MACH STORM

Operation Manual (Second Edition)

BANDAI NAMCO

Games

MACH STORM

Operation Manual

The actual product may differ slightly from the illustrations in this manual.

NAMCO BANDAI Games Inc.

⚠DANGER

● To ensure safe operation of the machine, be sure to read this Operation Manual before use.
● Keep this Operation Manual in a safe place for quick access whenever needed.

NAMCO BANDAI Games Inc.

Introduction

Thank you very much for purchasing MACH STORM (referred to as "this machine" in this Operation Manual).

This Operation Manual describes:
- How to safely install, operate, move, transport, maintain and dispose of the machine.
- How to make full use of the machine's functions and operate it correctly.
- How to ensure the safety of players and bystanders.

Contact for Machine and Machine Repair Inquiries
- For inquiries regarding the machine or machine repairs, contact your distributor.

The copyrights, trademarks and other rights used by the machine are noted at the end of this Operation Manual.

1. Safety Precautions – Be sure to read to ensure safe operation –

Instructions to the Owner

If you delegate the work for installing, operating, moving, transporting, maintaining or disposing the machine to other people, ensure that these people read the relevant sections of this operation manual carefully before starting work, and observe the corresponding precautions.

1-1 Levels of Risk

The safety and property damage precautions on the machine labels and in this Operation Manual are classified according to their risk level, as follows.

⚠**WARNING** : Failure to avoid these risks may result in serious injury or death

⚠ **CAUTION** : Failure to avoid these risks may result in light injury or damage to other property

Notes about functionality that are not linked to safety are indicated with the following symbol.

◢**NOTICE** : Information about product functions or protection

1-2 Definition of "Technician"

This Operation Manual is designed for arcade personnel. However, the sections marked "Must be performed by a technician" in the Table of Contents are written for technicians. These must be performed by technicians only.

A technician is a person involved in the design, manufacture, inspection, maintenance or service at an amusement device manufacturer, or a person involved routinely in the maintenance or management (such as repair) of amusement devices who has specialist knowledge of electricity, electronics or mechanical engineering equivalent to or higher than a technical high school graduate.

1-3   Critical Safety Precautions

⚠WARNING

- **Should an abnormality occur, turn off the power switch immediately to stop operations. Then, be sure** to disconnect the power cord plug from the outlet.
  Operating the machine while the abnormality persists may result in fire or accident.

- Sections of the monitor remain at a high temperature and high voltage even after the power switch is turned off. In order to avoid electric shock or burns, be very careful not to accidentally touch these sections.

- **Dust accumulating on the power cord plug may result in fire. Inspect the plug regularly and remove** any dust.

- **Fully insert the power cord plug into the outlet. Poor contact may generate heat and result in fire or** burns.

- **Damage to the power cord may result in fire, electric shock or electrical leakage. Be sure to observe** the following.
  - Keep the power cord away from heaters.
  - Do not twist the power cord.
  - Do not forcibly bend the power cord.
  - Do not alter the power cord.
  - Do not bundle the power cord.
  - Do not pull the power cord. (Always unplug by holding the plug and not the power cord.)
  - Do not place objects on the power cord.
  - Do not allow the power cord to be caught between the machine and other devices or the wall.
  - Do not do anything else that might damage the power cord.

- Do not expose the power cord and power cord plug to water. Doing so may result in electric shock or electrical leakage.

- Do not touch the power cord plug with wet hands. Doing so may result in electric shock.

- **The power capacity of the machine is maximum current consumption 3.2 A in case of AC 230 V specifications, or maximum current consumption 6.3 A in case of AC 120 V specifications. To prevent fire and electric shock, use indoor wiring that conforms to these power supply specifications.**

- **Use a power supply voltage range of AC 230 V ±10 V (in case of AC 230 V specifications) or AC 120 V ±10 V (in case of AC 120 V specifications). Using a voltage outside this range may result in fire** or electric shock. However, to ensure that the machine operates in the optimum condition, keep the **voltage at AC 230 V in case of AC 230 specifications or at AC 120 V in case of AC 120 V specifications** as much as possible.

- **Use the consumables and service parts (including screws) that are specified by NAMCO BANDAI Games Inc. To order parts, contact your distributor.**

- Do not modify the machine without permission. Do not perform any operations that are not described **in this Operation Manual. Modifying the machine may create unforeseen hazards.**

- **If you decide to transfer the ownership of this machine, be sure to provide this Operation Manual** with the machine.

⚠ **CAUTION**

■ **The projector of this machine uses a mercury lamp as the light source. The internal pressure of this lamp increases when lit. This lamp has the characteristics shown below. Be sure to fully understand these points, and handle the lamp with sufficient care.**

● Impact, degradation or other factors may cause the lamp to burst, emit loud noise, or reach the end of its life and no longer light up.

● **The time until the lamp bursts or reaches the end of its life differs according to the lamp.**

● Continued use past the replacement time increases the risk of the lamp bursting.

● If the lamp bursts, glass shards may scatter inside the machine and exit the machine through the ventilation holes or other openings. If the lamp bursts, the tiny amount of mercury gas sealed inside the lamp may be discharged together with glass particles from the ventilation holes of the projector unit or other openings.

● **Check the lamp operating time occasionally with the Test mode, and prepare a new lamp when the replacement time approaches. (See "7-4-4 (4) PROJECTOR TEST" .)**

■ If the lamp breaks...

● Should the lamp, lens or other glass part break, handle any glass shards with care to avoid injury or damage, and contact your distributor.

● Should the lamp burst, disconnect the power cord plug of the machine from the outlet, evacuate **the room, and ventilate the room thoroughly. Then, clean the area around the machine thoroughly,** and dispose of any foodstuffs that were located around the machine.

● If you suspect that glass particles or mercury gas entered your eyes or that you may have breathed in these substances when the lamp burst, consult a doctor immediately.

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Safety Precautions

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1-4   Machine Warning Labels

⚠**WARNING**

- ● **The warning labels attached to the machine contain important information for ensuring safety. Be** sure to observe the following.
  - • In order to ensure that the warning labels attached to the machine are always clearly visible, install the machine in an appropriate location with ample illumination and keep the labels clean at all times. Also make sure that the labels are not hidden by other machines or objects.
  - • Do not remove or alter the warning labels.
  - • **If a warning label becomes excessively dirty or damaged, replace it with a new one. To order** warning labels, contact your distributor.

WARNING 警告

To avoid an electrical shock and/or injury, be sure that the power is turned off before opening the service door.
Only qualified personnel should attempt to service the game.

8301412201

• Warning sticker Service B (EXP)
Part No.: 461-539
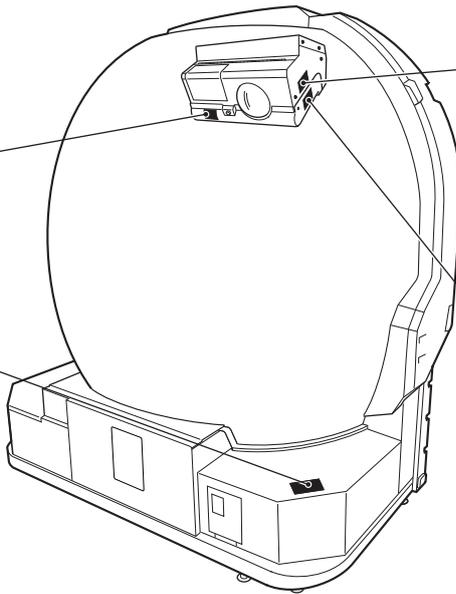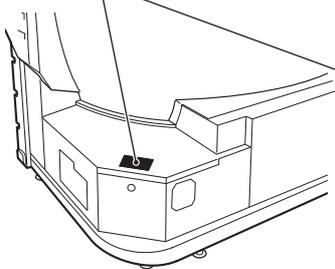
CAUTION 注意

To avoid eye injury, do not directly look into the projector.

• Caution sticker
Projector (EXP)
Part No.: 461-621

⚠ **Danger overhead**

• Danger sticker Watch your head
POD (EXP)
Part No.: 461-539

CAUTION 注意

When entering and exiting, take extra care near the door hinges.
To avoid pinching, do not place your fingers near the hinges.

• Caution sticker Finger pinching
POD (EXP)
Part No.: 461-627
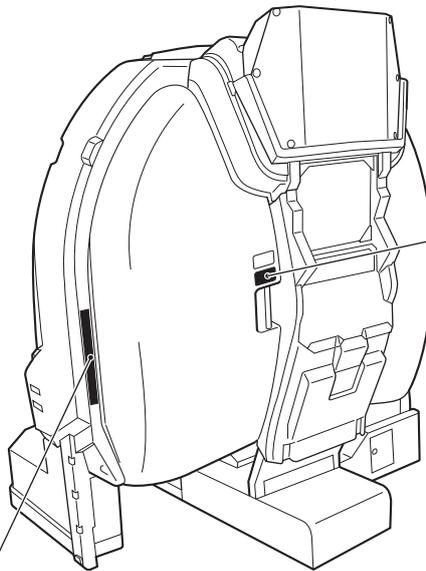
CAUTION 注意

● Please use caution if you have ever suffered any side effects when playing video games with flashing screens or are concerned that you might be in danger of doing so. Please take care when playing the game.
● If you feel unwell, please stop playing and take a rest.
● For safety, do not play under the following conditions:
  · If your feet do not reach the ground.
  · If you are intoxicated, are suffering from illness, are undergoing medical care, or are pregnant.
  · Heart issues or any other symptoms.
● This game is for single play only. Other personnel should not enter the game while playing.

8301413201

• Caution sticker
Capacity limit POD (EXP)
Part No.: 461-620

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1. Safety Precautions – Be sure to read to ensure safe operation –

Projector unit

(LVP-FD630 (V1))

Table of Contents

2. Specifications

(1) Rated power supply AC 230 V specifications:

AC 230 V ±10 V

AC 120 V specifications: AC 120 V ±10 V

(2) Rated power consumption   200 V series: 850 W

100 V series: 860 W

(3) Maximum current consumption   AC 230 V specifications: 3.2 A

AC 120 V specifications: 6.3 A

(4) Display unit   180° dome screen + projector with special lens

(5) Dimensions

　(1) When installed   Main unit   Width (W) 1,880 x Depth (D) 1,620 x Height (H) 2,060 [mm]

Installation size   Asian specifications:

Width (W) 1,880 x Depth (D) 1,620 x Height (H) 2,300 [mm]

U.S. and European specifications:

Width (W) 1,880 x Depth (D) 1,620 x Height (H) 2,540 [mm]
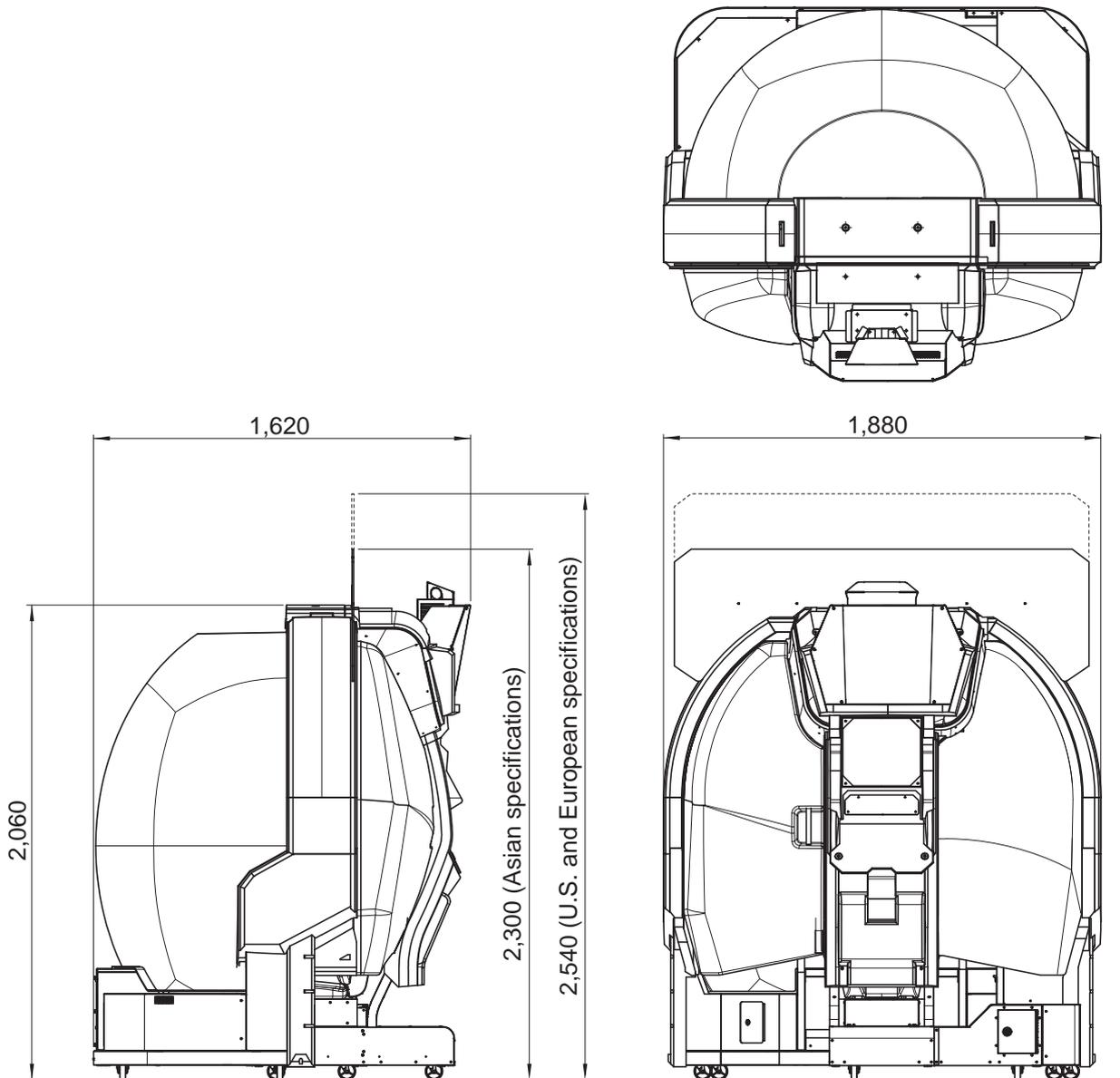
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Specifications

Test Mode

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2. Specifications

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(2) When disassembled

• Front assembly   Width (W) 1,780 x Depth (D) 900 x Height (H) 1,940 [mm]

1780

900

1940

• Rear assembly   Width (W) 1,810 x Depth (D) 985 x Height (H) 2,060 [mm]

1810

985

2060

10
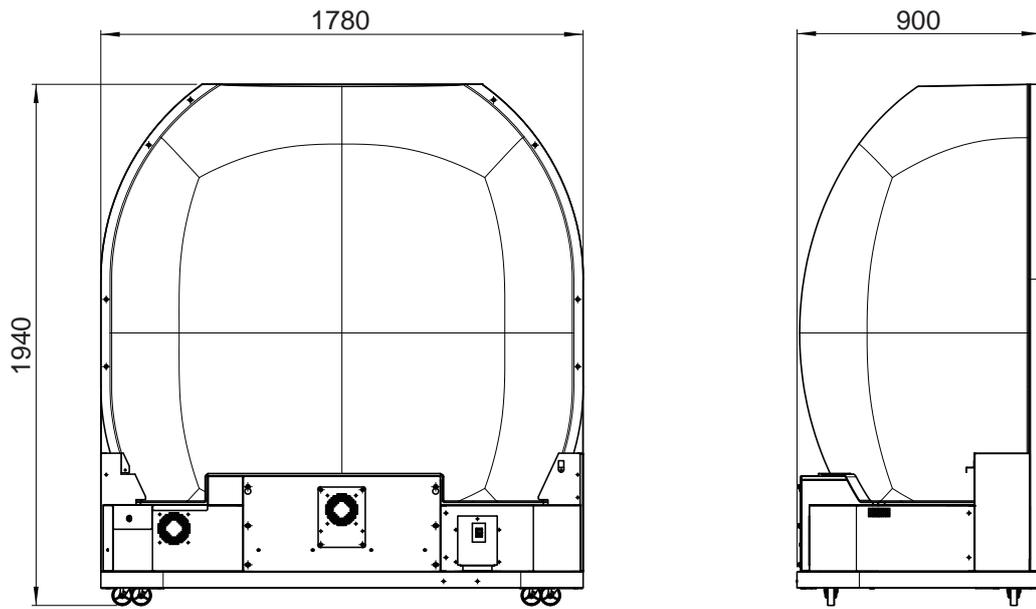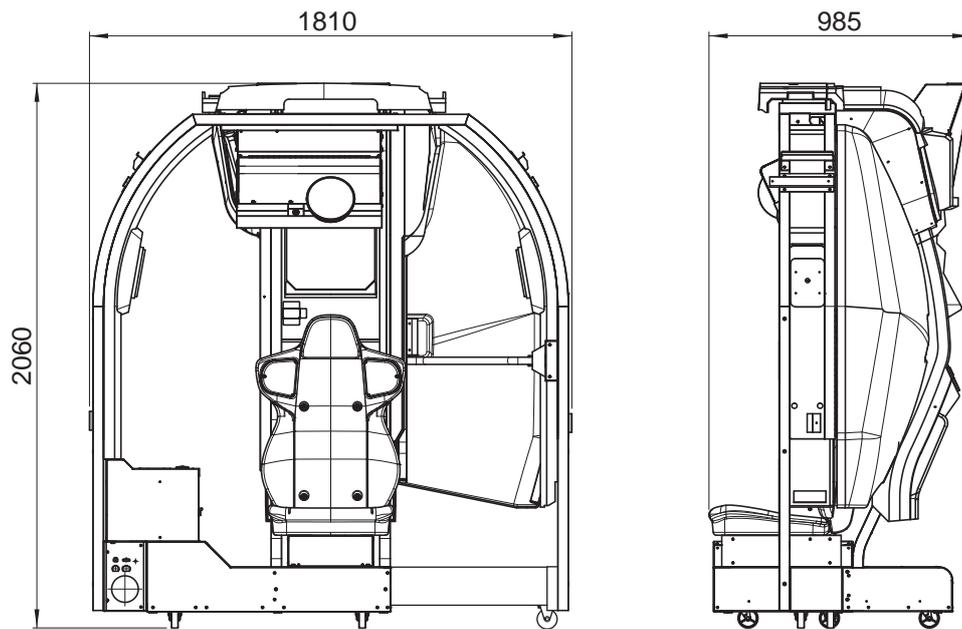
• Projector unit   Width (W) 520 x Depth (D) 480 x Height (H) 160 [mm]

(LVP-FD630 (V1))

520

480   160
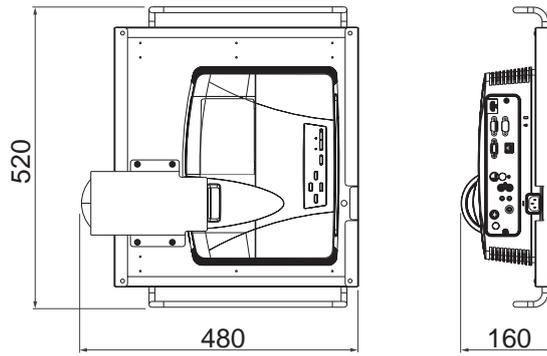
(7) Weight
  (1) When installed   365 kg
  (2) When disassembled   • Front assembly   175 kg
                             • Rear assembly   180 kg
                             • Projector unit   10 kg

Test Mode

Troubleshooting

3. Package Contents

The following items (three packages) are included when this machine is shipped.

NOTICE
- Make sure that all the items below are contained in the product packages.
- If any items are missing, contact your distributor.
- The packing boxes are reused when transporting the machine, so store them in a safe place and do not dispose of them.

Front assembly

Projector packing box
6, 7

4, 5, 14 to 19, 23, 26, 27, 28

Rear assembly

Cardboard behind seat back
22

Packed inside the cashbox
8 to 13, 25, 29, 30, 32 to 35

Packed inside the box
20, 21

1, 2, 3, 25, 31
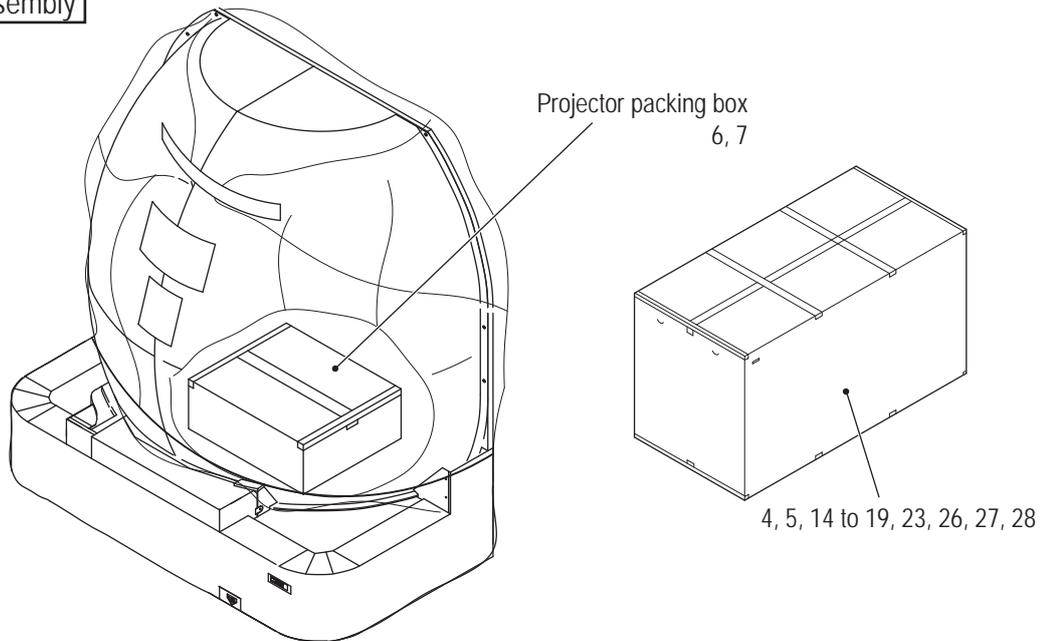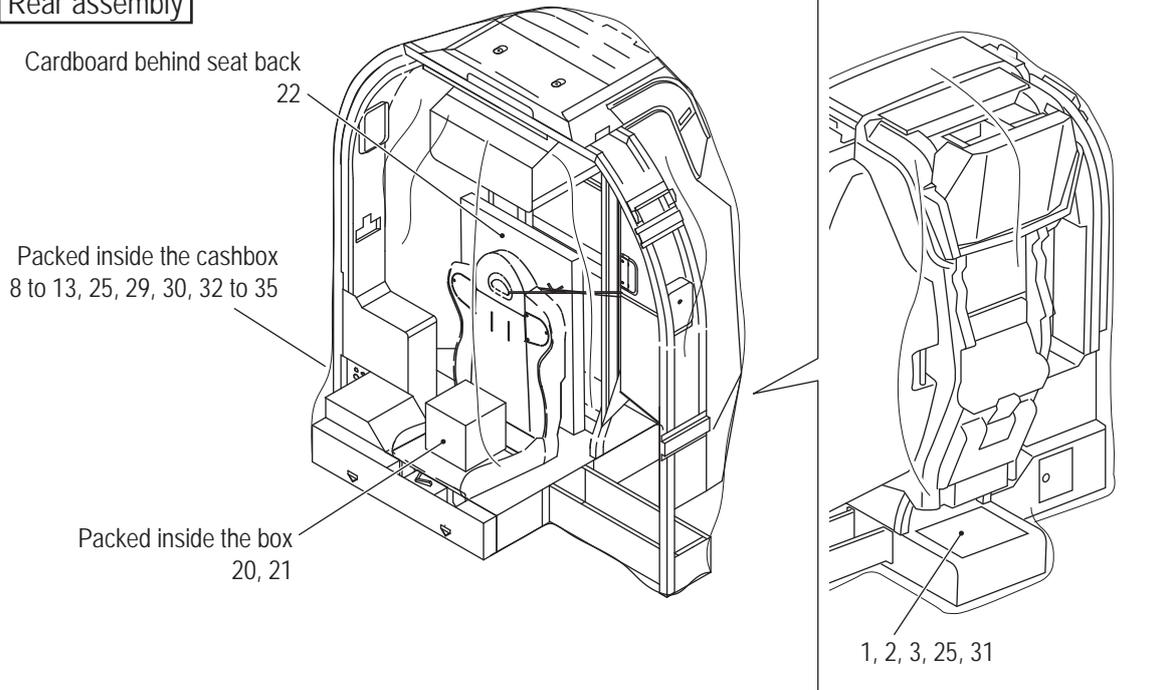
● Supplied Item List

No.	Name	Specifications		Qty.
1	Operation Manual (this manual)			1
2	Service key			2
3	Cashbox key			2
4	Power cord	3 m	U.S. and European specifications only	1
5	LAN cable	20 m	Not used for U.S. and European specifications	1
6	Remote controller for projector			1
7	Batteries for remote controller	Size AAA		2
8	Torx bolt (silver)	M5 x 12	(10 bolts used on page 62, 2 bolts used on page 70, 4 bolts used on page 72)	16
9	Torx bolt (silver)	M5 x 8	(Used on page 69)	4
10	Torx bolt (black)	M5 x 12	(Used on pages 61 and 62)	8
11	Flange socket bolt	M8 x 16	(Used on pages 59 and 60)	16
12	Flange socket bolt	M6 x 14	(Used on page 67)	2
13	Flat washer (large)	ø25 x ø5.5	(Used on page 69)	4
14	Side joint (L)			1
15	Side joint (R)			1
16	Side cover (L)			1
17	Side cover (R)			1
18	Lower side cover (L)	With cover joint assembled		1
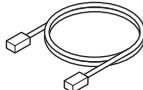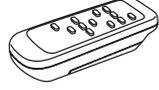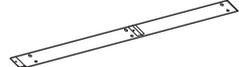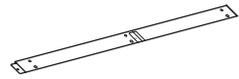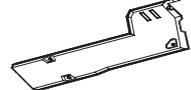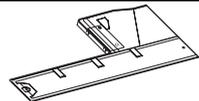
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Package Contents

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No.	Name	Specifications		Qty.
19	Lower side cover (R)			1
20	POP light assembly			1
21	LED light	AC/DC 12 V 7 W		3
22-a	POP (EXP)	U.S. and European specifications		1
22-b	POP (EXP ASIA)	Asian specifications		
23	POP bracket			1
24	Torx wrench	For M5, T25		1
25	USB dongle			1
26	Clamp	For power cord		1
27	Clamp	For LAN cable	Not used for U.S. and European specifications	1
28	Hole cover	U.S. specifications only		1
29	Phillips pan head screw (with flat and spring washers) (M4 x 14)	U.S. specifications only		4
30	Countersunk nut with washer	M8, U.S. specifications only		6
31	Coin door key	U.S. and European specifications only		2
32	Flat washer (large)	ø16 x ø5 (Used on page 62)		4
33	Padlock (supplied with a key)	One for European specifications Two for U.S. specifications		1 or 2
34	Lock bar (B)	U.S. specifications only		1
35	Lock bar (C)	U.S. and European specifications only		1
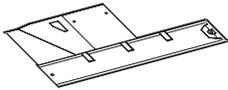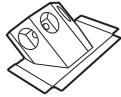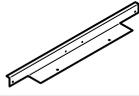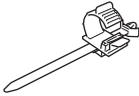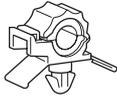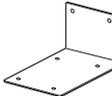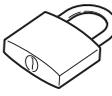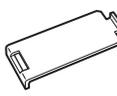
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4. Overall Structure (Part Names)

Front assembly

Projector assembly

Control lever assembly

Coin assembly

Seat assembly

Throttle lever assembly

Game PC board

Main power switch

Fuse

Fan

Cord box assembly

LAN cable*

Power cord

* Not required for U.S. and European specifications.

Top cover

POP

Door

Camera

Rear assembly

Back lamp

Service panel

Service door

System power switch

Fan outlet

Coin door

5. Delivery and Installation Conditions

⚠ WARNING

- Install the machine according to the instructions in this Operation Manual. Failure to follow these instructions may result in fire, electric shock, injury or malfunction.
- **Fully insert the power cord plug into the outlet. Poor contact may generate heat and result in fire or burns.**
- **Be sure to install the ground wire. Failure to install the ground wire may result in electric shock in the event of electrical leakage. (See "8A-2-1 Connecting the Power Cord and Ground" on page 73.)**
- **Install the machine securely by using the level adjusters. Unstable machine installation may result in accident or injury. (See "8A-1-1 (4) Level Adjuster Adjustment" on page 63.)**

5-1 Installation Conditions

5-1-1 Safety Inspection

⚠ WARNING

- **Do not block the ventilation holes of the machine with any objects or a wall, etc. If the ventilation holes are blocked, the inside of the machine may become hot, which may result in fire or malfunction.**
- The machine is designed for indoor use. Never install the machine outdoors or in the following locations.
    - **A location exposed to direct sunlight**
    - **A location exposed to rain or water leaks**
    - **A damp location**
    - **A dusty location**
    - **A location close to heaters**
    - **A hot location**
    - **An extremely cold location**
    - **A location exposed to condensation caused by temperature differences**
    - **A location that obstructs an emergency exit or fire extinguishing equipment**
    - **An unstable location or a location exposed to vibration**
- **The machine is not suitable for installation in an area where a water jet could be used.**

5-1-2   Play Zone

⚠ CAUTION

● **Create a play zone around the machine so that players leaving the machine do not make contact** with bystanders or passersby.

NOTICE ● **When installing the machine, create a play zone approximately as shown in the figure below. Be sure to secure this play zone, as it is also needed for service work.**

● **A ceiling height of 2 m 35 cm or more is required for Asian specifications, and 2 m 60 cm or more for U.S. and European specifications.**

(1)   Play zone (example)
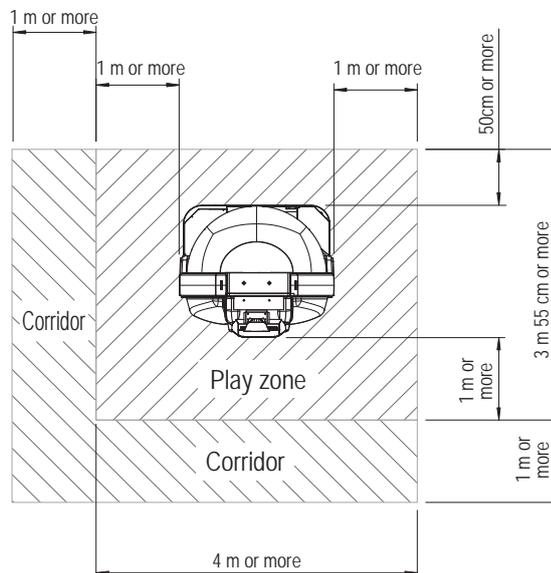
Diagram labels:
1 m or more
1 m or more
1 m or more
50cm or more
3 m 55 cm or more
1 m or more
1 m or more
Corridor
Play zone
Corridor
4 m or more

5-2   Required Dimensions for the Delivery Route (Such as Doors and Corridors)

Entryways and corridors must be larger than the dimensions noted below.

- Front assembly   Width (W) 1,780 x Depth (D) 900 x Height (H) 1,940 [mm]
                          Weight   175 kg

- Rear assembly   Width (W) 1,810 x Depth (D) 985 x Height (H) 2,060 [mm]
                          Weight   180 kg

The delivery route must be sufficiently larger than the above dimensions.

6. Moving and Transportation

⚠ WARNING

● Do not leave the machine on a slope. It may fall over or cause an accident.

6-1   Moving (Within the Same Floor)

◄ NOTICE

● Move the machine carefully to avoid damaging it.
● Do not subject the machine to impact when moving it up or down a step.
● Even when moving the machine only a short distance, be sure to raise the level adjusters to their highest level. (See "8A-1-1 (4) Level Adjuster Adjustment" on page 63.)
● Be careful not to apply force to the rear window, door and other acrylic molded parts when moving the machine.
● When disassembling the machine into the front and rear assemblies for movement, attach the rear joint frame to the rear assembly. (See "8A-1-1 (2) Removing the Rear Joint Frame" on page 61.)

6-2 Transportation

◀NOTICE ● Do not subject the machine to impact when lowering it.

6-2-1 Manual Transportation (Such as Carrying on Stairs)

⚠**WARNING**

- **Before transporting the machine manually, be sure to first remove the projector unit from the rear** assembly (see "8B-6-1 Removing and Installing Each Part" on page 142), and disassemble the machine into the front and rear assemblies. (See "8A-1-1 Assembling the Machine" on page 56.)
- Transporting the fully assembled machine may result in an accident.
- When transporting the machine manually, be sure to use the following number of people. Overburdening yourself may result in accident or injury.
  - Front assembly (175 kg): 7 people or more
  - Rear assembly (180 kg): 9 people or more
  - Projector unit (10 kg): 1 person or more

Front assembly

Rear assembly
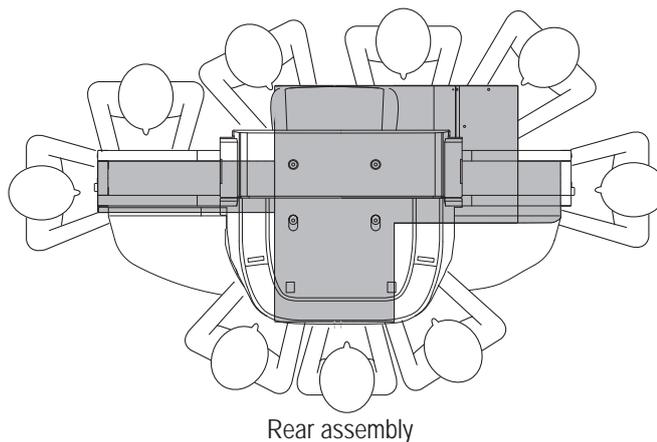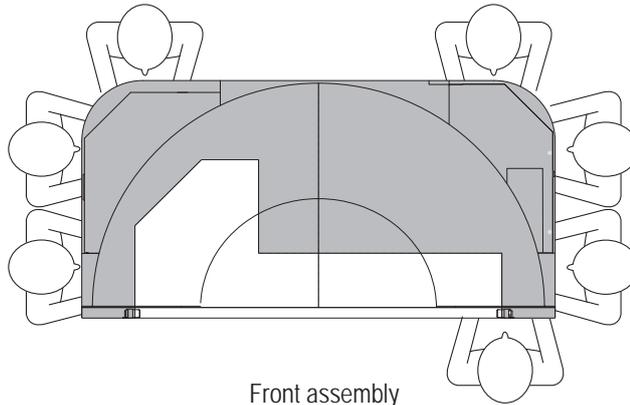
◀NOTICE ● Do not subject the machine to impact when lowering it.
● Secure the door with cord or tape so that it does not open when transporting the rear assembly.

Before transporting the machine manually, disassemble it into each assembly by referring to "8A-1-1 Assembling the Machine" on page 56.

1 Raise the level adjusters to their highest level.

2 Remove the molded covers.

3 Disassemble the machine into the front and rear assemblies.

4 Attach the rear joint frame to the rear assembly.

5 Remove the projector unit from the rear assembly.

6 After transporting the machine manually, reassemble the machine.

NOTICE
- Be careful not to apply force to the screen when transporting the front assembly manually.
- The front assembly has a height of 1,940 mm. Be careful not to bump the ceiling.
- Be careful not to apply force to the rear window, door and other acrylic molded parts when transporting the rear assembly manually.
- The rear assembly has a height of 2,060 mm. Be careful not to bump the ceiling.
- If the projector image has shifted after assembling the machine, adjust the projector. (See "8B-6-2 Adjusting the Projector Position" on page 155.)

Moving and Transportation

Test Mode

Troubleshooting

6-2-2　Loading to and Unloading from a Vehicle

⚠ WARNING

- Before transporting the machine manually, be sure to disassemble it into the front and rear assemblies, remove the projector unit from the rear assembly, and attach the rear joint frame to the rear assembly. (See "8A-1-1 Assembling the Machine" on page 56) Transporting the fully assembled machine manually (such as carrying on stairs) may result in damage to equipment or accident.
- When transporting the machine manually, be sure to use the following number of people. Overburdening yourself may result in accident or injury.
  - Front assembly (175 kg): 7 people or more
  - Rear assembly (180 kg): 9 people or more
  - Projector unit (10 kg): 1 person or more
- When using a forklift to transport the machine, observe the following. Failure to observe the following may result in an accident, such as the machine falling over.
  - Make sure that the machine is disassembled into the front assembly, rear assembly and projector unit.
  - **Be sure to insert the forks into the specified positions.**
  - Make sure that the machine is balanced properly during transportation.

◖NOTICE　　● Do not subject the machine to impact when lowering it from the forklift.

Front assembly　　　　　　　　　　　　　Rear assembly

Fork position
FORK

Fork sticker
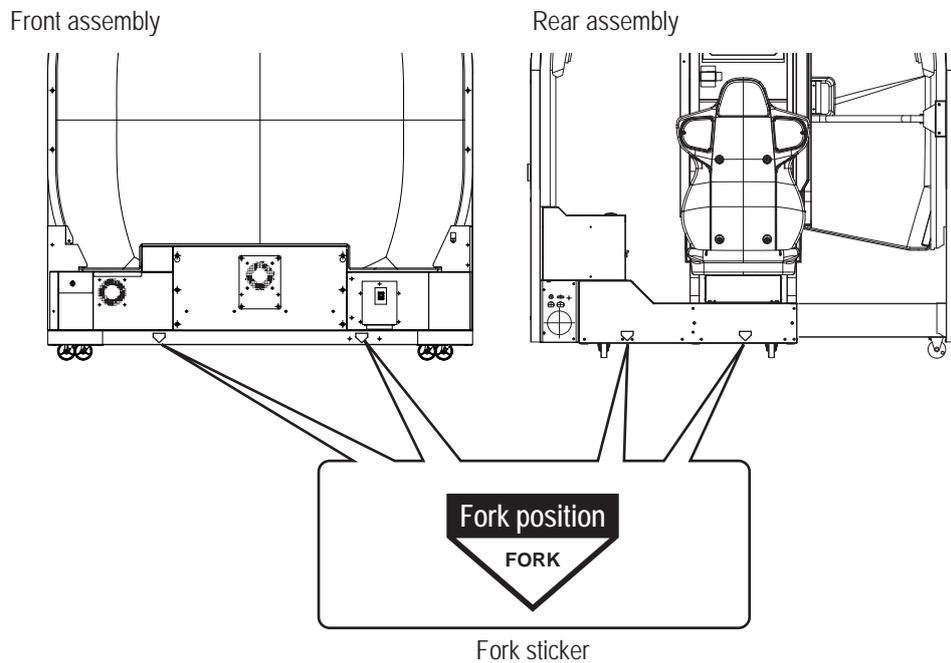
6-2-3   Transportation Using a Vehicle

⚠ **WARNING**

● **When transporting the machine on a vehicle, secure the machine firmly so that it does not move** during vehicle transport. Failure to secure the machine may result in an accident.

◀NOTICE
● Do not subject the machine to impact when lowering it.
● Move the machine carefully to avoid damaging it.
● When securing the machine with a rope, observe the following.
  • Be sure to secure the machine with ropes or belts in the positions shown in the **figure below.**
  • Place blankets or other shock absorbing material between the machine and the ropes or belts to protect the machine surfaces.
● Be sure to pack the projector unit in the dedicated packing box for transportation.
● Place Styrofoam or other shock absorbing material between the machine and the truck bed and any other equipment or items to protect the machine surfaces.
● When transporting the machine in rainy weather, use a vehicle with a cargo cover, a container truck, or similar vehicle to protect the machine from direct exposure to rain.
● Secure the door with cord or tape so that it does not open when transporting the rear assembly.
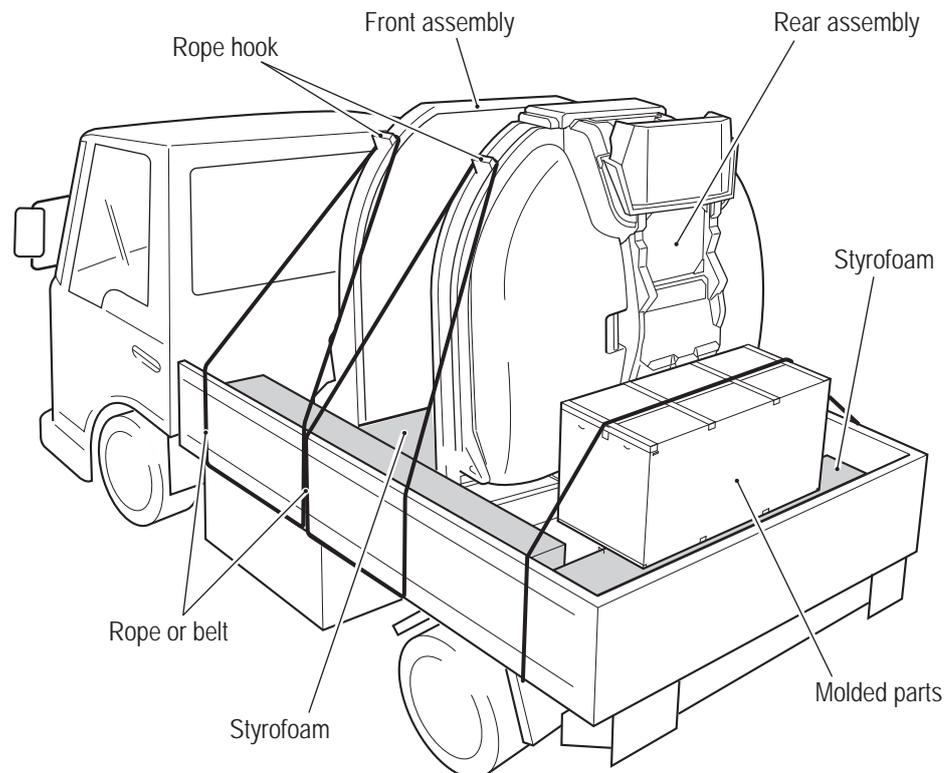
7. Operation

⚠ WARNING

- Should an abnormality occur, turn off the main power switch immediately to stop operations. Then, be sure to disconnect the power cord plug from the outlet.
- **Operating the machine while the abnormality persists may result in fire or accident.**
- **Dust accumulating on the power cord plug may result in fire. Inspect the plug regularly and remove any dust.**
- **Fully insert the power cord plug into the outlet. Poor contact may generate heat and result in fire or burns.**
- Before operating the machine, be sure to check that installation has been performed according to **the instructions and specified procedures in this Operation Manual (see "5. Delivery and Installation Conditions" on page 16). Failure to install the machine correctly may result in fire, electric shock, injury or malfunction.**
- **The warning labels contain important information for ensuring safety. Be sure to observe the following. (For the warning label locations, see "1-4 Machine Warning Labels" on page 4.)**
    - **In order to ensure that the warning labels attached to the machine are always clearly visible,** install the machine in an appropriate location with ample illumination and keep the labels clean **at all times. Also make sure that the labels are not hidden by other machines or objects.**
    - **Do not remove or alter the warning labels.**
    - **If a warning label becomes excessively dirty or damaged, replace it with a new one.**
- To order warning labels, contact your distributor.
- **In order to ensure safe use of the machine, be sure to perform the pre-operation inspection ("7-1 Pre-operation Inspection" on page 25) and service ("8B. Service" on page 83) described in this Operation Manual.**
- **Omitting these inspections or service may result in an accident.**
- **If players start feeling ill because of the game images or light stimulation, they must stop playing** and take a break immediately.
- **In rare cases, stimulation by lights or video images may cause the player to have a seizure or lose consciousness. If this happens, advise the player to seek immediate medical assistance.**
- **Set the cabinet volume within the range that allows the player to hear alarms and warning** announcements within the operating facility.

⚠ CAUTION

- **In order to ensure the safety of players, be careful not to let people play under the following conditions. This is required to prevent accidents.**
    - **People whose feet cannot reach the floor when sitting on the seat**
    - **People under the influence of alcohol**
    - **People who are injured or ill**
    - People who are pregnant
    - People with heart conditions
    - People with other ailments
- The machine is designed for one player. Be careful not to let two or more people attempt to enter **the machine at the same time. This is required to prevent accidents.**
- **This machine is not intended for use by persons (including children) with reduced physical, mental or sensory capabilities, or those with lack of experience and knowledge of the machine, unless they are supervised or given instruction by a person responsible for their safety. Children should be supervised to ensure that they do not play with the machine.**

7-1　Pre-operation Inspection

7-1-1　Safety Inspection

Check the points below before starting machine operations.

If there is an abnormality, resolve it by referring to "8B-2 Troubleshooting" on page 85.

⚠ WARNING

- **Before operating the machine, check the following locations. This is required to prevent accident or injury.**

- Are all warning labels legible? (See "1-4 Machine Warning Labels" on page 4.)
- Are all level adjusters adjusted properly so that the machine is stable? (See "8A-1-1 (4) Level Adjuster Adjustment" on page 63.)
- Is the specified play zone provided? (See "5-1-2 Play Zone" on page 17.)
- Are the power cord and LAN cable laid out safely so that they will not cause players or other customers to trip over them?

7-1-2   Function Inspection (After Power On)

Inspect the following points after turning on the power switch. If you discover an abnormality, turn off the power switch immediately to stop operations.

Then, disconnect the power cord plug from the outlet and contact your distributor.

- Is any part of the power cord or plug abnormally hot?
- Does touching the machine give a tingling electric shock?
- Is there a burning smell, abnormal noise or vibration?
- Is there any other abnormality or malfunction?
- Check the operation of each button (is there an ON/OFF response?), analog interface (is the input range normal?) and other input devices. (See "7-4-4 (2) SWITCH TEST" on page 37.)
- Check the audio. (Is sound produced by each speaker?) (See "7-4-6 SOUND TEST" on page 42.)
- Set the cabinet volume within the range that allows the player to hear alarms and warning announcements within the operating facility.
- Check that the various lights light up. (See "7-4-4 (3) OUTPUT TEST" on page 38.)
- Check the displayed images. (Are images projected correctly from the projector?)
- Is the screen blank and the back lamp lit up red? (See "7-7 Projector Lamp (Lamp Unit) Life" on page 54.)

To inspect the following points, press the Service switch and actually play the game.

- Check the operation of each control device (levers, machine gun button, missile button). (Can the player's aircraft be controlled properly?)

7-2 Playing the Game

The game ends when the number of credits runs out
(1 credit = 1 stage) or when the endurance gauge reaches 0.

7-2-1 Game Flow

[Operation Method during Game Play]

(1) Control lever (lever on right side)

• Tilt the lever forward, back, right and left to pilot
  your aircraft.

Tilt forward/back: Dives/climbs

Tilt to the right/left: Turns to the right/left

• Press the missile button
    : A missile is launched.

• Squeeze the machine gun button
    : The machine gun fires.

(2) Throttle lever (lever on left side)

• Tilt the lever forward to accelerate and back to decelerate.

Tilt forward: The aircraft speeds up temporarily and closes the distance with the enemy
                    aircraft.

Tilt back: The aircraft slows down temporarily and the distance with the enemy aircraft
                    widens.
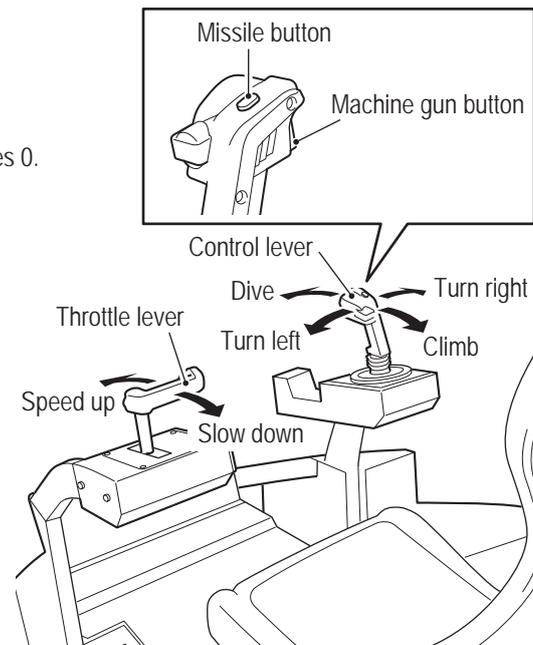
[Game Flow]

When coins equal to the credits required for game play are inserted, the player selects the sortie mission and
game play starts.

[Take-off from the Aircraft Carrier]

(1) Starting the game

After inserting coins equal to the credits required for game play, the player presses the missile button
or squeezes the machine gun button to start game play.

(2) Selecting the mission

When the aircraft reaches the takeoff position, tilt the throttle lever to select the sortie mission and
press the missile button or squeeze the machine gun button to enter the selection. There are five
missions, and a difficulty is set for each mission.

(3) Taking off from the aircraft carrier

Tilt the throttle lever forward to take off from the aircraft carrier.

[Missions]

(1) Mission

The player attempts to align the lock-on circle in the center of the display with enemy craft that
appear before them. When the lock-on gauge is red around its entire circumference indicating the
lock-on state, the player can fire a missile to shoot down the enemy craft.
When an enemy missile is fired at the player, the player attempts to shoot it down using missiles or
the machine gun. If the player fails to shoot down the enemy missile, the player's aircraft receives
damage. When the endurance gauge at the bottom of the display reaches empty, the mission fails.

(2) Boss dogfight

Toward the end of each mission, a dogfight with the enemy boss occurs with a time limit. If the enemy
boss cannot be defeated within the time limit, the time runs out and the mission fails.

Missile button

Machine gun button

Control lever

Dive   Turn right

Throttle lever

Turn left   Climb

Speed up

Slow down

1
2
3
4
5
6
7
8A
8B
9
10
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[RETRY]

When the retry function is set to ON and a mission is failed, the player can play the same mission again from the start by inserting coins equal to the required additional number of credits.

[EXTRA MISSION]

When the extra mission function is set to ON and a mission is successfully completed, the player can challenge an extra mission by inserting coins equal to the required additional number of credits. This extra mission lets the player aim for a higher score by shooting down enemy craft that appear successively within a time limit.

(1) Time limit

> The time limit is displayed at the top of the screen during the extra mission. The goal is to shoot down as many enemy craft as possible within this time limit to achieve a higher score. Some enemy craft extend the time limit when shot down.

(2) Quick-kill and multi lock-on missiles

> When the player shoots down an enemy craft within a certain time (quick kill), the multi lock-on gauge at the bottom of the screen increases. When the multi lock-on gauge becomes full, multi lock-on missiles can be fired, enabling to shoot down multiple enemy craft at once.
>
> * Set the number of credits required for retry and extra mission game play at the COIN OPTIONS screen (See "7-4-2 Game Cost Settings (COIN OPTIONS)" on page 33.)
>
> * Set the retry and extra mission functions to ON or OFF at the GAME OPTIONS screen. (See "7-4-2 Game Contents Settings (GAME OPTIONS)" on page 34.)

[RESULTS]

(3) Results

> When a mission is successfully completed or failed, the player's score is totaled and a rank is assigned.

(4) Ranking

> Finally, the ranking list is displayed. When a player achieves a ranking within the top 20, they can enter their name.
>
> * When the power is turned off, the records for rank 6 and lower are deleted and return to the default rankings.

7-3 Adjustment

7-3-1 Turning the Power Switch On

1 Turn on the main power switch located on the front of the front assembly.

If the machine does not start up correctly, the system power switch may not be set to ON.

Check the system power switch by referring to "7-3-2 Adjustment Switches" on page 30.
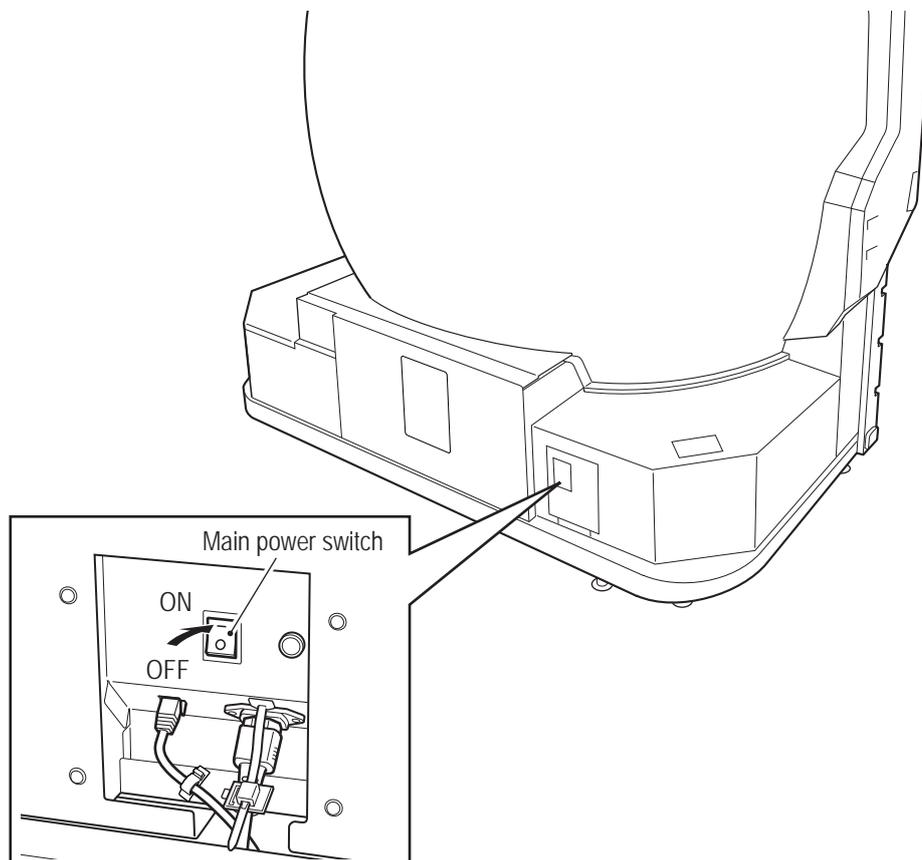
Main power switch

ON

OFF

⚠ **NOTICE** ● **When turning the power off and then on again, do not turn the power back on immediately, and be sure to observe the following condition.**

• **When using the main power switch**

It takes time to restart the projector, so wait 10 minutes **or more after turning off the main power switch before turning it back on.**

7-3-2   Adjustment Switches

The adjustment switches are located inside the machine.
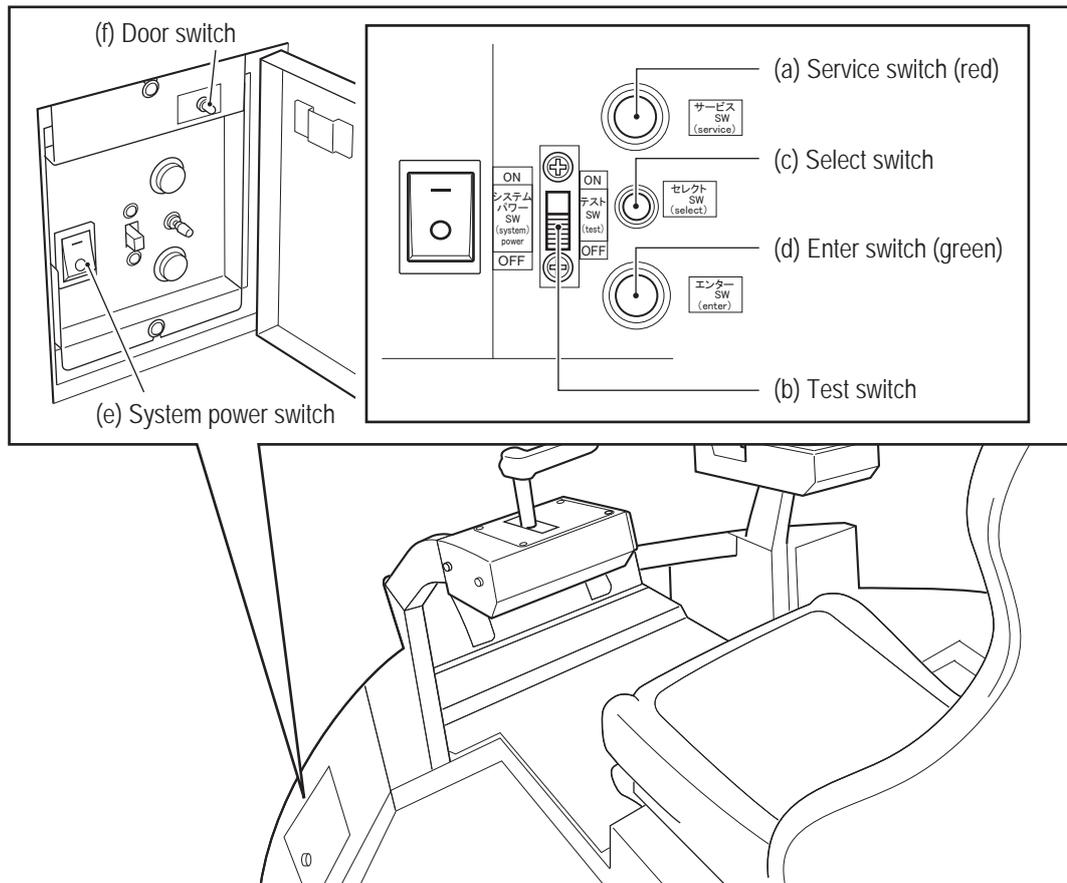
Inside the machine

(a) Service switch (red)

　　Press this button to increase the credit count without operating the coin counter. When credits are added using the Service switch, the back lamp is lit up red.

(b) Test switch

　　Set this switch to ON to enter Test mode.

　　Test mode is used to test the various parts of the machine such as the monitor.

　　(See "7-4 Test Mode" on page 31.)

(c) Select switch

　　In Test mode, flip this switch up or down to select an item or setting (numerical value).

(d) Enter switch (green)

　　After selecting an item or setting (numerical value) with the Select switch, press this switch to enter or execute the selection.

(e) System power switch

　　This switch is used to forcibly reboot the game PC board when an abnormality occurs in the system. To reboot the game PC board, set the Reset switch to OFF, wait for 30 seconds or more, and then set the system power switch to ON again.

(f) Door switch

　　For security purposes, coin credits can be added by pressing the Service switch only while the door is open.

⚠ NOTICE

● **When the main power switch is turned off, it takes time to restart the projector, and the display may remain blank for a few minutes (approximately 10 minutes).**

　　Therefore, the system power switch should be used to reboot the game PC board.

7-4　Test Mode

7-4-1　Description of the Main Menu Screen (MENU)

1 Use the service key to unlock and open the service door, and set the Test switch to ON. The MENU screen appears on the screen.

2 Flip the Select switch up or down to select the item. The selected item blinks.

3 Press the Enter switch to enter the selected item.

4 When the selection is entered, the display changes to the detailed information for the selected item.

5 After finishing all the adjustments, set the Test switch to OFF. The display returns to the game screen.

```
MENU                                         (a)
                                             (b)
COIN OPTIONS    1-1 COIN ERROR 1
GAME OPTIONS    1-2 COIN ERROR 2
I/O TEST                                      (c)
MONITOR TEST                                  (d)
SOUND TEST                                    (e)
BOOKKEEPING                                   (f)
OTHERS                                        (g)
NETWORK STATUS                                (h)
NBLINE POINTS                                 (i)
LAST GAME STATUS
LEFT CREDIT  1                                (j)
USE CREDIT   3                                (k)



SELECT SW:CHOOSE    ENTER SW:ENTER
```

When an error occurs in Test mode, the error code and error name are displayed at the upper right of the MENU screen.
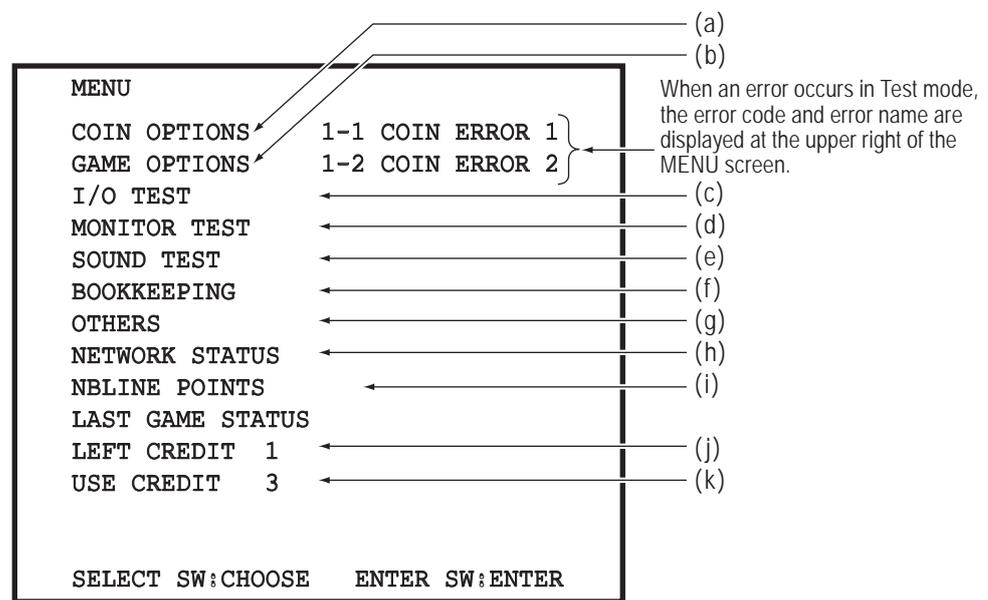
MENU screen

	Item	Description	Reference section
(a)	COIN OPTIONS	Game cost settings	Page 33
(b)	GAME OPTIONS	Game contents and other settings	Page 34
(c)	I/O TEST	Switch, light and other tests	Page 35
(d)	MONITOR TEST	Monitor adjustment	Page 41
(e)	SOUND TEST	Volume adjustment, etc.	Page 42
(f)	BOOKKEEPING	Operating time and game related data	Page 43
(g)	OTHERS	Used to check the version, etc.	Page 45
(h)	NETWORK STATUS	Used to check the network status and IP address, and to reacquire the network status. * This item is displayed only when using the online version of the software.	Page 48
(i)	NBLINE POINTS	Used to check the NBLINE points.	Page 50

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Item	Description	Reference section
(j) LEFT CREDIT	Number of unused credits immediately before switching to Test mode	–
(k) USE CREDIT	Number of credits being used by the player during game play immediately before switching to Test mode	–

7-4-2 Game Cost Settings (COIN OPTIONS)

This screen is used to make various changes to the cost settings such as the game cost settings.

1 In the MENU screen, select COIN OPTIONS and press the Enter switch.
The COIN OPTIONS screen appears.

2 Flip the Select switch up or down to select the item. The selected item blinks.

```
COIN OPTIONS
[DEFAULT IN GREEN]

GAME COST      2      CREDIT(S) ←————— (a)
RETRY COST     1      CREDIT(S) ←————— (b)
EXTRA COST     2      CREDIT(S) ←————— (c)
FREE PLAY      OFF  ←——————————————— (d)

EXIT



  SELECT SW:CHOOSE    ENTER SW:ENTER
```
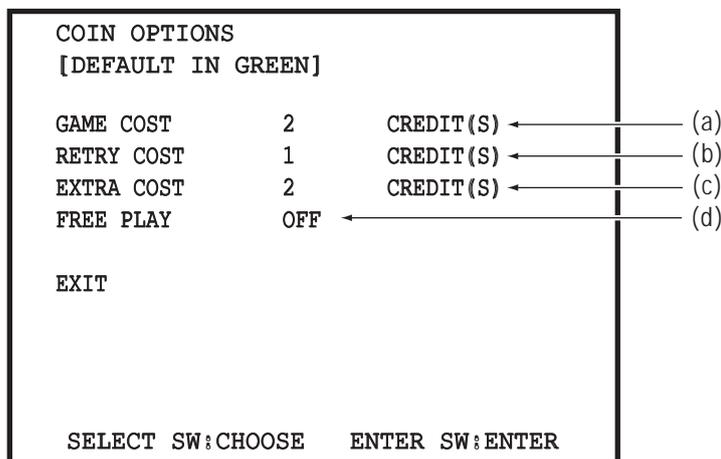
COIN OPTIONS screen

Item	Description
(a) GAME COST	Sets the number of credits required for game play. The setting range is 1 to 20. (Default: 2 *8 for U.S. and European specifications)
(b) RETRY COST	Sets the number of credits required for retry game play. The setting range is 1 to 20. (Default: 1 *4 for U.S. and European specifications)
(c) EXTRA COST	Sets the number of credits required for extra mission game play. The setting range is 1 to 20. (Default: 2 *8 for U.S. and European specifications)
(d) FREE PLAY*	Free play setting (Default: OFF)

* This setting is available only when using the offline version of the software.

3 When the selection is entered, the display changes to the detailed information for the selected item.

4 After entering the selection, flip the Select switch up or down to change the item setting.

5 After changing the setting, press the Enter switch to return to the item selection.

6 Select EXIT and press the Enter switch to return to the MENU screen.

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7-4-3   Game Contents Settings (GAME OPTIONS)

This screen is used to make various game contents settings.

1 In the MENU screen, select GAME OPTIONS and press the Enter switch. The GAME OPTIONS screen appears.

2 Flip the Select switch up or down to select the item. The selected item blinks.

```
GAME OPTIONS
[DEFAULT IN GREEN]

DIFFICULTY        C(NORMAL) ◄─────────────── (a)
NO DEAD MODE      OFF ◄───────────────────── (b)
RETRY             ON ◄────────────────────── (c)
EXTRA MISSION     ON ◄────────────────────── (d)

EXIT




   SELECT SW:CHOOSE    ENTER SW:ENTER
```
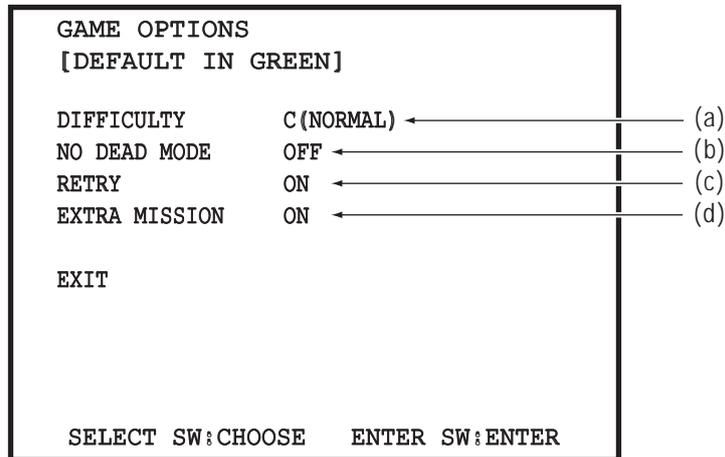
GAME OPTIONS screen

Item	Description
(a) DIFFICULTY	Sets the game difficulty. Increasing the difficulty increases the amount by which the endurance gauge decreases when damage is taken, making it easier to get shot down. The setting range is from A (VERY EASY) to E (VERY HARD). (Default: C (NORMAL))
(b) NO DEAD MODE	Sets the mode where the player's aircraft is not shot down even if it receives damage during game play. (Default: OFF)
(c) RETRY	Sets the function to play the same mission again from the start when a mission is failed. (Default: ON)
(d) EXTRA MISSION	Sets the time limit mission function to aim for a higher score when a mission is successfully completed. (Default: ON)

3 When the selection is entered, the display changes to the detailed information for the selected item.

4 After entering the selection, flip the Select switch up or down to change the item setting.

5 After changing the setting, press the Enter switch to return to the item selection.

6 Select EXIT and press the Enter switch to return to the MENU screen.

7-4-4　Input/Output Test of Switches (I/O TEST)

This screen is used to test the switches and other items.

1　In the MENU screen, select I/O TEST and press the Enter switch.
The I/O TEST screen appears.

2　Flip the Select switch up or down to select the item to be changed.

```
I/O TEST

I/F CALIBRATION ◄──────────────────────  (a)
SWITCH TEST ◄────────────────────────── (b)
OUTPUT TEST ◄────────────────────────── (c)
PROJECTOR TEST ◄────────────────────── (d)
CAMERA TEST ◄────────────────────────── (e)

EXIT

I/O PCB:          CONNECT OK ◄────────── (f)

FIRMWARE VERSION: NBGI./WinArc/Ver2.03/JPN ◄── (g)

 SELECT SW:CHOOSE    ENTER SW:ENTER
```
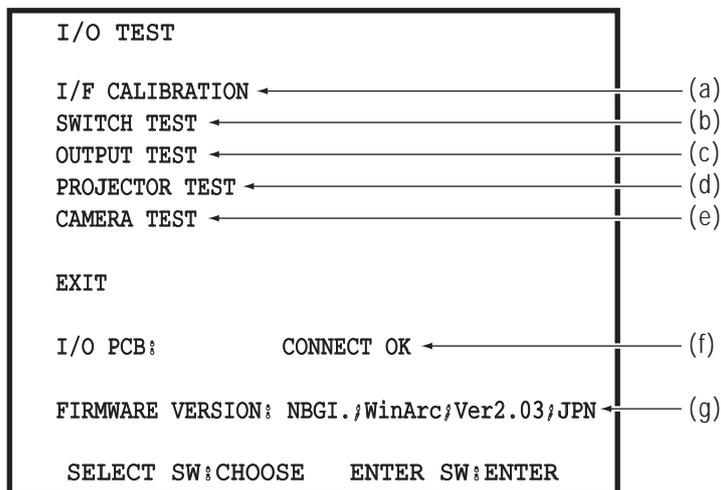
I/O TEST screen

Item	Description
(a) I/F CALIBRATION	Initializes the controls (levers).
(b) SWITCH TEST	Tests each switch and control.
(c) OUTPUT TEST	Tests the fan, etc.
(d) PROJECTOR TEST	Checks the projector operation status.
(e) CAMERA TEST	Tests the camera.
(f) I/O PCB	Displays "CONNECT OK" when the I/O PCB connection status is normal.
(g) FIRMWARE VERSION	Displays the firmware version of the I/O PCB.

3　Press the Enter switch to enter the selected item. When the selection is entered, the display changes to the detailed information for the selected item.

4　Select EXIT and press the Enter switch to return to the MENU screen.

1
2
3
4
5
6
7
8A
8B
9
10
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(1)   I/F CALIBRATION

This screen is used to initialize the controls (levers).

1　　In the I/O TEST screen, select I/F CALIBRATION and press the Enter switch. The I/F CALIBRATION screen appears.

```
I/F CALIBRATION

THROTTLE LEVER    CONTROL LEVER
  Y: 7F40           X: 8680
                    Y: 8840


[STEP 1] Tilt the right and left levers as far as they will go
         in each direction.

[STEP 2] Take your hands off the right and left levers.

[STEP 3] Press the service switch to complete the initialization
         process. The screen will automatically switch to the
         SWITCH TEST display.

[STEP 4] Confirm the status of the levers in the SWITCH TEST
         screen.


EXIT
ENTER SW:ENTER
```

I/F CALIBRATION screen

2　　Move the levers all the way forward, back, right and left, then release your hands from the levers and press the Service switch to initialize the levers.
After initialize the controls (levers), the screen will automatically switch to the SWITCH TEST display.

3　　Check that the levers have been properly initialized in the SWITCH TEST screen.

4　　Select EXIT and press the Enter switch to return to the I/O TEST screen.

NOTICE　　● **Be sure to execute I/F (CALIBRATION) when the game PC board is replaced.**

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(2) SWITCH TEST

This screen is used to test each switch and control.

1 In the I/O TEST screen, select SWITCH TEST and press the Enter switch. The SWITCH TEST screen appears.

2 Flip the Select switch up or down to select the item to be tested.

```
SWITCH TEST
[ON: RED ]
COIN INPUT1          0  ←─────────── (a)
COIN INPUT2          0  ←─────────── (b)
SERVICE            OFF  ←─────────── (c)
TEST                ON  ←─────────── (d)
UP SELECT          OFF  ←─────────── (e)
DOWN SELECT        OFF  ←─────────── (f)
ENTER              OFF  ←─────────── (g)
MACHINE GUN        OFF  ←─────────── (h)
MISSILE            OFF  ←─────────── (i)
SERVICE PANEL      OFF  ←─────────── (j)
THROTTLE LEVER   CONTROL LEVER ───── (k)
  Y:0500  ←        X:0500  ←──────── (l)
                   Y:0500  ←──────── (m)



        UP SELECT + ENTER:EXIT
```
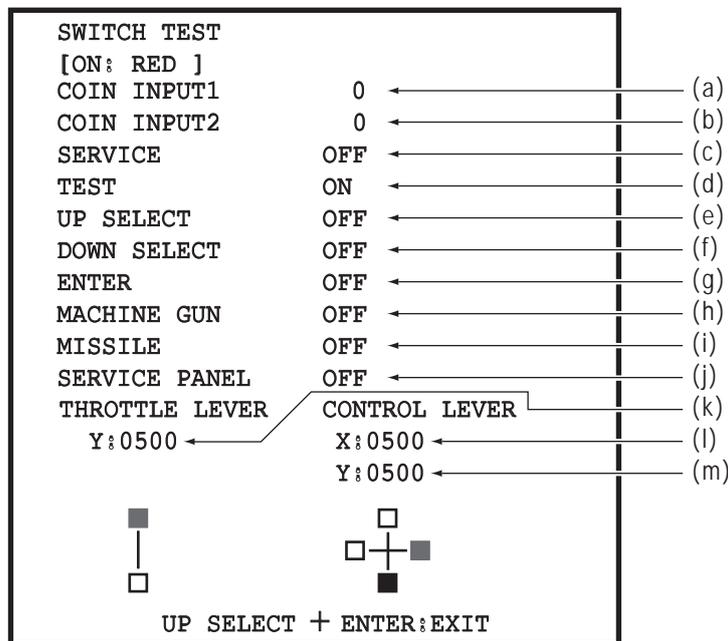
SWITCH TEST screen

	Item	Description
(a)	COIN INPUT1	Counts up each time there is coin input (for coin). When the count exceeds "999" it returns to "0".
(b)	COIN INPUT2	Counts up each time there is coin input (for the Bill Validator). When the count exceeds "999" it returns to "0".
(c)	SERVICE	Indicates ON while the Service switch is pressed.
(d)	TEST	Indicates ON while the Test switch is set to ON. (This screen is accessed in Test mode, so this is naturally ON.)
(e)	UP SELECT	Indicates UP while the Select switch is flipped up.
(f)	DOWN SELECT	Indicates DOWN while the Select switch is flipped down.
(g)	ENTER	Indicates ON while the Enter switch is pressed.
(h)	MACHINE GUN	Indicates ON while the trigger switch on the control lever is squeezed.
(i)	MISSILE	Indicates ON while the button switch on the control lever is pressed.
(j)	SERVICE PANEL	Indicates ON while the service panel is open.
(k)	THROTTLE LEVER	The numerical values change when the throttle lever is tilted forward and back. If "UP OK!" and "DOWN OK!" are displayed, the lever is operating normally.
(l)	CONTROL LEVER X	The numerical values change when the control lever is tilted to the right and left. If "LEFT OK!" and "RIGHT OK!" are displayed, the lever is operating normally.
(m)	CONTROL LEVER Y	The numerical values change when the control lever is tilted forward and back. If "UP OK!" and "DOWN OK!" are displayed, the lever is operating normally.

3 Press the Enter switch to enter the selected item.

4 Hold the Select switch flipped up and press the Enter switch to return to the I/O TEST screen.

(3) OUTPUT TEST

This screen is used to check the fan, control lever vibration, and back lamp operation.

1 In the I/O TEST screen, select OUTPUT TEST and press the Enter switch. The OUTPUT TEST screen appears.

2 Flip the Select switch up or down to select the item to be changed.

```
OUTPUT TEST
[ON: RED ]

FRONT FAN          OFF  ←————————————— (a)
VIBRATION          OFF  ←————————————— (b)
 POWER(6-15)       15   ←————————————— (c)
LED REAR COVER     OFF  ←————————————— (d)
 COLOR             WHITE ←———————————— (e)
  R                15   ←————————————— (f)
  G                15   ←————————————— (g)
  B                15   ←————————————— (h)

EXIT

  SELECT SW : CHOOSE  ENTER SW : ENTER
```
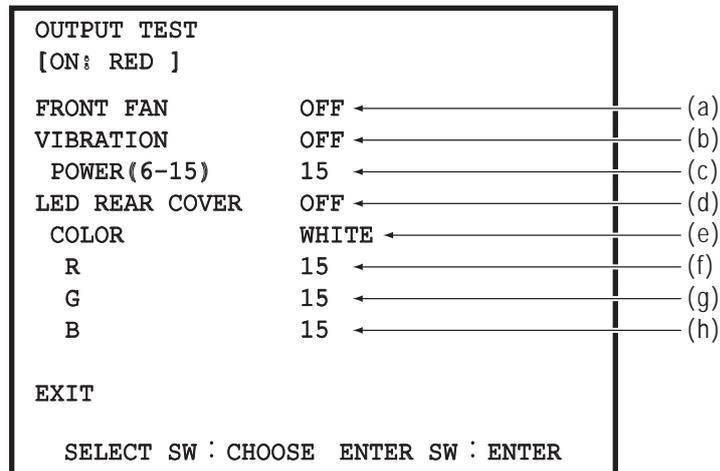
OUTPUT TEST screen

Item	Description
(a) FRONT FAN	Rotates the fan in accordance with the indicated status. The setting value changes in the order of OFF → LOW → MIDDLE → HIGH → OFF → ...
(b) VIBRATION	Vibrates the vibration motor of the control lever at the strength set by the POWER item in accordance with the ON/OFF indication.
(c) POWER	Sets the vibration motor strength. *
(d) LED REAR COVER	When this is set to ON, the back lamp is lit with the color set by the COLOR item.
(e) COLOR	Sets the back lamp color. The setting value can be selected from WHITE, RED, BLUE, GREEN or CUSTOM. (Default: WHITE) When set to CUSTOM, the color corresponding to the R, G and B setting values is set. *
(f) R	This can be selected when CUSTOM is selected by the COLOR item. Sets the red color intensity. The setting range is 0 to 15. (Default: 15)
(g) G	This can be selected when CUSTOM is selected by the COLOR item. Sets the green color intensity. The setting range is 0 to 15. (Default: 15)
(h) B	This can be selected when CUSTOM is selected by the COLOR item. Sets the blue color intensity. The setting range is 0 to 15. (Default: 15)

*These settings are not reflected during game play or Attract mode operation. These setting items are used only to check operation.

3 Press the Enter switch to enter the selected item.

4 Select EXIT and press the Enter switch to return to the I/O TEST screen.

(4) PROJECTOR TEST

This screen is used to check the projector lamp operation time and current status.

1 In the I/O TEST screen, select PROJECTOR TEST and press the Enter switch. The PROJECTOR TEST screen appears.

```
PROJECTOR TEST

STATUS        OK                              (a)
STATE         2 TURN ON                       (b)
LAMP TIME     285 HOUR(S)                      (c)
PANEL TIME    ----- HOUR(S)                    (d)
TOTAL TIME    ----- HOUR(S)                    (e)

FAN1        ----- rpm    FAN2      ----- rpm
FAN3        ----- rpm    FAN4      ----- rpm   (f)
TEMPERATURE1  ----- C    TEMPERATURE2 ----- C  (g)

EXIT
4735 hour(s) until the projector lamp is due for replacement.

ENTER SW : ENTER
```

PROJECTOR TEST screen

	Item	Description
(a)	STATUS	Indicates the current projector status.
(b)	STATE	Indicates the internal operation state of the projector.
(c)	LAMP TIME	Indicates the current lamp operation time. The color and message contents change according to the time. 0h to 3749h: Displayed in white. The time remaining until 5000 hours is also displayed at the bottom of the screen. 3750h to 4749h: Displayed in orange. This indicates that the lamp replacement time is approaching. The time remaining until 5000 hours and a notice are also displayed at the bottom of the screen. 4750 hours or more: Displayed in blinking red. This indicates that it is time to replace the lamp. The message "TIME TO EXCHANGE THE PROJECTOR LAMP" is also displayed at the bottom of the screen.
(d)	PANEL TIME	Not supported and performs no function.
(e)	TOTAL TIME	Not supported and performs no function.
(f)	FAN	Not supported and performs no function.
(g)	TEMPERATURE	Not supported and performs no function.

2 Select EXIT and press the Enter switch to return to the I/O TEST screen.

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(5) CAMERA TEST

This screen is used to check that the image taken by the camera can be displayed.

1 In the I/O TEST screen, select CAMERA TEST and press the Enter switch. The CAMERA TEST screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks.
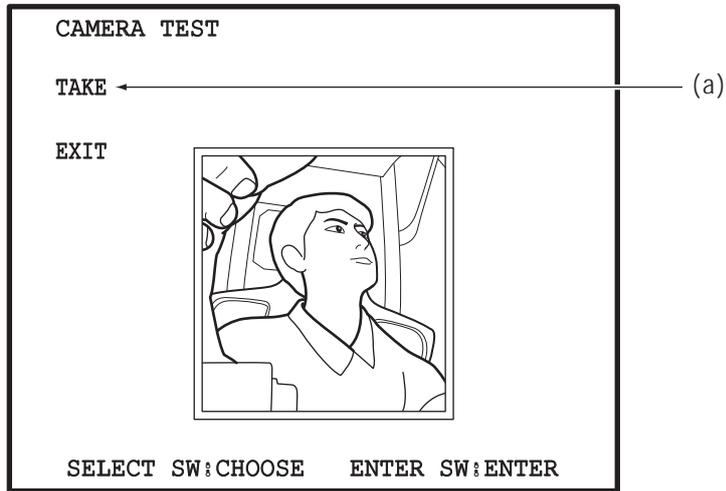
CAMERA TEST screen

Item	Description
(a) TAKE	Takes a still image with the camera. The still image is displayed in the finder. Press the Enter switch again while the still image is displayed to return to the streaming video display.

3 Select EXIT and press the Enter switch to return to the I/O TEST screen.

7-4-5 Projector Test (MONITOR TEST)

This screen is used to make various monitor (projector) adjustments.

1 In the MENU screen, select MONITOR TEST and press the Enter switch. The MONITOR TEST screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks.

```
MONITOR TEST


GRADATION PATTERN                ←──────────── (a)
VIEW ANGLE ADJUST PATTERN        ←──────────── (b)
FOCUS ADJUST PATTERN             ←──────────── (c)
FULL WHITE                       ←──────────── (d)

FACTORY (LENS) PATTERN           ←──────────── (e)
FACTORY (ASSEMBLY) PATTERN       ←──────────── (f)
FACTORY (VALIDATION) PATTERN     ←──────────── (g)


EXIT



   SELECT SW:CHOOSE    ENTER SW:ENTER
```
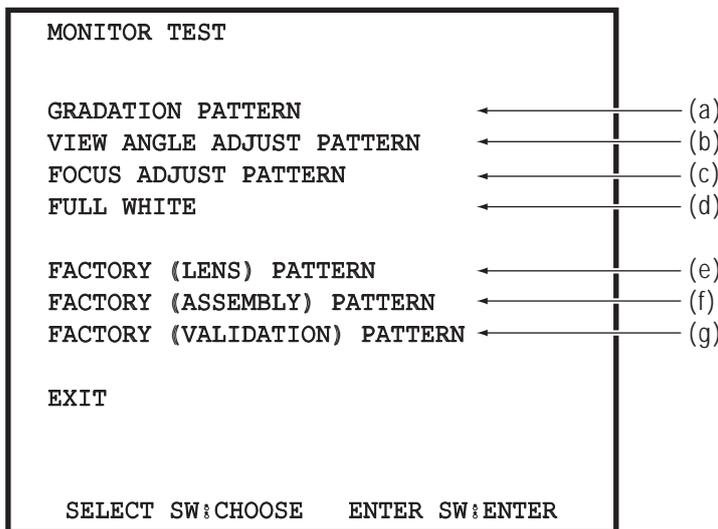
MONITOR TEST screen

	Item	Description
(a)	GRADATION PATTERN	Displays a 16-gradation pattern.
(b)	VIEW ANGLE ADJUST PATTERN	Displays an viewing angle adjustment pattern. See "8B-6-2 Adjusting the Projector Position" on page 155.
(c)	FOCUS ADJUST PATTERN	Displays a focus adjustment pattern.
(d)	FULL WHITE	Displays an all-white pattern.
(e)	FACTORY (LENS) PATTERN	Displays a factory adjustment pattern.
(f)	FACTORY (ASSEMBLY) PATTERN	Displays a factory adjustment pattern.
(g)	FACTORY (VALIDATION) PATTERN	Displays a factory adjustment pattern.

3 Press the Enter switch to go to the test screen for the selected item.

4 Select EXIT and press the Enter switch to return to the MENU screen.

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7-4-6   SOUND TEST

⚠**WARNING**

● **Set the cabinet volume within the range that allows the player to hear alarms and warning announcements within the operating facility.**

This screen is used to set the sound volume and to request sounds (stereo check).

1 In the MENU screen, select SOUND TEST and press the Enter switch. The SOUND TEST screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks.

```
SOUND TEST
[DEFAULT IN GREEN]

VOLUME          GAME    (0~15) 10 ⎤
                ATTRACT (0~15) 10 ⎦        (a)

SEPARATE CHECK  FRONT(L/R) ◄              (b)
(GAME VOLUME)   REAR(L/R) ◄              (c)
                CENTER AND WOOFER ◄       (d)

EXIT


        SERVICE SW:SPEAKER CHECK
  SELECT SW:CHOOSE    ENTER SW:ENTER
```
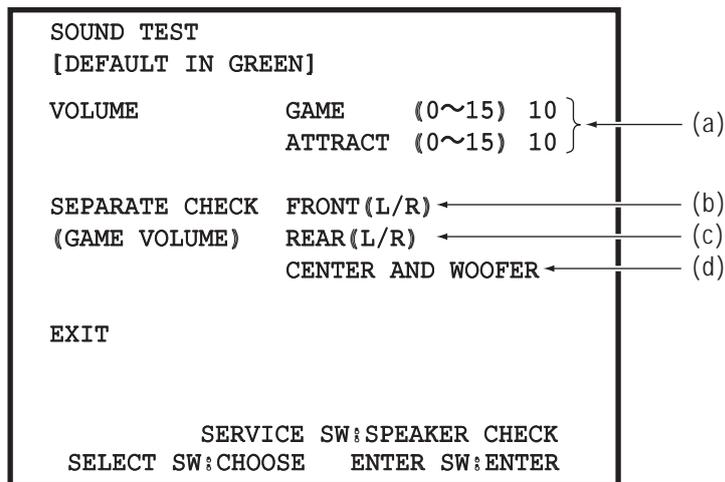
SOUND TEST screen

Item	Description
(a) VOLUME	GAME : Adjusts the overall game volume. (Default: 10) (Setting range: 0 to 15)
	ATTRACT : Adjusts the volume in Attract demo mode. (Default: 10) (Setting range: 0 to 15)
(b) SEPARATE CHECK (GAME VOLUME) SEAT(L/R)	Plays the test sound from the speakers installed on the seat.
(c) SEPARATE CHECK (GAME VOLUME) SIDE(L/R)	Plays the test sound from the speakers installed on the right and left of the cabinet.
(d) SEPARATE CHECK (GAME VOLUME) CENTER AND WOOFER	Plays the test sound from the speakers installed below the seat surface.

3 Press the Enter switch to enter the selected item.
  * When the Service switch is pressed at the SOUND TEST screen, the test sound is played from each of the speakers in order from the speakers installed in the cabinet.

4 After entering the selection, flip the Select switch up or down to change the item setting.

5 After changing the setting, press the Enter switch to return to the item selection.

6 Select EXIT and press the Enter switch to return to the MENU screen.

7-4-7   Displaying Game Data (BOOKKEEPING)

This screen displays the operating time, play count and other game related data.

1 In the MENU screen, select BOOKKEEPING and press the Enter switch. The BOOKKEEPING screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks.

```
BOOKKEEPING


NOW     04/Oct/2013 FRI 11:17:26 (UTC)
SINCE   30/Sep/2013 MON 19:46:52 (UTC)


POWER ON TIME          000078:05:09  ←————— (a)
TOTAL PLAY TIME        000002:25:39  ←————— (b)
AVE.PLAY TIME          000000:02:41  ←————— (c)
PLAY ON RATIO                 3.11%  ←————— (d)
PLAY COUNT                       54  ←————— (e)
RETRY COUNT                       0  ←————— (f)
EXTRA COUNT                       0  ←————— (g)
INPUT1 COUNT                    108  ←————— (h)
INPUT2 COUNT                      0  ←————— (i)
TOTAL CREDIT COUNT              108  ←————— (j)
SERVICE SW COUNT                  0  ←————— (k)


ERROR LOG                         ←————— (l)
BOOKKEEPING INITIALIZE            ←————— (m)



EXIT
   SELECT SW:CHOOSE    ENTER SW:ENTER
```
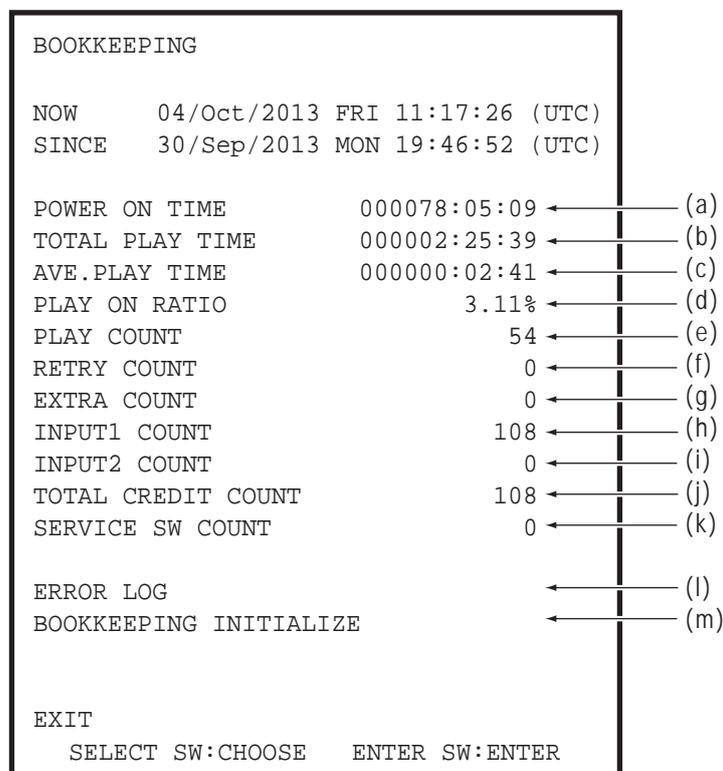
BOOKKEEPING screen

	Item	Description
(a)	POWER ON TIME	Cumulative total power on time, displayed in real time
(b)	TOTAL PLAY TIME	Cumulative total play time
(c)	AVE.PLAY TIME	Average play time
(d)	PLAY ON RATIO	Utilization ratio [Cumulative total play time/Cumulative total power on time]
(e)	PLAY COUNT	Total normal mission count
(f)	RETRY COUNT	Total retry count
(g)	EXTRA COUNT	Total extra mission count
(h)	INPUT1 COUNT	Coin input (Channel 1)
(i)	INPUT2 COUNT	Coin input (Channel 2)
(j)	TOTAL CREDIT COUNT	Total of INPUT1 + INPUT2
(k)	SERVICE SW COUNT	Total number of service credits
(l)	ERROR LOG	Used to check the error history, error count and other information.
(m)	BOOKKEEPING INITIALIZE	Initializes the bookkeeping contents. (YES: Execute initialization, NO: Cancel initialization)

* The time is displayed as the coordinated universal time (UTC). (Online version only)

3 Press the Enter switch to enter the selected item.

4 Select EXIT and press the Enter switch to return to the MENU screen.

(1) ERROR LOG

This screen is used to check the error history.

1 In the BOOKKEEPING screen, select ERROR LOG and press the Enter switch. The ERROR LOG screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks. Up to 20 of the most recent errors along with the date and time of occurrence can be viewed with 10 errors per page.
The most recent error appears at the top of ERROR LOG (1/2), and the oldest error appears at the bottom of ERROR LOG (2/2).

```
ERROR LOG
1/2

1  1-1 COIN ERROR 1       04/Oct/2013 FRI 14:12:53(UTC)
2  1-2 COIN ERROR 2       04/Oct/2013 FRI 14:12:43(UTC)
3  1-1 COIN ERROR 1       04/Oct/2013 FRI 14:12:42(UTC)
4  1-1 COIN ERROR 1       04/Oct/2013 FRI 14:12:33(UTC)
5  1-2 COIN ERROR 2       04/Oct/2013 FRI 13:22:49(UTC)
6  1-1 COIN ERROR 1       04/Oct/2013 FRI 13:22:40(UTC)
7  1-1 COIN ERROR 1       04/Oct/2013 FRI 13:22:28(UTC)
8  3-1 I/O ERROR 1        01/Oct/2013 TUE 15:21:28(UTC)
9  1-1 COIN ERROR 1       01/Oct/2013 TUE 11:46:08(UTC)
10 19-22 USB DONGLE ERROR 01/Oct/2013 TUE 10:32:56(UTC)


NEXT  ←————————————————————————————————————— (a)
BACK  ←————————————————————————————————————— (b)

EXIT

        SELECT SW:CHOOSE    ENTER SW:ENTER
```

ERROR LOG screen

Item	Description
(a)　NEXT	Switches to the next page. (When selected at page 2, the display returns to page 1.)
(b)　BACK	Returns to the previous page. (When selected at page 1, the display switches to page 2.)

3 Press the Enter switch to enter the selected item.

4 Select EXIT and press the Enter switch to return to the BOOKKEEPING screen.

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7-4-8　Other Options (OTHERS)

This screen is used to initialize various settings.

1　In the MENU screen, select OTHERS and press the Enter switch. The OTHERS screen appears.

2　Flip the Select switch up or down to select the item to be changed. The selected item blinks.

```
OTHERS
[DEFAULT IN GREEN]

ROM    DAC100-2-NA-MPRO-A01 ←──────── (a)
       (2013-09-30 16:49:22)


CLOCK  04/Oct/2013 FRI 11:24:33 (UTC)← (b)
S/N    271611-100001 ←──────────────── (c)


LANGUAGE         ENG ←──────────────── (d)
MAINTENANCE TIME SETTING ←──────────── (e)
CLOCK SETTING ←─────────────────────── (f)
BACKUP MEMORY INITIALIZE ←──────────── (g)


EXIT
  SELECT SW:CHOOSE    ENTER SW:ENTER
```
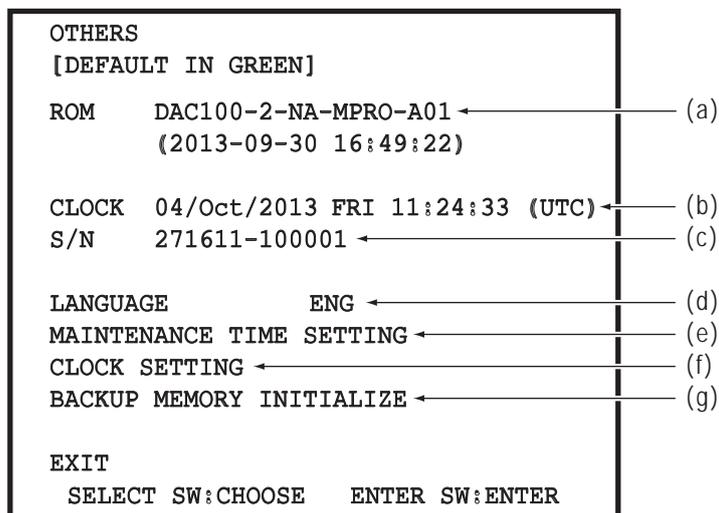
OTHERS screen

	Item	Description
(a)	ROM	Displays the version of the program on the hard disc.
(b)	CLOCK	Displays the clock.
(c)	S/N	Displays the serial number of the software.
(d)	LANGUAGE	Used to select the language.
(e)	MAINTENANCE TIME SETTING	Sets the maintenance time for automatically restarting the game PC board.
(f)	CLOCK SETTING	Used to set the clock.
(g)	BACKUP MEMORY INITIALIZE	Deletes the various settings. (YES: Execute initialization, NO: Cancel initialization)

* This setting is available only when using the offline version of the software.

3　Press the Enter switch to enter the selected item.

4　Select EXIT and press the Enter switch to return to the MENU screen.

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(1)   Setting the Clock (CLOCK SETTING)

Used to set the clock.

The clock can be set only when the clock is incorrect at machine start-up. (The clock can be set anytime when using the offline version of the software.)

When using the online version of the software, this option is not available in the normal test mode. (The option is not displayed.)

1   In the OTHERS screen, select CLOCK SETTING and press the Enter switch. The CLOCK SETTING screen appears.

2   Flip the Select switch up or down to select the item. The selected item blinks.

```
CLOCK SETTING

CLOCK  04/Oct/2013 FRI 11:24:45

YEAR         13+2000  ←──────────── (a)
MONTH        10 Oct   ←──────────── (b)
DAY          04  ←──────────────── (c)
HOUR         11  ←──────────────── (d)
MINUTE       24  ←──────────────── (e)

SET

EXIT

  SELECT SW:CHOOSE   ENTER SW:ENTER
```
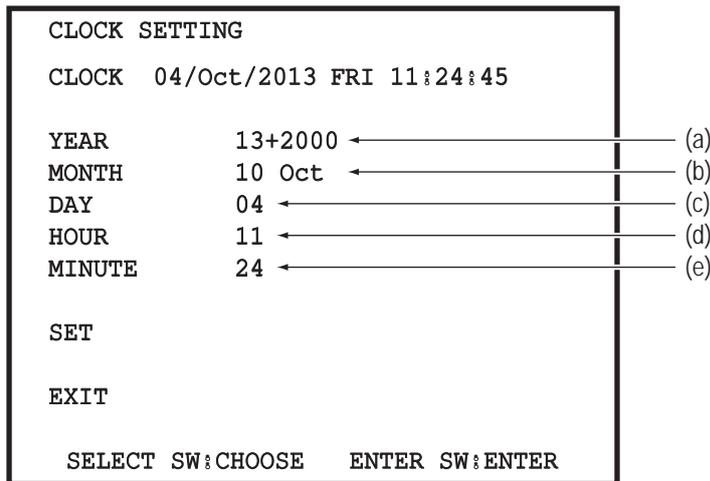
CLOCK SETTING screen

Item	Description
(a) YEAR	Sets the year.
(b) MONTH	Sets the month.
(c) DAY	Sets the day.
(d) HOUR	Sets the hour.
(e) MINUTE	Sets the minute.
(f) SET	Sets the time. Applies the values of YEAR to MINUTE above to the clock.

3   Press the Enter switch to enter the selected item.

4   After entering the selection, flip the Select switch up or down to change the item setting.

5   After changing the setting, press the Enter switch to return to the item selection.

6   Select EXIT and press the Enter switch to return to the MENU screen.

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(2)   Setting the Maintenance Time (MAINTENANCE TIME SETTING)

This screen is used to set the maintenance time at which the game PC board is automatically restarted in order to reduce the load on the game PC board when operating the machine continuously for long times.

1   In the OTHERS screen, select MAINTENANCE TIME SETTING and press the Enter switch. The MAINTENANCE TIME SETTING screen appears.

2   Flip the Select switch up or down to select the item. The selected item blinks.

```
MAINTENANCE TIME SETTING

CLOCK  04/Oct/2013 FRI 11:10:00(UTC)

MAINTENANCE TIME  07:00(UTC)  ←          (a)

HOUR       07  ←                         (b)
MINUTE     00  ←                         (c)

SET  ←                                   (d)




EXIT
  SELECT SW:CHOOSE    ENTER SW:ENTER
```
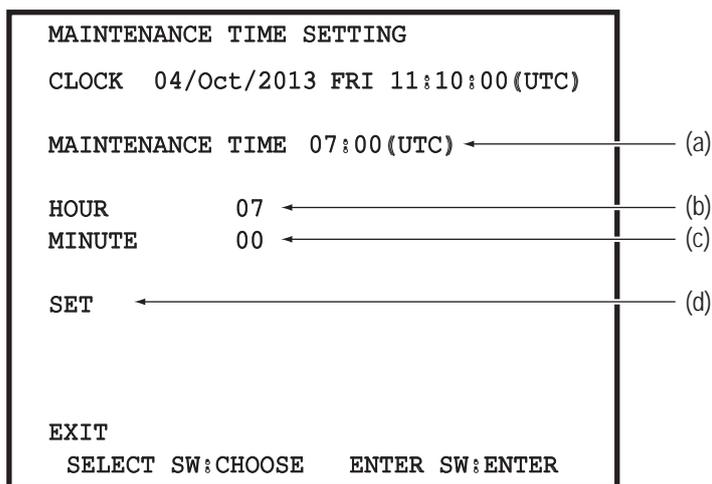
MAINTENANCE TIME SETTING screen

Item	Description
(a) MAINTENANCE TIME	Displays the maintenance time. (Default: 07:00) In the online version of the software, the time is displayed as the coordinated universal time (UTC).
(b) HOUR	Hour setting
(c) MINUTE	Minute setting
(d) SET	Sets the maintenance time. This reflects the HOUR and MINUTE values to the maintenance time.

3   Press the Enter switch to enter the selected item.

4   After entering the selection, flip the Select switch up or down to change the item setting.

5   After changing the setting, press the Enter switch to return to the item selection.

6   Select EXIT and press the Enter switch to return to the OTHERS screen.

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7-4-9 NETWORK STATUS

* This screen is not used for U.S. and European specifications.

This screen is used to check the network status.

* The settings on this page are available only when using the online version of the software.

1 In the MENU screen, select NETWORK STATUS and press the Enter switch. The NETWORK STATUS screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks.

```
NETWORK STATUS

PCB ID                ABGN-1100001  ⎫
GAME ID               1.0           ⎪
IP ADDRESS            000.000.000.000
BROADCAST             000.000.000.000
SUBNETMASK            000.000.000.000  ⎬← (a)
PRIMARY DNS           000.000.000.000
NBLINE ROUTER         OK            ⎪
NBLINE AUTH           OK            ⎪
BNG SERVER            NONE          ⎭

The network is not available now.        ⎫
If the offline condition lasts 9 days,   ⎬← (b)
you will be unable to start the game.    ⎭

NETWORK STATUS CHECK    START  ←──────── (c)

EXIT

SELECT SW : CHOOSE    ENTER SW : ENTER
```
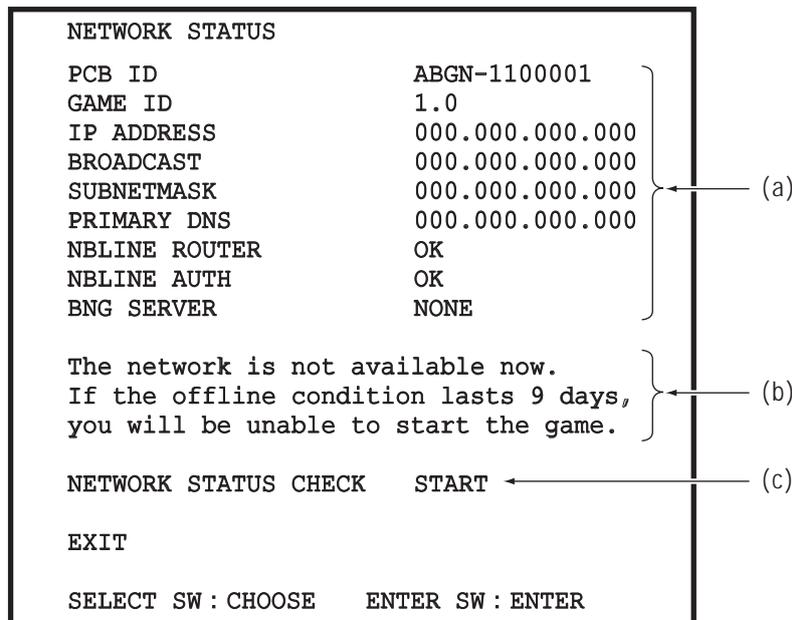
NETWORK STATUS screen

Item	Description
(a) Network status displays	The following items are displayed. • PCB ID: Serial ID for NBLINE authentication • GAME ID: Game ID for NBLINE authentication • IP ADDRESS: IP address of this cabinet • BROADCAST: IP address of default gateway • SUBNETMASK: Subnet mask setting value • PRIMARY DNS: IP address of primary DNS • NBLINE ROUTER: Connection status with router • NBLINE AUTH: NBLINE authentication results • BNG SERVER: Connection status with game server

(b) Offline operation warning messages	The following messages are displayed when the machine is operating in offline mode.
	• During offline operation
	  The network is not available now.
	  If the offline condition lasts xx days, (hours)
	  you will be unable to start the game.
	  (The remaining offline operation time is displayed in xx.)
	• When offline operation is not possible (when the remaining offline operation time has reached zero)
	  There is an error with the network so the game can't start.
	  Please check the network according to the manual.

(c) NETWORK STATUS CHECK	Reacquires the network information.

3 Press the Enter switch to enter the selected item.

4 Select EXIT and press the Enter switch to return to the MENU screen.

7-4-10   NBLINE POINTS   * This screen is not used for U.S. and European specifications.

This screen is used to check the NBLINE points.
* The settings on this page are available only when using the online version of the software.

1 In the MENU screen, select NBLINE POINTS and press the Enter switch. The NBLINE POINTS screen appears.

2 Flip the Select switch up or down to select the item to be changed. The selected item blinks.

```
NBLINE POINTS

PCB ID                ABGN-1100001  ←——— (a)

NBLINE AUTH           OK  ←——————— (b)
POINT REMAIN          256 ←——————— (c)


[LOW NBLINE POINTS]
Playable NBLINE point is low.  ←——— (d)
Please charge NBLINE points.


CHECK SERVER POINTS  ←——————— (e)

EXIT

SELECT SW : CHOOSE    ENTER SW : ENTER
```
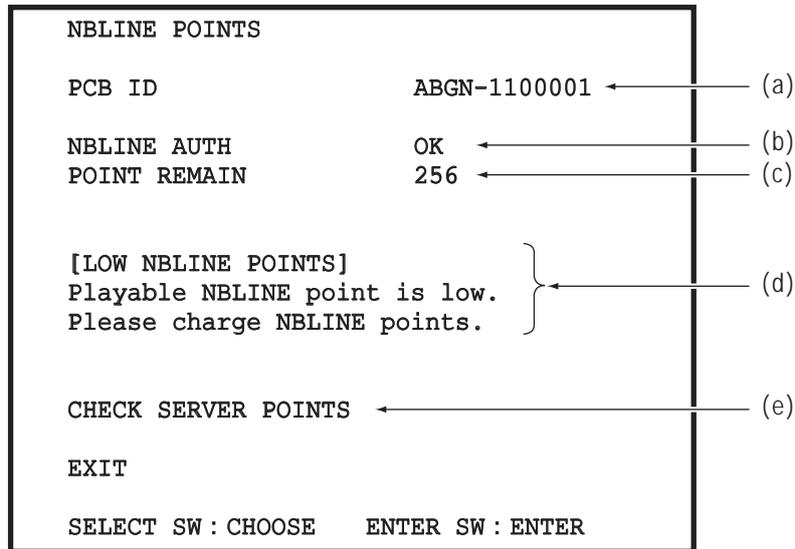
NBLINE POINTS screen

Item	Description
(a) PCB ID	Displays the serial ID for NBLINE authentication
(b) NBLINE AUTH	Displays the NBLINE authentication results.
(c) POINT REMAIN	Displays the remaining number of NBLINE points held by the machine.
(d) Alert and error message	When the number of NBLINE points becomes low or runs out, the following messages are displayed. • When the remaining number of NBLINE points is 400 points or less [LOW NBLINE POINTS] Playable NBLINE point is low. Please charge NBLINE points. • When there are insufficient NBLINE points [22-3 ERROR] Playable NBLINE point has run out. Please charge NBLINE points. Please check if there is a network error or not on the NETWORK STATUS screen.
(e) CHECK SERVER POINTS	Reacquires the NBLINE point information.

3 Press the Enter switch to enter the selected item.

4 Select EXIT and press the Enter switch to return to the MENU screen.

7-5   About the Network   * Connection to a network is not required for U.S. and European specifications.

When using the online version of the software, this machine requires connection to the network (NBLINE) to operate. (*1)

When communication trouble or other trouble occurs in the network connection, the machine operates in offline mode.

The machine can be operated for 240 hours (10 days) (*2) in the offline condition to enable game play even when network trouble occurs for short periods.

However, when this time limit is exceeded, new games cannot be played.

In this case, "22-1 ERROR" is displayed on the screen.

(When the limit of 240 hours (10 days) is exceeded during game play, game play can continue until the game is over.)

To enable game play again, resolve the network trouble and connect to NBLINE. (*3)

*1 The network connection status can be checked in Test mode. (See "7-4-9 NETWORK STATUS" on page 48.)

*2 The remaining offline operation time can be checked in Test mode. (See "7-4-9 NETWORK STATUS" on page 48.)

*3 Refer to the error display for network troubleshooting. (See "8B-3 Error Displays" on page 89.)

When trouble occurs in the network connection, "MS" appears in the upper left corner of the Attract screens.

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7-6   Cleaning

NOTICE
- Do not use thinner, benzene, gasoline or other organic solvents. This may degrade the materials.

(1)   Cleaning the Screen Surface

Wipe away any dirt or dust on the screen surface using a soft cloth moistened with a small amount of water, then wipe dry using a dry soft cloth.

Oval dome
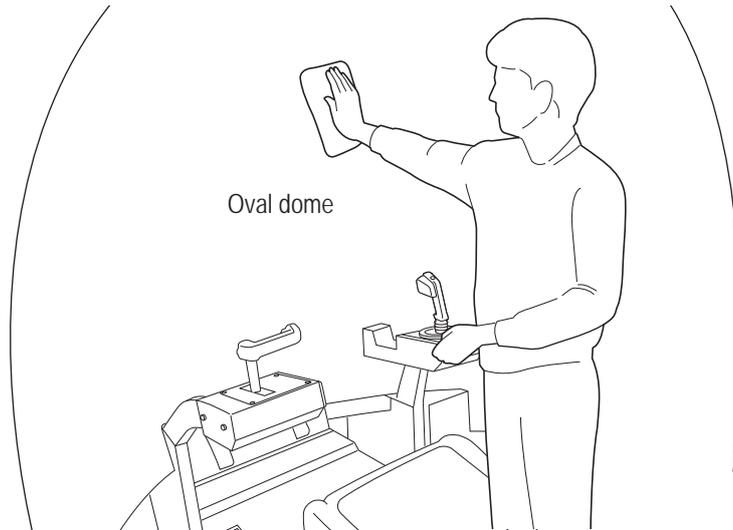
(2)   Door and Rear Window

Wipe away any dirt or dust using a dry soft cloth. When the door and rear window become extremely dirty, wipe away the dirt using a cloth moistened with a small amount of water, then wipe dry using a dry soft cloth.

Rear window

Door

Operation
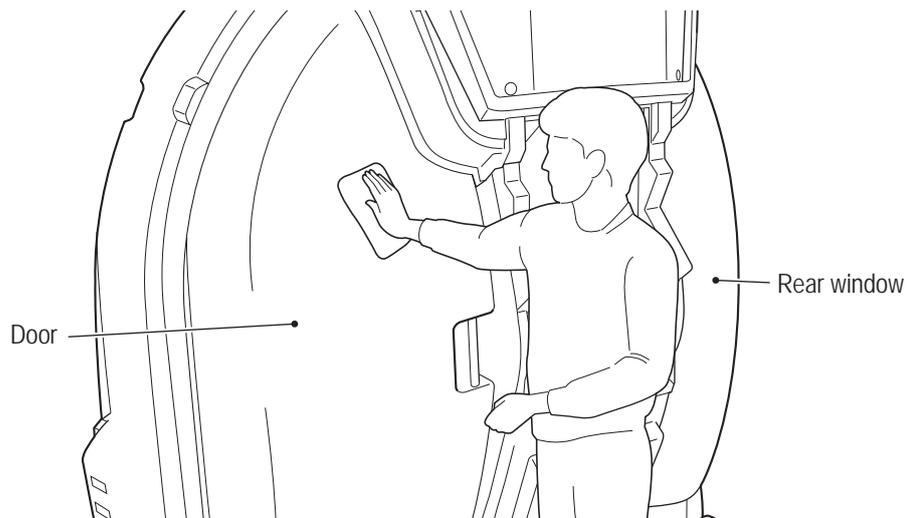
(3) Cleaning the Projector Filters

> **NOTICE** ● **Regularly clean the projector filters approximately once per week. Dust and dirt accumulating on the filters may prevent adequate ventilation and result in a projector error.**

1 Remove the filter F and filter R. (See "8B-6-1 (3) Replacing the Filter F (Projector)" on page 150 and "8B-6-1 (4) Replacing the Filter R (Projector)" on page 151.)

2 Clean the dust and dirt from the filter F and filter R surfaces.
Wash with water and allow to dry thoroughly, or use a vacuum cleaner, being careful not to suck the filter into the vacuum cleaner.
When a filter becomes torn or has large holes or other damage, replace it with a new one.

3 After cleaning, install the filters by reversing the procedure.

(4) Cleaning the Lens Cover

Open the projector cover and front lid of the projector assembly (see "8A-1-1 (5) Installing the Projector Unit" on page 64), and wipe away any dirt or dust on both sides of the lens cover with a dry cloth. When the door and rear window become extremely dirty, wipe away the dirt using a cloth moistened with a small amount of water, then wipe dry using a dry soft cloth.
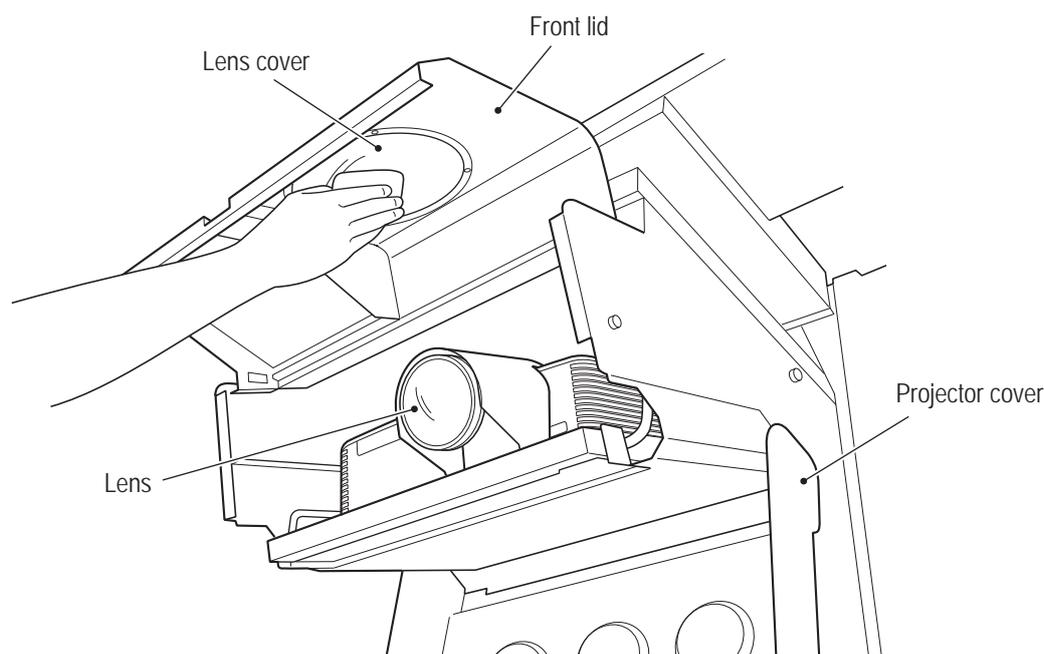
(5) Cleaning the Projector Lens

Open the projector cover and front lid of the projector assembly (see "8A-1-1 (5) Installing the Projector Unit" on page 64), and remove any dirt or dust from the projector lens using a dedicated lens cleaning kit such as a commercially available eyeglass cleaning cloth or eyeglass cleaner.

> **NOTICE** ● Be sure to use a dedicated lens cleaner to clean the lens surface.

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7-7 Projector Lamp (Lamp Unit) Life

It is recommended to replace the projector lamp (lamp unit) promptly to avoid inconveniencing players or other customers.

The projector lamp (lamp unit) is a consumable part, and may stop lighting up or the brightness may drop before the lamp reaches the end of its life. The lamp life time noted below is approximate, and is not a guaranteed value.

● **Projector model number: LVP-FD630 (V1)**

Lamp life: 5,000 hours

When the lamp reaches the end of its life, the projector stops and the screen goes blank. The game cannot be operated thereafter until the projector lamp (lamp unit) is replaced. In order to avoid this situation, be sure to replace the projector lamp (lamp unit) during the "Replacement time" status noted in the table below.

* When the lamp reaches the end of its life, the machine stops even if a customer is currently playing a game.

Behavior when the power switch is turned on

Status	Lamp operation time	Screen display after the game PC board is started up
Caution urged	3,750 to 4,750 hours	The projector lamp is due for replacement soon.
Replacement time	4,750 to 5,000 hours	Please replace the projector lamp.
Operation not possible	5,000 hours or more	The screen is blank and the back lamp is lit up red. (See (2) Projector Errors" on page 90.)

* Until the lamp operation time reaches 5,000 hours, the screen display at game start-up can be skipped until the next start-up by pressing the missile button or squeezing the machine gun button.

See "8B-6-1 (2) Replacing the Projector Lamp (Lamp Unit)" on page 143 for the replacement procedure.

NOTICE   ● **Use the lamp that is specified by NAMCO BANDAI Games, Inc. Using a non-specified lamp may damage the projector unit.**

7-8   24-Hour Continuous Operation

This machine has a maintenance function that automatically restarts the game PC board in order to reduce the load on the game PC board when operating the machine continuously for long times.

* The restart time is approximately 3 minutes.

When operating the machine continuously for long times such as 24-hour operation, refer to "(2) Setting the Maintenance Time (MAINTENANCE TIME SETTING)" on page 47 and set the maintenance time.

* The game PC board automatically restarts (approximately 3 minutes) when Attract mode is entered next after the maintenance time is reached, so set the time to a time period during which there is usually little game play.

NOTICE
- There is no need to use this function when the power is turned on and off once or more per day, but set the maintenance time to a time period other than during operating hours to prevent the game PC board from restarting during operating hours.

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8.   Technician's Manual – Must be performed by a technician –

※Chapter 8 (page 56 to page 164) of the Operation Manual is for use by service technicians only.
The procedures described in these pages must only be performed by qualified service personnel.

8A.   Installation and Assembly

8A-1   Assembly

8A-1-1   Assembling the Machine – Must be performed by a technician –

(1)   Connecting the Front Assembly and Rear Assembly

⚠ CAUTION

● **Be sure to secure sufficient work space.**

▶**NOTICE**   ● **If the door was secured using a cord or rope to restrain it from opening during** transport, remove the restraint beforehand so that the door can open and close.

1   Bring the front assembly and rear assembly close to each other.

2   Remove the two Torx bolts (M5 x 12) and remove the side flange guard R. Use the service key to unlock the PCB roof of the front assembly. Remove the five Torx bolts (M5 x 12) and remove the PCB roof.

Torx bolt (M5 x 12)
Side flange guard R
Front assembly
Service key
Torx bolt (black) (M5 x 12)
PCB roof

– Must be performed by a technician –
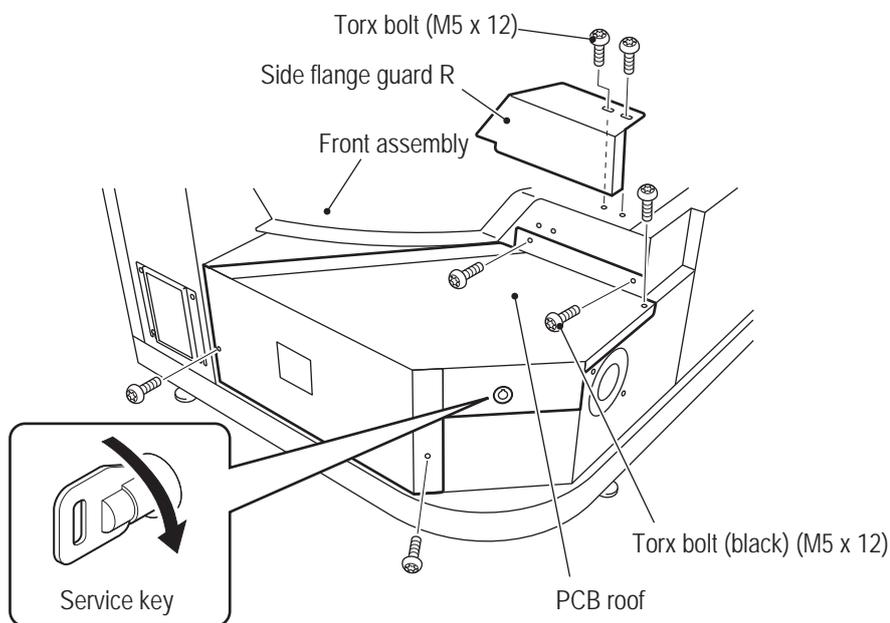
3 Remove the two flange socket bolts (M3 x 10) from the game PC board and remove the PCB duct.

Flange socket bolt (M3 x 10)

PCB duct

Game PC board
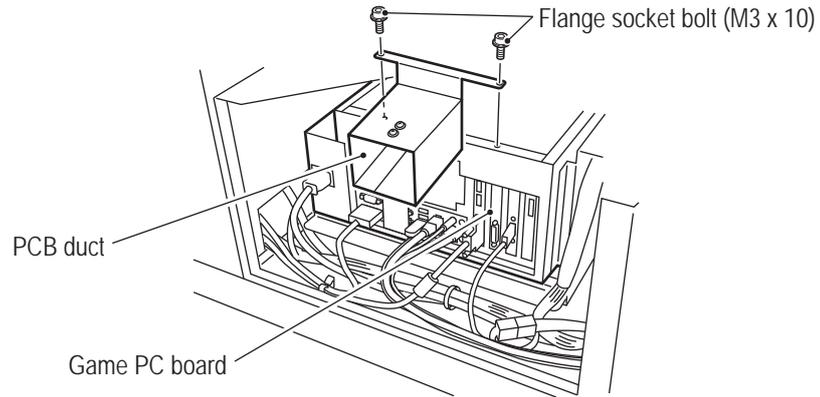
4 Connect the four connectors from the front assembly side to the connectors of the rear assembly, and lead the two connectors from the rear assembly side into the front assembly.
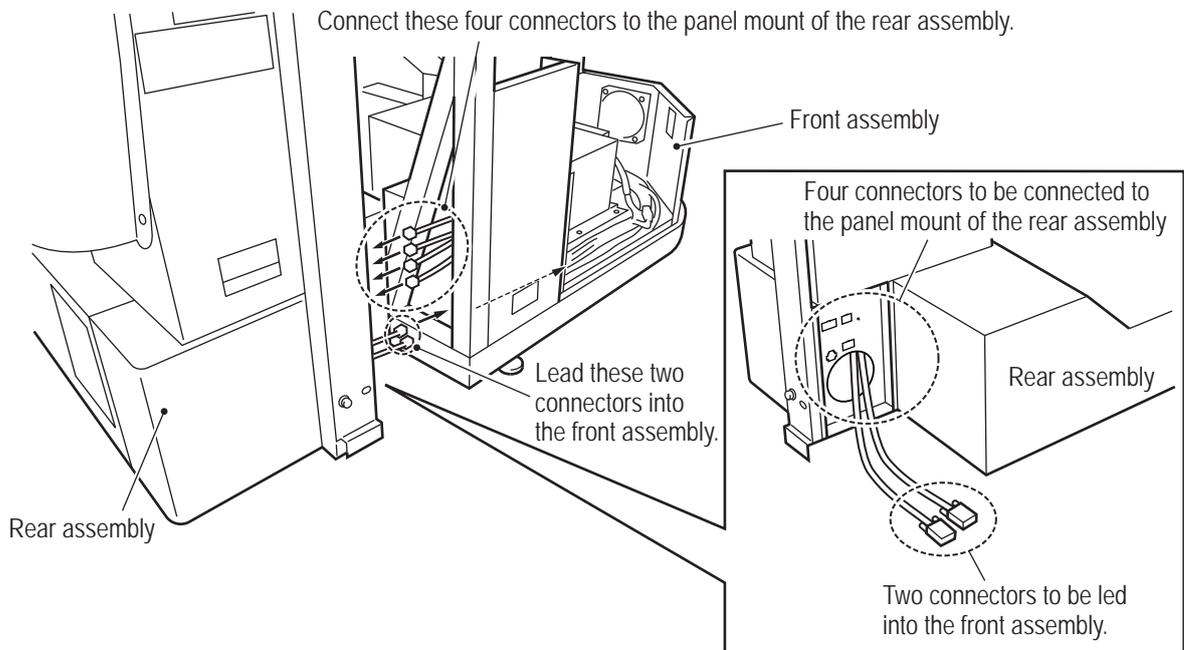
Connect these four connectors to the panel mount of the rear assembly.

Front assembly

Four connectors to be connected to the panel mount of the rear assembly

Lead these two connectors into the front assembly.

Rear assembly

Rear assembly

Two connectors to be led into the front assembly.

– Must be performed by a technician –

5 Connect the two connectors led into the front assembly to the connectors on the game PC board panel. Then, insert the USB dongle into the USB 3 slot.

Projector communication
Serial 1
(Connect to SERIAL1)

USB dongle

Game PC board

Projector video
VIDEO 1
(Connect to DVI1)

Front assembly

Rear assembly

Connector
USB dongle
Connector
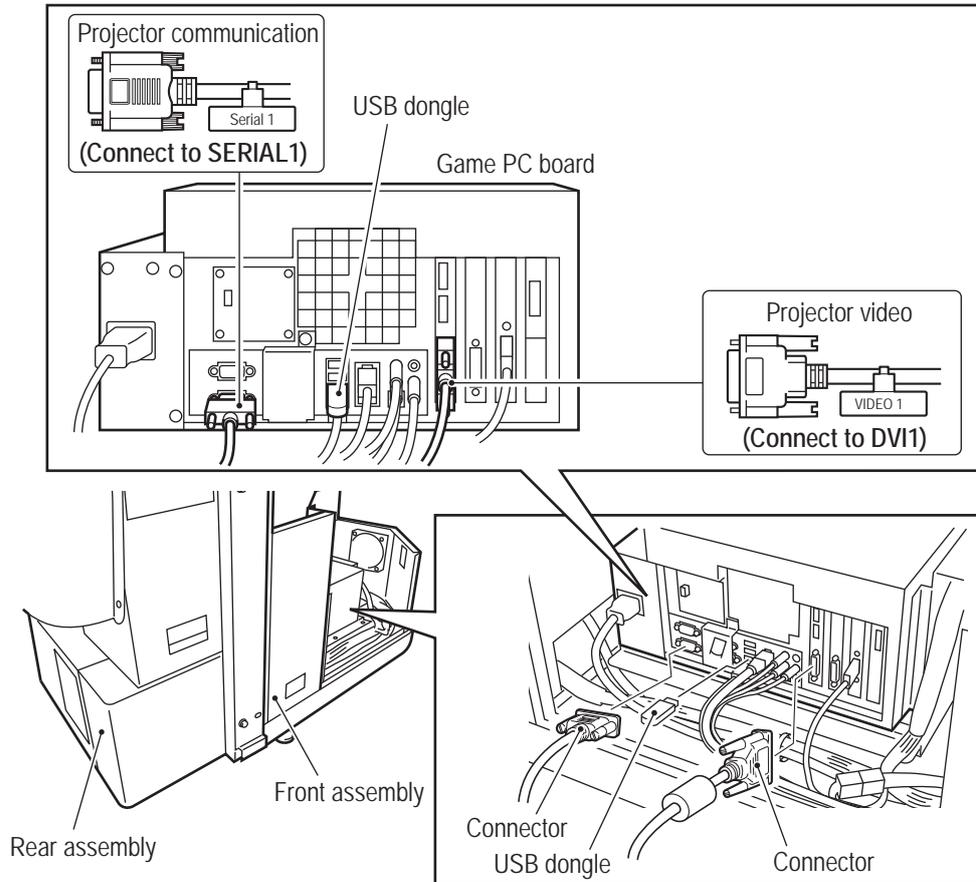
6 Bundle the rear side cables together using the clamps bundling the front side cables.

Clamp
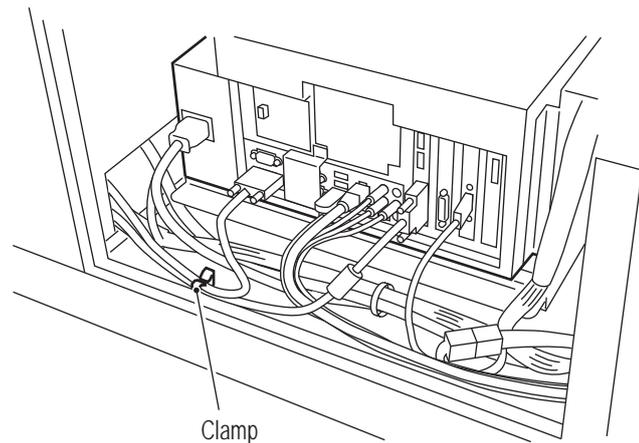
7 Install the PCB duct and PCB roof by reversing the procedure in steps **2** and **3**.

– Must be performed by a technician –

8   Push the front assembly and rear assembly together and use two supplied flange socket bolts (M8 x 16) to temporarily secure the bracket on the rear side of the opened door.

Bracket

Door

Flange socket bolt (M8 x 16)
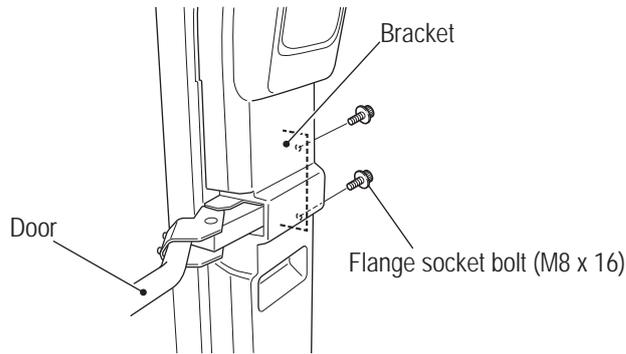
NOTICE   ● **When pushing the front and rear assemblies together, the cover bracket protrusions of the rear assembly may contact the front assembly depending on the floor condition or other factors, so push strongly while being careful not to pinch your hands or other items.**

9   Align the base joint on the front assembly side and the bolt holes on the rear assembly side, and use two supplied flange socket bolts (M8 x 16) to temporarily secure the assemblies.
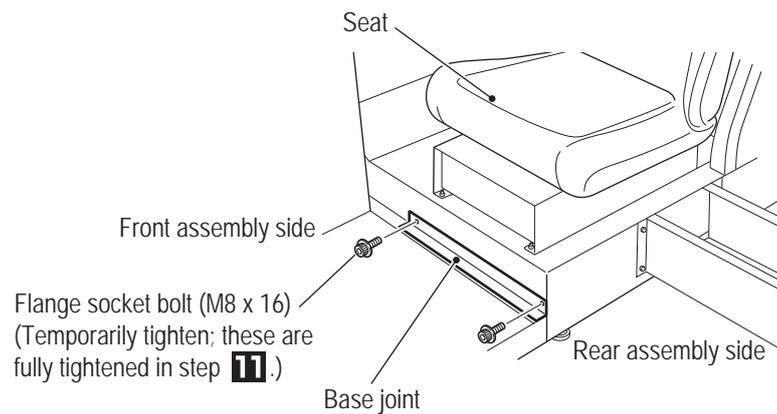
Seat

Front assembly side

Flange socket bolt (M8 x 16)
(Temporarily tighten; these are fully tightened in step **11**.)

Base joint

Rear assembly side

1
2
3
4
5
6
7
8A
8B
9
10
11

Installation and Assembly

Test Mode

Troubleshooting

– Must be performed by a technician –

10 Use six supplied flange socket bolts (M8 x 16) to temporarily secure the supplied side joint (L). Then, use six supplied flange socket bolts (M8 x 16) to temporarily secure the supplied side joint (R).

Side joint (L)

Slot

Side joint (R)

Use the slot positions and fold shapes to identify L and R. Be careful not to mistake L and R. The slots are located on the front assembly.

Temporarily secure using flange socket bolts (M8 x 16)

Side joint (L) (The opposite side is the side joint (R).)

Rear assembly door side

Front assembly dome side

Flange socket bolt (M8 x 16) (Temporarily tighten; these are fully tightened in step **11**.)

11 Hold the front and rear assemblies together so that there is no gap between the joining surfaces in the location shown in the figure, and fully tighten the twelve flange socket bolts (M8 x 16) temporarily tightened in step **10**, the two flange socket bolts (M8 x 16) temporarily tightened in step **9**, and the two flange socket bolts (M8 x 16) temporarily tightened in step **8**.

Rear assembly

Front assembly

Cover bracket

Do not leave a gap

60
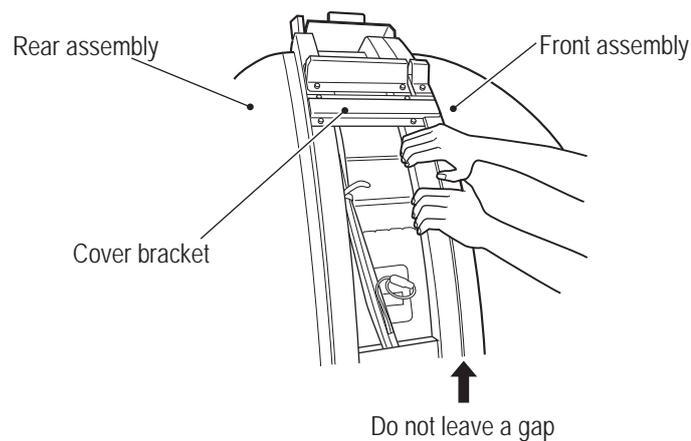
(2) Removing the Rear Joint Frame

Remove the six flange socket bolts (M8 x 16), and remove the rear joint frame.

> **NOTICE**
> - The rear joint frame is a required part during disassembly and transportation, so be **sure to keep it together with the bolts in a safe place.**

Rear assembly

Rear joint frame

Flange socket bolt (M8 x 16)
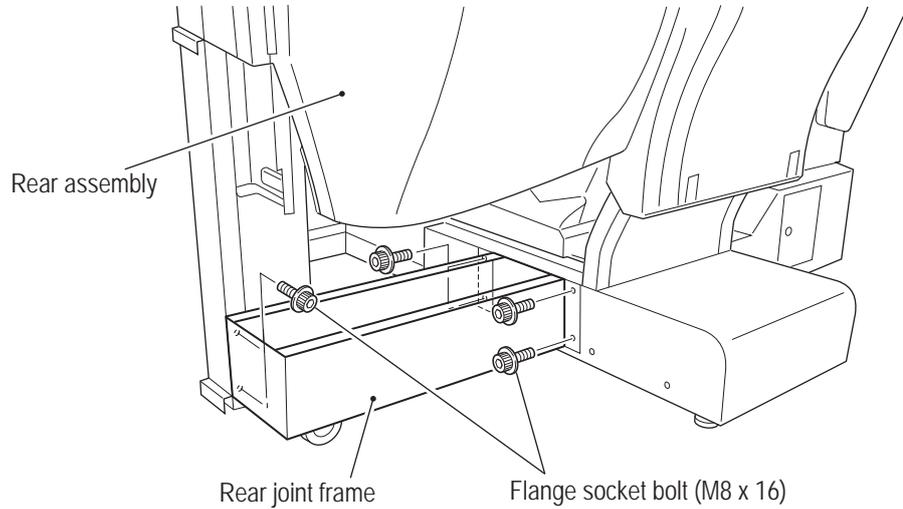
(3) Installing the Molded Covers

1 Use four supplied Torx bolts (black) (M5 x 12) to install the supplied lower side cover (L).
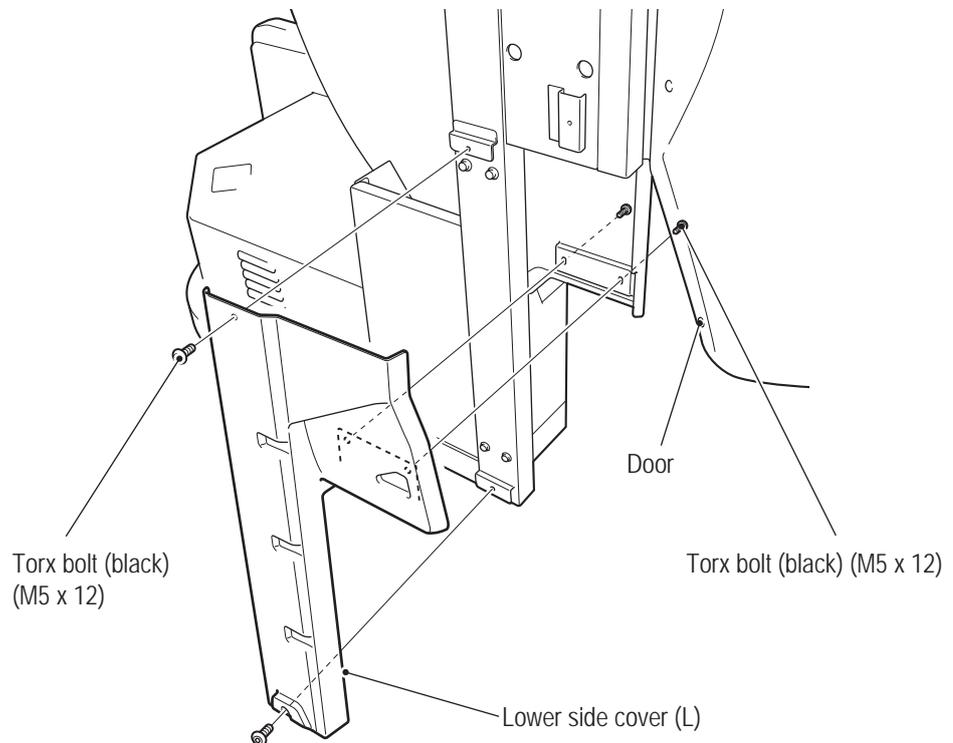
Torx bolt (black)
(M5 x 12)

Door

Torx bolt (black) (M5 x 12)

Lower side cover (L)

– Must be performed by a technician –

2 Use four supplied Torx bolts (black) (M5 x 12) to install the supplied lower side cover (R).

Torx bolt (black) (M5 x 12)

Lower side cover (R)
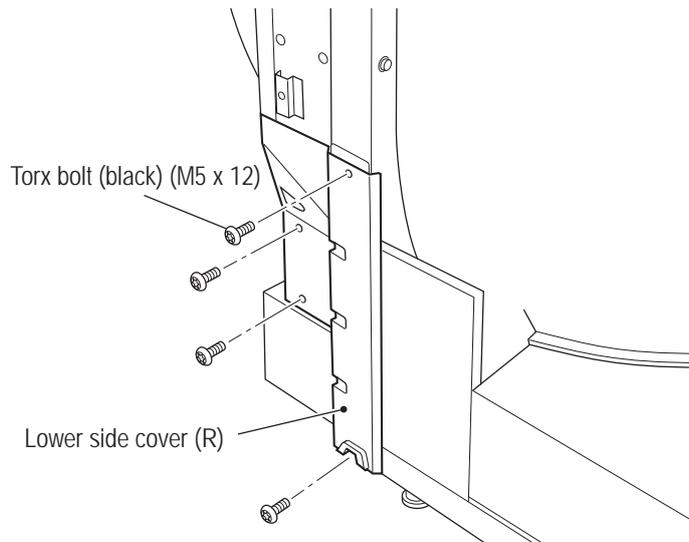
3 Hook the slot at the top of the supplied side cover (L) onto the hook, then install the side cover (L) and secure it using five supplied Torx bolts (silver) (M5 x 12) and two flat washers (ø5 x 16). Perform the same procedure to also install the side cover (R).

When installing the side cover (R), insert it under the top cover.

Top cover

Slot in side cover (R)

Hook

Hook

Side cover (R)

Side cover (L)

Torx bolt (silver) (M5 x 12)

Torx bolt (silver) (M5 x 12)

Flat washer (ø16 x ø5)

Flat washer (ø16 x ø5)

Front assembly

Front assembly
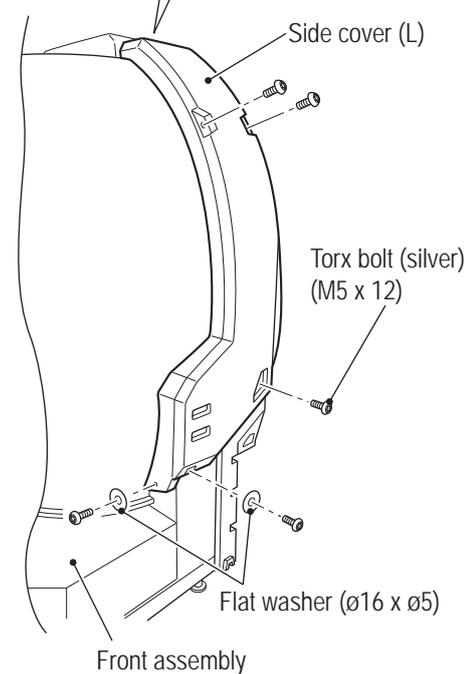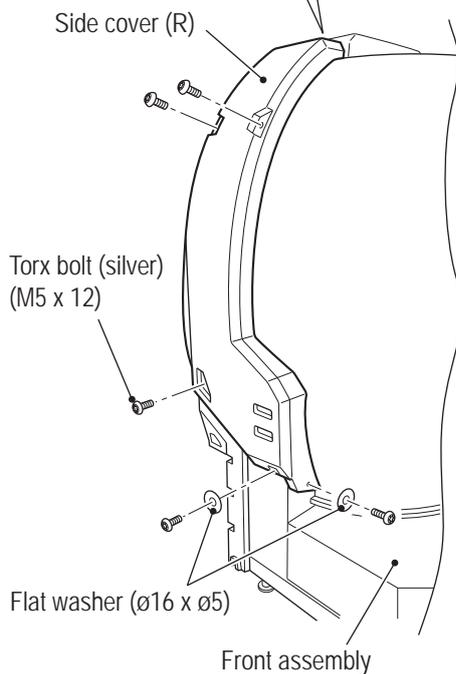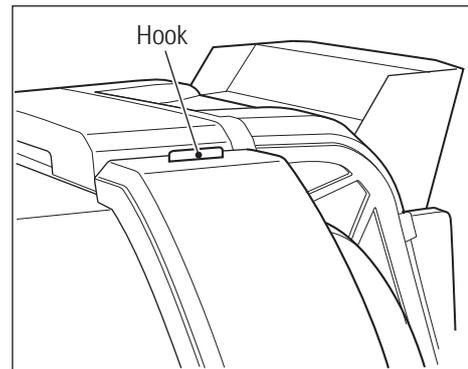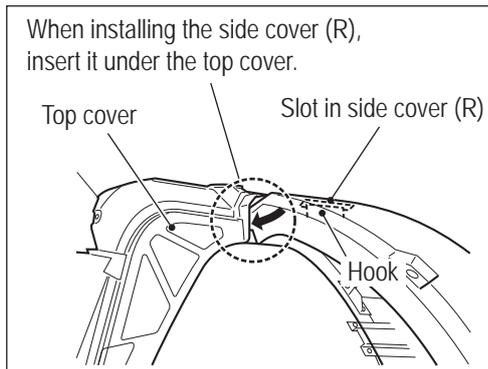
(4) Level Adjuster Adjustment

1 After the machine has been installed in accordance with "5-1 Installation Conditions" on page 16, lower the seven level adjusters until the casters are at a height of approximately 5 mm from the floor.
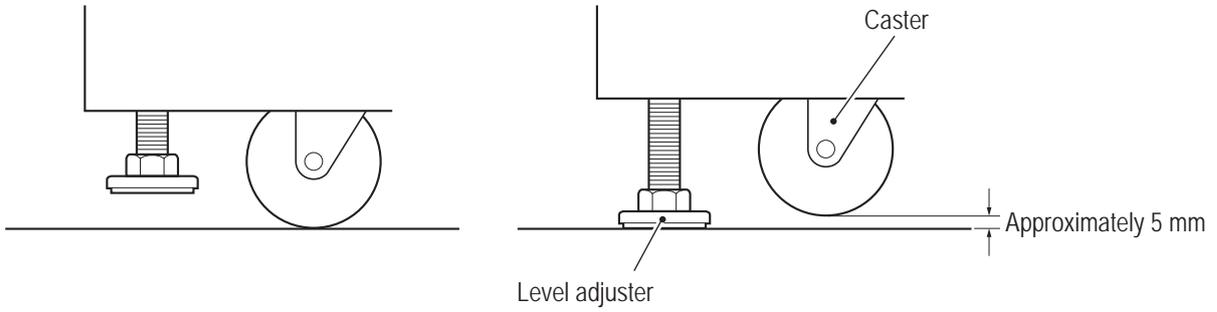
Caster

Approximately 5 mm

Level adjuster

– Must be performed by a technician –

(5)   Installing the Projector Unit

⚠ CAUTION

● **The projector unit weighs approximately 10 kg. Be very careful when performing installation.**

NOTICE ● **The projector unit packing materials are used when moving and transporting the**
projector unit, so do not dispose of these materials.

1   Remove the two flange button bolts (M4 x 10) from both sides of the projector cover.

2   Use the service key to unlock and open the projector cover.

Flange button bolt (M4 x 10)

Projector cover

Service key
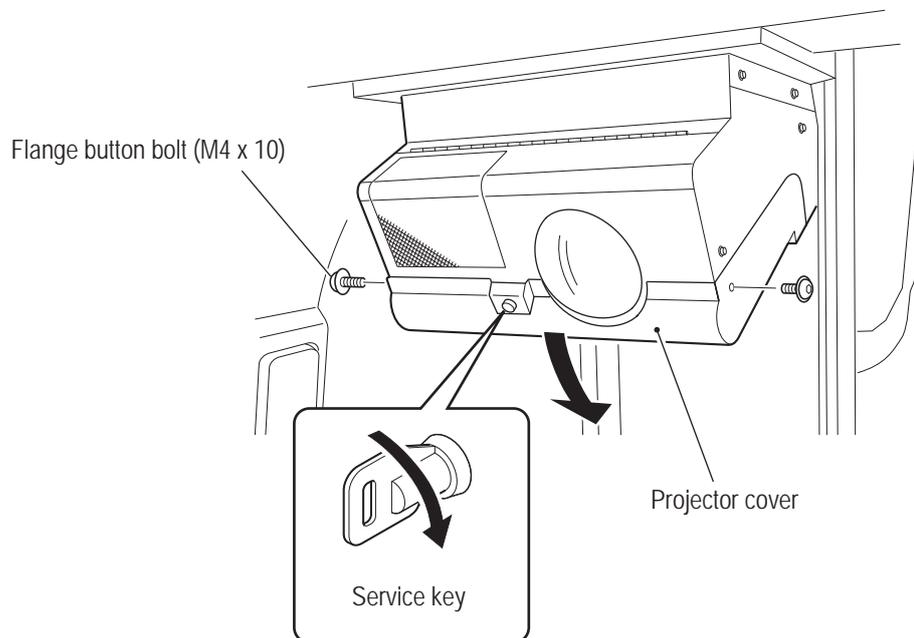
3   Open the front lid upward and lock it in place. (When the front lid is opened up all the way, it
automatically locks in place.)

Front lid

Lock
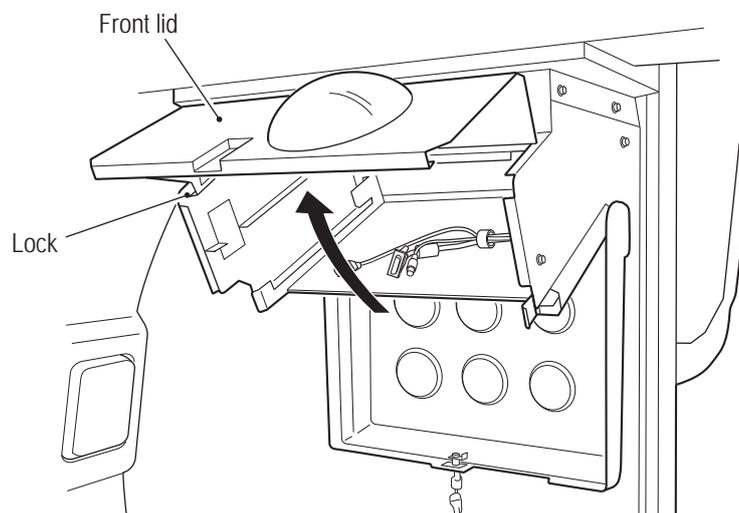
– Must be performed by a technician –

4 Remove the projector unit from the packing box, hold it by the handles with the lens facing downward, and hook the handles onto the fixtures on both sides of the projector case.

NOTICE
- Be very careful not to bump the lens part.
- **Install the projector unit with the same serial number as the rear assembly. If a projector unit with a different serial number is installed, the video position on the dome screen may be offset. The position of the serial number sticker differs for each model as shown in the figure.**
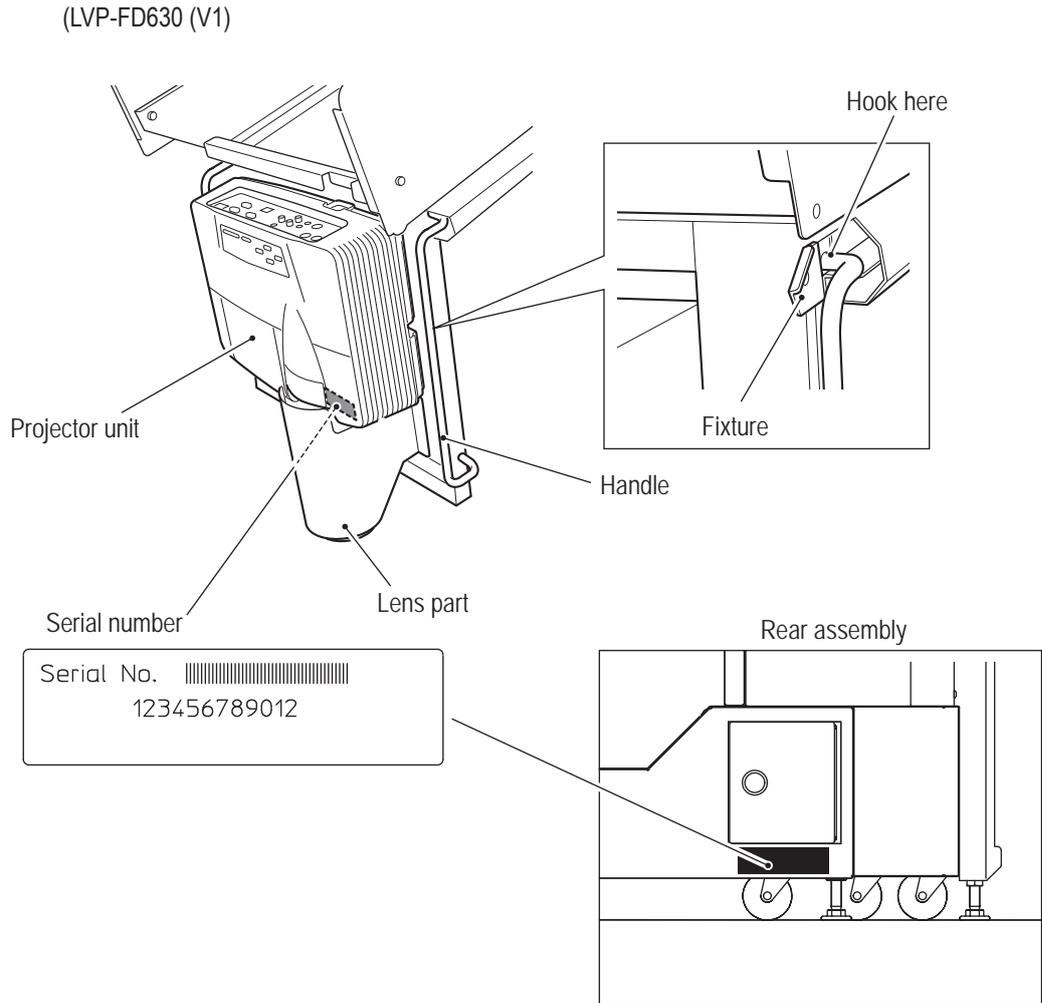
(LVP-FD630 (V1))

Hook here

Projector unit

Fixture

Handle

Serial number

Lens part

Serial No. |||||||||||||||||||||||||||||||||||||||||||
123456789012

Rear assembly

– Must be performed by a technician –

5 Connect the three connectors to the projector.

Connector

Insert the connectors aligned as shown in the figure below.

Front side

Front side
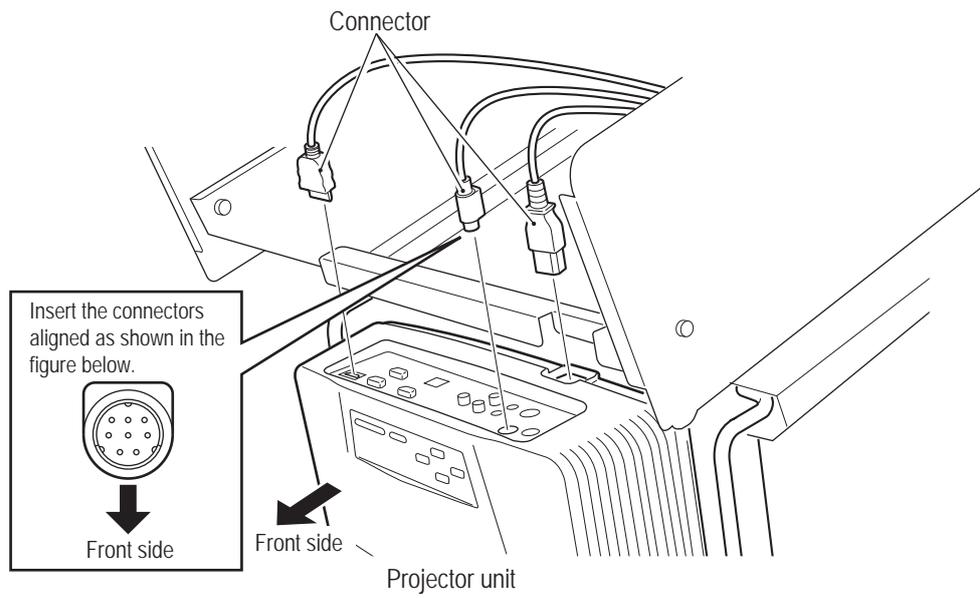
Projector unit

6 Lift up the projector unit and push it back into the projector case, being careful not to pinch the cables. Then, hook the front side of the handles onto the fixtures to secure the projector unit.

Hook here

Projector unit

Handle

Installation and Assembly
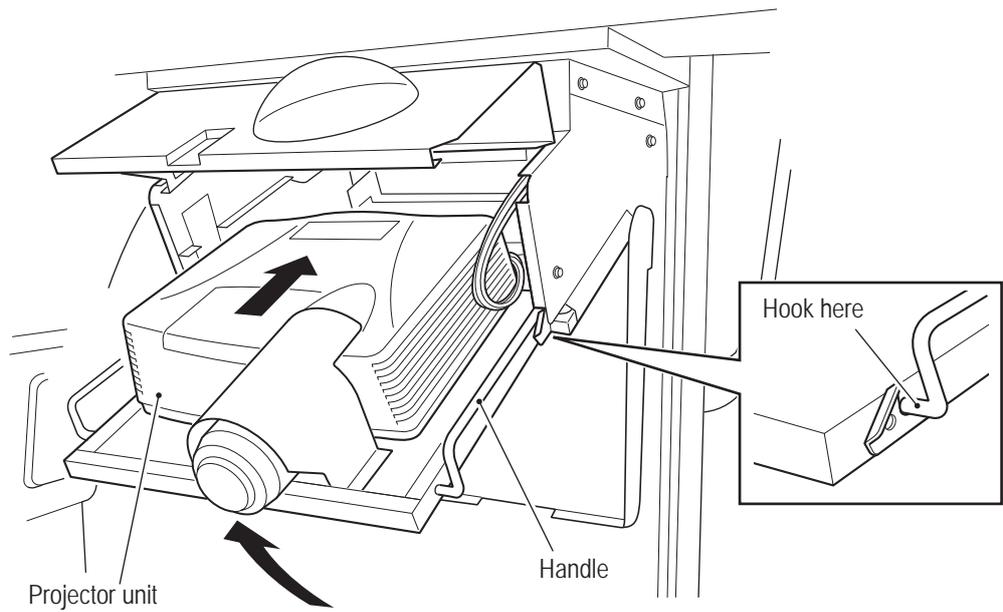
◗ **NOTICE** ● **When installing the LVP-FD630 (V1), arrange the cables so that they pass over the top** of the projector unit.

Cables
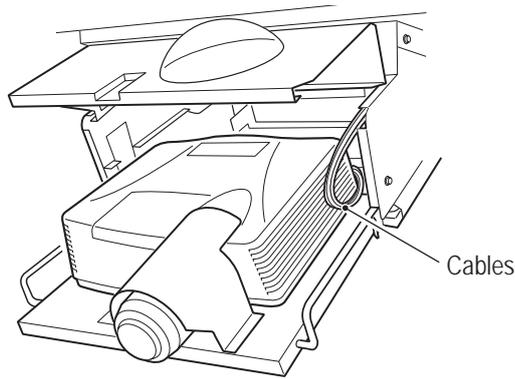
8 Use two supplied flange socket bolts (M6 x 14) to secure the projector unit to the fixtures on both sides of the projector case.

Projector case

Flange socket bolt (M6 x 14)

Projector unit
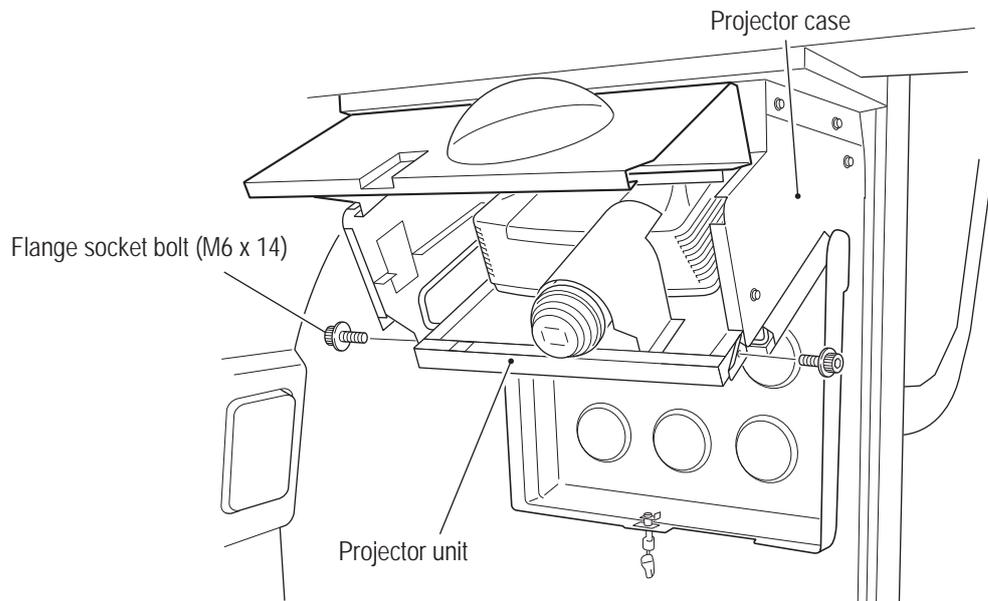
9 Remove the lens cap and secure it in the position shown in the figure to avoid losing it. (A hook-and-loop fastener is attached to the lens cap.)
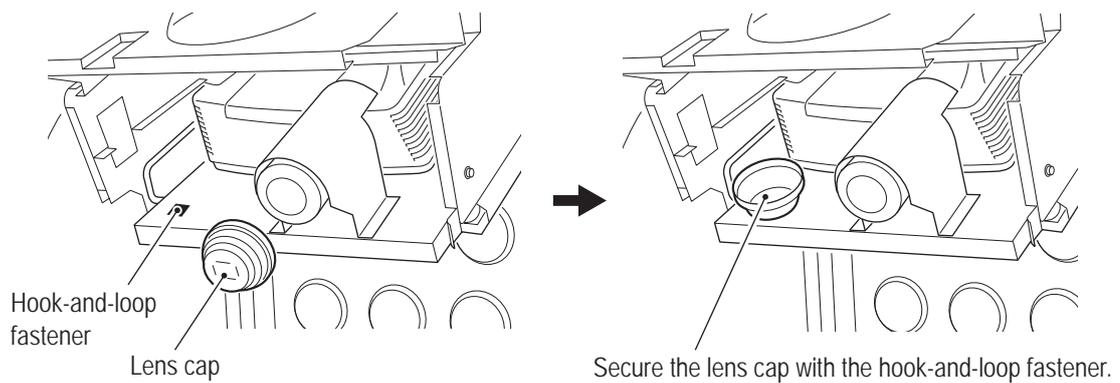
Hook-and-loop fastener

Lens cap

Secure the lens cap with the hook-and-loop fastener.

Test Mode

Troubleshooting

67

– Must be performed by a technician –

10 Close the front lid and projector cover by reversing the procedure.

Support the front lid with your right hand and press the lock with the finger of your left hand to release the lock.

Lock (Push to release)
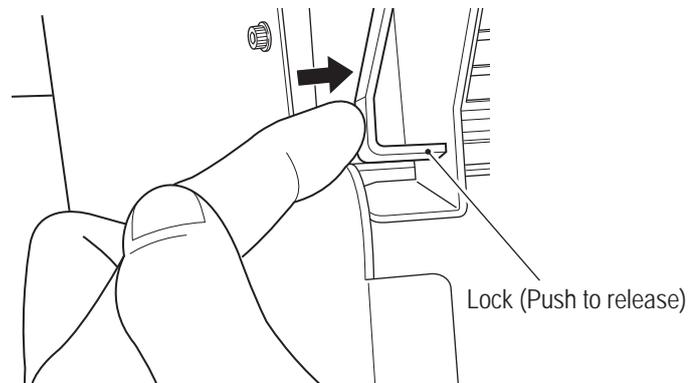
NOTICE ● **Be careful not to touch the projector lens with your bare hands. Fingerprints or other dirt may prevent images from being projected properly.**

(6) Installing the POP Display

⚠ CAUTION

● Removing the POP display requires standing at an elevated height. Prepare an appropriate **footstool and be careful when working. Working in an unnatural body posture may result in injury** or machine damage.

1 Remove the POP display from the packing box. The POP display is folded in half, so very carefully unfold the POP display and place it so that the POP surface is facing upward.

NOTICE ● **Spread out a sheet or take other measures to prevent the POP display from becoming** dirty before unfolding the POP display.

POP surface

Sheet
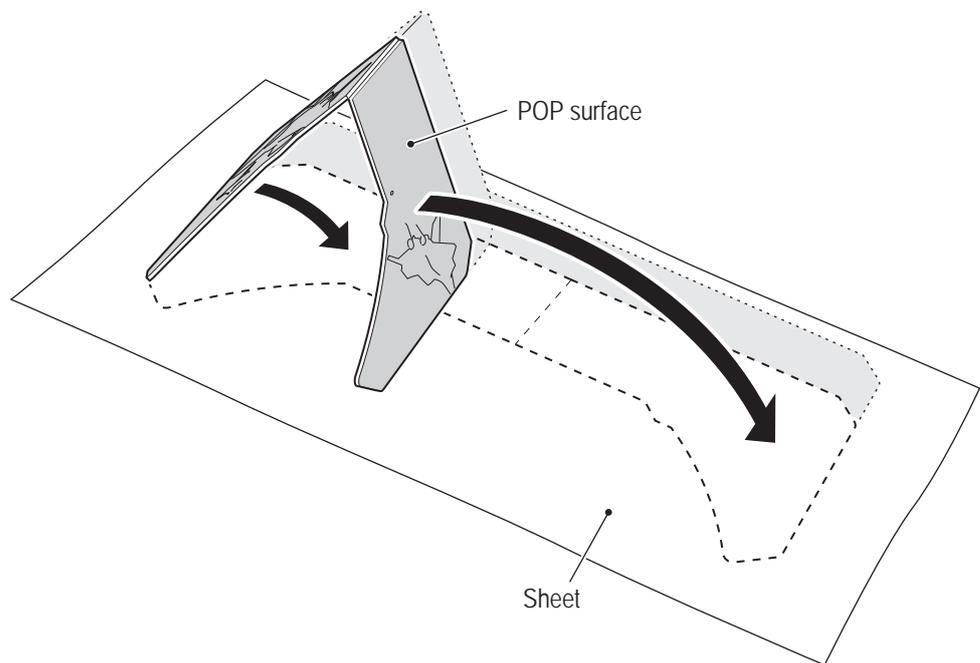
2 Secure the POP display to the POP bracket with four Torx bolts (silver) (M5 x 8) and four flat washers (ø25 x ø5.5).
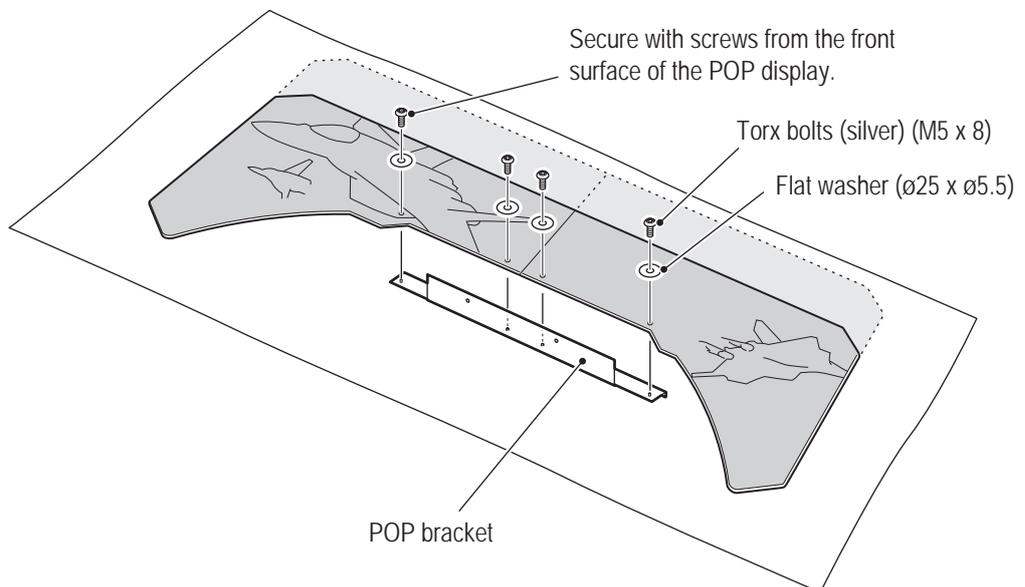
Secure with screws from the front surface of the POP display.

Torx bolts (silver) (M5 x 8)

Flat washer (ø25 x ø5.5)

POP bracket

– Must be performed by a technician –

3 Secure the POP bracket to the rear assembly with two Torx bolts (silver) (M5 x 12).

Torx bolt (silver) (M5 x 12)

POP bracket

Rear assembly

Illustration surface

70

Installation and Assembly
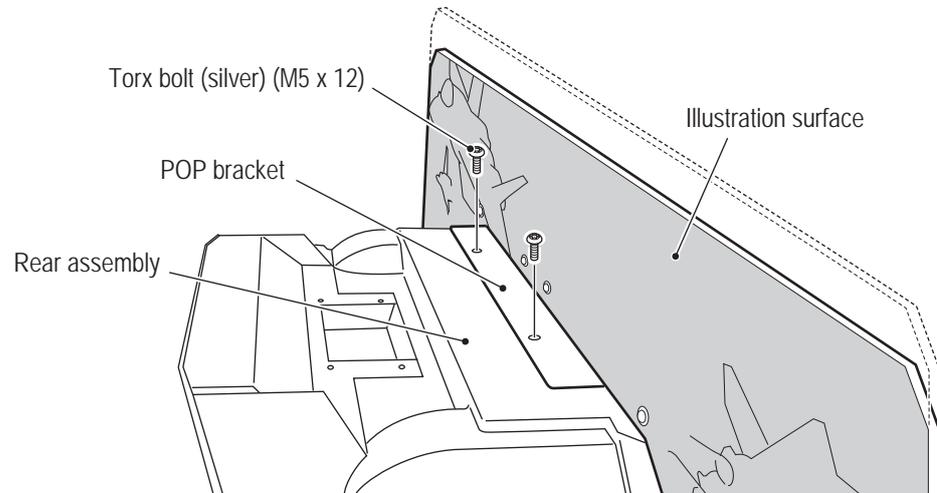
(7)   Installing the POP Light Assembly

⚠ CAUTION

● Removing the POP light assembly requires standing at an elevated height. Prepare an appropriate **footstool and be careful when working. Working in an unnatural body posture may result in injury** or machine damage.

---

1 Remove the POP light assembly from the packing box, then remove the three Torx bolts (silver) (M5 x 12) and remove the POP light cover.

Torx bolt (silver) (M5 x 12)

POP light cover
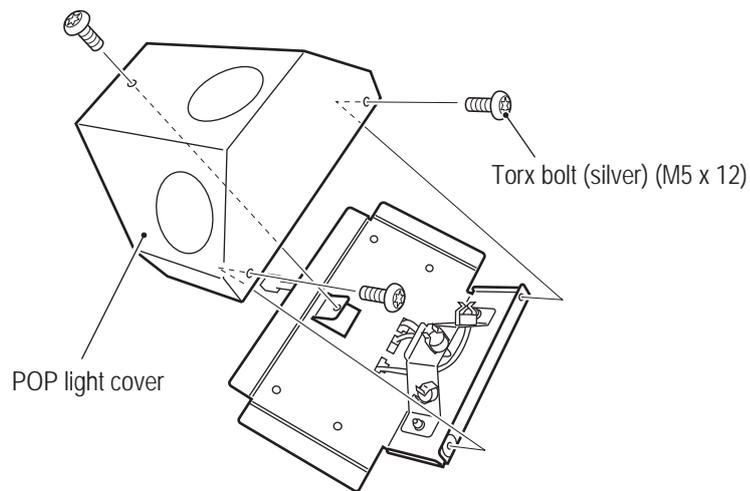
2 Remove the three LED lights from the packing box and install them.
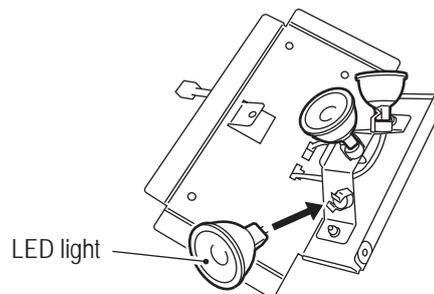
LED light

NOTICE ● **When installing the LED lights, be sure to carefully align the socket and pin positions** and insert the LED lights securely. (The lights do not have a polarity.)

Test Mode

Troubleshooting

– Must be performed by a technician –

3 Install the previously removed POP light cover with three Torx bolts (silver) (M5 x 12).

Torx bolt (silver) (M5 x 12)

POP light cover
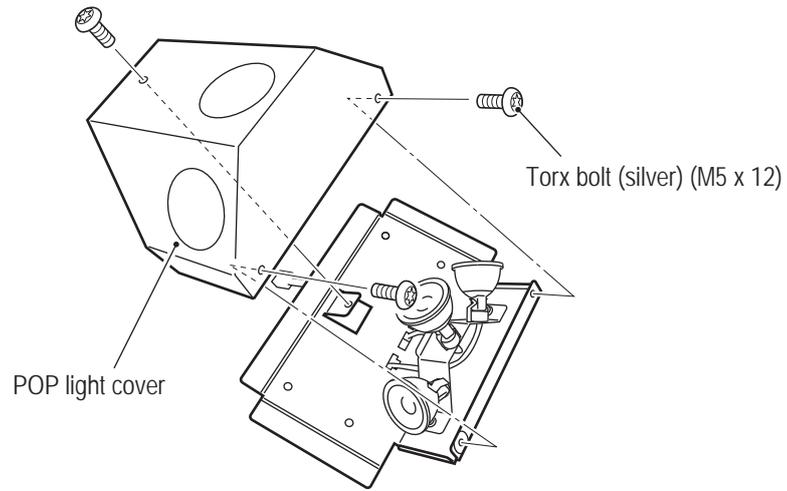
4 Lift up the POP light assembly to the top of the rear assembly and connect the connector.

NOTICE ● When lifting up the POP light assembly to the top of the rear assembly, hold the POP **light assembly with the LED lights facing upward and do not subject it to strong impact. Otherwise the LED lights may fall out.**

POP light assembly

Connector

Top of the rear assembly
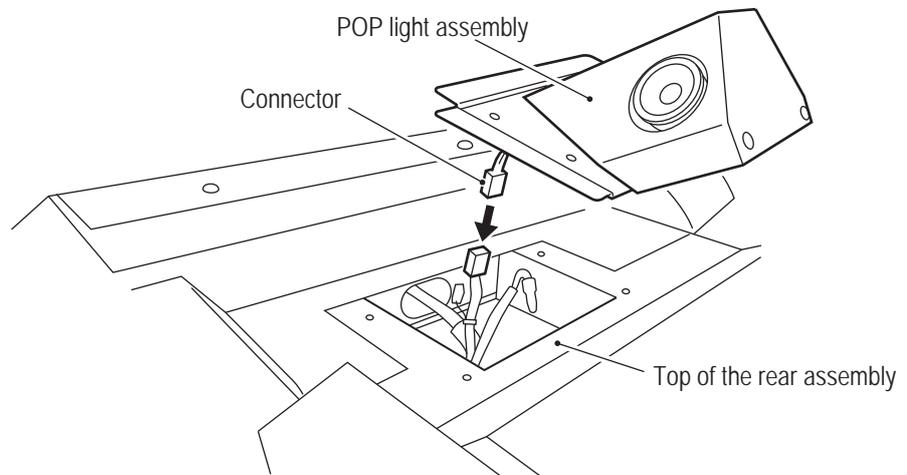
5 Secure the POP light assembly with four Torx bolts (silver) (M5 x 12).

Torx bolt (silver) (M5 x 12)
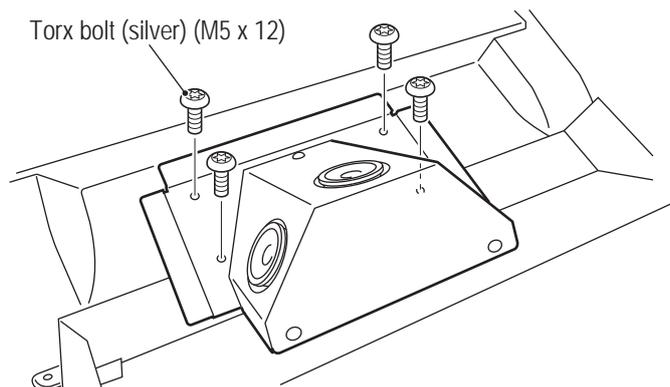
8A-2 Power Supply and Other Connections and Preparations

8A-2-1 Connecting the Power Cord and Ground

⚠ WARNING

- Connect the ground wire of the 3P plug to the ground. Failure to connect the ground wire may result in electric shock in the event of electrical leakage.
- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

⚠ CAUTION

- Lay out the LAN cable and power cord safely so that they will not cause players, bystanders or passersby to trip over them.

NOTICE
- Use the supplied power cord. When there is no supplied power cord, use a power cord that matches the region where the machine is used.
- When laying the power cord on the floor, it is recommended to use commercially available cable molding to protect the power cord.
- When laying the power cord on the floor, be sure to arrange the power cord safely so that passersby do not trip over it.
- Connect the power cord with sufficient leeway so that it is not excessively bent and there is no tension applied.
- Be sure to fully insert the power cord plug into the outlet.

(1) In case of a 3P outlet

Insert the power cord plug into the outlet.

Test Mode

Troubleshooting

– Must be performed by a technician –

(2)   **Connecting the power cord to the machine**

1   Insert the supplied power cord clamp above the power supply inlet.

2   Connect the power cord plug to the power supply inlet of the machine, then secure it with the clamp as shown in the figure below to prevent accidental disconnection.

Power cord

Clamp

Cord box assembly

Insert the power cord plug into the power supply inlet.

Insert the AC cord clamp into the hole above the power supply inlet to secure it.

Power cord

AC cord clamp

Secure the connector holder to the base of the power cord plug.

Lift up the lever and slide the connector holder to the base of the power cord plug.

Connector holder
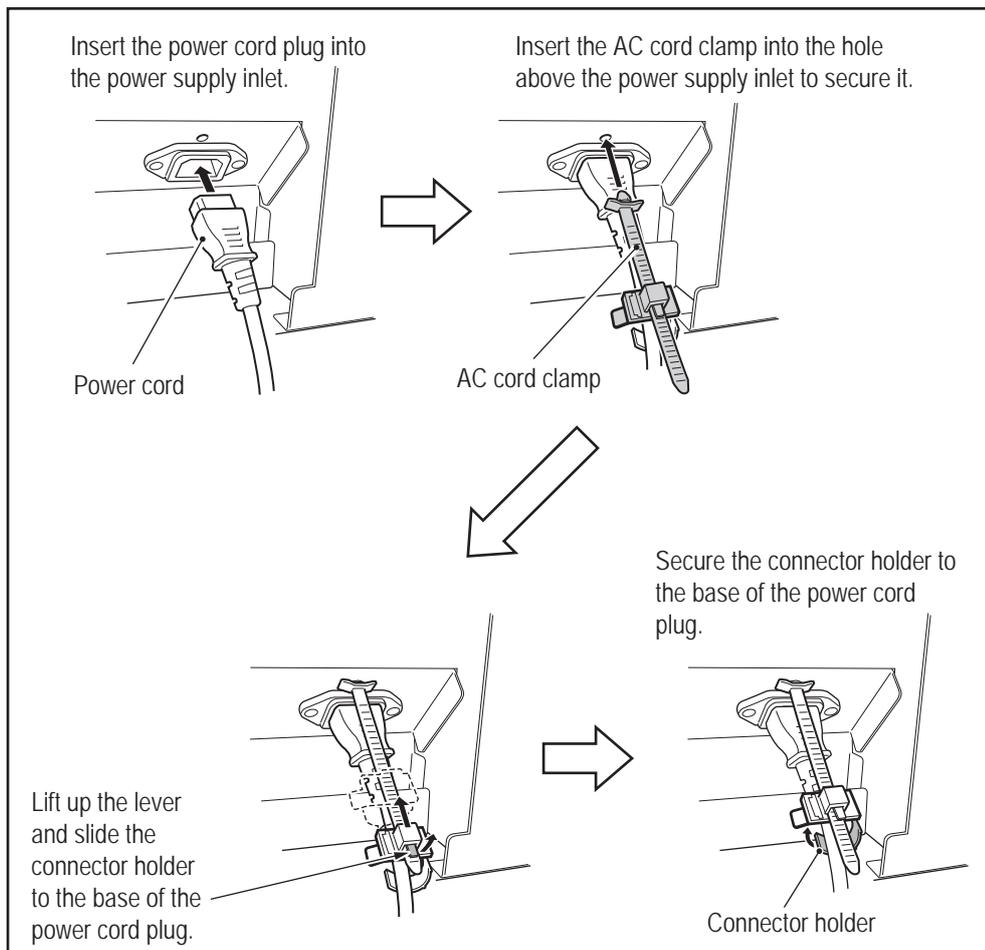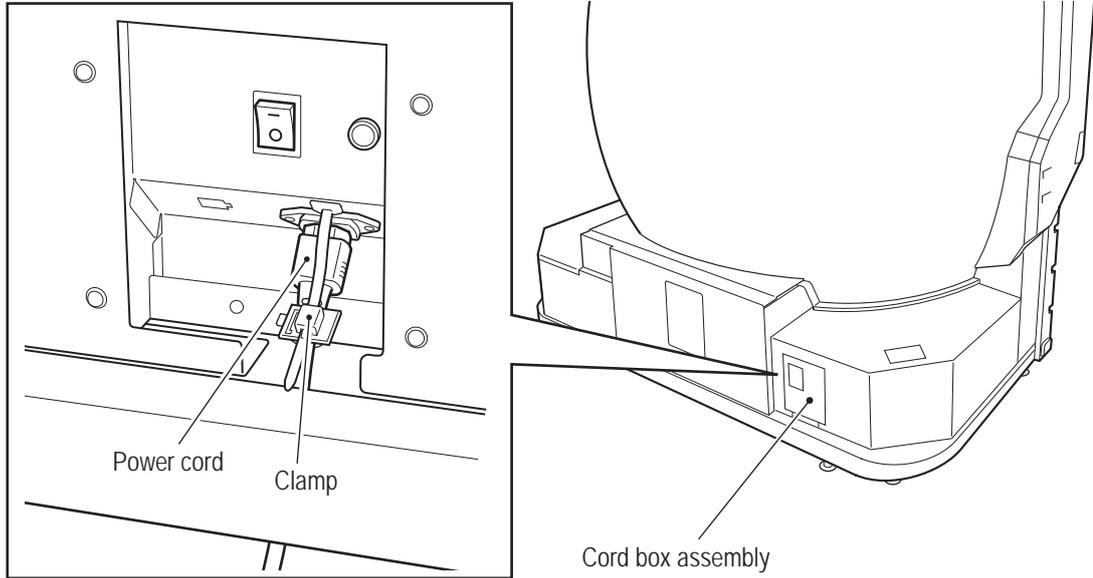
8A-2-2   Connecting the LAN Cable   * This task is not required for U.S. and European specifications.

⚠WARNING

● **In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.**

⚠CAUTION

● **Lay out the LAN cable so that it will not cause players, bystanders or passersby to trip over it.**

1 Insert the supplied LAN cable clamp into the position shown in the figure.

2 Secure the LAN cable with the clamp.

LAN cable   Cord box assembly

Clamp
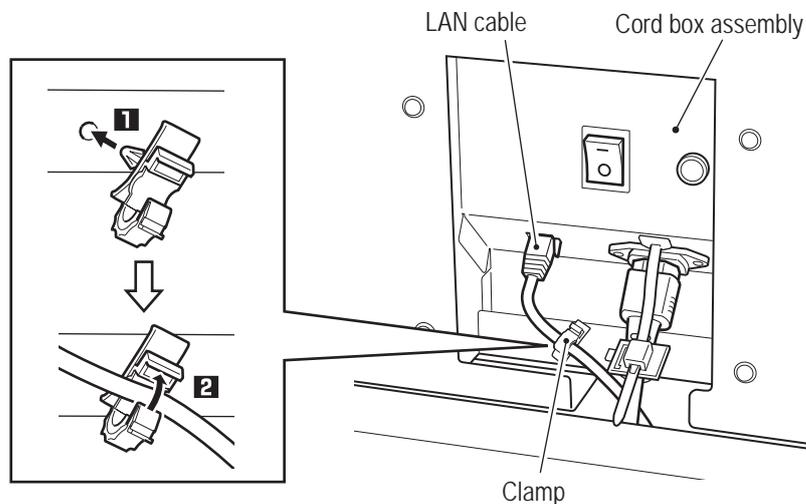
NOTICE ● **To avoid damage to the electronic circuits, be sure to turn off the power switch before connecting the LAN cable. (See "8A-2-3 Turning the Power Switch On" on page 77.)**
● **When laying the LAN cable on the floor, it is recommended to use commercially** available cable molding to protect the cable.
● **Failure to observe the following instructions may result in communication trouble** and prevent proper game play. Be sure to connect the LAN cable correctly according to the instructions.
   • A disconnected LAN cable may result in communication trouble. When laying the **LAN cable on the floor, be sure to arrange the cable so that passersby do not trip** over it.
   • **Do not bundle the LAN cable with power cords or pass it through the same cable molding as power cords.**
   • **Connect the LAN cable with sufficient leeway so that it is not excessively bent and** there is no tension applied.
   • **After connecting the LAN cable to the machine, secure it with the clamp.**

– Must be performed by a technician –

(1) Connection diagram

⚠ WARNING

● **In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.**

1 Refer to the figure below and connect the LAN cable connected to the cabinet assembly to an NBLINE router and connected to NBLINE or to an open port of an NBLINE compatible switching hub.

NBLINE router
LAN port
Machine
NBLINE compatible switching hub
Uplink port
LAN port
Connected to the cord box assembly
LAN cable (20 m)
(supplied with the machine)
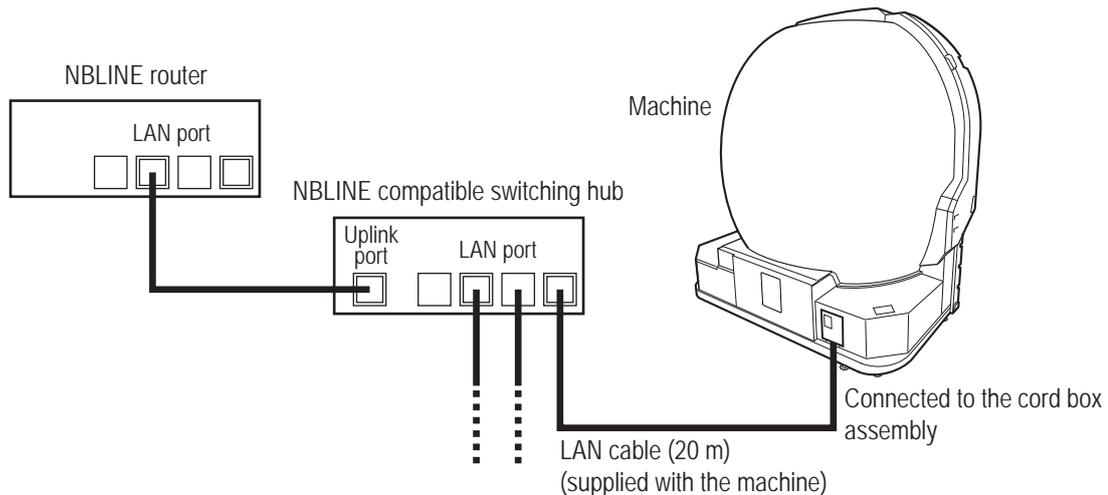
* The connection work required for network communication differs according to the conditions of the installation location. Therefore, this Operation Manual only describes an outline of the connections.
For inquiries regarding individual support at each installation location, contact your distributor.

⚠ WARNING

● **Be careful not to let the machine's sheet metal or other objects damage the cables extending from the machine.**

◀NOTICE ● **Careless network system installation or other work makes networks susceptible to hacking and can result in communication errors, lost data and other trouble. In consideration of recovery in case of trouble and taking countermeasures to prevent hacking, it is recommended to commission this installation and other related work to professionals.**
● Use commercially available cord protectors to protect the LAN cable so that players **and other customers do not interfere with or trip over it.**

8A-2-3 Turning the Power Switch On

NOTICE
- **When turning the power off and then on again, do not turn the power back on immediately, and be sure to observe the following condition.**
  - **When using the system power switch**
  Turn off the switch, wait for 30 seconds or more, and then turn on the switch again.
  - **When using the main power switch**
  It takes time to restart the projector, so wait <u>10 minutes</u> or more after turning off the main power switch before turning it back on.
- **When the main power switch is turned off, it takes time to restart the projector. Therefore, when possible use the system power switch to turn off the power.**

1 Turn on the main power switch.

2 Use the service key to unlock and open the service door inside the machine, and check that the system power switch inside the service door is set to ON.

■ Cord box assembly
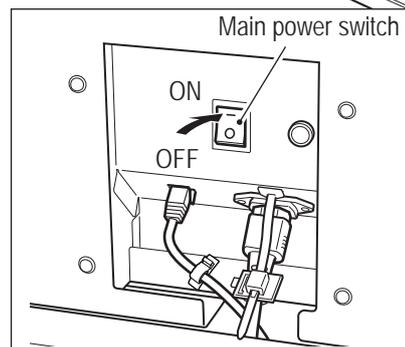
Main power switch
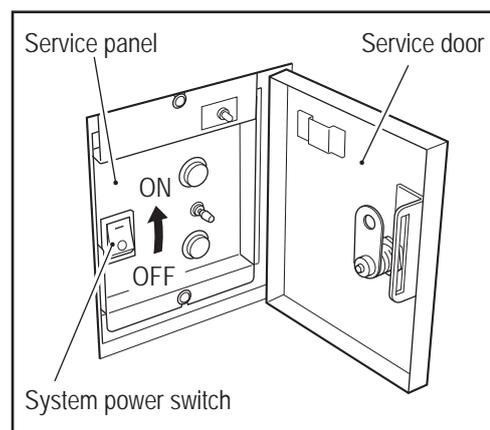
ON

OFF

■ Machine (internal)

Service panel

Service door

ON

OFF

System power switch

– Must be performed by a technician –

8A-2-4　Setting the Maintenance Time

This machine has a function that automatically restarts the game PC board in order to reduce the load on the game PC board when operating the machine continuously for long times. At the default this maintenance time is set to AM7:00 UTC (coordinated universal time), so refer to "(2) Setting the Maintenance Time (MAINTENANCE TIME SETTING)" on page 47 and change the setting to a time that will have little effect even if the game PC board is restarted during the shop operating hours.

* It is recommended to set this maintenance time to a time other than during operating hours.

8A-3 Post-Installation Checks

☐ Has the machine been installed in conformance with the installation conditions? (See "5-1 Installation Conditions" on page 16.)

☐ Are the power capacity conditions met?

☐ Has the ground wire been installed?

☐ Has the power cord been installed using cable molding or other means so that players and other customers do not trip over it?

☐ Are images projected over the entire dome screen (all the way to the edges)?

(See "8B-6-2 Adjusting the Projector Position" on page 155.)

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8A
8B
9
10
11

Installation and Assembly

Test Mode

Troubleshooting

– Must be performed by a technician –

8A-4 Disassembly (When the Delivery Route has a Low Ceiling)

8A-4-1 Removing the Top Cover – Must be performed by a technician –

The height after the top cover is removed is 2,060 mm.

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the main power switch before starting this task.

⚠ CAUTION

● Removing and installing the top cover requires standing at an elevated height. Prepare an **appropriate footstool and be careful when working. Working in an unnatural body posture may** result in injury or machine damage.

1 Remove the four Torx bolts (M5 x 12), disconnect the connector and remove the POP light. (In factory-shipped condition the POP light is removed, so this step is not necessary.)
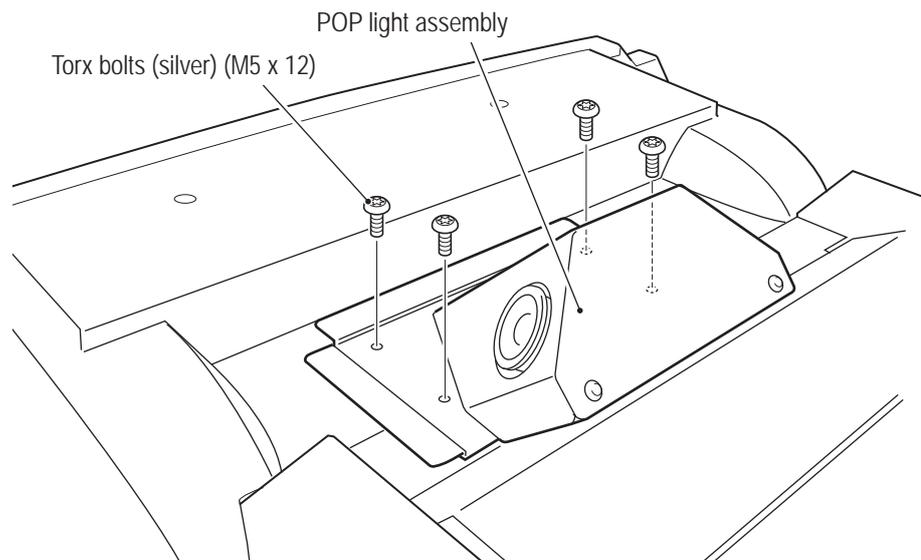
POP light assembly

Torx bolts (silver) (M5 x 12)

80

2 Remove the six Torx bolts (silver) (M5 x 8) and six flat washers (ø16 x ø5), and remove the acrylic panel.

Torx bolt (silver) (M5 x 8)

Flat washers (ø16 x ø5)

Acrylic panel
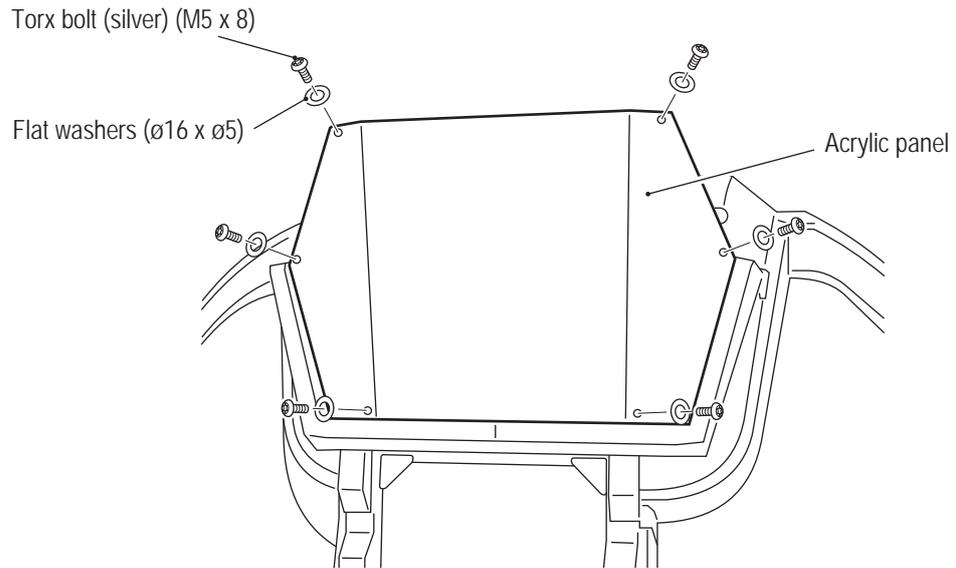
3 Remove the ten Torx bolts (M5 x 12) and the flat washer (ø16 x ø5) and remove the top cover.
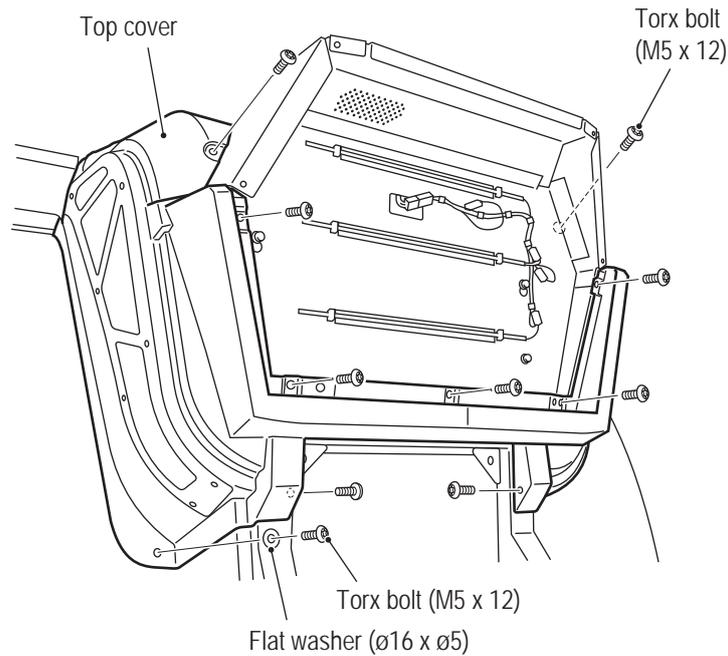
Top cover

Torx bolt (M5 x 12)

Torx bolt (M5 x 12)

Flat washer (ø16 x ø5)

– Must be performed by a technician –

4   Disconnect the connector of the LED module (white).

Connector
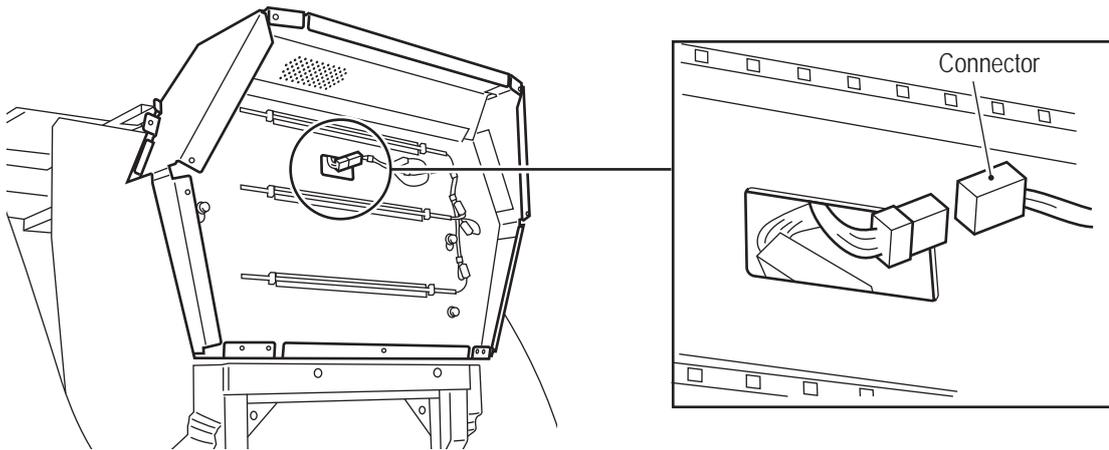
5   Loosen the upper two hexagon socket head bolts (with flat and spring washers) (M6 x 16), and remove the lower two hexagon socket head bolts (with flat and spring washers) (M6 x 16). Remove the two Torx bolts (silver) (M5 x 12), and remove the top cover.

Lift up slightly and remove.

Top cover

Loosen these two hexagon socket head bolt (with flat and spring washers) (M6 x 16).

Remove these two hexagon socket head bolt (with flat and spring washers) (M6 x 16).

Torx bolt (silver) (M5 x 12)
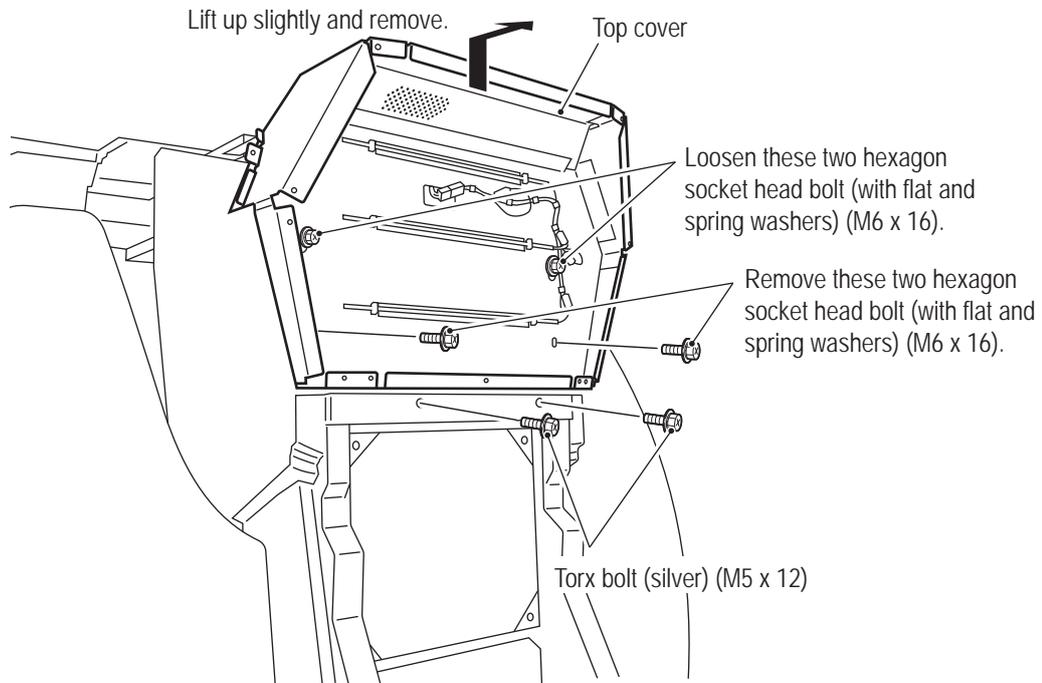
6   To install, perform the procedure in reverse.

– Must be performed by a technician –

8B.   Service

⚠ WARNING

- In order to avoid electric shock, accident or injury to yourself or other people, be sure to turn off the power switch before performing service work (such as repairs or correcting malfunctions).
- Sections of the projector remain at a high temperature and high voltage even after the power switch is turned off. To avoid electric shock or burns, be very careful not to accidentally touch these sections.

8B-1   Inspection and Service

⚠ WARNING

- Perform periodic service. Failure to perform service may result in an accident.
- Perform the pre-operation inspection every day. This is required to prevent accidents. (See "7-1 Pre-operation Inspection" on page 25.)

8B-1-1   Points for Inspection – Must be performed by a technician –

Periodically check the following inspection points for any abnormalities.

(1)   Level Adjuster Inspection
- Check that the level adjusters are fixed securely. (See "8A-1-1 (4) Level Adjuster Adjustment" on page 63.)

(2)   Projector Inspection
- Check that images are projected properly from the projector.
- Check that the projection range of the projector matches the screen position. (See "8B-6-2 Adjusting the Projector Position" on page 155.)
- Check the projector installation and adjustment screws for loose screws. Fully retighten any loose screws.

(3)   Power Cord Plug Inspection
- Check that the power cord plug is firmly inserted into the power supply input socket in the machine's cord box and an outlet.
- Clean any dust or dirt from the connection parts.
- Check for cracks or dirt on the power cord covering. If there is any abnormality on the power cord, be sure to replace it.

(4)   Screw Looseness Inspection

Check the following parts for loose screws. Fully retighten any loose screws.
- Throttle lever assembly and control lever assembly fixing screws (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)
- Lever grip A and lever grip B fixing screws (See "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

– Must be performed by a technician –

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(5) Greasing the Lever Assemblies

- Clean off the old grease every six months and apply fresh silicon grease (Shin-Etsu Chemical Co., Ltd G-40M or equivalent product) to the stainless steel part, spring stopper and shaft. Also reapply grease when the lever operation becomes stiff. (See "8B-5-1 (12) Replacing the Spring or Spring Stopper" on page 113.)

Control lever

Grease-up locations

Stainless steel part

Shaft

Spring stopper

Throttle lever

Stainless steel part

Shaft

Spring stopper

84
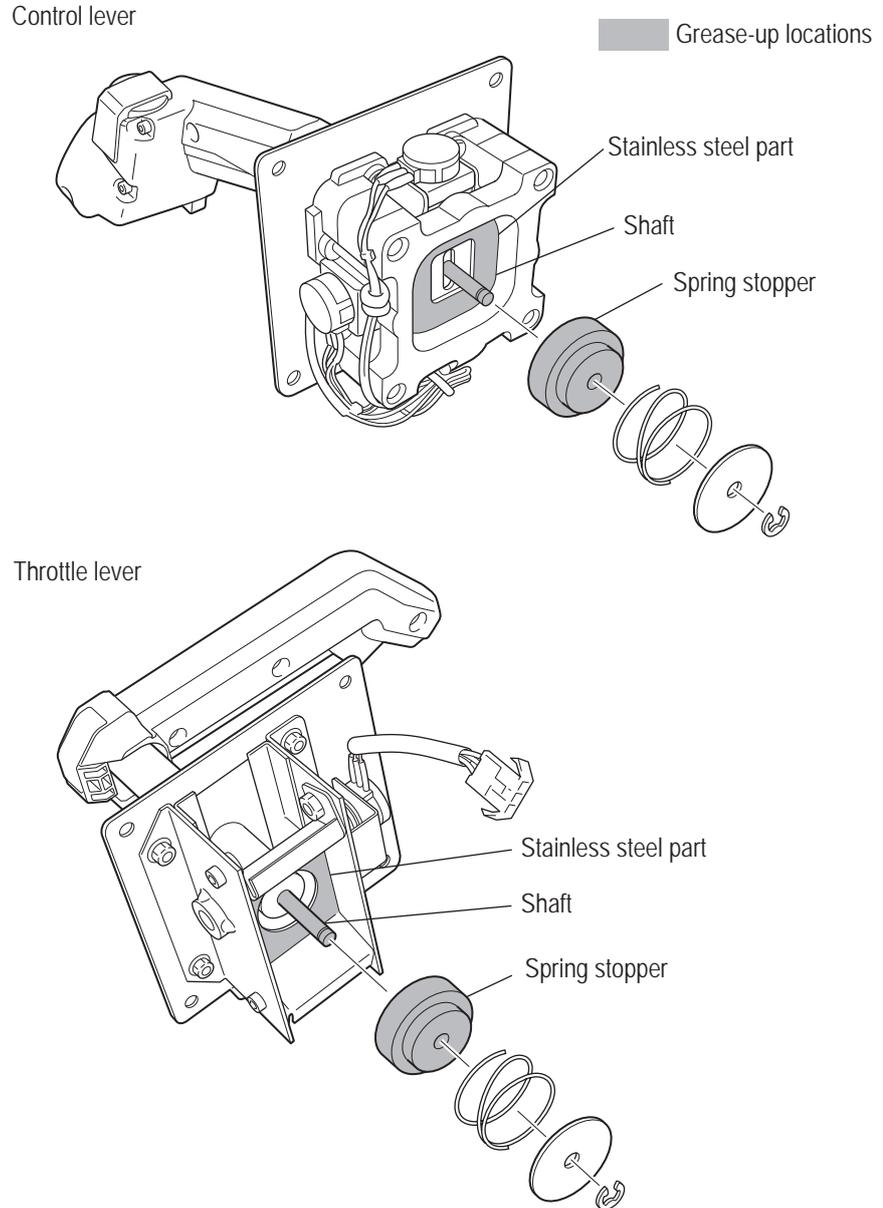
8B-2 Troubleshooting

8B-2-1 Machine – Must be performed by a technician –

Symptom	Main cause	Solution	Reference page
• The machine does not start.	• The USB dongle is not inserted.	• Insert the USB dongle.	Page 94
	• The system power switch is set to OFF.	• Set the system power switch to ON.	Page 30
	• A game PC board malfunction	• Contact your distributor.	—
	• A USB dongle malfunction		
• Operation is not stable or the machine operates incorrectly.	• The power supply voltage is not within the range of ±10 V.	• Disconnect any high-capacity devices (such as an air conditioner or large machine) from the same line to secure the specified power supply voltage.	—
• The power turns off during operation.	• The fuse has burned out.	• Replace with a new fuse of the specified capacity. If the fuse burns out frequently, there is a mechanical abnormality.	Page 137
		• Contact your distributor.	—
• There is no sound coming from the speakers.	• The volume setting is low.	• Set the appropriate volume.	Page 42
• There is no sound coming from the main speakers or sound is not coming from the correct speaker (side, seat, woofer).	• The sound connectors are not connected correctly.	• Refer to the Operation Manual and connect the connectors correctly.	Page 94

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| – Must be performed by a technician – |

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8B-2-2   Projector Assembly – Must be performed by a technician –

Symptom	Main cause	Solution	Reference page
• Images are not displayed.	• A projector unit connector is disconnected.	• Insert the connector securely.	Page 66
	• The projector unit main power is off.	• Turn on the projector unit main power.	Page 66
	• The lamp outer cover has come off.	• Correctly install the lamp outer cover.	Page 148
	• The projector unit lamp has burned out.	• Replace the projector unit lamp.	Page 143
	• The lamp operation time has exceeded 5,000 hours.	• Replace the projector unit lamp.	Page 143
	• A projector unit malfunction.	• Refer to "8B-3 (2) Projector Errors" and take the appropriate corrective action.	Page 90
	• A game PC board malfunction.	• Contact your distributor	—
• Images are not displayed correctly.	• An abnormality in some of the projector settings.	• Contact your distributor	—
• The screen display is flipped vertically or horizontally.	• The projector assembly is a factory shipped part or repair part, and initialization when the projector is started up for the first time is not yet complete.	• Wait until the projector starts up.	—
	• The projector unit connector or adapter is disconnected.	• Insert the connector and adapter securely.	Page 66
• The image is out of focus.	• The projector unit lens or lens cover is dirty.	• Clean the projector unit lens and lens cover.	Page 52
• The image is dark.	• The brightness and contrast are not adjusted properly.	• Adjust the brightness and contrast.	Page 159
	• The projector unit lamp operation time is nearing the end of the lamp life.	• Replace the projector unit lamp.	Page 143
•The color appears faded or the hue is poor.	• The red, green and blue levels are not adjusted properly.	• Adjust the red, green and blue levels.	Page 159
	• The dome screen is dirty.	• Clean the dome screen.	Page 52
	• The projector unit lamp operation time is nearing the end of the lamp life.	• Replace the projector unit lamp.	Page 143
• The remote controller does not function.	• The remote controller batteries have run down.	• Replace the remote controller batteries.	Page 159
	• The remote controller batteries are not installed correctly.	• Install the remote controller batteries correctly.	
	• The remote controller is not pointed at the photosensor of the projector unit.	• Point the remote controller at the photosensor of the projector unit when operating it.	Page 160

| – Must be performed by a technician – |

Troubleshooting

Symptom	Main cause	Solution	Reference page
• "LAMP EXCHANGE" is displayed on the left edge of the dome screen.	• The projector lamp is nearing the end of its life.	• When the lamp operation time exceeds 4,750 hours, this message is displayed once every 25 hours for approximately one minute and then disappears.	Page 54 Page 144
		• The lamp will no longer light when the lamp operation time reaches 5,000 hours, so be sure to prepare a replacement lamp and replace the projector lamp when this message appears.	

8B-2-3   Throttle and Control Lever Assemblies – Must be performed by a technician –

Symptom	Main cause	Solution	Reference page
• The lever does not function.	• The analog interface has not been initialized.	• Initialize the analog interface.	Page 36
	• A connector is disconnected.	• Insert the connector securely.	Page 103
	• An analog interface malfunction.	• Replace the analog interface.	Page 104
• A button switch does not function.	• A connector is disconnected.	• Insert the connector securely.	Page 103
	• A micro switch malfunction.	• Replace the micro switch.	Page 106
• The throttle or control lever movement is stiff.	• The silicon grease has become worn (dry).	• Apply new silicon grease.	Page 84
• An abnormality in the throttle or control lever neutral range.	• The throttle or control lever (analog interface) has not been initialized.	• Initialize the throttle or control lever.	Page 36
	• The spring stopper has become worn.	• Replace the spring stopper.	Page 113

Test Mode

Troubleshooting

– Must be performed by a technician –

8B-2-4   Seat Assembly – Must be performed by a technician –

Symptom	Main cause	Solution	Reference page
• There is no sound coming from the seat speakers or the bottom speakers.	• The volume setting is low.	• Set the appropriate volume.	Page 42
	• The connector or Faston terminal is disconnected.	• Insert the connector and Faston terminals securely.	Page 94 Page 99

8B-3 Error Displays – Must be performed by a technician –

(1) Error Display

*If the error display remains on the screen after performing the appropriate solution, set the Test switch to ON and then OFF again to cancel the error display.

Symptom (error code)	Main cause	Solution	Reference page
• 1-1 COIN ERROR 1	• The coin selector is jammed.	• Check the coin selector and resolve the trouble.	—
	• A coin selector malfunction.	• Replace the coin selector.	—
	• An abnormality in the harness around the coin selector.	• Contact your distributor.	—
• 1-2 COIN ERROR 2	• A Service switch malfunction.	• Replace the Service switch.	Page 30
	• An abnormality in the harness around the Service switch.	• Contact your distributor.	—
	• A NA-JV(S) PC board malfunction.	• Replace the NA-JV(S) PC board.	Page 97
• 1-3 COIN ERROR 3	• Coin counter is not connected.	• Connect the harness of the coin counter.	—
• 3-1 NOT CONNECT I/O-PCB	• A NA-JV(S) PC board malfunction.	• Replace the NA-JV(S) PC board.	Page 97
	• The USB cable is not connected.	• The USB cable is not connected correctly.	Page 93
• 3-3 I/O ERROR 3	• The NA-JV(S) PC board connection is disconnected.	• The USB cable is not connected correctly.	Page 94
• 5-1 ERROR	• Network connection failed.	• Check the network cable connection.	Page 91
• 8-1 CAMERA ERROR	• The camera unit is not inserted correctly into the game PC board.	• Check that the camera unit USB is inserted into the game PC board correctly.	Page 94
	• A camera unit malfunction.	• Contact your distributor.	—
• 19-21 USB DONGLE ERROR (INVALID DONGLE)	• A different USB dongle than that specified is connected to the game PC board.	• Connect a USB dongle that matches the specifications of the cabinet.	Page 58
• 19-22 USB DONGLE ERROR (NO DONGLE)	• The USB dongle is not inserted correctly to the game PC board.	• Insert the USB dongle securely.	Page 58
	• A USB dongle malfunction.	• Contact your distributor.	—
	• A game PC board malfunction.	• Replace the game PC board.	Page 92
• 19-23 USB DONGLE ERROR (IO ERROR)	• A service USB dongle malfunction.	• Contact your distributor.	—
	• A game PC board malfunction.	• Replace the game PC board.	Page 92
• 20-1 VERSION UP ERROR - FAILED	• Version update failed.	• Replace the version update USB dongle.	—
• 20-2 VERSION UP ERROR - NO FILE	• Version update failed.	• Insert the version update USB dongle.	—
• 22-1 ERROR	• Offline operation time exceeded.	• Connect the network cable.	Page 94
• 22-2 ERROR	• Acquisition of game cost information failed.	• Contact your distributor.	—
• 99-1 SYSTEM ERROR	• A game PC board malfunction.	• Replace the game PC board.	Page 92

8B. Service

| – Must be performed by a technician – |

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(2)   Projector Errors

When the projector lamp has burned out, the back lamp lights up red.

When the screen is blank and the back lamp is not lit up red, there may be a problem with the projector.

Request a technician to solve the problem.
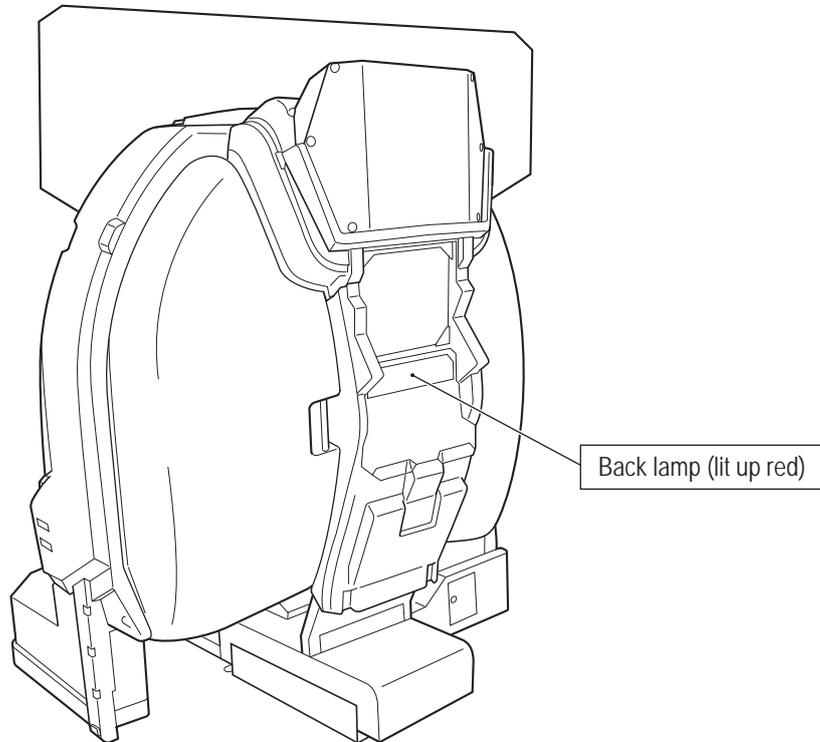
Back lamp (lit up red)

* If the error display remains on the screen after performing the appropriate solution, set the Test switch to ON and then OFF again to cancel the error display.

Symptom	Main cause	Solution	Reference page
• The screen is blank and the back lamp is lit up red.	• The projector lamp is nearing the end of its life.	• Replace the lamp.	Page 143
• The screen is blank and the back lamp is not lit up red.	• The lamp has become hot making it difficult to light.	• Turn off the projector power, wait a bit, then turn on the power again. If allowing the lamp to cool does not resolve the problem, replace the lamp.	Page 143
	• The inside of the projector has become hot.	• Turn off the power and clean the projector filters, then turn on the power again.	Page 53, 150
	• The projector lamp outer cover is open.	• Turn off the power and install the projector lamp outer cover properly.	Page 144
	• The projector main power is off.	• Turn on the projector main power.	Page 148
	• The connectors of the cables connecting the projector and the game PC board are disconnected.	• Insert the projector connectors and the video and projector connectors on the game PC board side securely.	Page 66, 94
	• A projector malfunction.	• Contact your distributor.	—
	• A projector cooling fan malfunction.	• Contact your distributor.	—

– Must be performed by a technician –

8B-4   Network Trouble

When using the online version of the software with the machine not connected to the network, some limits are applied even if there are no mechanical abnormalities.

- When not connected to NBLINE for a long time

  This machine requires a connection to the network (NBLINE) to operate. (*[1])

  When communication trouble or other trouble occurs in the network connection, the machine operates in offline mode.

  The machine can be operated for 240 hours (10 days) (*[2]) in the offline condition to enable game play even when network trouble occurs.

  However, when this time limit is exceeded, new games cannot be played.

  In this case, "22-1 ERROR" is displayed on the screen. (When the limit of 240 hours (10 days) is exceeded during game play, game play can continue until the game is over.)

  To enable game play again, resolve the network trouble and connect to NBLINE. (*[3])

    *1   The network connection status can be checked in Test mode. (See "7-4-9 NETWORK STATUS" on page 48.)

    *2   The remaining offline operation time can be checked in Test mode. (See "7-4-9 NETWORK STATUS" on page 48.)

    *3   Refer to the error display for network troubleshooting. (See "8B-3 Error Displays" on page 89.)

When trouble occurs in the network connection, "MS" appears in the upper left corner of the Attract screens.

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2
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6
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8A
8B
9
10
11
Service

Test Mode

Troubleshooting

8B-5   Removing and Installing Assemblies and Parts

8B-5-1   Machine – Must be performed by a technician –

(1)   Removing and Installing the Game PC Board – Must be performed by a technician –

⚠ **WARNING**

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

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1 Turn off the main power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the two Torx bolts (M5 x 12) and remove the side flange guard R. Use the service key to unlock the PCB roof of the front assembly. Remove the five Torx bolts (M5 x 12), and remove the PCB roof.

Torx bolt (M5 x 12)
Side flange guard R
Front assembly
Torx bolt (black) (M5 x 12)
Service key
PCB roof

– Must be performed by a technician –

3 Remove the two flange socket bolts (M3 x 10) from the game PC board and remove the PCB duct. Then, remove the two Phillips pan head screws (with flat and spring washers) (M3 x 6) from the PCB duct and attach them to the game PC board.

Flange socket bolt (M3 x 10)

PCB duct

Game PC board

Phillips pan head screws
(with flat and spring washers) (M3 x 6)

Attach the two Phillips pan head screws (with flat and spring washers) (M3 x 6) removed from the PCB duct to the holes from where the flange socket bolts (M3 x 10) were removed.

PCB duct
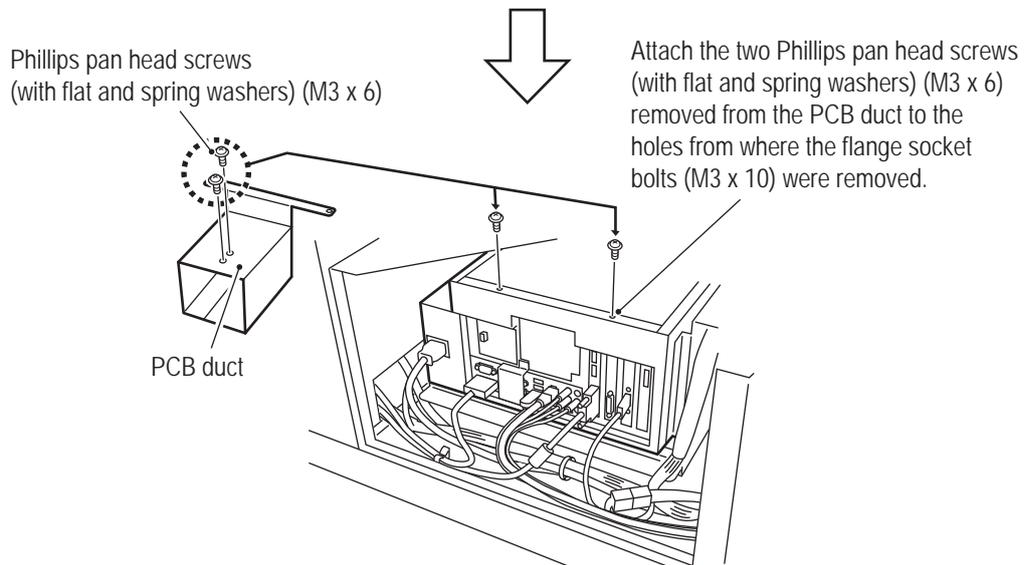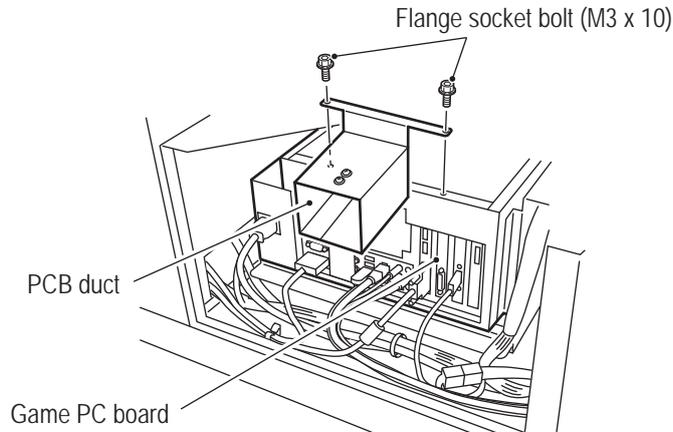
4 Disconnect the power cord, Faston terminal, USB dongle and 14 connectors connected to the game PC board and open the two clamps.
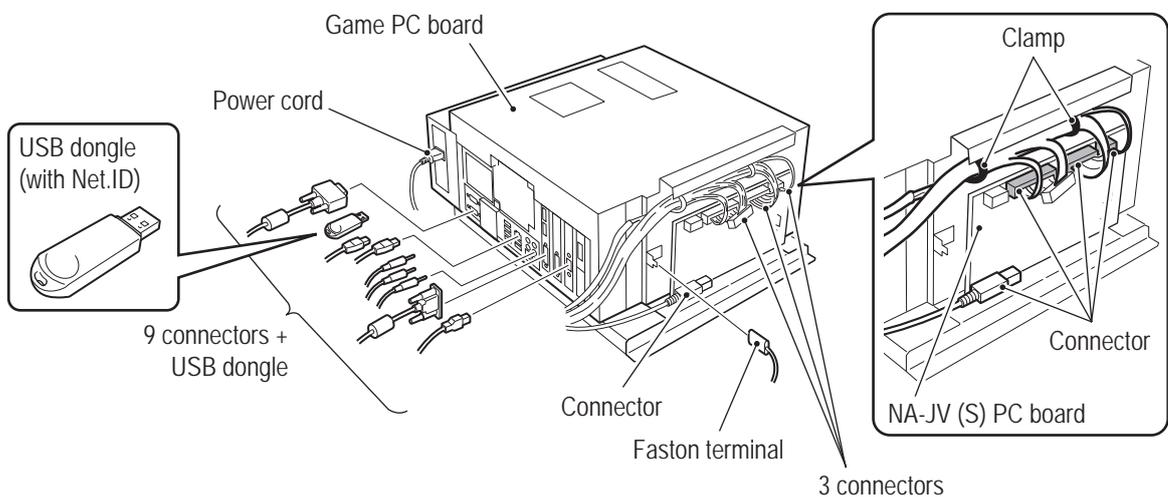
Game PC board

Clamp

Power cord

USB dongle
(with Net.ID)

9 connectors +
USB dongle

Connector

Connector

NA-JV (S) PC board

Faston terminal

3 connectors

– Must be performed by a technician –

NOTICE ● When installing, follow the indications on the game PC board and connect the connectors correctly.

Projector communication
(Connect to SERIAL 1)
SERIAL 1

No connection

JV I/O
(milky white USB cable)
(Connect to JVI/O)
JV I/O
* Do not mix up with the USB sound amplifier.

Power supply
(power supply convertor cable)
(Connect to AC inlet of the power supply)

Projector video
(Connect to VIDEO 1)
VIDEO 1

Audio (ø3.5 stereo cable)
AUDIO 3
Orange
3
AUDIO 2
2
Black   Yellow-green
1
AUDIO 1
* The connection port and connector colors do not match. Check the connector tag numbers and connect to the connection ports with matching numbers.

Communication
(LAN cable)
(Connect to LAN)

Camera module
(black USB cable)
USB 4
(Connect to USB 4)
* Do not mix up with the JV I/O.

USB dongle
(Connect to USB port No. 3.)

5 Remove the two Phillips pan head screws (with flat and spring washers) (M5 x 12).

Game PC board

Phillips pan head screws
(with flat and spring washers) (M5 x 12)

6 Remove the game PC board.

Use the handles as guides and hold the game PC board firmly
with both hands when removing and installing the game PC board.

Game PC board

ES3 (X) base C

Be very careful of the sheet metal
and heat sink edges and other
sharp locations.

Heat sink
edge

NA-JV (S) PC board

5.1CH AMP PC board

PCB cover

ES3 (X) base C

Hook the ES3 (X) base B here.

When installing, orient
the game PC board
with the ES3 (X) base
B in the back and
install it to the ES3 (X)
base C.

ES3 (X) base B

ES3 (X) base A
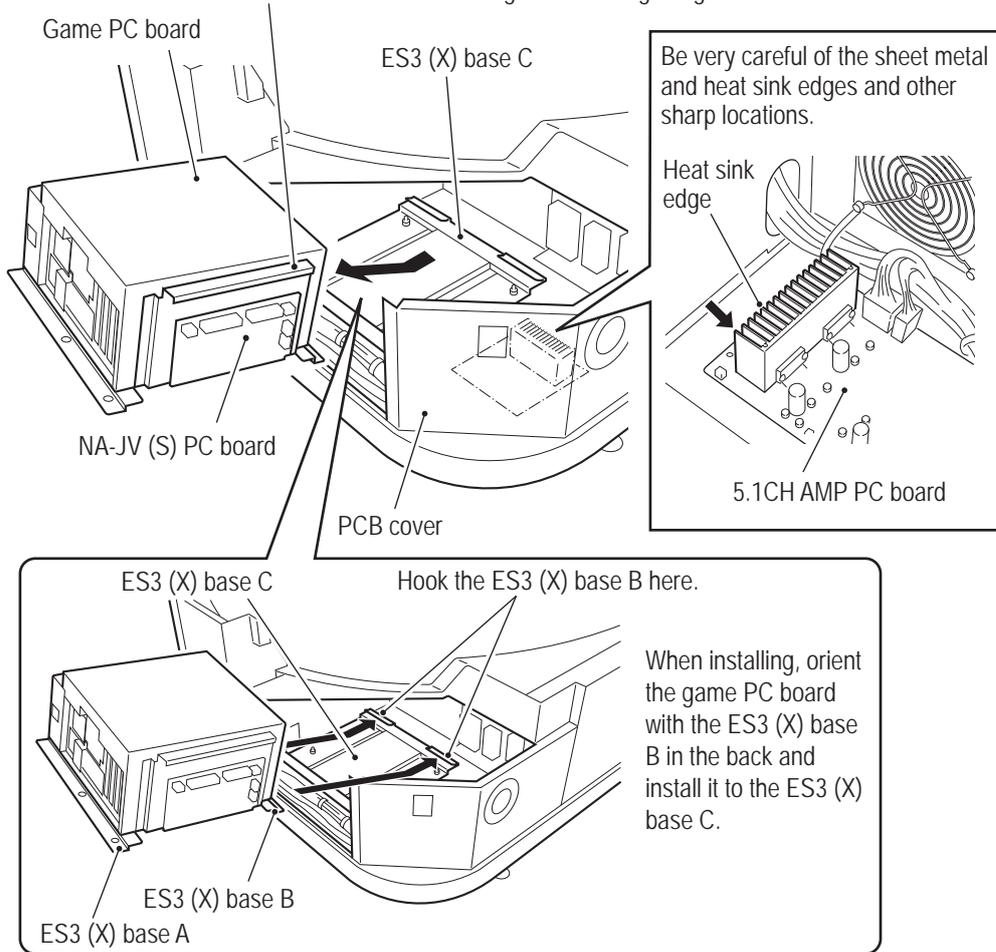
⚠ CAUTION

● Be careful not to injure yourself on the electronic parts or sheet metal inside the Station.

NOTICE ● Be careful not to damage the 5.1CH AMP PC board when removing and installing the
game PC board.

1 2 3 4 5 6 7 8A **8B** 9 10 11

Service

Test Mode

Troubleshooting

95

– Must be performed by a technician –

7 Remove the ten Phillips pan head screws (with flat and spring washers) (M4 x 10) and remove the ES3 (X) base A, ES3 (X) base B and NA-JV (S) PC board.

NA-JV (S) PC board

Phillips pan head screws
(with flat and spring washers)
(M4 x 10)

Game PC board

ES3 (X) base B

ES3 (X) base A

Phillips pan head screws
(with flat and spring washers)
(M4 x 10)
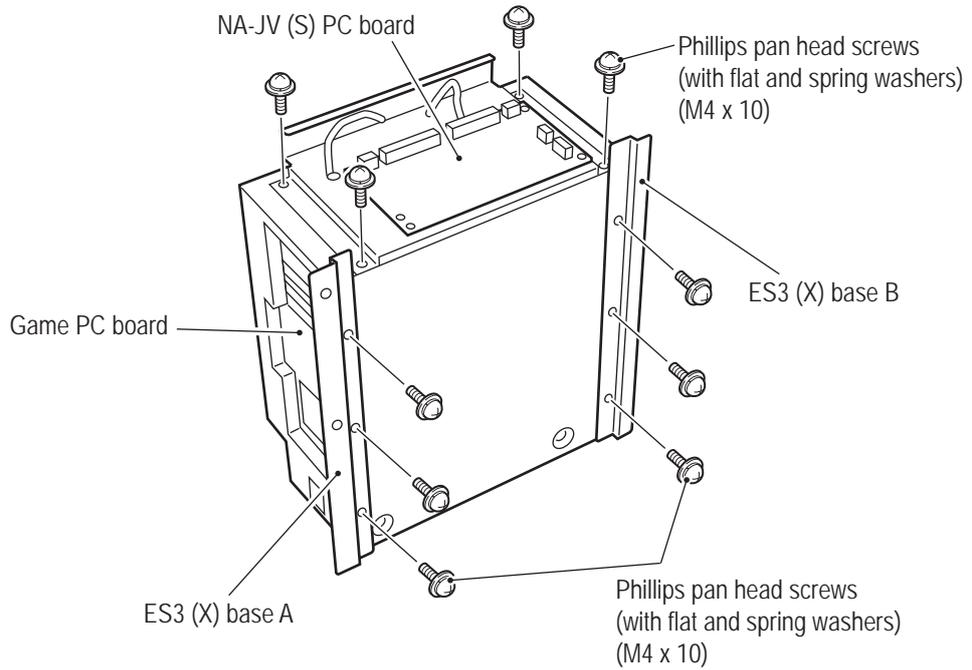
8 Install the new game PC board by reversing the procedure.

NOTICE
- **When installing, check the connector orientations and insert the connectors firmly until they lock securely.**
- When installing, be careful not to pinch the connectors and harness.
- After replacing the game PC board, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)
- **When assembling, remember to attach the Phillips pan head screws (with flat washer) (M3 x 6) removed from the game PC board to the PCB duct.**

– Must be performed by a technician –

(2) Replacing the NA-JV (S) PC Board – Must be performed by a technician –

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

◀NOTICE

● PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body. (Example: touching the surface of grounded metal.)

1 Turn off the main power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the two Torx bolts (M5 x 12) and remove the side flange guard R. Use the service key to unlock the PCB roof of the front assembly. Remove the five Torx bolts (M5 x 12), and remove the PCB roof.

Torx bolt (M5 x 12)

Side flange guard R

Front assembly

Service key

Torx bolt (black) (M5 x 12)

PCB roof

─ Must be performed by a technician ─

3 Open the two clamps and disconnect the Faston terminal and four connectors connected to the NA-JV (S) PC board.
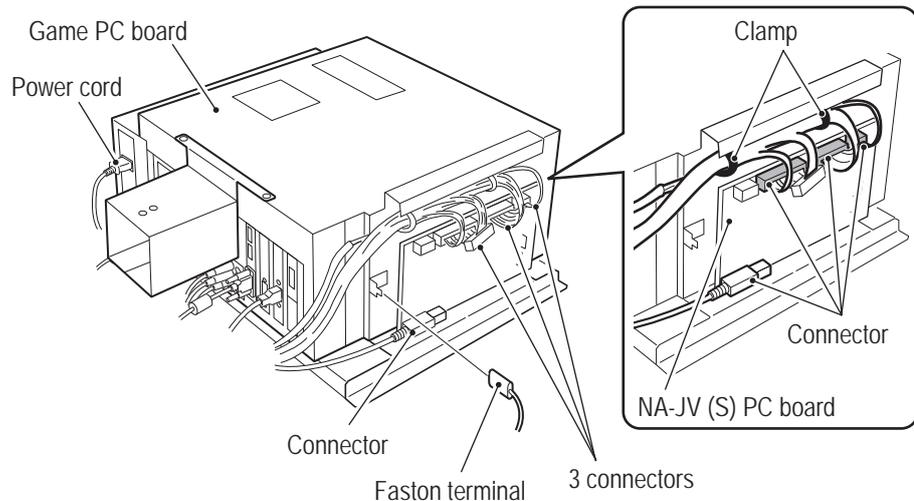
4 Remove the five Phillips pan head screws (with flat and spring washers) (M3 x 8) and remove the NA-JV (S) PC board.
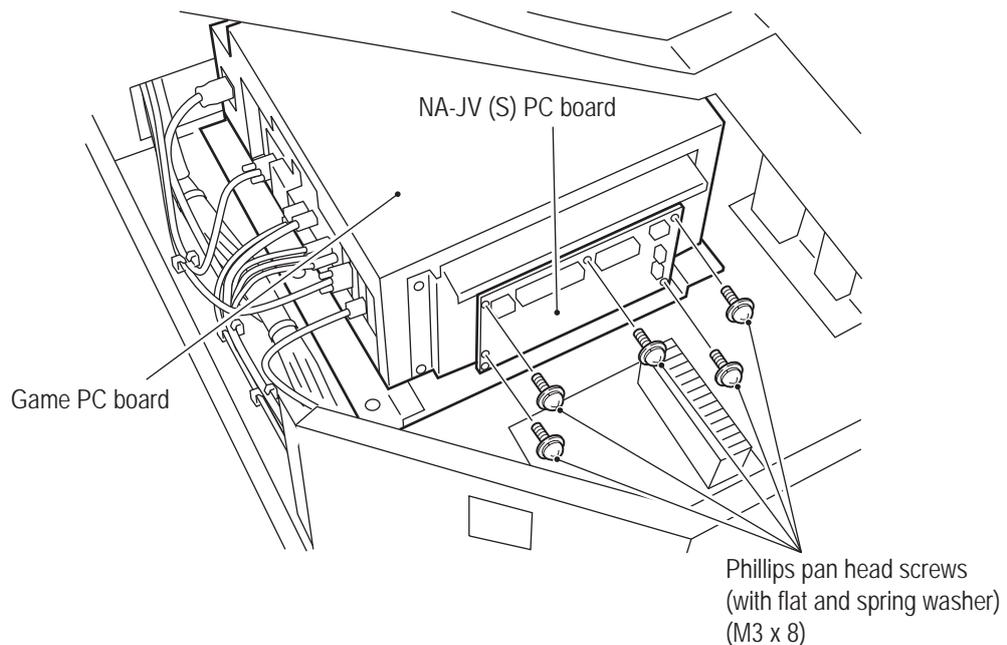
5 To install, perform the procedure in reverse.

NOTICE
● **When installing, check the connector orientations and insert the connectors firmly** until they lock securely.
● When installing, be careful not to pinch the connectors and harness.
● After replacing the NA-JV(S) PC board, use Test mode to check that there are no I/O problems.

– Must be performed by a technician –

(3)   Replacing the 5.1CH AMP PC Board – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

◄ NOTICE   ● PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body. (Example: touching the surface of grounded metal.)

1   Turn off the main power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2   Remove the two Torx bolts (M5 x 12) and remove the side flange guard R. Use the service key to unlock the PCB roof of the front assembly. Remove the five Torx bolts (M5 x 12), and remove the PCB roof.

Torx bolt (M5 x 12)
Side flange guard R
Front assembly
Torx bolt (black) (M5 x 12)
PCB roof
Service key

1
2
3
4
5
6
7
8A
8B
9
10
11
Service

Test Mode

Troubleshooting

– Must be performed by a technician –

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3 Disconnect the six connectors, remove the five Phillips pan head screws (with flat and spring washers) (M3 x 8) and remove the 5.1CH AMP PC board.
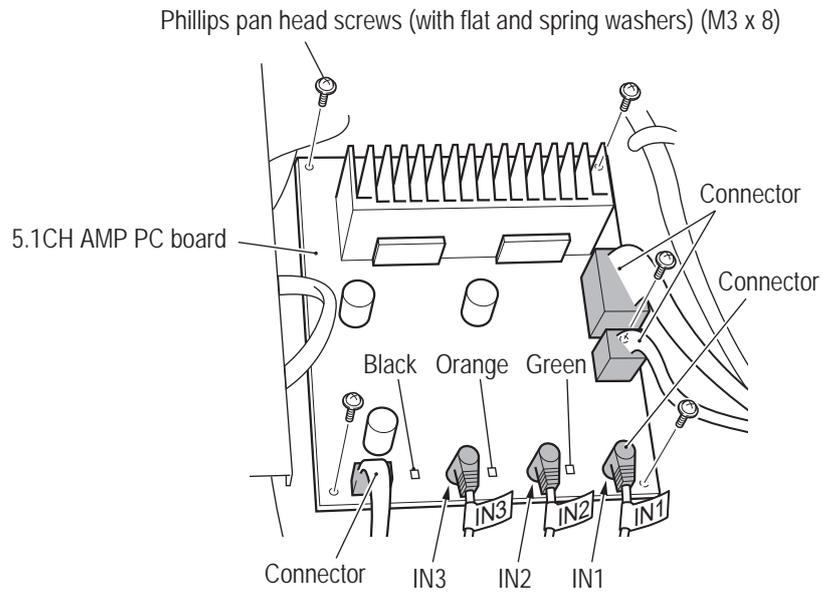
Phillips pan head screws (with flat and spring washers) (M3 x 8)

5.1CH AMP PC board

Connector

Connector

Black   Orange   Green

Connector   IN3   IN2   IN1

4 To install, perform the procedure in reverse.

NOTICE
● **When installing, check the connector orientations and insert the connectors firmly** until they lock securely.
● When installing, connect the cables so that the harness tag indications match the PCB connector indications (IN1, IN2, IN3).
● When installing, be careful not to pinch the connectors and harness.
● After replacing the 5.1CH AMP PC board, use the sound test of Test mode to check the volume.

– Must be performed by a technician –

(4)   Removing and Installing the Power Panel Assembly – Must be performed by a technician –

⚠ WARNING

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the main power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the two Torx bolts (M5 x 12) and remove the side flange guard R.
Remove the four Torx bolts (black) (M5 x 12) and remove the PCB roof case.
Use the service key to unlock the PCB roof of the front assembly. Remove the five Torx bolts (M5 x 12), and remove the PCB roof. (See steps **2** of "8B-5-1 "(1) Removing and Installing the Game PC Board" on page 92.)

Torx bolt (M5 x 12)
Side flange guard R
Torx bolt (black) (M5 x 12)
Torx bolt (black) (M5 x 12)
Bottom part of the control lever inside the front assembly
Pull forward and remove.
PCB roof case
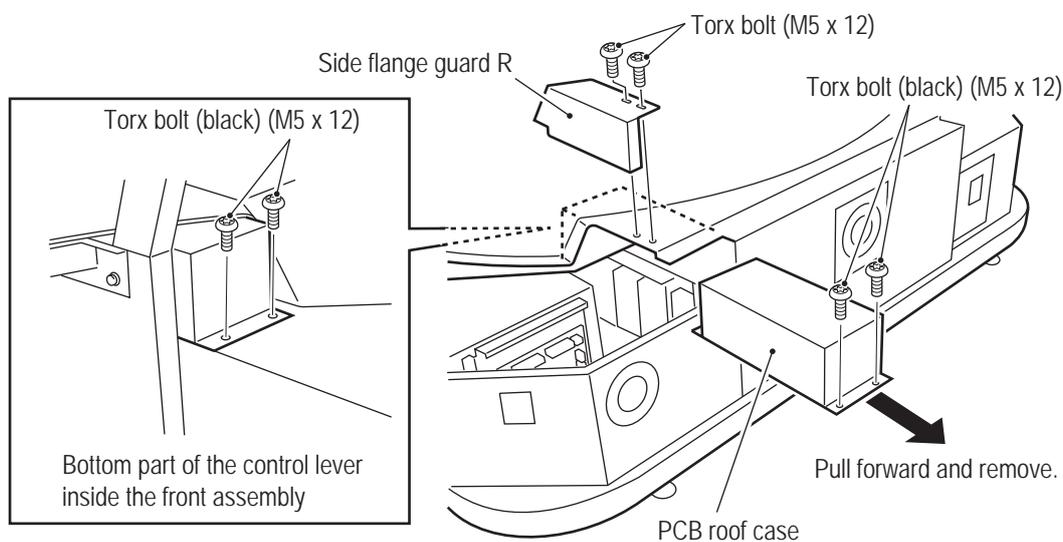
3 Loosen the two nuts with washers (M5), then lift up the power panel assembly slightly and pull it forward to remove it.
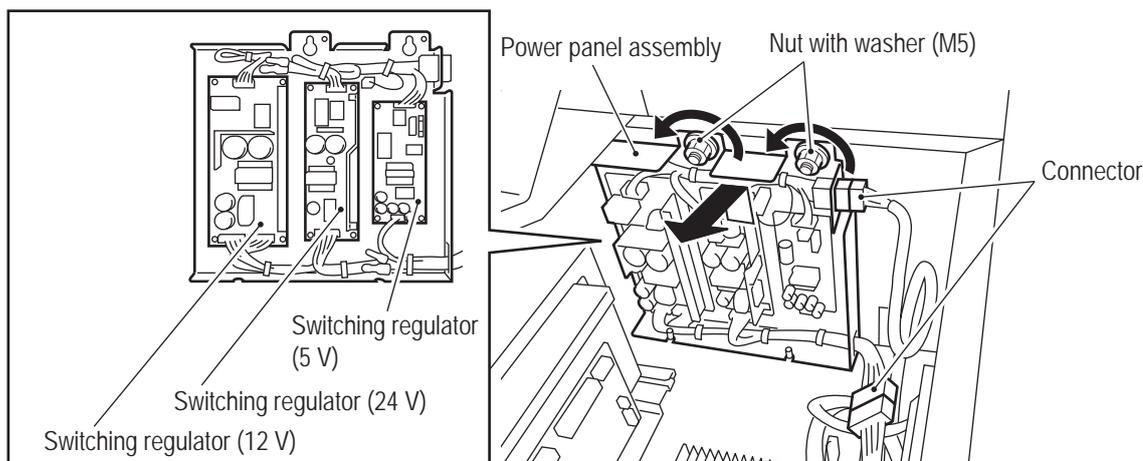
Power panel assembly
Nut with washer (M5)
Connector
Switching regulator (5 V)
Switching regulator (24 V)
Switching regulator (12 V)

4 To install, perform the procedure in reverse.

◀ NOTICE
- **When installing, check the connector orientations and insert the connectors firmly until they lock securely.**
- When installing, be careful not to pinch the connectors and harness.

– Must be performed by a technician –

(5) Replacing the Fan – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the main power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Loosen the lower two Torx bolts (black) (M5 x 12), remove the upper two Torx bolts (black) (M5 x 12) and remove the fan bracket.

Torx bolt (black) (M5 x 12)

Torx bolt (black) (M5 x 12)

Fan bracket
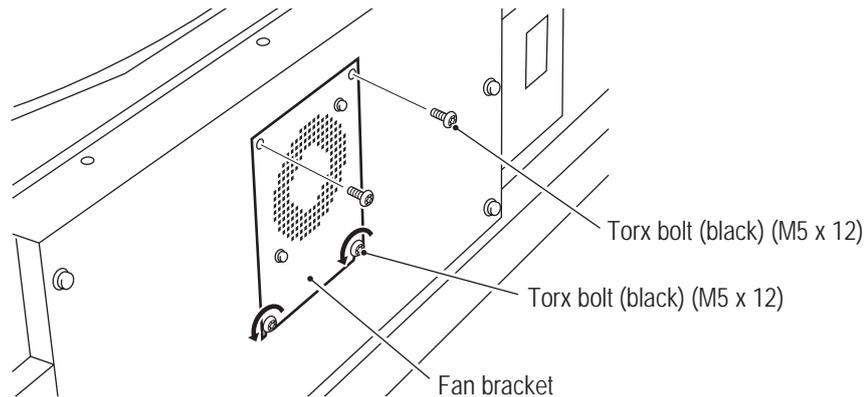
3 Disconnect the connector and Faston tab, remove the two nuts with washers (M4) and remove the fan.

Nut with washer (M4)

Faston tab

Connector

Fan
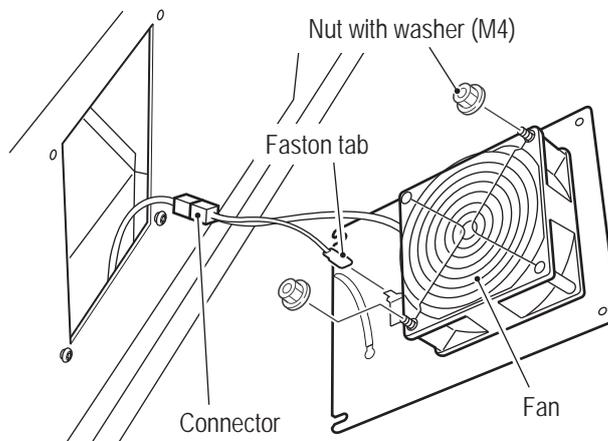
4 To install, perform the procedure in reverse.

NOTICE ● When installing the fan, orient it so that it blows air from the outside to the inside of the cabinet.

Fan blowing direction

Air intake direction
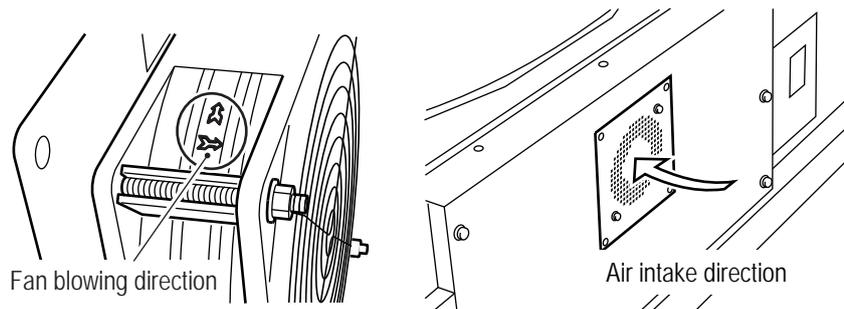
● **When installing, check the connector orientation and insert the connector firmly until it locks securely.**

● When installing, be careful not to pinch the connectors and harness.

(6)　Replacing and Installing the Control Lever Assembly – Must be performed by a technician –

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1　Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2　Remove the four Torx bolts (black) (M5 x 12) and lift up the control lever assembly.

3　Disconnect the connector and replace the control lever assembly.
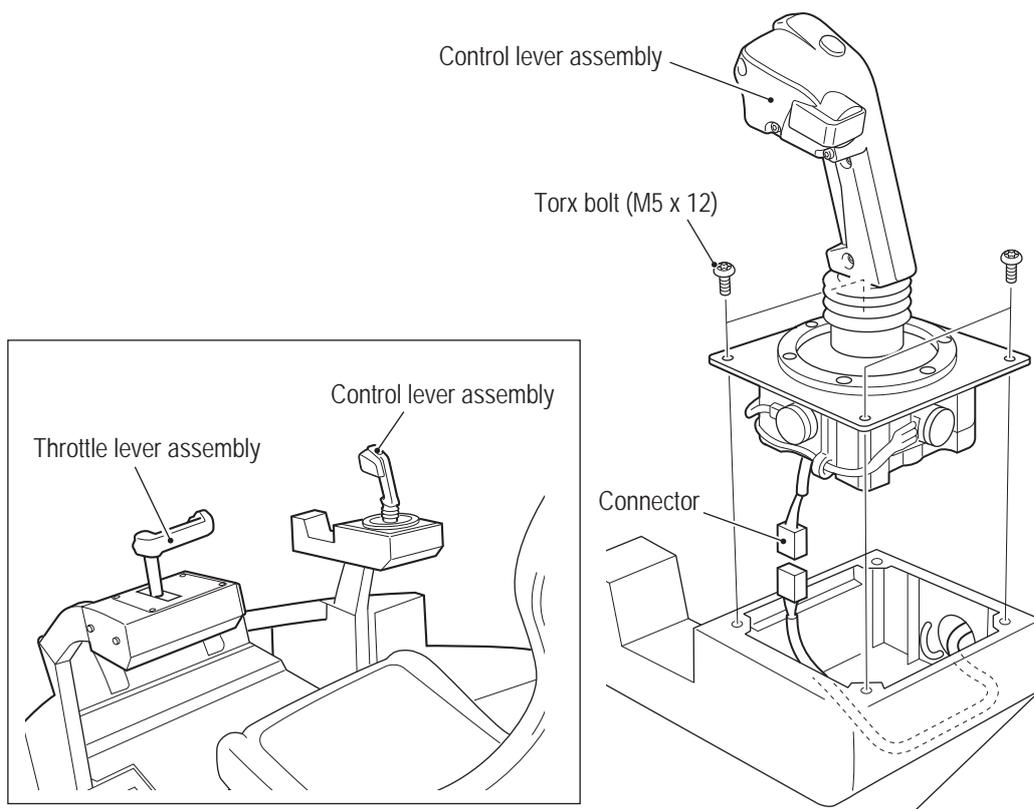
Control lever assembly

Torx bolt (M5 x 12)

Control lever assembly

Throttle lever assembly

Connector

4　To install, perform the procedure in reverse.

NOTICE　● **When installing, check the connector orientations and insert the connectors firmly until they lock securely.**
　　● When installing, be careful not to pinch the connectors and harness.
　　● After replacement, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)

Test Mode

Troubleshooting

103

– Must be performed by a technician –

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(7)　Replacing the Control Lever Analog Interface – Must be performed by a technician –

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3 Remove the four cap bolts (with spring washer) (M5 x 35) and remove the guide plate.

4 Remove the two Phillips pan head screws (M3 x 20) and remove the analog interface.

Control lever assembly

X-axis analog interface

Phillips pan head screw (M3 x 20)

Y-axis analog interface

Guide plate

Cap bolt (with spring washer) (M5 x 35)

X-axis analog interface

Heat-shrinkable tube

White and black | White and red
White and green

Analog interface terminal 1 wiring color: White and red
Analog interface terminal 2 wiring color: White and green
Analog interface terminal 3 wiring color: White and black

Y-axis analog interface

Heat-shrinkable tube

White and red | White and black
White and blue

Analog interface terminal 1 wiring color: White and black
Analog interface terminal 2 wiring color: White and blue
Analog interface terminal 3 wiring color: White and red

5 Remove the analog interface from the analog interface bracket.

Screw hole (tap) side

Analog interface spacer

Flat washer

Spring washer

Hexagonal nut (Do not over-tighten)

Analog interface

Analog interface bracket

Fit into the hole

Analog interface spacer

Analog interface

Analog interface bracket

Cross sectional view of analog interface portion

6 Replace the analog interface.

– Must be performed by a technician –

7   To install, perform the procedure in reverse.

NOTICE   ● **When installing the analog interface, align the flat surface of the analog interface shaft with the position of the D-shaped hole.**

Flat surface of the analog interface shaft

● After replacement, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)
● When installing, be careful not to pinch the harness in the lever moving parts.

1
2
3
4
5
6
7
8A
8B
9
10
11

Service

Test Mode

Troubleshooting

105

– Must be performed by a technician –

(8)   Replacing the Control Lever Switch (Micro Switch) – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3 Lower the rubber cover until the screw is visible.

Control lever assembly

Rubber cover
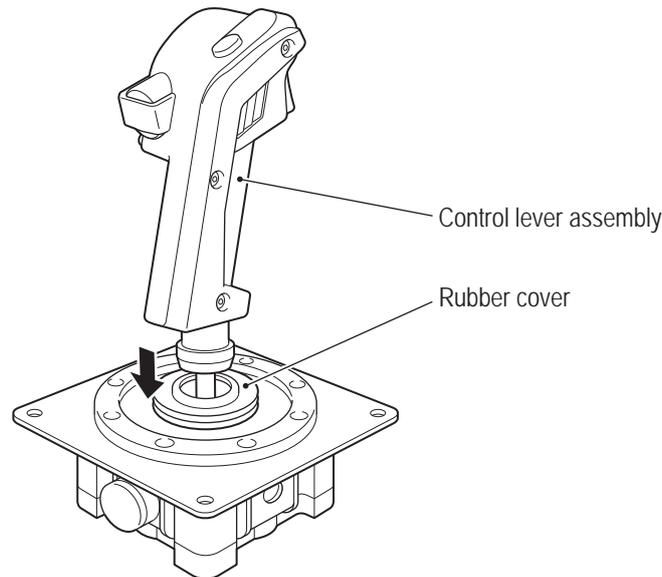
4 Remove the two button bolts (with spring washer) (M4 x 8) and the button bolt (with spring washer) (M4 x 30) and remove the lever grip A.

Button bolt (with spring washer) (M4 x 30)

Note:
Do not remove this button bolt (with spring washer) (M4 x 8)

Lever grip A

Button bolt (with spring washer) (M4 x 8)
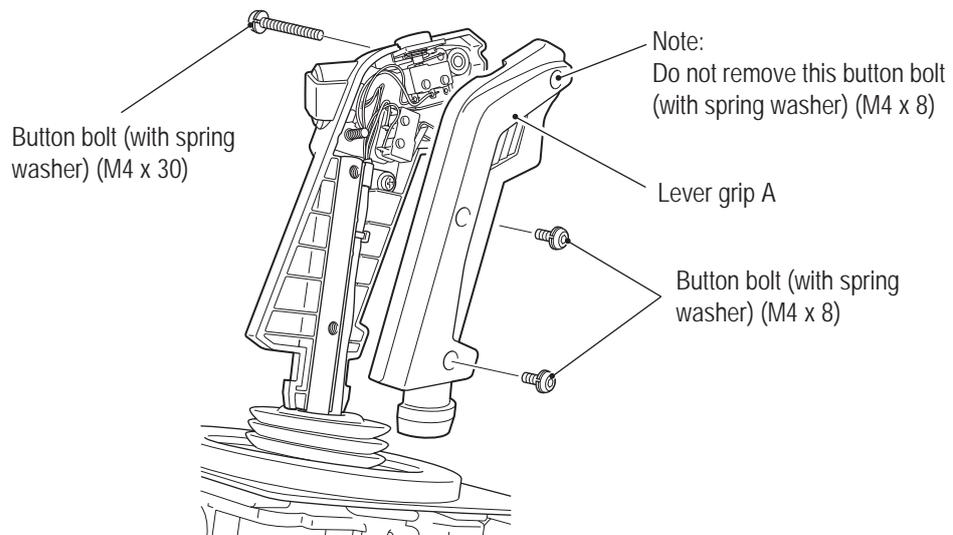
NOTICE ● Be sure not to remove the button bolt (with spring washer) (M4 x 8) on the top of the lever clip A to keep the machine gun button installed.

– Must be performed by a technician –

5 Remove the four special Phillips pan head screws (M2.3 x 12), four spring washers and the Phillips pan head screw (with flat and spring washers) (M4 x 8), and remove the switches and clamps.

Special Phillips pan head screw (M2.3 x 12)

Spring washer (M2.3)

Phillips pan head screw (with flat and spring washers) (M4 x 8)

Lever grip B

Switch (for missile button)

Motor cover

Clamp

Switch (for machine gun button)
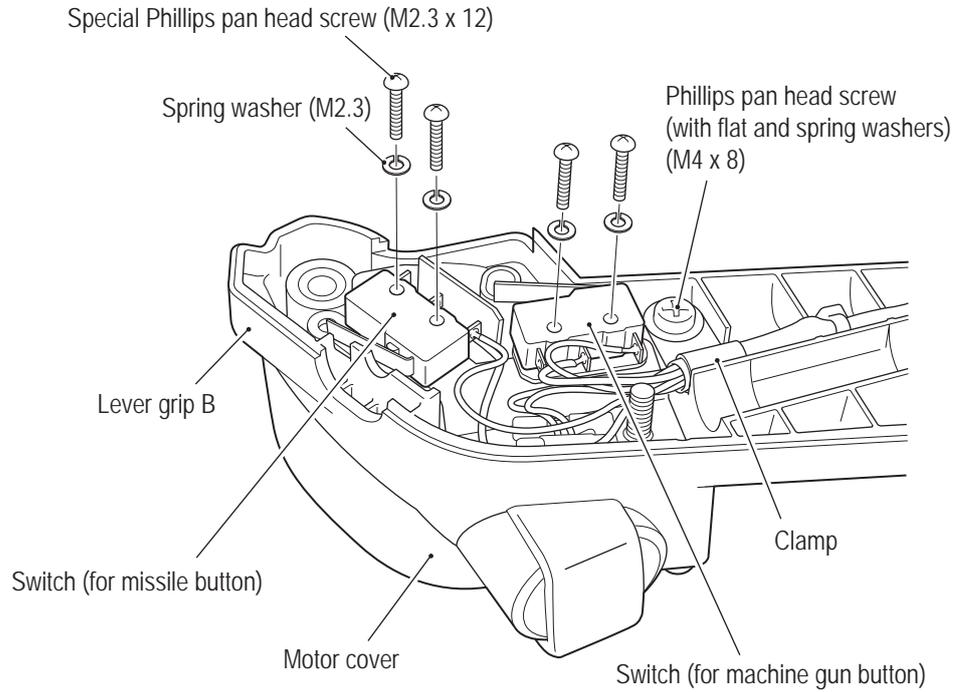
6 Melt the solder of the micro switch terminals and replace the micro switch.
 * Be careful not to disconnect the contacts crimped onto the wiring.

Switch (for missile button)

Switch (for machine gun button)

Switch (for missile button)

Switch (for machine gun button)

Wiring color: blue

Wiring color: black

Wiring color: green

Wiring color: black

Control lever metal part B
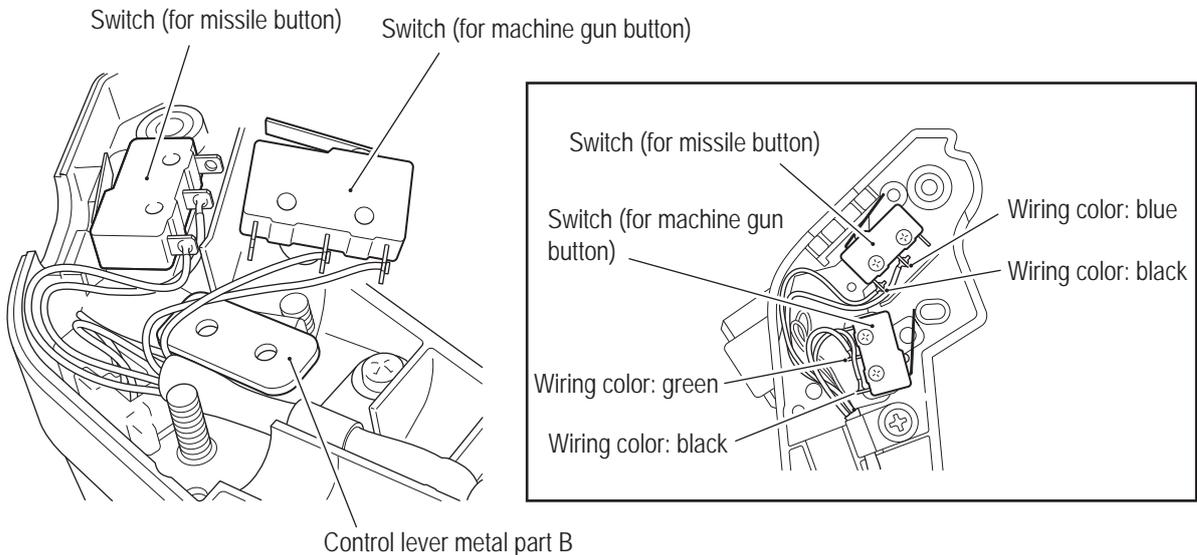
NOTICE
- When installing, be careful not to pinch the harness.
- Be very careful when handling the soldering iron.
- When soldering the wiring to the micro switch, be careful not to mix up the combinations of wiring colors and terminals.
- Be sure to insert the control lever metal part B below the switch (for machine gun button).

– Must be performed by a technician –

7 To install, perform the procedure in reverse.

Arrange the cable by wrapping it around the shaft one time in the clockwise.

Shaft

Front side

NOTICE
- Arrange the cable by wrapping it around the shaft one time in the clockwise direction starting from the analog interface side.
- Arrange the cable along the side surface of the square pipe.
- After replacement, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)
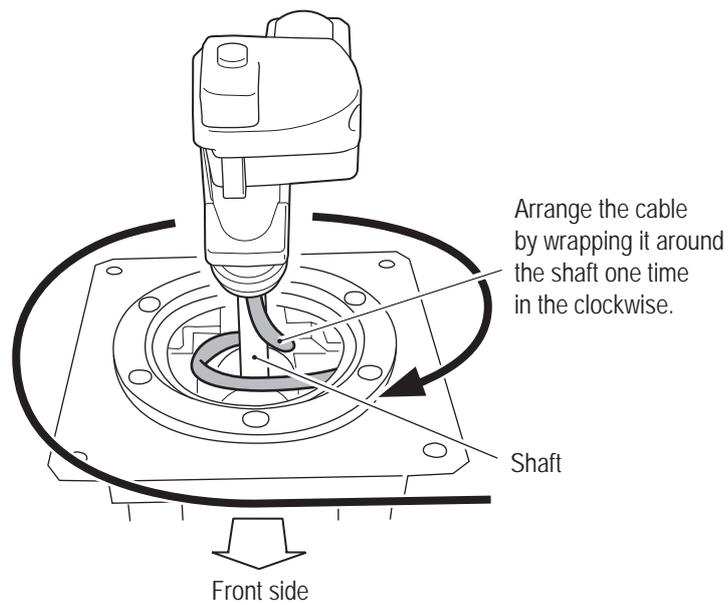
(9)   Replacing the Lever Switch (Machine Gun Button) – Must be performed by a technician –

⚠WARNING

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

---

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3 Disassemble the lever grip. (See steps **3** and **4** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

4 Remove and replace the machine gun button and machine gun button spring.
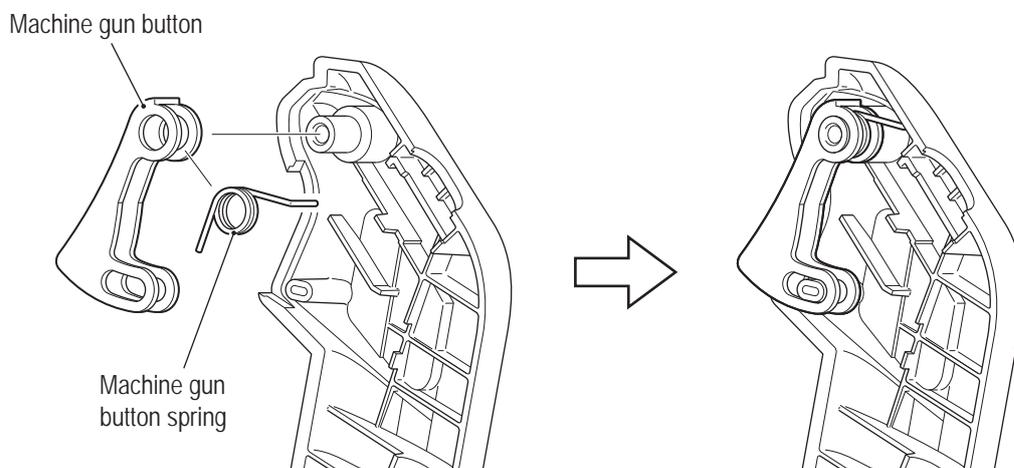
Machine gun button

Machine gun
button spring

5 To install, perform the procedure in reverse. (See steps **3** and **4** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

NOTICE ● After replacement, be sure to perform the I/O test for each switch. (See "7-4-4 (2) SWITCH TEST" on page 37.)

– Must be performed by a technician –

(10) Replacing the Lever Switch (Missile Button) – Must be performed by a technician –

⚠ WARNING

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3 Disassemble the lever grip. (See steps **3** and **4** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

4 Remove and replace the missile button and missile button spring.
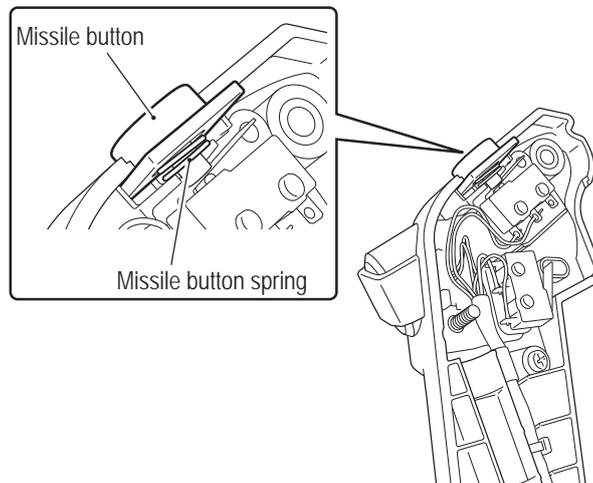
Missile button

Missile button spring

5 To install, perform the procedure in reverse. (See steps **3** and **4** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

NOTICE
- After replacement, be sure to perform the I/O test for each switch. (See "7-4-4 (2) SWITCH TEST" on page 37.)

– Must be performed by a technician –

(11)   Replacing the Control Lever Vibration Motor – Must be performed by a technician –

⚠ WARNING

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

---

1   Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2   Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3   Remove the button bolt (with spring washer) (M4 x 30) and two cap bolts (with spring washer) (M3 x 30) and remove the motor cover.

Motor cover

Button bolt
(with spring washer)
(M4 x 30)

Cap bolt (with spring washer)
(M3 x 30)
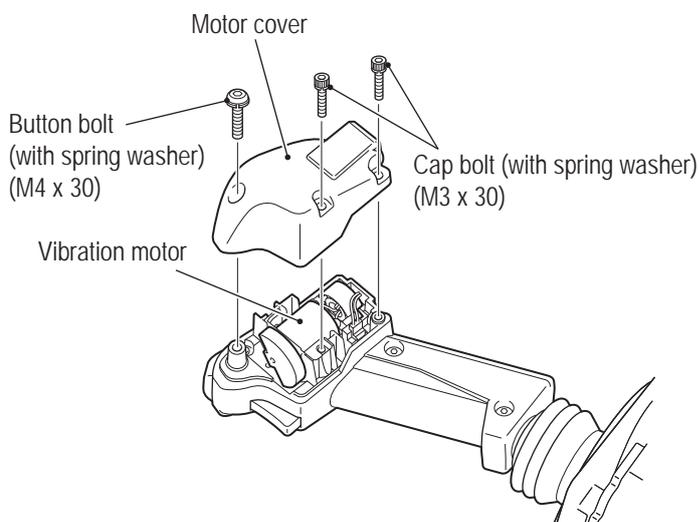
Vibration motor

4   Disconnect the connector, remove the Phillips pan head screw (with flat and spring washers) (M3 x 6) and remove the vibration motor, ferrite core and core spacer.
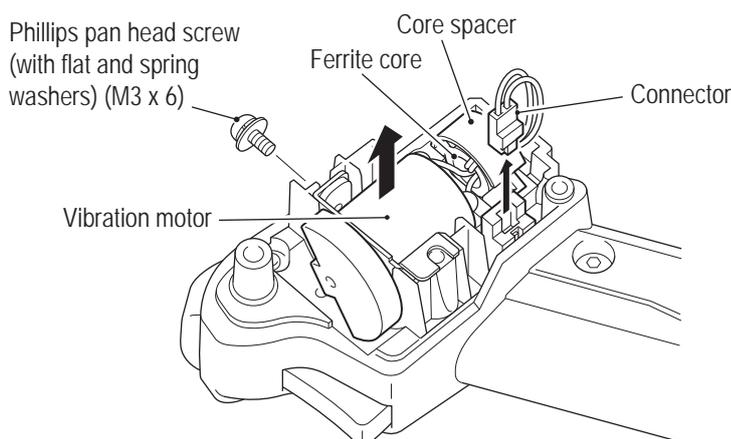
Phillips pan head screw
(with flat and spring
washers) (M3 x 6)

Core spacer
Ferrite core

Connector

Vibration motor

– Must be performed by a technician –

5 Rotate the weight, remove the two Phillips pan head screws (M2.3 x 2.5) and remove the vibration motor. Replace with a new vibration motor by reversing the procedure.

Vibration motor

Motor bracket

Rotate the weight to remove the screws.

Phillip pan head screws (M2.3 x 2.5)
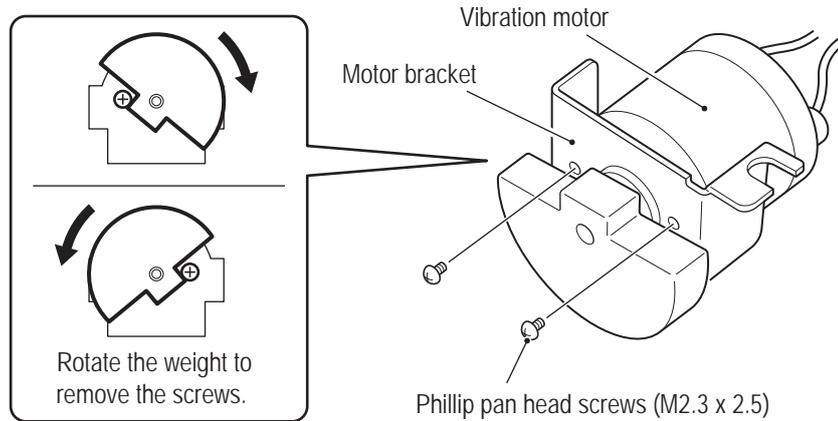
6 Wind the harness of the new vibration motor around the ferrite core one time, attach the core spacer to the ferrite core, and install the vibration motor, ferrite core and core spacer to the lever base B.
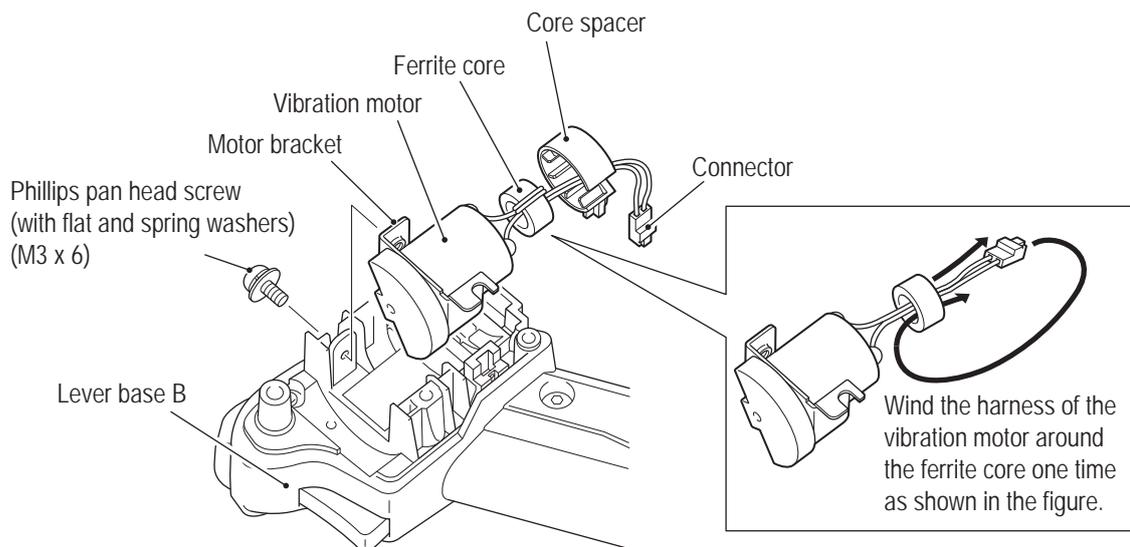
Core spacer

Ferrite core

Vibration motor

Motor bracket

Phillips pan head screw
(with flat and spring washers)
(M3 x 6)

Connector

Lever base B

Wind the harness of the vibration motor around the ferrite core one time as shown in the figure.

7 To install, perform the procedure in reverse.

112

(12)   Replacing the Spring or Spring Stopper – Must be performed by a technician –

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the control lever assembly or the throttle lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3 Remove the E-ring, spring end, spring and spring stopper.

Control lever

Stainless steel part
Shaft
Spring stopper
Spring
Spring end
E-ring
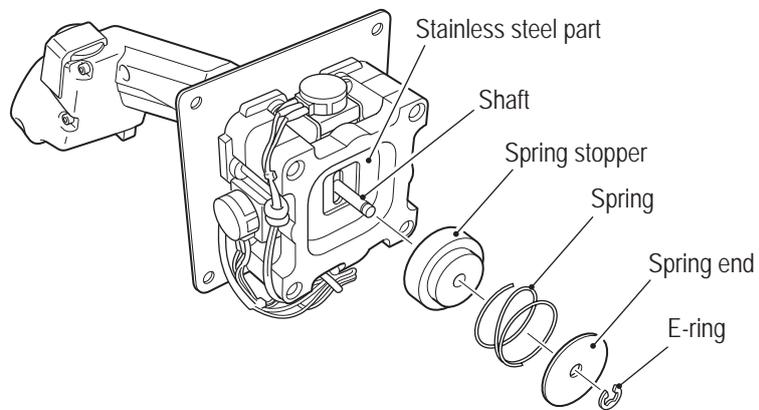
4 Replace the spring or spring stopper.

▶**NOTICE** ● Apply silicon grease (Shin-Etsu Chemical Co., Ltd G-40M or equivalent product) to the spring or spring stopper.

5 To install, perform the procedure in reverse.

▶**NOTICE** ● When installing, be careful not to pinch the harness in the lever moving parts.
● After replacement, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)

113

(13)   Replacing the Rubber Cover – Must be performed by a technician –

⚠ **WARNING**

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3 Remove the grips A and B of the control lever assembly. (See steps **3** to **5** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

4 Remove the six button bolts (with spring washer) (M4 x 8) and remove the cover fixing frame and rubber cover.

Rubber cover

Button bolt
(with spring washer)
(M4 x 8)

Button bolt
(with spring washer)
(M4 x 8)

Cover fixing frame
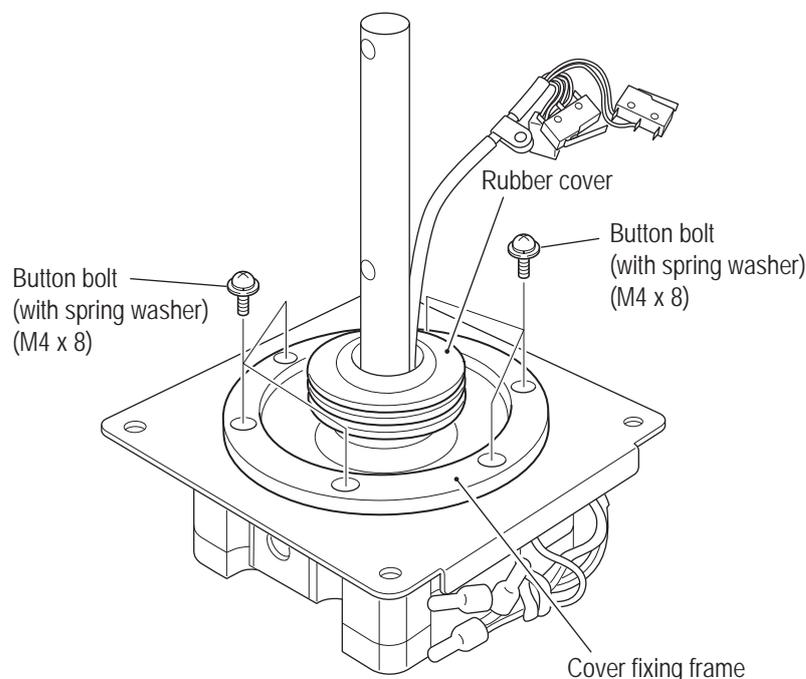
5 Replace the rubber cover.

6 To install, perform the procedure in reverse. (See steps **3** to **5** and **7** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

NOTICE
● Arrange the cable by wrapping it around the shaft one time in the clockwise direction starting from the analog interface side.
● Arrange the cable along the side surface of the square pipe.
● After replacement, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)

– Must be performed by a technician –

(14)   Replacing the Lever Sub-assembly – Must be performed by a technician –

⚠ WARNING

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1   Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2   Remove the control lever assembly. (See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

3   Remove the grips A and B of the control lever assembly. (See steps **3** to **5** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

4   Remove the rubber cover. (See steps **4** to **5** of "8B-5-1 (13) Replacing the Rubber Cover" on page 114.)

5   Remove the four cap bolts (with spring washer) (M5 x 35) and remove the guide plate.

Guide plate

Cap bolt (with spring washer)
(M5 x 35)
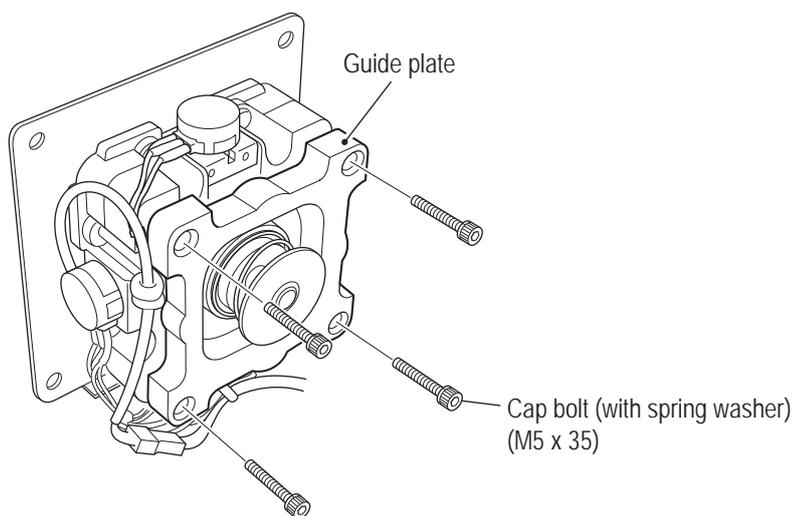
– Must be performed by a technician –

6 Remove the two Phillips pan head screws (M3 x 20) and remove the X-axis and Y-axis analog interfaces (two screws each).

7 Remove the two Phillips pan head screws (with spring washer) (M5 x 14) and remove the clamp base.

8 Loosen the clamp and remove the grip harness.

X-axis analog interface

Phillips pan head screw (M3 x 20)

Clamp base

Clamp

Y-axis analog interface

Lever harness

Lever harness

Grip harness

Phillips pan head screw (M3 x 20)

Phillips pan head screw (with spring washer) (M5 x 14)
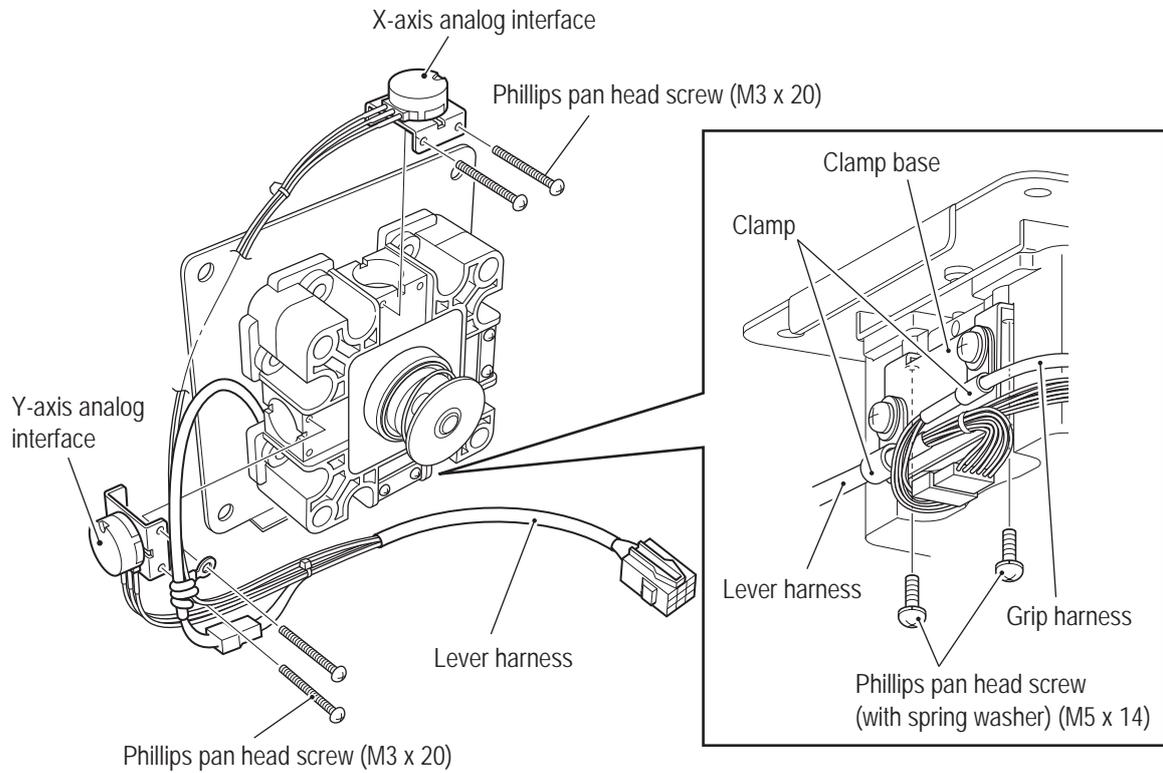
9 Remove the two Phillips pan head screws (with spring washer) (M5 x 14) and remove the lever sub-assembly from the installation plate.

Lever sub-assembly

Be careful as the four corner nuts (M5) may fall out when removing the cap bolts

Installation plate

Phillips pan head screw (with spring washer) (M5 x 14)

116
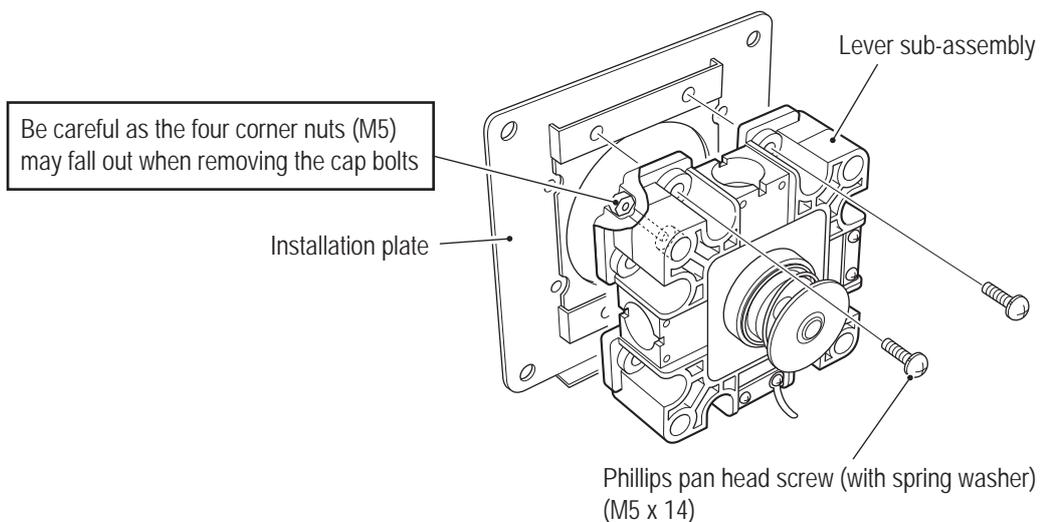
– Must be performed by a technician –

10 Use pliers or another tool to remove the E-ring, spring stopper, spring, spring end and stainless steel plate.

*The spring stopper, spring, spring end and E-ring are reused. (The stainless steel plate is not used.)

Stainless steel plate

Spring stopper

Spring

Spring end

E-ring
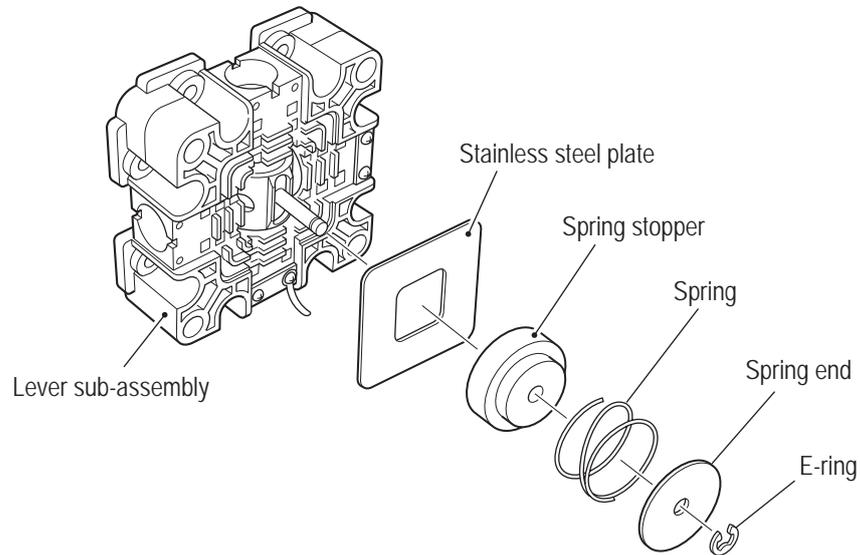
Lever sub-assembly

11 Remove the four cap bolts (with spring washer) (M5 x 35) of the new lever sub-assembly, and remove the guide plate.

New lever sub-assembly

Guide plate

Be careful as the four corner nuts (M5) may fall out when removing the cap bolts.

Cap bolt
(with spring washer)
(M5 x 35)
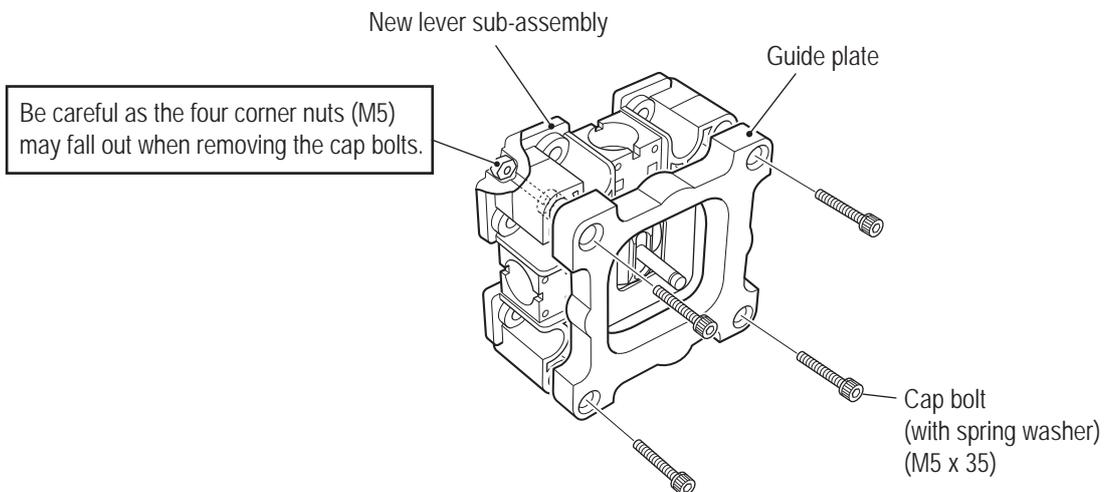
– Must be performed by a technician –

12 Attach the new lever sub-assembly to the installation plate by performing the step **9** procedure in reverse.

At this time attach the new lever sub-assembly so that the screw holes in the shaft of the new lever sub-assembly face the folded-back portion of the installation plate (the direction of the arrows), and the analog interface installation holes (without fixture) and positions where fixtures are mounted are as shown in the figure below.

Analog interface installation hole (with fixture)

Screw hole in the shaft

Installation plate

Analog interface installation hole (without fixture)

Make sure that the four corner nuts (M5) are properly inserted before assembly.

New lever sub-assembly

Folded-back portion of the installation plate (Screen side)

Analog interface installation hole (without fixture)

Analog interface installation hole (with fixture)

13 Apply silicon grease (Shin-Etsu Chemical Co., Ltd G-40M or equivalent product) to the stainless steel plate and shaft portion of the new lever sub-assembly.

New lever sub-assembly

Stainless steel plate (Silicon grease applied)

Shaft (Silicon grease applied)
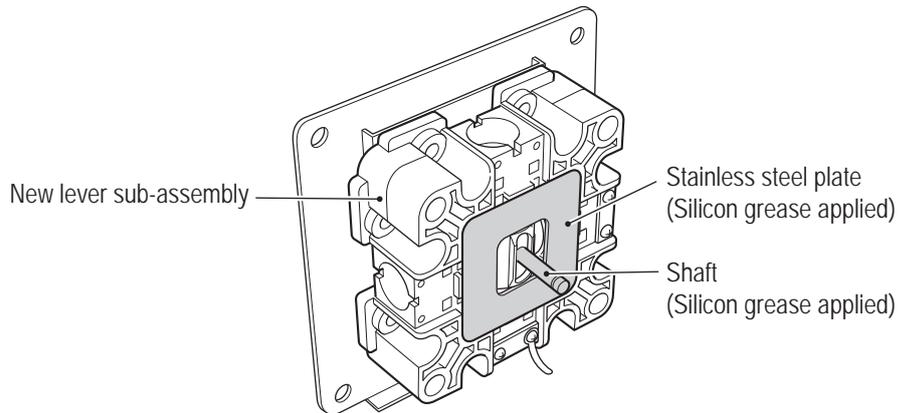
14 Install the spring stopper, spring and spring end removed in step **10** by reversing the procedure in step **10** and secure them with the E-ring.

Spring stopper

Spring

Spring end

E-ring

118
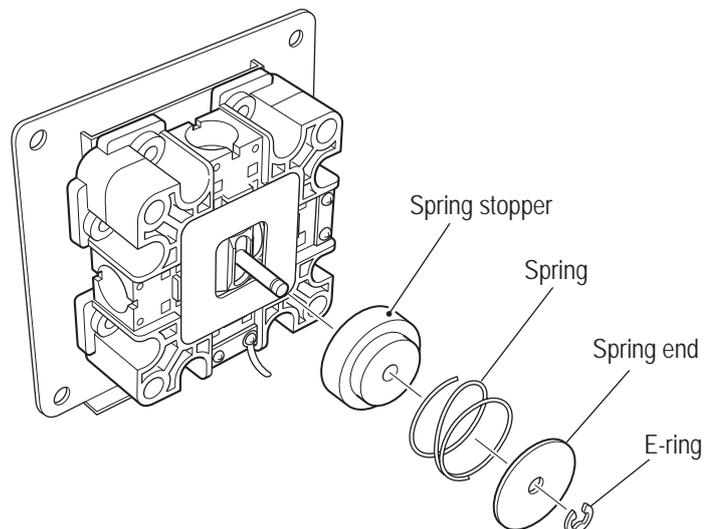
15 Install the analog interfaces and harness by reversing the procedure in steps **6** to **8**.

X-axis analog interface

Grip harness

Y-axis analog interface

Clamp base

Clamp

Lever harness

Grip harness

Phillips pan head screw (with spring washer) (M5 x 14)
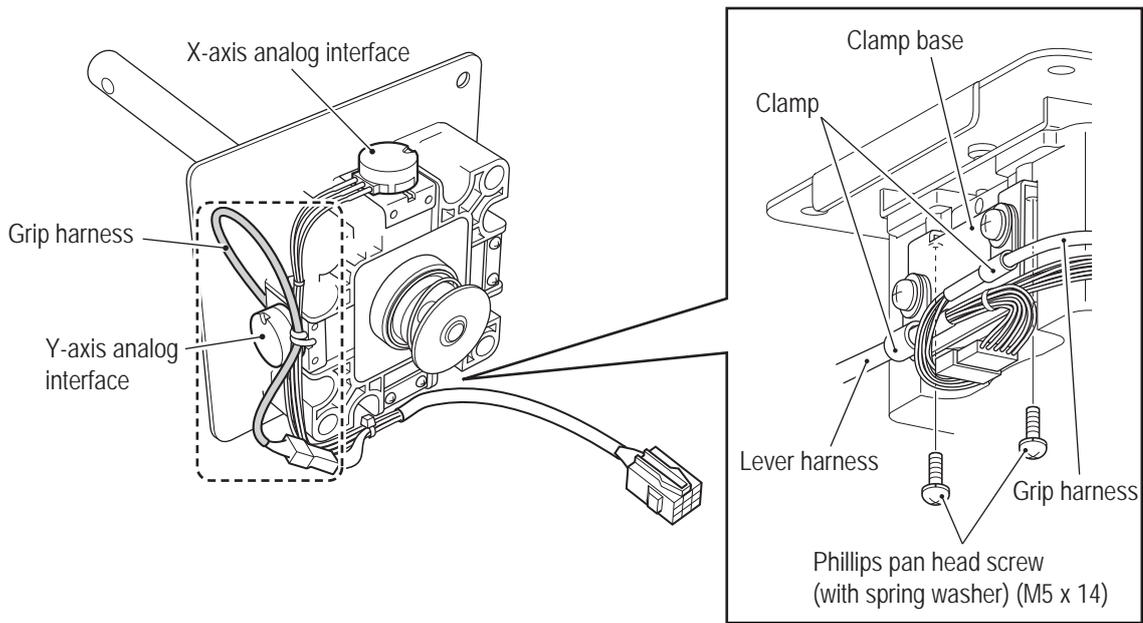
NOTICE

● When installing, be careful not to pinch the harness in the moving parts.

● **When installing the analog interface, align the flat surface of the analog interface** shaft with the position of the D-shaped hole.

Flat surface of the analog interface shaft

119
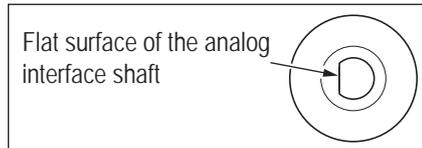
16 Arrange the grip harness as shown in the figure below.

NOTICE ● Arrange the grip harness by wrapping it around the shaft one time in the clockwise direction starting from the analog interface side.

Grip harness

Arrange the grip harness by wrapping it around the shaft one time in the clockwise.

Front side (Screen side)
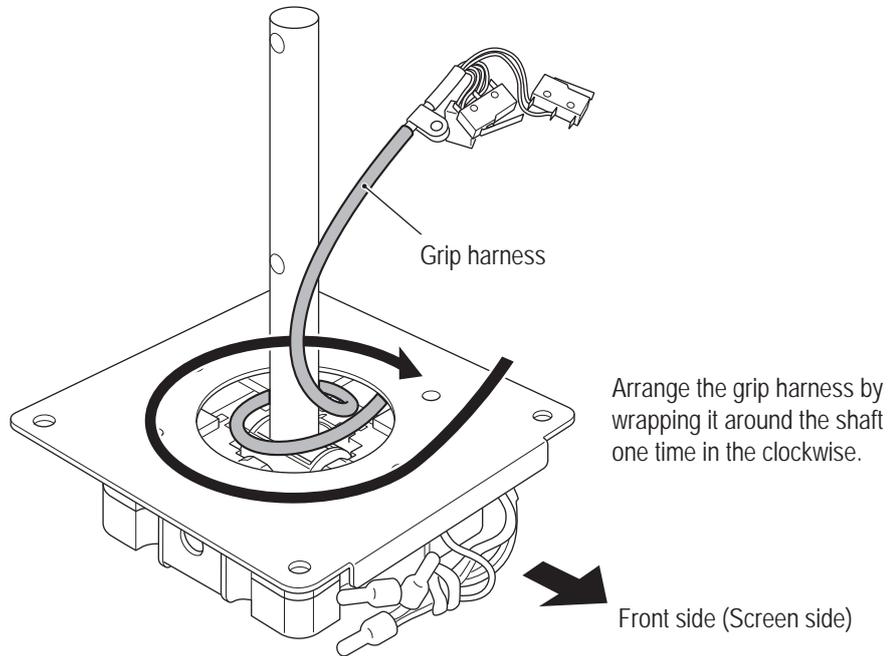
17 Use the four cap bolts (with spring washer) (M5 x 35) to install the guide plate removed in step **11**.

During assembly the four corner nuts (M5) may rotate loosely so that the bolts do not tighten. In this case use a thin rod or other tool to push the nuts (M5) toward the bolt side.

Guide plate

Cap bolt (with spring washer) (M5 x 35)
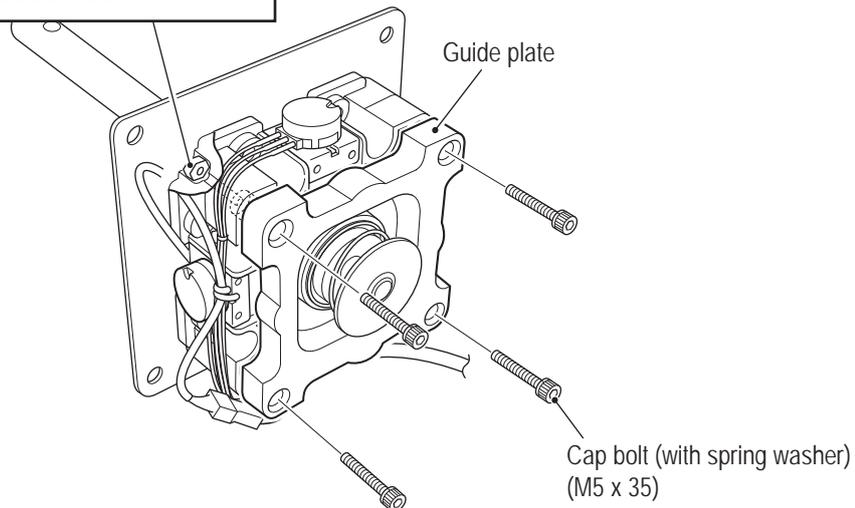
NOTICE ● When installing the guide plate, be careful not to pinch the stainless steel plate.

18 Install the rubber cover. (See steps **4** to **5** of "8B-5-1 (13) Replacing the Rubber Cover" on page 114.)

| – Must be performed by a technician – |

19 Install the grip. (See steps **3** to **5** and **7** of "8B-5-1 (8) Replacing the Control Lever Switch (Micro Switch)" on page 106.)

Make sure that the grip harness is wired correctly before installing the grip.

Clamping band   Grip harness

Lever grip A

Missile button

Lever grip B
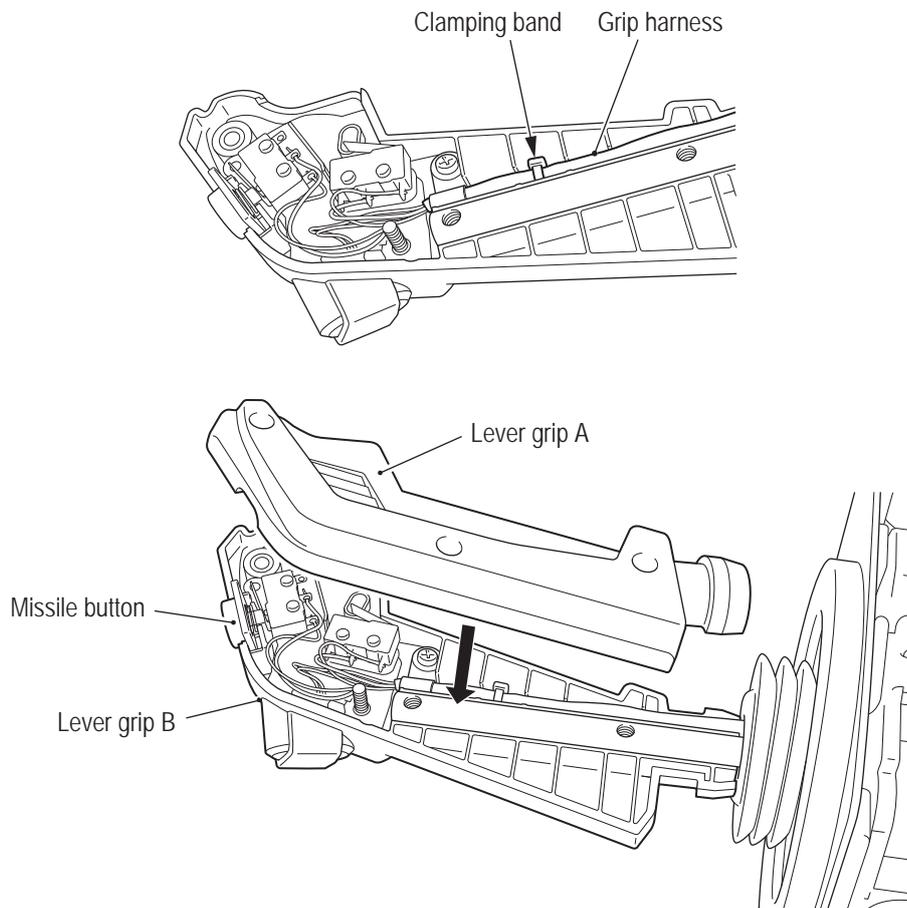
20 Pull the rubber cover up to the base of the lever arm.

Control lever assembly

Rubber cover
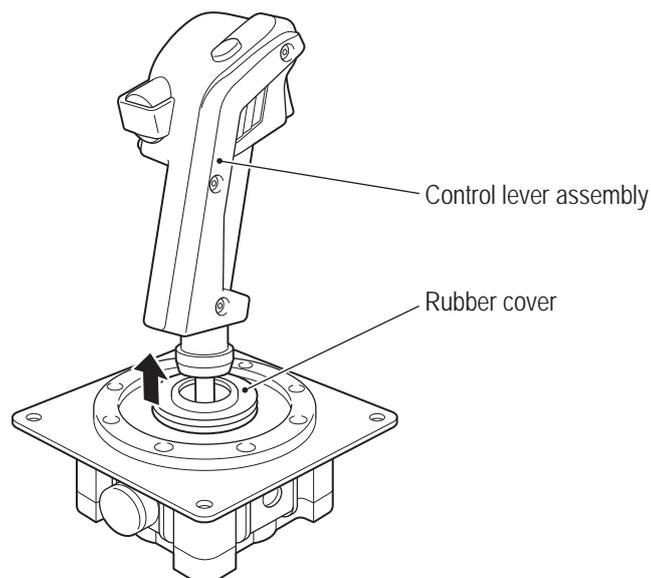
8B. Service

| – Must be performed by a technician – |

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21 Connect the connector and use four Torx bolts (black) (M5 x 12) to install the control lever.
(See "8B-5-1 (6) Replacing and Installing the Control Lever Assembly" on page 103.)

NOTICE
- When installing, be careful not to pinch the harness.
- After installation, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)

(15)   Replacing the Throttle Lever Assembly – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1   Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2   Remove the four Torx bolts (black) (M5 x 12) and lift up the throttle lever assembly.

3   Disconnect the connector.
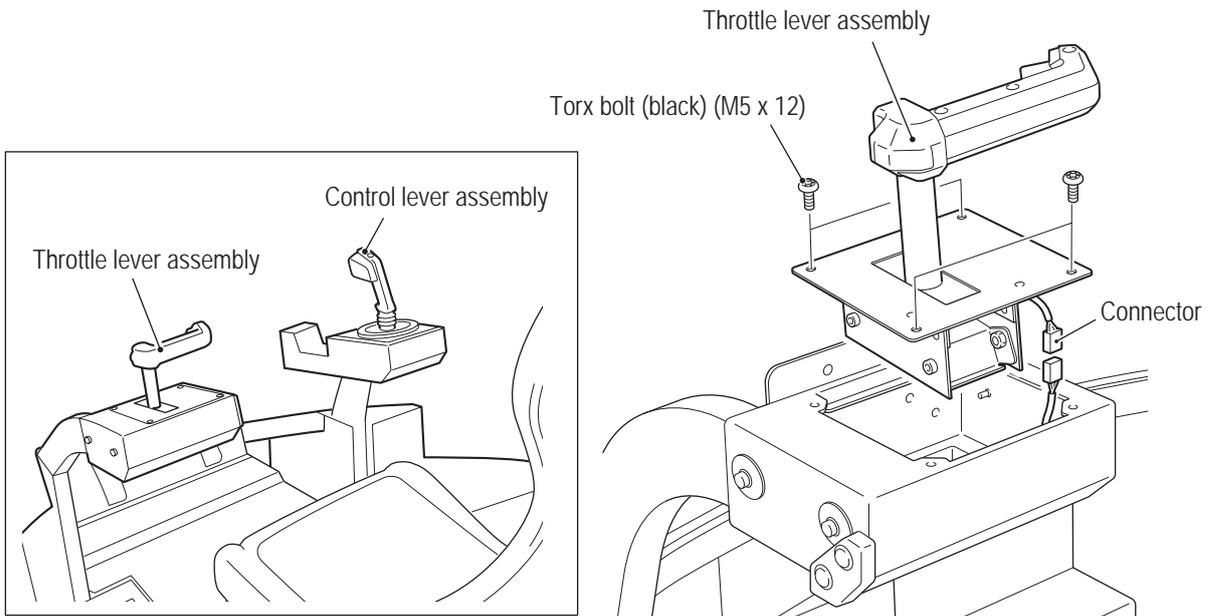
Throttle lever assembly

Torx bolt (black) (M5 x 12)

Connector

Control lever assembly

Throttle lever assembly

4   To install, perform the procedure in reverse.

▶ **NOTICE**   ● **When installing, check the connector orientations and insert the connectors firmly until they lock securely.**

● When installing, be careful not to pinch the connectors and harness.

● After installation, be sure to perform initialization.

– Must be performed by a technician –

(16)   Replacing the Throttle Lever Analog Interface – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1   Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2   Remove the throttle lever assembly. (See "8B-5-1 (15) Replacing the Throttle Lever Assembly" on page 123.)

3   Loosen the double point (M4 x 6) and remove the analog interface together with the analog interface bracket.

Analog interface bracket

Double point (M4 x 6)

Analog interface

4   Remove the analog interface from the analog interface bracket.

Throttle lever analog interface

3 2 1

Heat-shrinkable tube

White and black   White and red
White and blue

Analog interface terminal 1
 wiring color: White and red
Analog interface terminal 2
 wiring color: White and blue
Analog interface terminal 3
 wiring color: White and black

Analog interface

Analog interface bracket

Washer

Spring washer

Hexagonal nut (Do not over-tighten)
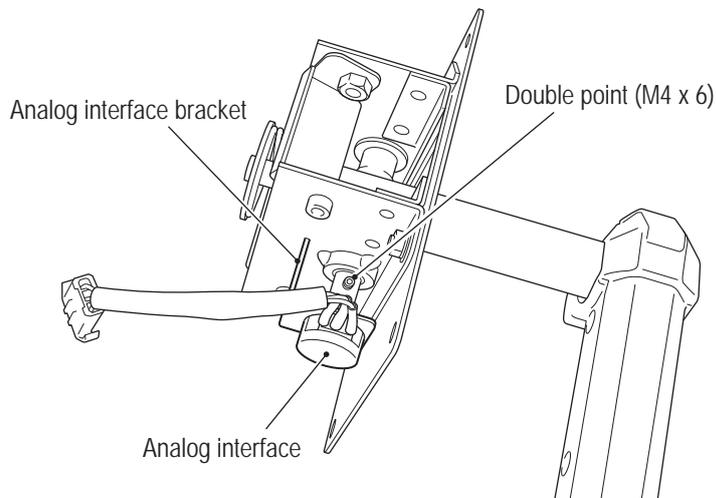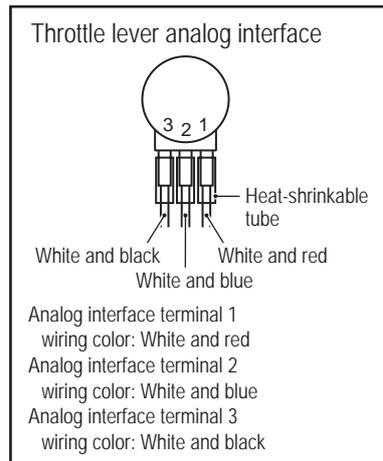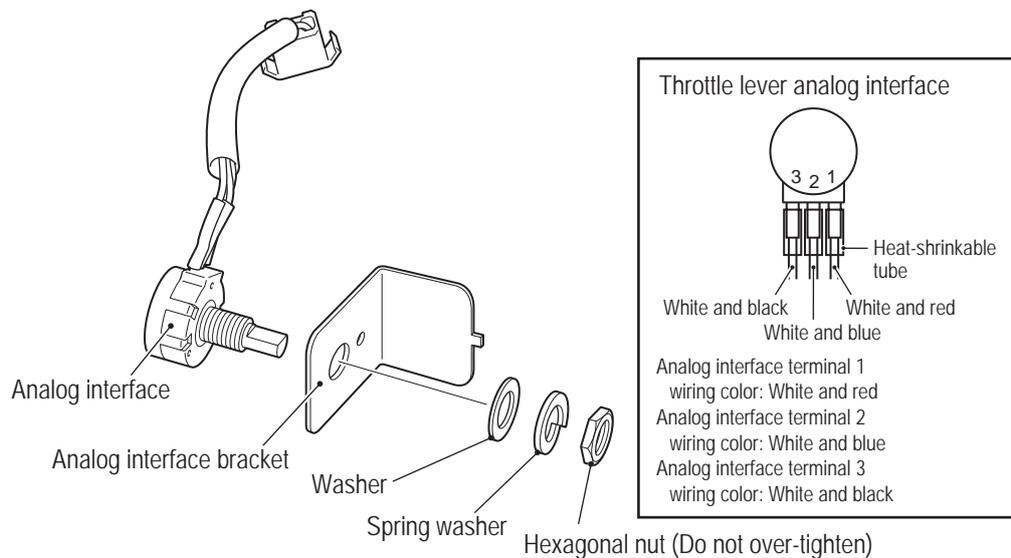
5   Replace the analog interface.

– Must be performed by a technician –

6 To install, perform the procedure in reverse.

> ⬤ **NOTICE**
> ● **When installing the analog interface, align the flat surface of the analog interface shaft with the position of the D-shaped hole.**

Flat surface of the analog interface shaft

● After replacement, be sure to perform initialization. (See "7-4-4 (1) I/F CALIBRATION" on page 36.)

● When installing, be careful not to pinch the harness in the lever moving parts.

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8B
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Service

Test Mode

Troubleshooting

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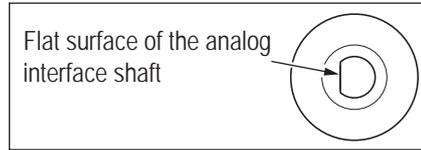
– Must be performed by a technician –

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(17)　Replacing the USB Camera – Must be performed by a technician –

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

◀NOTICE　● PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body. (Example: touching the surface of grounded metal.)

1　Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2　Remove the four Torx bolts (M5 x 12) and remove the camera box cover.

Torx bolt (M5 x 12)

Camera box cover
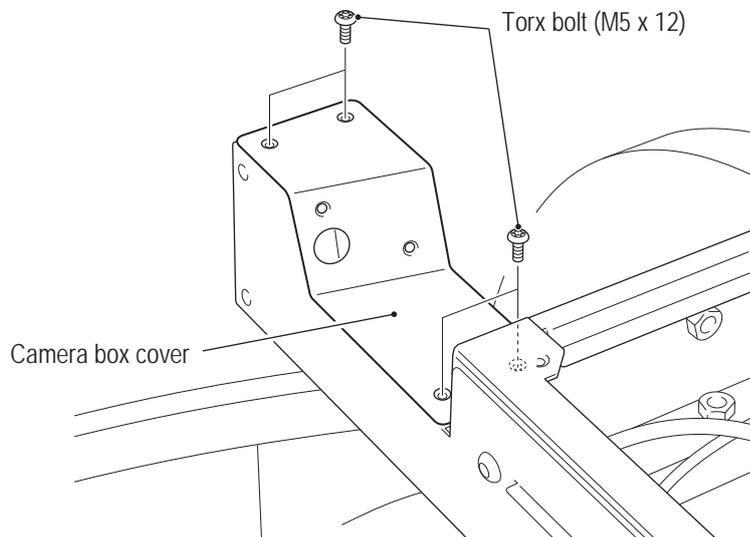
3　Remove the two nuts with washer (M4) and release the cable clip.

Nut with washer (M4)

Cable clip

126
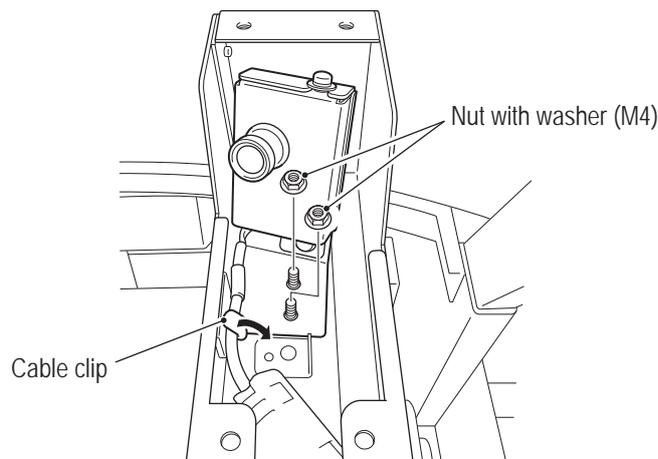
– Must be performed by a technician –

4 Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 10), and remove the camera cover.

Phillips pan head screw (with flat and spring washers) (M4 x 10)

Camera cover

Phillips pan head screw (with flat and spring washers) (M4 x 10)
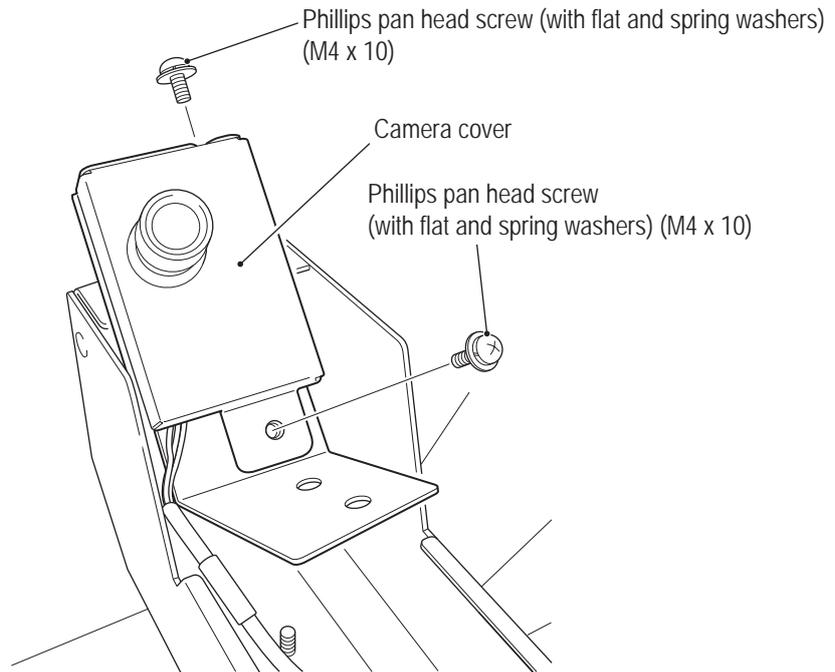
5 Remove the connector and the two Phillips pan head screws (M2 x 4) from the camera bracket, then replace the USB camera.

Phillips pan head screw (M2 x 4)

USB camera

Camera bracket

Connector
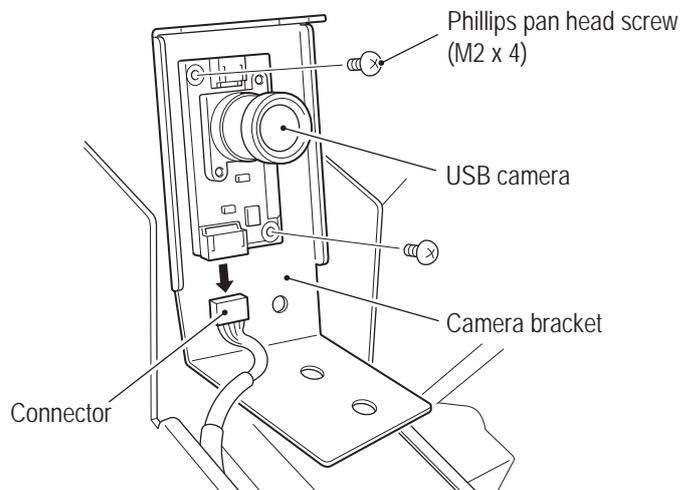
6 To install, perform the procedure in reverse.

NOTICE ● After replacement, be sure to perform the camera shooting test. (See "7-4-4 (5) CAMERA TEST" on page 40.)

Test Mode

Troubleshooting

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(18) **Replacing the Bill Validator (U.S. Specifications) – Must be performed by a technician –**

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

(a) Replacing the bill validator

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Open the padlock and remove the lock bar (B).

Lock bar (B)
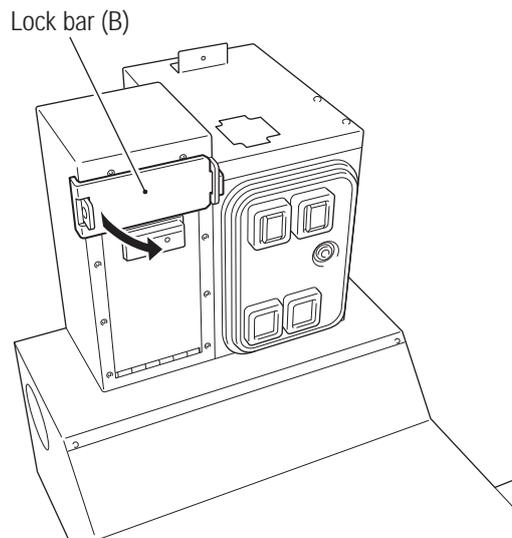
3 Use the service key to open the door.

Service key
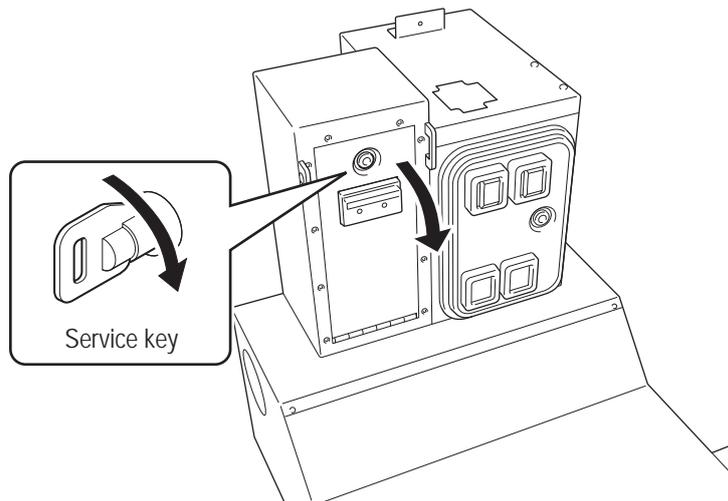
– Must be performed by a technician –

4   Disconnect the connector, remove the four bolts and replace the bill validator.

Bolt

Connector
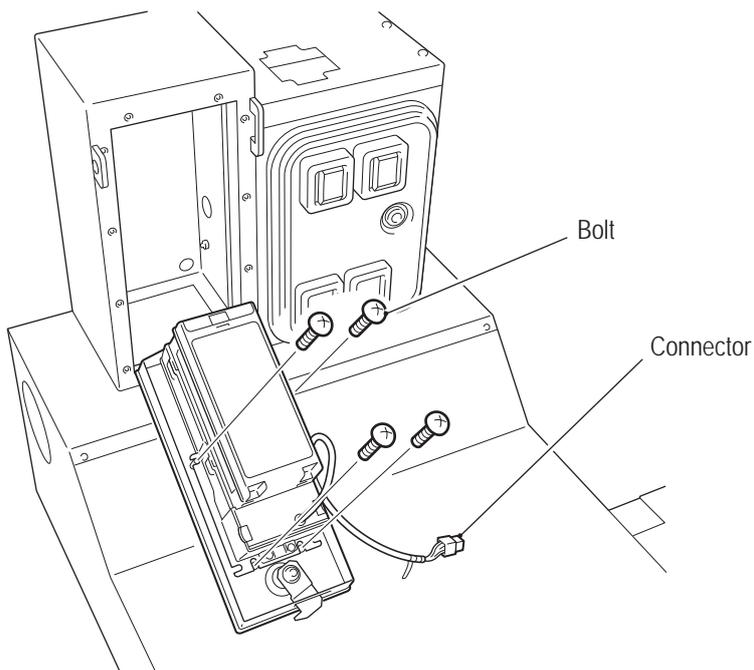
5   To install, perform the procedure in reverse.

(b) Removing the bill validator box

* Perform this task to operate the machine without using the bill validator.

NOTICE ● **Perform this task before joining the front and rear assemblies.**

1   Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2   Use the coin door key to open the door, and remove the four flange socket bolts (M8 x 12) from the inside of the coin box and the two flange socket bolts (M8 x 12) from inside the hole on the side of the base.
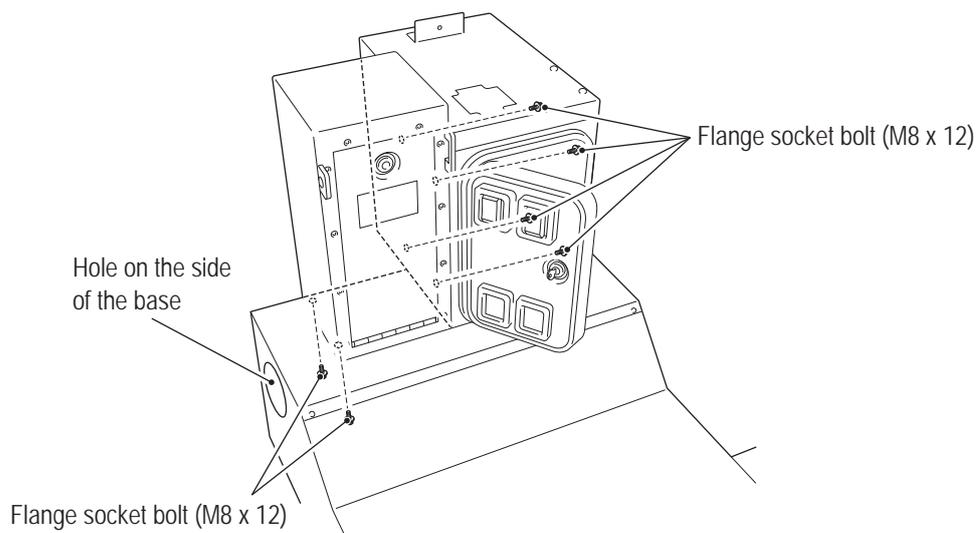
Flange socket bolt (M8 x 12)

Hole on the side of the base

Flange socket bolt (M8 x 12)

3   Use the service key to open the bill validator door, disconnect the connector and two ground wires from the bill validator, and push the harnesses into the coin box.

Push the harnesses into this hole.
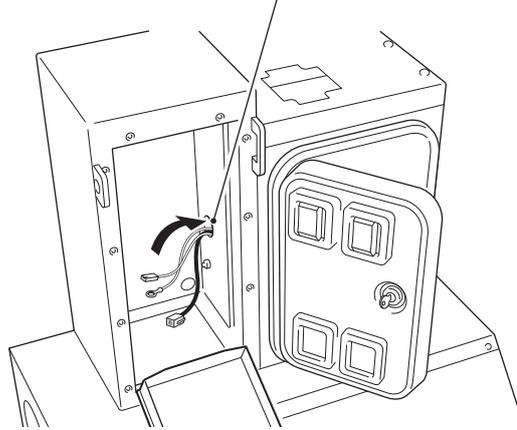
4   Remove the bill validator box and install the supplied hole cover using the six supplied countersunk nuts with washers (M8) in four locations inside the coin box and two locations on the bottom surface of the base.

Countersunk nuts with washer (M8)

Hole cover

Countersunk nuts with washer (M8)
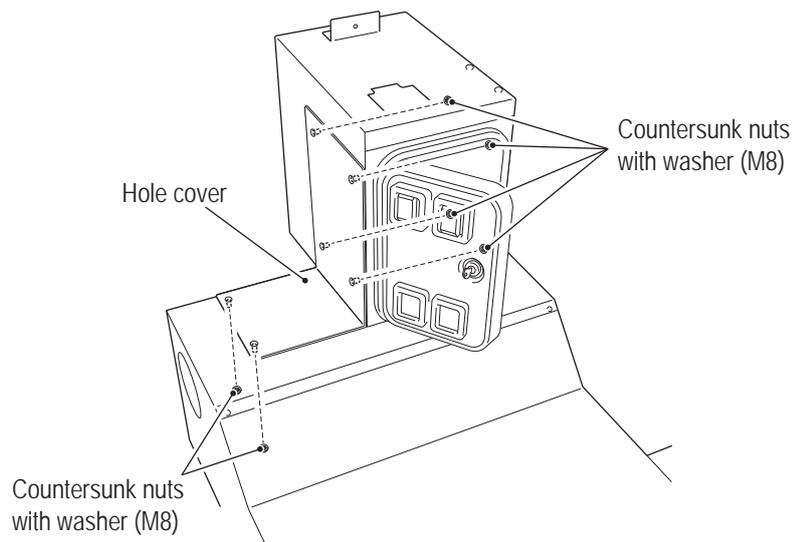
5   Close the coin door.

(19) **Replacing the CASHFLOW (European Specifications) – Must be performed by a technician –**

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Use the coin door key and open the door.

Coin door key
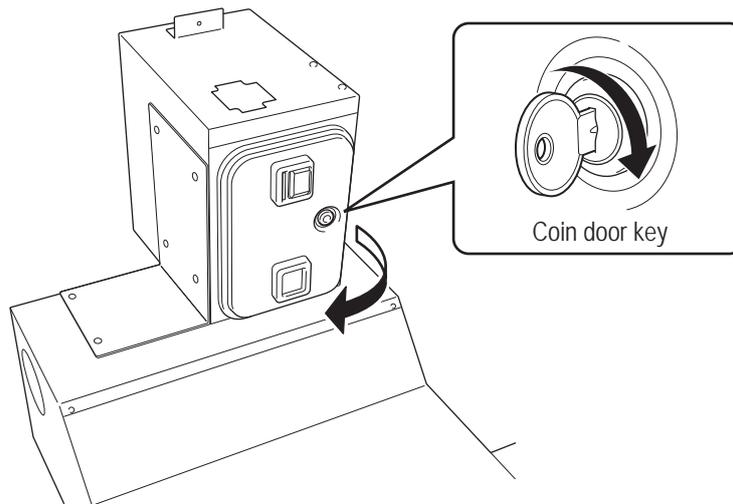
3 Raise the upper lock lever, lower the lower lock lever, and remove and replace the CASHFLOW.
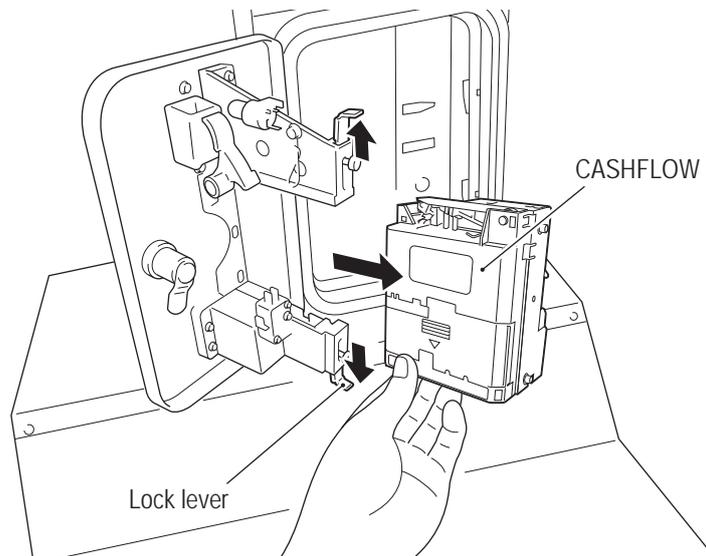
CASHFLOW

Lock lever

4 To install, perform the procedure in reverse.

Test Mode

Troubleshooting

(20)   Replacing the LED module (full color) – Must be performed by a technician –

⚠WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

NOTICE ● PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body. (Example: touching the surface of grounded metal.)

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the four Torx bolts (M5 x 12) and remove the LED cover.

LED cover

Torx bolt (M5 x 12)
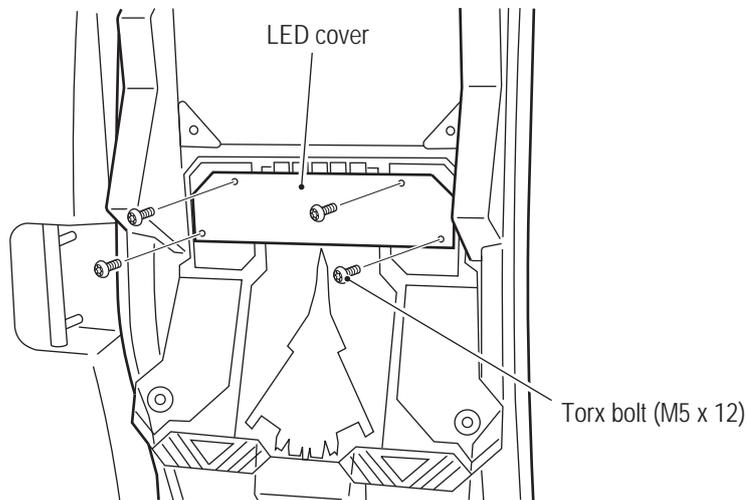
3 Disconnect the connector, remove the two Phillips pan head screw (with flat and spring washers) (M4 x 10) and remove the LED module (full color) together with the LED bracket.

LED bracket   Connector

Phillips pan head screw
(with flat and spring washers)
(M4 x 10)
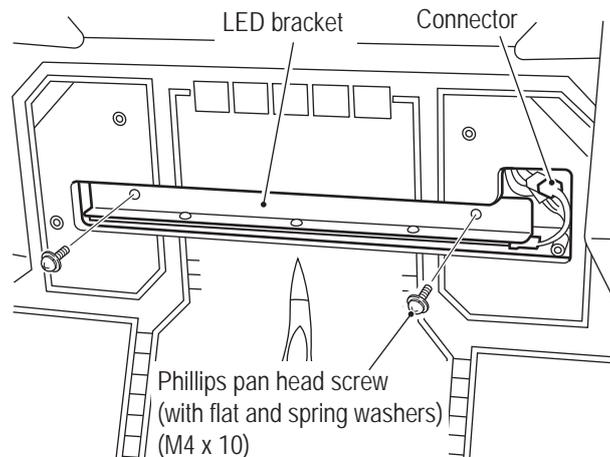
– Must be performed by a technician –

4 Remove the three Phillips pan head screws (with spring washer) (M2 x 6) and remove the LED module (full color).

LED bracket

Phillips pan head screw
(with flat and spring washers)
(M2 x 6)

LED module
(full color)

5 To install, perform the procedure in reverse.

NOTICE
● **When installing, check the connector orientations and insert the connectors firmly until they lock securely.**
● When installing, be careful not to pinch the connectors and harness.

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Service

Test Mode

Troubleshooting

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(21)　　Replacing the LED module (white) – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

> **NOTICE** ● PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body. (Example: touching the surface of grounded metal.)

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Make sure that the power switch of the machine is turned off, then remove the six Torx bolts (silver) (M5 x 8) and six flat washers (ø16 x ø5) and remove the acrylic panel.

Torx bolt (silver) (M5 x 8)

Flat washers (ø16 x ø5)

Acrylic panel
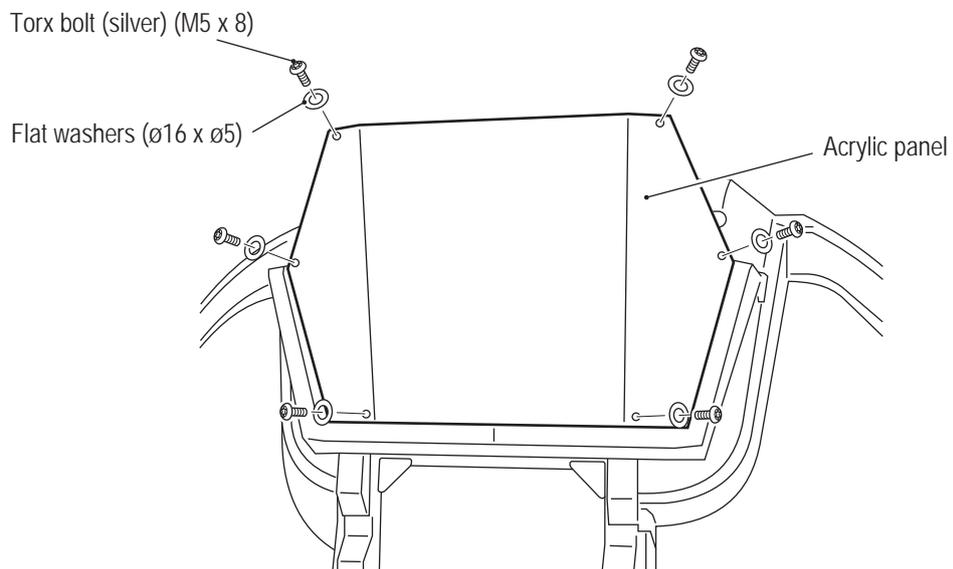
3 Disconnect the three connectors of the LED modules (white). (Each LED PC board has one connector.)

LED module (white)

Connector
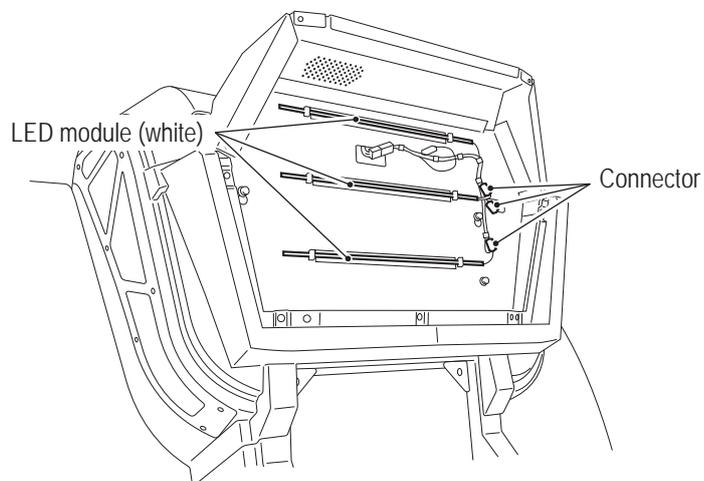
4 Release the nine clips securing the LED modules (white), release the five-cable clamps and remove the LED modules (white).

Clip   Clamp

LED modules (white)
Clip

Pull the hook forward to release it.
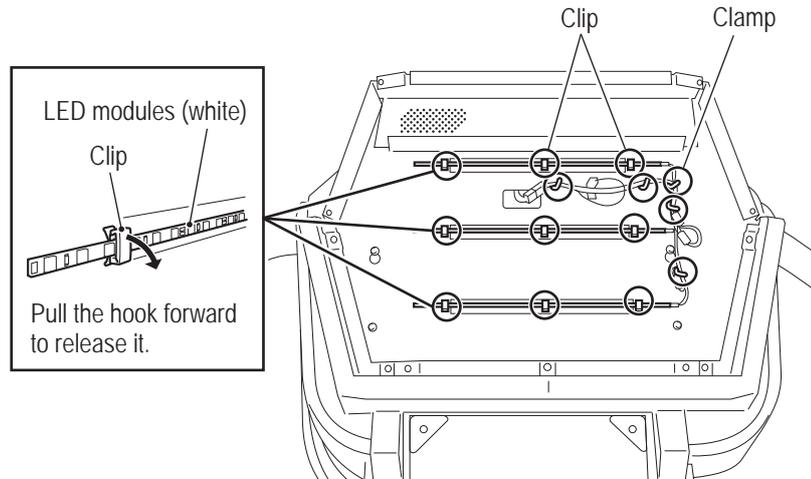
5 To install, perform the procedure in reverse. When installing the LED module (white), secure it so that there are three light emitters outside the clips on both sides.

NOTICE

● **When installing, check the connector orientations and insert the connectors firmly until they lock securely.**
● When securing the LED modules (white) with the clips, be sure not to pinch the light emitters or elements.

Light emitter
Clip

Element
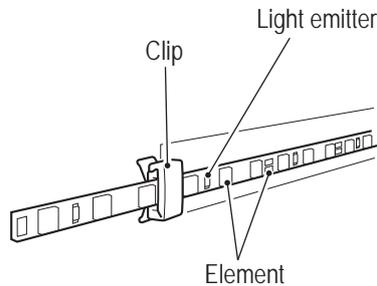
1 2 3 4 5 6 7 8A 8B 9 10 11

Service

Test Mode

Troubleshooting

– Must be performed by a technician –

(22)   Replacing the POP Light – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

⚠ CAUTION

● Removing the POP light assembly requires standing at an elevated height. Prepare an appropriate footstool and be careful when working. Working in an unnatural body posture may result in injury or machine damage.

1 Turn off the power switch. (See "8A-2-3 Turning the Power Switch On" on page 77.)

2 Remove the three Torx bolts (silver) (M5 x 12) and remove the POP light cover.

POP light cover

Torx bolt (silver)
(M5 x 12)
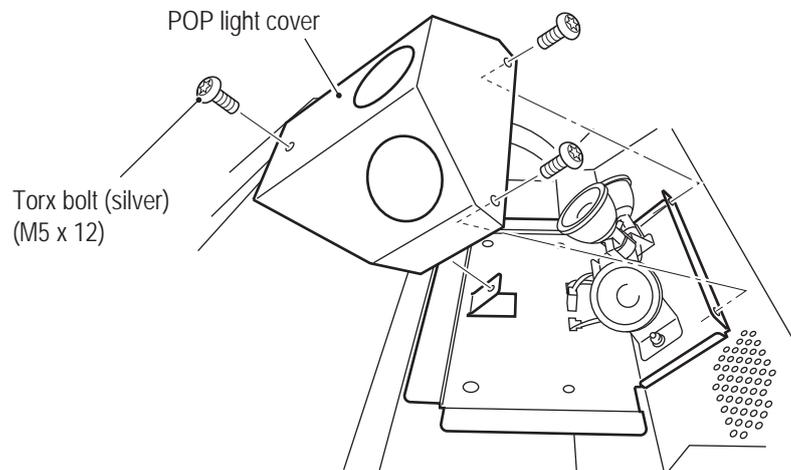
3 Replace the LED lights.
   * The LED lights are hot immediately after the power switch is turned off. Although the LED lights are not hot enough to cause burns, be careful when replacing the LED lights. If possible, allow the LED lights to cool for 10 minutes before performing this task.
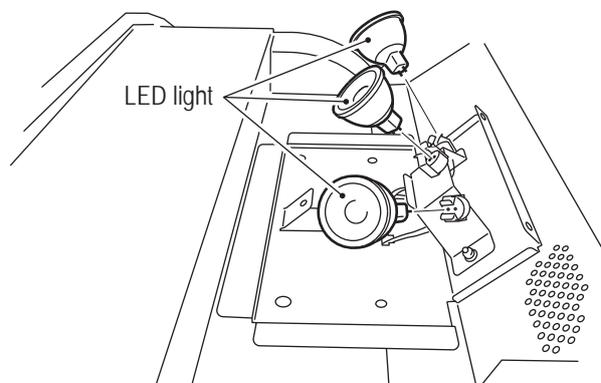
LED light

NOTICE ● When installing the LED lights, be sure to carefully align the socket and pin positions and insert the LED lights securely. (The lights do not have a polarity.)

4 To install, perform the procedure in reverse.

(23)   Replacing the Fuse – Must be performed by a technician –

⚠ WARNING

● **Never use a fuse other than the specified type. The fuse must be installed to prevent fire or** accident. To order a fuse, contact your distributor.

● When the fuse burns out again soon after replacement, there may be some other cause for the abnormality. Turn off the power switch immediately, disconnect the power cord plug from the outlet and contact your distributor.

(a)   Cord box assembly

1   Turn off the main power switch of the machine. (See "Turning the Power Switch On" of page 77.)
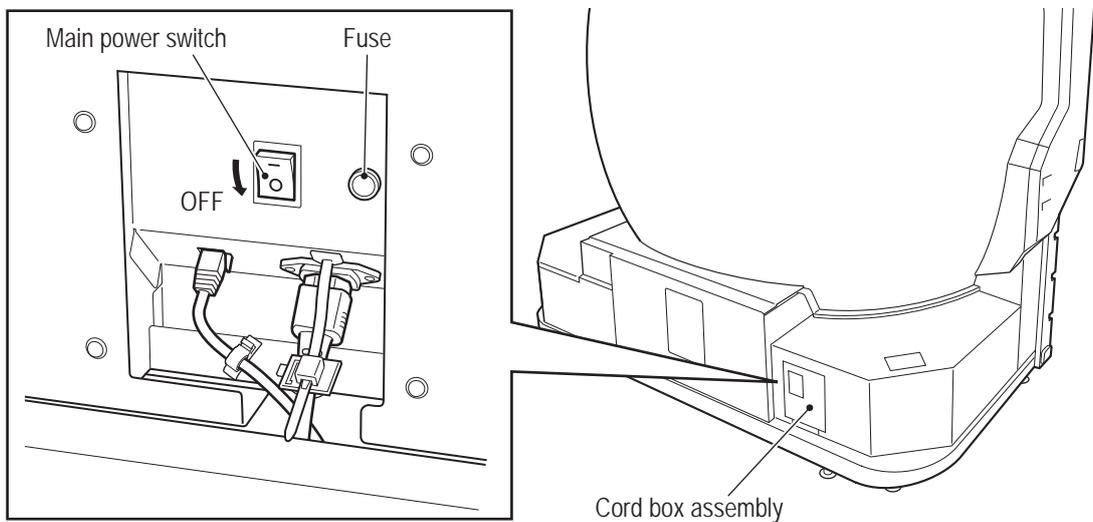
Main power switch   Fuse

OFF

Cord box assembly

2   Use a standard screwdriver to rotate the fuse counter-clockwise and remove it. Replace with a new slow-blow fuse with the same rating as the removed fuse.

Slow-blow fuse
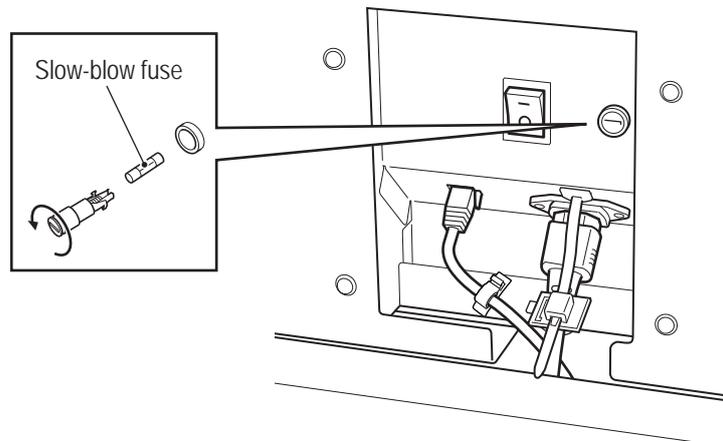
– Must be performed by a technician –

(b) **Coin box assembly (U.S. and European specifications only)**

1 Turn off the main power switch of the machine. (See "Turning the Power Switch On" of page 77.)
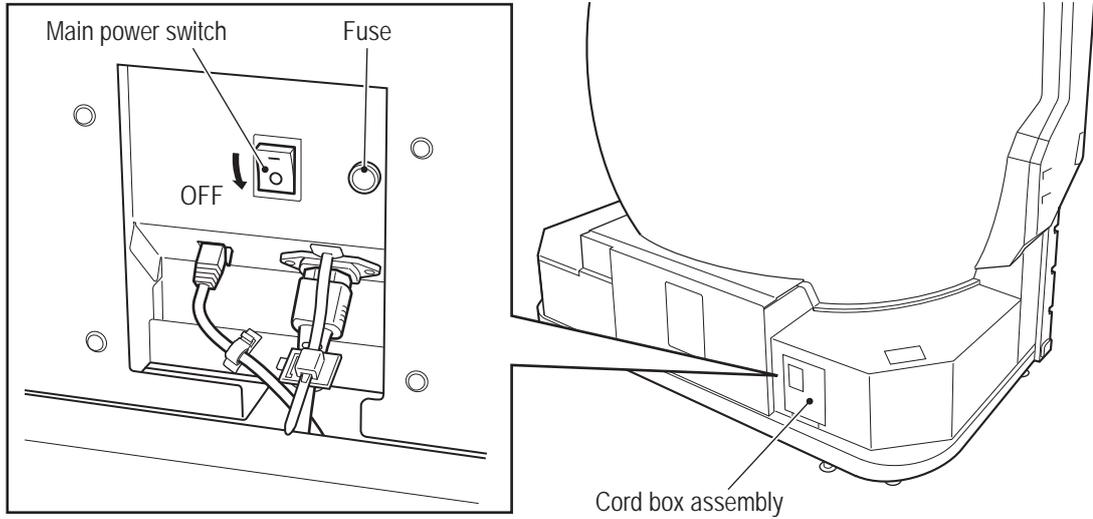
Main power switch   Fuse

OFF

Cord box assembly

2 Use a standard screwdriver to rotate the fuse counter-clockwise and remove it. Replace with a new fuse with the same rating as the removed fuse.

Fuse
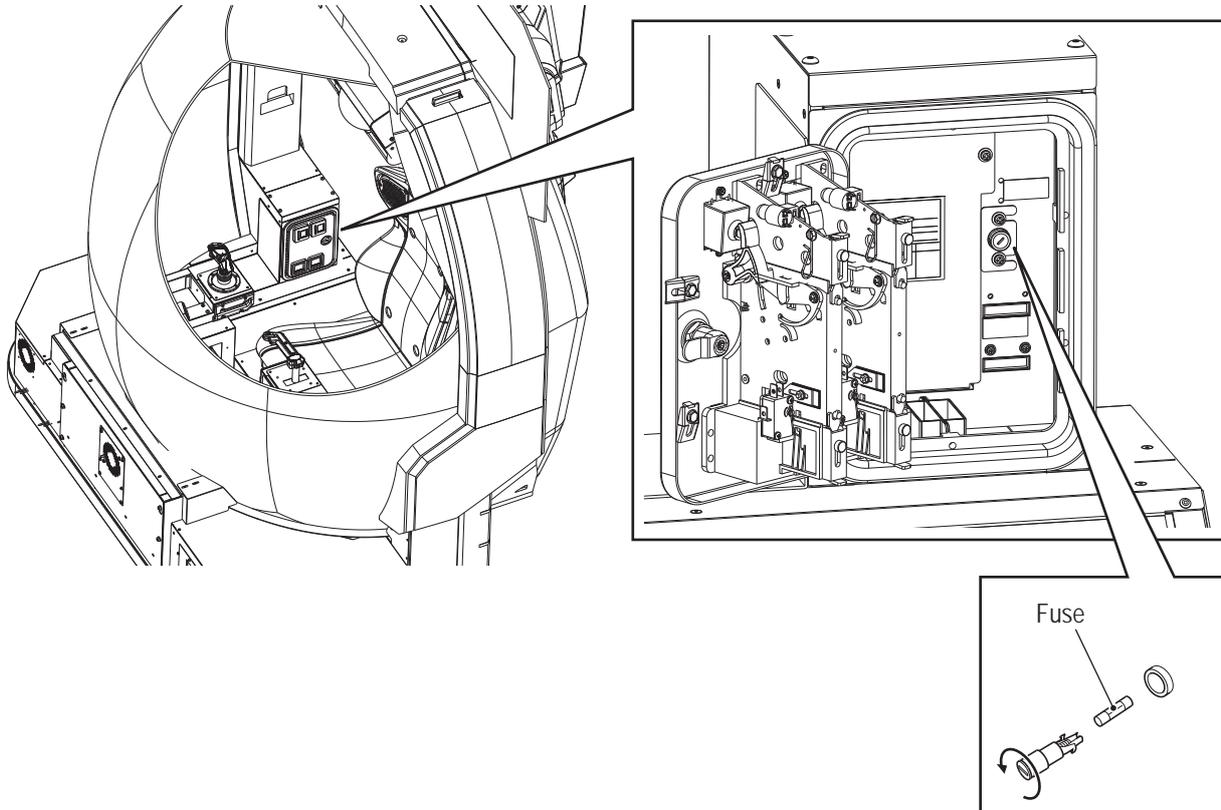
– Must be performed by a technician –

(24)   Replacing the Shock Absorber

1   Open the door to expose the shock absorber.

2   Push the shock absorber from the back side to remove and replace it.

Door

Door damper part

Shock absorber
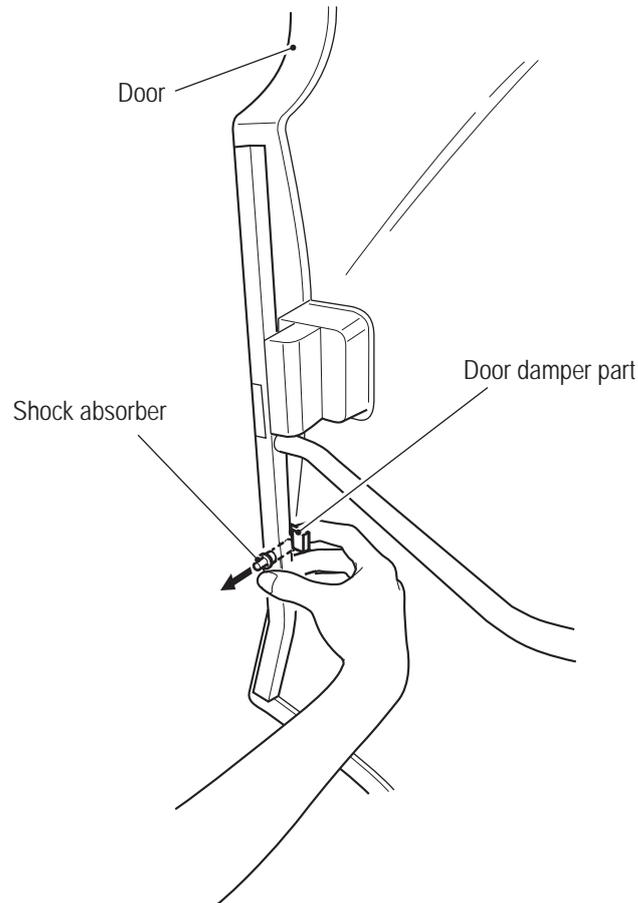
– Must be performed by a technician –

___

(25)   Replacing the Filters

1 Filters are located on the right outer side of the front assembly and inside the front assembly below the control lever. Loosen the lower two Torx bolts (M5 x 12), remove the upper two Torx bolts (M5 x 12) and remove the filter tray.

Throttle lever assembly

Control lever assembly

Inside the front assembly below the control lever

Torx bolt (M5 x 12)

Lift up and remove.

Torx bolt (M5 x 12)

Filter tray

Right outer side of the front assembly

Torx bolt (M5 x 12)

Lift up and remove.

Torx bolt (M5 x 12)
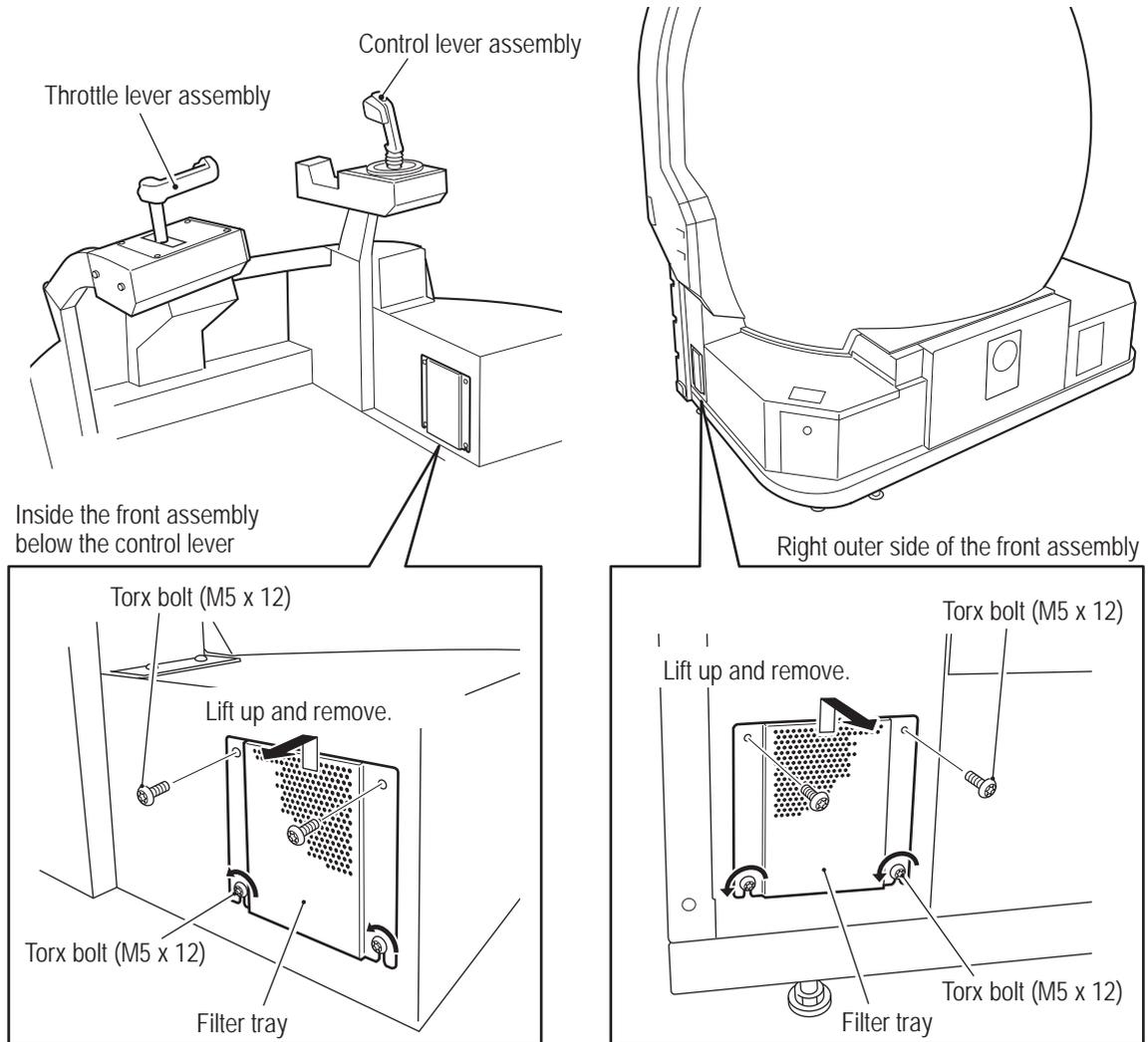
Filter tray

2 Remove the filter from the filter tray and replace it.

Filter tray

Filter
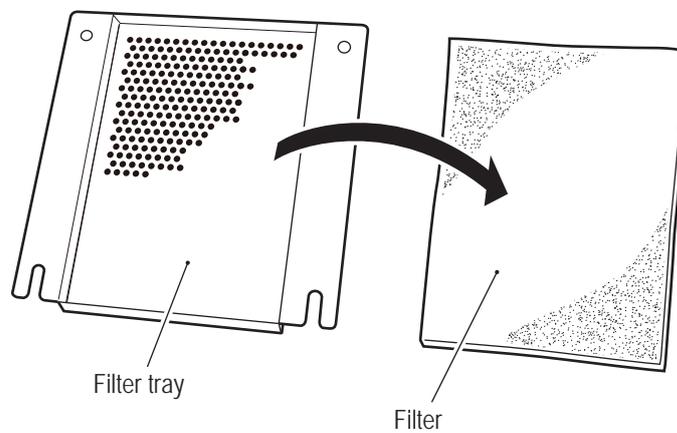
3 To install, perform the procedure in reverse.

– Must be performed by a technician –

8B-6   Replacing and Adjusting the Projector Unit

⚠ **WARNING**

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.
- Do not look into the lens while the projector assembly is lit. The strong light emitted from the lens may result in vision impairment or other problems.
- Be sure to use the dedicated lamp for this machine when replacing the lamp. Using other lamp than the dedicated lamp may result in malfunction, damage or injury. Also, do not reuse an old lamp. For inquiries regarding the dedicated lamp, contact your distributor.
- Contact your distributor for regular cleaning of the inside of the projector. Continued operation **with dust accumulated inside the projector may result in fire or malfunction. Cleaning of the** inside of the projector before humid or rainy seasons begin is particularly effective. Contact your distributor regarding the internal cleaning cost.

◀ NOTICE
- When transporting the projector unit, use the packing box that contained the projector assembly when the machine was purchased.
- Avoid use at altitudes of 1,500 m or more above sea level, as this may adversely affect the product life.

Test Mode

Troubleshooting

8B-6-1 Removing and Installing Each Part – Must be performed by a technician –

(1) Replacing the Projector Unit – Must be performed by a technician –

⚠ **WARNING**

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the main power switch before starting this task.

1 Refer to "8A-1-1 (5) Installing the Projector Unit" on page 64 and remove the projector unit by reversing the procedure.

2 Refer to "8A-1-1 (5) Installing the Projector Unit" on page 64 and install the projector unit.

3 After installation, adjust the projector position. (See "8B-6-2 Adjusting the Projector Position" on page 155.)

(2)   Replacing the Projector Lamp (Lamp Unit) – Must be performed by a technician –

⚠ WARNING

- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the main power switch before starting this task.
- Be sure to turn off the power switch and wait one hour or more to allow the lamp unit to cool **sufficiently before replacing the lamp unit. The lamp unit is very hot immediately after the power** switch is turned off, and may cause burns.
- **Never insert metal objects, flammable foreign matter, hands or other objects into the lamp enclosure after removing the lamp unit. Doing so may result in fire or electric shock.**
- **Be careful not to drop the lamp unit fixing screws inside of the machine. Also do not allow pieces of metal or flammable matter to enter the inside of the machine. Operation with foreign matter inside the machine may result in electric shock or fire.**
- **Install the replacement lamp unit securely. Improper installation may result in dark images or fire.**
- <u>Never use other than a new dedicated lamp for this machine.</u> Also do not reuse an old lamp. Doing so may result in malfunction, damage or injury. To order a lamp unit, contact your distributor.
- **Do not place the removed lamp unit on or near flammable matter. Doing so may result in fire.**
- Do not leave the removed lamp unit where customers may touch it. If the lamp unit is dropped it may be damaged and glass shards may cause injury.
- The lamp unit of this machine uses a tiny amount of inorganic mercury, which is an environmentally hazardous substance. Handle the used lamp unit carefully to avoid damaging it, **and dispose of it properly as hazardous waste such as fluorescent lights. In addition, follow any** applicable local municipal regulations or other ordinances when disposing of the lamp unit.
- If the lamp unit is damaged, a tiny amount of white gas (inorganic mercury) may be discharged. If you breathe in this gas or if it gets in your eyes or mouth, consult a doctor immediately.

⚠ CAUTION

- Depending on the lamp unit damage status, glass shards may have scattered inside the projector unit. Handle with particular care when removing the projector unit from the machine or when **replacing the lamp unit, as glass shards may fall out. Should any glass shards fall onto the floor or** seat, carefully and completely remove the glass shards using a vacuum cleaner, etc.
- Do not remove any screws other than necessary when replacing the lamp unit. Doing so may result in machine damage or malfunction.

Test Mode

Troubleshooting

– Must be performed by a technician –

> **NOTICE**
>
> ● **Confirm the projector unit model and be sure to use a compatible replacement lamp that is specified by NAMCO BANDAI Games Inc. Using other than the specified** replacement lamp may result in a projector malfunction. In addition, when requesting repair, be sure to indicate the projector unit model.
>
> | Projector unit | Replacement lamp |
> | --- | --- |
> | LVP-FD630 (V1) | Part No.: 002-596 |
>
> ● Install the lamp outer cover properly so that there is no gap. Failure to install the cover correctly may result in malfunction such as the power not turning on or the lamp not lighting up.
> ● Be sure use a new lamp when replacing the lamp.
> ● The lamp is made of glass, so be careful not to touch it with bare hands, subject it to strong impact or scratch it. (Dirt, impact or scratches may cause the glass to break.)
> ● When replacing the lamp unit, be sure to remove the lamp unit from this machine and **perform the work on a flat surface.**

1 Secure an area next to the machine cabinet to place the removed projector unit. Spread out a vinyl sheet or otherwise prepare a flat and sufficiently wide space (approx. 1 m square).

2 Remove the projector unit and place it in the area prepared in step **1**. (See "8A-1-1 (5) Installing the Projector Unit" on page 64.)

3 Hook your fingernail onto the cosmetic cover of the lamp cover fixing screw and remove the cosmetic cover. If the cosmetic cover is difficult to remove with your finger, use a standard screwdriver or other pointed tool.

Cosmetic cover
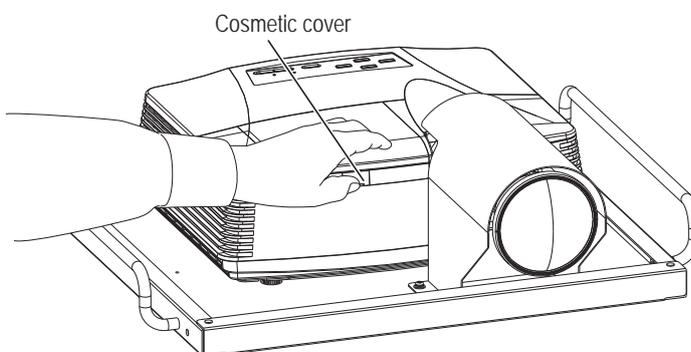
4 Remove the screw and slide the lamp cover to remove it.

Lamp cover
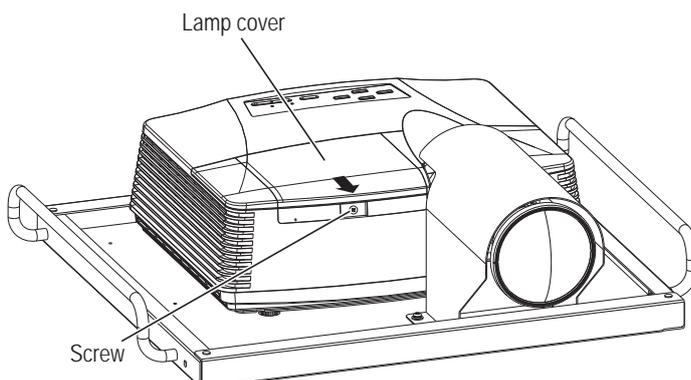
Screw

– Must be performed by a technician –

5 Loosen the two lamp unit fixing screws, raise up the lamp unit handle, and gently lift the lamp unit straight up to remove it.

Lamp unit handle

Lamp unit

Terminal portion

Lamp unit fixing screw
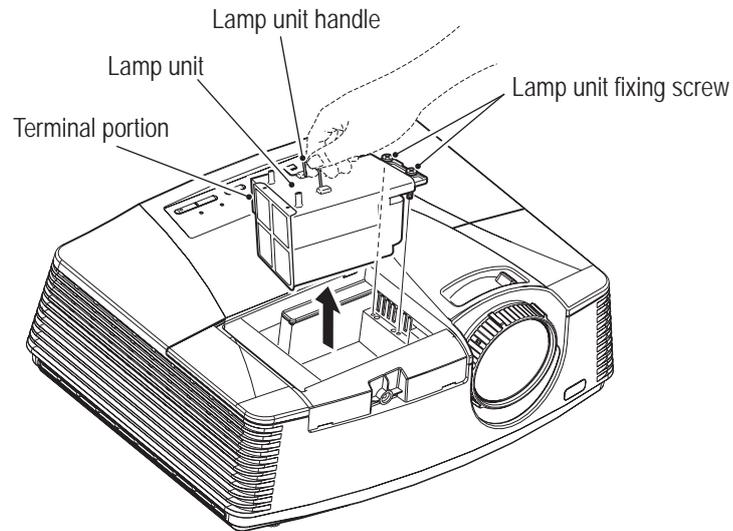
NOTICE ● **Do not loosen any screws other than the lamp unit fixing screws.**

⚠ CAUTION

● Remove the lamp unit gently from the projector unit. If the light source lamp is damaged, pulling out the lamp unit quickly may cause glass shards to scatter.
● Do not expose the removed lamp unit to water or other substances or place it where children may **touch it or near flammable objects. Doing so may result in burns or injury.**

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6 When the removed old lamp unit is damaged or glass shards can be confirmed, glass shards may also remain inside the projector unit. Before installing the new lamp unit, follow the procedure in steps **7** to **9** below and clean the inside of the projector unit. When the old lamp unit is not damaged and glass shards cannot be confirmed, follow the procedure below from step **10** and install the new lamp unit.

7 Use a vacuum cleaner with a thin-tip nozzle and thoroughly remove any fine glass shards from inside the lamp enclosure. Large glass shards may damage the internal fan. Be sure to thoroughly remove any glass shards from around the fan.

Fan
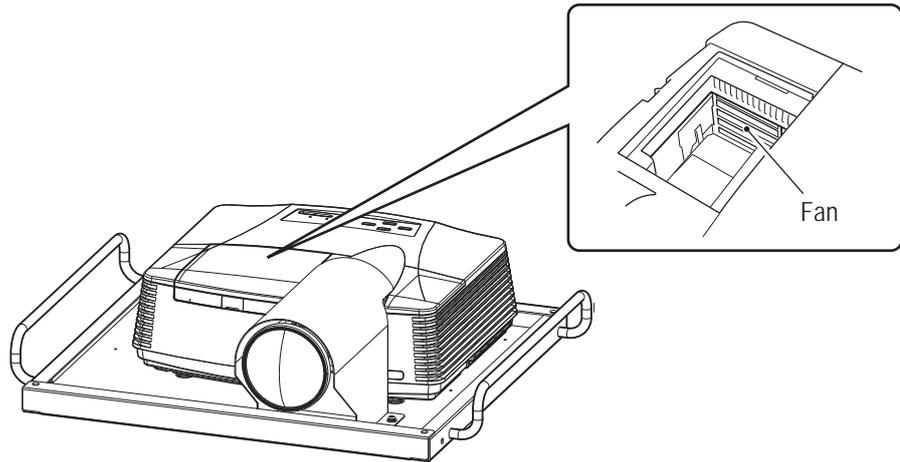
NOTICE ● Be careful not to damage the equipment inside the lamp enclosure when cleaning the inside of the lamp enclosure.

8 Glass shards may have entered the inside of the projector unit, so hold the projector unit by the handles, shake it gently forward and back and to the right and left and confirm whether there is any sound. Glass shards remaining inside the projector unit will make a rattling sound when shaken lightly. If a rattling sound is confirmed, tip the projector unit on its side to remove the glass shards from the ventilation holes on both sides, or hold the projector unit upside down to remove the glass shards from the lamp enclosure. If the glass shards inside the projector unit cannot be removed by these actions, contact your distributor.
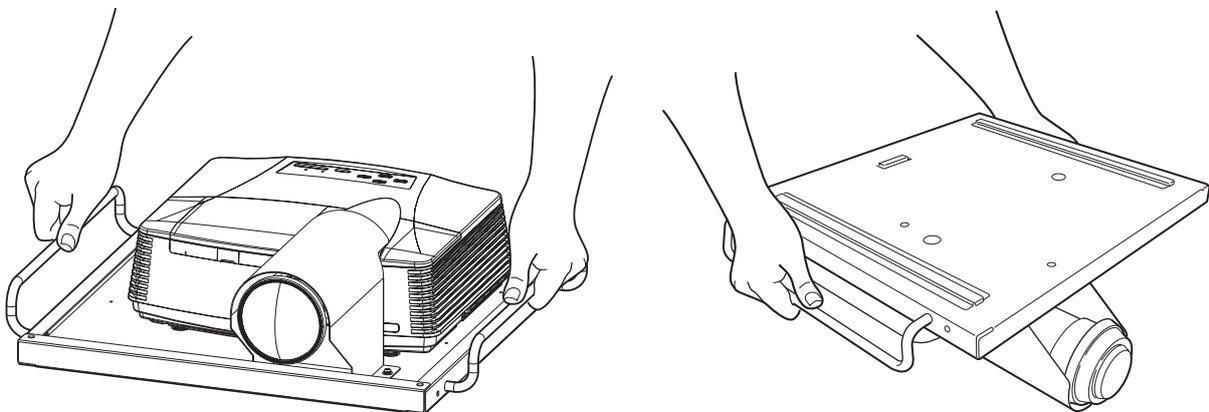
– Must be performed by a technician –

9 Fine glass shards may be scattered around the base sheet metal of the projector unit or the vinyl sheet spread on the floor, so use a vacuum cleaner and clean the areas around the projector (especially near the exhaust port).

10 Align the new lamp unit as shown in the figure and insert it into the lamp enclosure while pressing in the direction of the arrow. Then, insert the terminal portion securely and secure the lamp unit with two fixing screws.
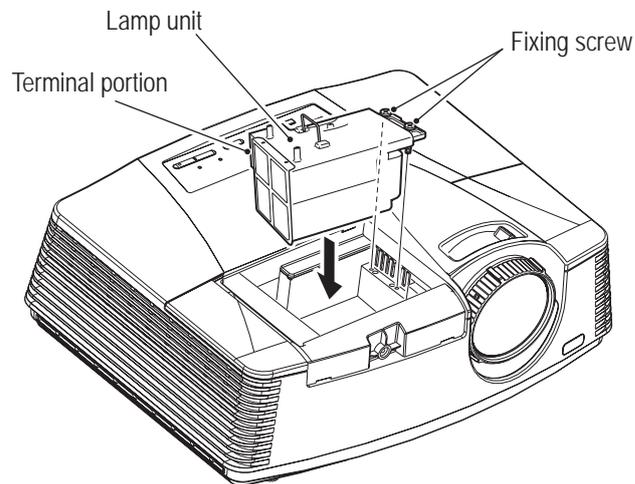
Lamp unit

Terminal portion

Fixing screw

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– Must be performed by a technician –

11 Install the lamp cover in its original position with the screw and attach the cosmetic cover by reversing the procedure in steps **3** and **4**.

NOTICE
- **If the lamp cover is not installed properly, the POWER indicator will blink alternately red and green and the power will not turn on. Be sure to install the lamp cover securely.**
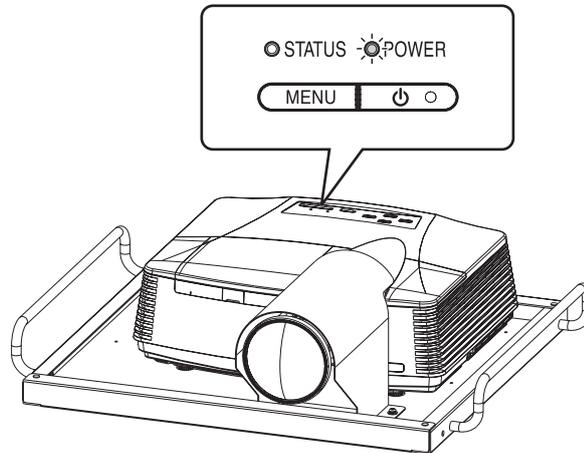
12 If the lamp unit was damaged, glass shards may have fallen into the machine as a result of the lamp unit replacement work thus far. Use a vacuum cleaner to thoroughly clean the floor inside the machine, the seat, around the levers and other areas, then wipe these areas using a cloth moistened with a small amount of water.

13 Connect the supplied power cord to the removed projector unit and connect the power cord plug to an outlet.
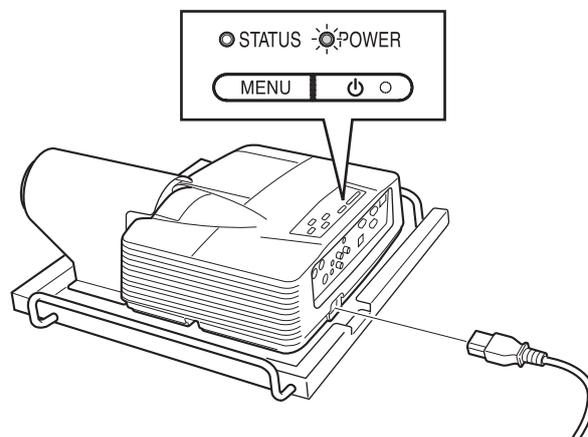
14 The POWER indicator lights up red and the STATUS indicator remains off or lights up red. If this status does not change, perform the procedure from **17** onward.

15 The POWER indicator lights up green and the start-up process is performed automatically. Wait until the start-up process is complete. (Approx. 90 seconds)
*The STATUS indicator blinks green during start-up and lights up green when start-up is complete.

– Must be performed by a technician –

16 Press the power button twice to start the shutdown process. Wait until the shutdown process is complete. (Approx. 90 seconds)
*The POWER indicator lights up red during shutdown and after shutdown is complete.
*The STATUS indicator blinks green during shutdown and turns off after shutdown is complete.

17 Press the ◄, ► and power buttons on the projector unit control panel at the same time.
Confirm that the STATUS indicator blinks red twice.
(If the STATUS indicator blinking cannot be confirmed, press the buttons again.)

COMPUTER/◄ button   STATUS indicator

VIDEO/► button   Power button
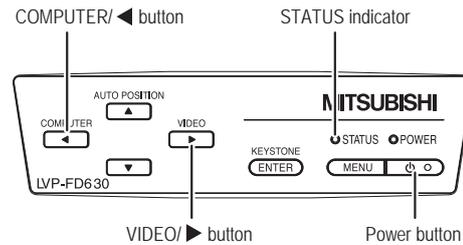
18 Disconnect the power cord connected in step **13**, then install the projector unit by reversing the procedure. (See "8A-1-1(5) Installing the Projector Unit" on page 64)

19 Turn on the main power switch and enter Test mode.

20 Select the PROJECTOR TEST item in the I/O TEST screen to open the page that displays the current projector status, and confirm that **LAMP TIME** indicates "**0 HOUR.**"
If "0 HOUR" is not indicated, perform the procedure in steps **14** to **18** again. (See "7-4-4 (4) PROJECTOR TEST" on page 39)

```
PROJECTOR TEST

STATUS        OK
STATE         2 TURN ON
LAMP TIME     0 HOUR(S)          ←  Be sure to confirm that this
PANEL TIME    ------ HOUR(S)        is "0 HOUR" after lamp
TOTAL TIME    ------ HOUR(S)        replacement!


FAN1          ------ rpm    FAN2          ------ rpm
FAN3          ------ rpm    FAN4          ------ rpm
TEMPERATURE1  ------ C      TEMPERATURE2  ------ C


EXIT
5000 hour(s) until the projector lamp is due for replacement.

ENTER SW : ENTER
```
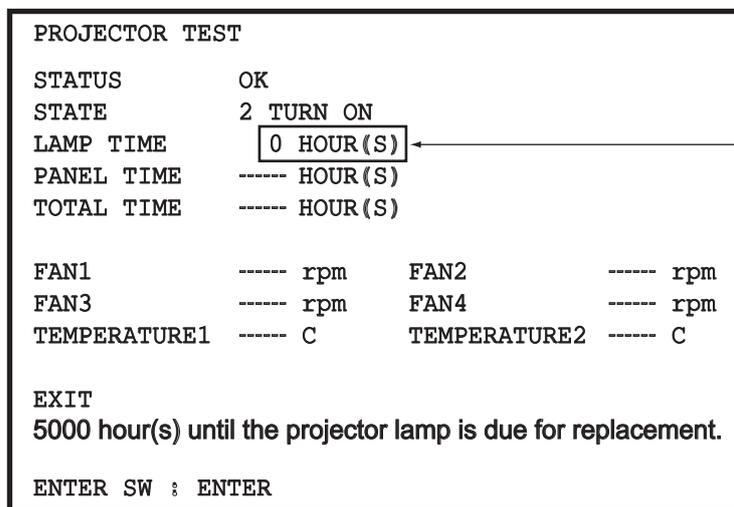
PROJECTOR TEST screen

21 Set the Test switch to OFF to exit Test mode.

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– Must be performed by a technician –

(3)   Replacing the Filter F (Projector) – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1   Open the projector cover. (See "8A-1-1 (5) Installing the Projector Unit" on page 64.)

2   Open the front lid. (See "8A-1-1 (5) Installing the Projector Unit" on page 64.)

3   Loosen the knurled screw (M4 x 16).

Knurled screw (M4 x 16)

Front lid
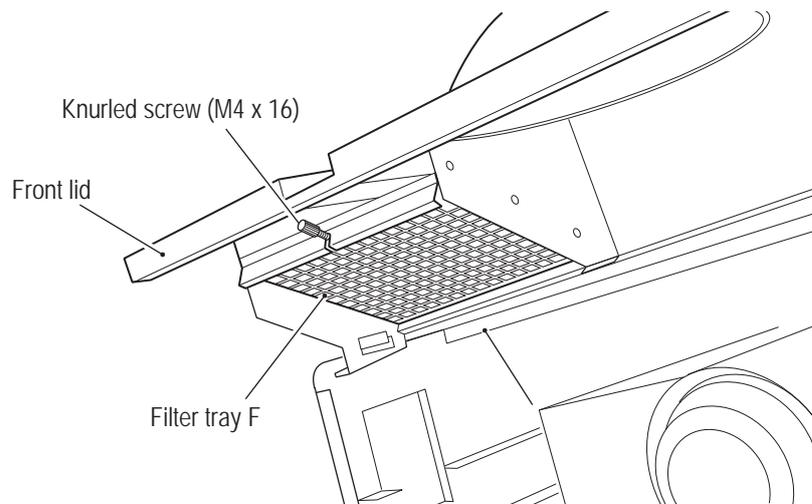
Filter tray F

4   Remove the filter tray F and remove the filter F.
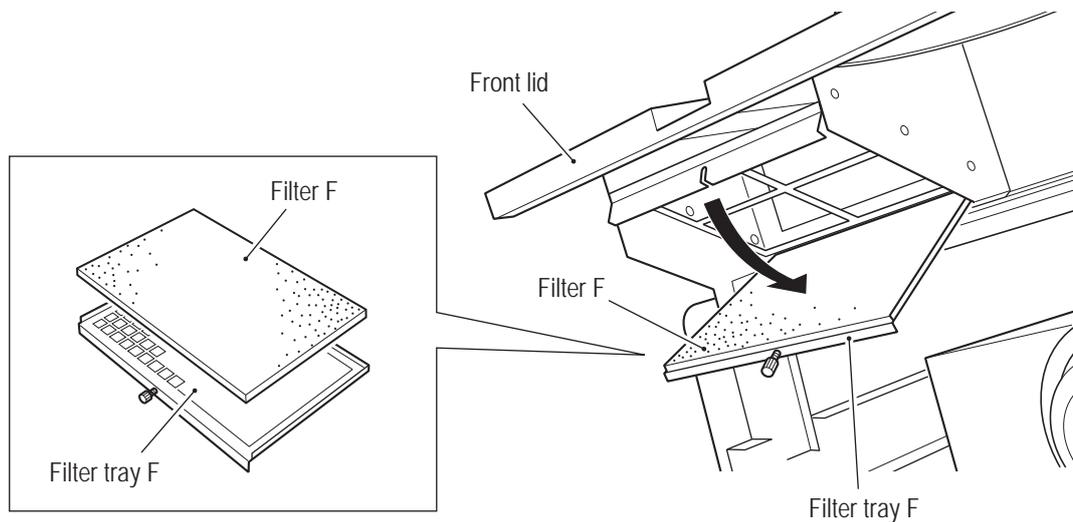
Front lid

Filter F

Filter F

Filter tray F

Filter tray F

5   To install, perform the procedure in reverse.

(4)   Replacing the Filter R (Projector) – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1   Loosen the two knurled screws (M4 x 16) at the back of the projector cover and remove the filter tray R.

Filter tray R

Projector cover

Knurled screw (M4 x 16) (loosen only)
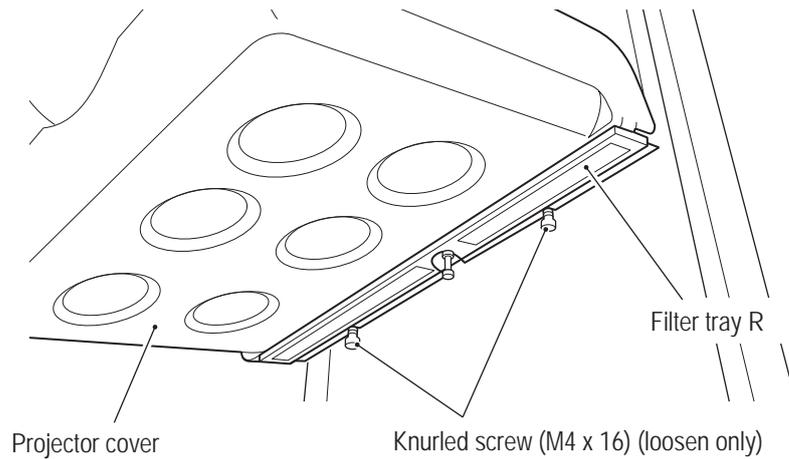
2   Remove and replace the filter R.
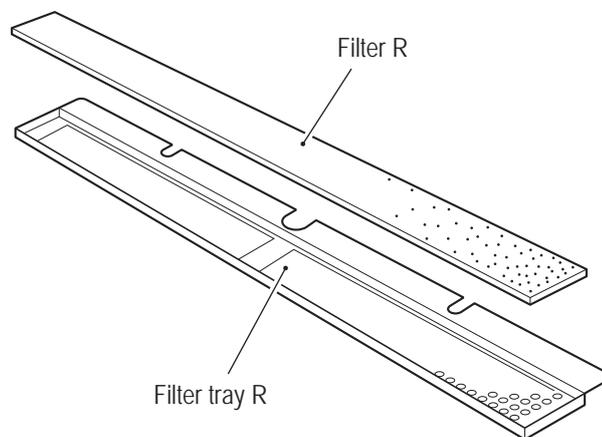
Filter R

Filter tray R

3   To install, perform the procedure in reverse.

(5) Replacing the Lens Cover – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

1 Open the projector cover. (See "8A-1-1 (5) Installing the Projector Unit" on page 64.)

2 Open the front lid. (See "8A-1-1 (5) Installing the Projector Unit" on page 64.)

3 Remove the four countersunk nuts (M4), then remove and replace the lens cover.
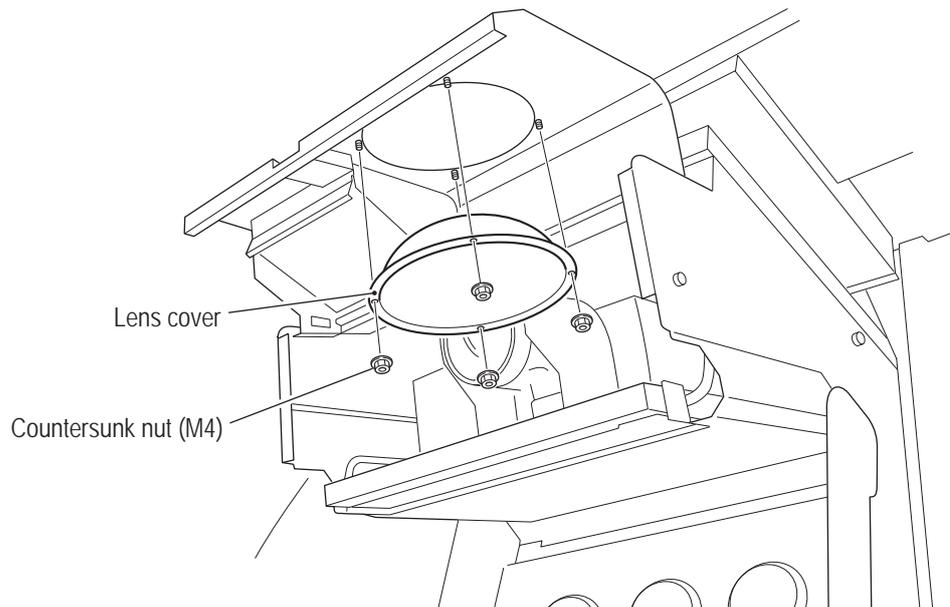
Lens cover

Countersunk nut (M4)

4 To install, perform the procedure in reverse.

(6)   Replacing the Fan Motor – Must be performed by a technician –

⚠ WARNING

● In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

---

1 Remove the projector unit. (See "8A-1-1 (5) Installing the Projector Unit" on page 64.)

2 Remove the two lower Phillips truss screws (M4 x 10) and loosen the two upper Phillips truss screws (M4 x 10).

Loosen only

Phillips truss screw (M4 x 10)

Projector cover
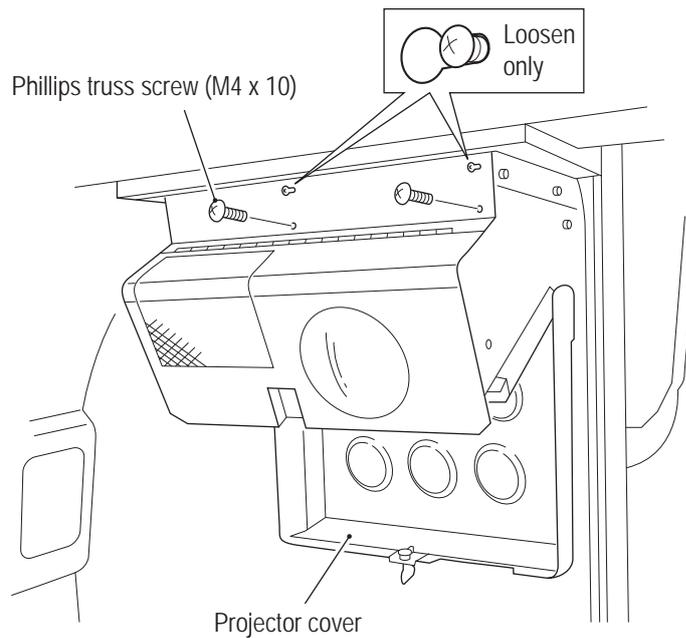
3 Open the front lid and disconnect the connector.

Front lid

Connector
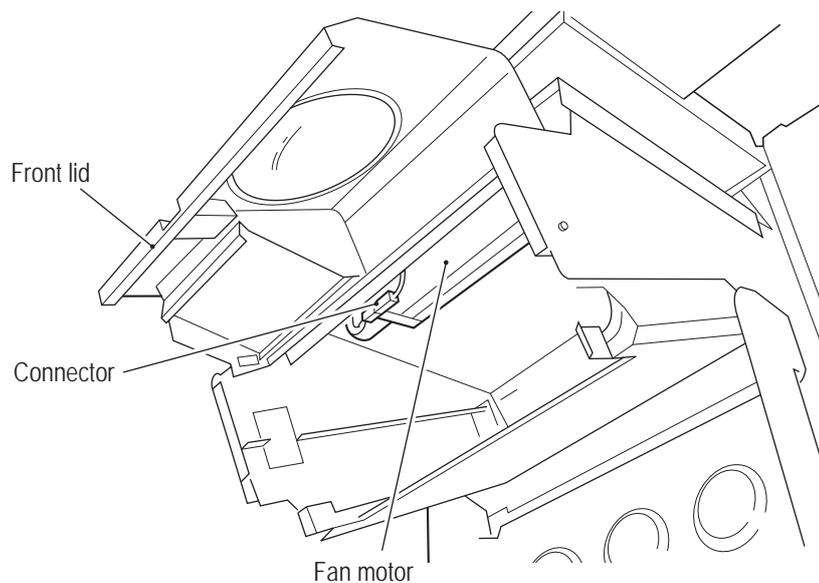
Fan motor

– Must be performed by a technician –

4 Slide the fan motor sideways in the direction of the arrow to remove and replace it.
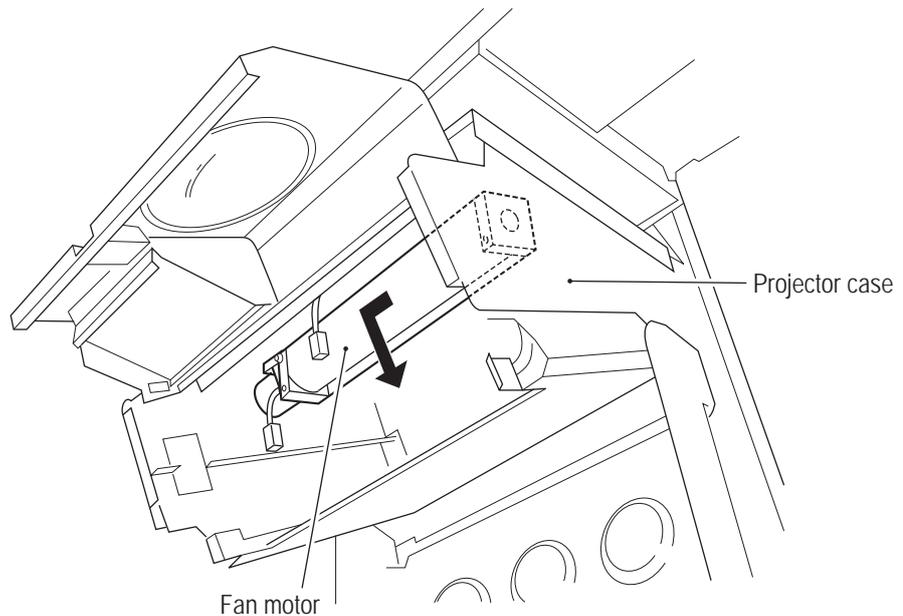
Projector case

Fan motor
* Orient the fan motor so that the air inlet
  (the side with the finger guard) faces the back side
  of the projector case.

5 To install, perform the procedure in reverse.

NOTICE ● Be careful of the air inlet facing when installing the fan motor. If the fan motor is installed with the air inlet facing the wrong direction, the fan motor will not operate correctly and the projector unit may become damaged.

– Must be performed by a technician –

8B-6-2　Adjusting the Projector Position – Must be performed by a technician –

1　Turn on the power switch.

2　After the title screen appears, enter Test mode, select the MONITOR TEST item and display the VIEW ANGLE ADJUST PATTERN screen. (See "7-4-5 Projector Test (MONITOR TEST)" on page 41)

3　Adjust the vertical and lateral positions and viewing angle of the projector as described on the following pages so that the white lines on the right and left edges of the VIEW ANGLE ADJUST PATTERN display screen are located at the edges of the dome screen as shown in the figure below.

Screen

Projected lines

Square pipe
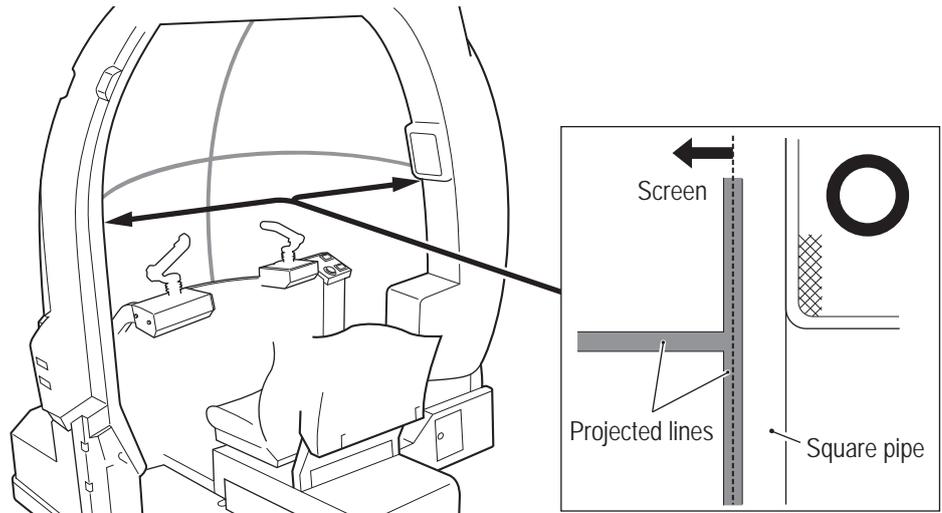
Approximate adjustment method

Screen
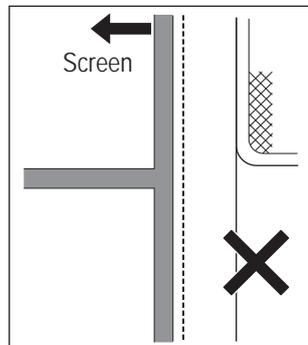
Page 157
"(2) Lateral Adjustment"

Screen
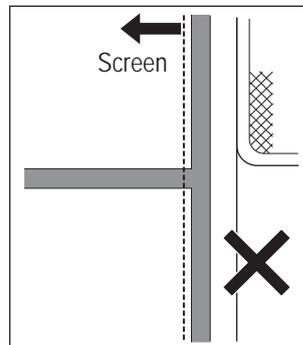
Page 158
"(3) Viewing Angle Adjustment"

Screen
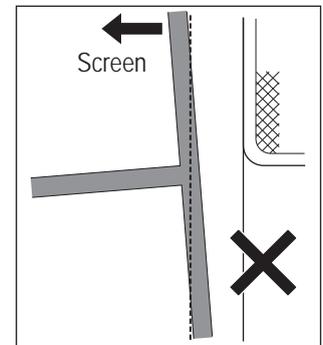
Page 156
"(1) Vertical Adjustment"

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(1)   Vertical Adjustment – Must be performed by a technician –

1   Loosen the four flange socket bolts (M6 x 8) on the right and left sides of the projector assembly.

Projector assembly

Flange socket bolt (M6 x 8)
(loosen only)
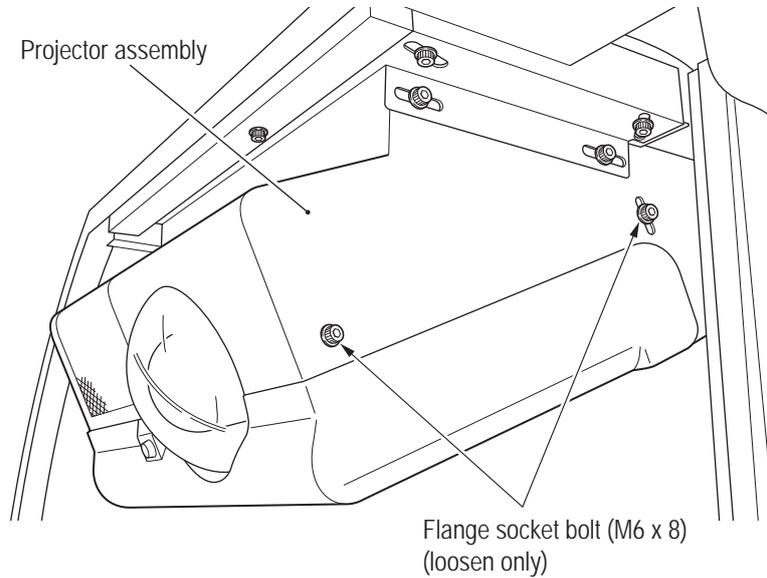
2   Loosen the countersunk nut (M6) and rotate the cap bolt (M6 x 55) to move the screen display up and down. Rotate clockwise to lower and counter-clockwise to raise the screen display.

Projector assembly

Rotate clockwise to lower the screen display

Countersunk nut (M6)

Rotate counter-clockwise to raise the screen display

Cap bolt (M6 x 55)
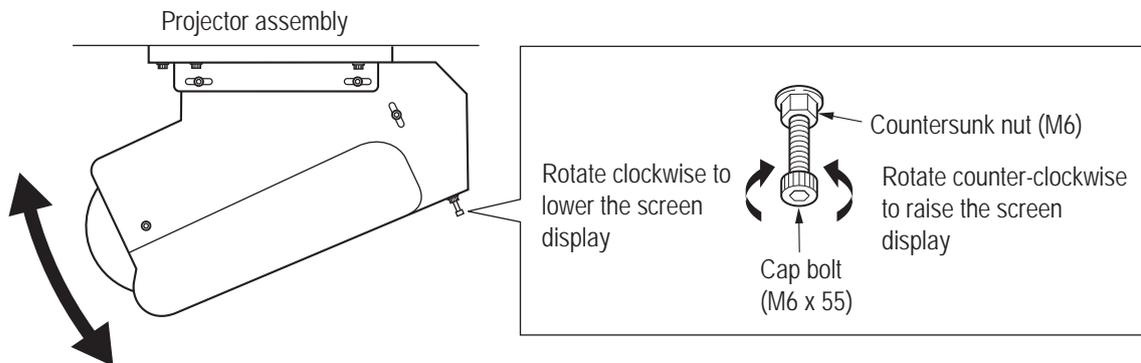
3   Adjust the vertical position so that the white lines on the right and left edges of the VIEW ANGLE ADJUST PATTERN display screen are approximately parallel with the edges of the dome screen.

4   After finishing the adjustment, tighten the loosened screws by reversing the procedure.

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(2) Lateral Adjustment – Must be performed by a technician –

1 Loosen the four flange socket bolts (M6 x 12) on the right and left sides of the projector assembly and the flange socket bolt (M6 x 12) above the lens. Loosen each screw just enough so that the projector assembly can be moved.

Flange socket bolt (M6 x 12)
(functions as the axis) (loosen only)

Flange socket bolt (M6 x 12)
(loosen only)

Projector assembly
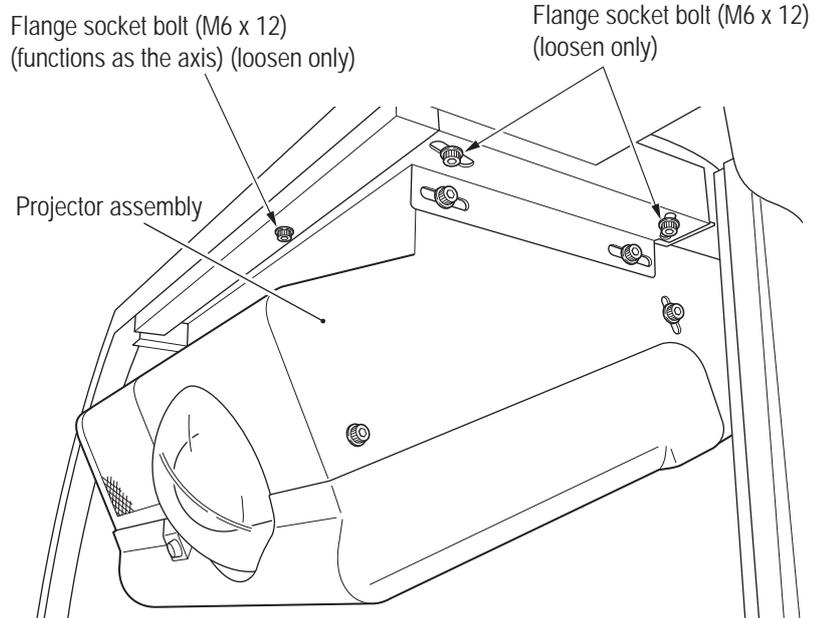
2 Move the rear of the projector assembly to the right and left around the axis of the loosened flange socket bolt (M6 x 12) above the lens. The screen display moves to the right and left accordingly.

Flange socket bolt (M6 x 12)
* The projector assembly rotates right and left around this screw as the axis.
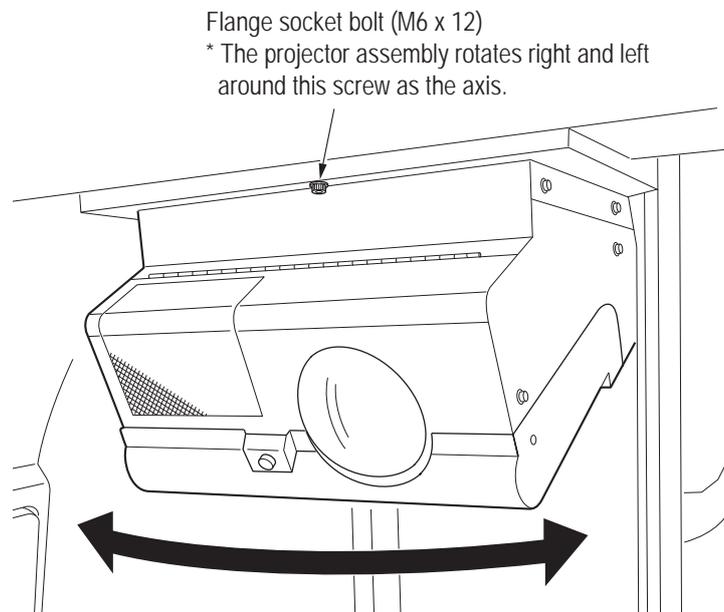
3 Adjust the lateral position so that the white lines on the right and left edges of the VIEW ANGLE ADJUST PATTERN display screen are approximately the same distance from the edges of the dome screen.

4 After finishing the adjustment, tighten the loosened screws by reversing the procedure.

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– Must be performed by a technician –

(3) Viewing Angle Adjustment – Must be performed by a technician –

1 Loosen the four flange socket bolts (M6 x 8) on the right and left sides of the projector assembly.
Loosen each screw just enough so that the projector assembly can be moved.

Flange socket bolt (M6 x 8) (loosen only)

Projector assembly
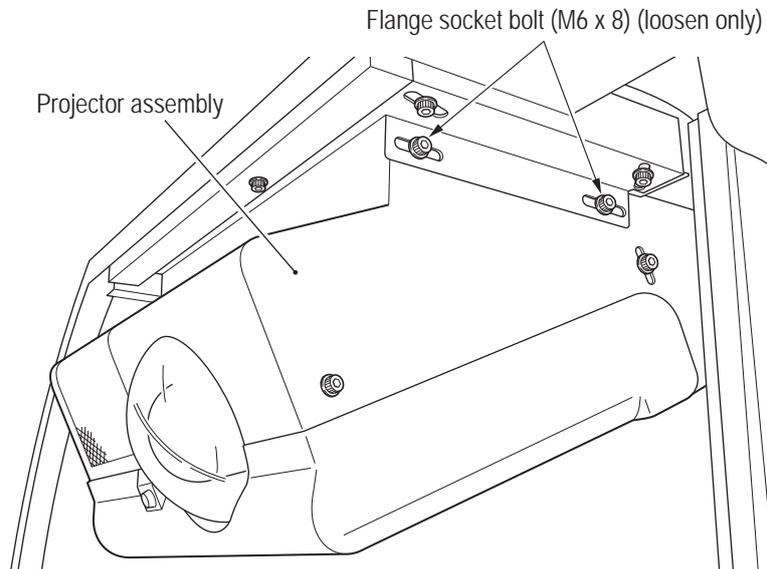
2 Move the projector assembly forward and back to move the edges of the screen display in and out.
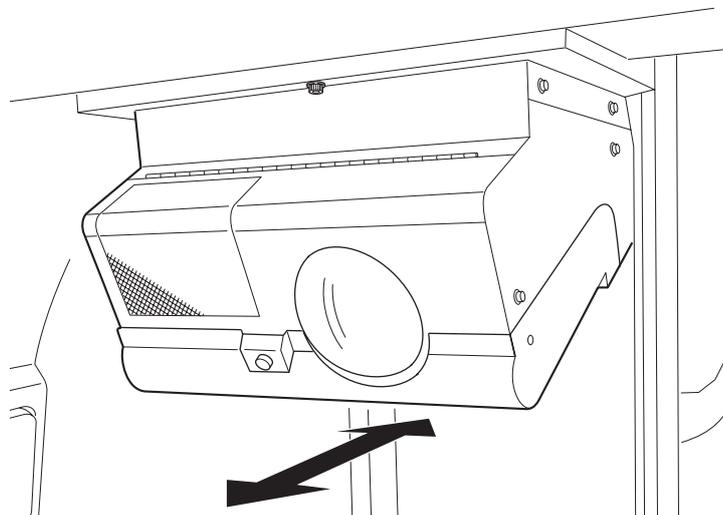
3 Adjust so that the white lines on the right and left edges of the VIEW ANGLE ADJUST PATTERN display screen are within the edges of the dome screen.

4 After finishing the adjustment, tighten the loosened screws by reversing the procedure.

8B-6-3 Various Projector Settings – Must be performed by a technician –

(1) Preparing the Remote Controller

⚠**WARNING**

- Be sure to observe the following regarding the dry cell batteries of the remote controller. Failure to **do so may cause the batteries to leak fluid or burst, possibly resulting in burns or injury.**
  - **Do not use other than the specified batteries.**
  - Do not mix up the polarity indications (+ and -).
  - **Do not charge, heat, disassemble, short circuit or place the batteries in a fire.**
  - Do not leave dry cell batteries that have run out or are past the recommended use date indicated on the batteries in the remote controller.
  - Do not mix different types of dry cell batteries or use new and old batteries together.
  - **Should battery fluid adhere to equipment, do not touch the battery fluid directly. If you happen to touch the battery fluid, rinse thoroughly with water and consult a doctor.**

■ Insert the dry cell batteries into the remote controller

1 Remove the battery cover.
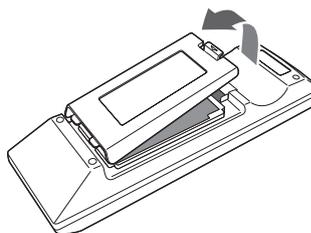
2 Insert the dry cell batteries.
Confirm the polarity indications (+ and -) on the dry cell batteries and insert the batteries correctly.
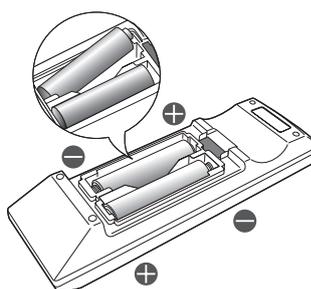
3 Close the battery cover.
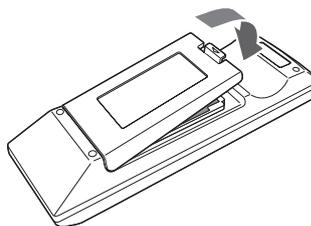
8B. Service

– Must be performed by a technician –

(2)   How to Operate the Remote Controller

NOTICE

- The remote controller may not operate when the remote control photosensor is **directly exposed to bright light such as sunlight or fluorescent light.**
- Do not drop or subject the remote controller to impact.
- Do not leave the remote controller in hot or humid locations.
- Do not expose the remote controller to water or place wet objects on the remote controller.
- Do not disassemble the remote controller.
- In rare cases, remote controller operations may not be accepted easily depending on the location of use or surrounding conditions. In these cases point the remote controller directly at the projector unit and perform the operation again.

Open the projector cover and front lid of the projector assembly (see "8A-1-1 (5) Installing the Projector Unit" on page 64), point the remote controller at the remote control photosensor of the projector unit and operate the remote controller.

Front lid

Remote controller effective operating range
Approx. 30° to the right and left, 20° up and 10° down or less
Distance: within approx. 5 m

Remote control photosensor

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– Must be performed by a technician –

(3)   Projector Unit Control Panel and Remote Controller Part Names

Projector unit control panel   Remote controller

Remote controller transmission part

There are two types of menu display. Press the MENU button to display the Quick Menu on the screen. Select "Detailed Menu" from the Quick Menu and press the ENTER button to display the Detailed Menu.

Projector unit control panel	: Main function
(1) Power button	: Turns the power on and off.
(2) POWER indicator	: Indicates the power on/off state.
(3) STATUS indicator	: Indicates errors and other states.
(4) MENU button	: Displays the menu. (See "8B-6-4 Projector Settings" on page 162.)
(5) AUTO POSITION/▲ button, ▼ button, COMPUTER/◄ button, VIDEO/► button	: Used to select menu items and make adjustments.
(6) KEYSTONE/ENTER button	: Adjusts the screen distortion. Enters the selected mode.

Remote controller	
(1) ON button	: Turns on the power.
(2) STANDBY button	: Turns off the power (standby mode).
(3) MENU button	: Displays the menu.
	There are two types of menu display. Press the MENU button to display the Quick Menu on the screen. Select "Detailed Menu" from the Quick Menu and press the ENTER button to display the Detailed Menu. (See "8B-6-4 Projector Settings" on page 162.)
(4) buttons ▲, ▼, ◄, ► buttons	: Used to select menu items and make adjustments. (See "8B-6-4 Projector Settings" on page 162.)
(5) ENTER button	: Enters the selected mode.
	• When this button is pressed, the button lights up. The projector can be operated using the remote controller while this button is lit. When a button inside the control button cover is pressed, this button automatically lights up and the projector can be operated using the remote controller. In either case, the button light turns off after approximately 30 seconds have passed since the last operation.

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 – Must be performed by a technician –

8B-6-4   Projector Settings – Must be performed by a technician –

(1)   Menu Settings

NOTICE
- **In rare cases the brightness may fluctuate due to the lamp characteristics. This is not a malfunction.**
- The lamp is a consumable part. When the lamp is used for a long time, the image may become dark or the lamp may burn out and no longer light up. This is due to the lamp characteristics, and is not a malfunction.
- The pixel engine used in the machine is manufactured using high-precision technology, but there may be pixels that do not light (dark pixels) or are constantly lit (bright pixels). This is not a malfunction.
- Avoid use at altitudes of 1,500 m or more above sea level, as this may adversely affect the product life.

The control buttons of the projector unit control panel and the remote controller ("8B-6-3 Various Projector Settings" on page 159) can be used to display menus on the screen and make various settings and adjustments. Press the MENU button to display the QUICK MENU and INFORMATION Menu.

* External signal input is required to enable adjustments using the Quick Menu.

* When a control button that cannot be executed is pressed, an icon may appear.

* Changing the values of some items in the setting menus provided with the machine is restricted. In particular, items not described in this Operation Manual include some settings that change automatically.

■ How to make Quick Menu settings

The screen images in the description below show the contrast setting as an example.

1   Press the MENU button.
The Quick Menu selection bar appears.

2   Press the ENTER button (or the ▼ button).
The desired menu appears.

3   Press the ▲ or ▼ button to select the item to be set.

4   Press the ◄ or ► button to set the desired value.

– Must be performed by a technician –

■ To cancel the QUICK MENU

5 Press the MENU button repeatedly.

- Menu screen operations may not be possible even when the button is pressed. In this case a malfunction may have occurred. Disconnect the power cord plug from the outlet, wait 10 minutes or more and then connect the power cord plug to the outlet again.
- Adjustments can be made using the QUICK MENU when there is external signal input.

■ Items that can be set using the QUICK MENU

QUICK MENU		
COLOR ENHANCER	◄	AUTO ►
CONTRAST	◄	0 ►
BRIGHTNESS	◄	0 ►
COLOR TEMP.	◄	STANDARD ►
SHARPNESS	◄	0 ►
LAMP MODE	◄	STANDARD ►
ASPECT	◄	AUTO ►
USER MENU		
SELECT USER MENU	◄	COLOR ►
DETAIL MENU		OK
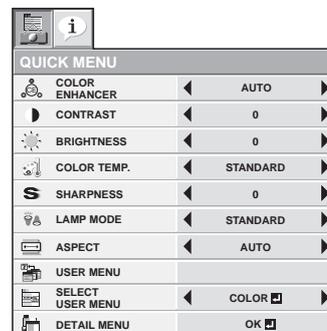
Setting item	Setting	Function
COLOR ENHANCER	AUTO	Makes settings suited to the input signal.
	Presentation	Results in a bright and crisp image.
	Standard	Results in a natural image.
	Theater	Sets a mellow image suitable for movies.
	USER	**Reflects the values set using the Picture Quality Menu in the Detailed Menu.**
CONTRAST	±30	Adjusts the contrast of the image.
BRIGHTNESS	±30	Adjusts the brightness of the image.
COLOR TEMP.	Standard, Low, High, USER	Adjusts the color temperature of the image.
SHARPNESS	±5	Adjusts the sharpness of the image.
LAMP MODE	Standard	Lamp life (3,000 hours). This mode increases the lamp brightness. The operating sound increases and the time until light source lamp replacement becomes shorter.
	Low	Lamp life (5,000 hours). Normally select this setting.
ASPECT		Not used
USER MENU		Not used
SELECT USER MEN		Not used
DETAIL MENU		Not used

- The LAMP MODE starts up in "Standard" mode when the power is turned on. When "Low" mode is set, the mode switches to "Low" mode after approximately 1 minute.
- The image may flicker when the LAMP MODE is switched, but this is not a malfunction.
- Do not switch the LAMP MODE frequently.

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Service

Test Mode

Troubleshooting

163

– Must be performed by a technician –

■ Information Menu

INFORMATION	
LAMP TIME (LOW)	0 H
INPUT	COMPUTER2
RESOLUTION	1024x768
VERTICAL FREQUENCY	75.04 Hz
HORIZONTAL FREQUENCY	60.02 KHz
SYNC. TYPE	5wire
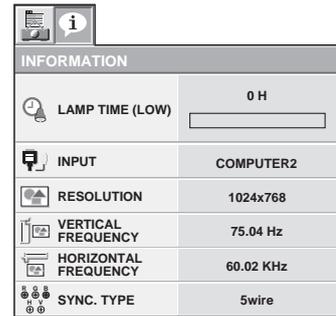
Setting item	Description
LAMP TIME (LOW)	Displays the lamp operation time converted to the time when the lamp mode is set to "Low." ● When the lamp mode is set to "Standard," the displayed time is longer than the actual operation time. ● When the lamp operation time is 10 hours or less, 0 H is displayed. When the lamp operation time exceeds 10 hours, the time is displayed in 1 hour units. ● When the lamp operation time exceeds 3,750 hours, the bar display turns yellow. When the time exceeds 4,750 hours, the bar display turns red. (The lamp life is 5,000 hours.)
INPUT	Displays the name of the input terminal inputting the currently projected video signal.
RESOLUTION	Displays the resolution of the currently projected video signal.
VERTICAL FREQUENCY	Displays the vertical frequency of the currently projected video signal.
HORIZONTAL FREQUENCY	Displays the horizontal frequency of the currently projected video signal.
SYNC. TYPE	Displays the sync signal format of the currently projected video signal.

9. Disposal

⚠WARNING

- When disposing of the machine, follow the applicable regulations for collection, transportation and disposal.
- When entrusting the collection, transportation and disposal of the machine to someone else, be **sure to entrust to specialists in each field.**
- The projector lamp used in this machine contains inorganic mercury, which is hazardous to the human body and the environment. When disposing of the used lamp, follow the applicable regulations for collection, transportation and disposal.

*The software used in this machine is protected by copyright laws. It is prohibited to copy, adapt, distribute publicly, or use the software for purposes other than the operation of this machine. Infringement of the copyright laws may subject persons to criminal penalties.
Do not use the recording media containing the software in a machine other than the specified game machine. Doing so may result in mechanical malfunction.

10. Parts List

10-1   Overall

(1)   Overall

Front assembly
(see page 167)

Rear assembly
(see page 170)

9

10
Not used for Asian
specifications

11
Not used for U.S. and
European specifications

1
(Opposite side 2)

3
(Opposite side 4)

5
(Opposite side 6)

8

7
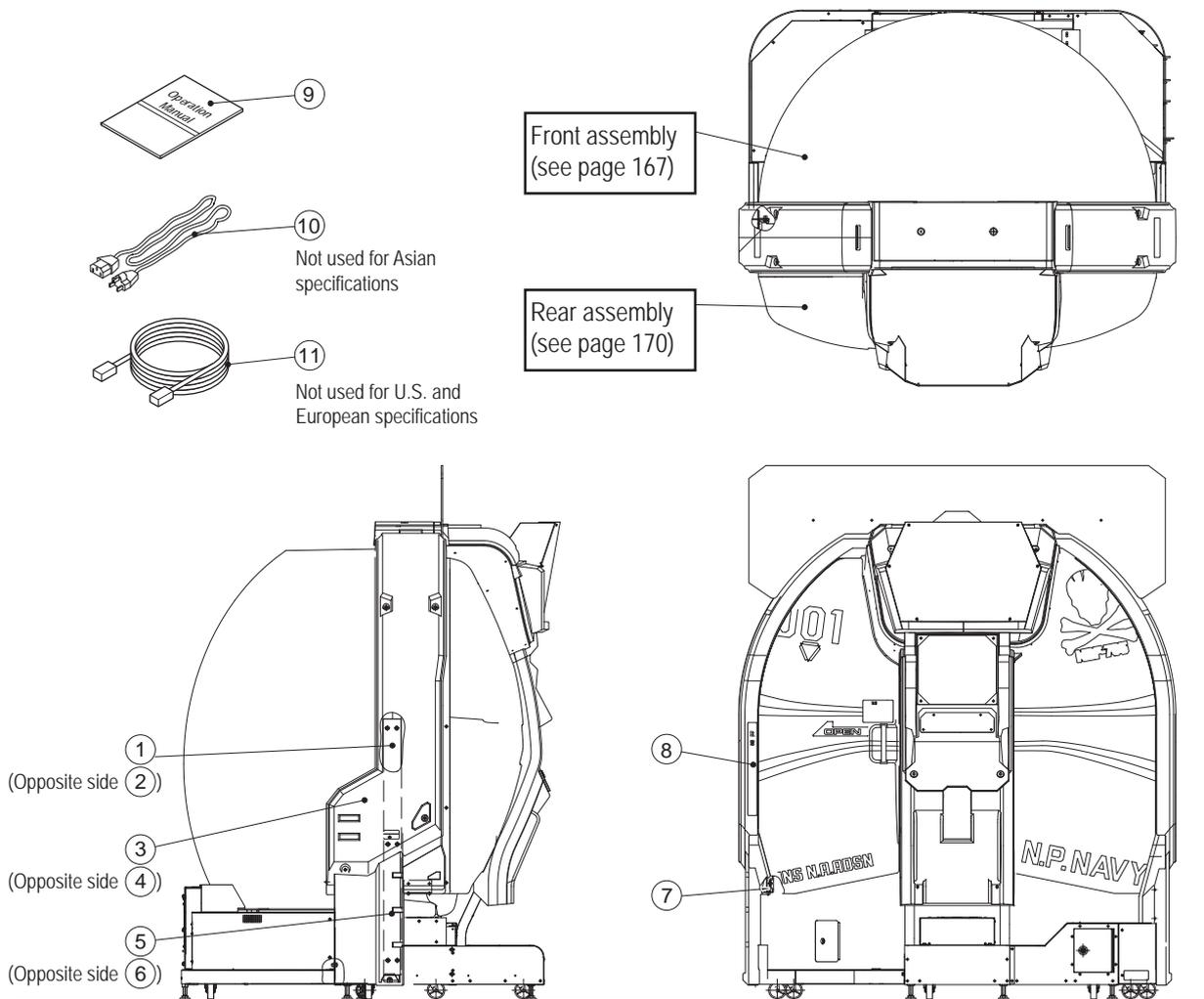
No.	Name	Qty.	Type or Rating	No.
1	Side joint (L)	1		717-910
2	Side joint (R)	1		717-911
3	Side cover (L) MA	1		734-205
4	Side cover (R) MA	1		734-206
5	Lower side cover (L) MA	1		734-207
6	Lower side cover (R) MA	1		734-208
7	Cover joint	1		717-916
8	Caution sticker Finger pinching POD (EXP)	1		461-627
9	Operation Manual	1	This manual	735-100
10a	Power cord UL	1	3 m U.S. specifications UL-AC15A125V-3000	011-116
10b	Power cord BSI		3 m European specifications BSI-AC10A250V3000	011-117
11	LAN cable	1	20 m	011-104
12	Replacement lamp for the projector	1		002-596

(2) Front assembly

Fan assembly
(see page 185)

Cord box assembly
(see page 181)

5.1CH AMP PC board

NAJV (S) PC board

Game PC board

Service plate assembly
(see page 174)

Power panel assembly
(see page 174)

Throttle lever assembly
(see page 182)

Control lever assembly
(see page 183)

(Opposite side 47)
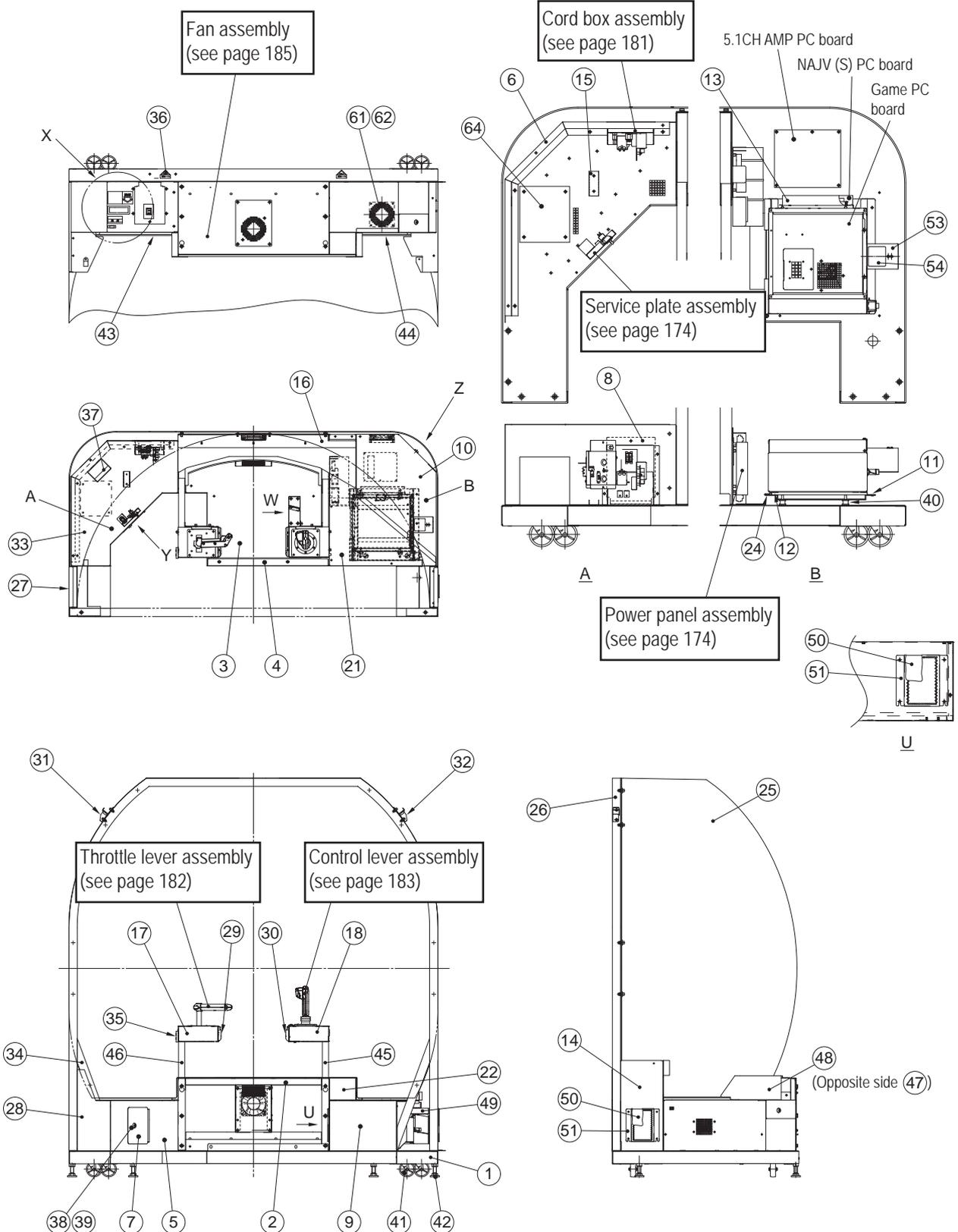
No.	Name	Qty.	Type or Rating	No.
1	Front base	1		734-210
2	Cross beam	1		734-211
3	Floor plate	1		734-212
4	Base joint	1		734-213

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Parts List

Test Mode

Troubleshooting
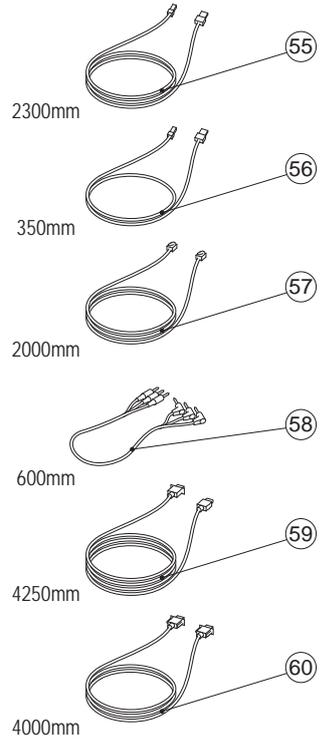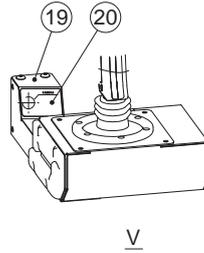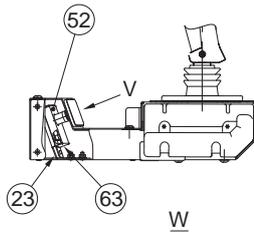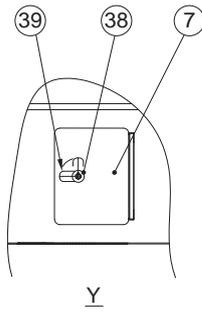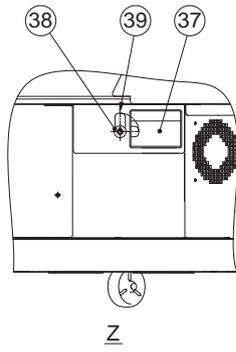
No.	Name	Qty.	Type or Rating	No.
5	Transformer cover A	1		734-214
6	Transformer cover B	1		734-215
7	Service door	1		734-216
8	Cord box cover	1		734-217
9	PCB cover	1		734-218
10	PCB roof	1		734-219
11	ES3(X) base A	1		734-220
12	ES3(X) base B	1		734-221
13	NA-JV base	1		734-222
14	Dome stay R	1		734-223
15	10-pin Faston tab	1		734-224
16	Flange guard	1		734-225
17	Lever base L	1		734-226
18	Lever base R	1		734-227
19	Camera box cover	1		734-229
20	Acrylic cover	1		734-230
21	PCB roof (B)	1		734-231
22	PCB roof case	1		734-232
23	Camera bracket	1		734-233
24	ES3(X) base C	1		734-234
25	Oval dome	1		717-930
26	Dome frame	1		717-931
27	Dome stay (L)	1		717-966
28	Stay cover (L)	1		717-968
29	Lever side CV (L) MA	1		734-235
30	Lever side CV (R) MA	1		734-236

No.	Name	Qty.	Type or Rating	No.
31	Front rope hook L	1		717-977
32	Front rope hook R	1		717-982
33	Transformer cover C	1		717-978
34	Side cover L bracket	1		717-973
35	Corner guard	1		717-986
36	Fork sticker	2		229-441
37	Warning sticker Service (B) (EXP)	2		461-539
38	Coin lock	2	F750-DS8 random number	101-175*
39	Clasp (thick)	2	Multi-purpose type t3.2	101-257
40	Anti-vibration rubber	4	RB-20	106-166
41	Caster (swivel type)	4		102-199
42	Adjustment bolt	4		102-166
43	Gap rubber S	1	420mm	106-184
44	Gap rubber L	1	580mm	106-185
45	Lever stay L (B)	1		734-238
46	Lever stay R (B)	1		734-239
47	Side flange guard L	1		734-240
48	Side flange guard R	1		734-241
49	Stay cover R	1		734-242
50	Filter (PCB cover)	2		734-316
51	Filter tray (PCB cover)	2		734-317
52	Camera cover	1		734-309
53	PCB duct	1		734-321
54	PCB duct sticker	1		734-322
55	USB cable (between game PC board and USB camera)	1	2300mm	011-098
56	USB cable (between game PC board and NA-JV(S) PC board)	1	350mm	011-100
57	LAN cable (between game PC board and Strait PC board)	1	2000mm	011-099
58	Audio cable (between game PC board and 5.1CH AMP PC board)	3	600mm	011-101
59	HDMI-DVI cable (between game PC board and projector)	1	4250mm	011-102
60	RS232C cable	1	4000mm	007-375
61	DC axial-flow fan motor	1	PAAD2A225BM-Y003	005-493
62	Fan guard	1	8130-TR	005-413
63	USB camera	1	KBCR-M06VU-HPB1014-A0	307-830
64	Transformer	1	F9609	004-760

* If you wish to specify the number (same number) for Part No. 38, consult your distributor when ordering.

Test Mode

Troubleshooting

(3) Rear assembly

Projector assembly
(see page 175)

Seat assembly
(see page 177)

POP light assembly
(see page 186)

A - A
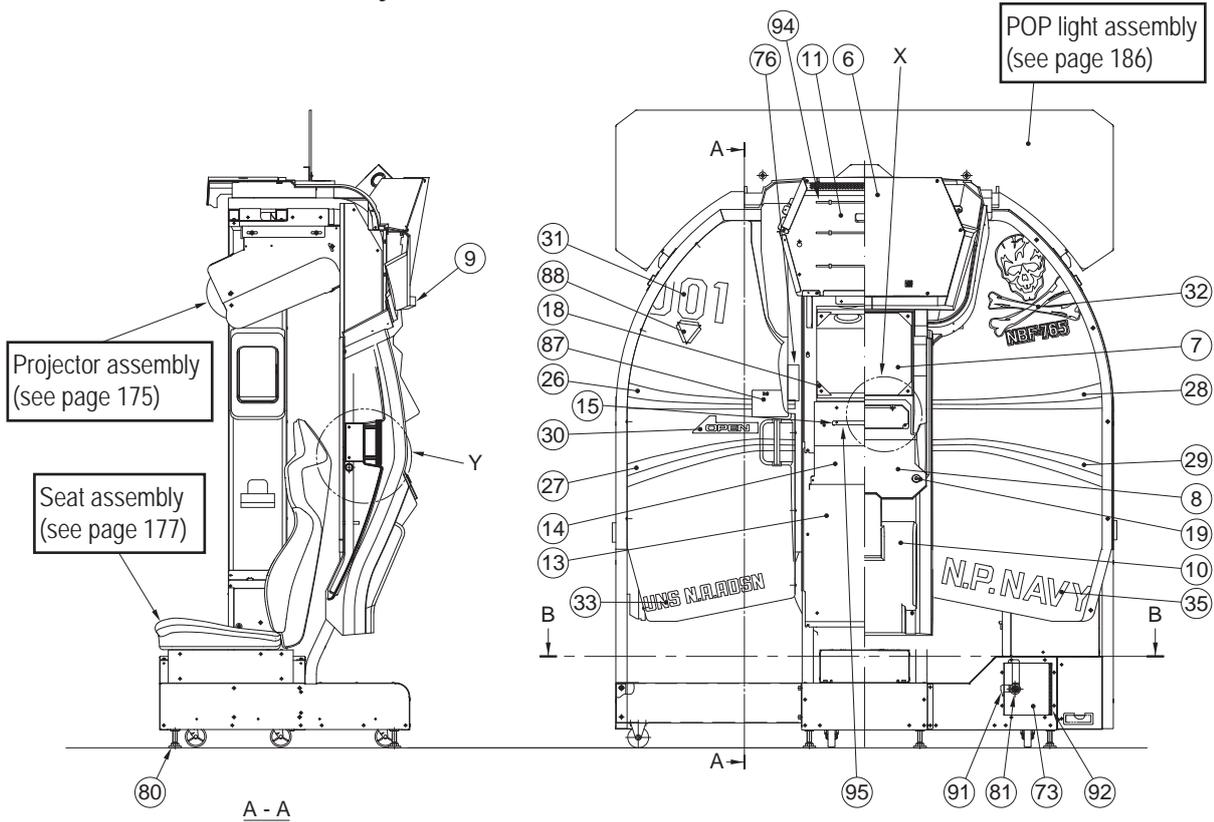
No.	Name	Qty.	Type or Rating	No.
1a	Rear base (EXP)	1	U.S. and European specifications	734-262
1b	Rear base (JPN)		Asian specifications	732-262
2	Rear joint	1		734-263
3	Seat base	1		734-264
4	Top frame	1		734-265
5	Top cover bracket	1		734-266
6	Sign panel A (EXP)	1		735-109
7	Sign panel B	1		734-268
8	Sign panel C	1		734-269
9	Top cover (MA)	1		734-270
10	Rear cover (MA)	1		734-271
11	Rear mark box	1		734-272
12	Rear panel A	1		734-273
13	Rear panel B	1		734-274
14	Rear cover metal part	1		734-275
15	LED bracket	1		734-276
16	LED cover	1		734-277
17	Window metal part	2		734-278
18	Window washer	4		734-279
19	Panel spacer	2		734-280
20	Rear cover side sticker (L)	1		734-281
21	Rear cover side sticker (R)	1		734-282
22	Rear cover sticker (A)	1		734-283
23	Rear cover sticker (B)	2		734-284
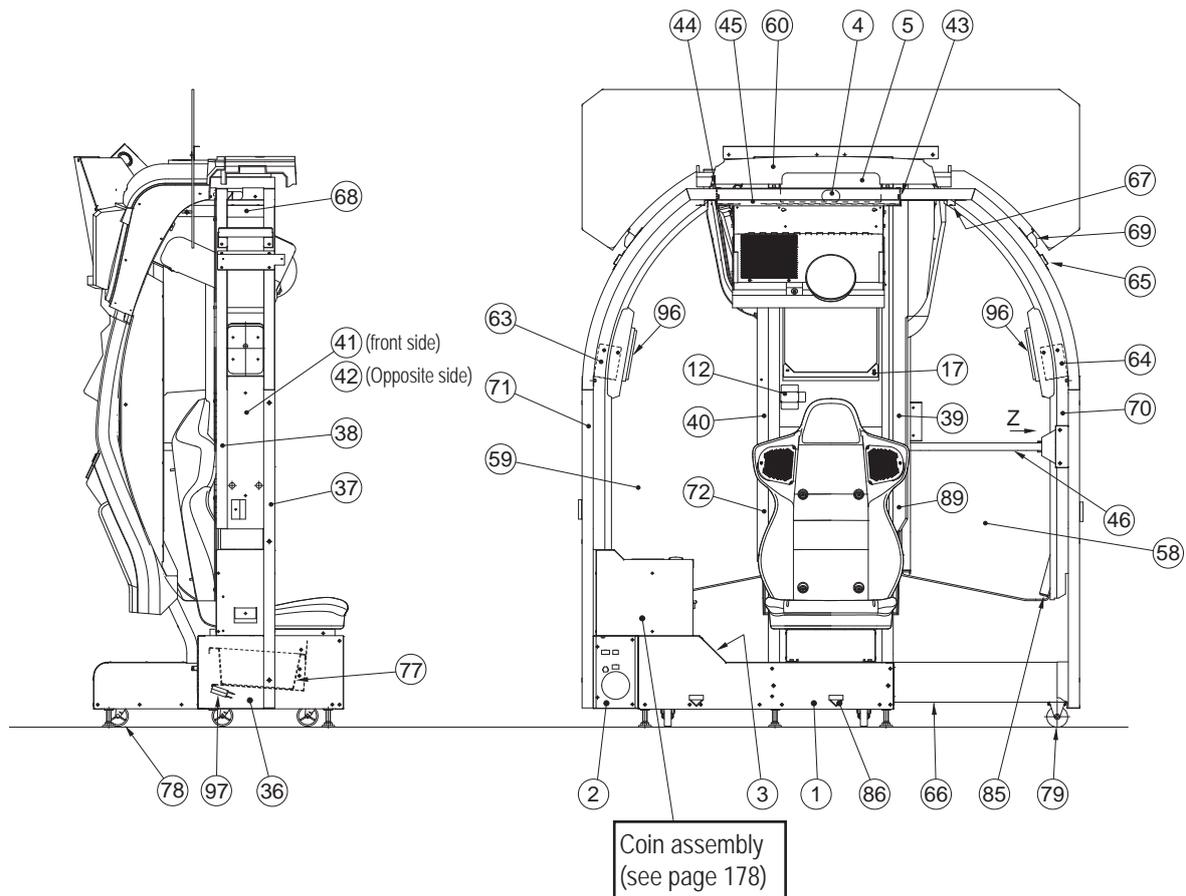
No.	Name	Qty.	Type or Rating	No.
24	Rear cover sticker (C)	1		734-285
25	Instruction sticker (EXP)	1		735-110
26	Door line sticker (A)	1		734-287
27	Door line sticker (B)	1		734-288
28	Rear window line sticker (A)	1		734-289
29	Rear window line sticker (B)	1		734-290
30	Door open sticker	1		734-291
31	Number sticker (001)	1		734-292
32	Skull and crossbones sticker	1		734-293
33	Number sticker (USS)	1		734-294
34	No step sticker	1		734-295
35	Number sticker (NAVY)	1		734-296
36	Power supply case	2		718-031
37	Side frame	1		718-033
38	Rear frame	1		718-034
39	Back frame (L)	1		718-035
40	Back frame (R)	1		718-036
41	Side joint (L)	2		718-037
42	Side joint (R)	1		718-038
43	Side hook (L)	1		718-041
44	Side hook (R)	1		718-042
45	Top cover (F)	2		718-043
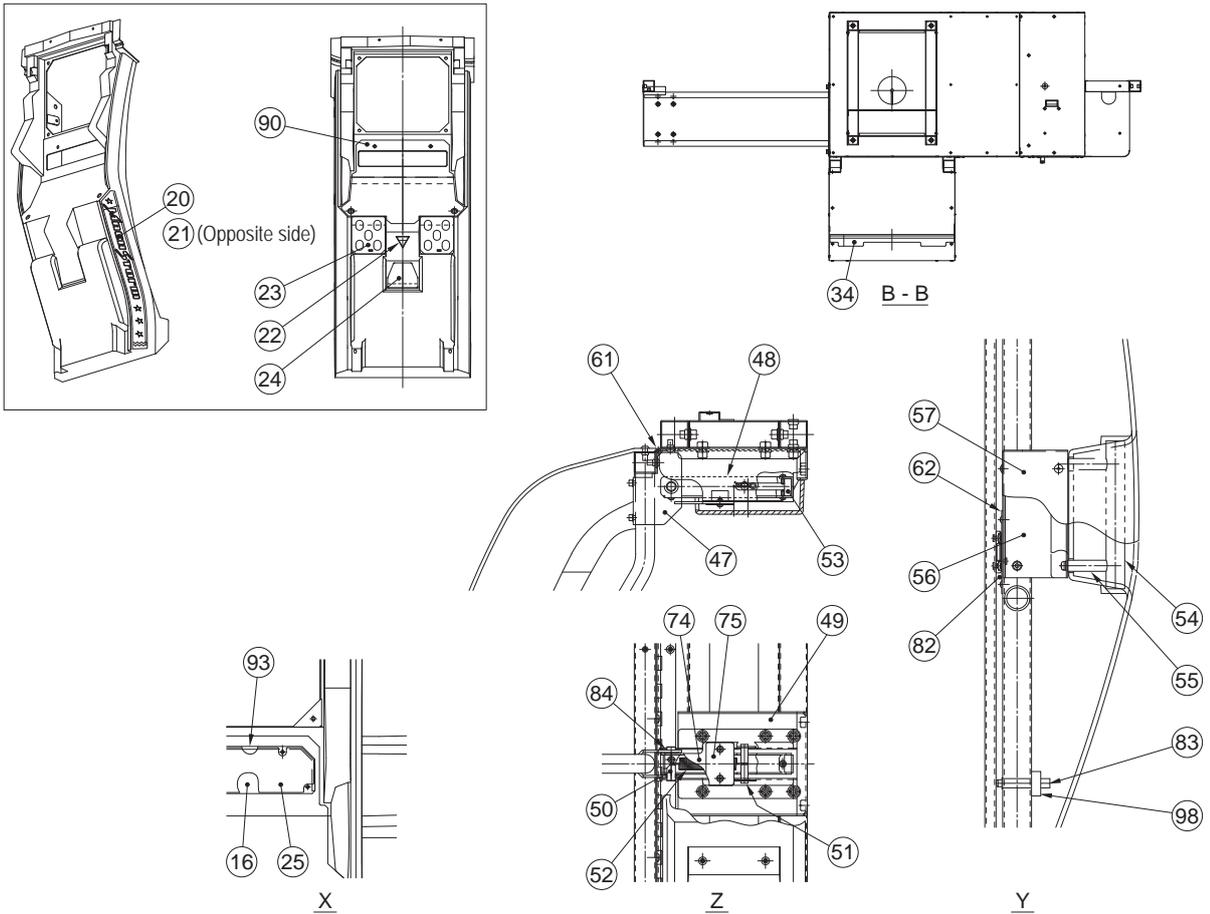
No.	Name	Qty.	Type or Rating	No.
46	Door frame	1		718-044
47	Door stay bracket	1		718-045
48	Door stay	1		718-046
49	Door stopper base	1		718-047
50	Stay shaft	1		718-048
51	Stay pin	1		718-049
52	Door spring	1		718-050
53	Door stopper rubber	1		718-051
54	Door handle	1		718-052
55	Handle spacer	1		718-053
56	Handle bracket	1		718-054
57	Handle bracket cover	1		718-055
58	Door (MA)	1		734-308
59	Rear window	1		718-057
60	Top cover S_MA	1		734-297
61	Door hinge	1		718-060
62	Door receiver	1		718-062
63	Speaker bracket (R)	1		718-066
64	Speaker bracket (L)	1		718-067
65	Cover bracket	2		718-069
66	Rear joint frame	1		718-070

No.	Name	Qty.	Type or Rating	No.
67	Top plate	1		718-071
68	Inner bracket	1		718-077
69	Rear rope hook	2		718-078
70	Interior cover (L)	1		718-081
71	Interior cover (R) (MA)	1		734-318
72	Shade frame	1		718-084
73	Coin door	1		718-089
74	Stay cover	1		718-091
75	Stay cover washer	1		718-092
76	Door cushion	1		722-392
77	Cashbox (K)	1		461-040
78	Caster (swivel type)	4	STC-75NM	102-199
79	Caster (fixed)	2	SKC-75NM	102-201
80	Level adjuster	4	KYW16-75-6B	102-045
81	Cam lock	1	N92-L10	101-142
82	Magnet catch	1	MC-JM45WT	101-209
83	Damper	1	DI-4000	106-236
84	Flange bush	2	80F-1206	104-025
85	Square pipe plug	4	KN-1160B	102-203
86	Fork sticker	2		229-441
87	Caution sticker Capacity limit POD (EXP)	1		461-620
88	Triangle sticker	1		734-319
89	Catch base (MS)	1		734-320
90	Rear cover sticker (D)	1		734-324
91	Stopper plate	1		710-834
92	Hinge S	1		710-841
93	EPT sealer	1	450mm	106-237
94	LED module (white)	3	LMB-WH4K1-24-4006W100-C	002-673
95	LED module (full color)	1	LMP-RGB-15-25019-W100-C	002-674
96	Speaker	2	S00110D1	006-150
97	Coin counter	1	NX-06FD20 12V	003-055
98	Door damper part	1		734-302

(4)　Power panel assembly
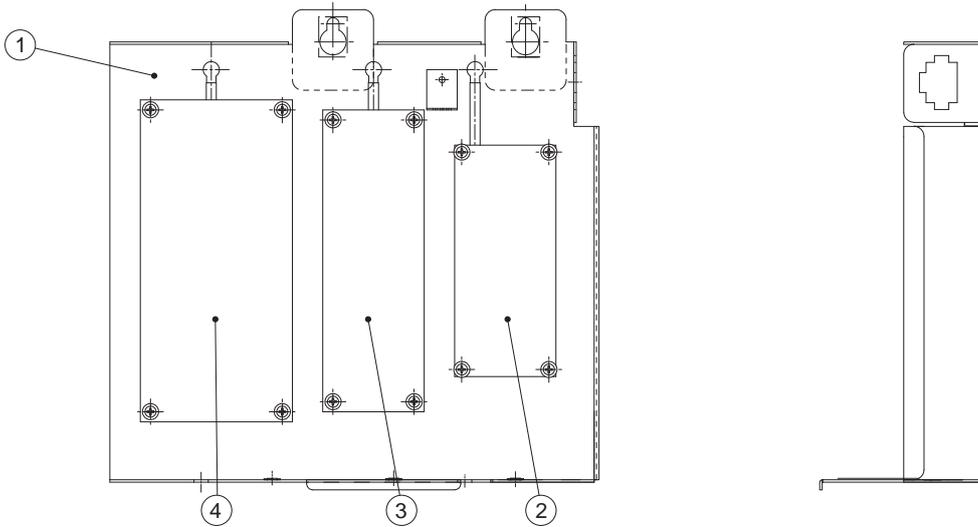
No.	Name	Qty.	Type or Rating	No.
1	Power supply base	1		734-243
2	Switching regulator (5 V)	1	VS15C-5	009-171
3	Switching regulator (24V)	1	VS75E-24	009-280
4	Switching regulator (12V)	1	VS150E-12	009-262

(5)　Service plate assembly
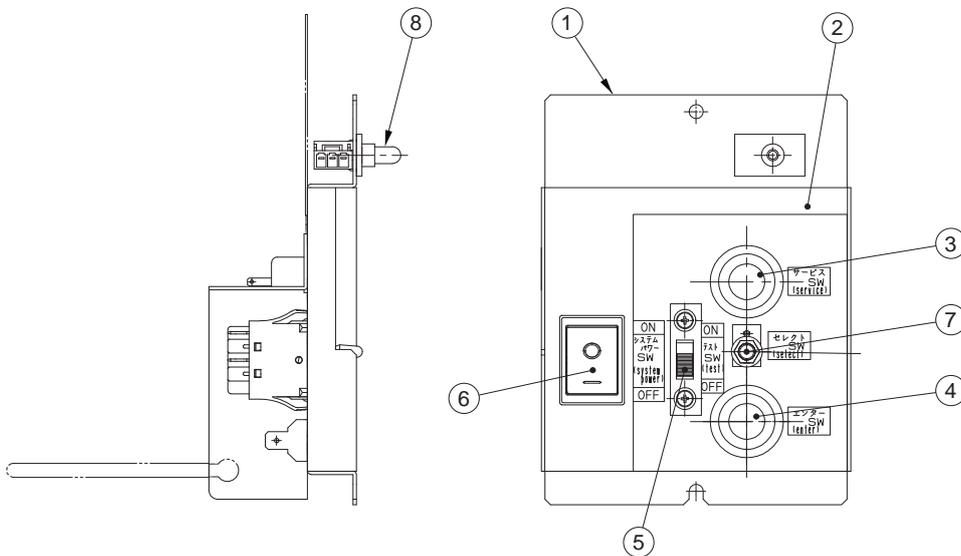
No.	Name	Qty.	Type or Rating	No.
1	Service panel	1		734-245
2	Service sticker	1		734-228
3	Push button (red) <Service>	1	SDP-103-C22RB (red)	000-336
4	Push button (green) <Enter>	1	SDP-103-C22GB (green)	000-619
5	Slide switch <Test>	1	SDS-103A-03#13BJ	000-312
6	Rocker switch <Reset switch>	1	JW-L21RKK	000-665
7	Toggle switch <Select>	1	SDSA-331G-CR	000-337
8	Door switch	1	D3D-113	000-884

(6) Projector Assembly

Projector unit

Fan motor discharge side

(Opposite side ③)

Projector unit top view

Projector unit lens cap (supplied)
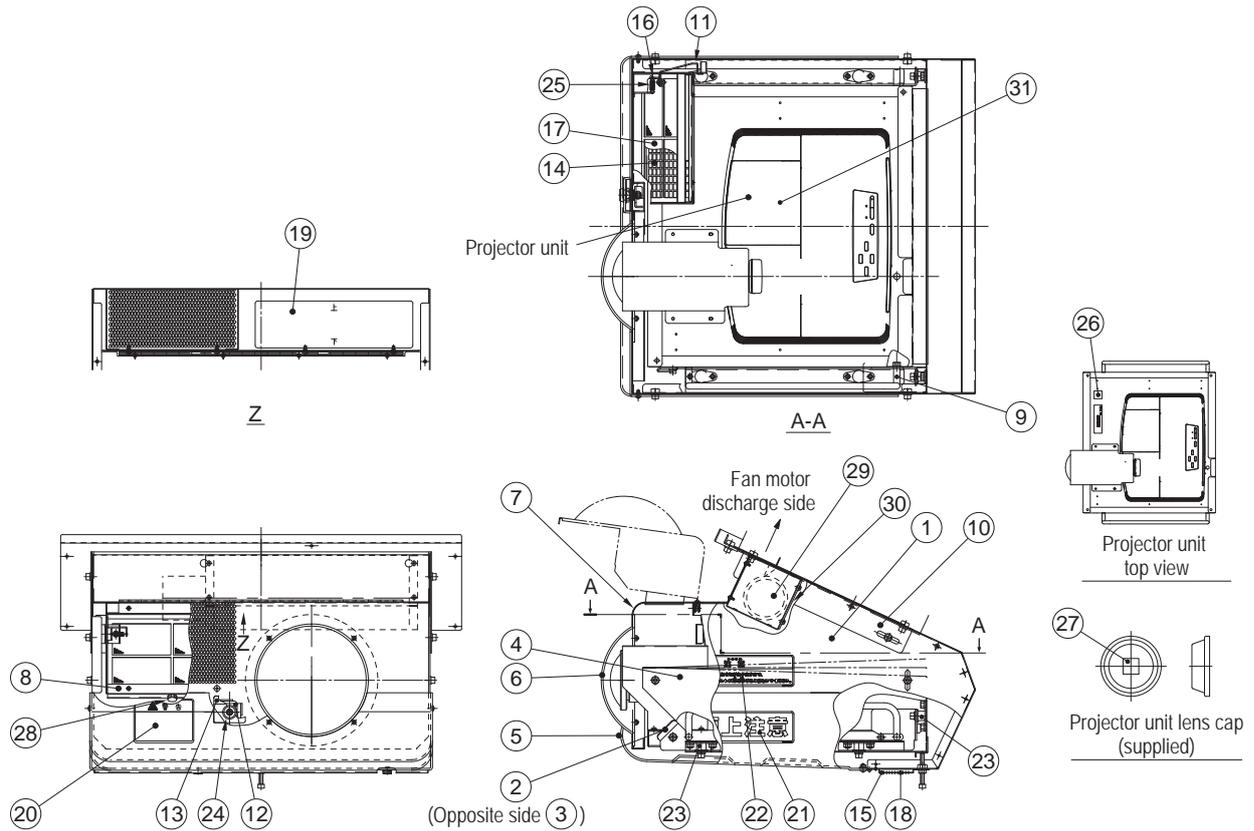
No.	Name	Qty.	Type or Rating	No.
1	Projector case	1		718-100
2	Projector hook (L)	1		734-298
3	Projector hook (R)	1		734-299
4	Adjustment tray	1		734-300
5	Projector cover	1		718-101
6	Lens cover (MA)	1		718-102
7	Front lid	1		718-103
8	Dust case	1		718-104
9	Projector grip	2		718-107
10	Projector hanger	1		718-109
11	Stay frame	1		718-110
12	Key hook	1		718-111
13	Lock washer	1		718-112
14	Filter tray F	1		718-113
15	Filter tray R	1		718-114
16	Spring bracket	1		718-115
17	Filter F	1		718-116
18	Filter R	1		718-117
19	Explanation sticker (HD) MA (EXP)	1		735-130
20	Warning sticker Service B (EXP)	1		461-539
21	Danger sticker Watch your head POD (EXP)	1		461-662
22	Caution sticker Projector (EXP)	1		461-621

No.	Name	Qty.	Type or Rating	No.
23	Anti-vibration rubber	6	RB-20	106-166
24	Coin lock	1	F750-DS8 random number	101-175*
25	Tensile coil spring	1	2117	105-140
26	Hook-and-loop fastener A	1	25 mm	106-238
27	Hook-and-loop fastener B	1	25 mm	106-239
28	Decorative knob screw	1	UN-2013W	110-044
29	Fan motor	1	MF930-BC-F7	005-409
30	Fan guard	1	FG930D	005-410
31	Replacement lamp for the projector	1		002-596

* If you wish to specify the number (same number) for Part No. 24, consult your distributor when ordering.

(7) Seat assembly

(Opposite side ②)
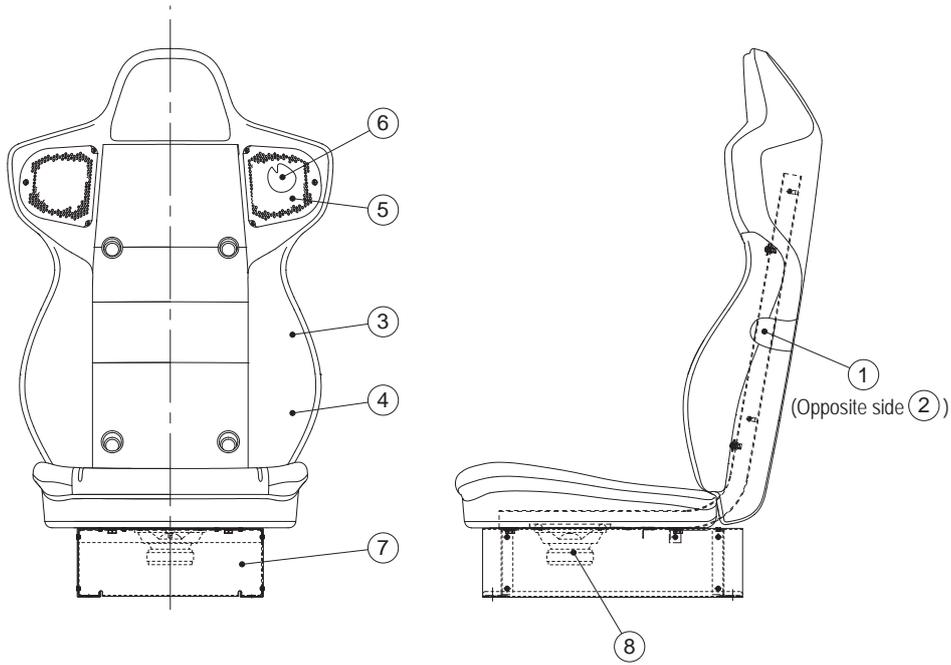
No.	Name	Qty.	Type or Rating	No.
1	Seat pipe (L)	1		734-303
2	Seat pipe (R)	1		734-304
3	Seat back	1		734-305
4	Seat cushion	1		727-950
5	Seat speaker cover	2		710-962
6	Speaker	2	FW-100A141-1	006-145
7	Seat adaptor	1		734-307
8	Woofer	1	FL130U70-4	006-184

Test Mode

Troubleshooting

(8)-1 Coin assembly (Asian specifications)
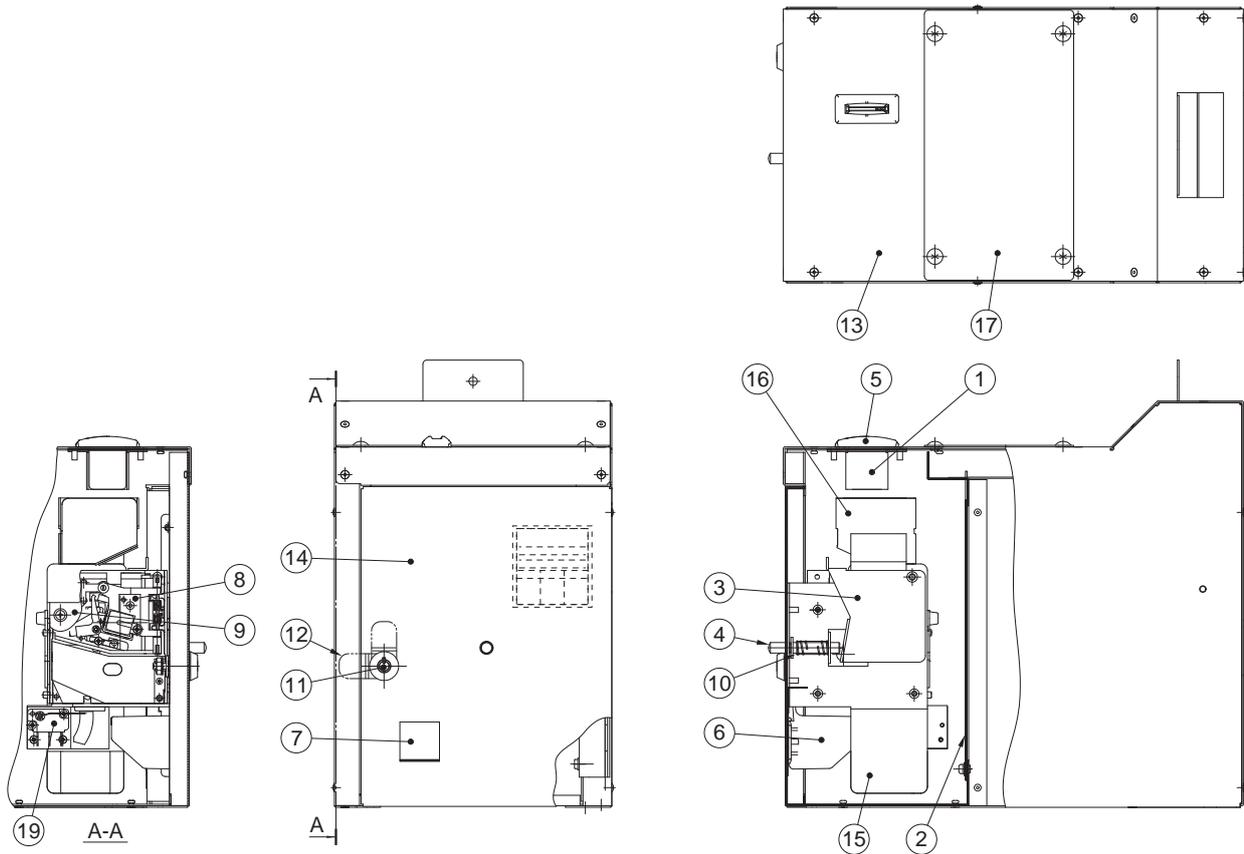
No.	Name	Qty.	Type or Rating	No.
1	Coin guide	1		718-132
2	Inner plate	1		718-138
3	Reject bracket	1		708-945
4	Reject pin	1		708-947
5	Coin bezel	1		708-957
6	Coin return opening (B)	1		412-518
7	Coin return cover (P)	1		412-520
8	Coin selector	1		—
9	Channel bracket	1	CB-81M with CB-81M micro switch	100-145
10	Compression coil spring	1	DC-541	105-153
11	Coin lock	1	F750-DS8 random number	101-175*
12	Clasp (thin)	1	Multi-purpose type t3.2	101-176
13	Coin box (JPN)	1		734-310
14	Service door	1		734-311
15	Selector bracket	1		734-312
16	Shooter	1		734-313
17	Cover panel	1		734-314
18	Coin micro switch	1		000-893

* If you wish to specify the number (same number) for Part No. 11, consult your distributor.

(8)-2 Coin assembly (U.S. Specifications)

（付属品）
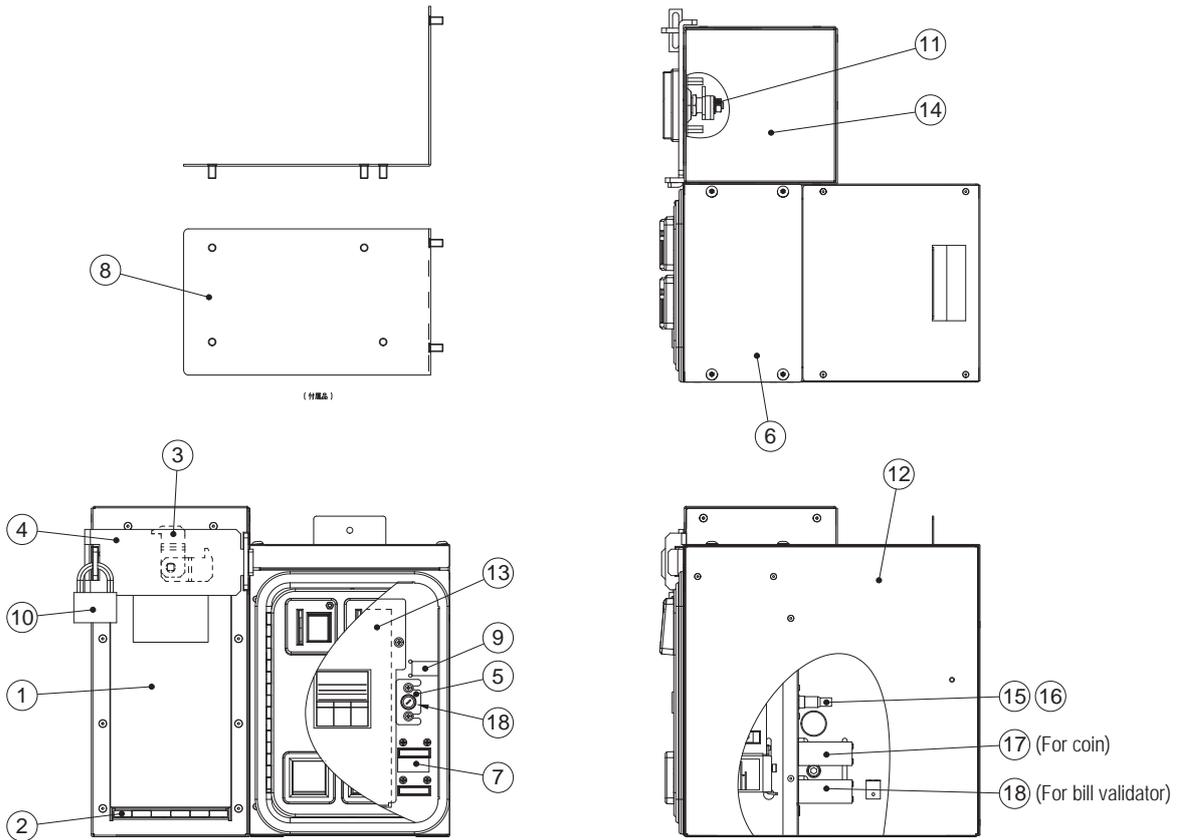
No.	Name	Qty.	Type or Rating	No.
1	Bill validator door	1		735-112
2	Bill validator hinge	1		735-113
3	Stopper plate (B)	1		735-114
4	Lock bar (B)	1		735-115
5	Fuse holder BK (NEL)	1		735-116
6	Cover panel (N)	1		735-117
7	Coin counter label	1		735-118
8	Hole cover	1		735-119
9	Fuse Sicker (B)	1		735-120
10	Padlock	1	C-555N-45	101-264
11	Cam lock	1	N92-L10	101-142
12	Coin box (N)	1		735-121
13	Guard panel	1		735-122
14	Bill validator box	1		735-123
15	Fuse holder	1	ø5 mm x 20 mm or ø6.3 mm x 32 mm	001-112
16	Fuse	1	ø5.0 mm x 20 mm TIME LAG 6.3A 250V	011-114
17	Coin counter	2		003-055
18	Fuse holder cap	1	ø5 mm x 20 mm	001-113

* If you wish to specify the number (same number) for Part No. 11, consult your distributor.

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Parts List

Test Mode

Troubleshooting

(8)-3 Coin assembly (European Specifications)
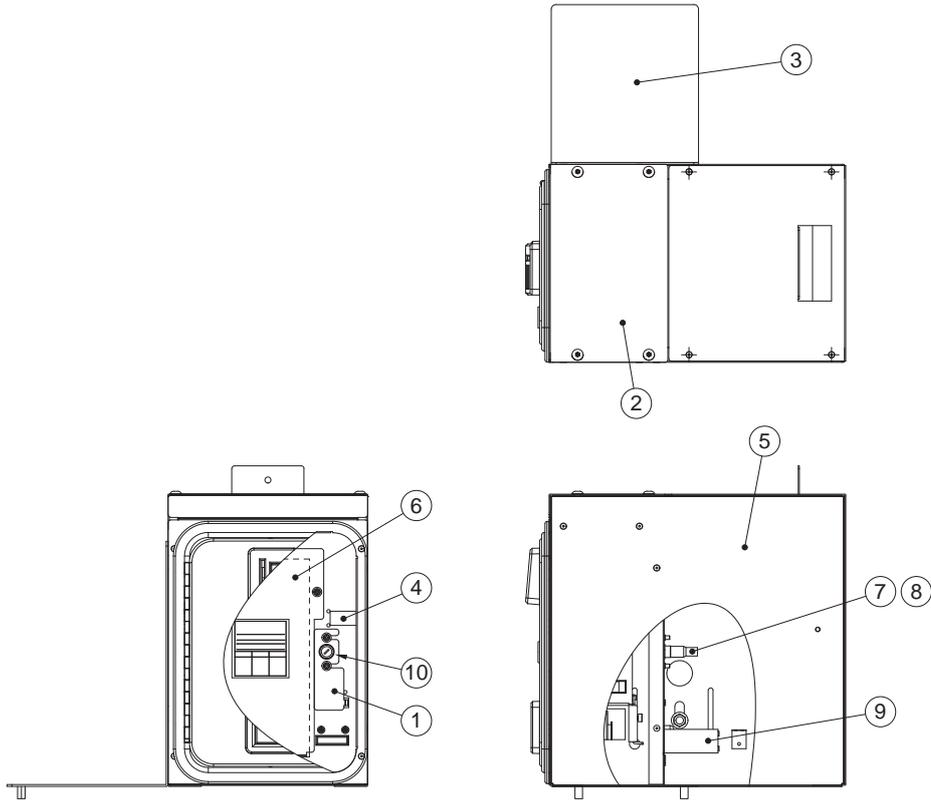
No.	Name	Qty.	Type or Rating	No.
1	Fuse holder bracket (NEL)	1		735-127
2	Cover panel (N)	1		735-117
3	Hole cover	1		735-119
4	Fuse sticker (D)	1		735-128
5	Coin box (N)	1		735-121
6	Guard panel	1		735-122
7	Fuse holder	1	ø5 mm x 20 mm or ø6.3 mm x 32 mm	001-112
8	Fuse	1	ø5.0 mm x 20 mm FAST-ACTING 2A 250V	001-115
9	Coin counter	1		003-055
10	Fuse holder cap	1	ø5 mm x 20 mm	001-113

* If you wish to specify the number (same number) for Part No. 11, consult your distributor.

(9)　Cord box assembly
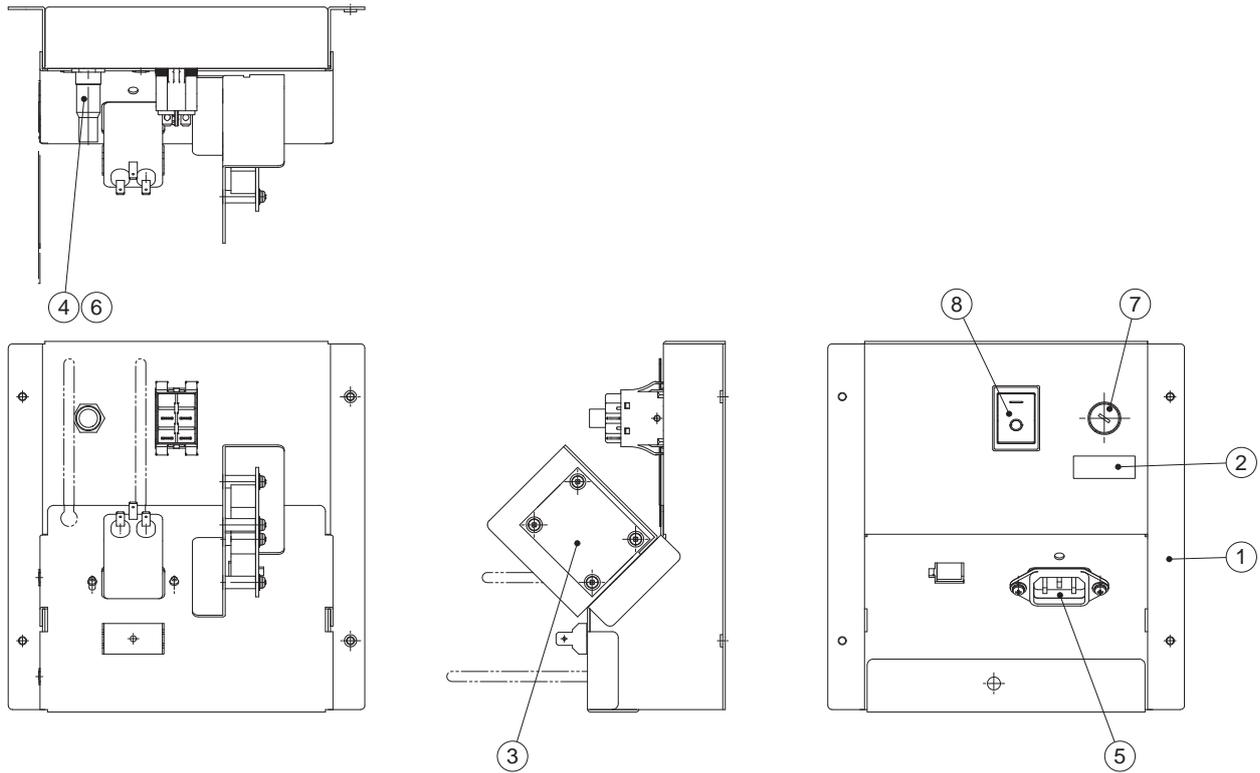
No.	Name	Qty.	Type or Rating	No.
1	Cord box	1		734-244
2	Fuse sticker	1		—
3	Strait PC board	1		307-308
4	Fuse	1		—
5	Noise Filter	1	RPE-2010R	011-103
6	Fuse holder	1		001-109
7	Fuse holder cap	1		001-110
8	Power switch	1	JW-L21RKKF1-008E	000-665

Test Mode

Troubleshooting

(10) Throttle lever assembly
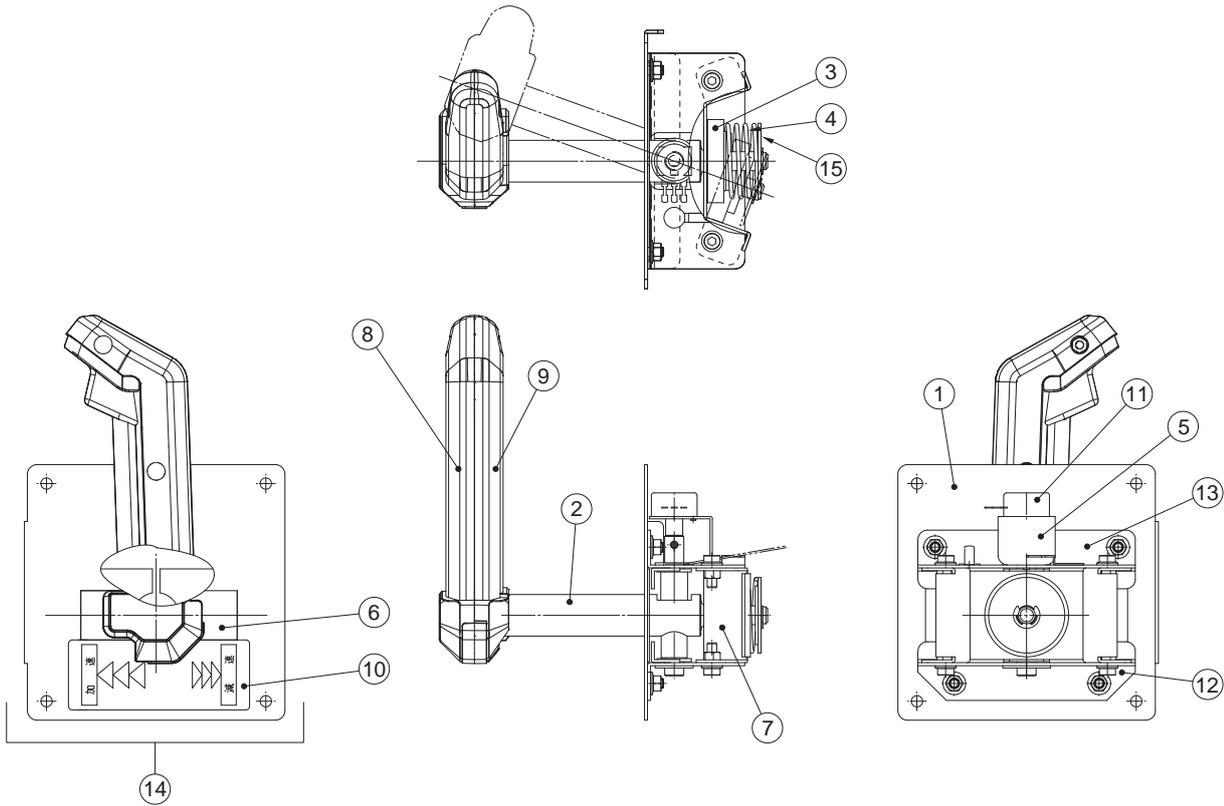
No.	Name	Qty.	Type or Rating	No.
1	Base plate	1		734-248
2	Lever shaft	1		734-249
3	Spring stopper	1		734-250
4	Spring	1		734-251
5	Analog interface bracket	1		734-252
6	Finger guard	1		734-253
7	Stopper	1		734-254
8	Throttle lever grip A	1	L and R make a set	734-256
9	Throttle lever grip B	1		
10	Throttle sticker (EXP)	1		735-129
11	Analog interface	1	RVQ24YN04-06 20F B102	008-079
12	Side base L (B)	1		734-260
13	Side base R (B)	1		734-261
14	Throttle lever assembly	1		734-259
15	Spring washer	1		734-255

(11)   Control lever assembly
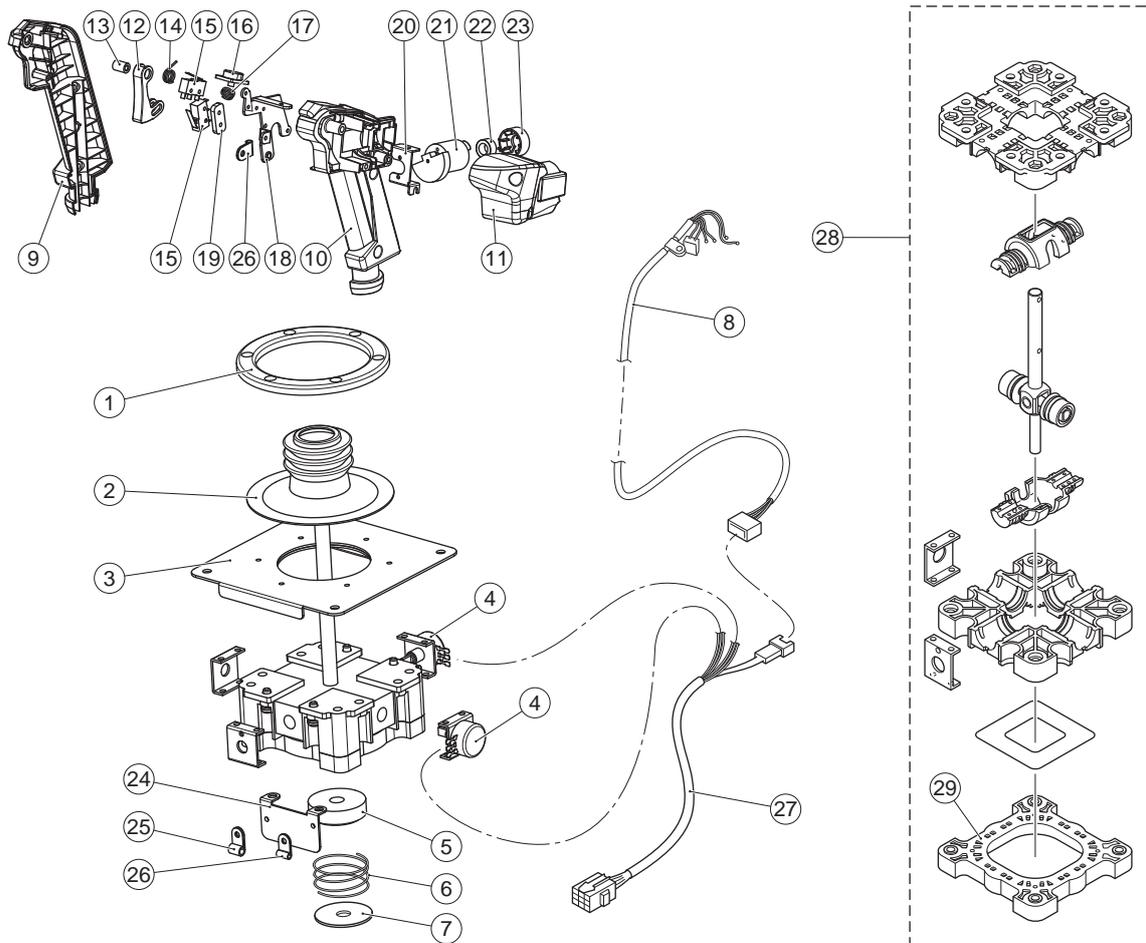
No.	Name	Qty.	Type or Rating	No.
1	Cover fixing frame	1		306-829
2	Rubber cover	1		306-783
3	Installation plate	1		306-824
4	Analog interface (with analog interface bracket)	2		307-856
5	Spring stopper	1		306-791
6	Spring	1		307-849
7	Spring end	1		306-828
8	Grip harness	1		307-850
9	Control lever grip A	1	L and R make a set	307-881
10	Control lever grip B	1		
11	Motor cover	1		307-882
12	Machine gun button	1		307-063
13	Machine gun button spacer	1		307-880
14	Machine gun button spring	1		307-126
15	Switch (For Machine gun button and Missile button)	1		307-853
16	Missile button	1		307-854
17	Missile button spring	1		307-855
18	Lever metal part A	1		307-856
19	Lever metal part B	1		307-857
20	Motor bracket	1		307-858

10. Parts List

No.	Name	Qty.	Type or Rating	No.
21	Vibration motor	1		307-859
22	Ferrite core	1		307-860
23	Core spacer	1		307-861
24	Clamp bracket	1		307-862
25	Clamp (large)	1		307-863
26	Clamp (small)	2		307-864
27	Lever harness	1		307-865
28	Lever sub-assembly	1		307-866
29	Guide plate	1		306-812

(12)   Fan assembly
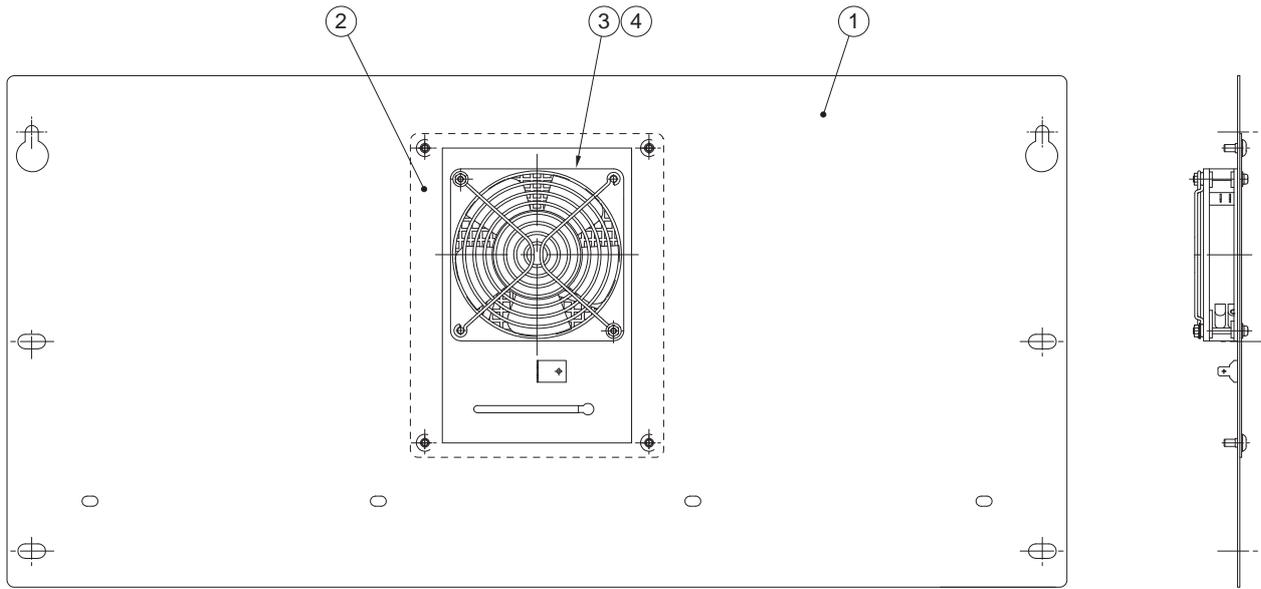
No.	Name	Qty.	Type or Rating	No.
1	Front cover	1		734-246
2	Fan bracket	1		734-247
3	Fan	1	9GV1224P1J10	005-540
4	Fan guard	1	8130-TR	005-413

Test Mode

Troubleshooting

(13)   POP light assembly
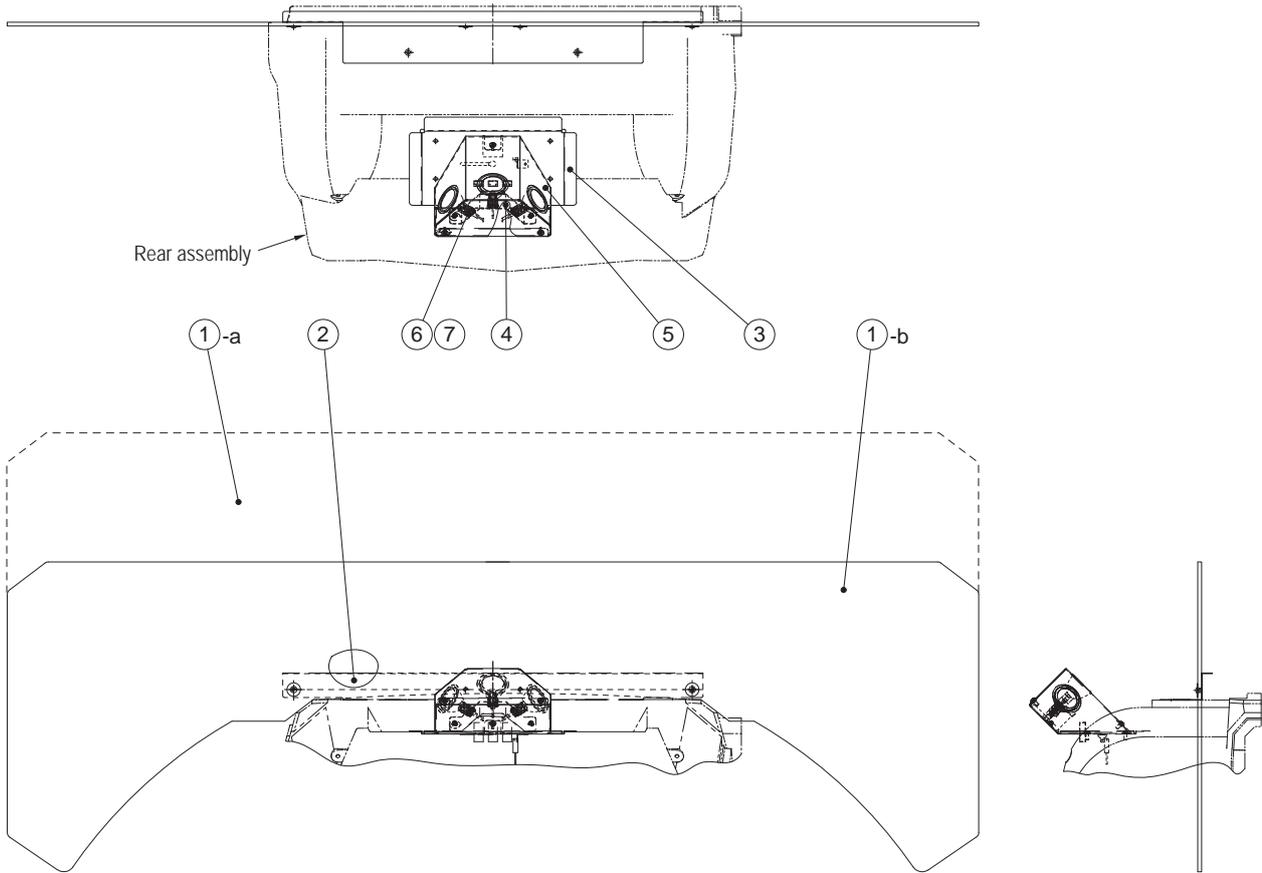
No.	Name	Qty.	Type or Rating	No.
1-a	POP (EXP)	1	U.S. and European specifications	735-131
1-b	POP (EXP ASIA)		Asian specifications	735-124
2	POP bracket (A)	1		734-347
3	POP light bracket (A)	1		734-325
4	POP light bracket (B)	1		734-326
5	POP light cover	1		734-327
6	Lamp socket	3		002-672
7	LED light	3		002-675

11. Wiring Diagram

11-1   Overall Connection Diagram (U.S. Specifications, AC 120V)   (1/3)

11-2 Overall Connection Diagram (European Specifications, AC 230V) (1/3)

1 2 3 4 5 6 7 8A 8B 9 10 **11**

Wiring Diagram

=ALL.AA1
FRONT(NEL) ASSY (2/3)

=ALL.AA1.AA5
SERVICE PLATE ASSY (2/2)

Test Switch
Servise Switch
Up/Down Switch
Enter Switch
Door Switch

NA-JV BK
-PCB2
NA-JV(S) PCB ASSY (1/2)
3/3.E1

CONTROL LEVER BK
CONTROL LEVER ASSY

-SW8 Trigger Switch
-SW9 Top Switch
-M1 Vibration
-VR2 Crosswise Direction Potentiometer
-VR3 Front-Back Direction Potentiometer

THROTTLE LEVER BK
=ALL.AA1.AA7
THROTTLE LEVER ASSY

-VR1 Front-Back Direction Potentiometer

-PC1 Camera Module

=ALL.AA1.AA6
FAN ASSY (2/2)

-FM1
DC Axial Fan Motor
1.5A 24VDC

-RA1 SYS ES3(X) ASSY (2/2)
1/3.B6

=ALL.AA1.AA3
POWER SUPPLY ASSY (2/2)

-REG1 Switching Regulator
5VDC 3.0A
1/3.D7

-REG2 Switching Regulator
12VDC 12.5A
1/3.D7

-REG3 Switching Regulator
24VDC 3.2A
1/3.E7

JV I/O
USB B Female / USB B Male
-CB9 USB Cable (BK)

USB A Female / USB A Male

USB 3 USB A Female / USB A Male
-PC4 USB DONGLE

USB 4 USB A Female / USB A Male
-CB10 USB Cable (BK)
USB CAMERA

-PCB3 5.1CH AMP PCB ASSY (1/2)
3/3.D1

AUDIO 1 (LT.GN) φ3.5 Stereo Jack / φ3.5 Stereo Plug
-CB11 φ3.5 Stereo Cable (BK)
SEAT L/R

AUDIO 3 (OG) φ3.5 Stereo Jack / φ3.5 Stereo Plug
-CB12 φ3.5 Stereo Cable (BK)
SEAT WOOFER

AUDIO 2 (BK) φ3.5 Stereo Jack / φ3.5 Stereo Plug
-CB13 φ3.5 Stereo Cable (BK)
SIDE L/R

-FM2 DC AXIAL FAN MOTOR
24VDC 0.20A

EXPLANATORY REMARKS

LINE		AWG
WIDE LINE	GN/YE	AWG16
	OTHER COLOR	AWG18
	AWGxx	AWGxx
NARROW LINE	ALL COLOR	AWG24
	AWGxx	AWGxx

COLOR TABLE

BK	BLACK	VT	VIOLET
BN	BROWN	GY	GRAY
RD	RED	WH	WHITE
OG	ORANGE	PK	PINK
YE	YELLOW	LT.GN	LIGHT GREEN
GN	GREEN	LT.BU	LIGHT BLUE
BU	BLUE		

"COLOR / COLOR" signed spiral cable.

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11-3 Overall Connection Diagram (Asian specifications, AC 110 – 120, 220 – 240V) (1/3)
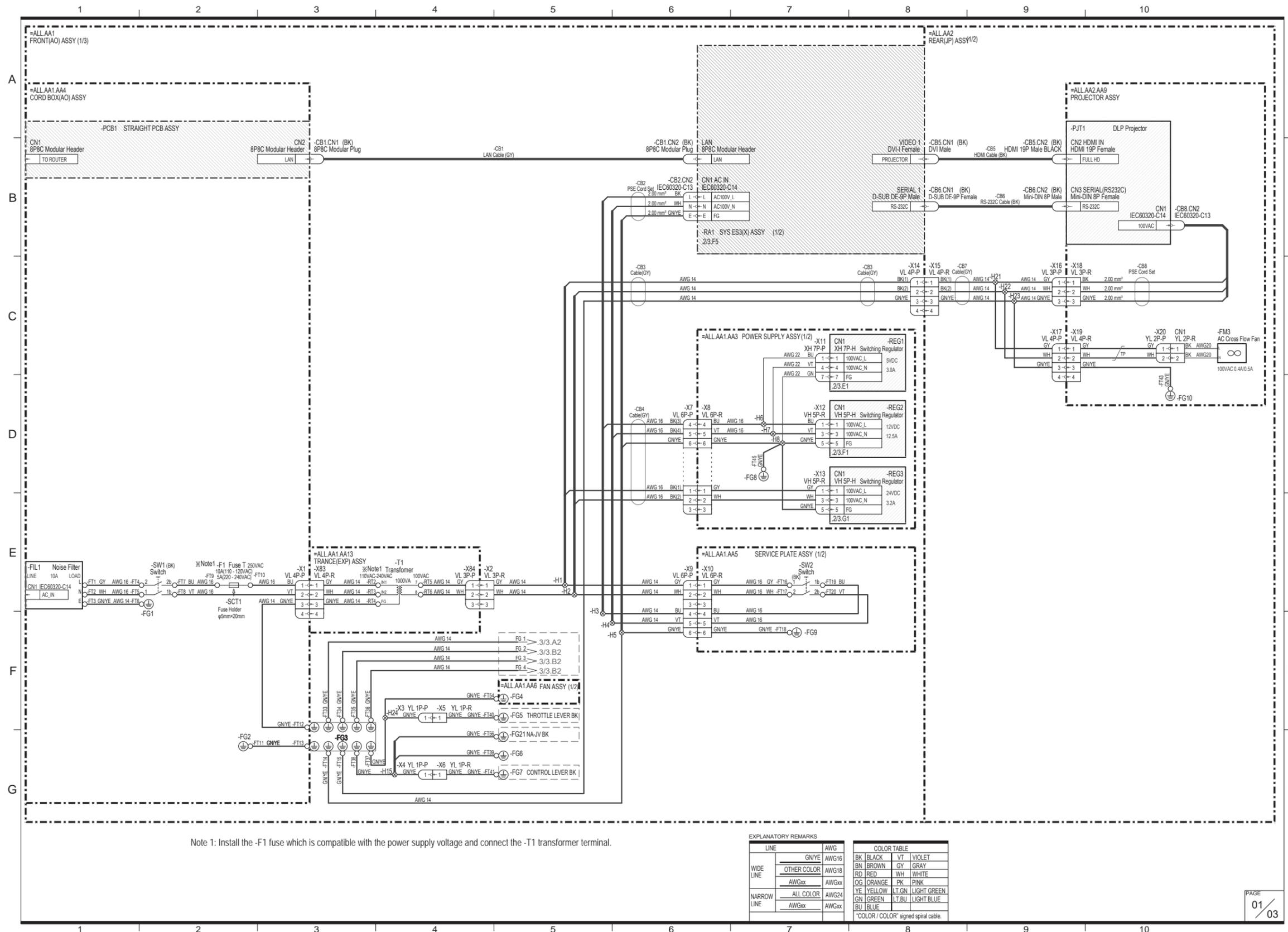
Note 1: Install the -F1 fuse which is compatible with the power supply voltage and connect the -T1 transformer terminal.

EXPLANATORY REMARKS

LINE		AWG
WIDE LINE	GN/YE	AWG16
	OTHER COLOR	AWG18
	AWGxx	AWGxx
NARROW LINE	ALL COLOR	AWG24
	AWGxx	AWGxx

COLOR TABLE

BK	BLACK	VT	VIOLET
BN	BROWN	GY	GRAY
RD	RED	WH	WHITE
OG	ORANGE	PK	PINK
YE	YELLOW	LT.GN	LIGHT GREEN
GN	GREEN	LT.BU	LIGHT BLUE
BU	BLUE		

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EXPLANATORY REMARKS

LINE		AWG
WIDE LINE	GN/YE	AWG16
	OTHER COLOR	AWG18
	AWGxx	AWGxx
NARROW LINE	ALL COLOR	AWG24
	AWGxx	AWGxx

COLOR TABLE

BK	BLACK	VT	VIOLET
BN	BROWN	GY	GRAY
RD	RED	WH	WHITE
OG	ORANGE	PK	PINK
YE	YELLOW	LT.GN	LIGHT GREEN
GN	GREEN	LT.BU	LIGHT BLUE
BU	BLUE		

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Matchlock Corporation. (3D VFX Tool BISHAMON)

cURL 7.22.0

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   go.microsoft.com/fwlink/?linkid=104604.

   By using these features, you consent to the transmission of this information. Microsoft does not use the information to identify or contact you.

   Computer Information. The following features use Internet protocols, which send to the appropriate systems computer information, such as your Internet protocol address, the type of operating system and browser, the name and version of the software you are using, and the language code of the device where you installed the software. Microsoft uses this information to make the Internet-based services available to you. NBGI has elected to turn on the following features on the device.

   • Plug and Play and Plug and Play Extensions. You may connect new hardware to your device. Your device may not have the drivers needed to communicate with that hardware. If so, the update feature of the software can obtain the correct driver from Microsoft and install it on your device.

   • Web Content Features. Features in the software can retrieve related content from Microsoft and provide it to you. Examples of these features are clip art, templates, online training, online assistance and Appshelp. You may choose to switch them off or not use them.

   • Digital Certificates. The software uses x.509 version 3 digital certificates. These digital certificates confirm the identity of user sending information to each other and allow you to encrypt the information. The software retrieves certificates and updates certificate revocation lists over the Internet.

   • Auto Root Update. The Auto Root Update feature updates the list of trusted certificate authorities. You can switch off this feature.

   • Windows Media Digital Rights Management. Content owners use Windows Media digital rights management technology (WMDRM) to protect their intellectual property, including copyrights. This software and third party software use WMDRM to play and copy WMDRM-protected content. If the software fails to protect the content, content owners may ask Microsoft to revoke the software's ability to use WMDRM to play or copy protected content. Revocation does not affect other content. When you download licenses for protected content, you agree that Microsoft may include a revocation list with the licenses. Content owners may require you to upgrade WMDRM to access their content. Microsoft software that includes WMDRM will ask for your consent prior to the upgrade. If you decline an upgrade, you will not be able to access content that requires the upgrade. You may switch off WMDRM features that access the Internet. When these features are off, you can still play content for which you have a valid license.

   • Windows Media Player. When you use Windows Media Player, it checks with Microsoft for
     • compatible online music services in your region;
     • new versions of the player; and
     • codecs if your device does not have the correct ones for playing content.

   You can switch off this feature. For more information, go to: go.microsoft.com/fwlink/?LinkId=51331.

- Malicious Software Removal/Clean On Upgrade. Before installation of the software, the software will check and remove certain malicious software listed at www.support.microsoft.com/?kbid=890830 ("Malware") from your device. When the software checks your device for Malware, a report will be sent to Microsoft about any Malware detected or errors that occurred while the software was checking for Malware. No information that can be used to identify you is included in the report. You may disable the software's Malware reporting functionality by following the instructions found at www.support.microsoft.com/?kbid=890830.

- Network Awareness. This feature determines whether a system is connected to a network by either passive monitoring of network traffic or active DNS or HTTP queries. The query only transfers standard TCP/IP or DNS information for routing purposes. You can switch off the active query feature through a registry setting.

- Windows Time Service. This service synchronizes with www.time.windows.com once a week to provide your l device with the correct time. The connection uses standard NTP protocol.

- Search Suggestions Service. In Internet Explorer, when you type a search query in the Instant Search box or type a question mark (?) before your search term in the Address bar, you will see search suggestions as you type (if supported by your search provider). Everything you type in the Instant Search box or in the Address bar when preceded by a question mark (?) is sent to your search provider as you type. Also, when you press Enter or click the Search button, the text in the Instant Search box or Address bar is sent to the search provider. If you use a Microsoft search provider, use of the information sent is subject to the Microsoft Online Privacy Statement. This statement is available at go.microsoft.com/fwlink/?linkid=31493. If you use a third-party search provider, use of the information sent will be subject to the third party's privacy practices. You can turn search suggestions off at any time. To do so, use Manage Add-ons under the Tools button in Internet Explorer. For more information about the search suggestions service, see go.microsoft.com/fwlink/?linkid=128106.

- Consent to Update Infrared Emitter/Receiver. The software may contain technology to ensure the proper functioning of the infrared emitter/receiver device shipped with certain Media Center-based products. You agree that the software may update the firmware of this device.

- Media Center Online Promotions. If you use Media Center features of the software to access Internet-based content or other Internet-based services, such services may obtain the following information from the software to enable you to receive, accept and use certain promotional offers:

  - certain device information, such as your Internet protocol address, the type of operating system and browser you are using, and the name and version of the software you are using,
  - the requested content, and
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