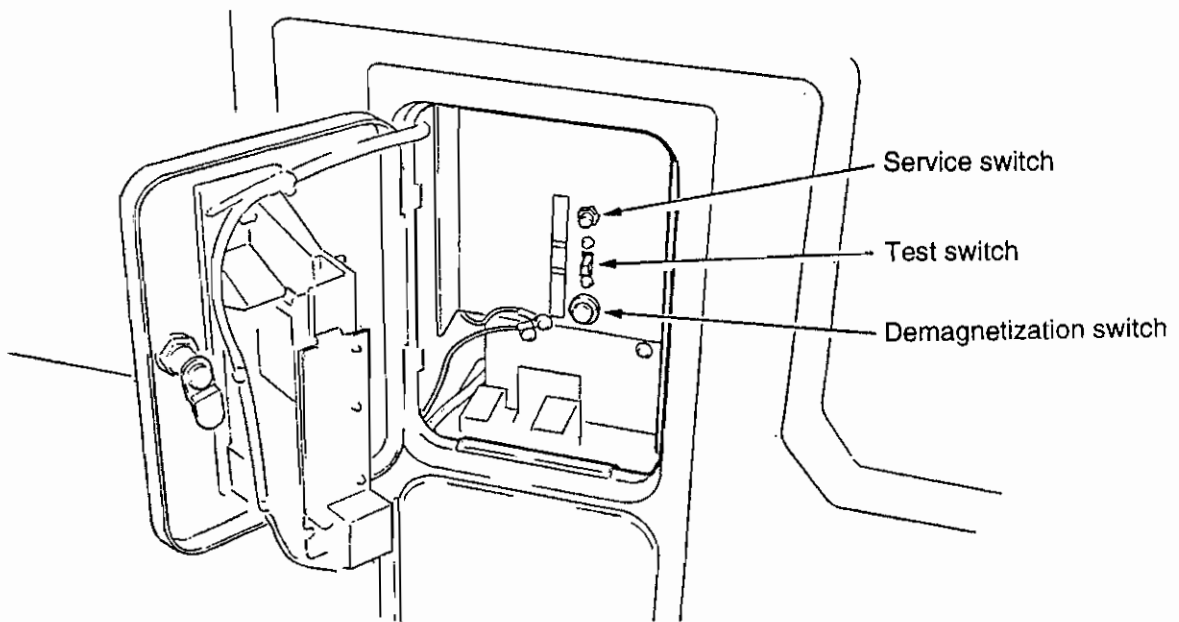
6-2 ADJUSTMENT

6-2-1 POWER ON

After installation (Chapter 4) has been completed, insert the plug in the outlet and turn ON the power.

6-2-2 SWITCHES FOR ADJUSTMENT

Open the coin door of the Coin ASSY and there are switches for adjustment.



[Service switch]

- 1) Push this switch to increase the number of credits without activating the coin counter.

[Test switch]

- 1) Turn this switch ON to put the game machine into the test mode.
- 2) Game cost can be switched and each test can be conducted in the test mode. (See "Test mode" on the next page.)

[Demagnetization Switch]

- 1) Depending on the machine layout or the condition of the building, it is possible for the machine to receive terrestrial magnetic effects, causing color spots on the monitor screen. If this happens, degauss the monitor by pressing this switch.

6-3 TEST MODE

- 1) Turn ON the test switch.

The MENU is displayed on the screen.

- 2) Use the gun to select an item.

<How to make selection>

Point the gun at the screen and shoot. → The selected item moves up.

Point the gun away from the screen and shoot. → The selected item moves down

NOTE: The selected item blinks in red.

- 3) To set the item, step on the pedal. The screen moves to the screen of the selected item.
- 4) To close the test mode, turn the test switch OFF. The screen returns to the game screen.

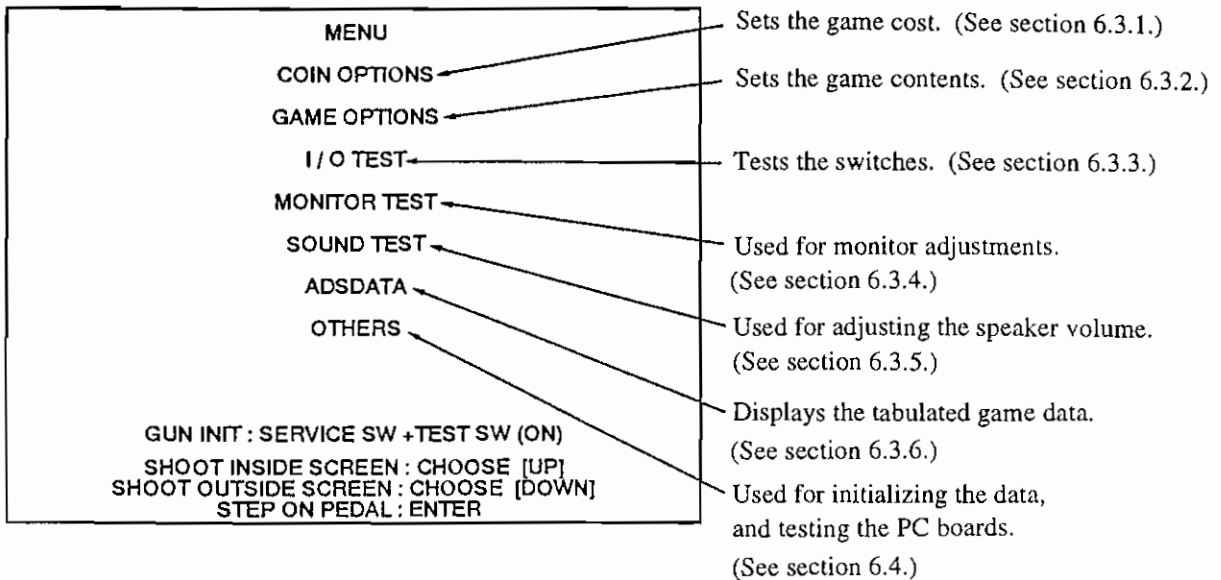


Fig. 6.1 Menu Screen

! CAUTION

- If the gun's aim is not properly set, it may be impossible to select an item. If this happens, refer to section 6.5, "GUN INITIALIZATION" and initialize the settings.

6-3-1 COIN OPTIONS

- 1) Select "COIN OPTIONS" on the menu screen and set it by stepping on the pedal.
- 2) After the "Coin Options" screen appears, use the gun to select the item to be changed.

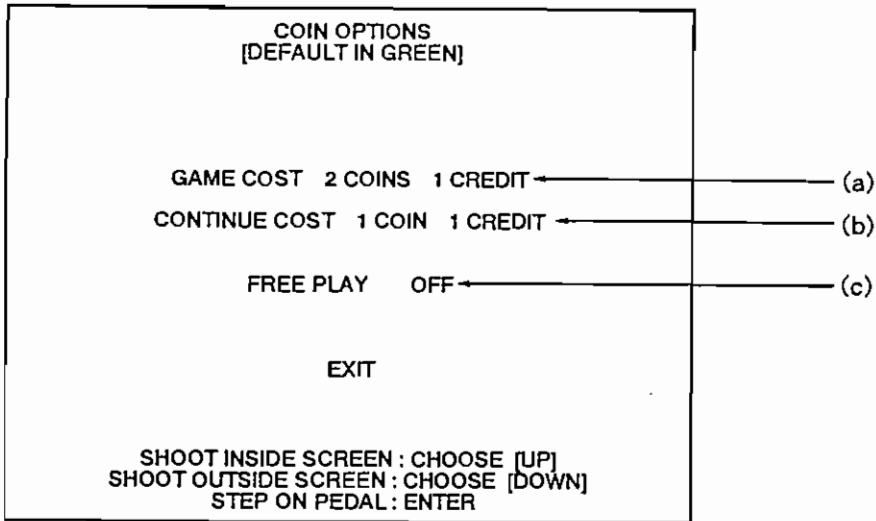


Figure 6.2 Coin Options Screen

(a) Game cost setting (GAME COST)	Number of coins required for one game	1 Coin to 9 Coins (Factory setting: 2)
(b) Continue cost setting (CONTINUE COST)	Number of coins required to continue	1 Coin to 9 Coins (Factory setting: 1)
(c) Free play setting (FREE PLAY)	OFF (factory setting: OFF) ON	

Table 6.1 Coin Options Settings

- 3) When the item to be changed is blinking in red, step on the pedal. The set value for that item will begin to blink in red, and it is possible to use the gun to change the setting.

<Method of changing a setting>

Point the gun at the screen and shoot: The number increases.

Point the gun away from the screen and shoot: The number decreases.

- 4) Change the setting and step on the pedal.
- 5) When the pedal is stepped on, the item will again blink in red. It is now possible to use the gun to select another item.
- 6) If "EXIT" is selected and the pedal is stepped on, the screen returns to the menu screen.

6-3-2 GAME OPTIONS

- 1) Select "GAME OPTIONS" on the menu screen and set it by stepping on the pedal.
- 2) After the "Game Options" screen appears, use the gun to select the item to be changed.

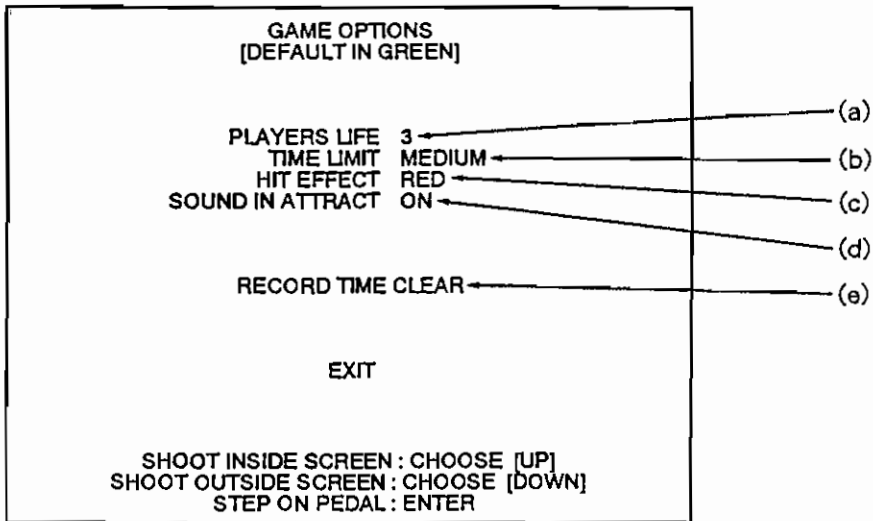


Fig. 6.3 Game Options Screen

(a) Life setting (PLAYER'S LIFE)	1 to 9 (Factory setting: 3)
(b) Time limit setting (TIME LIMIT)	5 levels: [Very short - Short - Medium - Long - Very Long] (Factory setting: MEDIUM)
(c) Effect setting (HIT EFFECT)	RED/GREEN *1 (Factory setting: RED)
(d) Attraction sound (SOUND IN ATTRACT)	ON OFF (Factory setting: ON)
(e) Record time clear (RECORD TIME CLEAR)	Initializes the record time. *2

Table 6.2 Game Options Settings (*1 and *2: See the next page.)

- 3) When the item to be changed is blinking in red, step on the pedal. The set value for that item will begin to blink in red, and it is possible to use the gun to change the setting. (See Table 6-2.)
- 4) Change the setting and step on the pedal.
- 5) When the pedal is stepped on, the item will again blink in red. It is now possible to use the gun to select another item.
- 6) If "EXIT" is selected and the pedal is stepped on, the screen returns to the menu screen.

Notes:

- *1. If the effect setting is set to "GREEN", it is possible to change the effect color from red to green when hitting the enemy with the gun. Also, the effect color when the player is shot changes from red to green.
- *2. When RECORD TIME CLEAR is selected and set (the pedal is stepped on), to prevent clearing the record by mistake, a message asking whether it is okay to clear is displayed. If "YES" is selected and set (the pedal is stepped on), the record time data will be initialized.

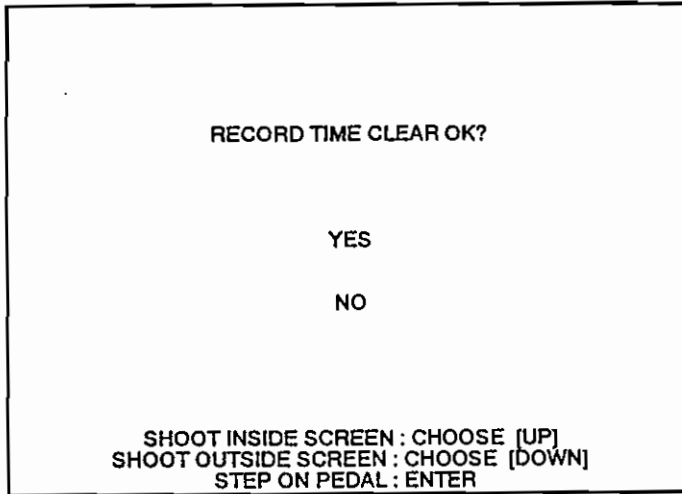


Fig. 6.4 Record Time Clear Screen

6.3.3 I/O TEST

- 1) Select "I/O TEST" on the menu screen and set it by stepping on the pedal.
- 2) On the I/O TEST screen, the status of the dip switches and the test items are displayed. If the dip switch status is "ON", it will be displayed in red, and if it is "OFF" it will be displayed in green. (The standard setting is all OFF.)
- 3) When an item to be tested is selected and set (the pedal is stepped on), the screen changes to the test screen for that item.

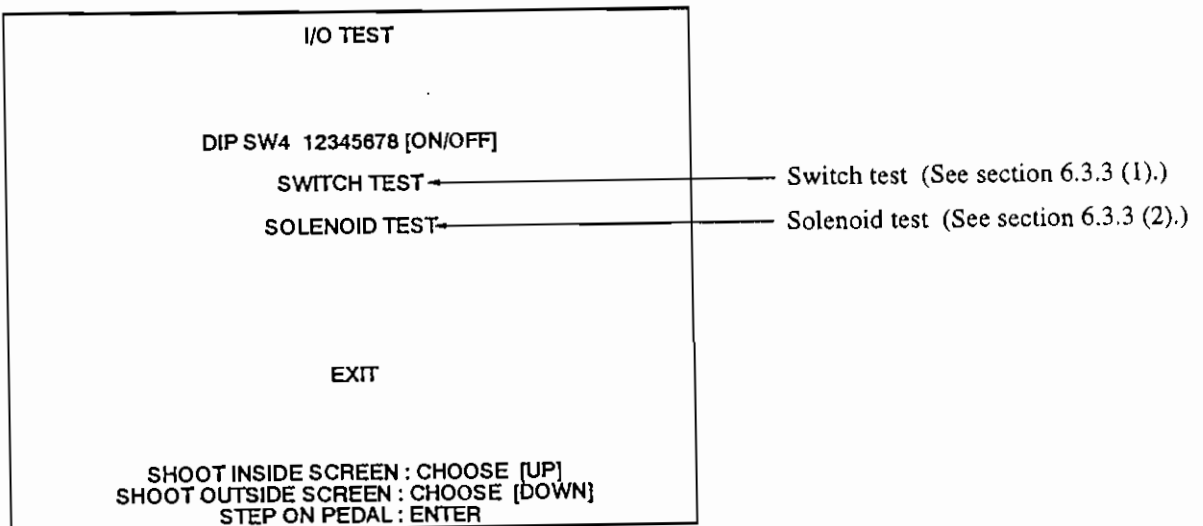


Fig. 6-5: I/O Test Screen

- 4) If "EXIT" is selected and the pedal is stepped on, the screen returns to the menu screen.

(1) Switch Test

- 1) If "SWITCH TEST" is selected and the pedal is stepped on, the "Switch Test" screen is displayed.

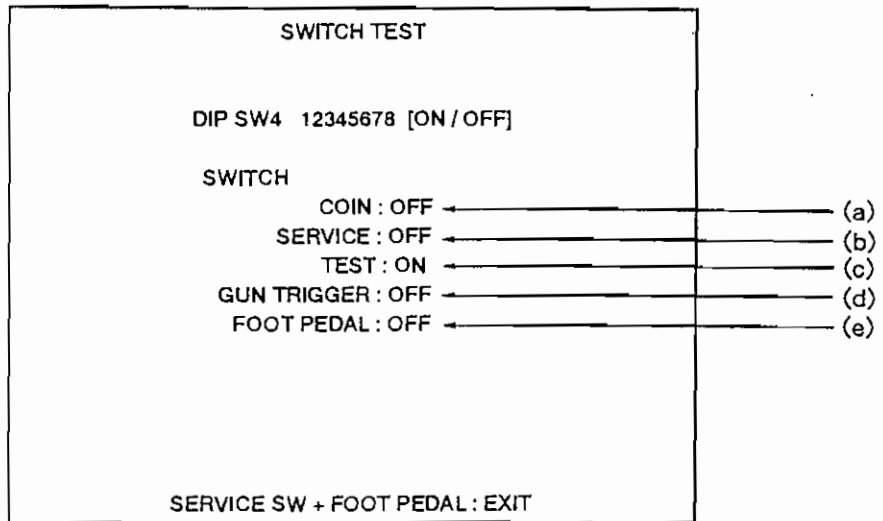


Fig. 6.6 Switch Test Screen

- 2) On the "Switch Test" screen, the status of each switch is displayed, and when a switch is turned ON or OFF, the display also changes to ON or OFF.

(a) Coin switch (COIN)	Goes ON when the coin switch is turned ON.
(b) Service switch (SERVICE)	Goes ON when the service switch is pressed.
(c) Test switch (TEST)	Always ON in this state.
(d) Gun trigger (GUN TRIGGER)	Goes ON when the gun trigger is pulled.
(e) Foot pedal (FOOT PEDAL)	Goes ON when the pedal is stepped on.

Table 6.3 Switch Test Items

- 3) If the pedal is stepped on while pressing the service switch, the screen returns to the "I/O Test" screen.

(2) Solenoid Test

- 1) If "Solenoid Test" is selected and the pedal is stepped on, the "Solenoid Test" screen is displayed.

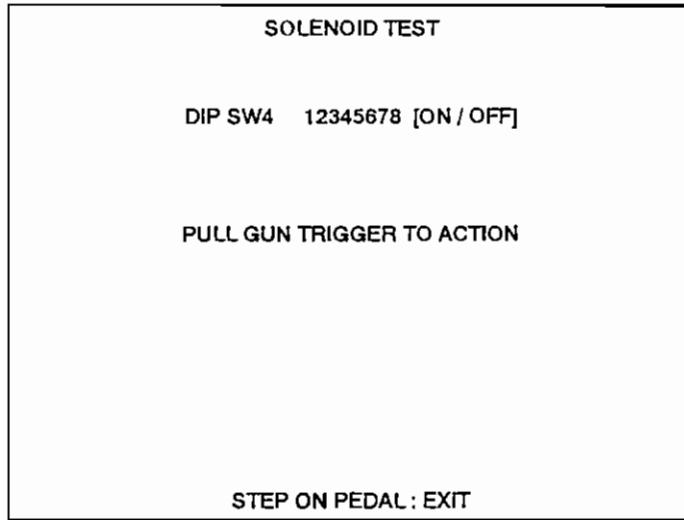


Fig. 6-7 Solenoid Test Screen

- 2) If the gun trigger is pulled while the "Solenoid Test" screen is displayed, the gun blow back mechanism functions.
- 3) The "I/O Test" screen returns when the pedal is stepped on.

6.3.4 MONITOR TEST

This is used in adjusting the monitor.

- 1) When the gun is used to select an item and the pedal is stepped on, the respective pattern is displayed. To exit a pattern screen, step on the pedal or pull the gun trigger.

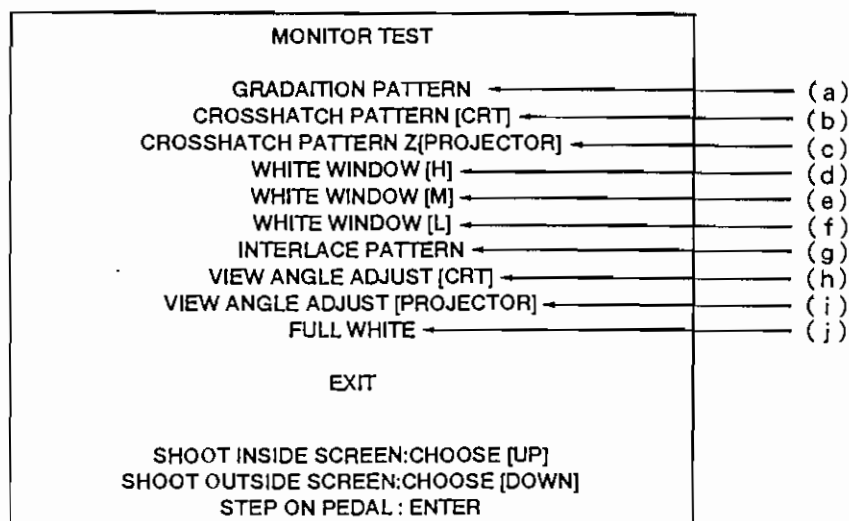


Fig. 6.8 Monitor Test Screen

- 2) If "EXIT" is selected and the pedal is stepped on, the screen returns to the menu screen.
 - (a) Displays the gradation pattern.
 - (b) Displays the cross-hatch pattern for the CRT monitor.
 - (c) Displays the cross-hatch pattern for the projector. (This is not used for the SD version.)
 - (d) Displays a white window (Bright).
 - (e) Displays a white window (Medium).
 - (f) Displays a white window (Dark).
 - (g) Displays an interlace pattern.
 - (h) Displays the adjustment screen for the CRT monitor.
 - (i) Displays the adjustment screen for the projector. (Not used for the SD version.)
 - (j) Displays white on the entire screen.

6.3.5 SOUND TEST

- 1) Select "SOUND TEST" on the menu screen and set it by stepping on the pedal.
- 2) In the sound test it is possible to adjust the volume of the left and right speakers, and to test the sound output. [The volume can be adjusted from 00 (Min.) to 63 (Max.)]

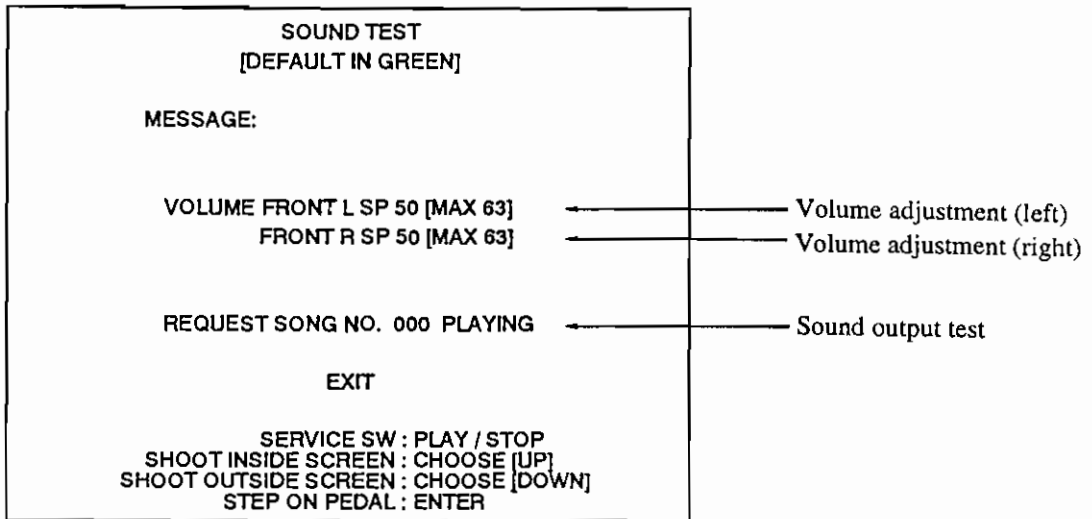


Fig. 6.9 Sound Test Screen (figure)

3) Volume adjustment

When the item to be changed is blinking in red, step on the pedal. The set value for that item will begin to blink in red, and it is possible to change it using the gun.

If the gun is pointed at the screen and shot, the number increases, and if it is pointed away from the screen and shot, the number decreases.

After the value is changed, it is set by stepping on the pedal.

4) Sound output test

The "REQUEST SONG NO." can be selected by changing one digit at a time of the three digit number. The number of the digit can be changed by selecting the digit to be changed and stepping on the pedal. Change the number and press the "Service Switch". The sound for that number will be output from the speaker.

5) If "EXIT" is selected and the pedal is stepped on, the screen returns to the menu screen.

6.3.6 ADS DATA

If "ADS DATA" is selected on the menu screen and the pedal is stepped on, the game data is displayed.

6.4 OTHERS

- 1) If "OTHERS" is selected on the menu screen and the pedal is stepped on, it is possible to initialize the data or to test the PC boards.

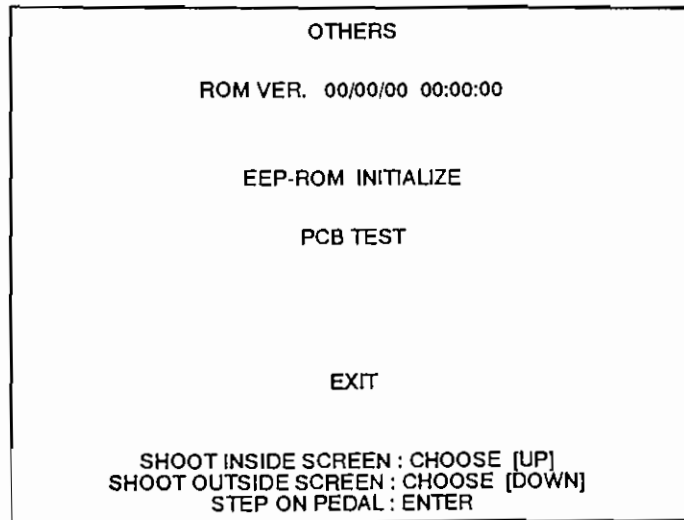


Fig. 6.10 OTHERS Screen

- 2) When "EEP-ROM INITIALIZE" is selected and the pedal is stepped on, the screen shown in Fig. 6-11 is displayed. If "YES" is selected and the pedal is stepped on, all of the data is initialized.

[Note] All of the data is initialized including the gun aim, record time, game cost, etc.

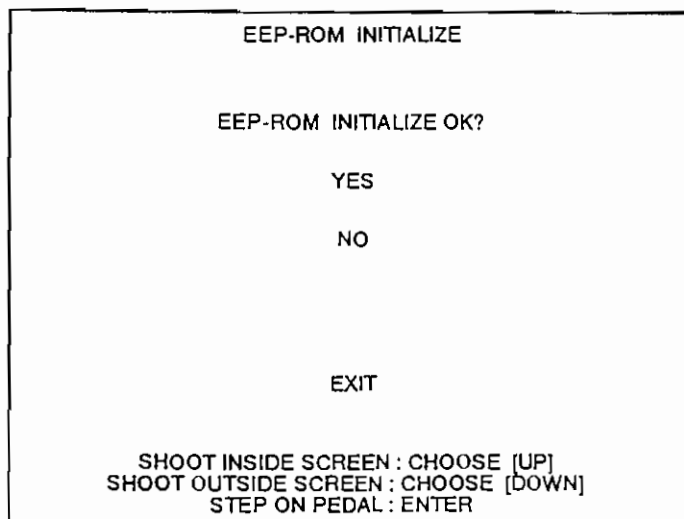


Fig. 6.11 Data Initialization Screen

3) If "PCB TEST" is selected on the "OTHERS" screen (Fig. 6.10) and the pedal is stepped on, the "PCB Test" screen is displayed.

It is possible to test the "VIDEO PC Board" and the "DSP PC Board". Select either one with the gun and step on the pedal. The test will be performed automatically.

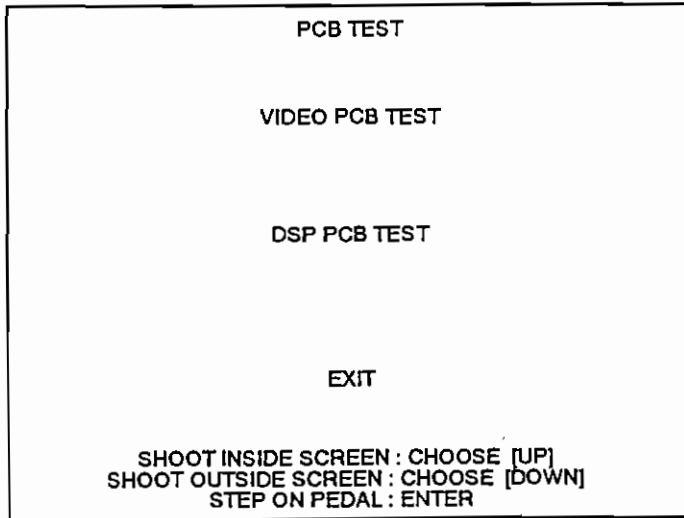


Fig. 6.12 PC Board Test Screen

4) If "EXIT" is selected and the pedal is stepped on, the screen returns to the menu screen.

6.5 GUN INITIALIZATION (GUN INIT.)

- 1) If the test switch is turned ON while pressing the service switch, the gun initialization menu screen is displayed. (Fig. 6.13)

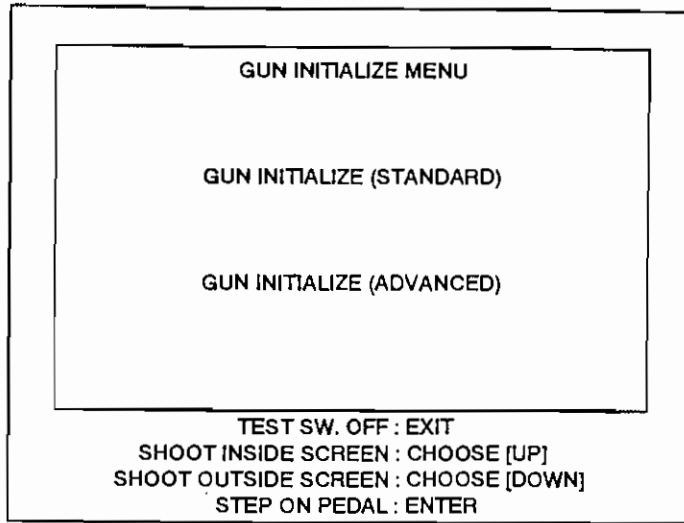


Fig. 6.13 Gun Initialization Menu Screen

- 2) There are two kinds of gun initialization: STANDARD and ADVANCED. Normally, the gun aim is set using standard initialization. Advanced initialization is generally not used.
- 3) If gun initialization (standard) is selected and set (the pedal is stepped on), the gun initialization screen shown in the figure below is displayed. (Fig. 6.14)

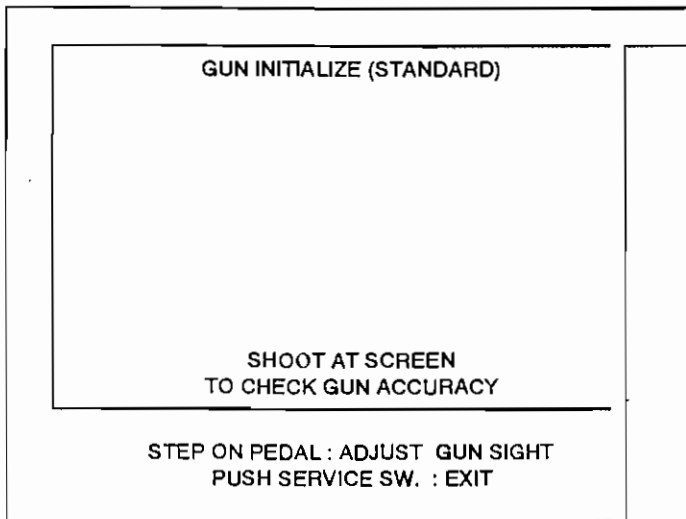


Fig. 6.14 Gun Initialization Screen 1

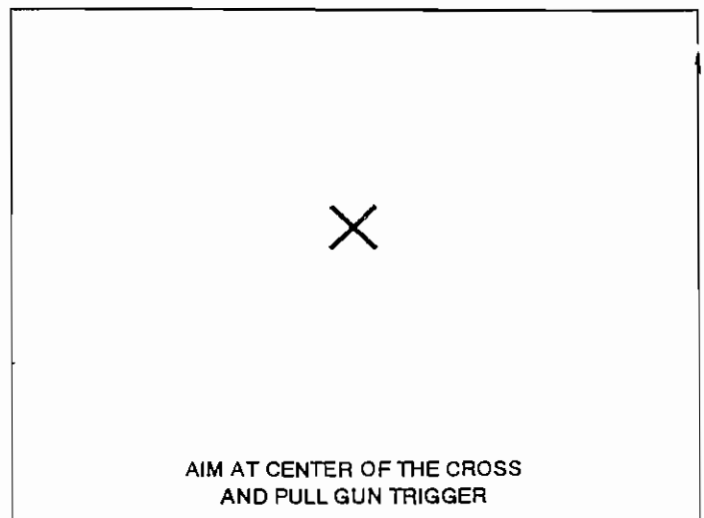


Fig. 6.15 Gun Initialization Screen 2

- 4) Step on the pedal while the screen shown in Fig. 6.14 is displayed. The screen shown in Fig. 6.15 is displayed. Aim and shoot the gun at the "X" in the center of this screen. The gun is initialized.

After the gun has been shot, the screen returns to the screen shown in Fig. 6.14.

- 5) On the screen shown in Fig. 6.14, aim and shoot the gun at the screen and a target will appear (see Fig. 6.16). Make sure that the target appears at the location where the gun is aimed and shoot at.

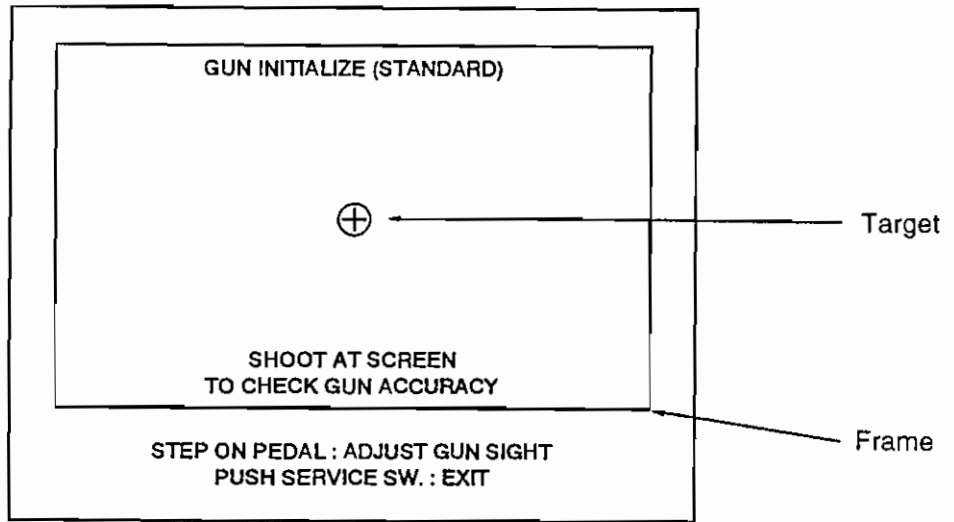


Fig. 6.16 Gun Initialization Screen 3

- 6) On the screen shown in Fig. 6.16, make sure the gun can shoot everywhere within the frame. If the gun is not initialized properly, step on the pedal to return to the screen shown in Fig. 6.15, and initialize the gun again.
- 7) If the service switch is pressed, the gun initialization menu screen (Fig. 6.13) returns.

*: Normally the gun is initialized by using the above procedure. However, if the following problem occurs, take "Advanced gun initialization" from step 8).

[The gun is completely initialized after completing step 7), however when shooting the gun at the center of the screen, the aim is proper, but when shooting at the edges of the screen, the bullet mark deviated from the gun is pointed (it's likely to toward the center of the screen).]

This problem is due to the performance of the monitor. Normally, adjustment up through step 7) will do for play, however if the above problem is thought to be severe, take advanced initialization from step 8).

● Advanced Gun Initialization

Standard initialization is performed by shooting only once at the center of the screen, however in advanced initialization, the screen is divided into five parts: center, top right, top left, bottom right and bottom left. It is possible to perform detailed adjustment by adjusting the aim for each part. However if the gun is not correctly initialized, it is possible that the aim will be worse than when initialized using standard initialization, therefore much care should be taken when performing initialization.

- 8) If gun initialization (advanced) is selected and set (the pedal is stepped on), the gun initialization setting screen shown in the figure below is displayed. (Fig. 6.17)

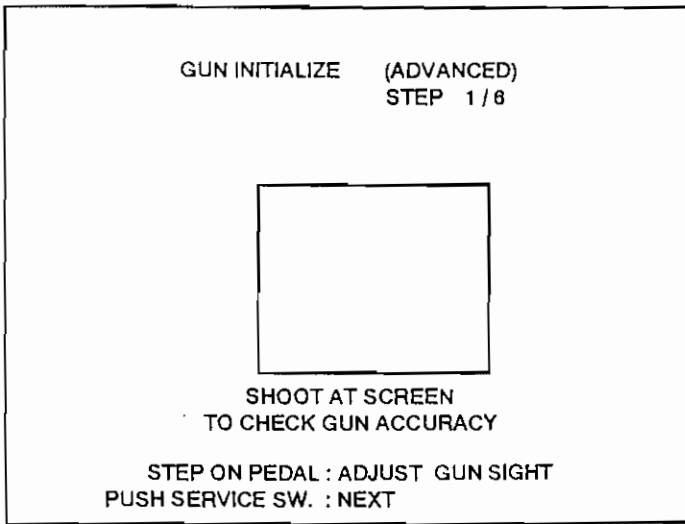


Fig. 6.17 Gun Initialization Screen 4

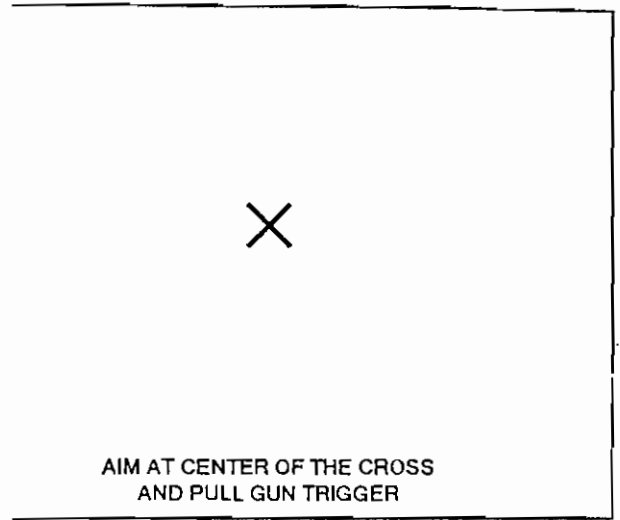


Fig. 6.18 Gun Initialization Screen 5

- 9) Step on the pedal while the screen shown in Fig. 6.17 is displayed. The screen shown in Fig. 6.18 is displayed. Aim and shoot the gun at the "X" in the top right of the screen. The gun is initialized.

After the gun has been shot, the screen returns to the screen shown in Fig. 6.17.

- 10) On the screen shown in Fig. 6.17, aim and shoot the gun at the screen. A target will appear (see Fig. 6.19). Make sure that the target appears within the frame shot at.

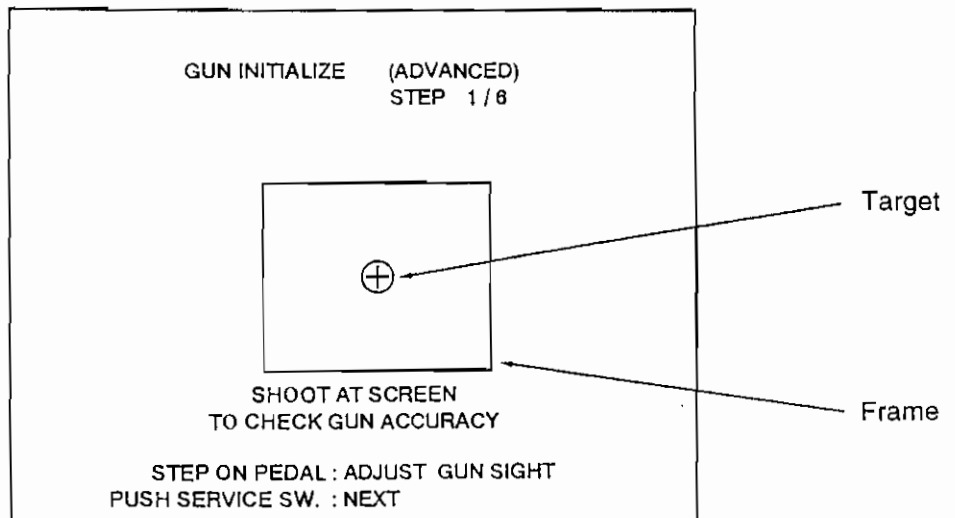


Fig. 6.19 Gun Initialization Screen 6

- 11) If the gun is not initialized properly, step on the pedal to return to the screen shown in Fig. 6.18, and initialize the gun again.

12) If the service switch is pressed, adjustment moves to STEP 2/6.

[Note] There are 6 steps (STEP 1/6 to STEP 6/6) to advanced initialization. If initialization is aborted in the middle, all of the settings will become invalid, so be sure to perform it all the way to the end.

13) STEP 2/6 adjusts the aim for the top left of screen. As was done in STEP 1/6, aim and shoot at the "X" to initialize the gun.

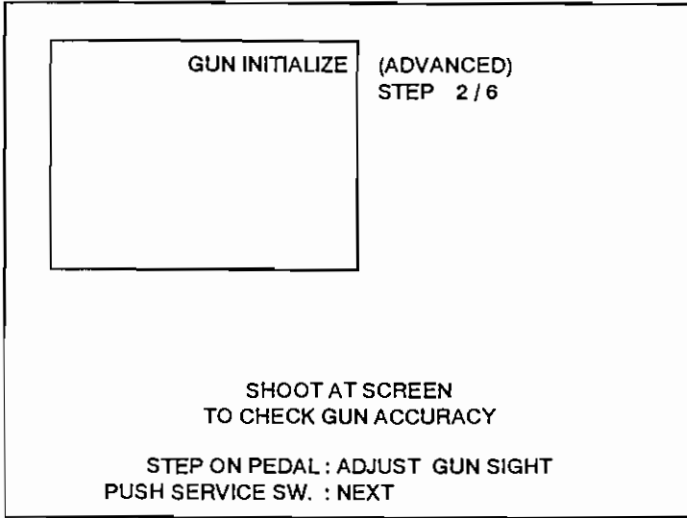


Fig. 6.20 Gun Initialization Screen 6

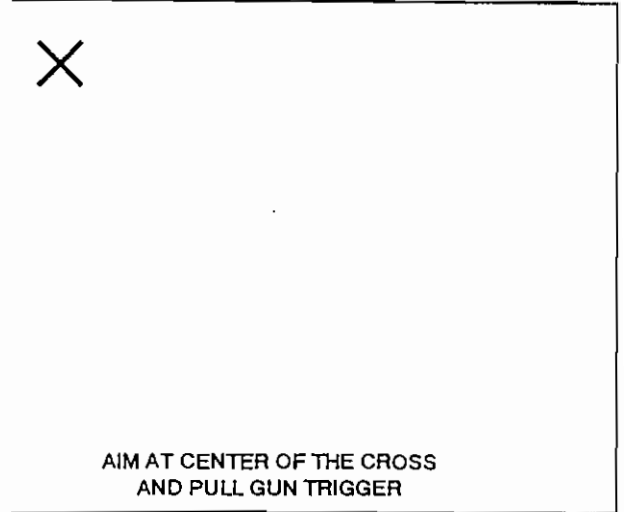


Fig. 6.21 Gun Initialization Screen 7

14) Perform initialization, and after checking the aim on the screen shown in Fig. 6.20, press the service switch to move to STEP 3/6.

If the initialization is not proper, step on the pedal to return to the screen shown in Fig. 6.21 and perform initialization again.

15) Perform initialization for STEP 3/6 (top right of the screen), STEP 4/6 (bottom left of the screen) and STEP 5/6 (bottom right of the screen) in the same way as for STEP 1/6 and STEP 2/6.

16) Perform initialization up through STEP 5/6 then press the service switch to move to the screen for STEP 6/6. (Fig. 6.22)

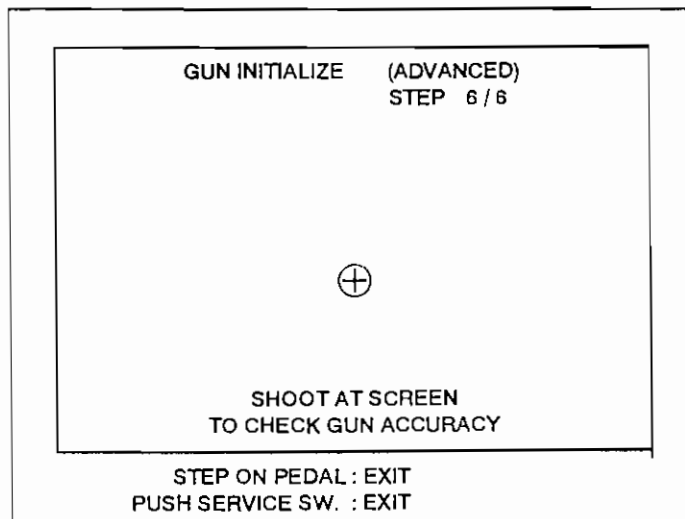


Fig. 6.22 Gun Initialization Screen 8

Here a final check is made for the 5 steps of initialization up through STEP 5/6. Aim and shoot the gun within the frame on the screen and make sure that the target appears at the location where the gun is aimed and shot at.

If the pedal is stepped on or the service switch is pressed, the gun initialization menu screen (Fig. 6.13) returns, and if the initialization is still not proper, select gun initialize (advanced) and perform initialization again.

If the gun is properly initialized, then turn the test mode OFF to return to the game screen.

6.6 SELF TEST

This machine performs a self test of the PC boards automatically when the power is turned ON. If they are normal, a "NOTICE" screen will be displayed.

If there are any problems, an error message will be displayed and operation will stop.

6.7 INSPECTION

6.7.1 INSPECTION ITEMS BEFORE STARTING OPERATION

The following items should be checked before starting operation. If there are any problems, handle them as described in section 7.2, "Troubleshooting".

(1) External inspection

- 1) Check the "Warning Labels". (Can it be read?)
- 2) Check that the adjusters are secure.
- 3) Check that the main unit and pedals are secure and check the connections.
- 4) Check that the screws on the gun are secure.
- 5) Check that the gun tube is secure and that there is no damage.

(2) Operation inspection

- 1) Check the sound.
- 2) Check that the fluorescent lamps are ON.
- 3) Check the image.
 - The next items should be checked through actual play by pressing the service switch.
- 4) Check the reaction of the gun.
- 5) Check the operation of the pedal.

6.7.2 PERIOD INSPECTION ITEMS

- 1) Check the gun lens for scratches and make sure it is clean.
- 2) Make sure the glass and mirrors are clean.

7. MAINTENANCE

- **This should be performed by technicians.**

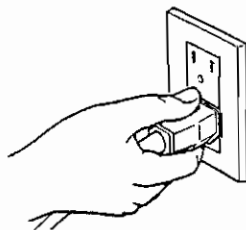


WARNING

- Do not remodel the game machine without permission. Remodeling it could bring unexpected dangers.
- Namco bears no responsibility for damage or accidents resulting from alterations to the machine.
- Use only the parts specified by Namco Ltd. when replacing consumables or replacement parts (including screws).
- When performing maintenance work (troubleshooting, repairs), be sure to turn the power OFF so the workers and others are not injured or receive electric shock.
- Before undertaking any operation that is not described in this Operation Manual, be sure to contact your dealer and follow the instructions and responses obtained.
- Namco bears no responsibility for the results if the above procedure or instructions are not followed.
- The Power Board ASSY and inside the cabinet are still hot and carry high voltage even after the main power switch has been turned OFF, and there is a possibility of burns or electric shock. Be very careful not to touch them.



CAUTION



- Be sure to turn the main power OFF before replacing parts or disconnecting and connecting connectors.
- When unplugging the power cable, do not pull on the cable. Hold the plug and pull it out from the power outlet.
- Do not touch the plug with wet hands.

7-1 MAINTENANCE AND INSPECTION

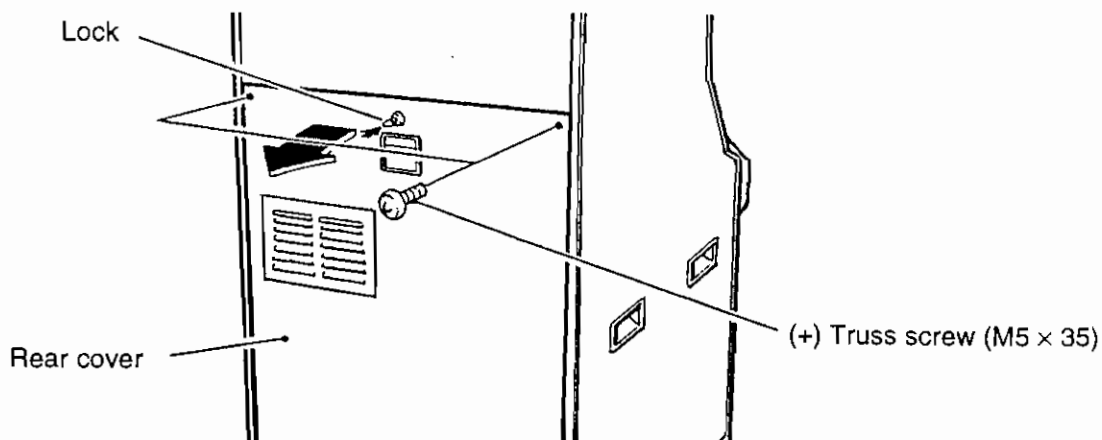


CAUTION

- Be sure to turn the power OFF before performing any work.

7-1-1 REMOVING THE REAR COVER

- 1) Remove the two (+) truss screws (M5 × 35) of the Main Unit ASSY, open the lock in the center, and remove the rear cover.

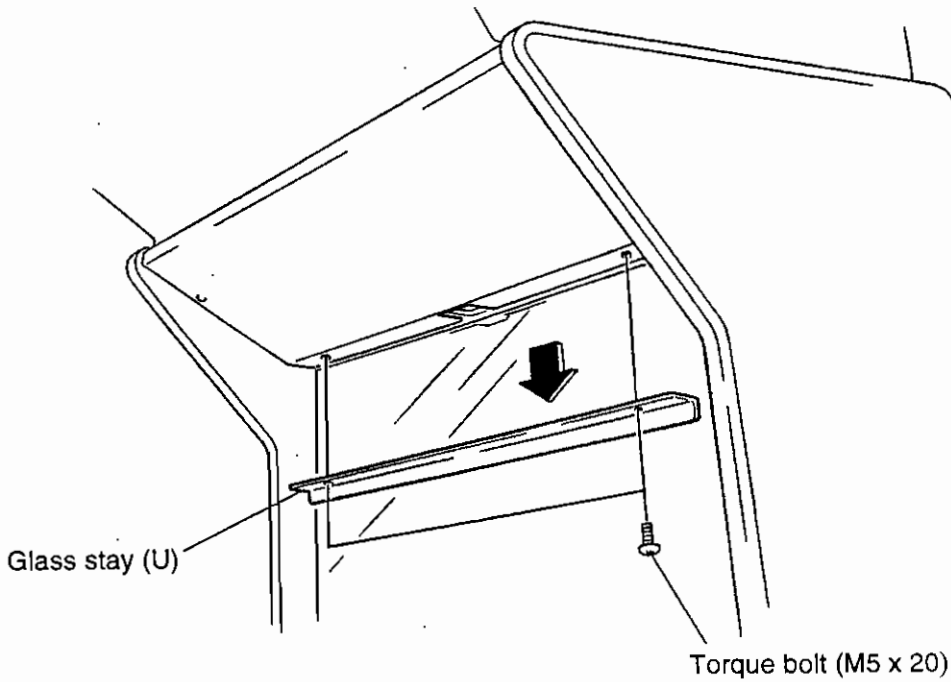


7-1-2 CLEANING INSIDE THE CABINET

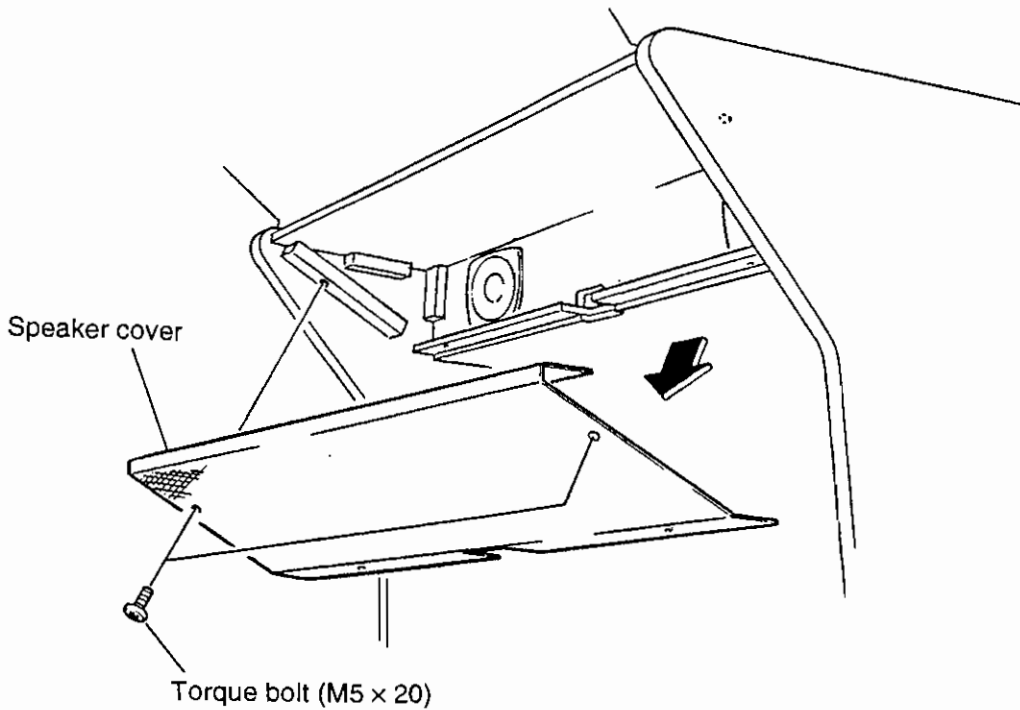
CAUTION

- Be sure to turn the power OFF before performing any work.
- This work involves removing glass so proper care should be taken.

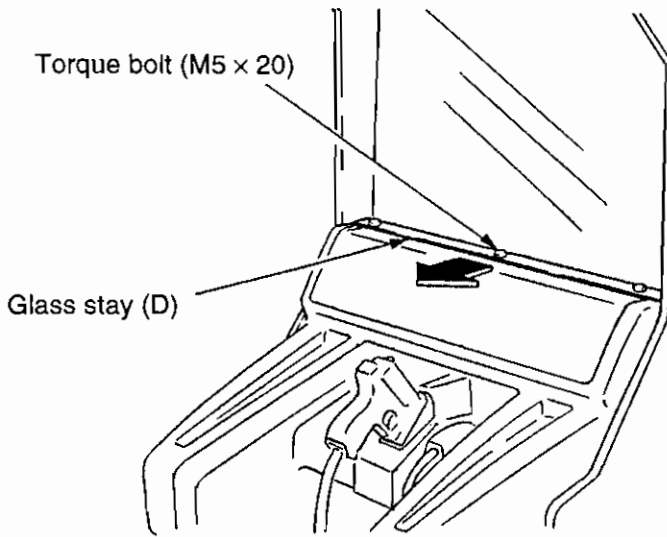
- 1) Remove the two torque bolts (M5 × 20) and remove the glass stay (U).



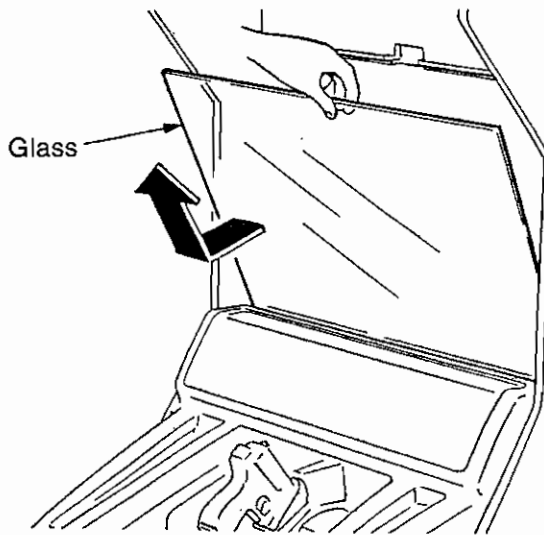
- 2) Remove the two torque bolts (M5 × 20) and remove the speaker cover.



- 3) Loosen the torque bolt (M5 × 20) and pull the glass stay (D) forward.



- 4) Place a finger in the notch formed in cabinet located at the top of the glass, and remove the glass by tipping it forward.



- 5) Clean inside the cabinet.

[Precautions] (Cleaning the CRT, mirror and glass)

- When wiping the dirt on the surface, use a dry, soft cloth. Do not use rough gauze.
- If the dirt is difficult to remove, use a well wrung soft cloth that has been dampened in a mild household detergent diluted with water, and then completely dry the surface. Do NOT use a detergent which contains abrasive powder or bleach.

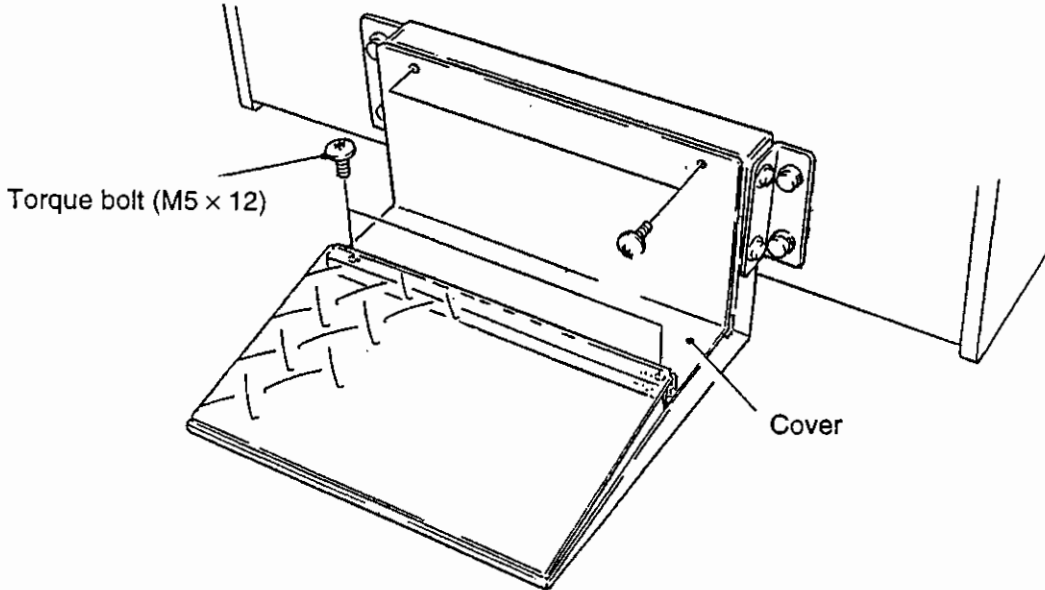
- 6) After cleaning, replace the glass, speaker cover and glass stay (U) using the opposite procedure.

7.1.3 CHECKING THE WEAR OF THE PLUNGER

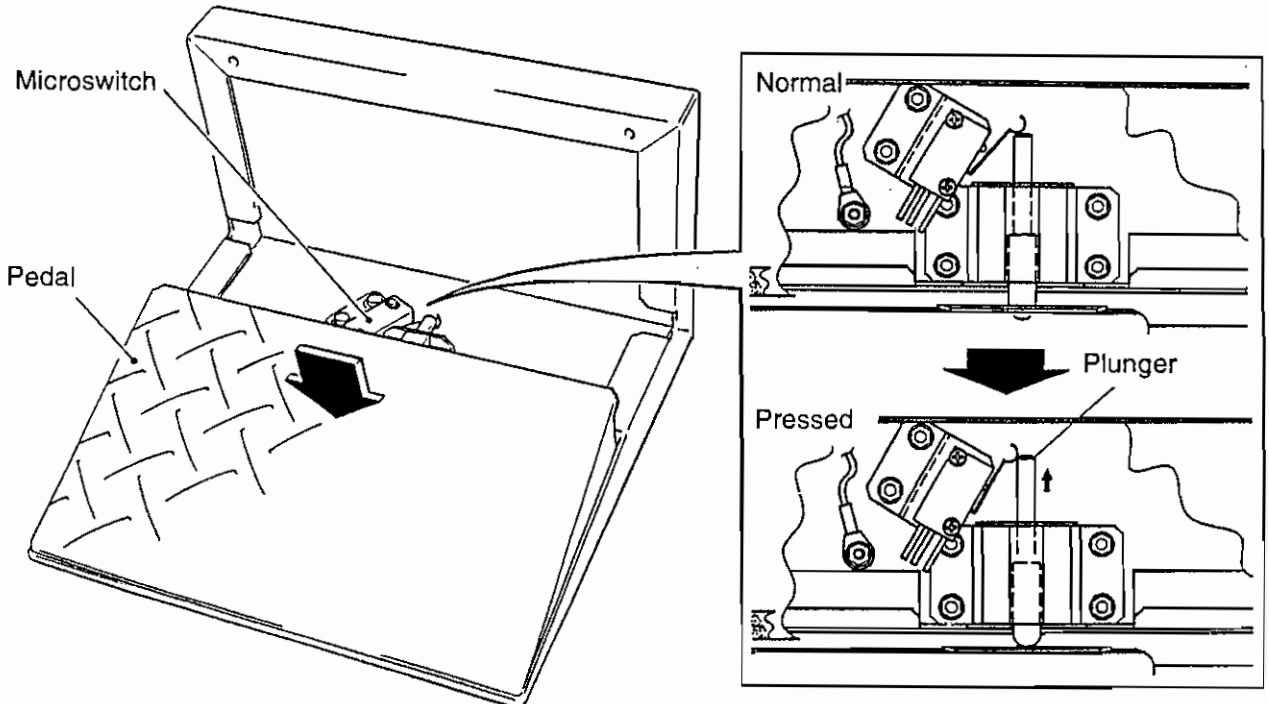
CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the four torque bolts (M5 × 12) and remove the cover.



- 2) Press the pedal by hand and check visually whether or not the plunger presses the microswitch.



- 3) If the plunger is worn and does not press the microswitch, replace the plunger. (Refer to section 7.3.3 (2), "Replacing the Plunger".)

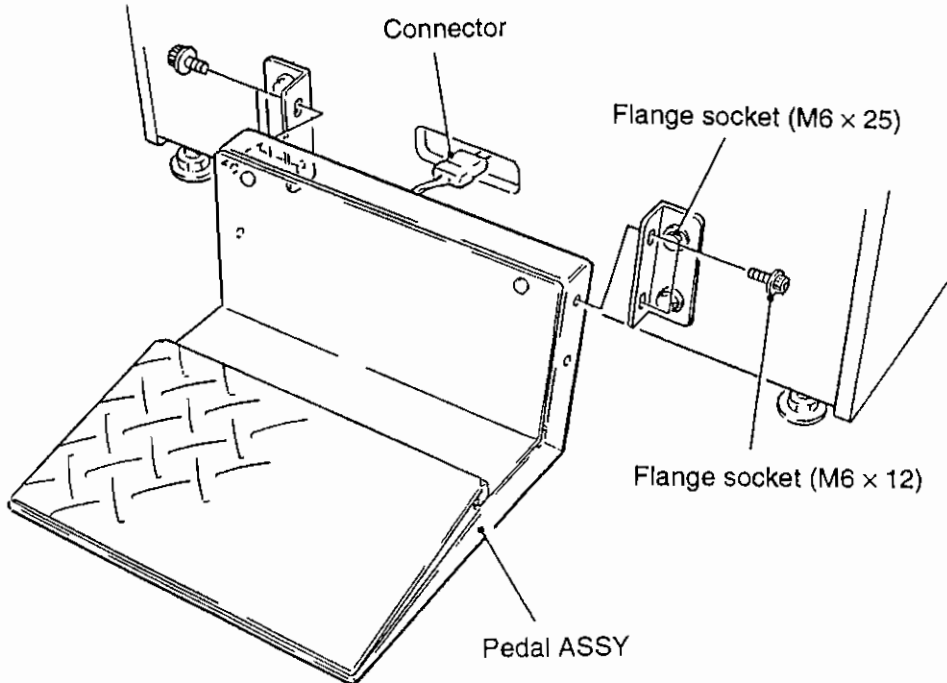
7.1.4 GREASING THE PLUNGER



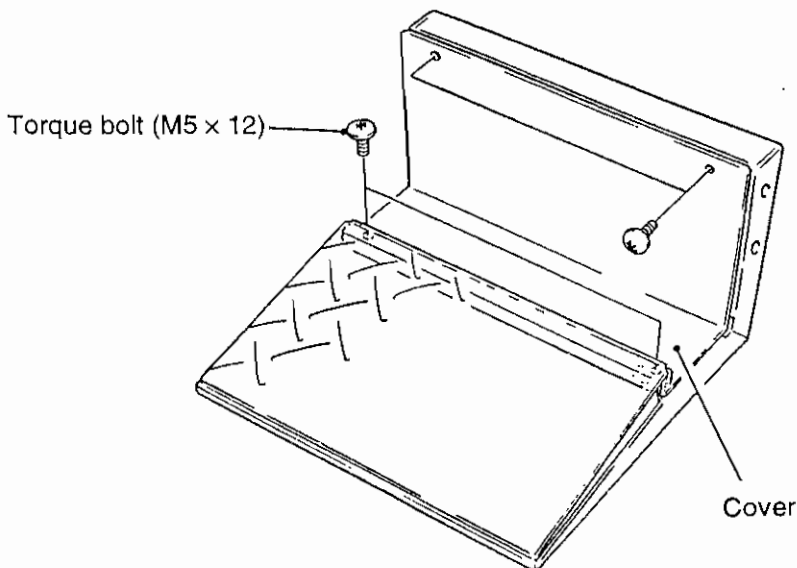
CAUTION

- Be sure to turn the power OFF before performing any work.

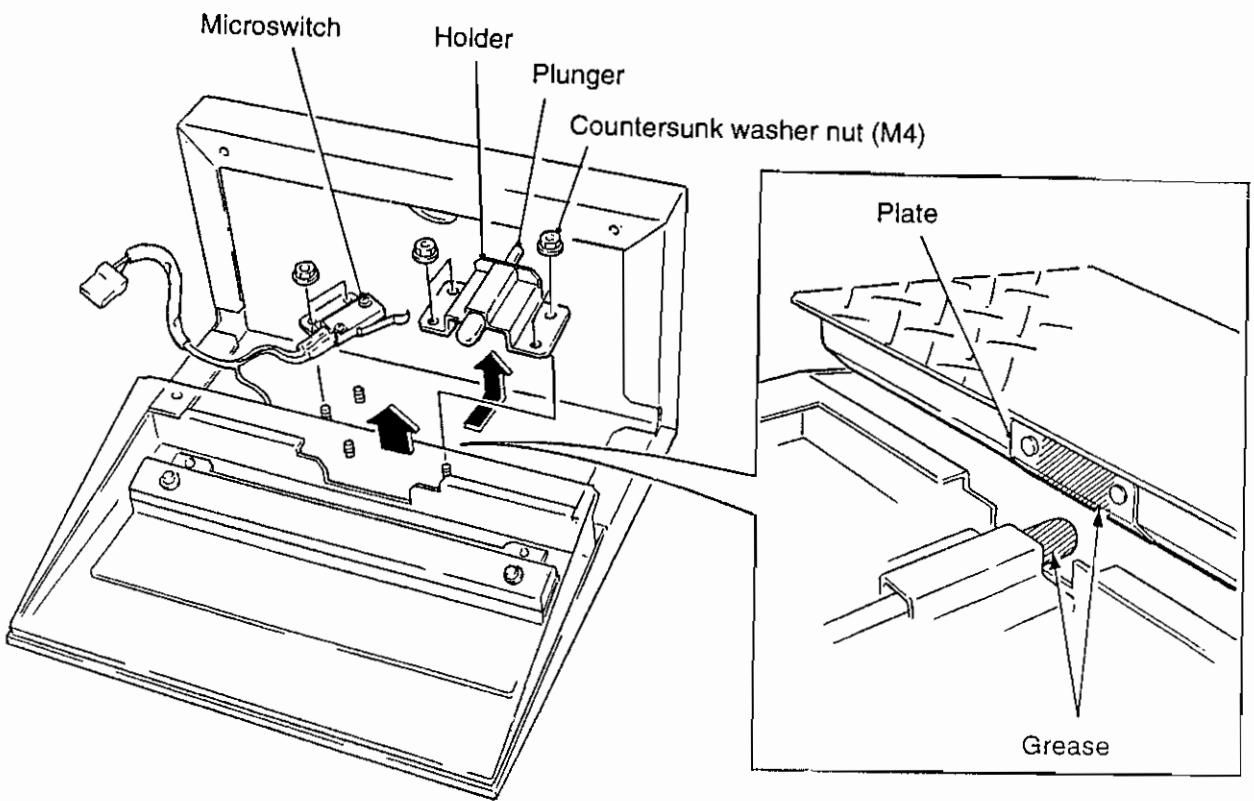
- 1) Loosen the four flange sockets (M6 × 25) on the main unit.
- 2) Remove the four flange sockets (M6 × 12) on the Pedal ASSY, then disconnect the connector and remove the Pedal ASSY.



- 3) Remove the four torque bolts (M5 × 12) and remove the cover.



- 4) Remove the two countersunk washer nuts (M4) and remove the microswitch.
- 5) Remove the four countersunk washer nuts (M4) holding the holder, and lift up the holder while pulling the plunger.
- 6) Wipe away the grease on the surface of the plate on the pedal with a cloth.
- 7) Apply grease to the plate and ball surface of the plunger.
 - Specified grease: ALVANIA GREASE No. 2 (Showa Shell Oil)



- 8) Assemble the pedal Assembly using the opposite procedure.
(For details on how to adjust the microswitch, refer to section 7.3.3, "Replacing the Microswitch".)

7-2 TROUBLESHOOTING



CAUTION

- Be sure to turn the power OFF before performing any work.

- If none of the following seem to be the cause of the trouble, or if there was no improvement after treatment, contact the dealer.
- The dealer will repair the PC board. Therefore, never carry out a continuity test with a tester. The internal voltage of the tester may destroy IC.
- When sending an article requiring repair, clearly state the details of failure in concrete and pack it securely.

In particular, when sending a PC board, wrap it up with a sponge or air cap and put it in a cardboard box so that an external force is not exerted on it.

7-2-1 OVERALL PROBLEM

Problem	Cause	Remedy	Reference page
- Although the power is turned on, the game machine does not work.		- Turn the power ON again.	-
	- There is a blown out fuse.	- Replace the fuse.	P51
- The operation is not stable. A malfunction occurs.	- The power-supply voltage exceeds the rated voltage by $\pm 10\%$, or it is insufficient.	- Remove any large capacity machines (air conditioner, several pinball games, large rides, etc.) on the same line, and keep the voltage at the prescribed level.	-
- The power is turned off during operation.	- There is a blown out fuse.	- Replace the fuse in the cord box. If the fuse blows frequently, there is a problem with the machine. Contact the dealer.	P51
- There is no sound from the speaker.	- The volume is too low.	- Reset the volume.	P30

7-2-2 MAIN UNIT ASSY

Problem	Cause	Remedy	Reference page
- There is no image on the monitor.	- The harness which connects the monitor and the PC Board Rack ASSY is disconnected.	- Open the rear cover the main unit and connect the harness.	P48

7-2-3 SIGN ASSY

Problem	Cause	Remedy	Reference page
- The fluorescent lamp does not go ON.	- The connector is disconnected.	- Connect the connector.	P14
	- The fluorescent lamp is burned out.	- Replace the fluorescent lamp.	P52
	- The glow lamp is burned out.	- Replace the glow lamp.	P52

7-2-4 PEDAL ASSY

Problem	Cause	Remedy	Reference page
- The pedal does not function.	- The microswitch is broken.	- Replace the microswitch.	P53
	- The connector is disconnected.	- Connect the connector.	P15
	- The plunger is worn out.	- Replace the plunger.	P54

7-2-5 GUN ASSY

Problem	Cause	Remedy	Reference page
- Does not blow back.	- The connector is disconnected.	- Connect the connector.	P55
	- The microswitch is broken.	- Replace the microswitch.	P60
	- The solenoid is broken.	- Replace the solenoid.	P59
- The gun aim is strange.	- The lens is dirty.	- Clean the lens.	P40 P 58
	- The aim is not initialized properly.	- Initialize the aim again.	P33

7-3 REMOVING AND REPLACING ASSY, PARTS

⚠ CAUTION

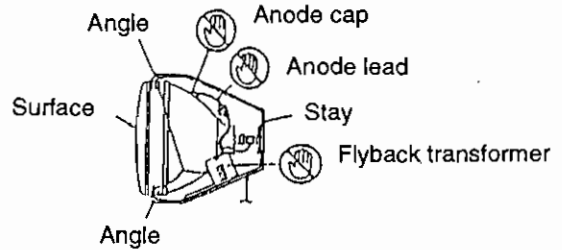
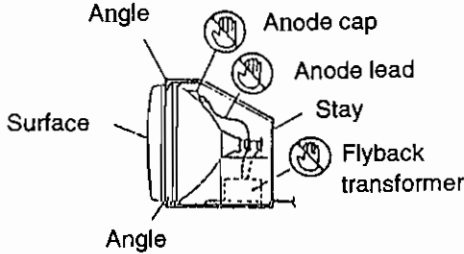
- Be sure to turn the power OFF before removing and replacing any of the Assemblies or parts.

7.3.1 MAIN UNIT

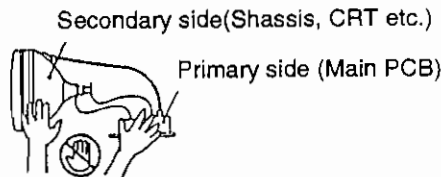
(1) Replacing the Monitor

⚠ DANGER

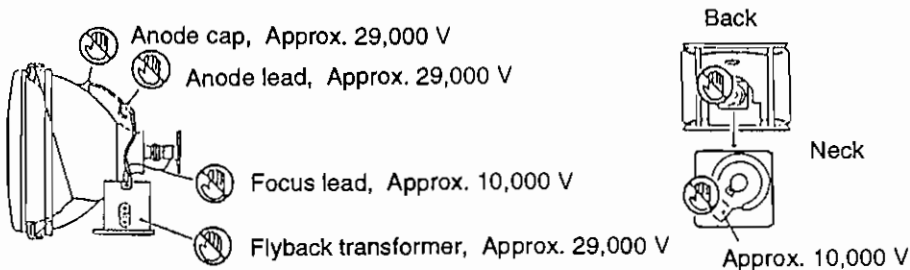
- Be sure to turn the power to the machine OFF before replacing the monitor. Failure to do so could be the cause of electric shock or other trouble.
- The anode cap, anode lead and flyback transformer retain high voltage even after the power has been turned OFF. There is a danger of electric shock so absolutely do not touch any of these areas.
- When replacing the monitor, be careful not to touch anywhere except the stay, angles or surface of the monitor CRT.



- The circuits within the monitor are separated into a primary side and secondary side, and they are electrically insulated. Do not touch the primary side or the primary side and secondary side at the same time. This could cause electric shock and is extremely dangerous.
- Do not short the primary side with the secondary side. This could cause electric shock or other trouble.



- There are places within the monitor where a voltage exceeding 20,000 volts is generated and there is a danger of electric shock, so do not touch anywhere inside the monitor.



- If there are any objects such as fragments of solder or paper inside the monitor, turn the power OFF. These could be the cause of trouble or fire.

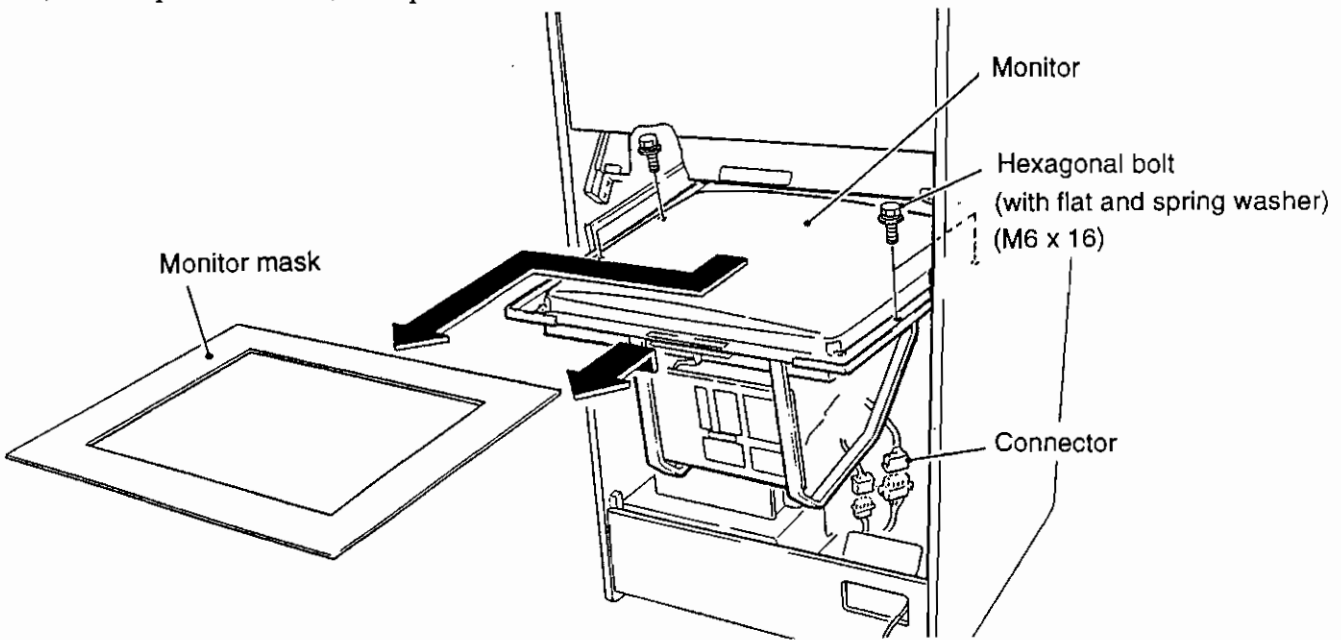
⚠ CAUTION

- If there is trouble with the monitor, immediately contact the dealer.

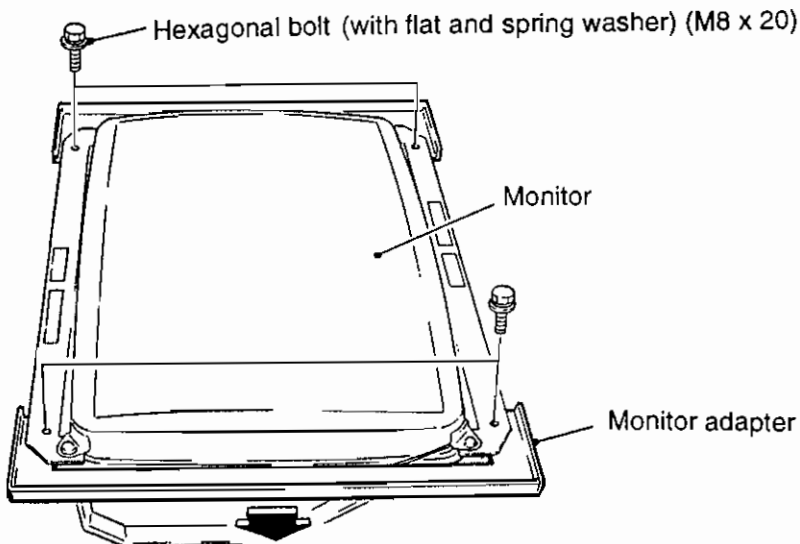
⚠ CAUTION

- Be sure to turn the power OFF before performing any work.
- The monitor weighs about 40 kg, It should be handled with much care.

- 1) Remove the two (+) truss screws (M5 × 35) and unlock the coin lock, then remove the rear cover. (Refer to section 7.1.1, “Removing the Rear Cover”.)
- 2) Pull the monitor mask forward and remove it.
- 3) Disconnect the two monitor connectors.
- 4) Remove the four hexagonal bolts (with flat and spring washers) (M6 × 16).
- 5) Lift the monitor, then pull it forward and remove it.



- 6) Remove the four hexagonal bolts (with flat and spring washers) (M8 × 20) and remove the monitor adapter from the monitor.



- 7) Replace and install the monitor using the opposite procedure.

(2) Replacing the PCB Rack ASSY

WARNING

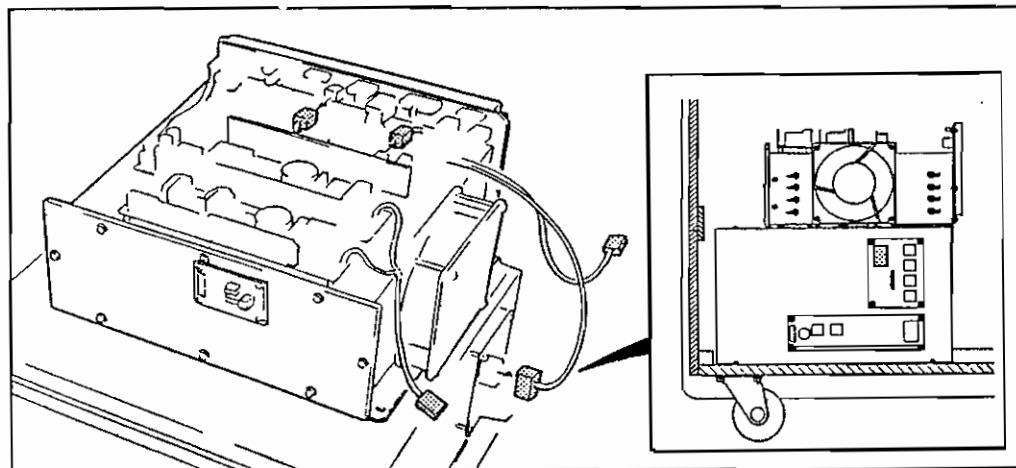
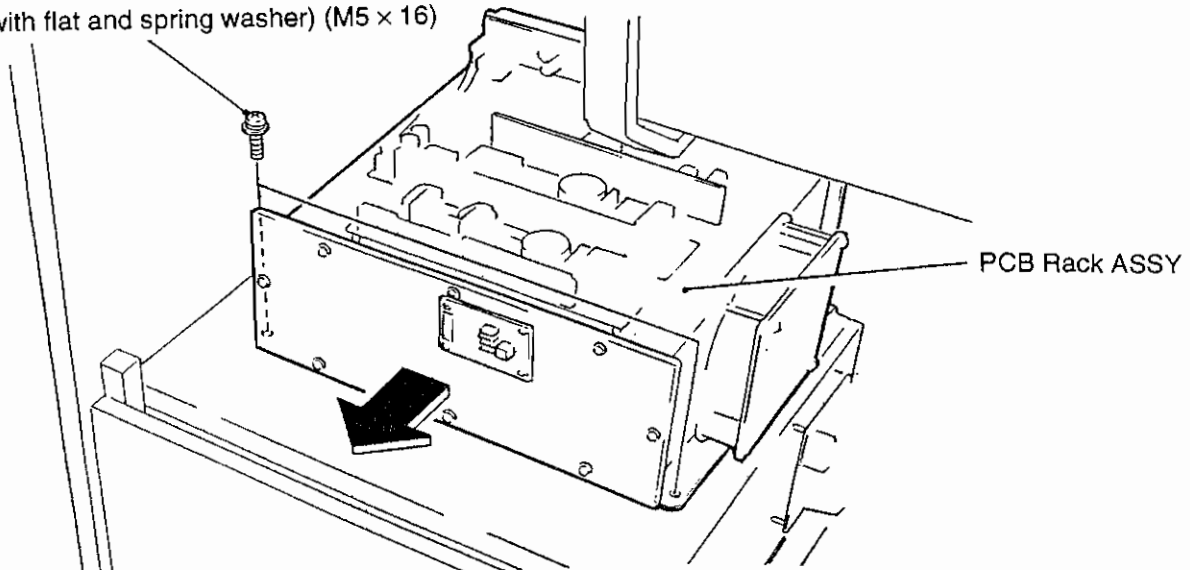
- The power board Assy and PC Board Rack ASSY remain hot even after the power has been turned OFF, and there is a possibility of burns. This work should be performed with much care.

CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the rear cover. (Refer to section 7.1.1, "Removing the Rear Cover".)
- 2) Remove the two (+) pan-head screws (with flat and spring washers) (M5 × 16), and pull the PC Board Rack ASSY forward.
- 3) Disconnect the five connectors.
- 4) Remove the PC Board Rack ASSY.

(+) Pan-head screw
(with flat and spring washer) (M5 × 16)



- 5) Replace and install the PCB Rack ASSY using the opposite procedure.

(3) Replacing the Game PC Board

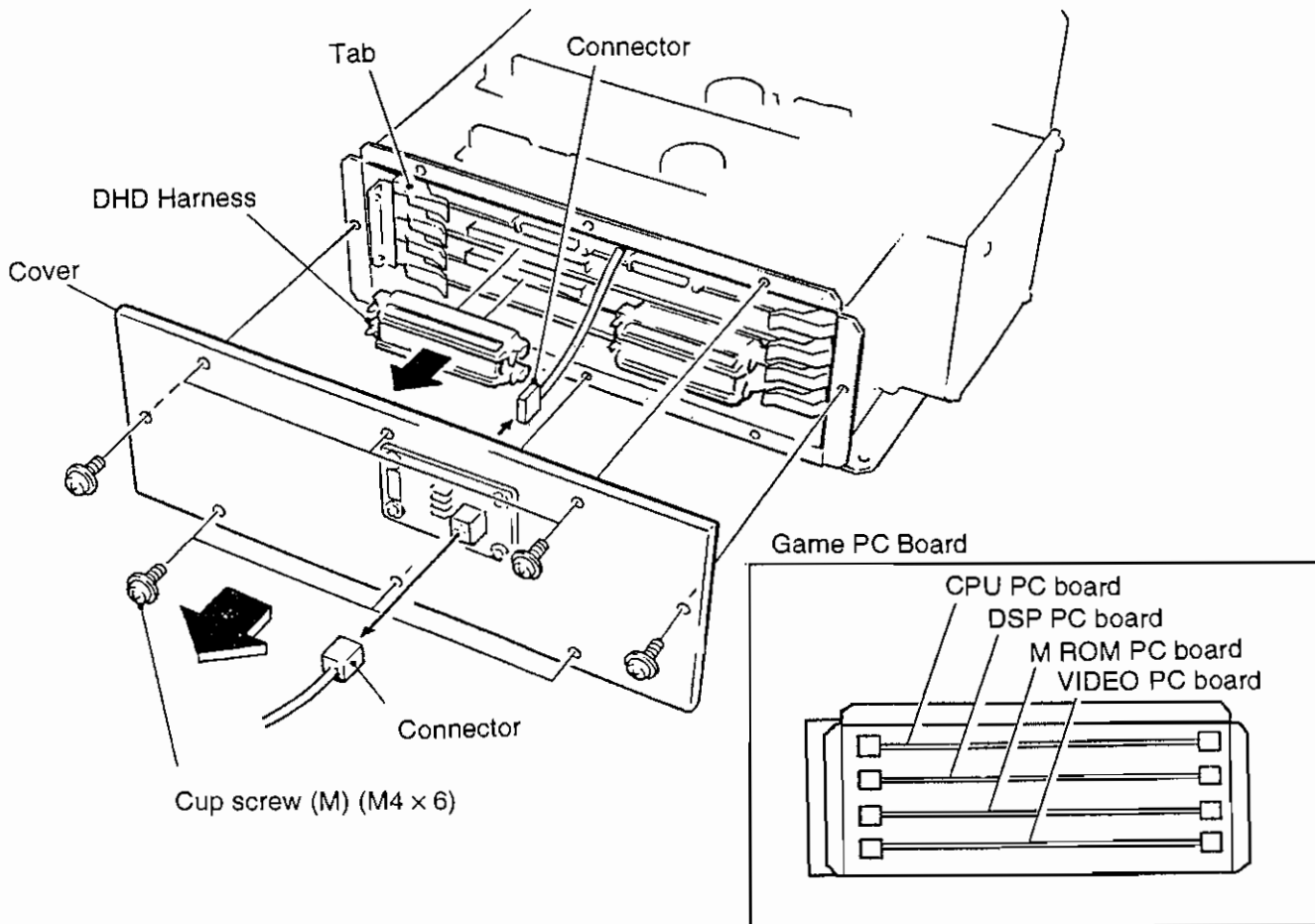
WARNING

- The power board ASSY and PCB rack ASSY remain hot even after the power has been turned OFF, and there is a possibility of burns. This work should be performed with much care.

CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the rear cover. (Refer to section 7.1.1, "Removing the Rear Cover".)
- 2) Disconnect the connector on the outside of the cover.
- 3) Remove the eight cup screws (M) (M4 × 6) and remove the cover.
- 4) Disconnect the connector on the inside of the cover.
- 5) Disconnect the two DHD harnesses.
- 6) Open the tabs holding the four game PC boards to the outside, and remove the game PC boards.



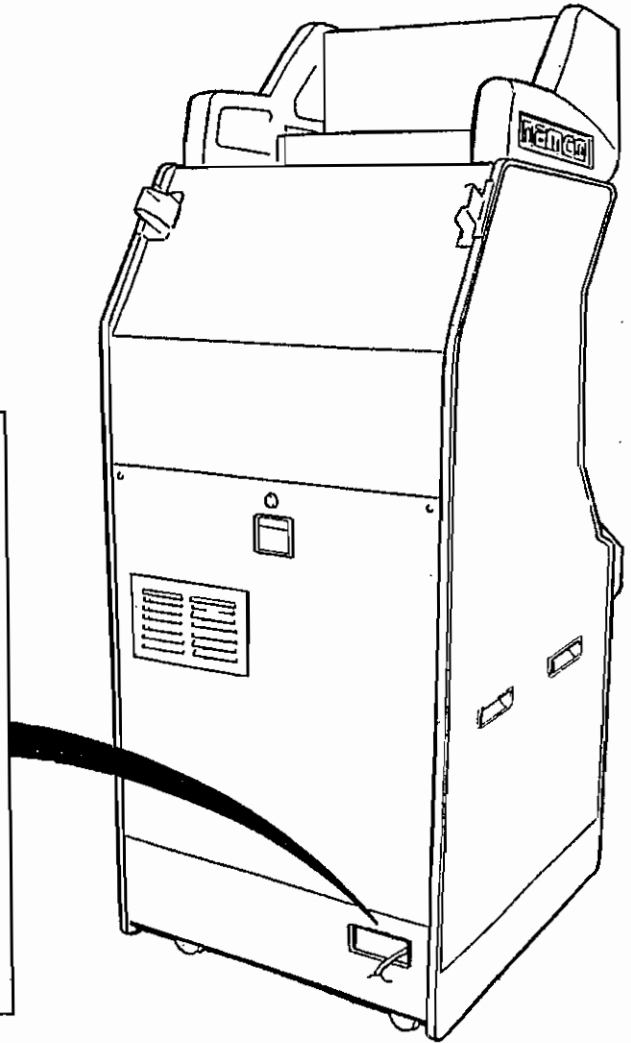
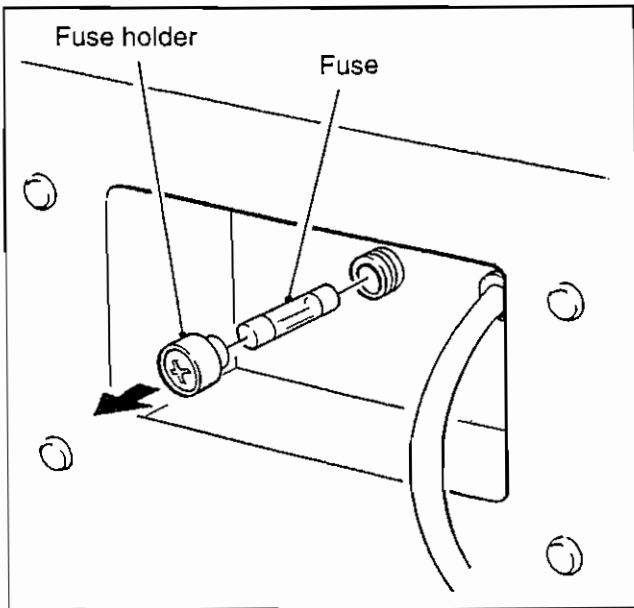
- 7) Install the new game PC boards using the opposite procedure.
- 8) Perform initialization.

(4) Replacing the Fuse

! CAUTION

- Be sure to turn the power OFF before performing any work.
- Only use a specified fuse (125V 4A for AC 110 V power supply or 250 V 3A for AC 220V power supply).

1) Open the fuse holder inside the cord box.



2) Replace the fuse with a new fuse(125V4A(for AC110V power supply) or 250V3A (for AC220V power supply).

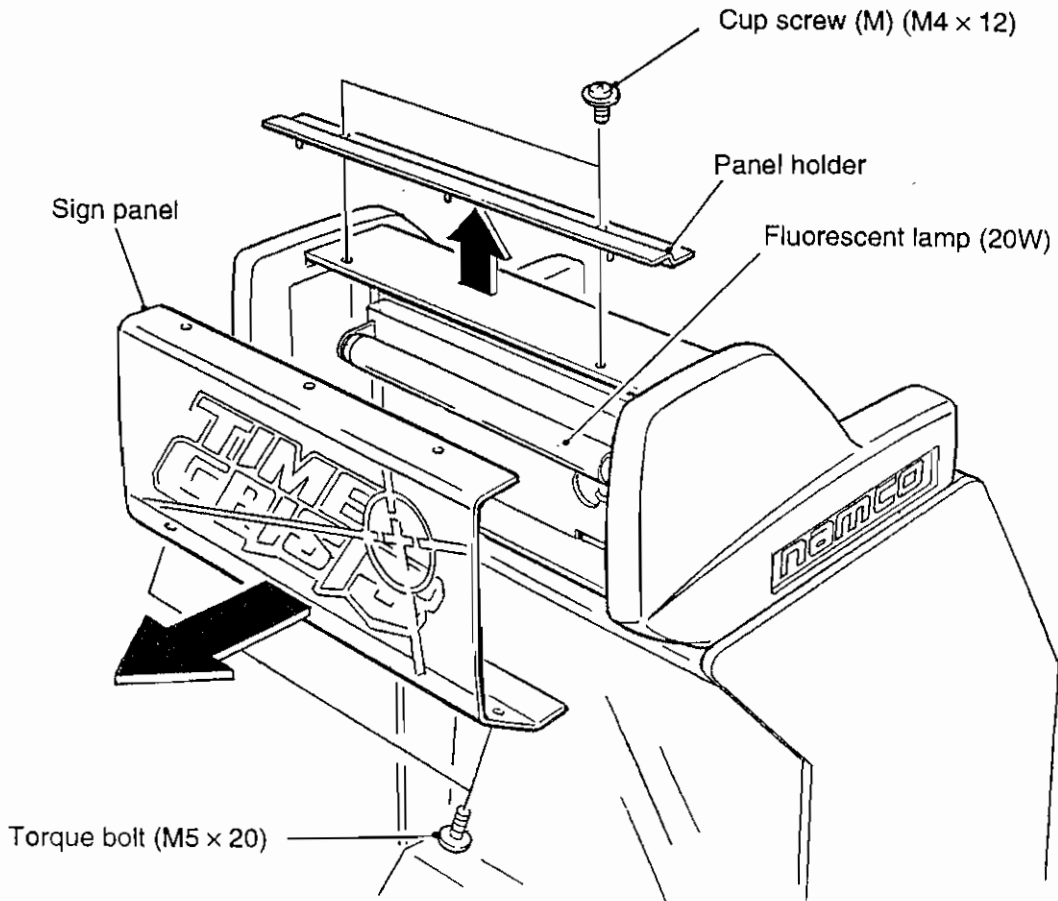
7.3.2 SIGN ASSY

(1) Replacing the Fluorescent Lamp

CAUTION

- Be sure to turn the power OFF before performing any work.
- The lamp is in a very high locations, so be very careful when replacing it.

- 1) Remove the two torque bolts (M5 × 20) and the two cup screws (M) (M4 × 12), then remove the panel holder while holding the sign panel.
- 2) Pull the sign panel forward and remove it.
- 3) Replace the fluorescent lamp (20W).
- 4) Install the sign panel and panel holder using the opposite procedure.



[Precaution]

If the ceiling is low and the top cup screws cannot be removed, remove the entire Sign ASSY then replace the fluorescent lamp. (Refer to section 4.3.1, "Installing the Sign ASSY".)

7.3.3 PEDAL ASSY

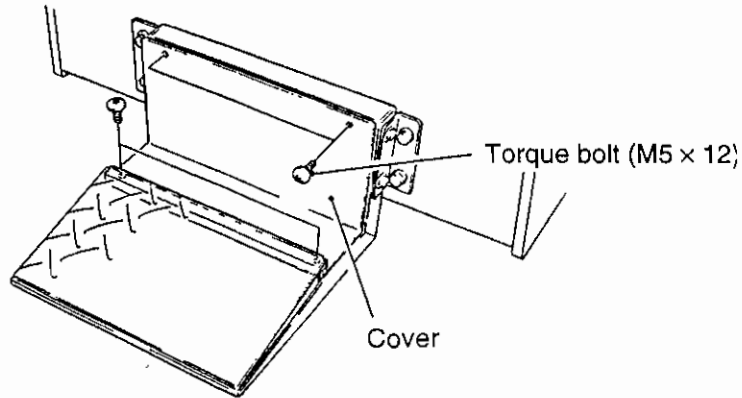
(1) Replacing the Microswitch



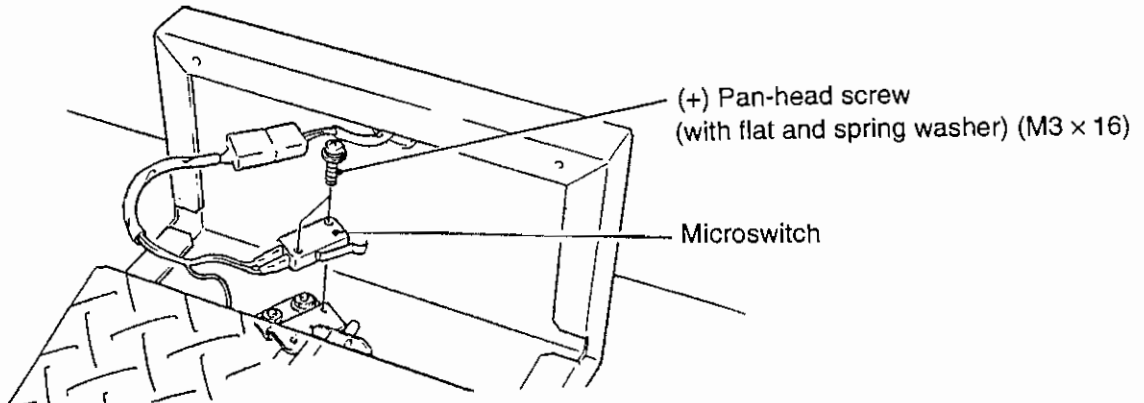
CAUTION

- Be sure to turn the power OFF before performing any work.

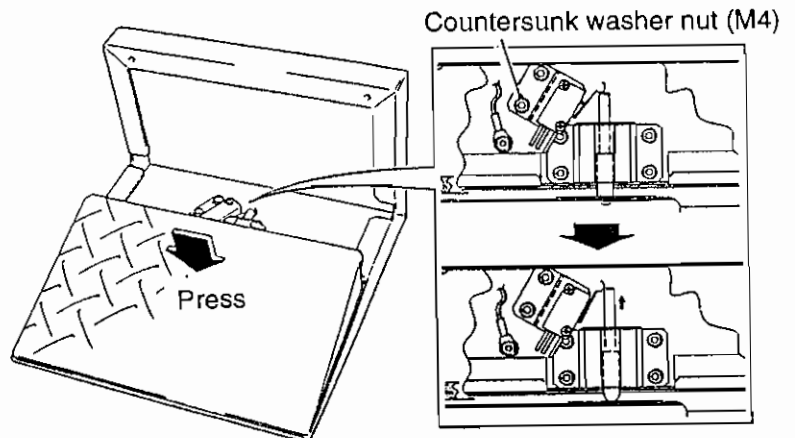
- 1) Remove the four torque bolts (M5 × 12) and remove the cover.



- 2) Remove the two (+) pan-head screws (with flat and spring washers) (M3 × 16) and remove the microswitch.



- 3) Replace the microswitch with a new one.
- 4) After replacement, press the pedal by hand and make sure the microswitch operates.
- 5) If the microswitch does not operate properly, loosen the two countersunk washer nuts (M4) and adjust the microswitch.



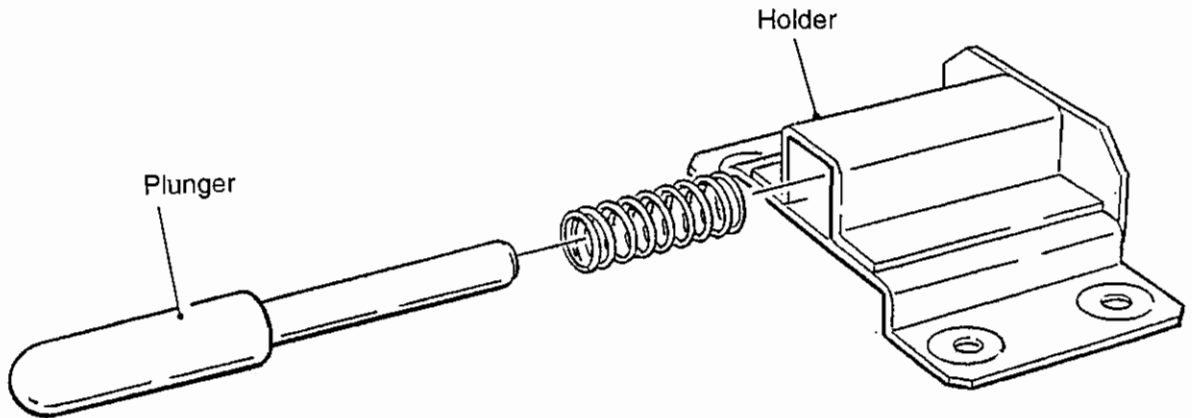
- 6) Install everything using the opposite procedure.

(2) Replacing the Plunger

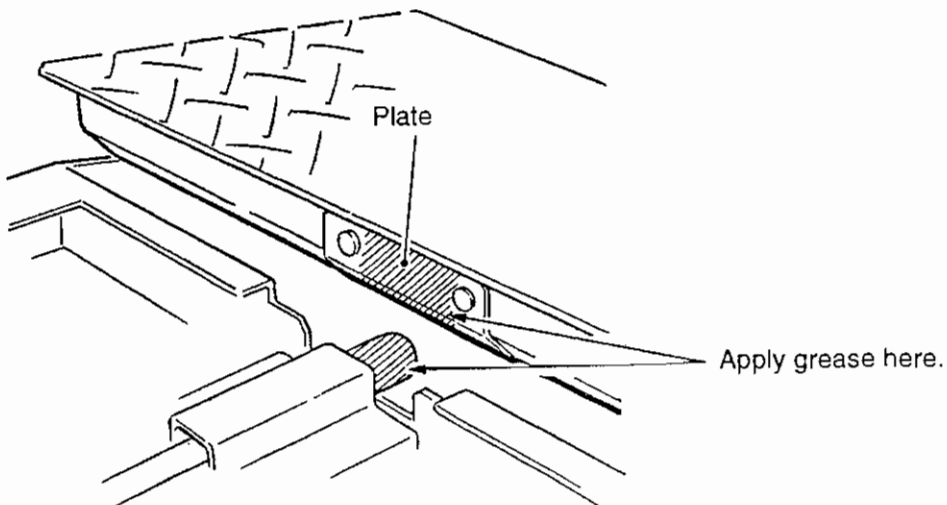
! CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the holder. (Refer to section 7.1.4, "Greasing the Plunger".)
- 2) Remove the plunger from the holder, and replace it with a new one. When doing this apply grease to the entire plunger.
 - Specified grease: ALVANIA GREASE No. 2 (Showa Shell Oil)



- 3) Remove the old grease from the surface of the plate on the pedal with a cloth and apply new grease.



- 4) Install the pedal ASSY using the opposite procedure. (For details on adjusting the microswitch, refer to section 7.3.3 (1), "Replacing the Microswitch".)

7.3.4 GUN ASSY

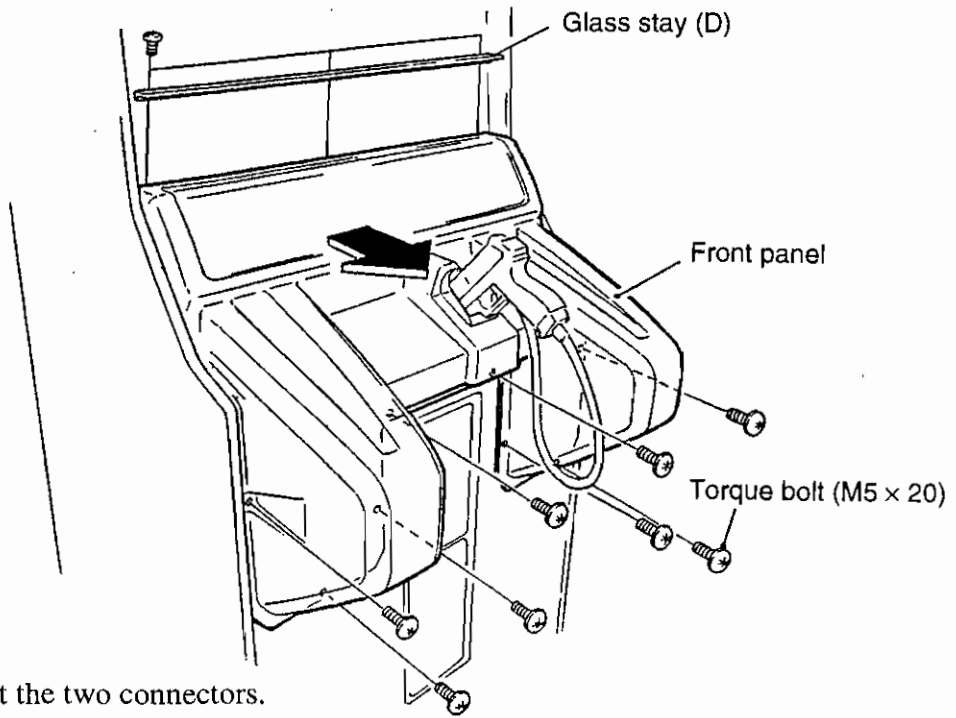
(1) Replacing the Gun ASSY



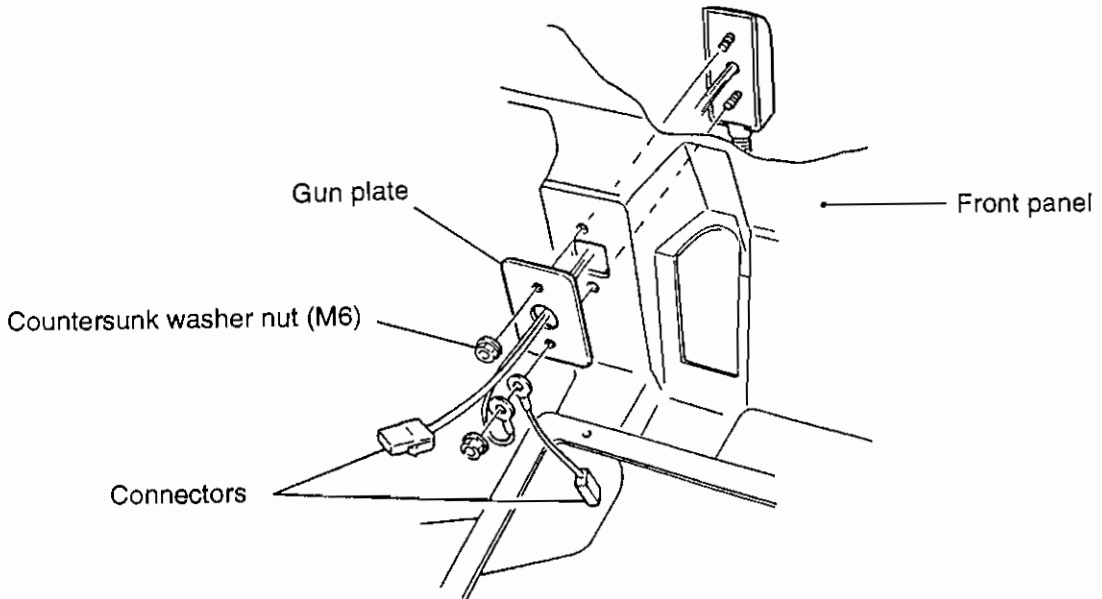
CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the 11 torque bolts (M5 × 20) and remove the front panel and glass stay (D).



- 2) Disconnect the two connectors.
- 3) Remove the two countersunk washer nuts (M6) on the back side of the Front panel and remove the Gun ASSY.



- 4) Install a new Gun ASSY using the opposite procedure.

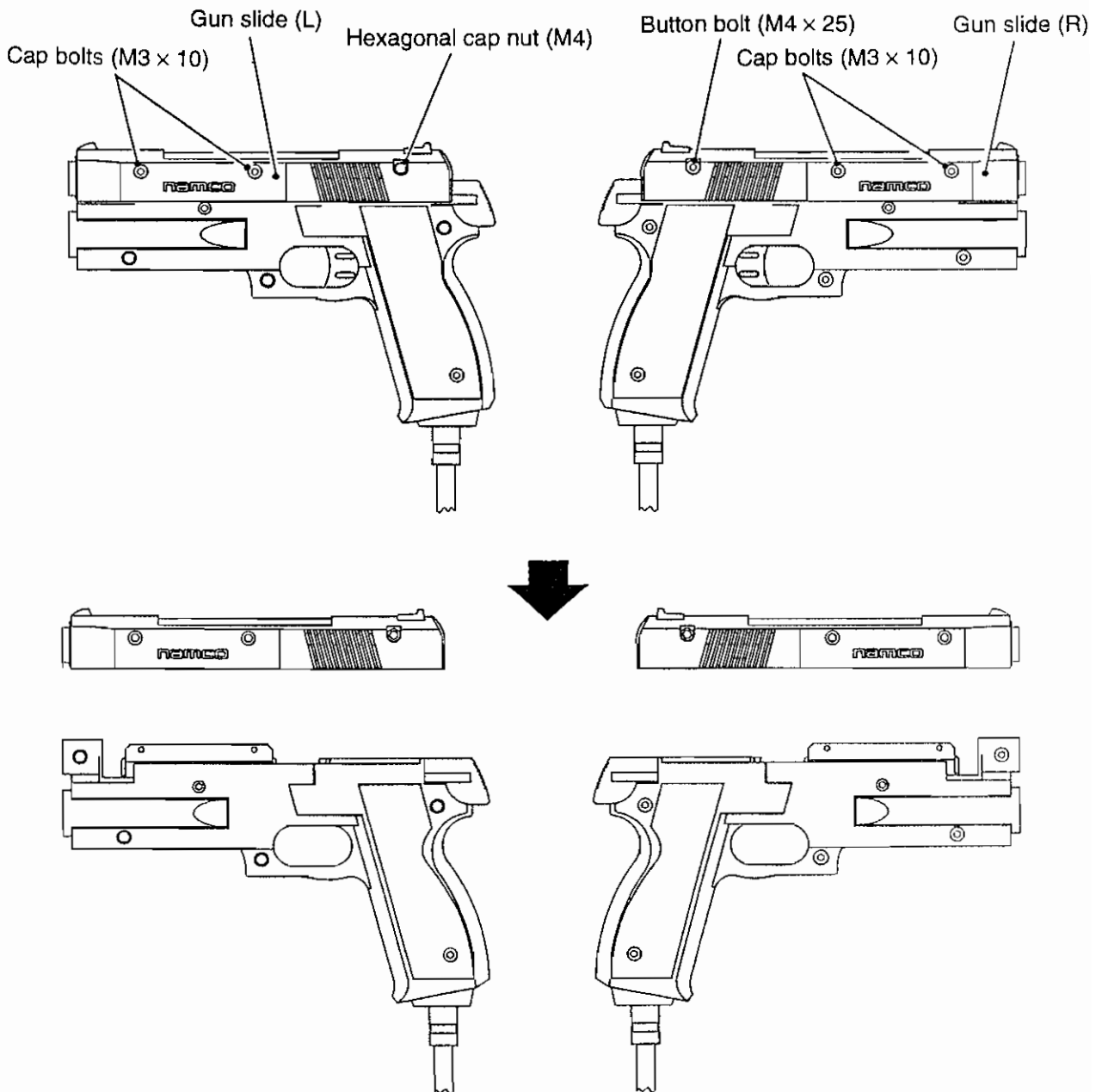
(2) Opening the Gun Slides



CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the four cap bolts (M3 × 10), the button bolt (M4 × 25) and the hexagonal cap nut (M4) holding the left and right gun slides and remove the left and right gun slides.

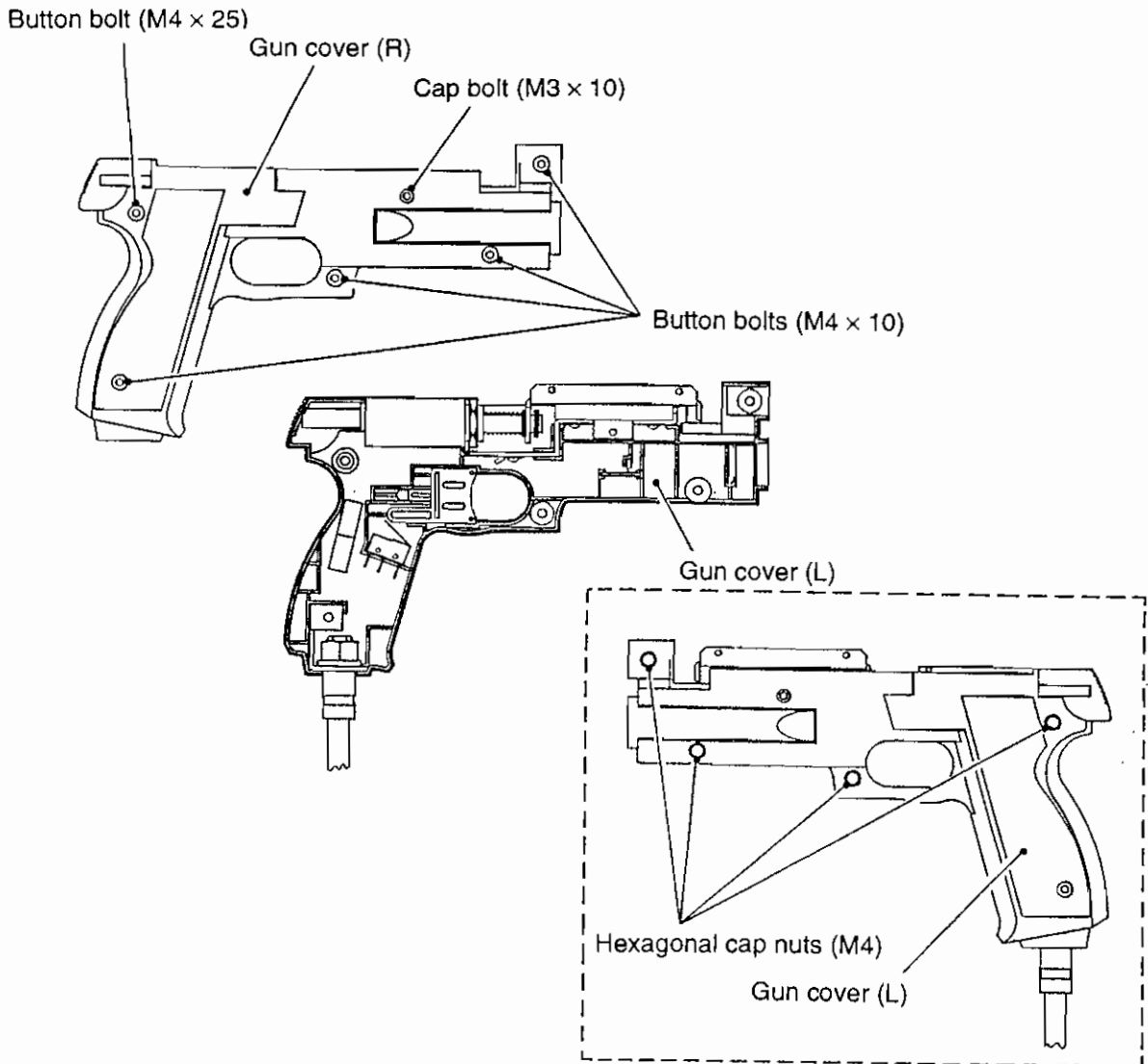


(3) Opening the Gun Cover

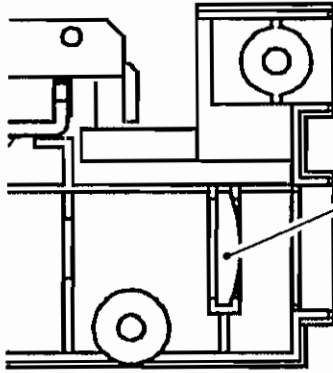
⚠ CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the left and right gun slides. (Refer to section 7.3.4 (2), "Opening the Gun Slides".)
- 2) Lower the left gun cover and remove the four button bolts (M4 × 10), the button bolt (M4 × 25), four hexagonal cap nuts (M4), and the cap bolt (M3 × 10) holding the right gun cover and remove the right gun cover. When doing this, be very careful not to drop the lens.



- 3) Install everything using the opposite procedure. When doing this make sure that the lens is facing the right direction. (The spherical surface of the lens should face the muzzle of the gun.)



Be careful of the lens direction.
(The spherical surface should face the muzzle of the gun)

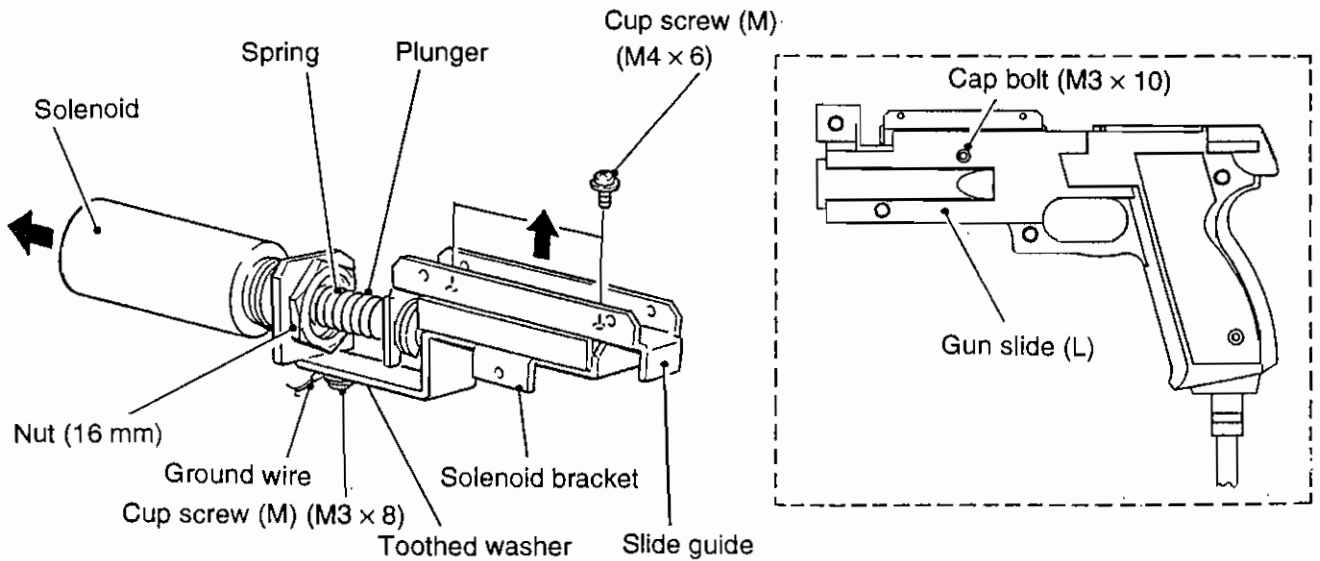
(4) Replacing the Solenoid



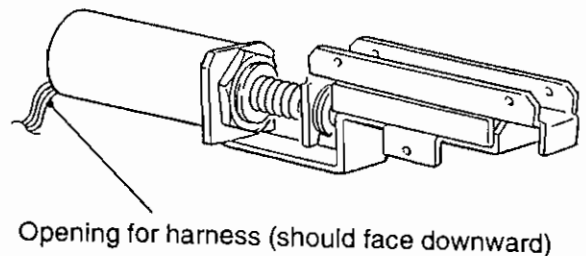
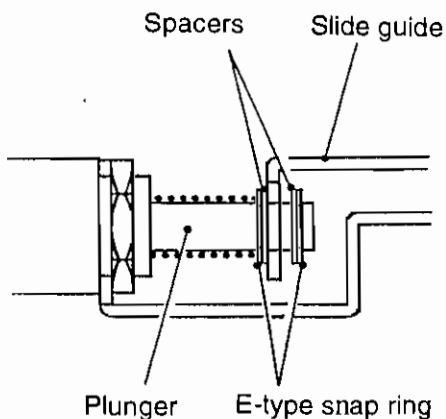
CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the gun cover and gun slides. (Refer to section 7.3.4 (2), "Opening the Gun Slides", and section 7.3.4 (3), "Opening the Gun Cover".)
- 2) Disconnect the connector of the solenoid.
- 3) Remove the cap bolt (M3 × 10) on the left gun cover, and remove the solenoid bracket.
- 4) Remove the cup screw (M) (M3 × 8) and disconnect the ground.
- 5) Loosen the nut (16 mm) holding the solenoid.
- 6) Remove the solenoid.
- 7) Remove the two cup screws (M) (M4 × 6) and remove the slide guides.
- 8) Remove the solenoid plunger. When doing this, be careful not to lose the spring.



- 9) Install everything using the opposite procedure. When doing this, be careful of the order of the E-type snap ring and spacer.



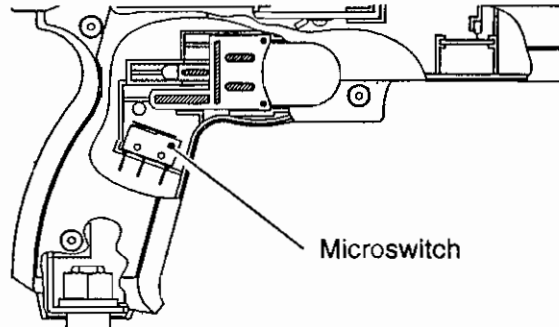
(5) Replacing the Microswitch



CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the right gun cover and right gun slide. (Refer to section 7.3.4 (2), "Opening the Gun Slides", and section 7.3.4 (3), "Opening the Gun Cover".)
- 2) Replace the microswitch.



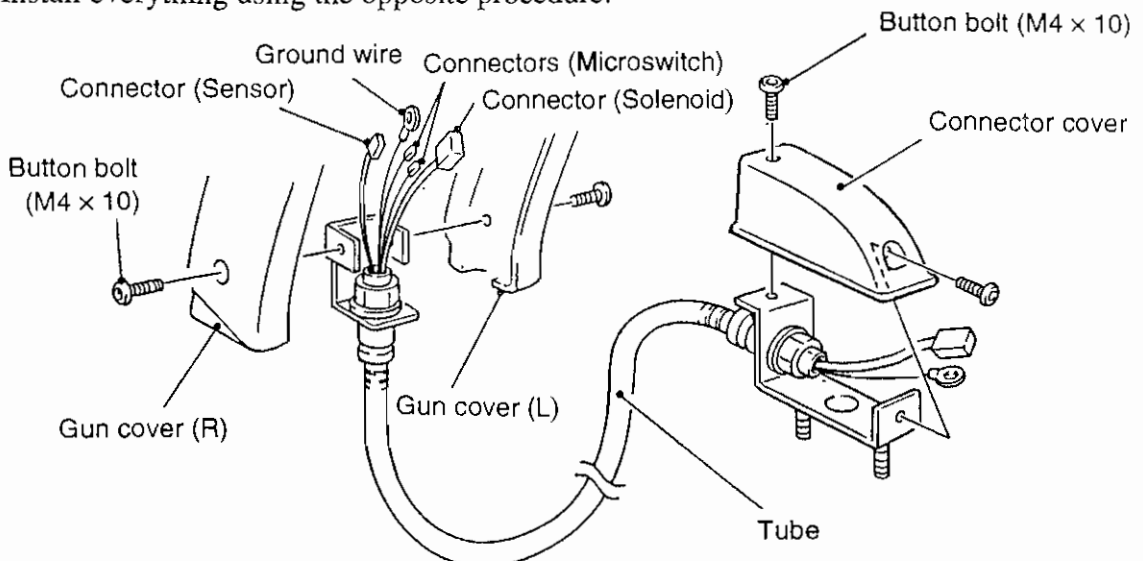
(6) Replacing the Tube



CAUTION

- Be sure to turn the power OFF before performing any work.

- 1) Remove the Gun ASSY. (Refer to section 7.3.4 (1), "Replacing the Gun ASSY".)
- 2) Remove the two button bolts (M4 × 10) and remove the connector cover.
- 3) Remove the left and right gun slides and the right gun cover. (Refer to section 7.3.4 (2), "Opening the Gun Slides", and section 7.3.4 (3), "Opening the Gun Cover".)
- 4) Remove the solenoid bracket, and disconnect the solenoid connector and ground. (Refer to section 7.3.4 (4), "Replacing the Solenoid".)
- 5) Disconnect the sensor connector and microswitch connector.
- 6) Remove the button bolt (M4 × 10) fastening the tube and left gun cover, and remove the tube.
- 7) Install everything using the opposite procedure.



8. DISPOSAL

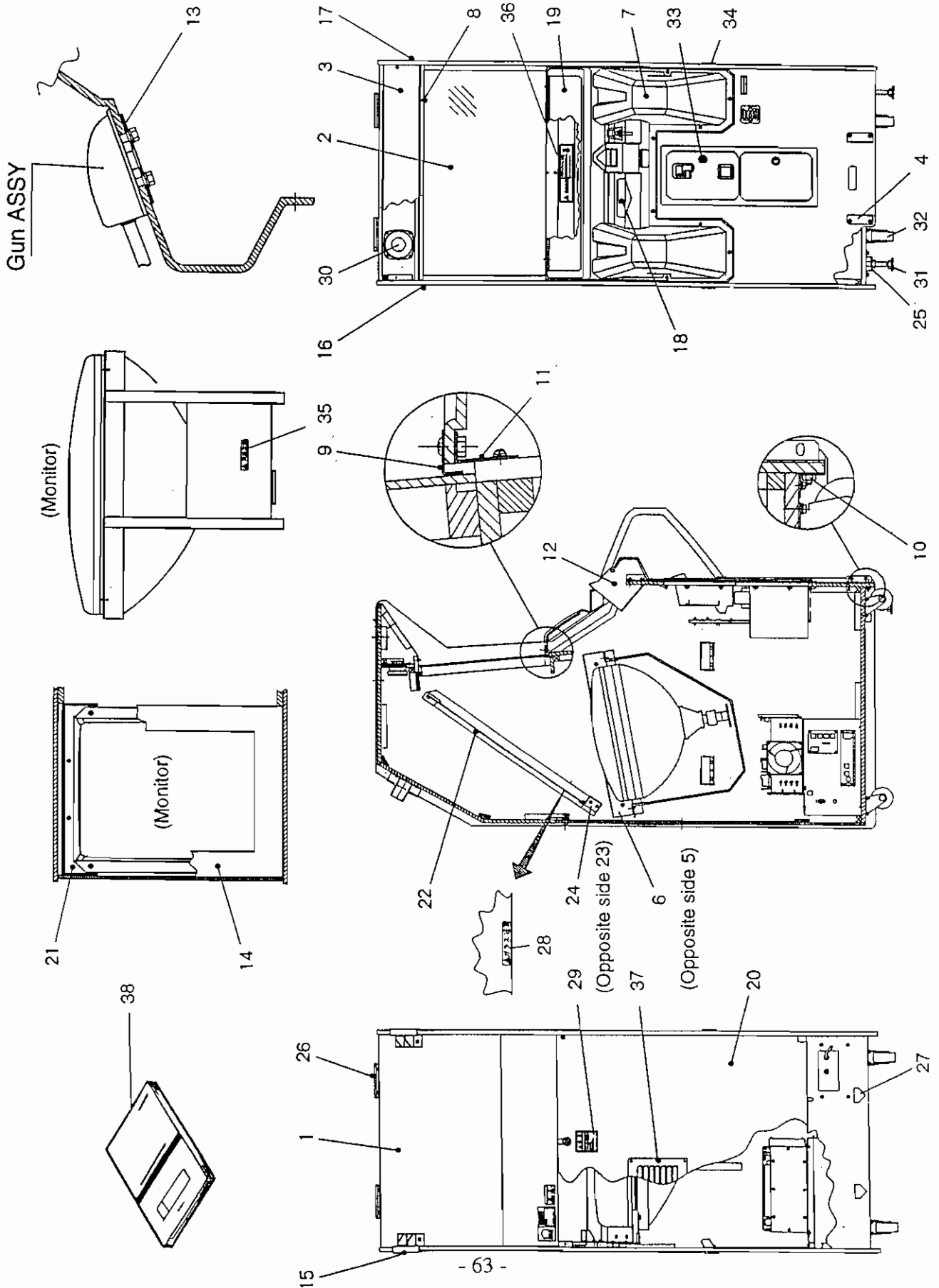


CAUTION

- When you wish to dispose of the game machine, consign the disposal operation to an authorized industrial waste treatment business.

9. PARTS LIST

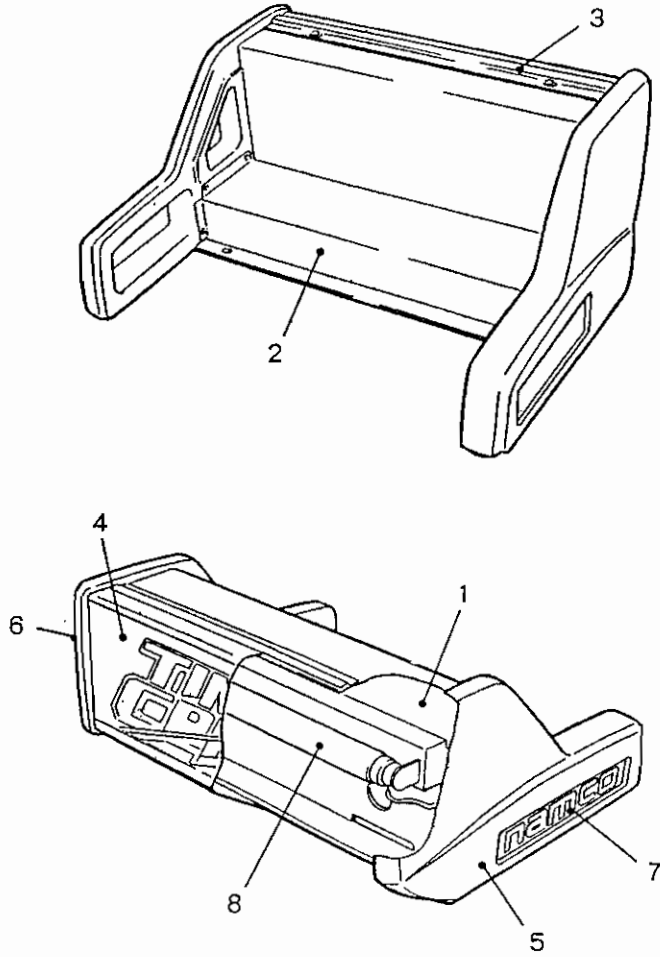
9-1 MAIN UNIT ASSY



No.	Name	Quantity	Part No.	No.	Name	Quantity	Part No.
1	Cabinet	1	631-111	21	Monitor adaptor	2	296-117
2	Panel glass	1	631-113	22	Mirror	1	296-121
3	Speaker cover	1	631-114	23	Mirror stay (R)	1	296-122
4	Pedal bracket	2	631-115	24	Mirror stay (L)	1	296-182
5	Monitor rail (R)	1	631-116	25	Adjuster base	2	296-124
6	Monitor rail (L)	1	631-186	26	Sign hook	2	414-214
7	Front panel	1	631-117	27	Fork sticker	2	229-441
8	Glass stay (U)	1	631-118	28	Caution ST (Glass) EXP	1	461-304
9	Glass stay (D)	1	631-119	29	Caution ST (High voltage) EXP	1	461-302
10	Supporter	1	631-121	30	Speaker EAS10P542A	2	006-094
11	Panel stay	1	631-122	31	Leveling bolt KYW16-75	2	102-045
12	Gun holder	1	631-123	32	Caster 420S-N75	4	102-013
13	Gun plate	1	631-124	33	Coin lock C-88-1 (random) ^{Note 1}	-	101-011
14	Monitor mask	1	631-125	34	Handle	4	624-150
15	Rope hook	2	631-126	35	Caution ST (High voltage S) EXP	1	461-318
16	Side board sticker (L)	1	631-127	36	Caution ST monitor high voltage EXP	1	461-319
17	Side board sticker (R)	1	631-187	37	Ventilation panel	1	450-125
18	Pedal sticker	1	631-128	38	Operation manual (this manual)	1	631-000
19	Explanation sheet EXP	1	631-189				
20	Rear cover	1	631-130				

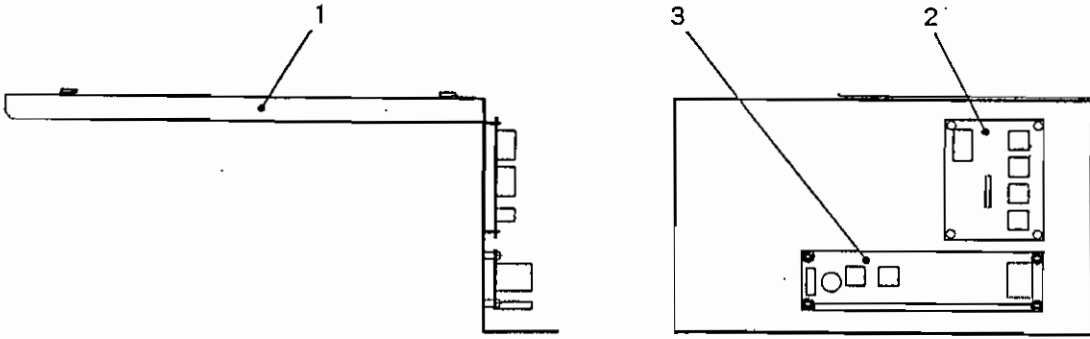
Note 1: Contact us about an order of article No. 33 by the specified number (same number).

9-2 SIGN ASSY



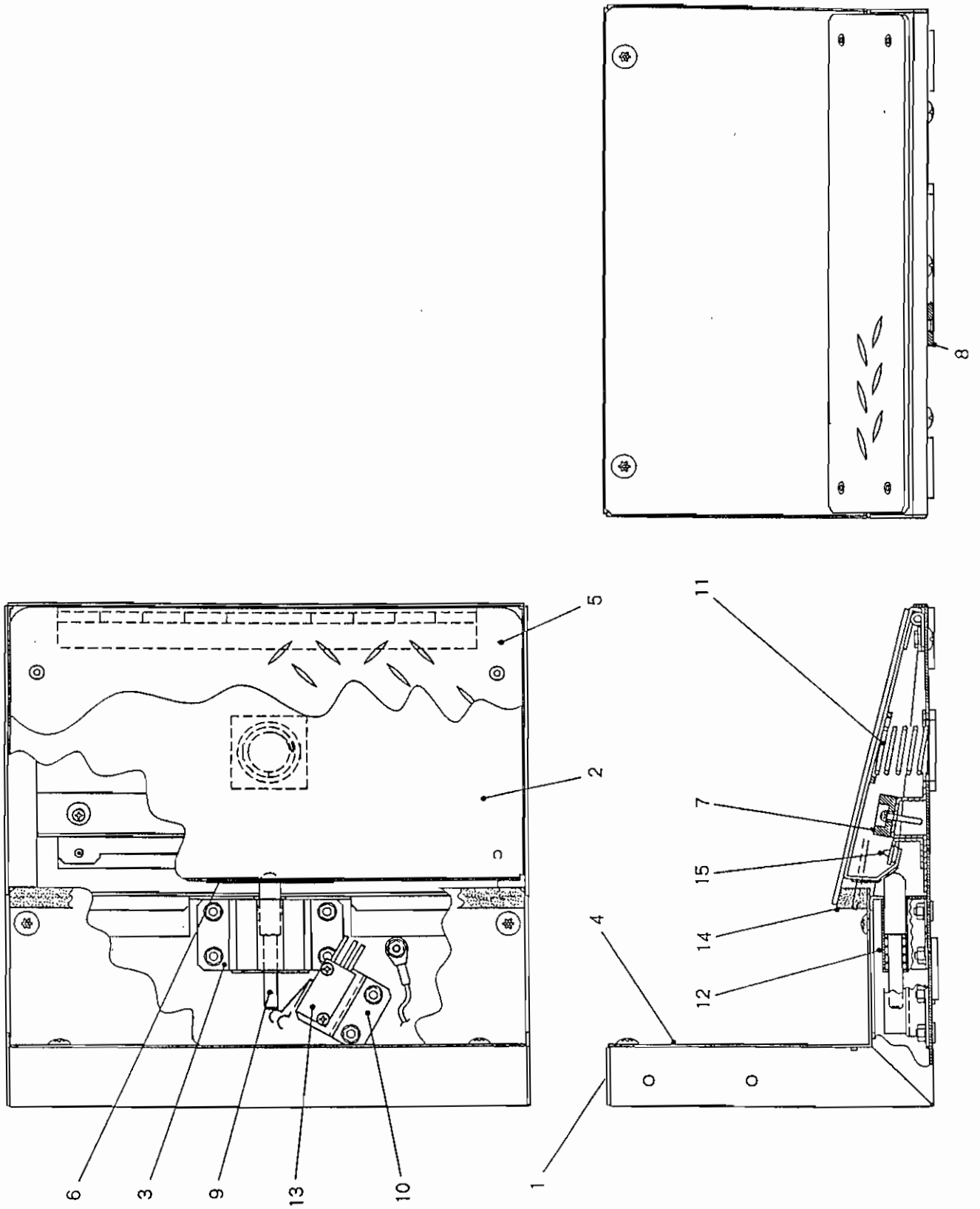
No.	Name	Quantity	Part No.	No.	Name	Quantity	Part No.
1	Frame	1	631-311	5	Side board (R)	1	451-011
2	Cover frame	1	631-312	6	Side board (L)	1	451-081
3	Panel holder	1	631-313	7	Namco sticker	2	451-016
4	Sign panel	1	631-314	8	Fluorescent lamp 20W	1	-

9-3 POWER BOARD ASSY



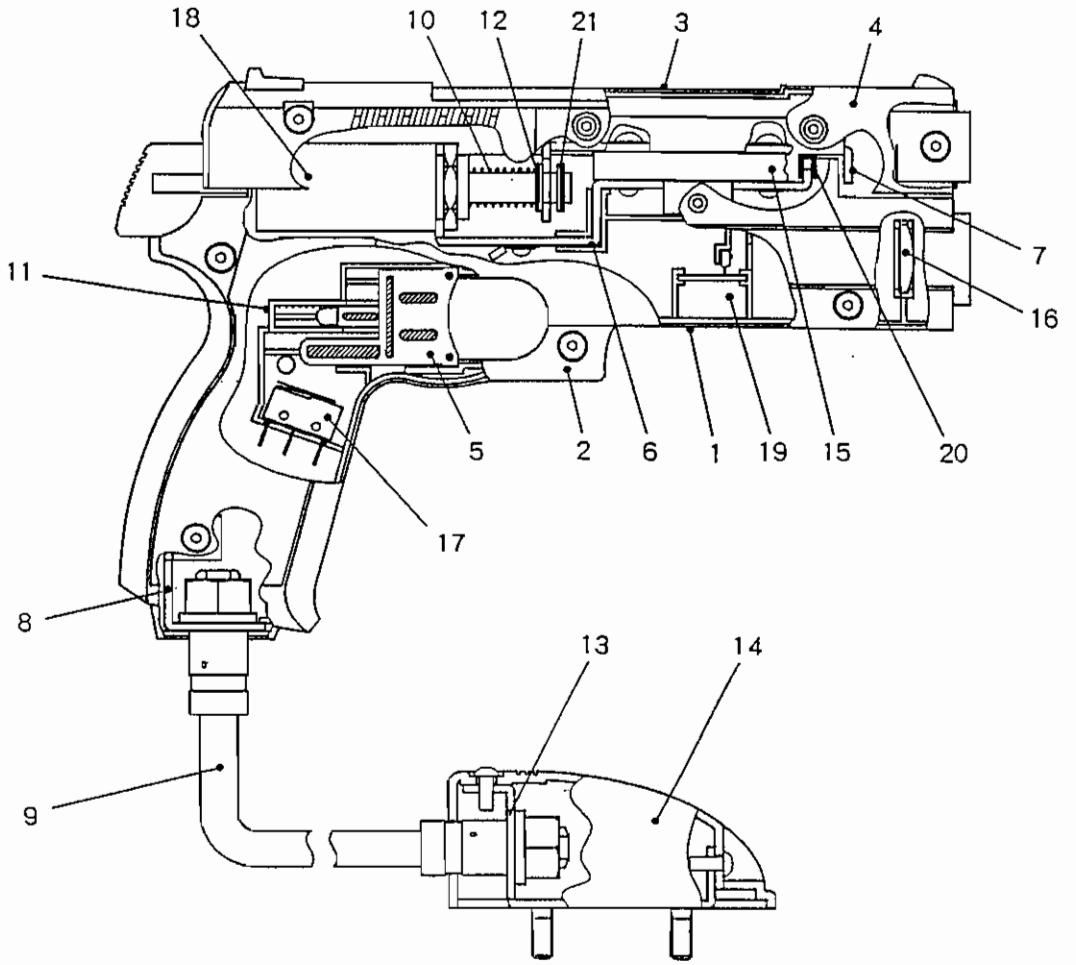
No.	Name	Quantity	Part No.	No.	Name	Quantity	Part No.
1	Power base	1	631-411	3	Switching regulator	1	009-069
2	Gun drive PCB	1	XTE- GDRU PCB		VS50-24 (24V50W)		

9-4 PEDAL ASSY



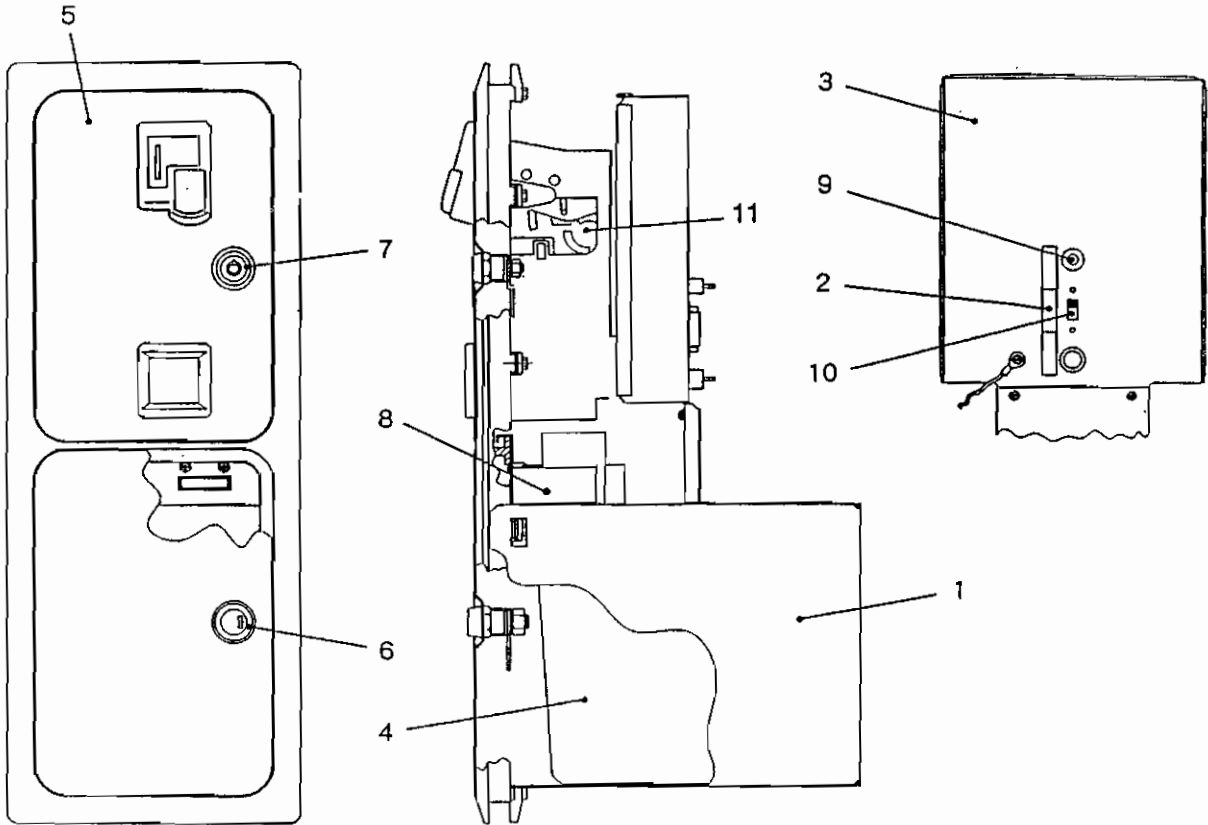
No	Name	Quantity	Part No	No	Name	Quantity	Part No
1	Pedal base	1	631-211	9	Plunger	1	631-219
2	Pedal	1	631-212	10	Switch stay	1	631-220
3	Holder	1	631-213	11	Spring (A)	1	631-221
4	Cover	1	631-214	12	Spring (B)	1	631-222
5	Pedal plate	1	631-215	13	Microswitch K3L13	1	000-027
6	Plate	1	631-216	14	EPTSEALER SEALANT	1	106-041
7	Stopper rubber	1	631-217		EE-910 W10 × t15 × L248		
8	Spring cover	1	631-218	15	Plug cushion rubber	2	106-017
9	Plunger	1	631-219		TM-96 model No. 3		

9-5 GUN ASSY



No	Name	Quantity	Part No	No	Name	Quantity	Part No
1	Gun cover (L-B)	1	296-491	11	Trigger spring	1	296-421
2	Gun cover (R-B)	1	296-492	12	Spacer	2	296-422
3	Gun slide (L-B)	1	296-493	13	Tube bracket (B)	1	296-423
4	Gun slide (R-B)	1	296-494	14	Connector cover	1	296-424
5	Trigger	1	296-415	15	Slide rail E20+F15R2/60L	1	296-425
6	Solenoid bracket	1	296-416	16	Lens NA-V1472050	1	XPB-296-466
7	Slide guide	1	296-417	17	Microswitch SS-01GL2T	1	000-228
8	Tube bracket (A)	1	296-418	18	Solenoid ST-0860A2	1	004-056
9	Gun cord harness ASSY	1	296-401	19	Sensor PCB	1	296-467
10	Back spring	1	296-420	20	Silencer rubber	1	296-428
	Gun ASSY (blue)	1	296-903	21	E-type snap ring 7CR-3 (10)	-	110-002

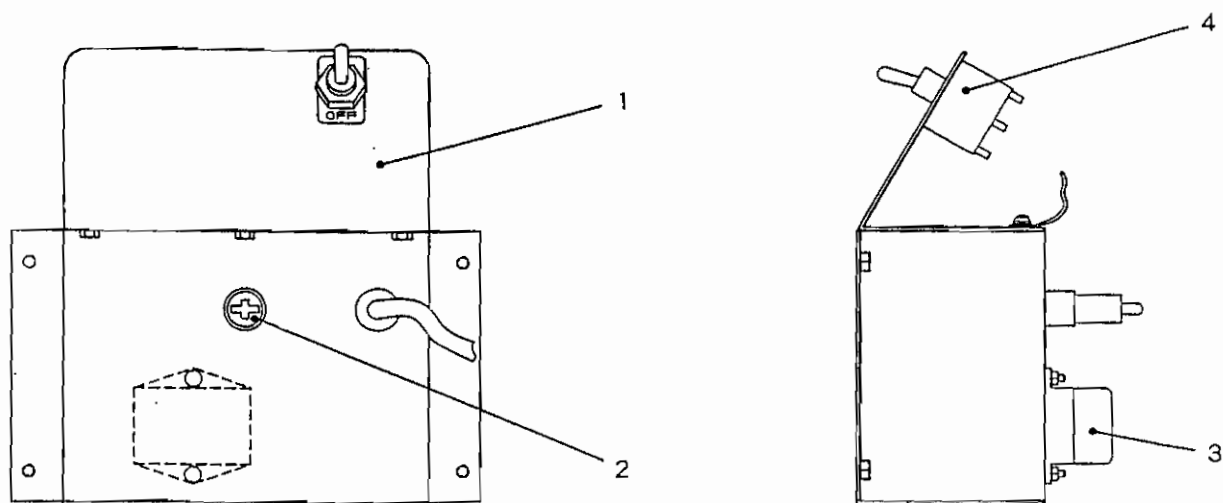
9-6 COIN ASSY



No.	Name	Quantity	Part No.	No.	Name	Quantity	Part No.
1	Coin case J (F)	1	461-711	7	Coin lock C-88-1 (random) ^{Note 1}	-	101-011
2	Service sticker B1	1	461-022	8	Coin counter NX-06FD	1	003-023
3	Service plate UP	1	461-030	9	Service switch	1	-
4	Cash box (B)	1	463-601	10	Test switch	1	-
5	Service door SD-204N-N	1	100-093	11	Coin selector	1	-
6	Electric lock VM78Z (General-purpose)	1	101-034				

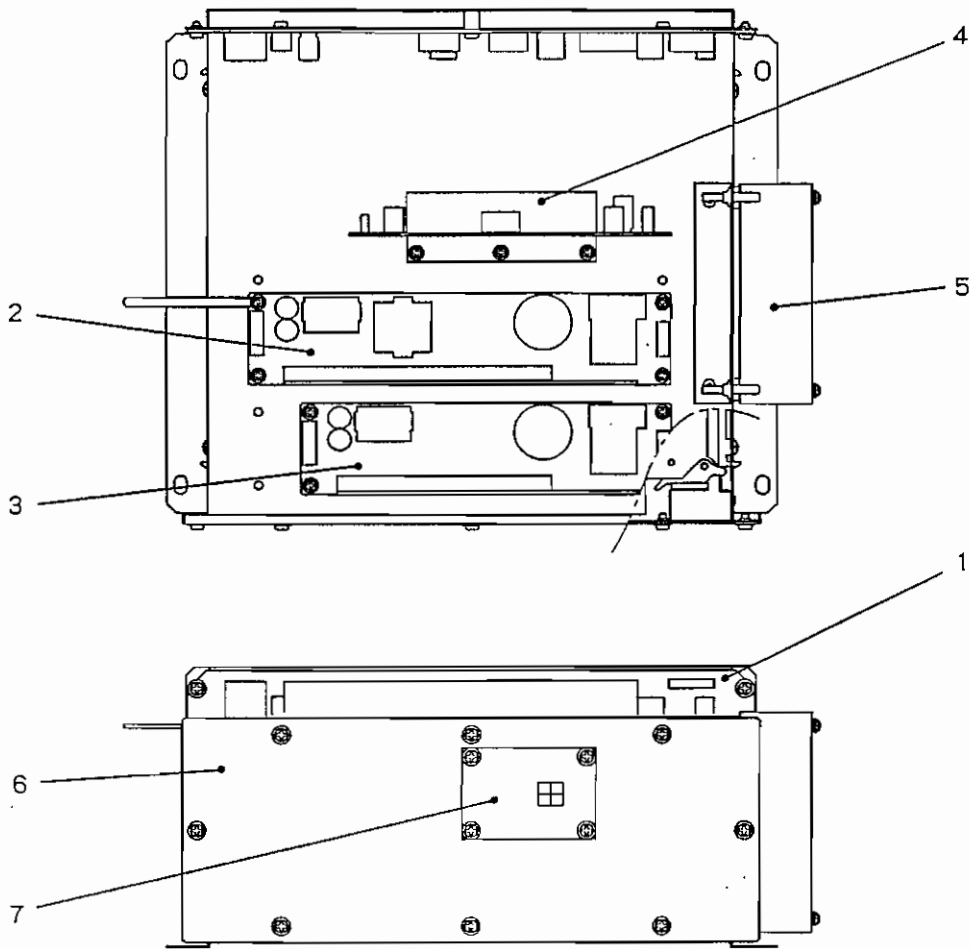
Note 1: Contact us about an order of article No. 7 by the specified number (same number).

9-7 CORD BOX ASSY



No.	Name	Quantity	Part No.	No.	Name	Quantity	Part No.
1	Cord box	1	631-151	3	Noise filter MR-2043	1	-
2	Fuse holder F-130	1	-	4	Toggle switch ET-215K	1	-

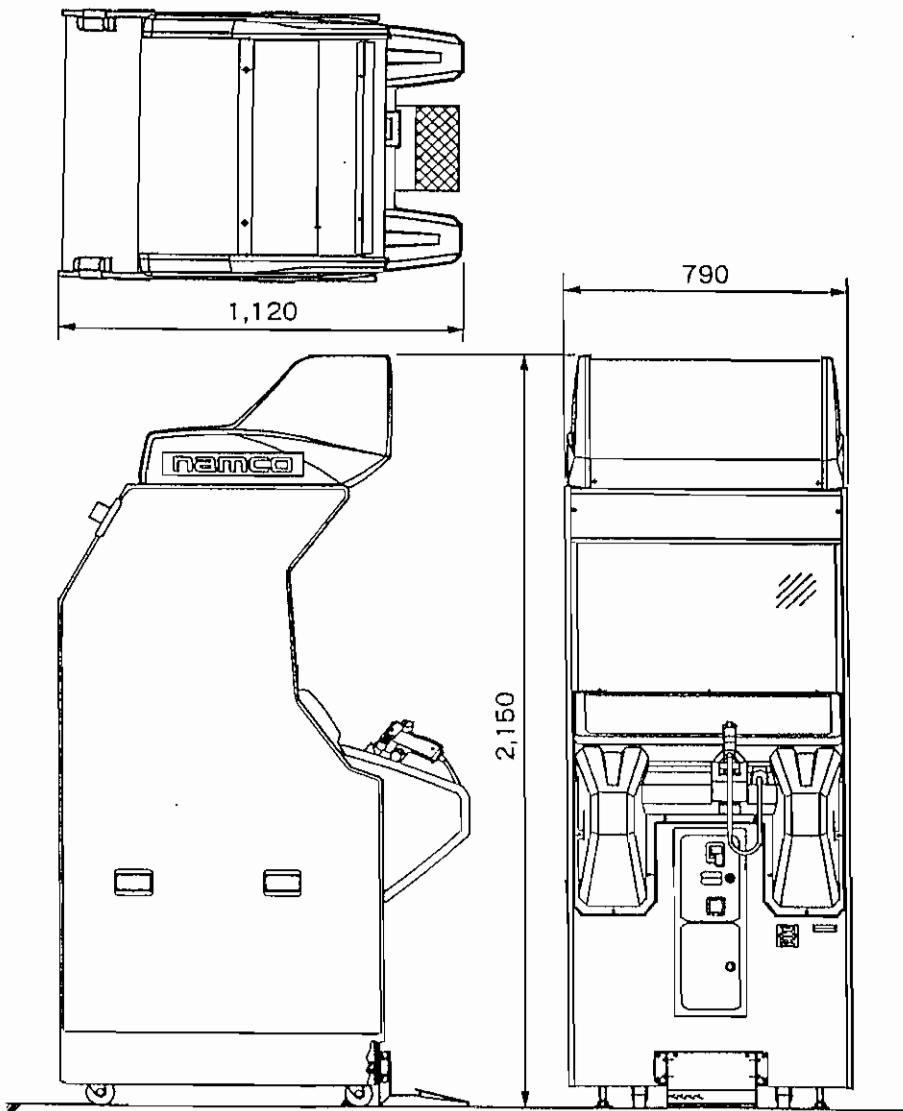
9-8 PCB RACK ASSY



No.	Name	Quantity	Part No.	No.	Name	Quantity	Part No.
1	Mother board	1	-	4	AMPPC board	1	-
2	Switching regulator VS75-5 (5V75W)	1	009-061	5	Fan	1	-
3	Switching regulator VS50-12 (12V50W)	1	009-062	6	Cover	1	631-511
				7	Joint PCB Board	1	-

10. SPECIFICATIONS

- Usable power supply: AC110±10V or AC220±10V (50/60 Hz)
- Power consumption: 255W (for AC110V power supply)
251W (for AC220V power supply)
- Coin box capacity: 350,000 yen (100 yen coin × 3,500)
- CRT: 29-inch color monitor × 1
- Dimensions:
 - 1) After installation: 790 mm (Width) × 1,120 mm (Depth) × 2,150 mm (Height)
 - 2) Before installation:
 - Main Unit ASSY: 790 mm (Width) × 1,120 mm (Depth) × 1,780 mm (Height)
 - Pedal ASSY: 250 mm (Width) × 250 mm (Depth) × 160 mm (Height)
 - Sign ASSY: 760 mm (Width) × 700 mm (Depth) × 390 mm (Height)



Weight

- After installation:	161 kg
- Before installation (individual ASSY's):	Main Unit ASSY 145 kg
Pedal ASSY	5 kg
Sign ASSY	11 kg

Accessories:

Operation manual (this manual)	1
Key (for electric lock)	2
Key (for coin lock)	2
Hexagonal wrench (5 mm)	1
Torque wrench (4 mm for M5)	1
(+) Hexagonal bolt (with flat and spring washers) (M6 x 16)	2
Flange socket (M6 x 12).....	4
Glass tube fuse	1
(125V 4A for AC110V power supply) or (250V 3A for AC220V power supply)	

- The specifications are subject to change without prior notice.

Copies of Manuals can be downloaded from our website:
www.namco.co.uk under Components Distribution

For all Parts or Technical Support contact:

Brent Electronic,
Namco House,
Units 7-8, Acton Park Estate,
The Vale,
London. W3 7QE

www.brentelectronic.com

For Technical Support, Warranty and

Advance Replacement Parts:-  +44 (0) 20 8324 6120

For Consumable Parts:-  +44 (0) 20 8324 6102

Fax for both:-  +44 (0) 20 8324 6126