

Star Wars: Battle Pod / Flat Screen Edition

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Operation Manual

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

Part No. 740 - 165
First edition issued on September 2015

WARNING

- To ensure safe operation of the machine, be sure to read this Operation Manual before use.
- Keep this Operation Manual in a safe place where it can be quickly accessed whenever needed.

The specifications of the machine and the contents of this operation manual are subject to change without prior notice due to product improvements.

Introduction

Thank you very much for purchasing the *Star Wars*: Battle Pod (referred to as "this machine" in this Operation Manual).

This Operation Manual describes:

- How to correctly understand this machine.
- How to safely install, move, transport, operate, service 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, moving, transporting, operating, maintaining or disposing of this 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 related to safety are indicated by 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

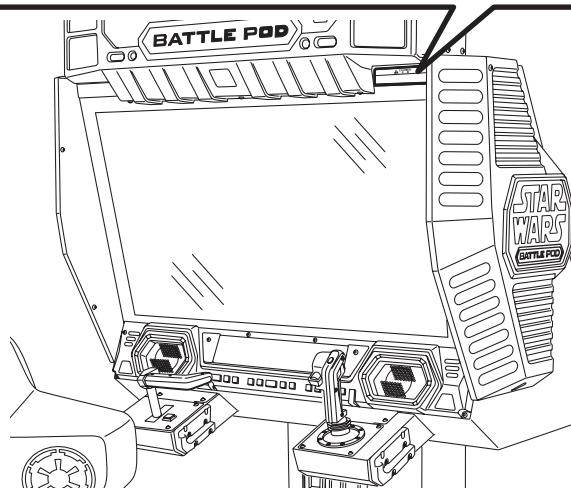
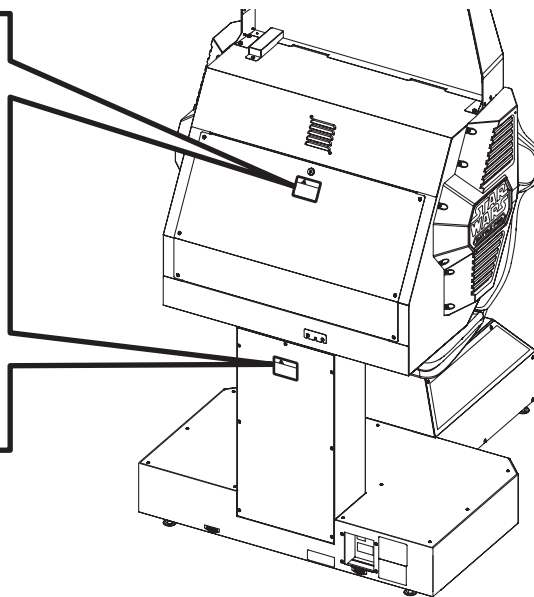
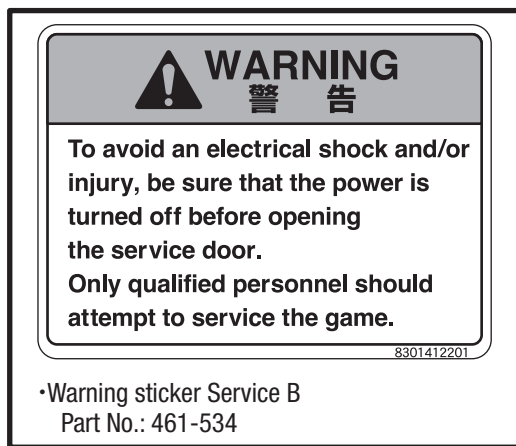
WARNING

- Should any abnormalities 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.
- 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 this machine is as follows.
 - 110 VAC/120 VAC model: maximum current consumption 3.0 A
 - 220 VAC/230 VAC model: maximum current consumption 1.6 ATo prevent fire and electric shock, use indoor wiring that conforms to these power supply specifications.
- Use the power supply voltage of this machine within the following ranges.
 - 110 VAC model: 100 to 120 VAC
 - 120 VAC model: 110 to 130 VAC
 - 220 VAC model: 210 to 230 VAC
 - 230 VAC model: 220 to 240 VACUsing a voltage outside this range may result in fire or electric shock.
However, in order to ensure optimum operating conditions, operate the machine at the following power supply voltages.
 - 110 VAC model: 110 V
 - 120 VAC model: 120 V
 - 220 VAC model: 220 V
 - 230 VAC model: 230 V
- In order to ensure safe use of the machine, be sure to perform the pre-operation inspection (P-23 "7-3 Pre-operation Inspection" and P-62 "8B. Service") described in this Operation Manual.
Omitting these inspections or service may result in an accident.
- Use the consumables and service parts (including screws) that are specified by BANDAI NAMCO Entertainment Inc. To order parts, contact your distributor or BANDAI NAMCO Entertainment Inc.
- 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.

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, sufficiently lit location 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.



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

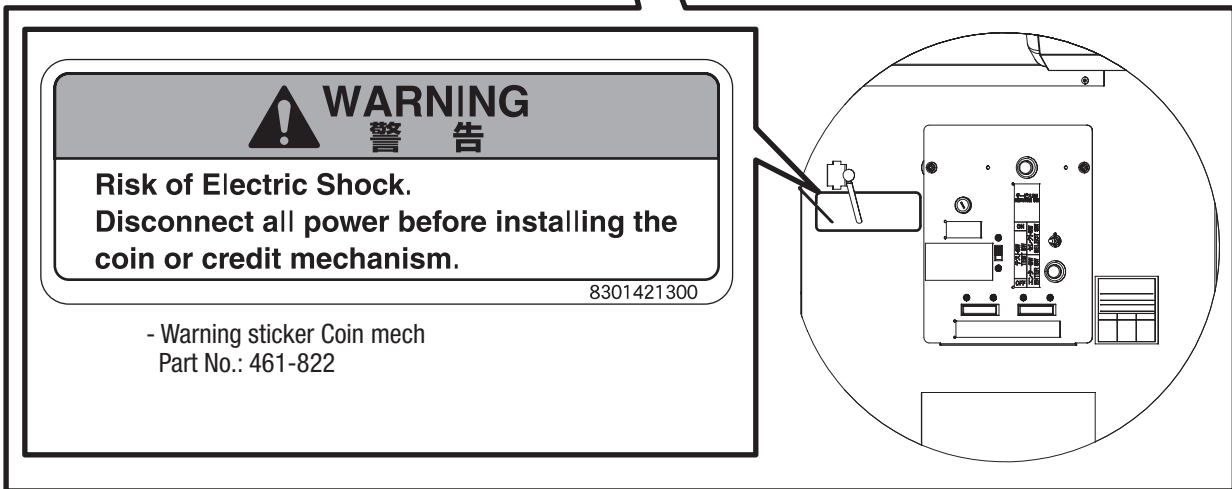
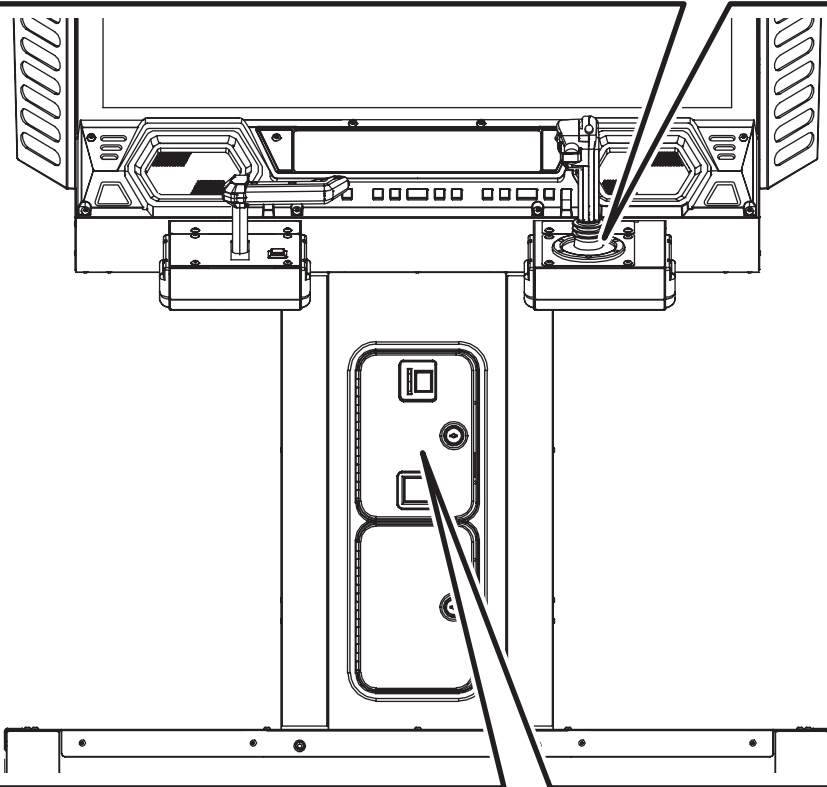
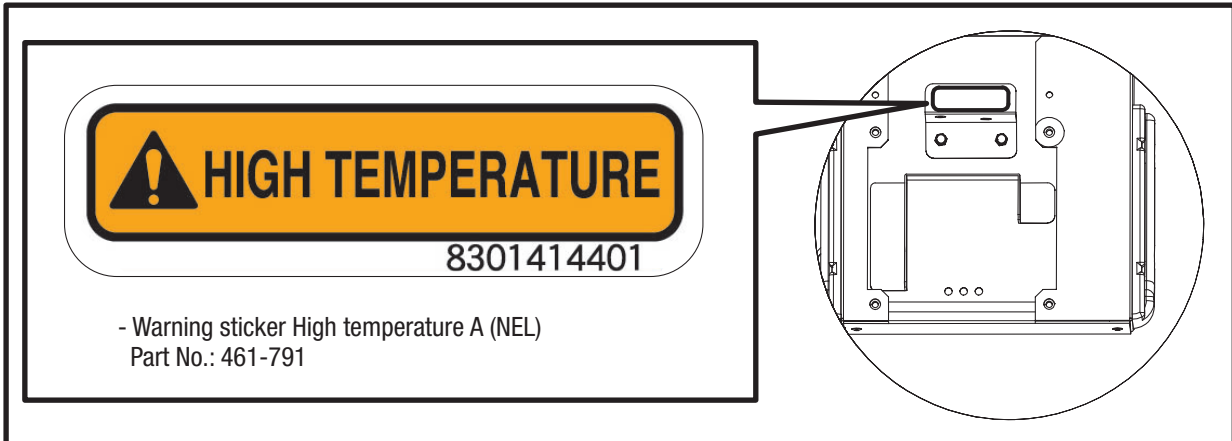


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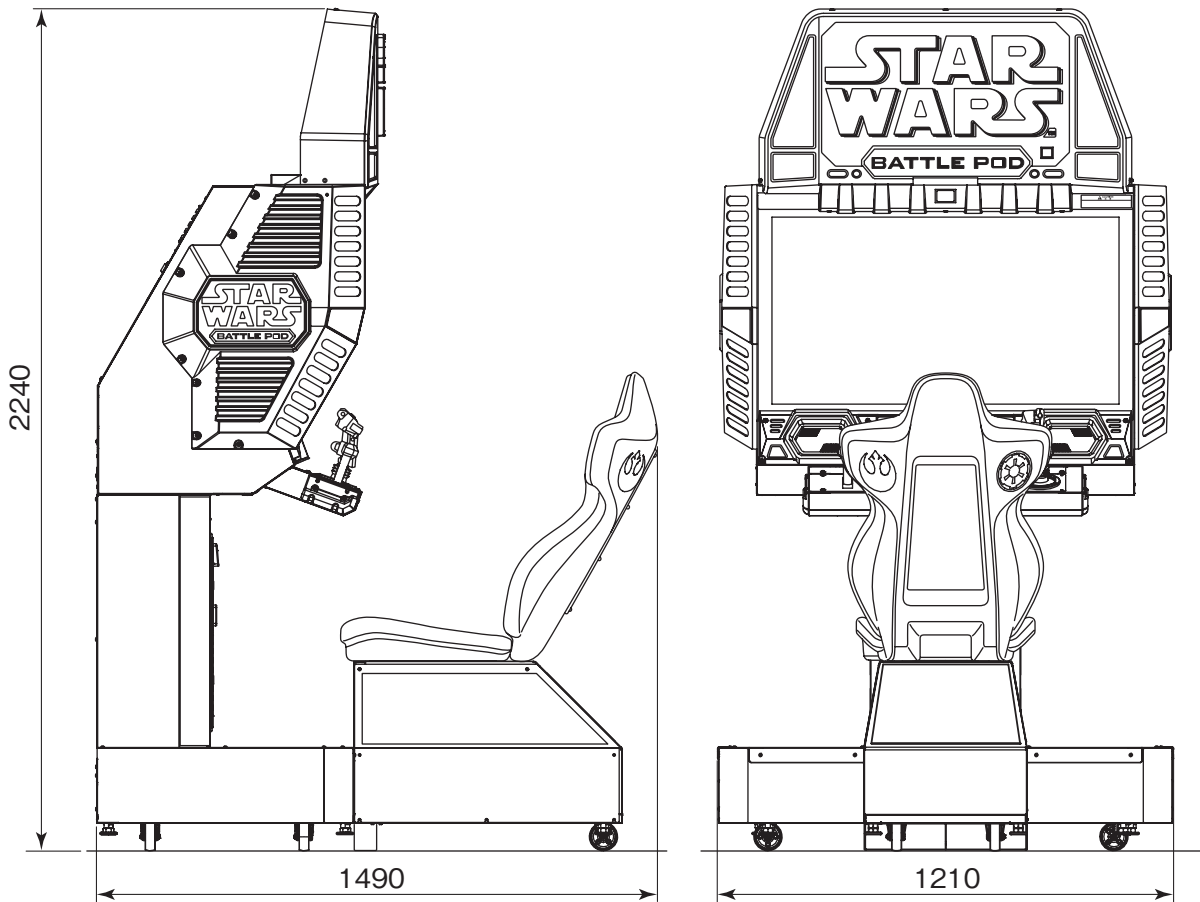
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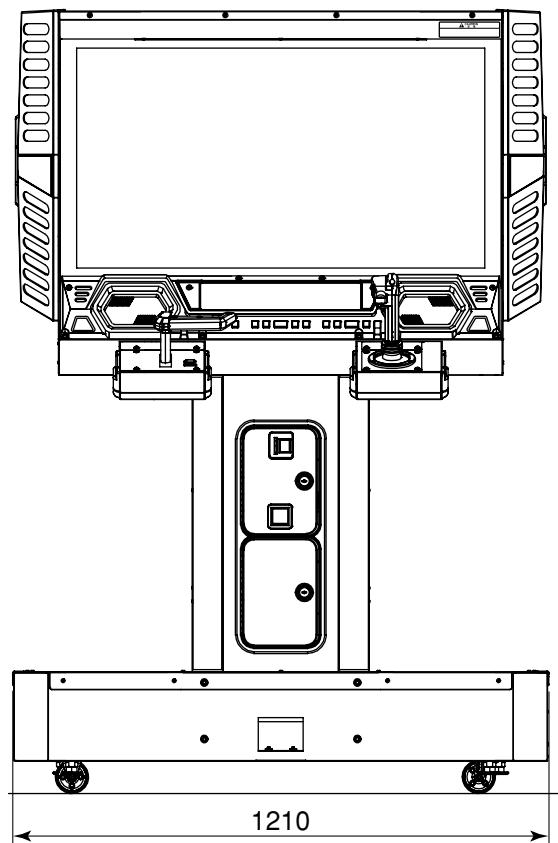
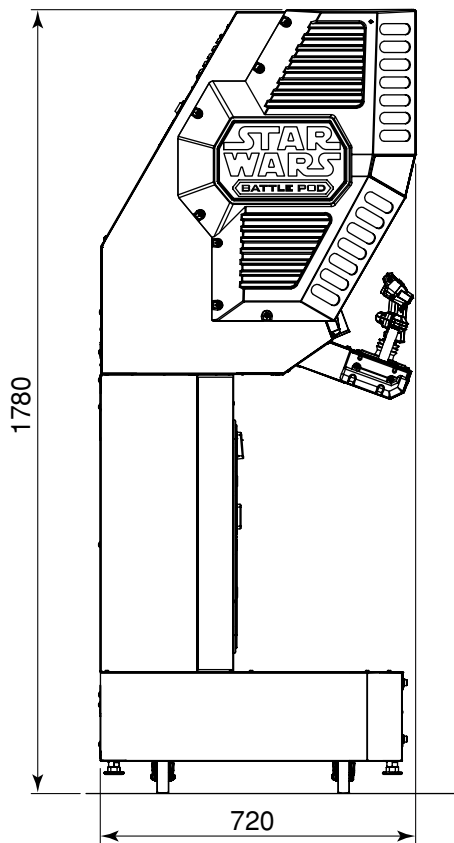
2. Specifications

(1) Rated power supply	110 VAC 110 V ± 10 VAC 120 VAC 120 V ± 10 VAC 220 VAC 220 V ± 10 VAC 230 VAC 230 V ± 10 VAC
(2) Rated power consumption	290W(110VAC/120VAC) 290W(220VAC/230VAC)
(3) Maximum current consumption	3.0 A (110 VAC/120 VAC) 1.6 A (220 VAC/230 VAC)
(4) Display unit	LCD monitor (42 inches)
(5) Dimensions	
[1] When installed	Width (W) 1,210 x Depth (D) 1,490 x Height (H) 2,240 [mm]

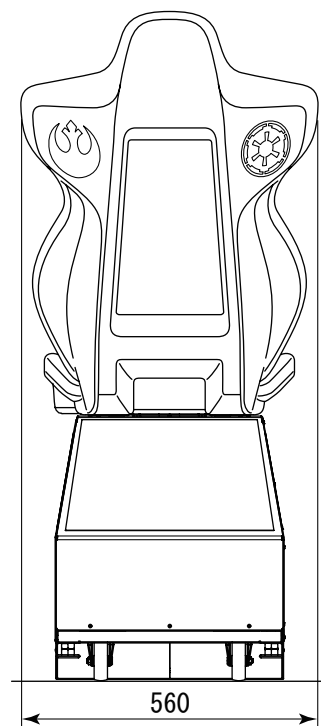
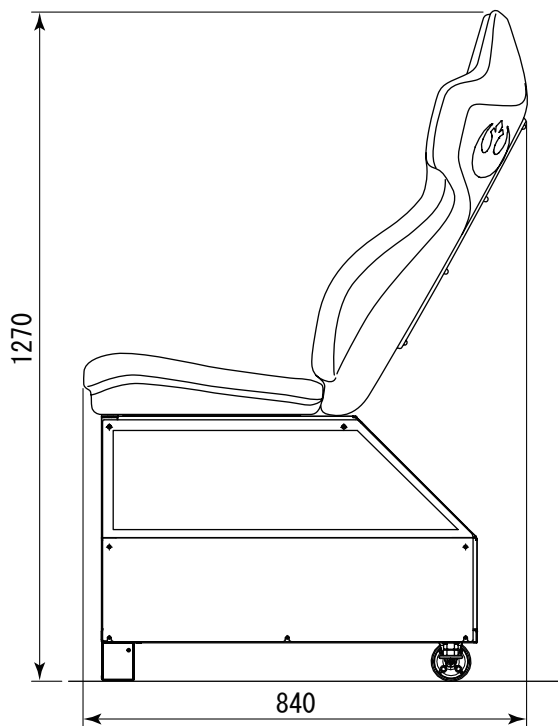


[2] When disassembled

· Cabinet assembly Width (W) 1,210 x Depth (D) 720 x Height (H) 1,780 [mm]



· Seat assembly Width (W) 560 x Depth (D) 840 x Height (H) 1,270 [mm]



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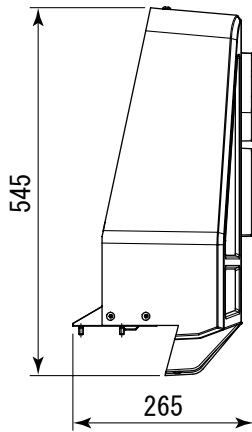
Specifications

Test Mode

Troubleshooting

2. Specifications

· Sign box assembly Width (W) 990 x Depth (D) 265 x Height (H) 545 [mm]



(7) Weight

[1] When installed	210kg
[2] When disassembled	· Cabinet assembly 170 kg
	· Seat assembly 32 kg
	· Sign box assembly 8 kg

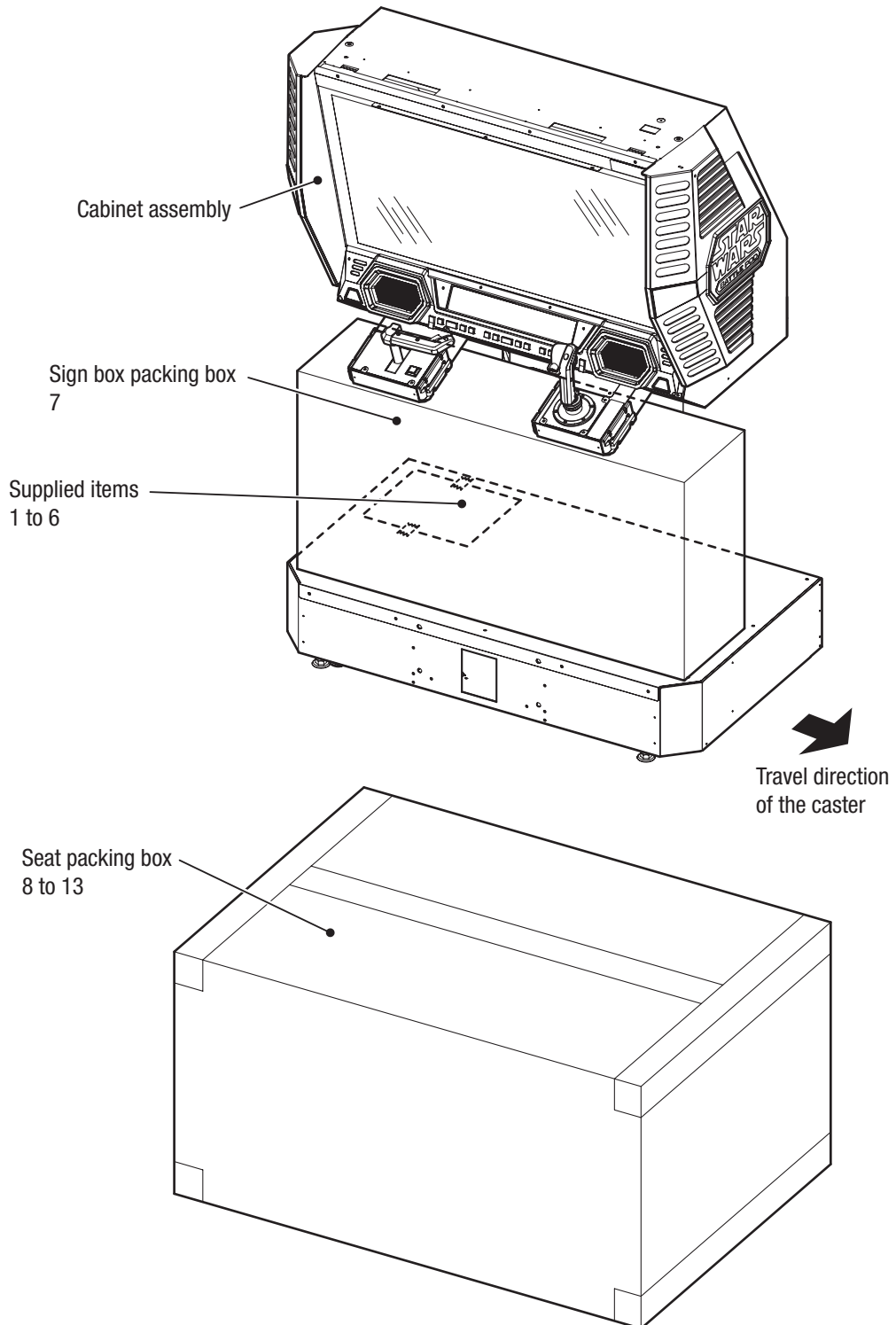
3. Package Contents

The following items (three packages) are included when this machine is shipped. However, the USB dongle may be delivered separately.









- 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.

Cabinet assembly : Weight 170 kg, Width (W) 1,210 x Depth (D) 720 x Height (H) 1,780 (mm)
Seat assembly packing box : Weight 40 kg, Width (W) 1,350 x Depth (D) 950 x Height (H) 700 (mm)
Sign box assembly packing box : Weight 14 kg, Width (W) 1,100 x Depth (D) 350 x Height (H) 600 (mm)




● Packing List

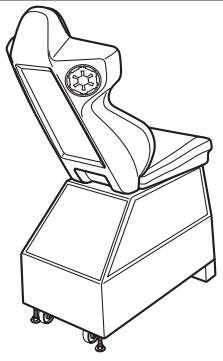





◆ Supplied items

No.	Name	Specifications	Qty.
1	Operation Manual		1
2	Service key		2
3	Coin box key		2
4	USB dongle	* The USB dongle may have been attached to the Game PC board using a cord. 	1
5	Clamp		1
6	LAN cable	6m 	1

◆ Sign box assembly packing box

No.	Name	Specifications	Qty.
7	Sign box assembly		1

◆ Seat assembly packing box

No.	Name	Specifications	Qty.
8	Seat assembly		1
9	Power cord	* Not attached to Asian models. 	1
10	Connector cover		1
11	Phillips hexagon head bolt	(with flat and spring washers) (M8 x 16) 	4
12	Torx bolt	M5 x 12 	4
13	Flange socket bolt	M8 x 16 	4

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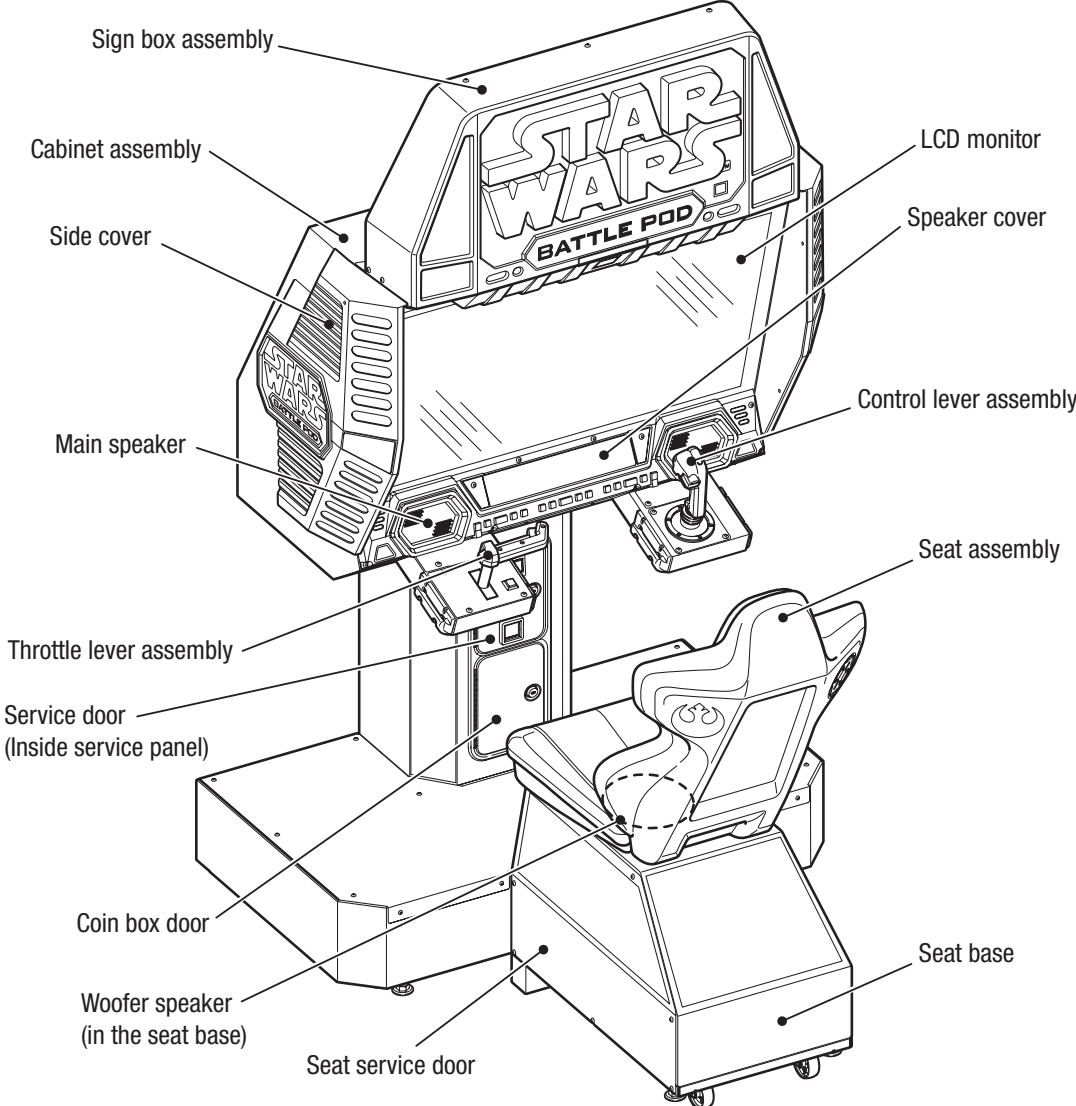
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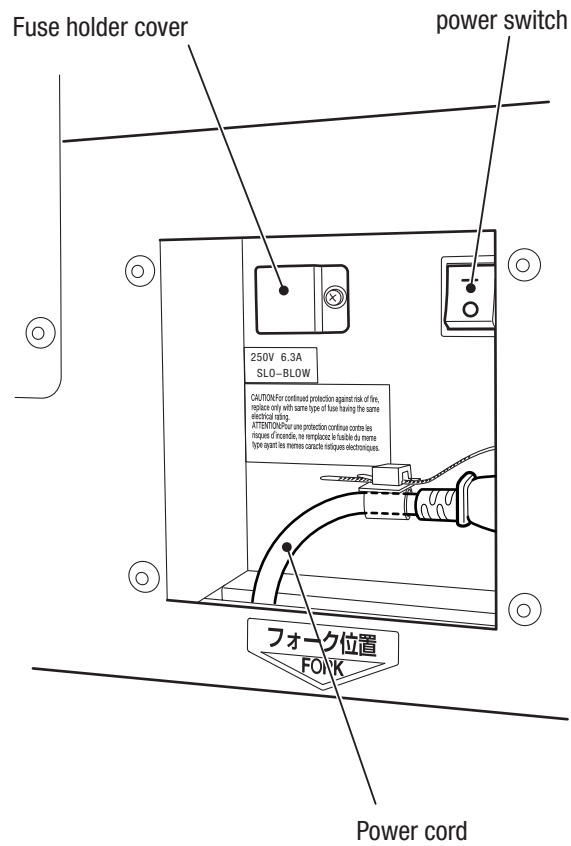
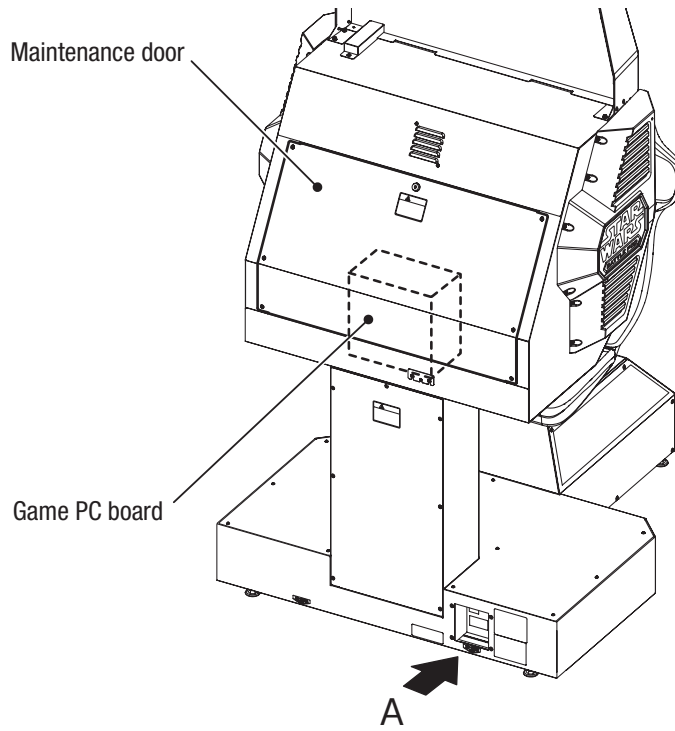
Package Contents

Test Mode

Troubleshooting

4. Overall Structure (Part Names)





Arrow View A (inside the cord box)

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- 8A
- 8B
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Overall Structure (Part Names)

Test Mode

Troubleshooting

5. Installation

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.
- Install the machine securely by using the level adjusters. Unstable machine installation may result in accident or injury. (See P-55 "8A-2-4 Level Adjuster Adjustment".)

5-1 Installation Conditions

WARNING

- Make sure that the ventilation holes on the back, sides or top of the machine are not obstructed by any objects, walls, etc. If the ventilation holes are blocked, the inside of the machine may become hot, which may result in fire or malfunction.

5-1-1 Locations Where the Machine Should Not be Installed

WARNING

- This 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

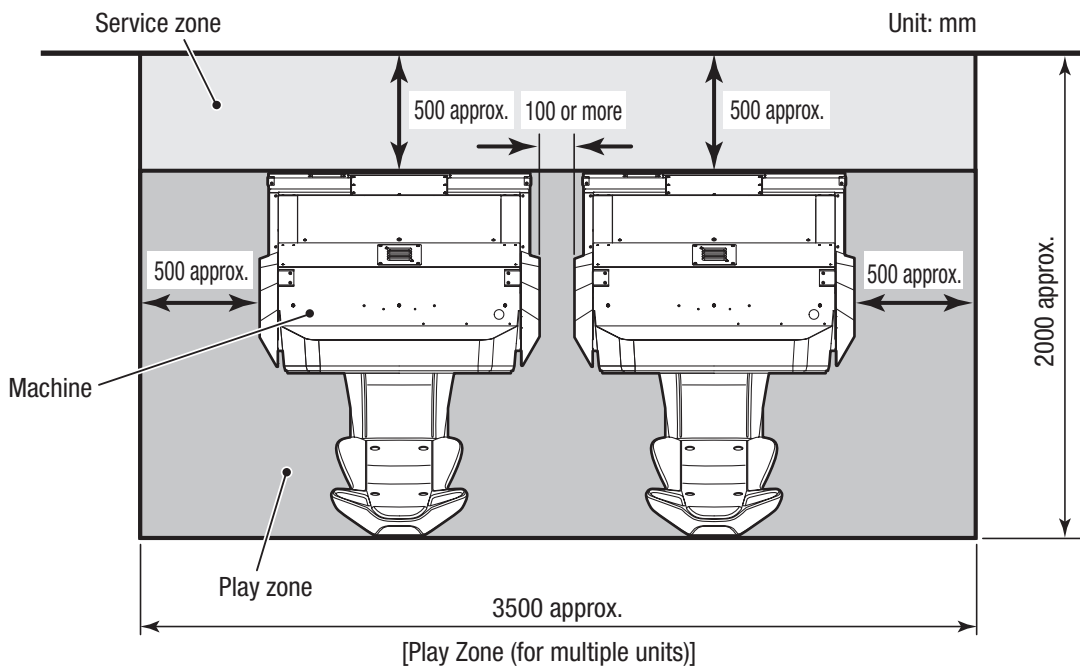
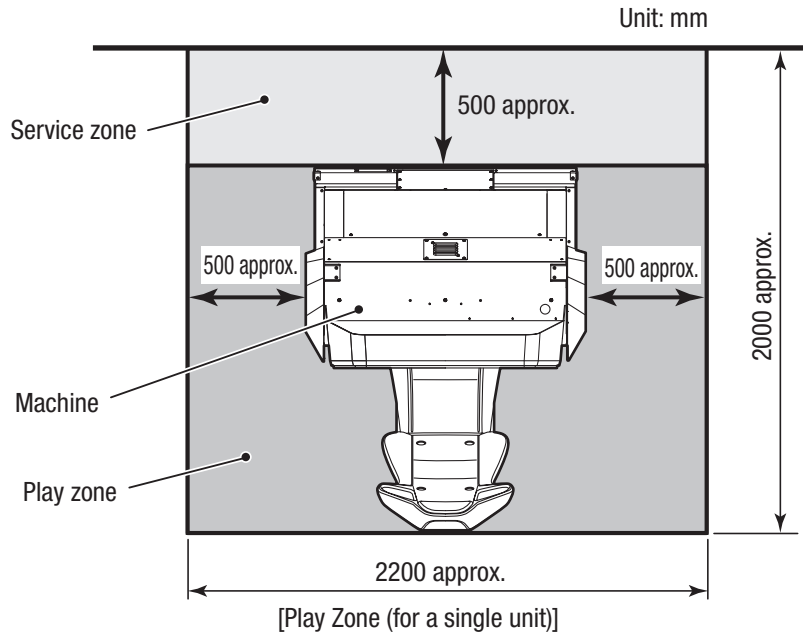
5-1-2 Play Zone to be Set Up during Installation

⚠ CAUTION

- Create a play zone around the machine so that players leaving the machine will not hit bystanders or passersby.

NOTICE

- When installing the machine, create a play zone as shown in the figure below. Be sure to secure this play zone, as it is also needed for service work.
- For installation, a floor-to-ceiling height of 2700 mm or more is required.



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Installation

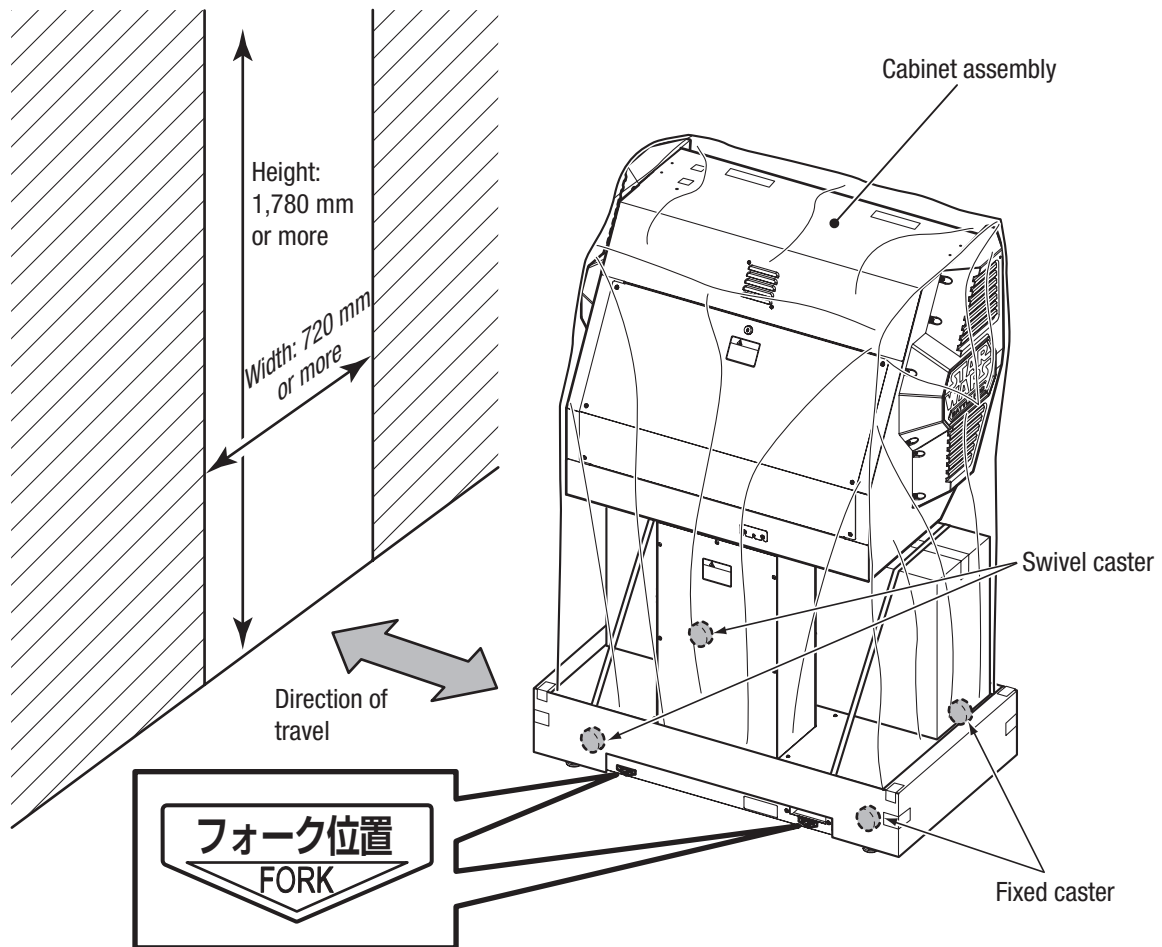
Test Mode
Troubleshooting

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

The dimensions of the machine when it is shipped are as follows. Entryways and corridors must be larger than the dimensions noted below.

Cabinet assembly: Width (W) 1,210 x Depth (D) 720 x Height (H) 1,780 [mm], Weight 170 kg

Referring to the dimensions noted above, confirm in advance that the unit can be easily carried in.



6. Moving and Transportation

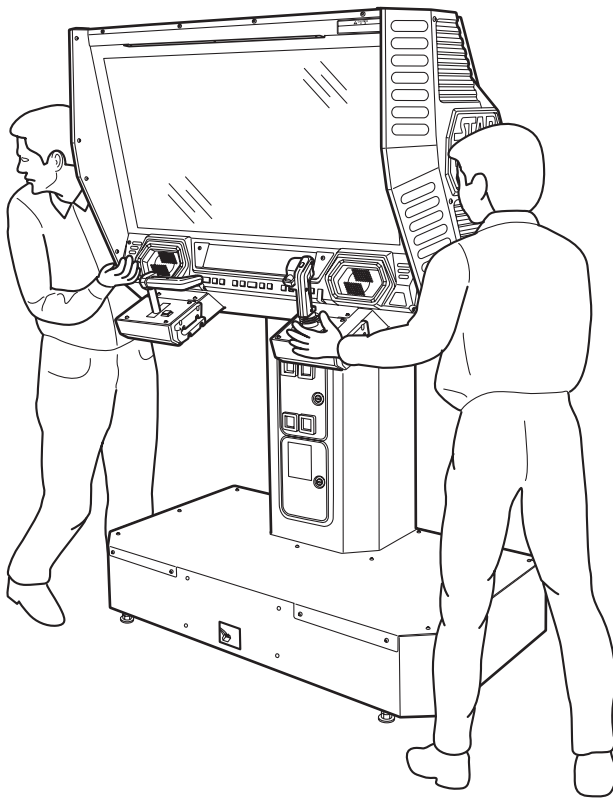
⚠ WARNING

- Do not leave the machine on a slope. It may fall over or cause an accident.
- Be sure to turn off the power switch before starting work.

6-1 Moving (Within the Same Floor)

NOTICE

- Move the machine carefully to avoid subjecting it to impact.
- When moving the machine, be sure to disassemble the cabinet assembly and the seat assembly. (See P-52 "8A-2-2 Installing the Seat Assembly".)
- Even when moving the machine only a short distance, be sure to raise the level adjusters to their highest level. (See P-55 "8A-2-4 Level Adjuster Adjustment".)



[Carrying the cabinet assembly]



[Carrying the seat assembly]

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Moving and Transportation

Test Mode

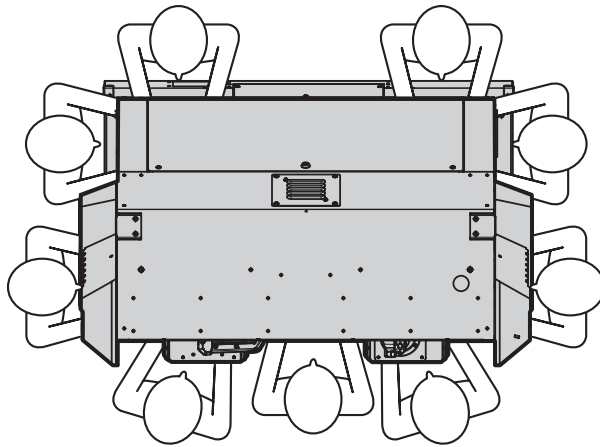
Troubleshooting

6-2 Transportation

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

WARNING

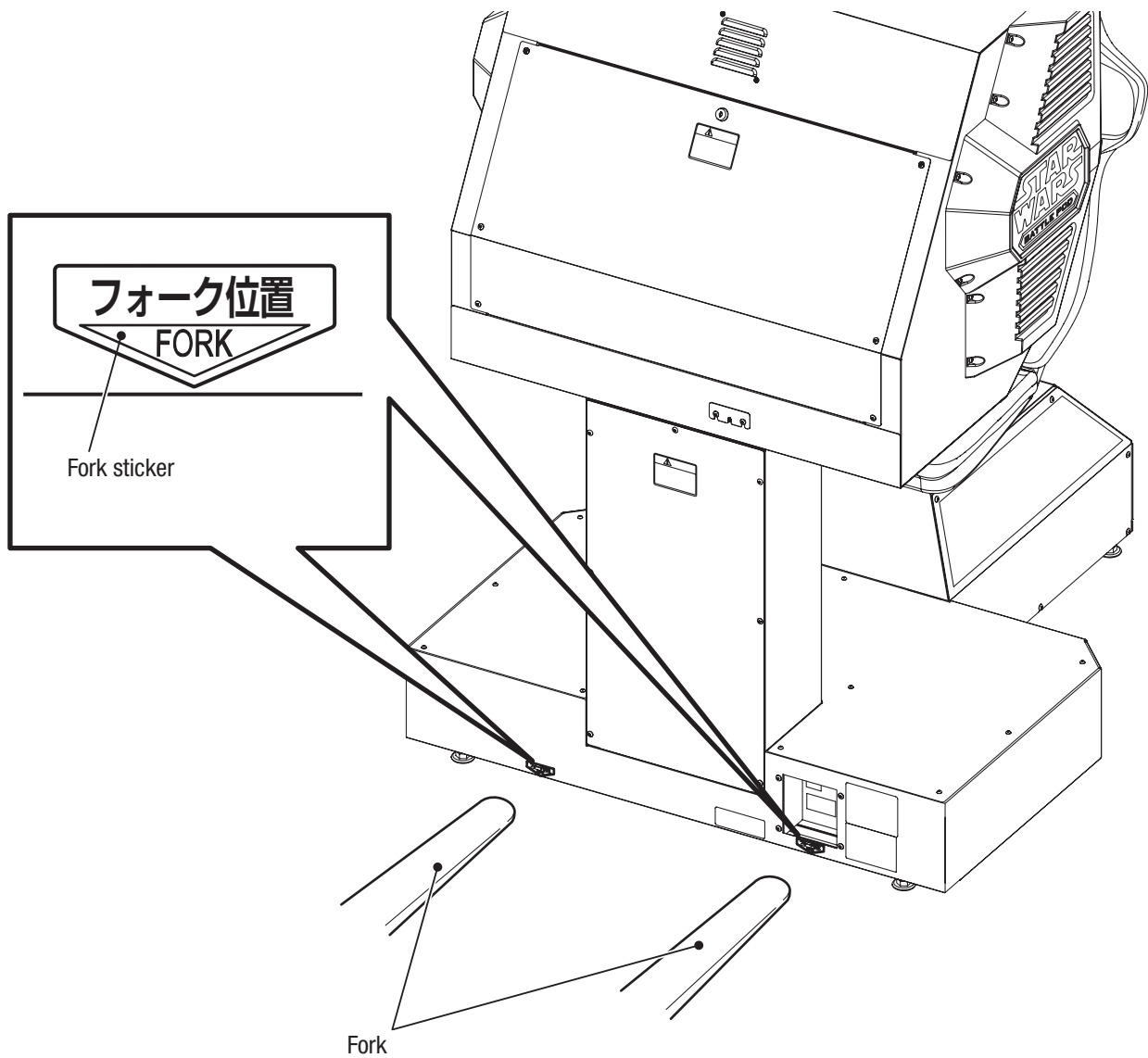
- When transporting the machine manually, be sure to disassemble the cabinet assembly and the seat assembly.
(See P-52 "8A-2-2 Installing the Seat Assembly".)
- When transporting the machine manually, be sure to use the following number of people. Overburdening yourself may result in accident or injury.
 - Cabinet assembly (170 kg): 9 or more people



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

⚠ WARNING

- When using a forklift to transport the machine, observe the position of the fork sticker. If the fork is inserted in a location other than that indicated by the fork sticker, the machine may tip and fall over, or be subjected to another type of accident.
- Be sure to disassemble the cabinet assembly and the seat assembly.
(See P-52 "8A-2-2 Installing the Seat Assembly".)



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Moving and Transportation

Test Mode

Troubleshooting

7. Operation

WARNING

- Should any abnormalities 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.
- 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 P-16 "5. Installation"). Failure to install the machine correctly may result in fire, electric shock, injury or malfunction.
- The warning labels attached to the machine contain important information for ensuring safety. Be sure to observe the following. (For information about where to attach the warning labels, see P-3 "1-4 Machine Warning Labels".)
 - In order to ensure that the warning labels attached to the machine are always clearly visible, install the machine in an appropriate, sufficiently lit location 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 (P-23 "7-3 Pre-operation Inspection"), service (P-62 "8B-1 Inspection and Service") described in this Operation Manual.
Omitting the above-mentioned inspections or service may result in an accident.

7-1 People Who Should Not Play the Game

CAUTION

- In order to ensure the safety of players, be careful not to let people play under the following conditions. It may result in an accident.
 - People who are sensitive to light such as strobe lights
 - People whose behavior is against what is described on the warning labels on this machine

7-2 Safety Precautions during Game Play

⚠ CAUTION

- If players start feeling ill due to 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. In particular, if the player is under 6 years old, be sure to advise the parents to keep an eye on their child.

7-3 Pre-operation Inspection

Check the points below before starting machine operations.

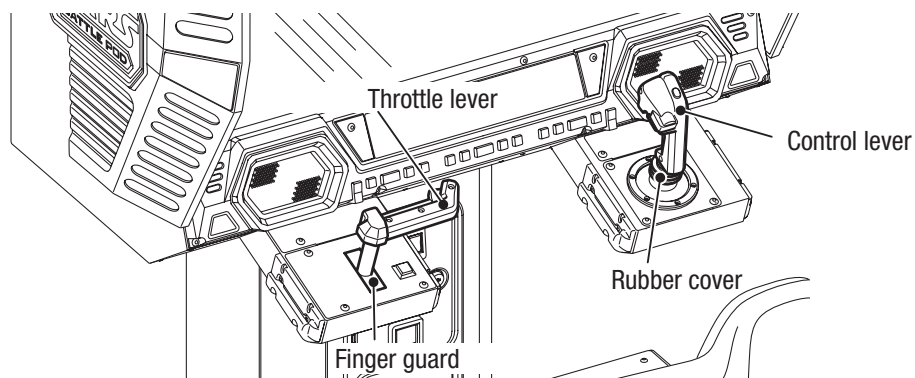
If there is an abnormality, resolve it by referring to P-65 "8B-2 Troubleshooting".

⚠ WARNING

- Before operating the machine, check the following locations. This is necessary to prevent accident or injury.
- Do not operate this machine when any part is damaged, broken, or deteriorated, or when this machine is not correctly installed. Doing so may cause injury to the players and the people around them. If you discover any abnormalities, stop operations immediately. To order replacement parts, contact your distributor.

7-3-1 Safety Inspection (Before Power On)

- (1) Are the warning labels attached? (See P-3 "1-4 Machine Warning Labels".)
- (2) Are all warning labels legible? (See P-3 "1-4 Machine Warning Labels".)
- (3) Have all the level adjusters been adjusted? (See P-55 "8A-2-4 Level Adjuster Adjustment".)
- (4) Is the specified play zone provided? (See P-17 "5-1-2 Play Zone to be Set Up during Installation".)
- (5) Is the power cord laid out safely so that it will not cause players or other customers to trip over it?
- (6) Is the rubber cover of the control lever torn or removed?
- (7) Is the finger guard of the throttle lever cracked or removed?
- (8) Are the parts damaged that the player touches, such as the seat and the control lever?



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Operation

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7-3-2 Safety Inspection (After Power On)

Inspect the following points after turning on the power switch. (See P-27 "7-5-1 Turning the Power Switch On".) 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.

- (1) Is any part of the power cord or plug abnormally hot?
- (2) Does touching the machine give a tingling electric shock?
- (3) Is there a burning smell, abnormal noise or vibration?
- (4) Is there any other abnormality or malfunction?

7-3-3 Function Inspection (After Power On)

- (1) Check the images. (See P-39 "7-6-5 Screen Adjustment (MONITOR TEST)".)
- (2) Check the audio. (Is sound emitted from each speaker?) (See P-40 "7-6-6 Sound Adjustment (SOUND TEST)".)
- (3) Check the lamps. (Do the view change buttons light up?) (See P-37 "(c) OUTPUT TEST".)
- (4) Check each LED module. (Does the LED module light up?) (See P-37 "(c) OUTPUT TEST".)

To inspect the following points, press the Service switch and actually play the game. (See P-28 "7-5-2 Adjustment Switches".)

- (1) Check the operation of the control lever. (Does the course of the vehicle change when you operate the control lever?)
- (2) Check the operation of the throttle lever. (Does the vehicle speed up or slow down when you move the throttle lever forward or backward?)
- (3) Check the operations of the main trigger and the special button. (Is a bullet fired when you press the button?)
- (4) Check the operation of the vibration motor. (Does the control lever vibrate when a bullet is fired?)
- (5) Check the operations of the view change button. (Does the display change when you press the button?)

7-4 Playing the Game

7-4-1 Outline of the Game

This machine enables players to take part in sensory dogfight shooting games. Players ride vehicles such as X-wing Fighters and Speeder Bikes that are well-known from Star Wars movies, and shoot down enemy vehicles quickly in order to carry out their missions.

7-4-2 Operation Method

Operation Method When Selecting the Mission

(1) Control lever

- Tilt the lever to the right and left to select a mission.
- Press the main trigger or the special button to enter the mission.

Operation Method during the Mission

(1) Control lever

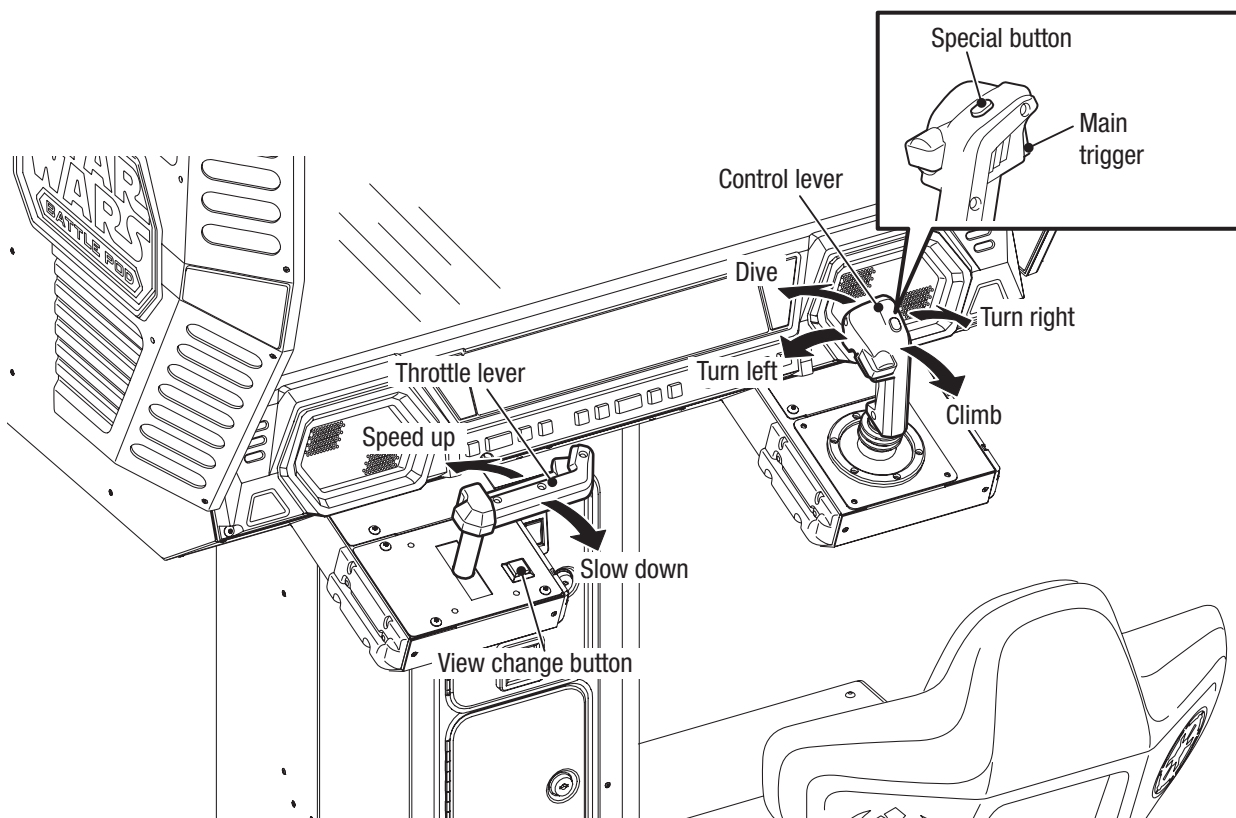
- Tilt the lever forward, backward, right and left to pilot your vehicle.
 - Tilt forward/backward: Dives/climbs
 - Tilt to the right/left: Turns to the right/left
- When you operate the main trigger or the special button, the corresponding weapons will be fired.

(2) Throttle lever

- Tilt the lever forward or backward to speed up or slow down the vehicle.
 - Tilt forward: The vehicle speeds up temporarily and closes the distance with the enemy vehicle.
 - Tilt backward: The vehicle slows down temporarily and the distance to the enemy vehicle widens.

(3) View change button

- Press the button to switch between showing/hiding the cockpit.



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7-4-3 Game Flow

How to Start the Game

When a credit is established after coins have been inserted, the game starts. The game mode select screen is displayed.

SELECT GAME MODE

To play a one-person game, select "SINGLE PLAYER" (SINGLE PLAY). To play a two-person game, select "MULTIPLAYER" (MULTI-PLAY).

Selecting the Mission

Select a mission from among five missions, each with a different level of difficulty.

Missions

(1) Basic Dogfight

Operate the control lever and throttle lever to align the lock-on circle onto enemy vehicles that appear before you, attack the enemy vehicle by pulling the main trigger, and attempt to deliver a damaging blow to shoot it down.

You can inflict great damage on the enemy vehicle if you align the center of the lock-on circle with the center of the enemy vehicle.

If you keep aligning the center of the lock-on circle with the enemy vehicle, it will be locked on.

Press the special button while locking on to carry out a crushing attack and quickly shoot down the enemy vehicle.

(2) Counterattack by Enemy Vehicles

If you fail to shoot down the enemy vehicle quickly, it will counterattack. If your vehicle is attacked by the enemy vehicle, the endurance of your vehicle will fall. If it reaches 0, the mission will end in failure.

(3) Final Dogfight

Toward the end of each mission, the final dogfight takes place. You must accomplish your goal within the time limit. If you fail to accomplish your goal, the mission will end in failure.

Results

Regardless of success or failure, when the mission finishes, you can display the result screen to check your score and rank.

When the mission finishes, irrespective of the mission being a success or failure, you can enter the player's name.

Continue

Display the continue selection screen after displaying the results. If you do not insert a coin and select continue at this time, the game will be over.

If you continue, you will be able to select from among five missions. You can select a mission that you have successfully completed.

Ranking

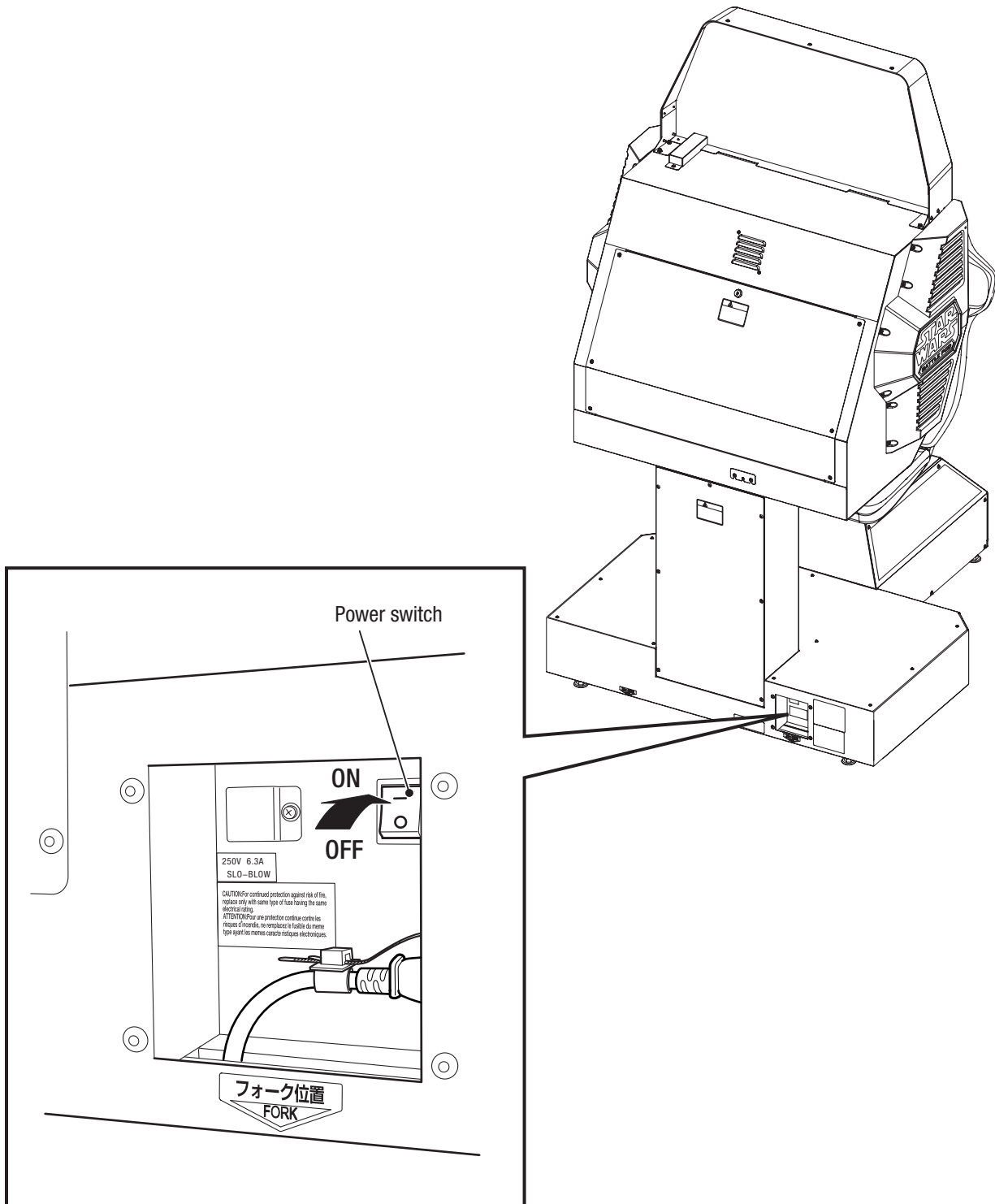
The ranking list is displayed when the game ends.

The most recent players compete in this ranking. Old data is automatically deleted in chronological order.

7-5 Power Switch and Adjustment Switch

7-5-1 Turning the Power Switch On

Turn on the power switch located at the rear bottom of the cabinet assembly.



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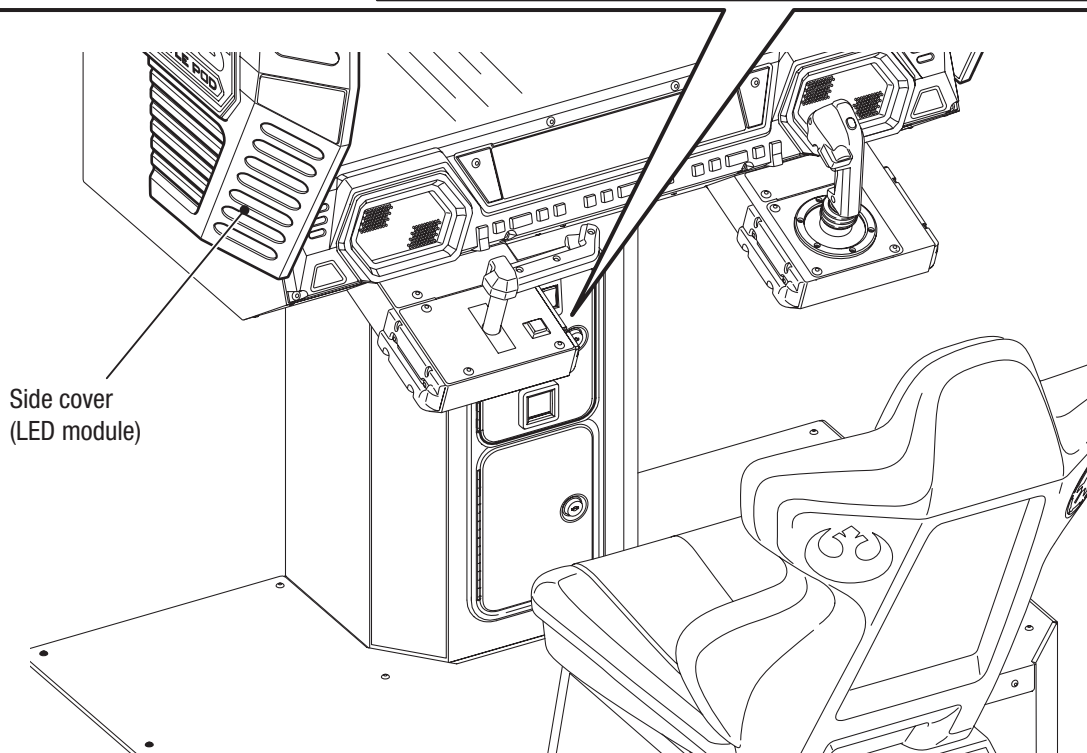
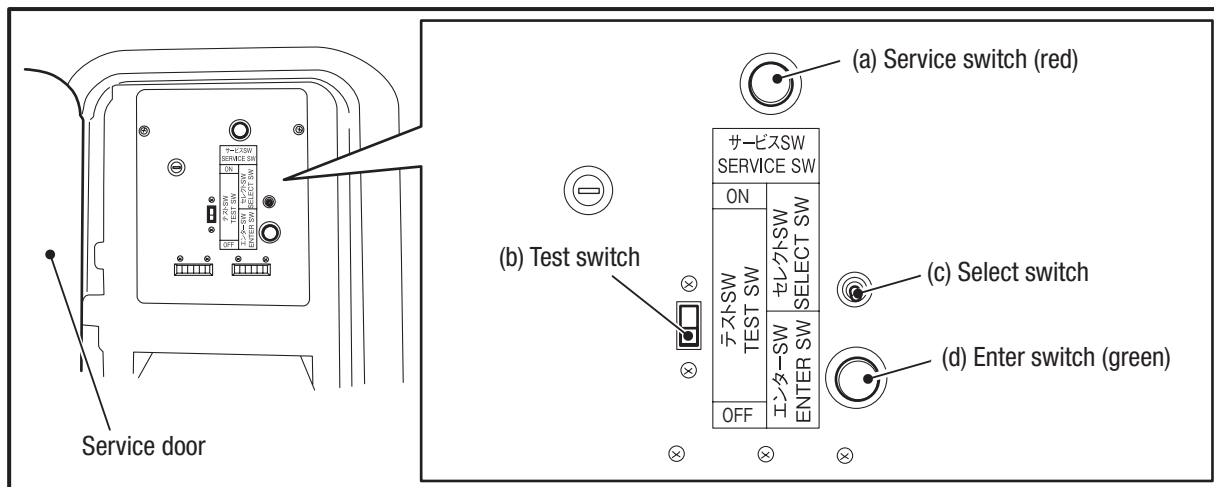
Operation

Test Mode

Troubleshooting

7-5-2 Adjustment Switches

The adjustment switches are located inside the service door.



(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 LED module (side cover) lights up green.

(b) Test switch

Set this switch to ON to enter Test mode. Test mode is used to set the game cost and perform the I/O test.

(c) Select switch

Flip this switch up or down to select an item or setting to be confirmed or changed.

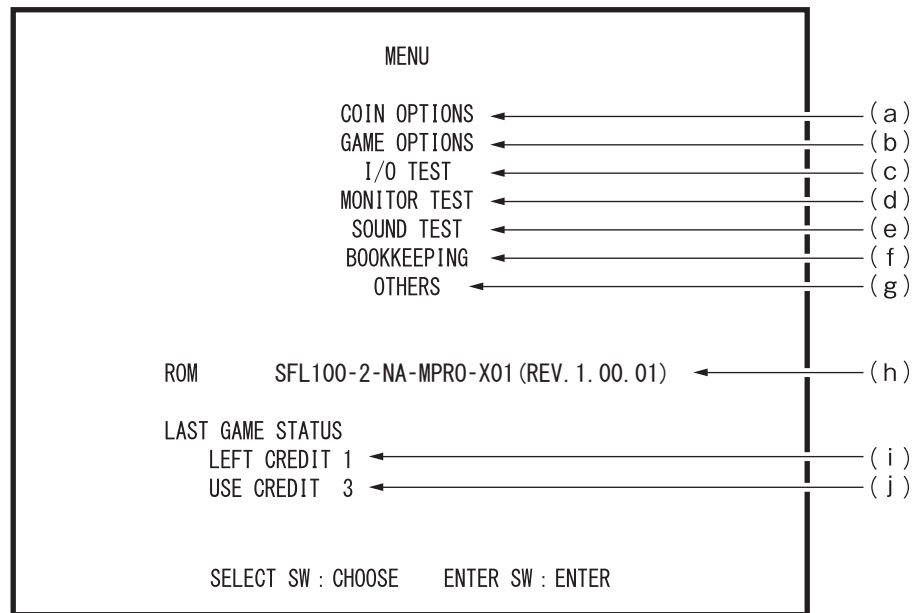
(d) Enter switch (green)

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

7-6 Test Mode

7-6-1 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.
- 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.
When the selection is entered, the display changes to the selected test menu.
- 4** When all the adjustments are finished, set the Test switch to OFF.
The display returns to the game screen.



MENU screen

Item	Description	Reference section
(a) COIN OPTIONS	Sets the game cost.	P-30
(b) GAME OPTIONS	Sets the game contents.	P-31
(c) I/O TEST	Performs I/O test of switches and devices.	P-33
(d) MONITOR TEST	Adjusts the monitor.	P-39
(e) SOUND TEST	Adjusts the volume.	P-40
(f) BOOKKEEPING	Reviews the operating time and game data.	P-41
(g) OTHERS	Sets the time and the language.	P-43
(h) ROM	Displays software version or revision.	-
(i) LEFT CREDIT	Displays the number of credits remaining from the last time the game was played.	-
(j) USE CREDIT	Displays the number of credits used the last time the game was played.	-

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Operation

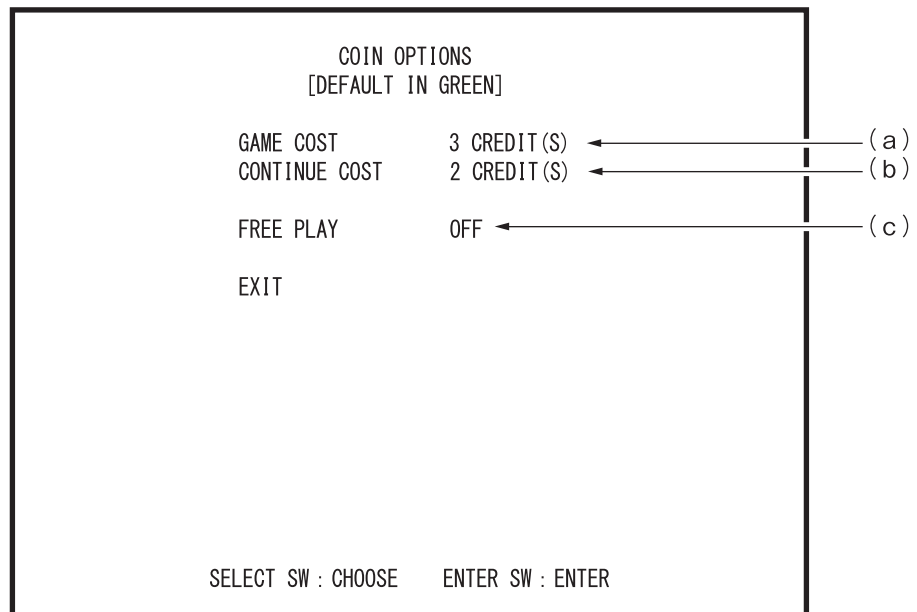
Test Mode

Troubleshooting

7-6-2 Game Cost Settings (COIN OPTIONS)

This screen is used to change the settings of the game cost and free play.

- 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.
- 3** Press the Enter switch to enter the selected item, and use the Select switch to change the setting. After changing the setting, press the Enter switch to return to the item selection.
- 4** Select EXIT and press the Enter switch to return to the MENU screen.



COIN OPTIONS screen

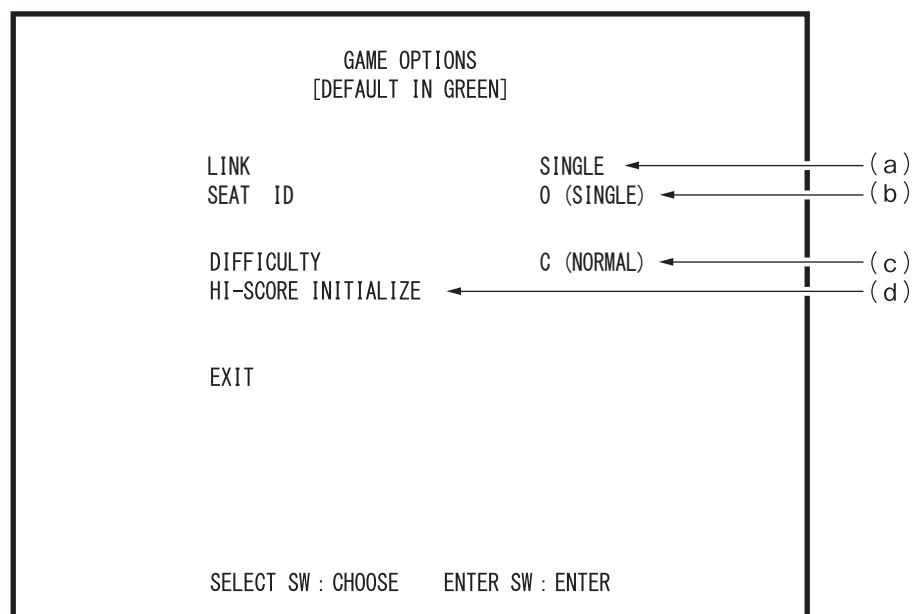
Item	Description	Default
(a) GAME COST	Sets the number of credits required for game play. The setting range is 1 to 19.	3
(b) CONTINUE COST	Sets the number of credits required to continue. The setting range is 1 to 19. Setting value cannot be larger than the GAME COST.	2
(c) FREE PLAY	Sets whether to allow free play. OFF: regular coin operation ON: free play If FREE PLAY is turned ON, GAME COST and CONTINUE COST cannot be selected.	OFF

* If the SEAT ID of the cabinet is "2(MULTI/SUB)", copy the settings of "1(MULTI/MAIN)". (The settings cannot be changed.)

7-6-3 Game Contents Settings (GAME OPTIONS)

This screen is used to set the game difficulty and initialize ranking.

- 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.
- 3** Press the Enter switch to enter the selected item, and use the Select switch to change the setting of the item. After changing the setting, press the Enter switch to return to the item selection.
- 4** Select EXIT and press the Enter switch to return to the MENU screen.



GAME OPTIONS screen

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7. Operation

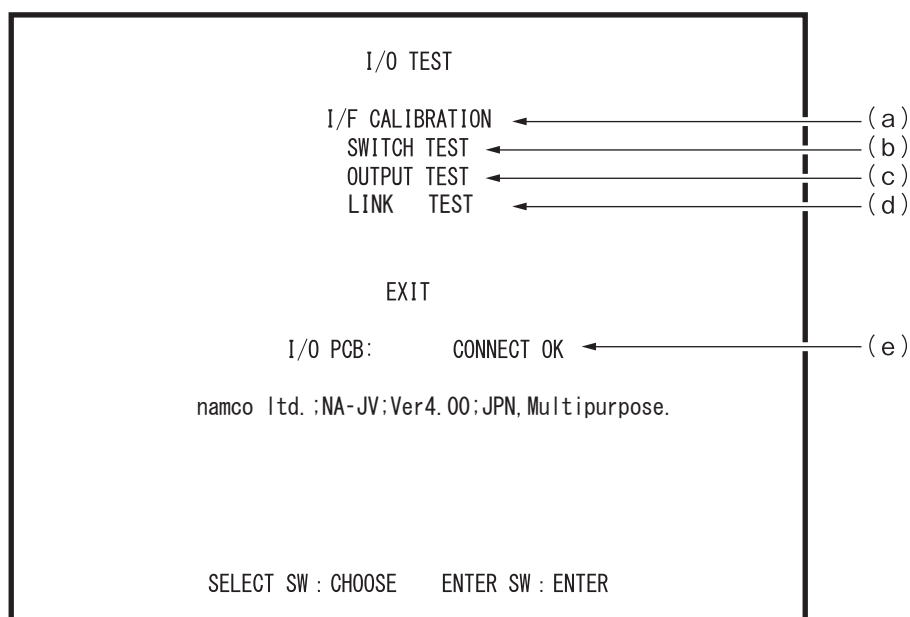
Item	Description	Default
(a) LINK	<p>Displays cabinet-to-cabinet communication status.</p> <p>CHECKING: The system is currently checking the communication status.</p> <p>SINGLE: Single setting</p> <p>OK: Enables in-store play settings and cabinet-to-cabinet communications.</p> <p>NG: Disables in-store play settings and cabinet-to-cabinet communications.</p> <p>DUPLICATE SEAT ID x: The same SEAT ID x is being used by multiple cabinets that are in the process of cabinet-to-cabinet communications.</p> <p>("x" indicates any number.)</p>	
(b) SEAT ID	<p>Sets a single game device or in-store play devices (main and sub devices).</p> <p>0(SINGLE): Single game device</p> <p>1(MULTI/MAIN): In-store play device (Main)</p> <p>2(MULTI/SUB): In-store play device (Sub)</p> <p>* We recommend setting the cabinet on the left to "1(MULTI/MAIN)" when placing two cabinets side by side.</p>	0 (SINGLE)
(c) DIFFICULTY	<p>Sets difficulty of the game.</p> <p>A(NO DEAD MODE): a setting that ensures your vehicle will not be shot down even if it is attacked.</p> <p>B(EASY): a setting that makes it more difficult for your vehicle to be shot down when compared to the regular setting.</p> <p>C(NORMAL): regular setting</p> <p>D(HARD): a setting that makes it easier for your vehicle to be shot down when compared to the regular setting.</p> <p>E(VERY HARD): a setting that makes it extremely easy for your vehicle to be shot down when compared to the regular setting.</p>	C(NORMAL)
(d) HI-SCORE INITIALIZE	<p>Initializes ranking.</p> <p>Select this item to display HI-SCORE INITIALIZE? with YES and NO displayed at right. Select NO to return to the state before making the above-mentioned selection. Select YES to reset and to display COMPLETE! after finishing initialization.</p> <p>* If two cabinets are installed, initialize both cabinets at the same time.</p>	-

* If the SEAT ID of the cabinet is "2(MULTI/SUB)", copy the settings of "1(MULTI/MAIN)" for the settings of "(C)DIFFICULTY". (They cannot be changed.)

7-6-4 Input/Output Test (I/O TEST)

Calibrates the controls (levers) and performs I/O test for each switch.

- 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 displayed.
- 3** Press the Enter switch to enter the selected item. When the selection is entered, the display changes to the test screen of each item.
- 4** Select EXIT and press the Enter switch to return to the MENU screen.



I/O TEST screen

Item	Description	Reference section
(a) I/F CALIBRATION	Calibrate the control lever assembly and the throttle lever assembly.	P-34
(b) SWITCH TEST	Tests the operation of each switch.	P-35
(c) OUTPUT TEST	Checks the control lever vibration and the LED module operations.	P-37
(d) LINK TEST	Checks cabinet-to-cabinet communications.	P-38
(e) I/O PCB	Displays the connection status of the NA-JV (S) PC board. CONNECT OK (green display): Communication is normal. CONNECT NG (red display): Communication is not normal. Check the connection of the NA-JV (S) PC board.	P-87

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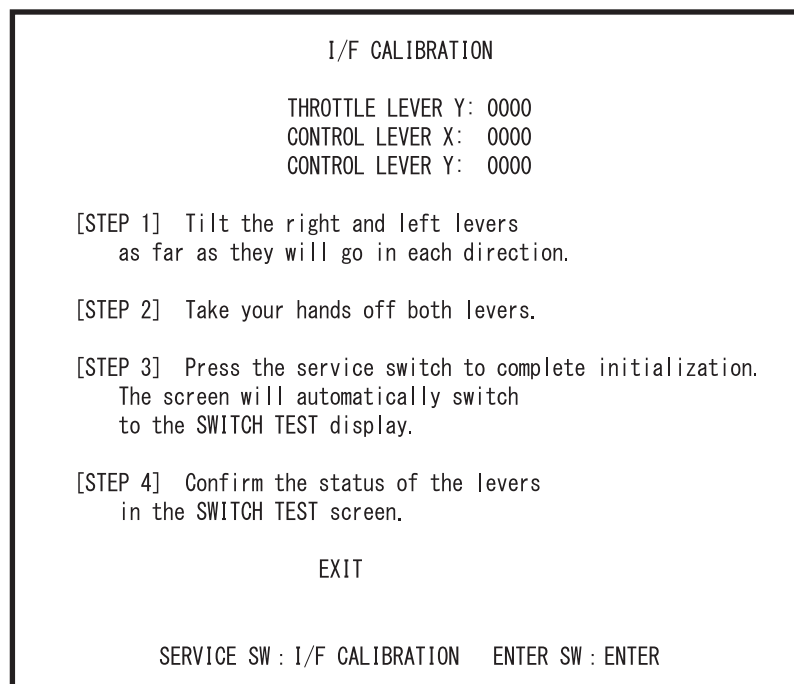
(a) I/F CALIBRATION

Calibrate the control lever assembly and the throttle lever assembly.



- When the control lever assembly, the throttle lever assembly, the game PC board, or the NA-JV (S) PC board is replaced, or the backup data is initialized, be sure to perform calibration. Otherwise, the game may not work correctly.

- 1** In the I/O TEST screen, select I/F CALIBRATION and press the Enter switch. The I/F CALIBRATION screen appears.
- 2** If you do not perform calibration, select EXIT and press the Enter switch to return to the I/O TEST screen.
- 3** Move the levers slowly. When the control lever assembly strike the stoppers on the front, back, right and left and the throttle lever assembly strike the stoppers on the front and back, take your hands off the levers near the center.
- 4** Press the Service switch to complete calibration of the levers. The display will automatically switch to the SWITCH TEST screen.
- 5** Confirm the status of the levers in the SWITCH TEST screen.

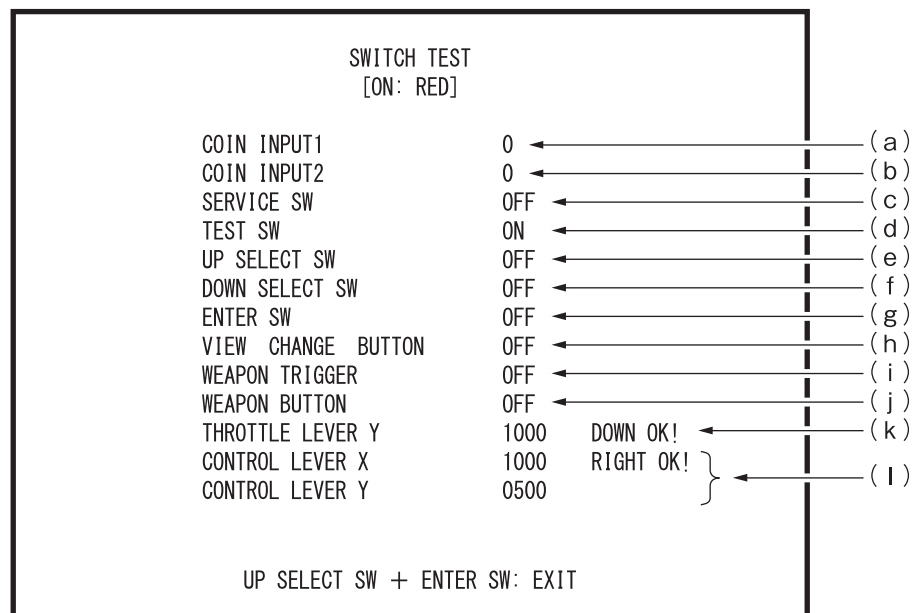


I/F CALIBRATION screen

(b) 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** Entering each switch changes the display.
- 3** Hold the Select switch flipped up and press the Enter switch to return to the I/O TEST screen.



SWITCH TEST screen

Item	Description
(a) COIN INPUT1	Adds 1 to the count when a coin is inserted. When the count exceeds 999 it returns to 0.
(b) COIN INPUT2	Adds 1 to the count when a bill is inserted into the bill validator. When the count exceeds 999 it returns to 0. It is used when a bill validator is installed (US model only).
(c) SERVICE SW	Displays ON when you press the Service switch.
(d) TEST SW	Displays ON while the machine is in Test mode. Turn it off to return to the game screen.
(e) UP SELECT SW	Displays ON when you flip the Select switch up.
(f) DOWN SELECT SW	Displays ON when you flip the Select switch down.
(g) ENTER SW	Displays ON when you press the Enter switch.
(h) VIEW CHANGE BUTTON	Displays ON when you press the view change button.
(i) WEAPON TRIGGER	Displays ON when you press the main trigger of the control lever assembly.
(j) WEAPON BUTTON	Displays ON when you press the special button of the control lever assembly.
(k) THROTTLE LEVER	Increases or decreases the numerical value when you tilt the throttle lever assembly forward or backward. If you move the lever all the way to the front side and UP OK! is displayed, and all the way to the rear side and DOWN OK! is displayed, it is operating normally. If OK is not displayed even when you move the lever all the way, calibrate the lever. (See P-34 "(a) I/F CALIBRATION".)

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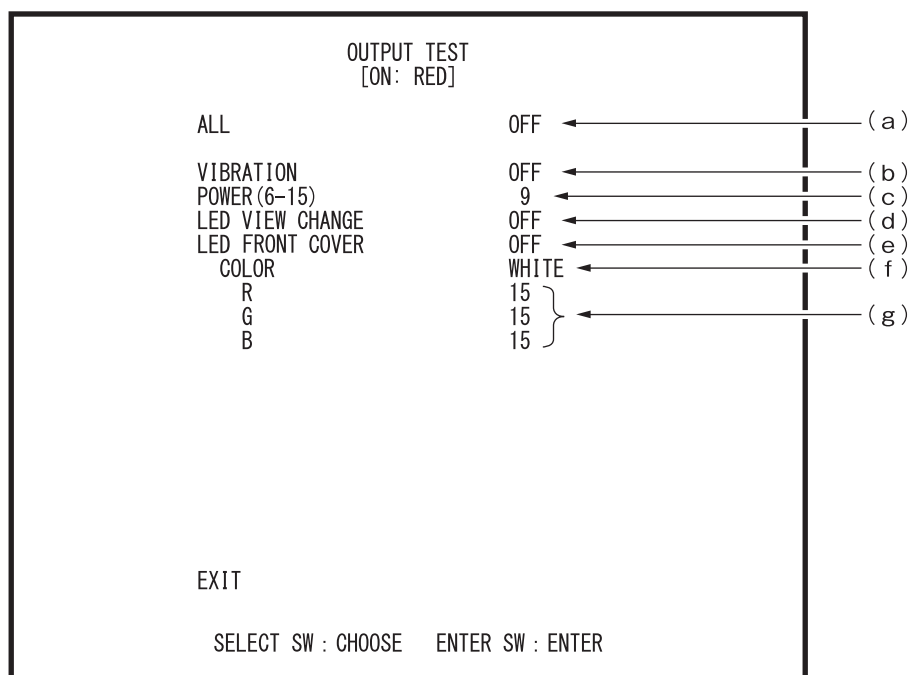
Item	Description
(l) CONTROL LEVER	<p>Tilt the control lever assembly from side to side to increase or decrease the numerical value on the X side, and forward or backward to increase or decrease the numerical value on the Y side.</p> <p>If you move the lever all the way to the left side and LEFT OK! is displayed, all the way to the right side and RIGHT OK! is displayed, all the way to the rear side and UP OK! is displayed, and all the way to the front side and DOWN OK! is displayed, it is operating normally.</p> <p>If OK is not displayed even when you move the lever all the way, calibrate the lever. (See P-34 "(a) I/F CALIBRATION".)</p>

(c) OUTPUT TEST

This screen is used to check the control lever vibration and the LED module.

This test is used to check operation. It has no effect on game play or Attract mode 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 tested.
- 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.



OUTPUT TEST screen

Item	Description	Default
(a) ALL	When you set this to ON, items (b), (d), and (e) will be ON.	OFF
(b) VIBRATION	Vibrates the control lever with the intensity that has been set in "(c) POWER (6-15)" when this is set to ON.	OFF
(c) POWER(6-15)	Sets the vibration intensity of the control lever. The setting range is 6 to 15.	9
(d) LED VIEW CHANGE	Lights up the view change button lamp when this is set to ON.	OFF
(e) LED FRONT COVER	Lights up the LED module (side cover) with the color that has been set in "(f) COLOR" when this is set to ON.	OFF
(f) COLOR	Sets the color of the LED module lamp (side cover). WHITE: white lighting RED: red lighting BLUE: blue lighting GREEN: green lighting CUSTOM: lights up a color set in "(g) R, G, B"	WHITE
(g) R, G, B	Sets the color of the LED module lamp (side cover) with RGB values. The setting range is 1 to 15.	15

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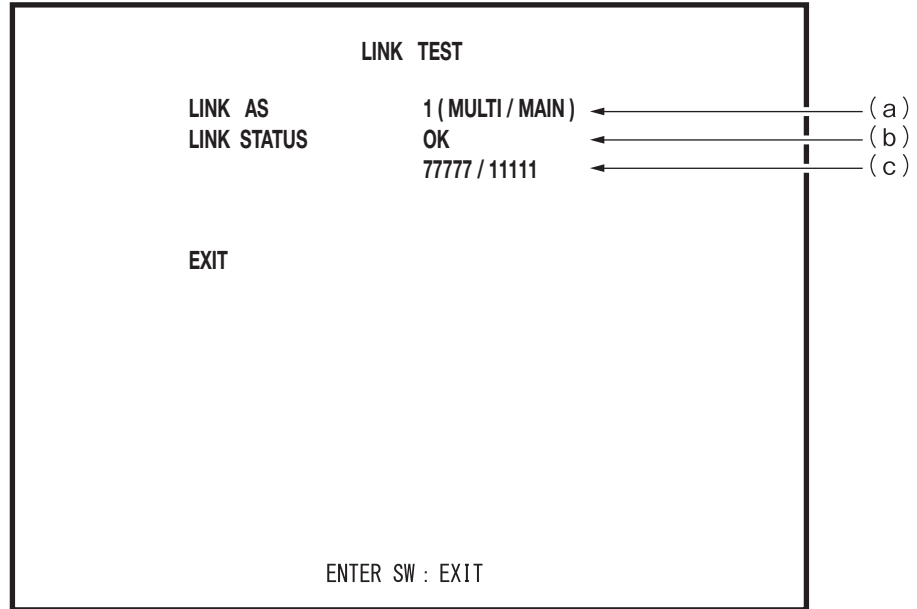
Test Mode

Troubleshooting

(d) LINK TEST

This screen is displayed only when the "SEAT ID" of the cabinet is set to "1(MULTI/MAIN)" or "2(MULTI/SUB)" on the P-31 "7-6-3 Game Contents Settings (GAME OPTIONS)" screen.

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



LINK TEST screen

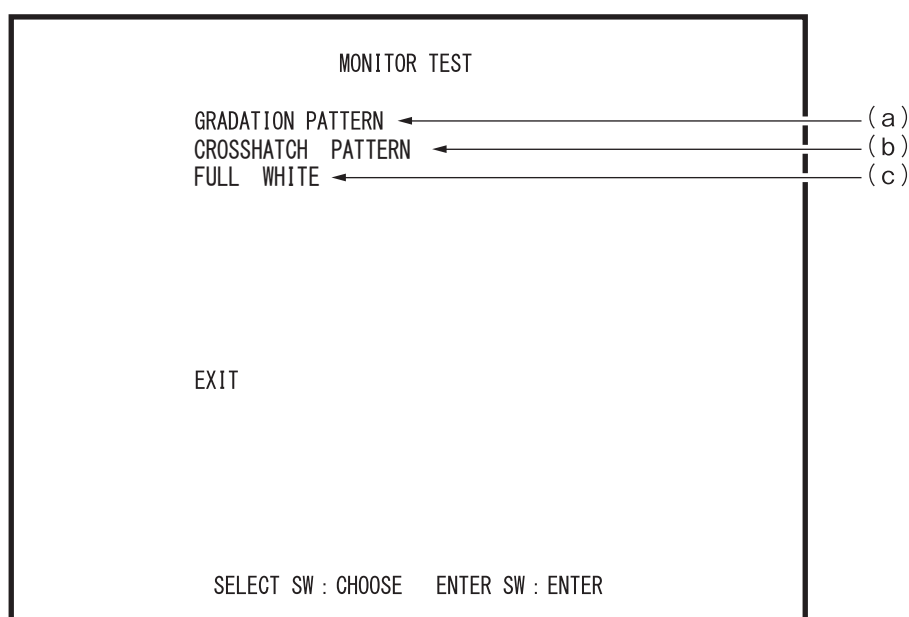
- 2** Press the Enter switch to return to the I/O TEST screen.

Item	Description
(a) LINK AS	Displays the SEAT ID of the cabinet.
(b) LINK STATUS	Displays the cabinet-to-cabinet communication status. CHECKING: The system is currently checking the communication status. SINGLE: Single setting OK: Enables in-store play settings and cabinet-to-cabinet communications. NG: Disables in-store play settings and cabinet-to-cabinet communications. DUPLICATE SEAT ID x: The same SEAT ID x is being used by multiple cabinets that are in the process of cabinet-to-cabinet communications. ("x" indicates any number.)
(c) Number of communication successes and number of communication failures	Checks cabinet-to-cabinet communications, and displays the number of communication successes and the number of communication failures.

7-6-5 Screen Adjustment (MONITOR TEST)

Displays the screen for adjusting the monitor.

- 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. The selected item blinks.
- 3** Press the Enter switch to enter the test pattern to display. While the test pattern is displayed, press the Enter switch again to return to the MONITOR TEST screen.
- 4** Select EXIT and press the Enter switch to return to the MENU screen.



MONITOR TEST screen

Item	Description
(a) GRADATION PATTERN	Displays the brightness of eight colors in 16-tone gradation (RGBCMYWK).
(b) CROSSHATCH PATTERN	Displays the crosshatch pattern to check the LCD monitor.
(c) FULL WHITE	Displays an all white pattern.

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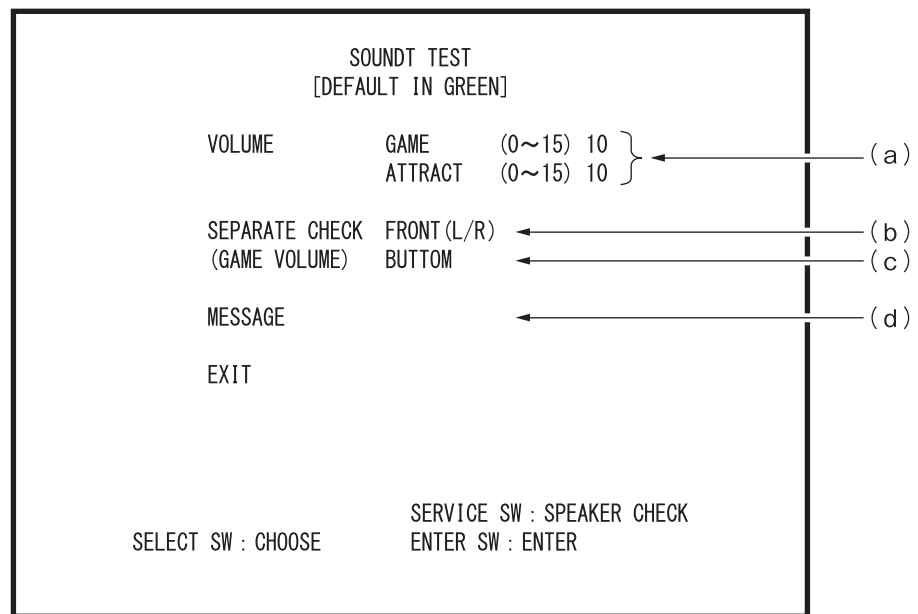
Test Mode

Troubleshooting

7-6-6 Sound Adjustment (SOUND TEST)

Displays the screen for sound adjustment.

- 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. The selected item blinks.
- 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. After changing the setting, press the Enter switch to return to the item selection.
- 5** Press the Service switch to play the test sound from the speakers. The volume of the test sound is the setting value of the selected item.
- 6** Select EXIT and press the Enter switch to return to the MENU screen.



SOUND TEST screen

Item	Description	Default
(a) VOLUME	Sets the volume. It can be adjusted between 0 and 15. GAME: volume setting during game play ATTRACT: volume setting while in Attract mode	10
(b) SEPARATE CHECK (GAMEVOLUME) FRONT (L / R)	Select this item and press the Enter switch to play the test sound from two front (under the monitor) speakers, one at a time from left to right at the volume set in "(a) VOLUME" during game play.	
(c) SEPARATE CHECK (GAMEVOLUME) BUTTOM	Select this item and press the Enter switch to play the test sound from the speaker below the seat surface at the volume set in "(a) VOLUME" during game play.	
(d) MESSAGE	Displays the speaker being used and its volume.	

7-6-7 Displaying/Initializing Game Data (BOOKKEEPING)

Displays or initializes various data related to the game.

- 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. The selected item blinks.
- 3** Press the Enter switch to enter the selected item.
 - Every time you select NEXT and press the Enter switch, the display switches to the next page. Select NEXT in the last page to return to the first page.
 - Every time you select PREVIOUS and press the Enter switch, the display switches to the previous page.
 - Select ERROR LOG and press the Enter switch to change to the screen where you can check the error log.
 - Select BOOKKEEPING INITIALIZE and press the Enter switch to display BOOKKEEPING INITIALIZE? with NO and YES displayed on the right-hand side. Select NO to return to the state before making the above-mentioned selection. Select YES to display COMPLETE! after finishing initialization.
- 4** Select EXIT and press the Enter switch to return to the MENU screen.

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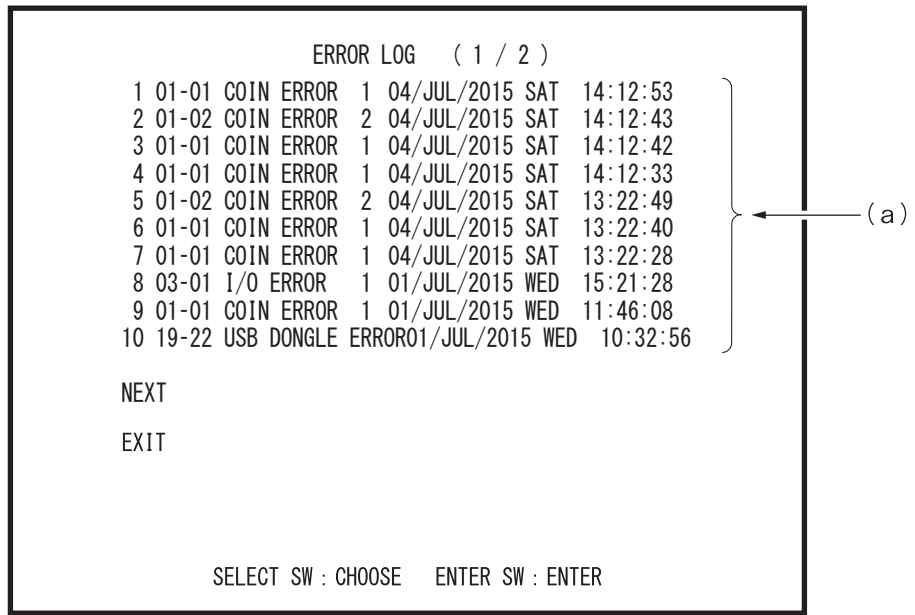
Test Mode

Troubleshooting

7-6-8 ERROR LOG

Checks the history of detected error logs.

- 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 NEXT, then press the Enter switch to move to the next page. If NEXT PAGE is selected while there is no following page (second page in the screen example), the display returns to the first page.
- 3** Select EXIT and press the Enter switch to return to the BOOKKEEPING screen.



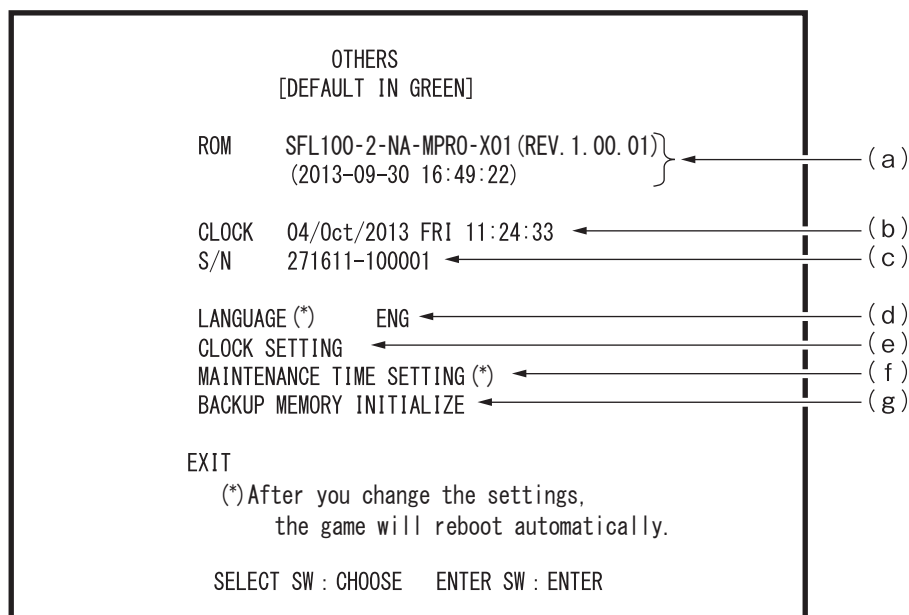
ERROR LOG screen

Item	Description
(a) Error Log History	Displays the history of error logs in reverse chronological order.

7-6-9 Other Options (OTHERS)

Displays, sets or initializes the current time and the software version.

- 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. The selected item blinks.
- 3** Press the Enter switch to enter the selected item.
- 4** Select EXIT and press the Enter switch to return to the MENU screen.



OTHERS screen

Item	Description
(a) ROM	Displays software version or revision, date and time of creation.
(b) CLOCK	Displays the current time of the built-in clock and the date.
(c) S/N	Displays the serial number of the USB dongle.
(d) LANGUAGE(*)	Sets the subtitle language displayed when the game is being played. ENG (English/DEFAULT) SPA (Spanish) RUS (Russian) IND (Indonesian) THA (Thai) If you change the setting, the machine will automatically restart when you set the Test switch to OFF.
(e) CLOCK SETTING	Sets the time of the built-in clock.
(f) MAINTENANCE TIME SETTING(*)	Sets the maintenance time. (See P-47 "7-7 About Maintenance Time".) If you change the setting, the machine will automatically restart when you set the Test switch to OFF.
(g) BACKUP MEMORY INITIALIZE	Resets each setting to the factory default. Select this item to display BACKUP MEMORY INITIALIZE? with YES and NO displayed on its right-hand side. Select NO to return to the state before items are selected. Select YES to display COMPLETE! after initialization is completed and to return to the screen before items are selected.

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Operation

Test Mode

Troubleshooting

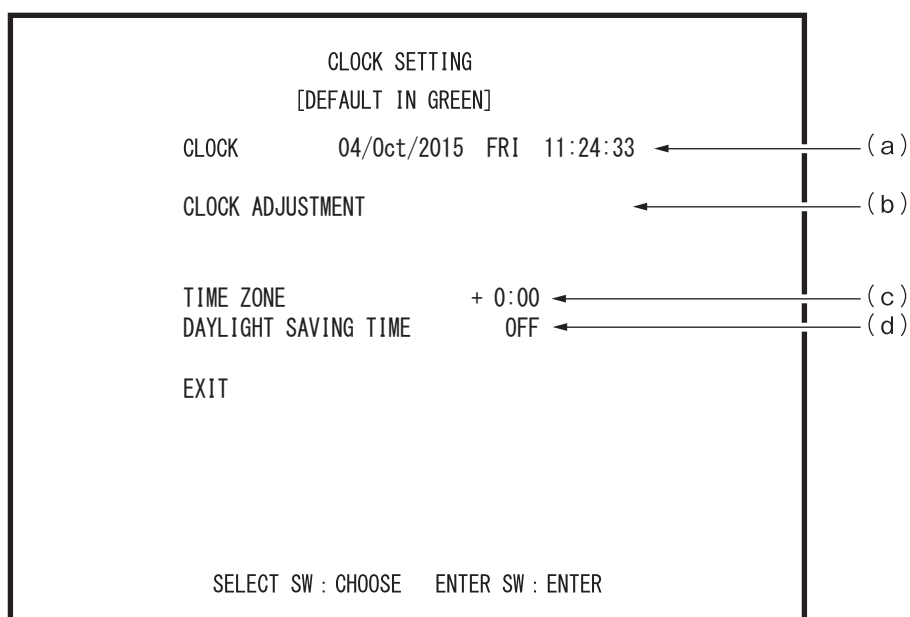
(a) Setting the Built-in Clock (CLOCK SETTING)

Sets the built-in clock.



● Set the built-in clock as precisely as possible. If the time is incorrect, the machine may restart at an unexpected time. (See P-47 "7-7 About Maintenance Time".)

- 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.
- 3** Press the Enter switch to enter the selected item.
- 4** Select EXIT and press the Enter switch to return to the OTHERS screen.



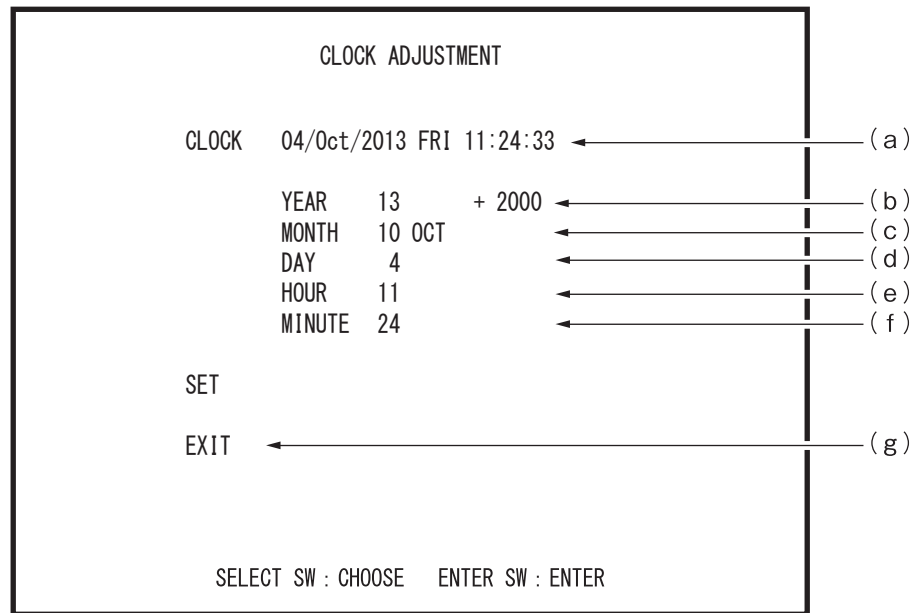
CLOCK SETTING screen

Item	Description
(a) CLOCK	Displays the current time of the built-in clock and the date.
(b) CLCOK ADJUSTMENT	Sets the current time of the built-in clock and the date.
(c) TIME ZONE	Sets the time zone.
(d) DAYLIGHT SAVING TIME	Sets the daylight-saving time.

(b) Setting the Time (CLOCK SETTING)

Sets the built-in clock.

- 1** In the CLOCK SETTING screen, select CLOCK ADJUSTMENT and press the Enter switch. The CLOCK ADJUSTMENT screen appears.
- 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** Select EXIT and press the Enter switch to return to the CLOCK SETTING screen.



CLOCK ADJUSTMENT screen

Item	Description
(a) CLOCK	Displays the current time of the built-in clock.
(b) YEAR	Sets the year.
(c) MONTH	Sets the month.
(d) DAY	Sets the day.
(e) HOUR	Sets the hour.
(f) MINUTE	Sets the minute.
(g) SET	Enters the current time of the built-in clock and the date.

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Operation

Test Mode

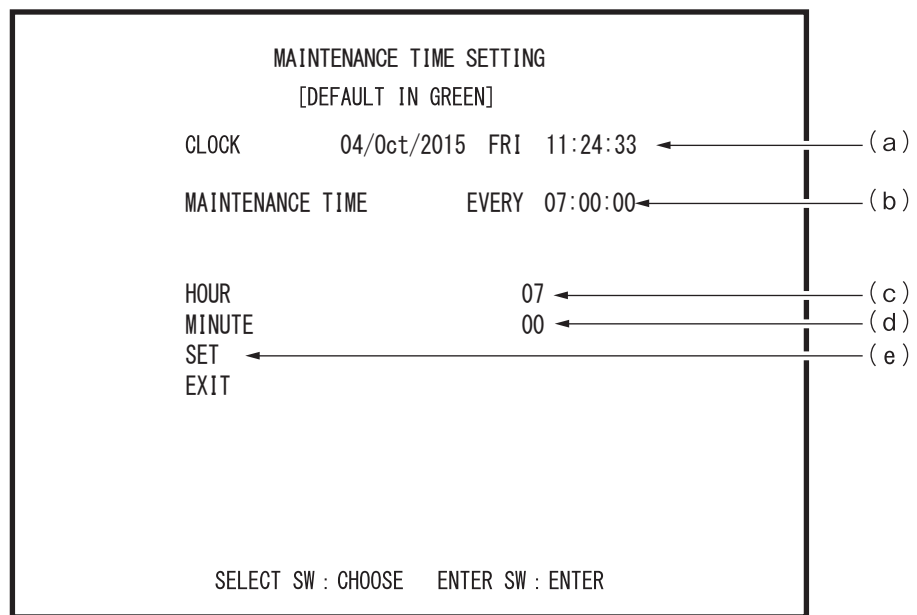
Troubleshooting

(c) Setting Maintenance Time (MAINTENANCE TIME SETTING)

Sets the maintenance time. (See P-47 "7-7 About Maintenance Time".)

If you change the setting, the machine will automatically restart after you set the Test switch to OFF.

- 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.
- 3** Press the Enter switch to enter the selected item.
- 4** Select EXIT and press the Enter switch to return to the OTHERS screen.



MAINTENANCE TIME SETTING screen

Item	Description	Default
(a) CLOCK	Displays the time of the built-in clock and date.	-
(b) MAINTENANCE TIME	Displays the maintenance time currently set.	07:00:00
(c) HOUR	Sets the hour of maintenance time.	07
(d) MINUTE	Sets the minute of maintenance time.	00
(e) SET	Enters the time that has been set.	-

7-7 About Maintenance Time

This machine is equipped with a function that clears the system by rebooting at 7:00 AM every day ("Maintenance time") to reduce the load on the game PC board caused by prolonged continuous operation.

- * Before shipping, the maintenance time is set at 7:00 AM. However, this can be changed by following the description in P-46 "(c) Setting Maintenance Time (MAINTENANCE TIME SETTING)".
- * Even when the set time is reached, the machine will not reboot while a game is being played. It will reboot when the game is finished and the Attract screen reappears.

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Operation

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Troubleshooting

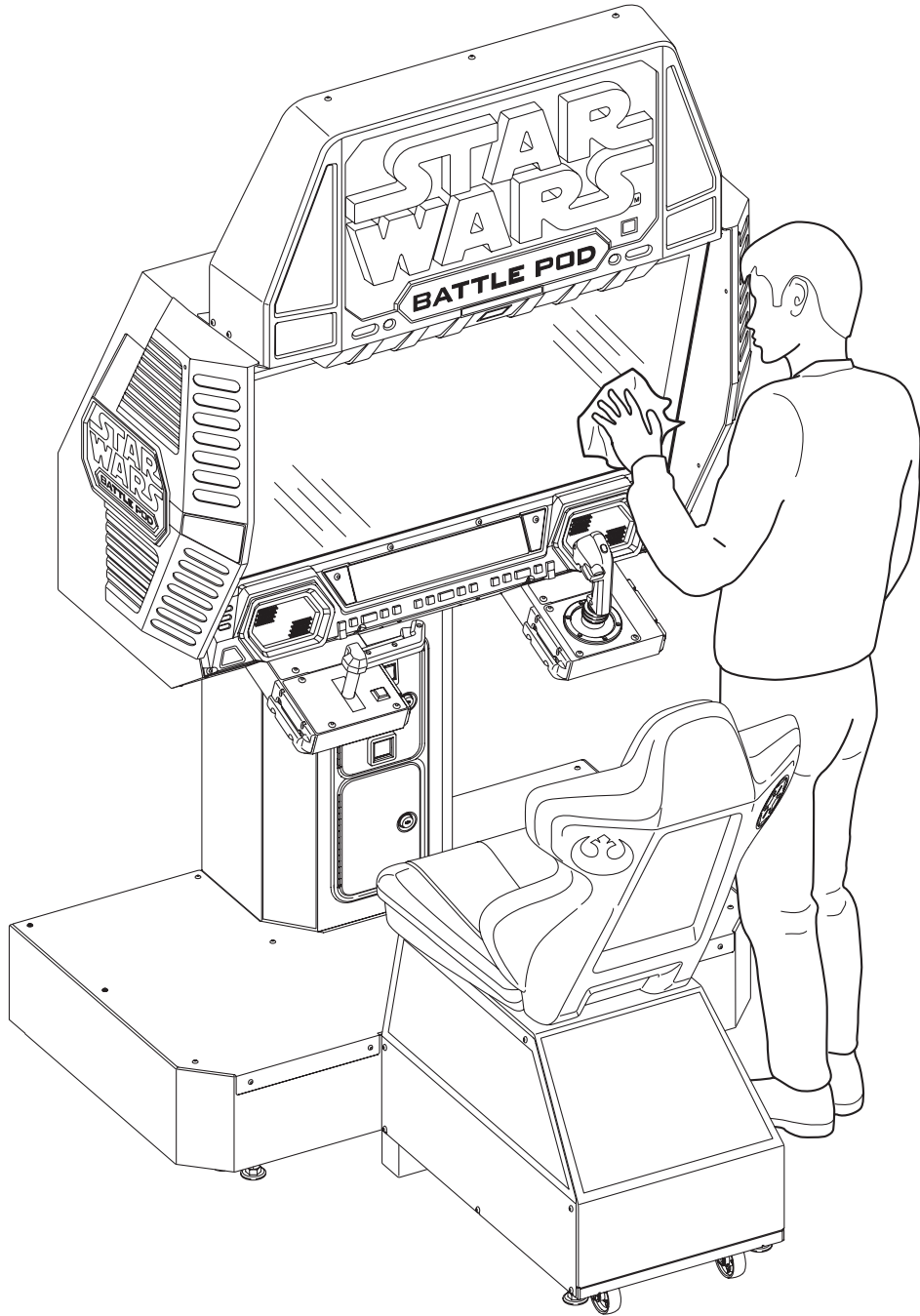
7-8 Daily Cleaning



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

(1) Cleaning the Monitor Glass

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.



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

8A. Installation and Assembly

8A-1 Assembly Preparation

8A-1-1 Number of Workers and Work Time

The following numbers of workers and work times are required for assembly work.

Number of workers

Delivery work: See P-20 "6-2 Transportation".

Assembly work: Two or more technicians

Work time

Assembly work: Approximately one hour

8A-1-2 Workflow

Carry out the assembly work in the following order.

- [1] Installing the Sign Box Assembly
- [2] Installing the Seat Assembly
- [3] Inserting the USB Dongle
- [4] Adjusting the Level Adjuster
- [5] Connecting the Power Cord and LAN Cable
- [6] Turning the Power Switch On

8A-1-3 Space Required during Installation

An open space of 3 m x 3 m or larger with a ceiling height of 2.5 m or higher is required for assembly and installation.

8A-1-4 Required Tools and Parts

The following tools are required for assembly and installation.

- Phillips-head screw driver (No. 2)
- Torx wrench (for M5, T25) * supplied item
- Allen key (Width across flats: 6 mm)
- Wrench (Width across flats: 24 mm)
- A stepladder or a footstool
- Light (when needed)

U.S. and European models are not equipped with coin selectors when they are shipped. Refer to P-112 "8B-4-24 Replacing the Coin Selector (U.S. and Asian Models)" or P-113 "8B-4-25 Replacing the CASHFLOW (European Model)" to prepare the appropriate selector.

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

Test Mode

Troubleshooting

-Must be performed by a technician-

8A-2 Assembly

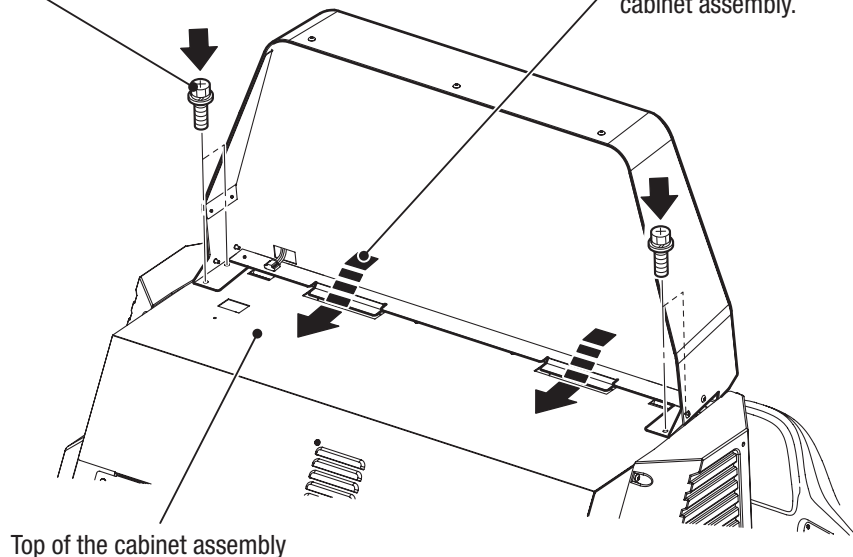
8A-2-1 Installing the Sign Box Assembly

WARNING

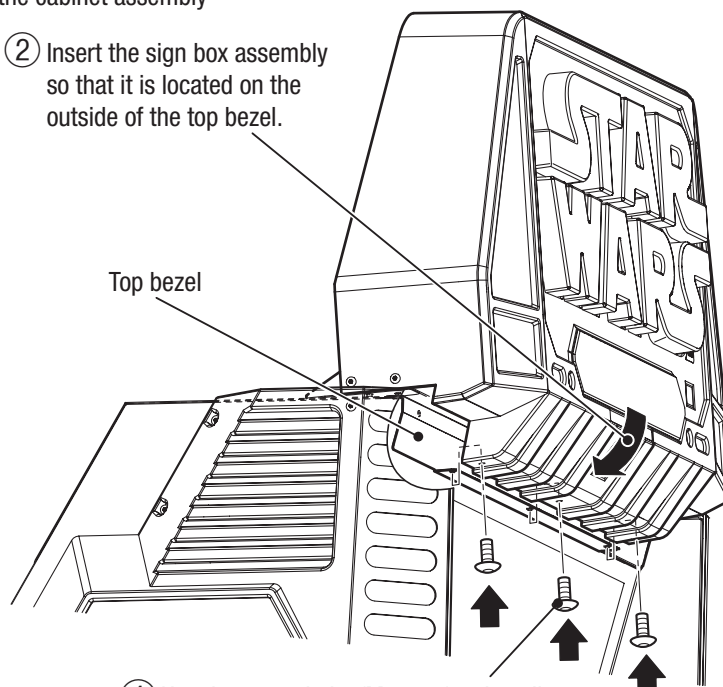
- Installation of the sign box assembly involves standing at an elevated height. Prepare an appropriate stepladder or footstool and have two or more people perform the work. Working in an unnatural body posture may result in injury or machine damage.

- 1** Remove the maintenance Door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 2** Install the sign box assembly.

- 3** Use four Phillips hexagon head bolts (with flat and spring washers) (M6 x 16) to install.
- 1** Insert the sign box assembly into the top part of the cabinet assembly.



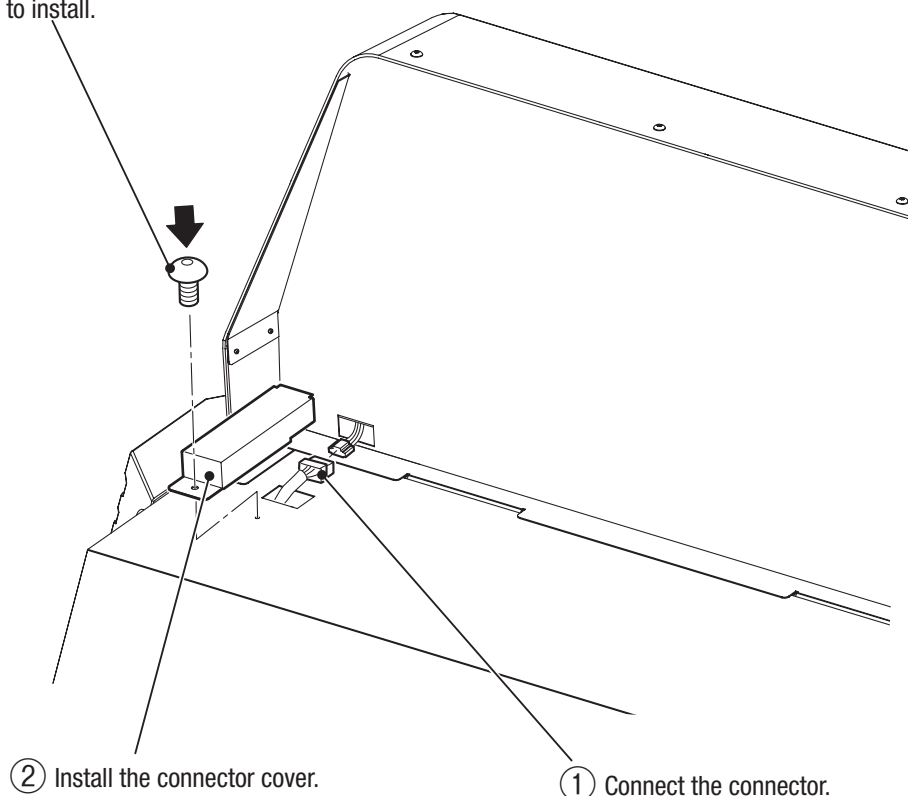
- 2** Insert the sign box assembly so that it is located on the outside of the top bezel.



- 4** Use three torx bolts (M5 x 12) to install.

3 Install the connector and connector cover.

③ Use one torx bolt (M5 x 12) to install.



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

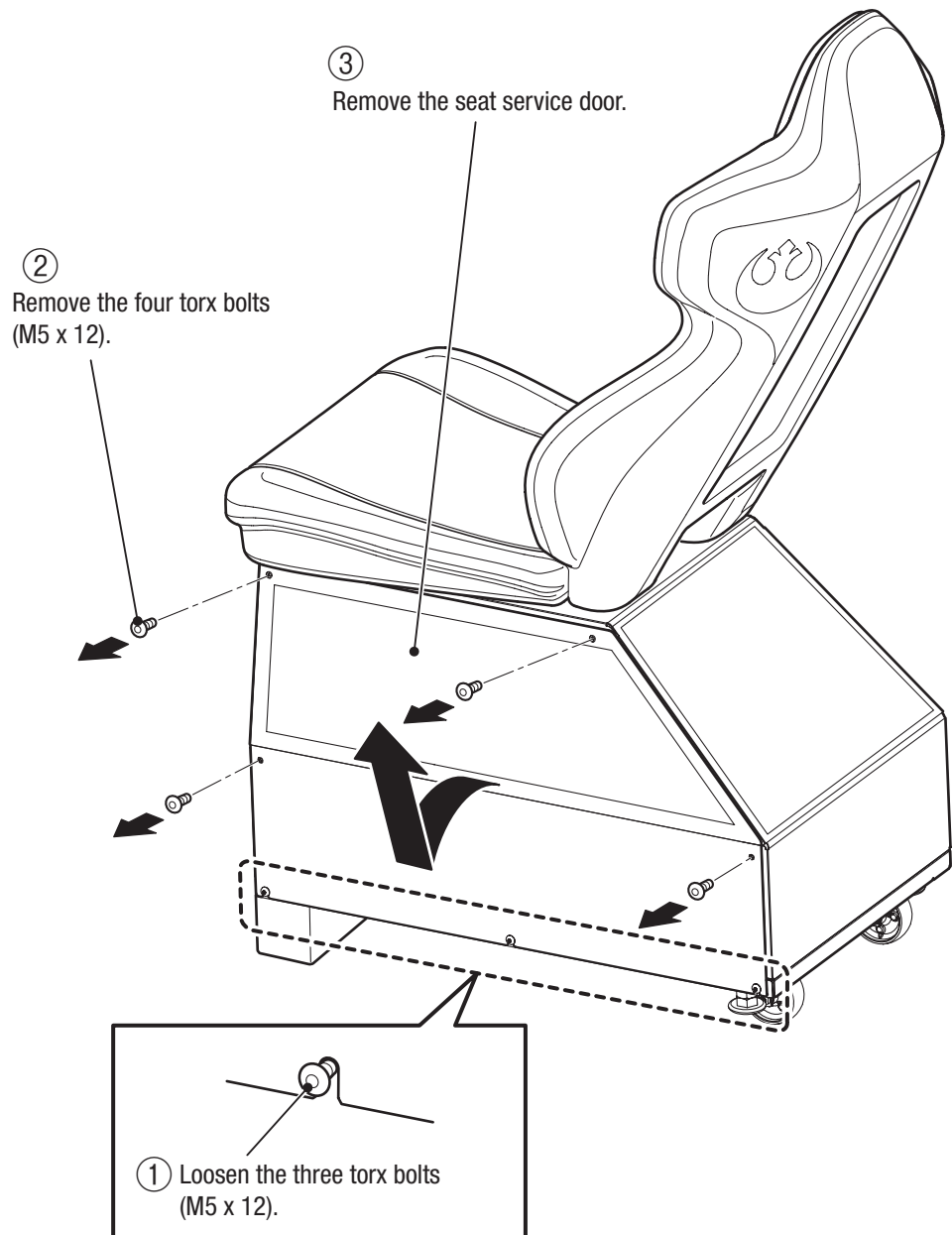
Test Mode

Troubleshooting

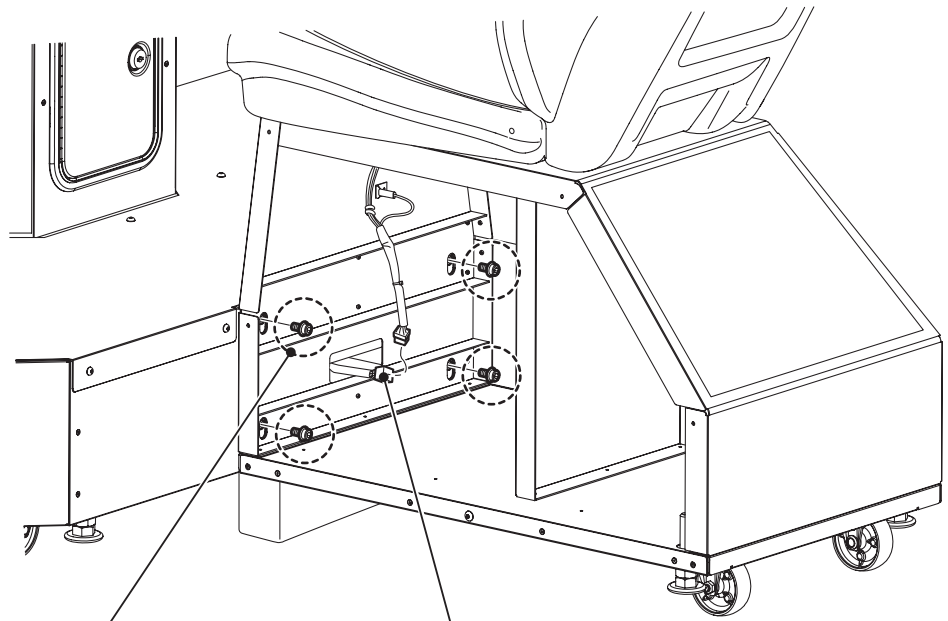
-Must be performed by a technician-

8A-2-2 Installing the Seat Assembly

- 1 Remove the seat service door.



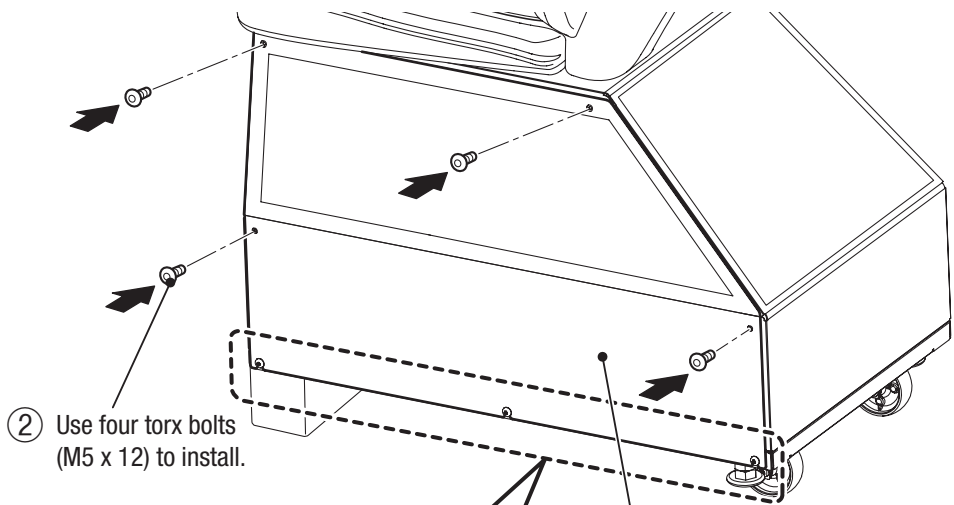
2 Install the seat assembly.



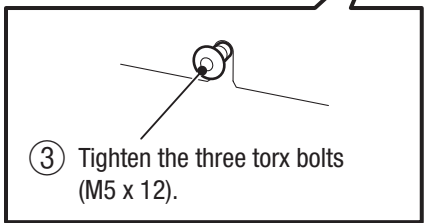
① Use four flange sockets (M8 x 16) to install.

② Connect the connector.

3 Install the seat service door.



② Use four torx bolts (M5 x 12) to install.



③ Tighten the three torx bolts (M5 x 12).

① Install the seat service door.

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

Test Mode

Troubleshooting

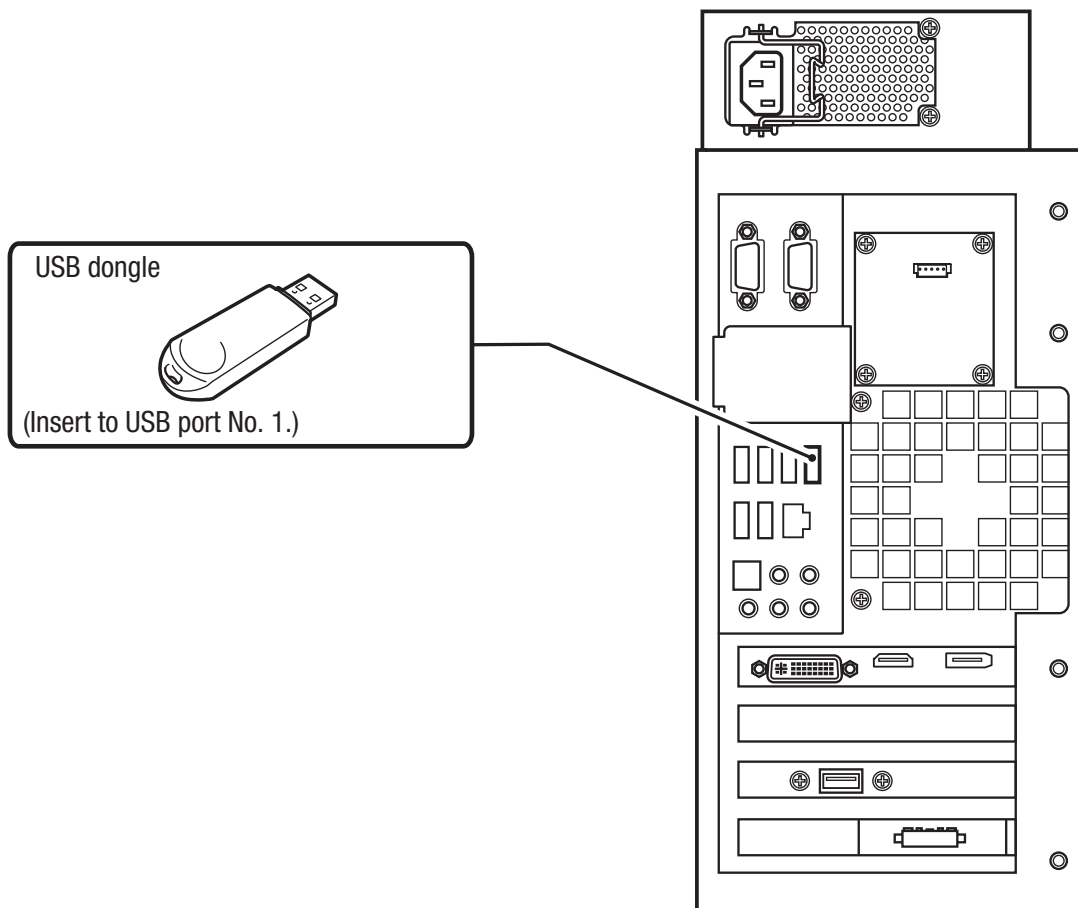
-Must be performed by a technician-

8A-2-3 Inserting the USB Dongle

WARNING

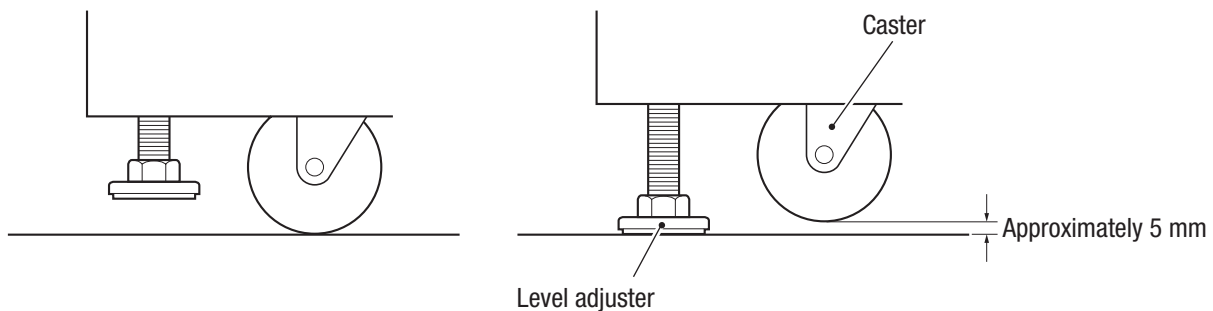
- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch of the game cabinet before starting this task.
- The supplied USB dongle is intended only for use with this machine. Do not use it with other instruments. Do not insert any USB dongles that are not designed for use with this machine. Doing so may result in mechanical malfunction.

- 1** Remove the maintenance Door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 2** Insert the supplied USB dongle into USB port No. 1 on the game PC board.



8A-2-4 Level Adjuster Adjustment

Lower the level adjuster until the casters are at a height of approximately 5 mm from the floor.



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

Test Mode

Troubleshooting

-Must be performed by a technician-

8A-3 Connecting the Power Cord and LAN Cable

WARNING

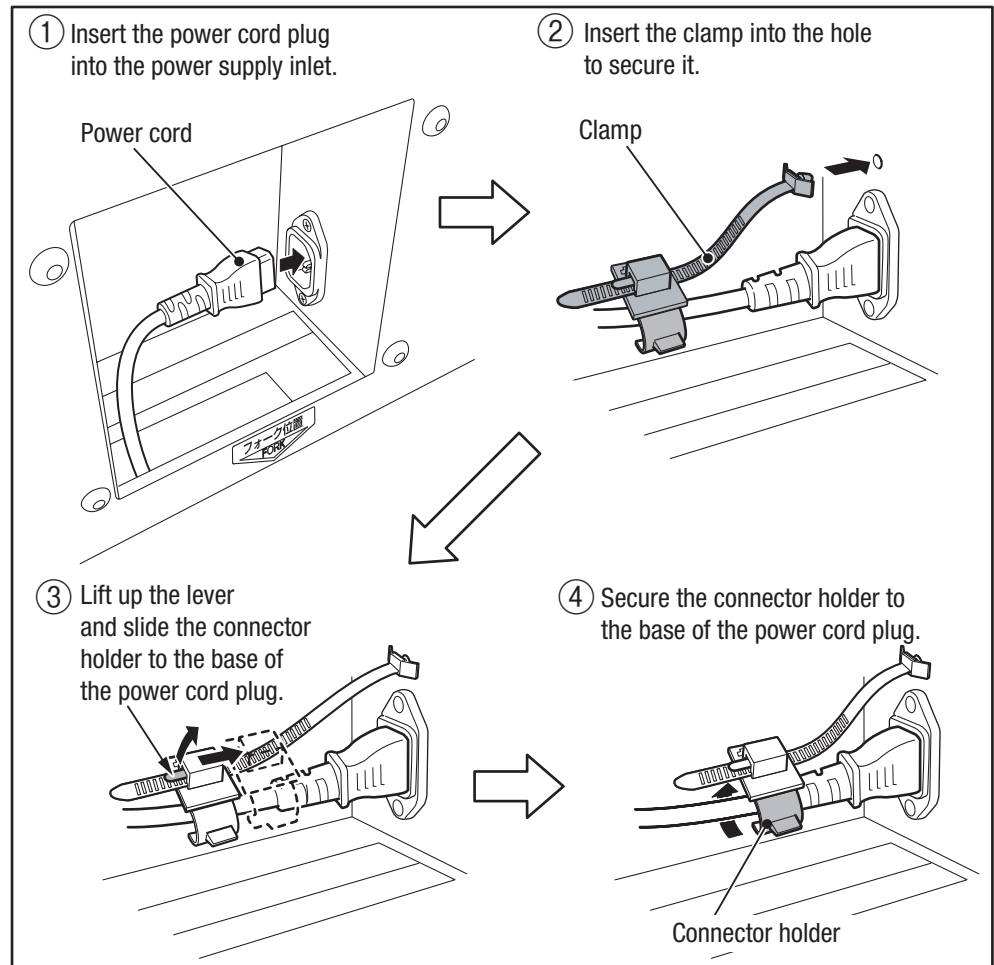
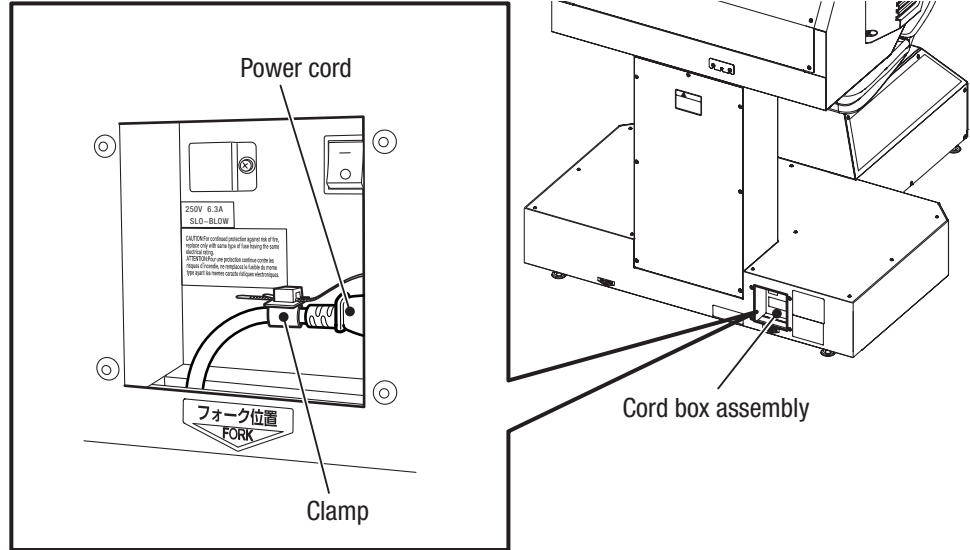
- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.
- Be careful not to let the cabinet's sheet metal or other objects damage the cables that extend from the bottom of the cabinet. Doing so may result in fire or electric shock.

CAUTION

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

8A-3-1 How to Connect the Power Cord

- 1 Insert the power cord plug into the power supply inlet from the rear bottom of the cabinet assembly.



- 2 Insert the power plug of the power cord into the outlet.

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

Test Mode

Troubleshooting

-Must be performed by a technician-

8A-3-2 How to Connect the LAN Cable

When operating the machine as a single unit, you do not need to connect the LAN cable. Go to P-61 "8A-4 Turning the Power Switch On".

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 of the game cabinet before starting this task.

CAUTION

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

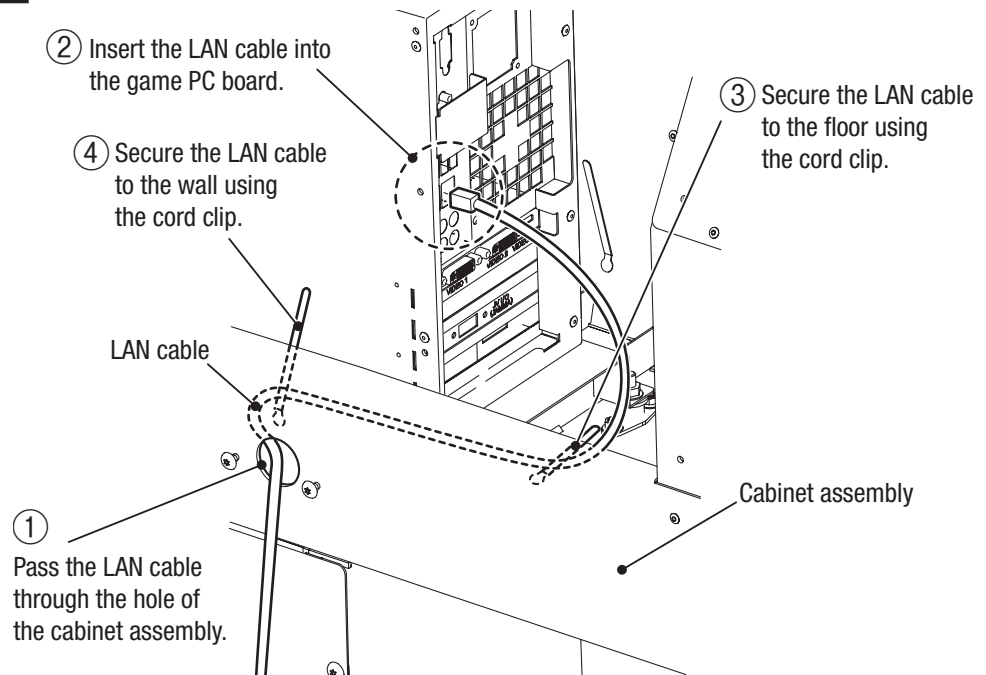
NOTICE

- When laying out the LAN cable on the floor, it is recommended that commercially available cable molding be used 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 out 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.
 - When installing the machine, do not bend the LAN cable excessively or pull it too tight to avoid subjecting the cable to excessive load.

! 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 of the game cabinet before starting this task.
- Be careful not to let the cabinet's sheet metal or other objects damage the cables that extend from the bottom of the cabinet. Doing so may result in fire or electric shock.

- 1** Remove the maintenance Door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 2** Loosen the two torx bolts (M5 x 12), and remove the LAN cover.
- 3** Connect the LAN cable to the game PC board.



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

Test Mode

Troubleshooting

-Must be performed by a technician-

4 Install the LAN cover.

① Insert the LAN cover.

② Tighten the two torx bolts (M5 x 12).

LAN cover

5 In the same way, connect the LAN connector on the opposite side to the other cabinet.



- Check the shape and orientation of the connector before inserting the LAN cable.
- Fully insert the LAN cable connector. A disconnected LAN cable will not work correctly.
- Recommended LAN Cable:
 - RJ45 CAT5e Ethernet Cable
 - Straight-Through
 - STP
- Before operating the machine, configure link settings in Test mode. (See P-31 "7-6-3 Game Contents Settings (GAME OPTIONS)".)

8A-4 Turning the Power Switch On

- 1 Turn on the power switch at the rear bottom of the cabinet assembly.
(P-35 "(b) SWITCH TEST".)

Now, installation and assembly are complete. Go to P-22 "7. Operation".

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

Test Mode

Troubleshooting

-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).

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 P-23 "7-3 Pre-operation Inspection".)

8B-1-1 Points for Inspection

Periodically check the following inspection points for any abnormalities.

(1) Level Adjuster Inspection

- Check that the level adjusters are fixed correctly. (See P-55 "8A-2-4 Level Adjuster Adjustment".)

(2) Power Cord Inspection

- Check that the power cord is firmly inserted into the cord box assembly of this machine and an outlet of the building. (See P-57 "8A-3-1 How to Connect the Power Cord".)
- 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.

(3) LAN Cable Inspection (If Connection is Necessary for Cabinet-to-Cabinet Communications)

- Check that the LAN cable connector is firmly inserted.
- Check for cracks or dirt on the LAN cable. If there is any abnormality on the LAN cable, be sure to replace it.

(4) Screw Looseness Inspection

Check the following parts for loose screws. Fully retighten any loose screws.

- Fixing screws on the control lever assembly (See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- Fixing screws on lever grip A and lever grip B (P-90 "8B-4-13 Replacing the Control Lever Micro Switch".)
- Fixing screws on the throttle lever assembly (P-82 "8B-4-8 Replacing the Throttle Lever Assembly".)
- Fixing screws on the seat assembly
- Others

(5) Game PC Board Inspection

If dust accumulates around the air inlet of the game PC board, clean it.

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Service

Test Mode

Troubleshooting

-Must be performed by a technician-

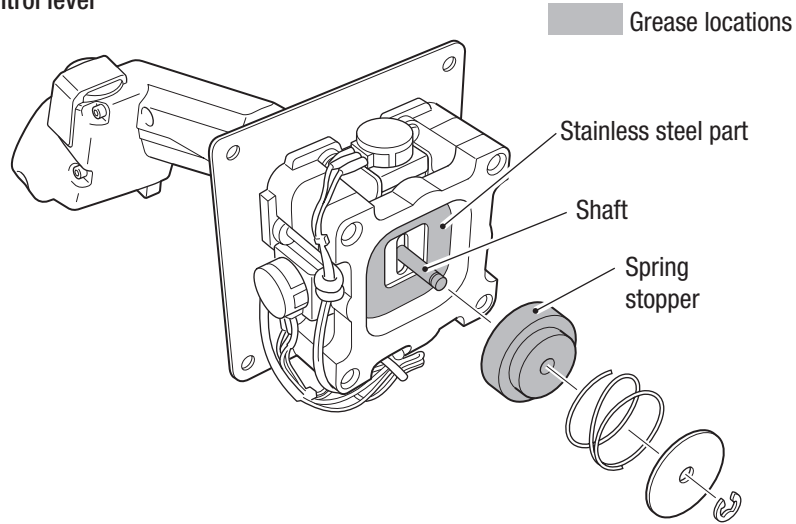
8B-1-2 Points for Service

Replenish the grease on the control lever and the throttle lever once every 6 months (approx.). Apply fresh silicon grease (recommended product: G-40M , Shin-Etsu Chemical Co, Ltd.) to the stainless steel part, spring stopper and shaft.

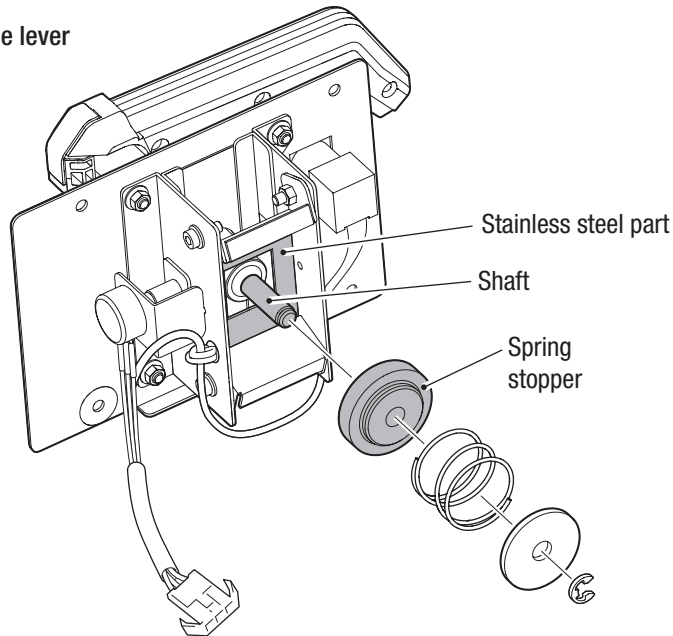
Also apply silicon grease (recommended product: G-40M, Shin-Etsu Chemical Co, Ltd.) when the lever operation becomes stiff.

(See P-97 "8B-4-17 Replacing the Spring or Spring Stopper".)

Control lever



Throttle lever



● Do not use anti-rust spray or lubricant spray, as these products will make the grease come off.

8B-2 Troubleshooting

WARNING

- In order to avoid electric shock, accident or injury to yourself or others, be sure to turn off the power switch before starting this task.
- If the condition does not fall under any troubleshooting item, or if the solution does not improve the machine's status, turn off the power switch immediately, stop operations, and contact your distributor. Continuing to operate the machine may cause an accident.

NOTICE

- Before you conclude that the machine has malfunctioned, check that each connector is firmly connected.
- Never subject PC boards to continuity inspections that use a tester or other devices. We will repair them. The internal voltage of the tester may damage the IC.
- When sending us a product to be repaired, be sure to pack it securely. In particular, when sending a game PC board, wrap it in sponges or bubble wrap and put it in a corrugated cardboard box or other suitable container to prevent it from being subjected to external impacts. Furthermore, attach a "Repair Request Form" to the product to be repaired.

8B-2-1 Overall

Symptom	Main cause	Solution	Reference section
· The machine does not start.	· The USB dongle is not inserted.	· Insert the USB dongle.	P-54
	· 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 of this machine is not used in the following ranges. · 110 VAC 110 V ± 10 VAC · 120 VAC 120 V ± 10 VAC · 220 VAC 220 V ± 10 VAC · 230 VAC 230 V ± 10 VAC	· 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.	-
· There is no sound coming from the speakers.	· The volume setting is low.	· Set the appropriate volume.	P-40
· There is no sound coming from the speakers, or there is no sound coming from the correct speaker.	· The connectors are not connected correctly.	· Correctly connect the connectors.	-
· Service switch does not work.	· A connector is disconnected.	· Insert the connector securely.	P-70 P-74
	· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74

8B. Service

-Must be performed by a technician-

8B-2-2 Seat Assembly

Symptom	Main cause	Solution	Reference section
· No sound is output from the woofer speakers.	· The volume setting is low.	· Set the appropriate volume.	P-40
	· A connector and a Faston terminal are disconnected.	· Insert the connector and the Faston terminal securely.	P-70 P-73

8B-2-3 Control Lever Assembly and Throttle Lever Assembly

Symptom	Main cause	Solution	Reference section
· The lever does not function.	· The analog interface has not been calibrated.	· Calibrate the analog interface.	P-34
	· A connector is disconnected.	· Insert the connector securely.	P-87
	· An analog interface malfunction.	· Replace the analog interface.	P-88
	· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74
· The switch does not function.	· A connector is disconnected.	· Insert the connector securely.	P-87
	· A micro switch malfunction.	· Replace the micro switch.	P-90
	· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74
· The throttle or control lever movement is stiff.	· The silicon grease has become worn (dry).	· Apply new silicon grease.	P-64
· An abnormality in the throttle or control lever neutral range.	· The throttle/control lever (analog interface) has not been calibrated..	· Calibrate the throttle/control lever.	P-34
	· The spring stopper has become worn.	· Replace the spring stopper.	P-97
	· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74

8B-3 Error Display

When this machine detects an error on start-up or during game play, it displays an error screen and stops operation.

Refer to the error code table below to identify the cause of the error and resolve it.

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.

If a screen not shown in the error code table is displayed, or the error message is displayed again after performing the appropriate solution, there may be some other cause. Contact your distributor.

Hardware Errors

When this machine detects a hardware error, it displays an error screen and operation stops.

However, errors marked by an asterisk (*) in the error message list do not stop the play process even if they are detected while the game is being played.

Error code	Error message	Main cause	Solution	Reference section
01-01	COIN ERROR 1 *	· The coin selector is jammed.	· Check the inside of the coin selector.	-
		· A coin selector or micro switch malfunction.	· Replace the coin selector or the micro switch.	-
		· The harness to the coin selector or the micro switch is not connected correctly.	· Check the connection of the connector.	-
		· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74
01-02	COIN ERROR 2 *	· A Service switch malfunction.	· Replace the switch.	-
		· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74
01-03	COIN ERROR 3 *	· The harness to the coin selector or the micro switch is not connected correctly.	· Check the connection of the connector.	-
		· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74
03-01	I/O PCB ERROR	· The harness of the NA-JV (S) PC board is not connected correctly.	· Check the connection of the connector.	P-74
		· NA-JV (S) PC board malfunction.	· Replace the NA-JV (S) PC board.	P-74
04-01	LINK MALFUNCTION 1	· An abnormality in the LAN cable connection.	· Check the connection of the LAN cable.	P-58
04-02	LINK MALFUNCTION 2	· The specified SEAT ID is duplicated with that of another connected cabinet.	· Check the SEAT ID of the cabinet.	P-31
		· An abnormality in the LAN cable connection.	· Check the connection of the LAN cable.	P-58
04-03	LINK MALFUNCTION 3	· The software version is different from that of another connected cabinet.	· Update the software.	
		· An abnormality in the LAN cable connection.	· Check the connection of the LAN cable.	P-58
19-21	USB DONGLE ERROR 1	· A USB dongle for another model is inserted.	· Turn off the power switch, and then insert the USB dongle for this machine. If the same error is displayed when you turn on the power switch, contact your distributor.	P-54
19-22	USB DONGLE ERROR 2	· A USB dongle is not inserted.	· Check that the USB dongle is correctly inserted.	P-54
19-23	USB DONGLE ERROR 3	· Two or more USB dongles are inserted.	If the USB dongle is correctly inserted, contact your distributor.	
20-02	VERSION UP ERROR2	· The version upgrade media is not inserted.	· Check whether the version upgrade media has been correctly inserted into the game PC board.	-

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Service

Test Mode

Troubleshooting

8B. Service

-Must be performed by a technician-

Error code	Error message	Main cause	Solution	Reference section
21-01	CLOCK ERROR	· The clock setting is not correct.	· Correctly set the built-in clock.	P-44

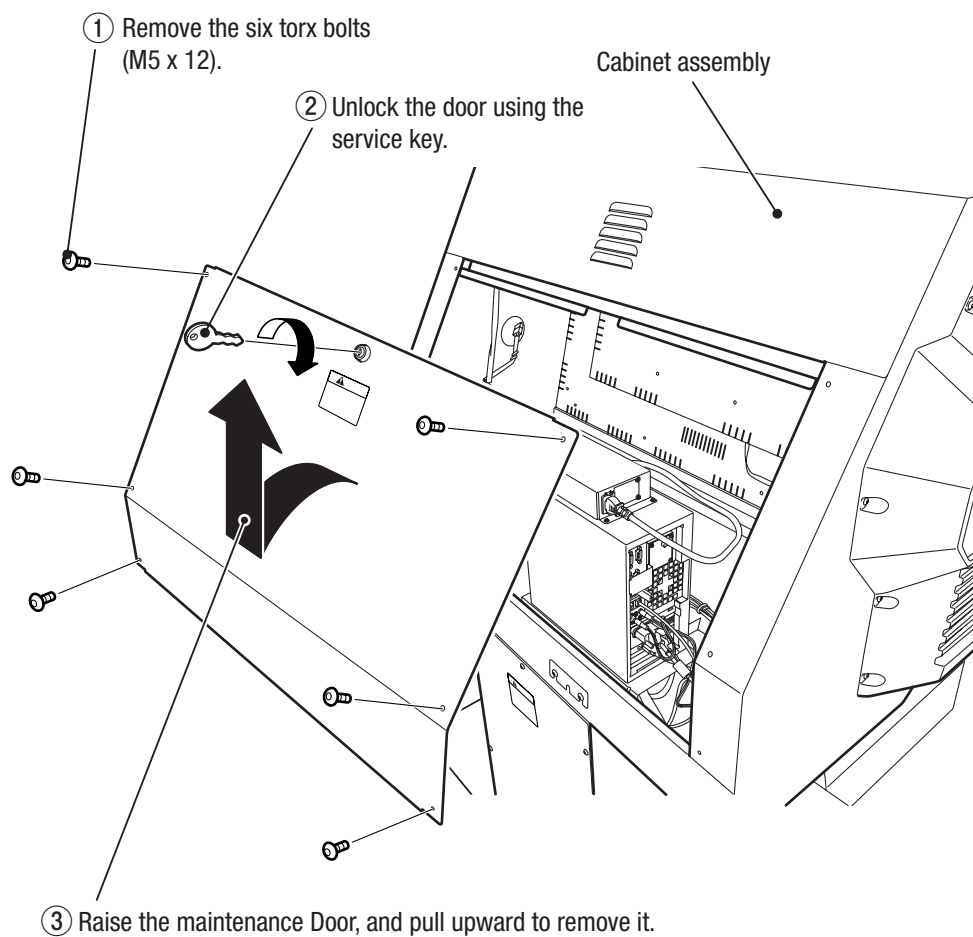
8B-4 Removing, Installing, and Replacing Each Part

8B-4-1 Removing and Installing the Maintenance Door

! 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the maintenance door.



- 3** To install, perform the procedure in reverse.

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Service

Test Mode

Troubleshooting

-Must be performed by a technician-

8B-4-2 Replacing the Game PC Board

WARNING

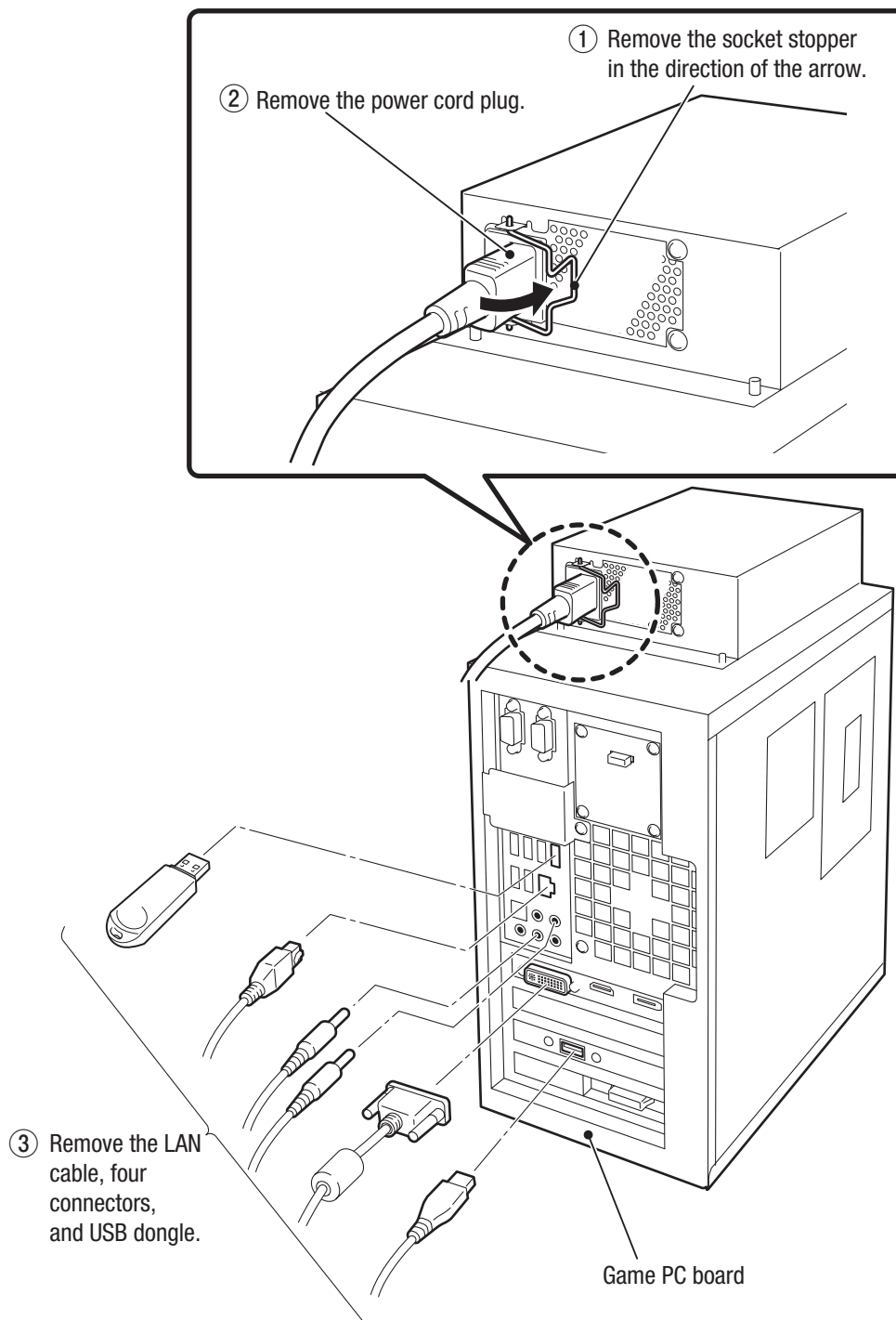
- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

NOTICE

- PC boards are vulnerable 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.)
- Connect the connectors correctly according to the indications on the game PC board.

-Must be performed by a technician-

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the maintenance door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 3** Remove all the cables.

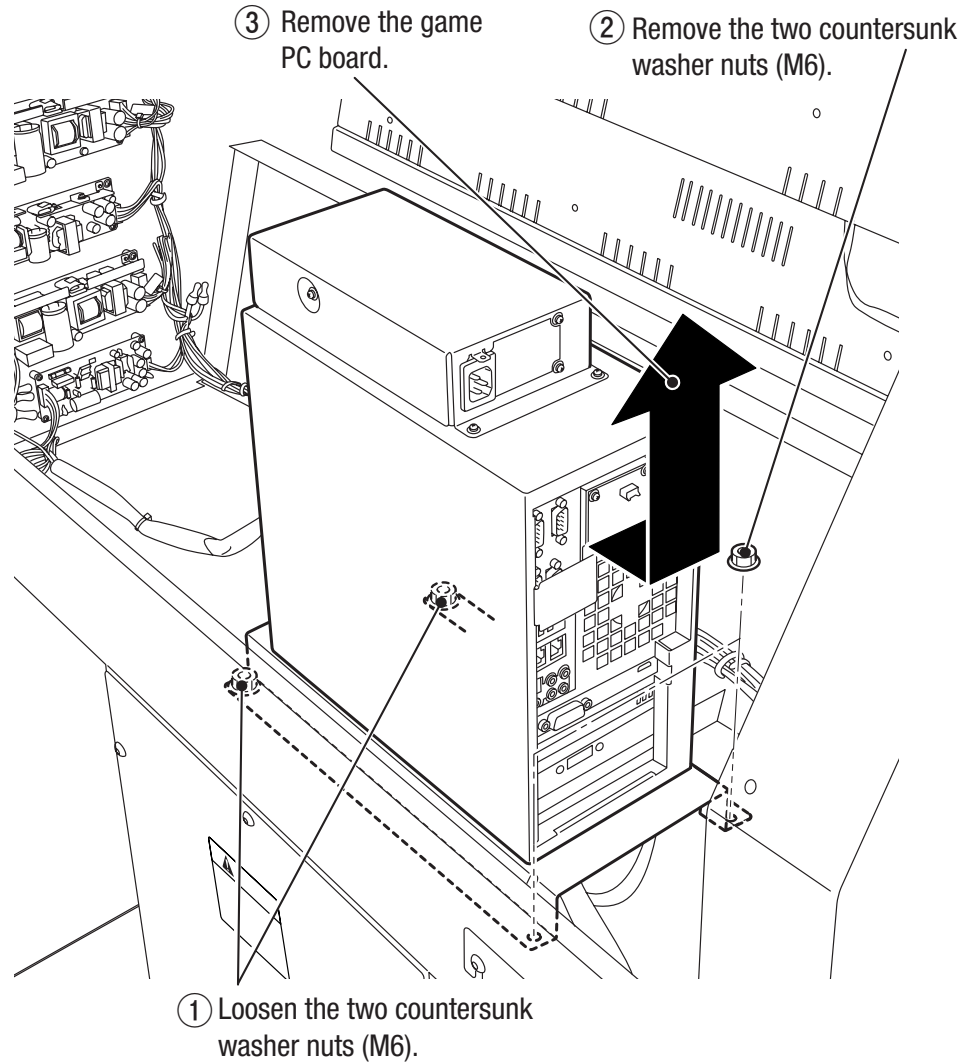


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Service

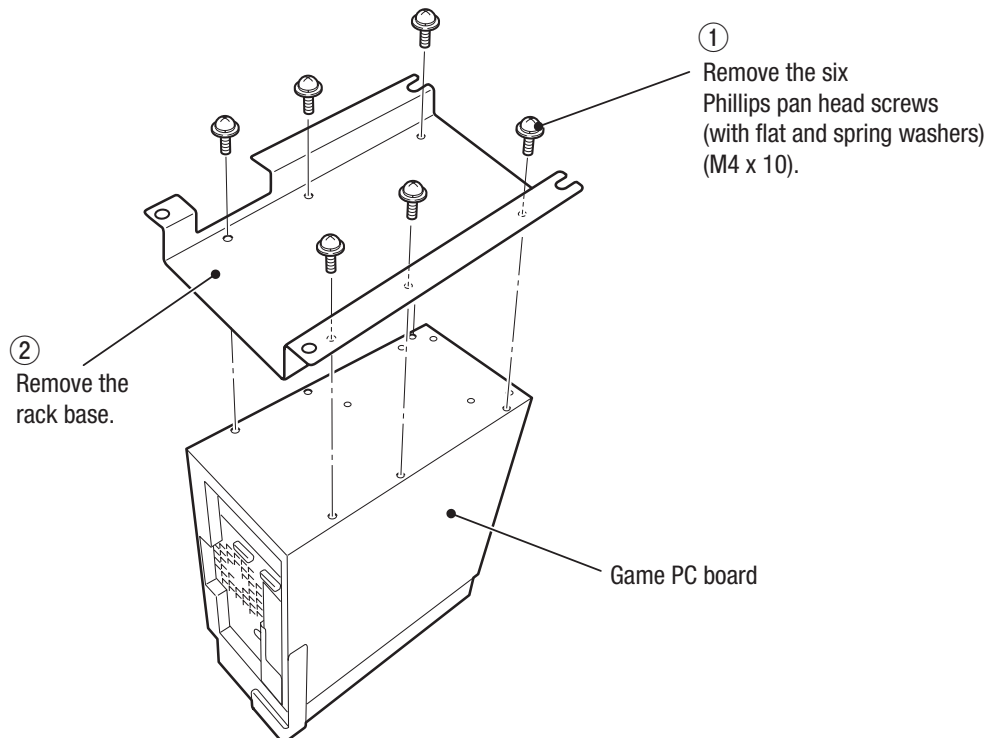
Test Mode
Troubleshooting

-Must be performed by a technician-

4 Remove the PC board.

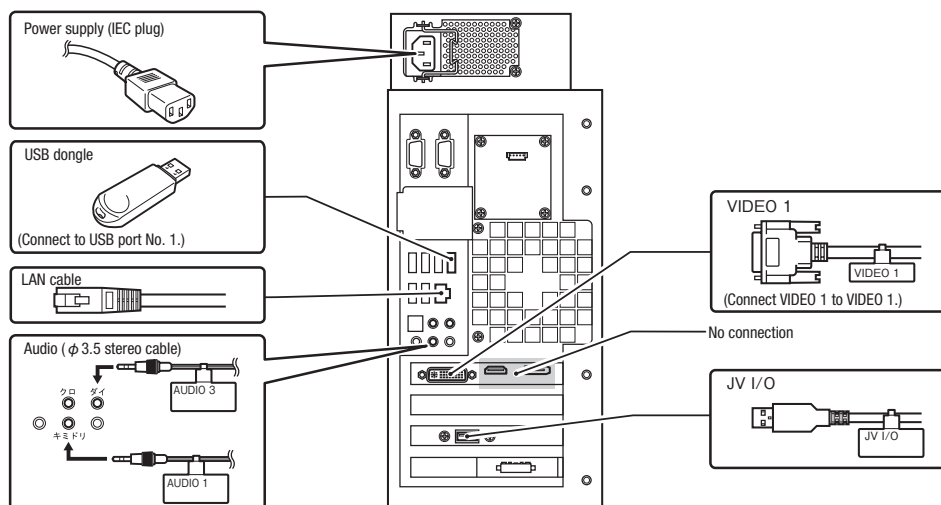


5 Remove the rack base.



-Must be performed by a technician-

- 6** Replace the game PC board with a new one, and install the new one by following the removal procedure in reverse.



- Check the connector orientations, connect the connectors firmly to each other, and lock them securely.
- After replacing a game PC board, be sure to adjust the control lever assembly and throttle lever assembly, and check the volume and other settings. (See P-29 "7-6 Test Mode".)

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Service

Test Mode

Troubleshooting

-Must be performed by a technician-

8B-4-3 Replacing the NA-JV (S) PC Board

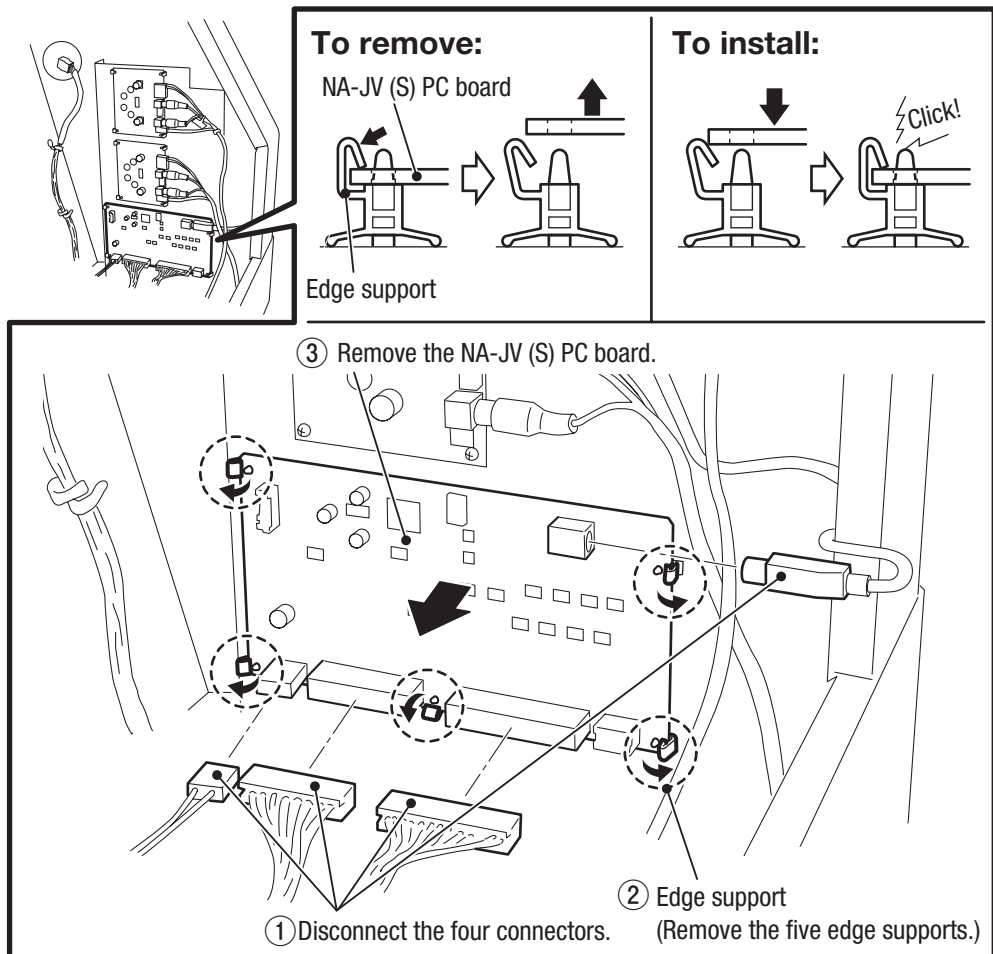
WARNING

● 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 vulnerable 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.)
- Check the connector orientations, connect the connectors firmly to each other, and lock them securely.
- Conduct input/output tests in Test mode. (See P-33 "7-6-4 Input/Output Test (I/O TEST)".)

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the maintenance door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 3** Remove the NA-JV (S) PC board.



- 4** To install, perform the procedure in reverse.

-Must be performed by a technician-

8B-4-4 Replacing the Amplifier PCB Board

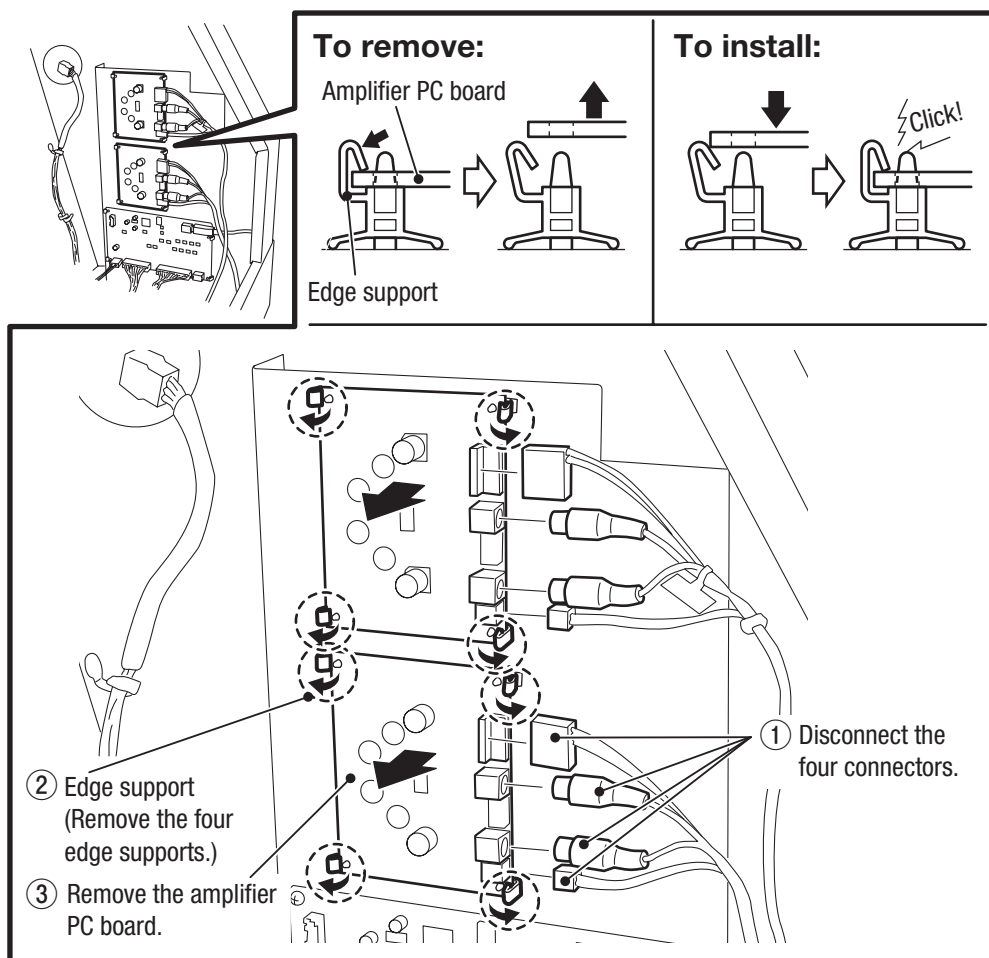
! WARNING

● 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 vulnerable 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.)
- Check the connector orientations, connect the connectors firmly to each other, and lock them securely.
- Conduct a sound test in Test mode to check the volume. (See P-40 "7-6-6 Sound Adjustment (SOUND TEST)".)

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the maintenance door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 3** Remove the amplifier PC board.



- 4** To install, perform the procedure in reverse.

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Service

Test Mode
Troubleshooting

-Must be performed by a technician-

8B-4-5 Replacing the Switching Regulator

The machine uses 5-V (1), 12-V (2), and 24-V (1) switching regulators.

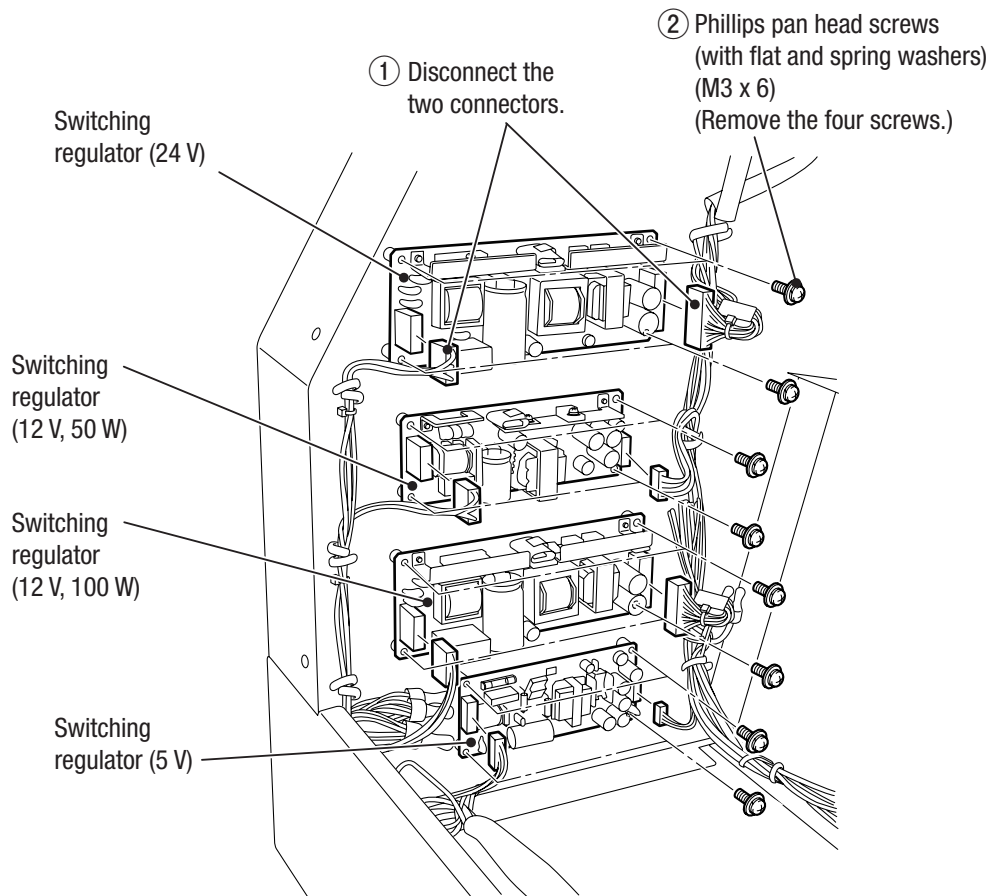
WARNING

- 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 vulnerable 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.)
- Check the connector orientations, connect the connectors firmly to each other, and lock them securely.

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the maintenance door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 3** Remove the damaged switching regulator.



- 4** To install, perform the procedure in reverse.

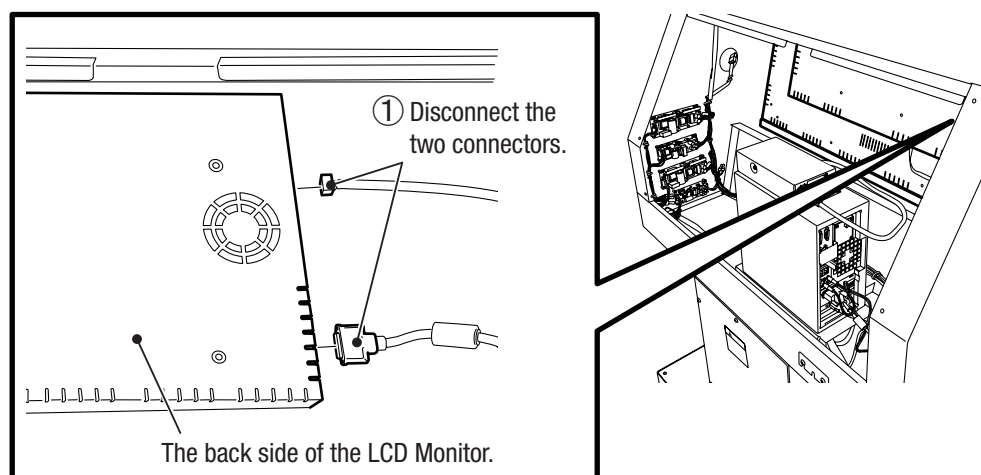
-Must be performed by a technician-

8B-4-6 Replacing the LCD Monitor

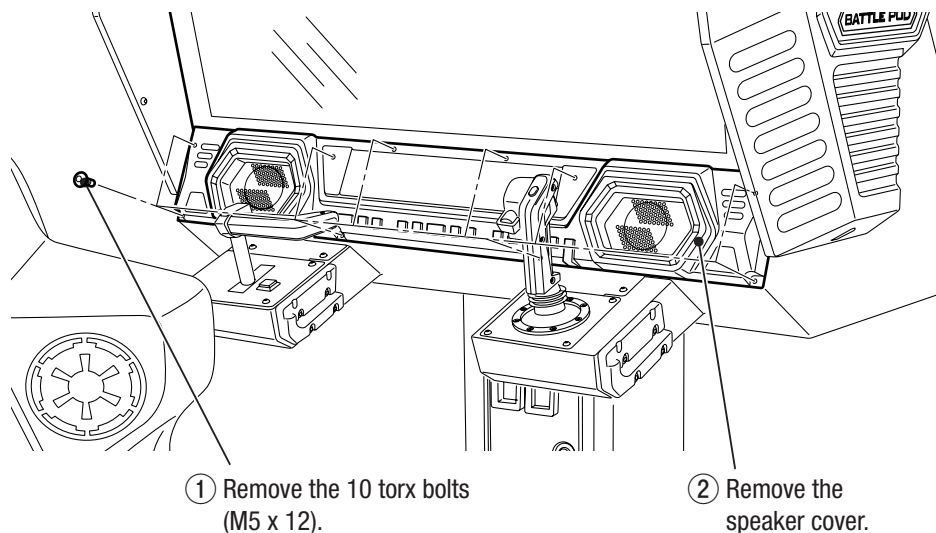
! WARNING

- 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.
- The LCD monitor weighs approximately 16 kg. When installing or removing the LCD monitor, assign two or more people in order to prevent accidents.

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the maintenance door.
(See P-69 "8B-4-1 Removing and Installing the Maintenance Door".)
- 3** Remove the connector from the back side of the cabinet assembly.



- 4** Remove the sign box assembly.
(See P-50 "8A-2-1 Installing the Sign Box Assembly".)
- 5** Remove the control panel cover.



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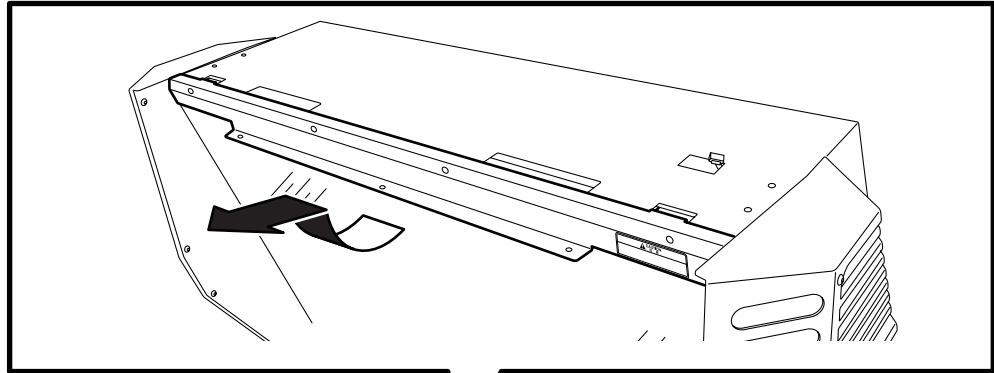
Service

Test Mode

Troubleshooting

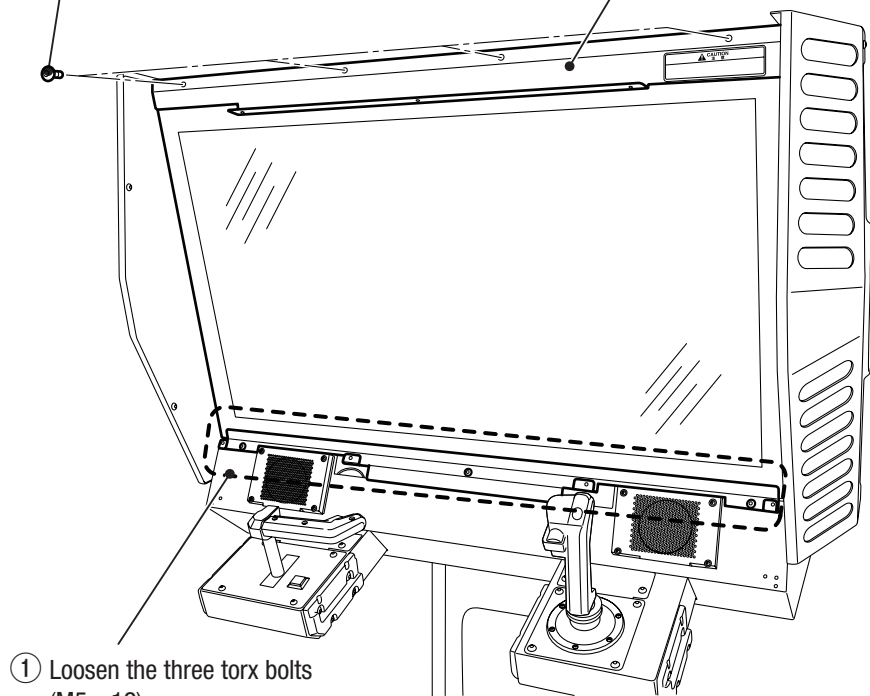
-Must be performed by a technician-

- 6** Remove the monitor glass.

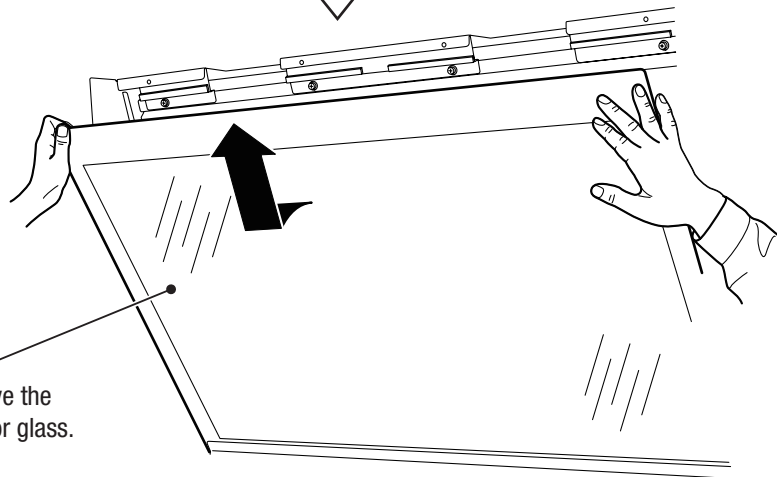


- ② Remove the four torx bolts (M5 x 12).

- ③ Remove the top bezel.



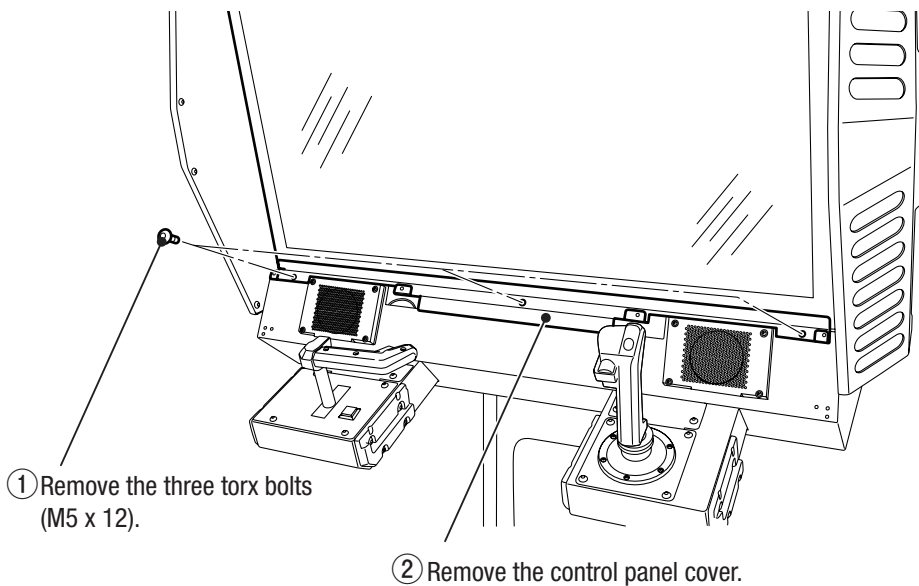
- ① Loosen the three torx bolts (M5 x 12).



- ④ Remove the monitor glass.

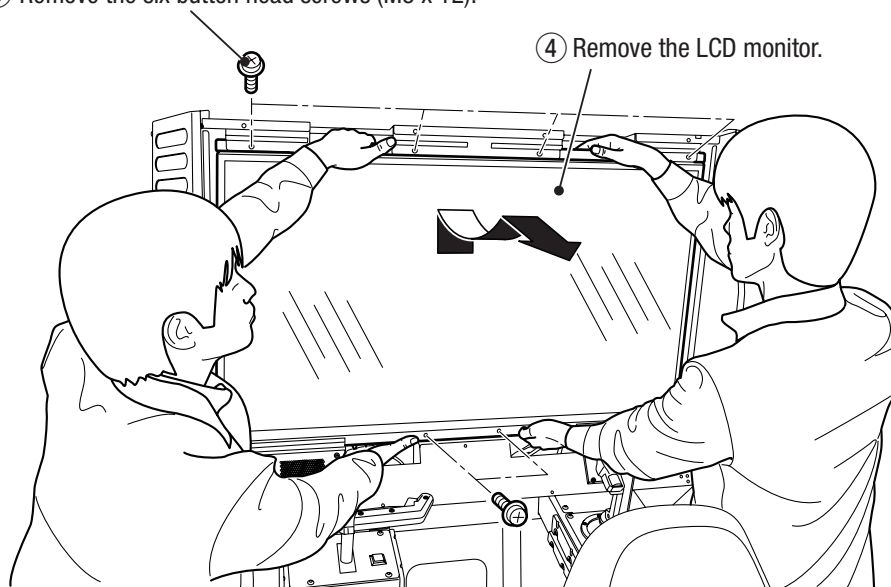
-Must be performed by a technician-

7 Remove the LCD monitor.



③ Remove the six button head screws (M5 x 12).

④ Remove the LCD monitor.



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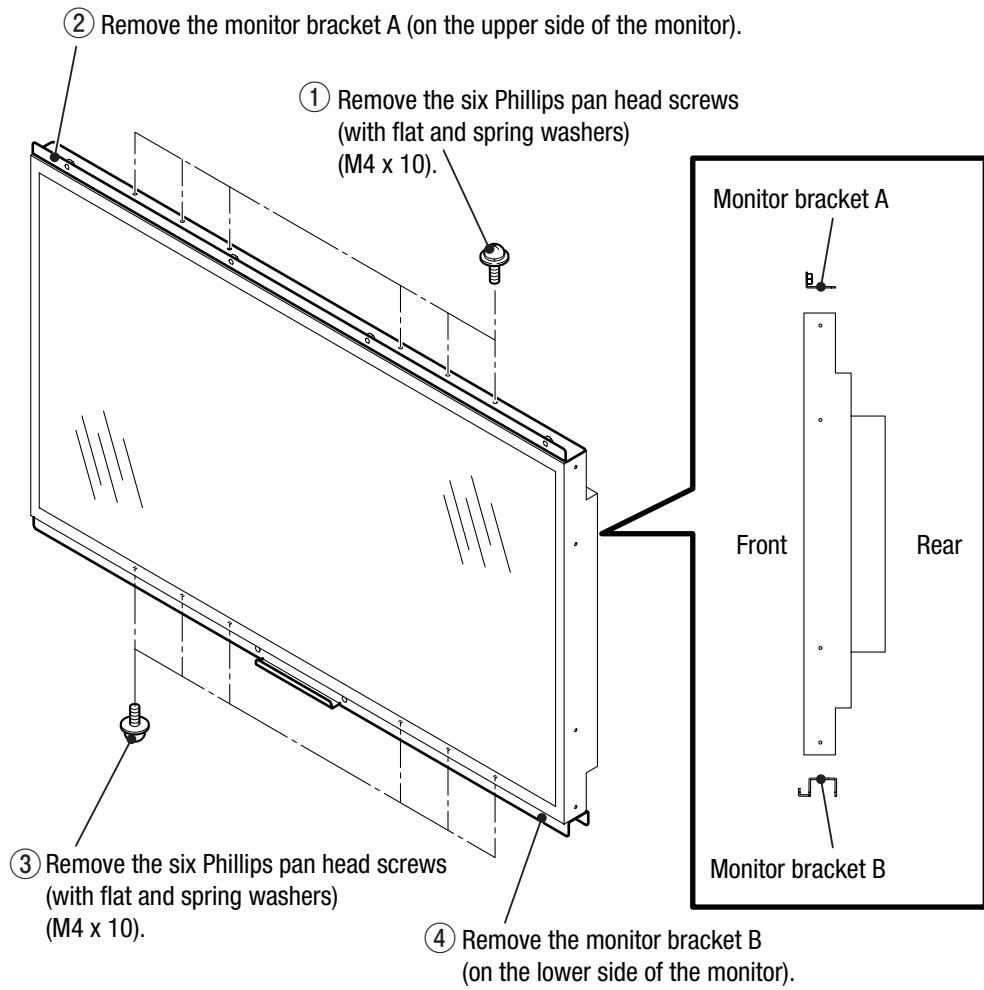
Service

Test Mode

Troubleshooting

-Must be performed by a technician-

8 Remove monitor brackets A and B, and replace the LCD monitor.



9 To install, perform the procedure in reverse.

-Must be performed by a technician-**8B-4-7 Replacing the Cord Box Fuse****! 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.
- Never use a fuse other than the specified type. The fuse must be installed to prevent fire or accident.
- If the fuse blows out immediately after it is newly installed, other causes may be suspected. Immediately turn off the power switch, pull out the power cord plug from the outlet, and contact your distributor.

NOTICE

- To order a fuse, contact your distributor.

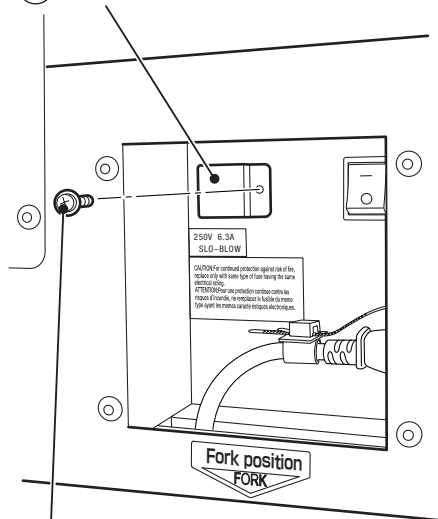
1 Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)

2 Remove the fuse.

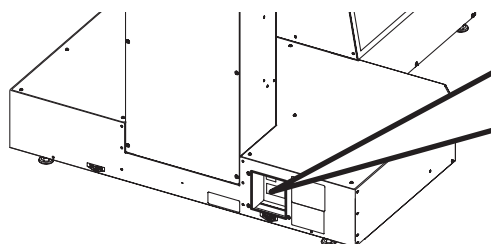
Replace the fuse with either of the following fuses according to the machine specifications, and install the new one by following the removal procedure in reverse.

Model Fuse Rating	Fuse rating
110 VAC / 120 VAC model	: T6.3A
220 VAC / 230 VAC model	: T3.15A

2 Remove the fuse cover.



1 Remove the one Phillips pan head screw (with flat and spring washers) (M4 x 10).

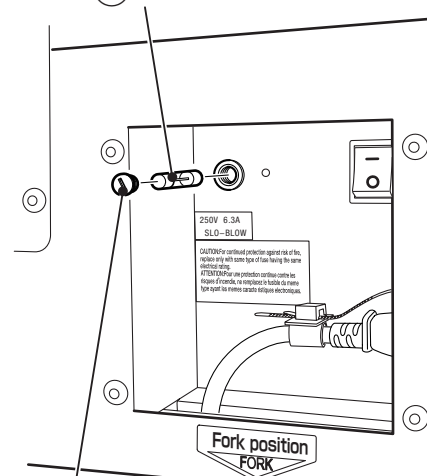


Fuse holder cap

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Using a standard screwdriver, rotate it 45 degrees counter-clockwise.

5 Remove the fuse.



4 Remove the fuse holder cap.

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Service

Test Mode

Troubleshooting

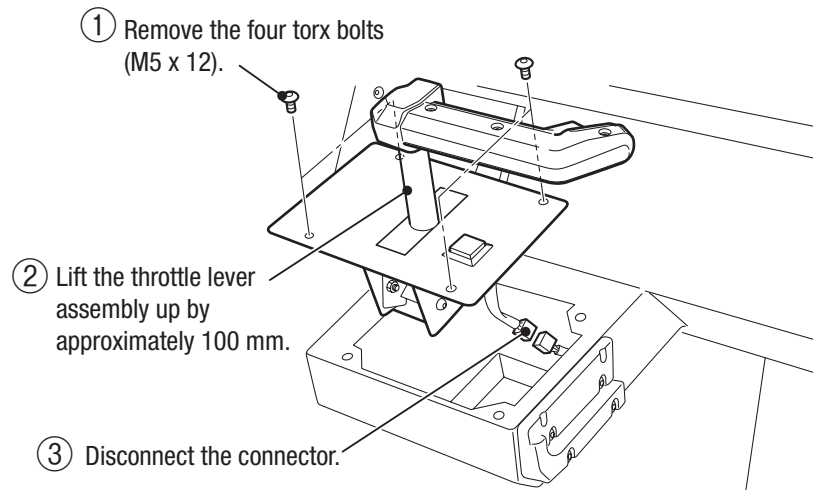
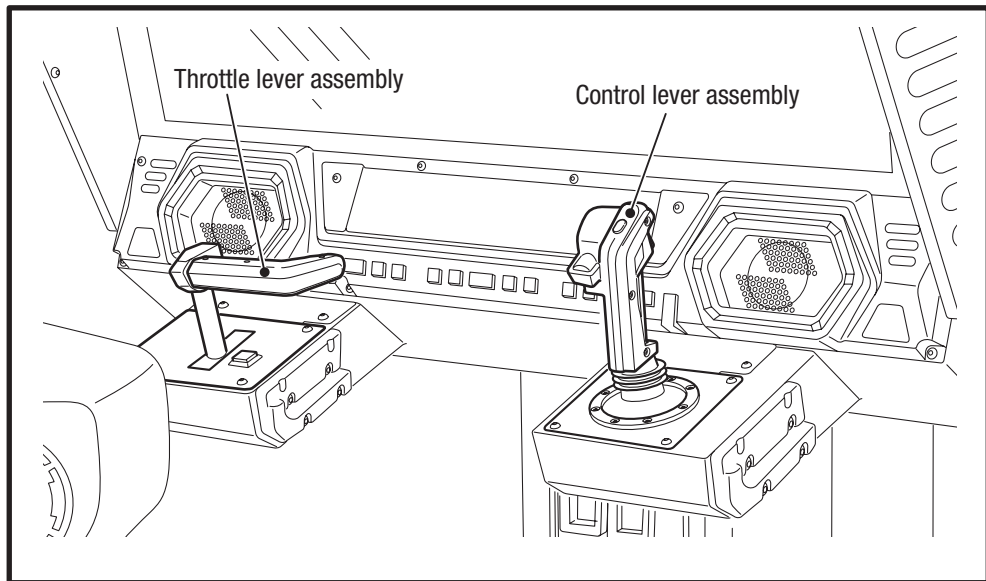
-Must be performed by a technician-

8B-4-8 Replacing the Throttle Lever Assembly

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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the throttle lever assembly.



- 3** To install, perform the procedure in reverse.
- 4** Calibrate the lever.
(See P-34 "(a) I/F CALIBRATION".)

NOTICE

- When installing, check the connector orientations, connect the connectors firmly to each other, and lock them securely.
- When installing, take care not to allow the connectors and harnesses to get caught.

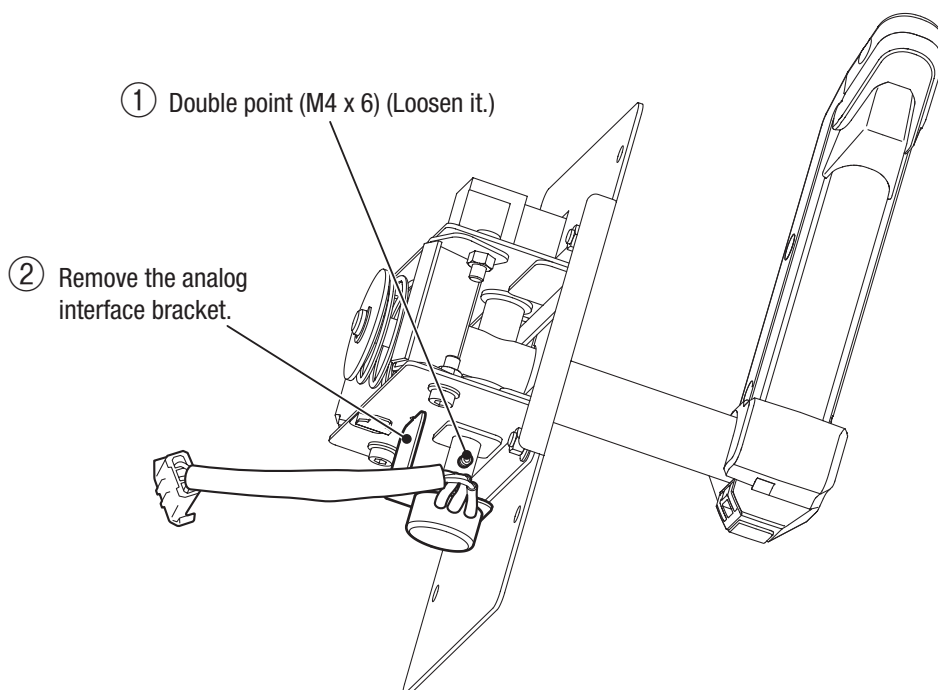
-Must be performed by a technician-

8B-4-9 Replacing the Throttle Lever Analog Interface

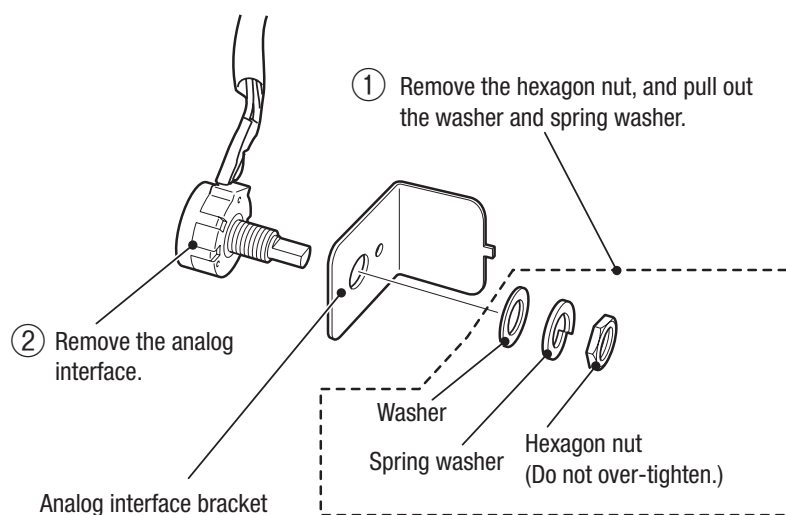
! WARNING

- 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the throttle lever assembly.
(See P-82 "8B-4-8 Replacing the Throttle Lever Assembly".)
- 3** Remove the analog interface together with the analog interface bracket.



- 4** Remove the analog interface.



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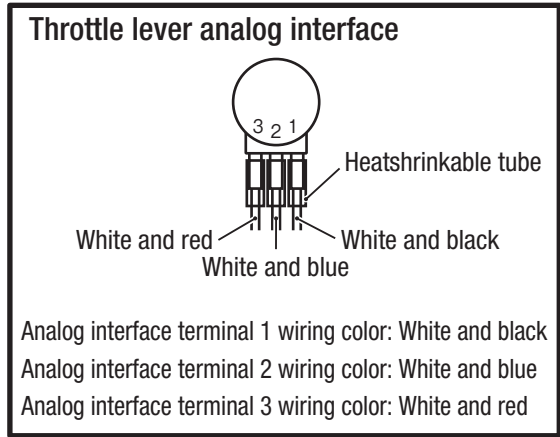
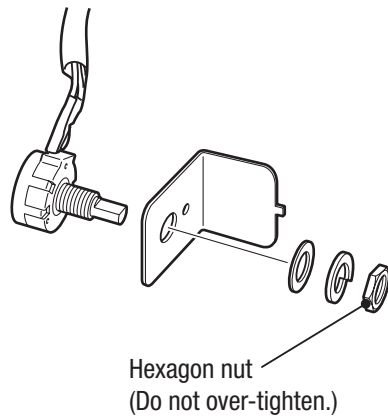
Service

Test Mode

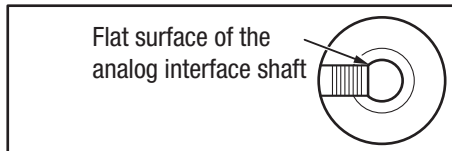
Troubleshooting

-Must be performed by a technician-

- 5 Install the analog interface by implementing the procedure in reverse.



- Tighten the double point (M4 x 6) to the level surface of the analog interface shaft.



- When installing, be careful not to pinch the harness in the lever's moving parts.

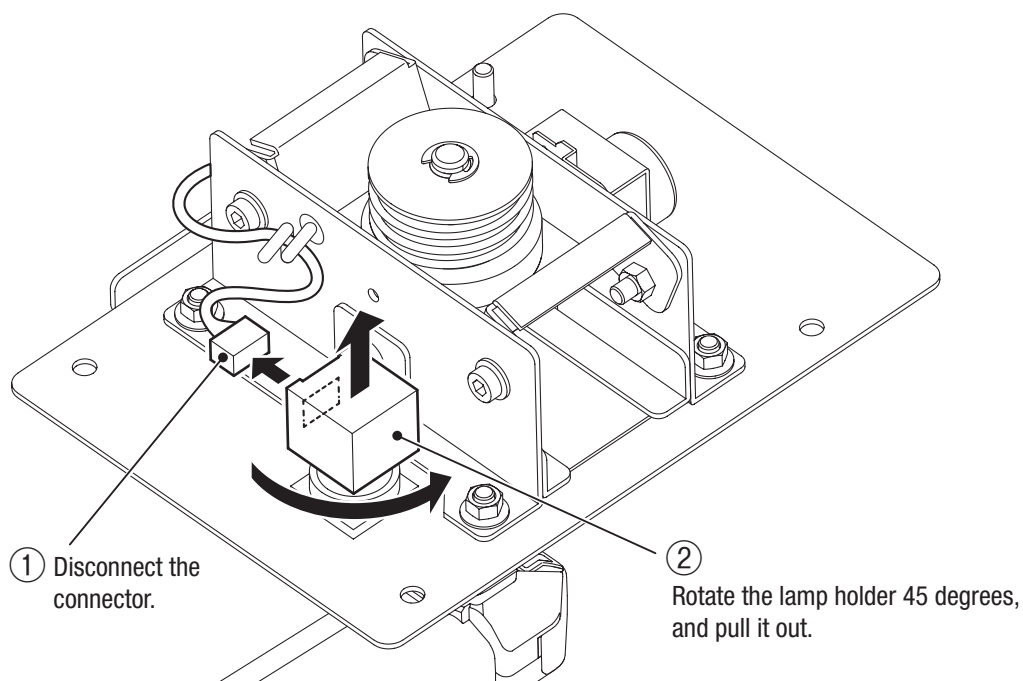
- 6 Calibrate the analog interface.
(See P-34 "(a) I/F CALIBRATION".)

-Must be performed by a technician-

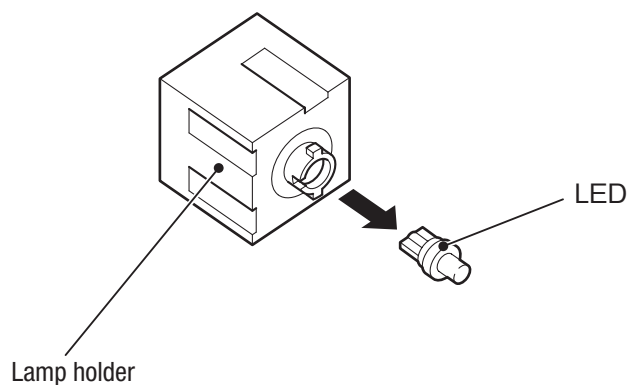
8B-4-10 Replacing the View Change Button**! WARNING**

- 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the throttle lever assembly.
(See P-82 "8B-4-8 Replacing the Throttle Lever Assembly".)
- 3** Remove the lamp holder.



- 4** When replacing the LED, insert the new LED into the lamp holder.



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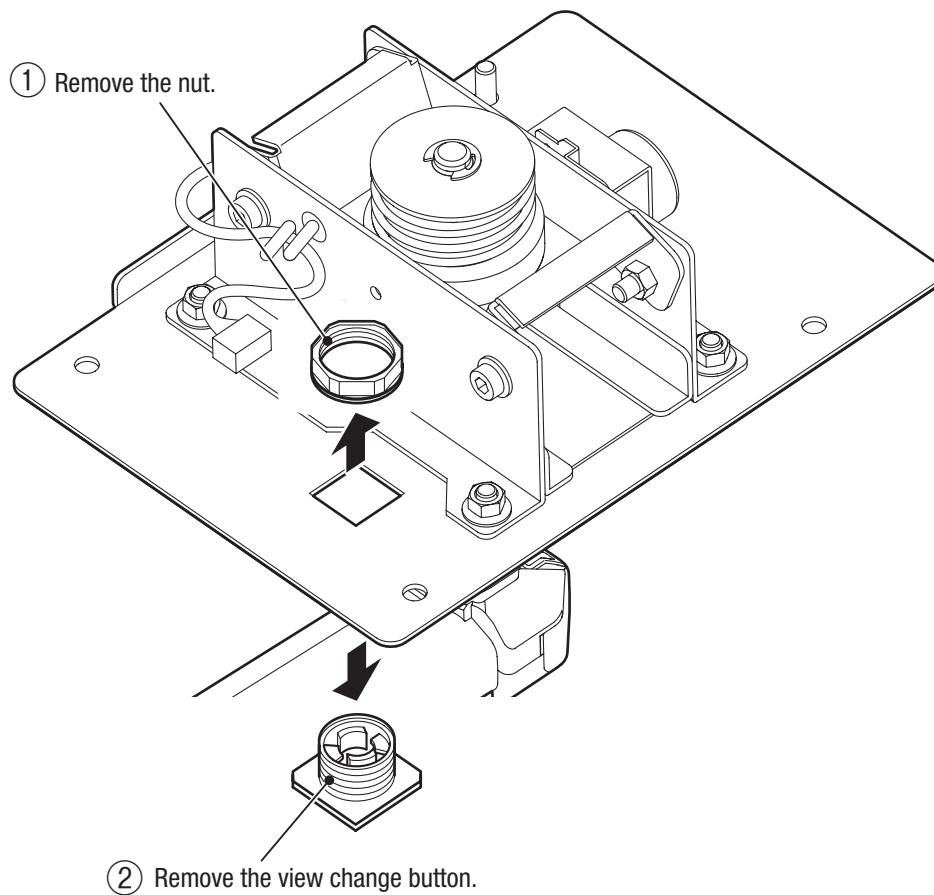
Service

Test Mode

Troubleshooting

-Must be performed by a technician-

- 5** Remove the view change button.



- 6** To install, perform the procedure in reverse.



- After replacement, be sure to perform the I/O test for each switch. (See P-35 "(b) SWITCH TEST".)

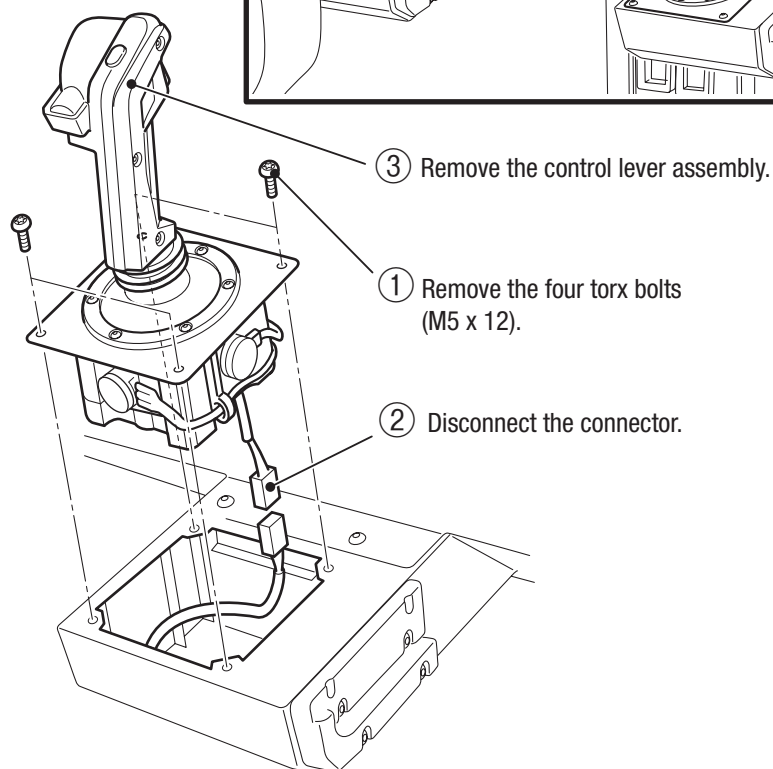
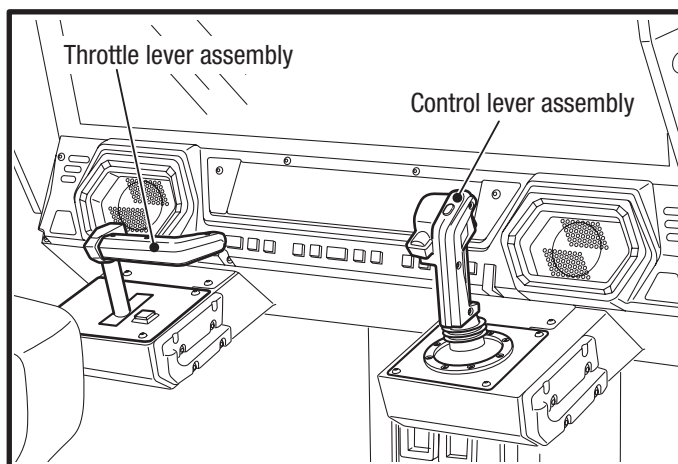
-Must be performed by a technician-

8B-4-11 Replacing the Control Lever Assembly

! 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.



- 3** To install, perform the procedure in reverse.
- 4** Calibrate the analog interface. (See P-34 "(a) I/F CALIBRATION".)

NOTICE

- When installing, check the connector orientations, connect the connectors firmly to each other, and lock them securely.
- When installing, take care not to allow the connectors and harnesses to get caught.

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Service

Test Mode

Troubleshooting

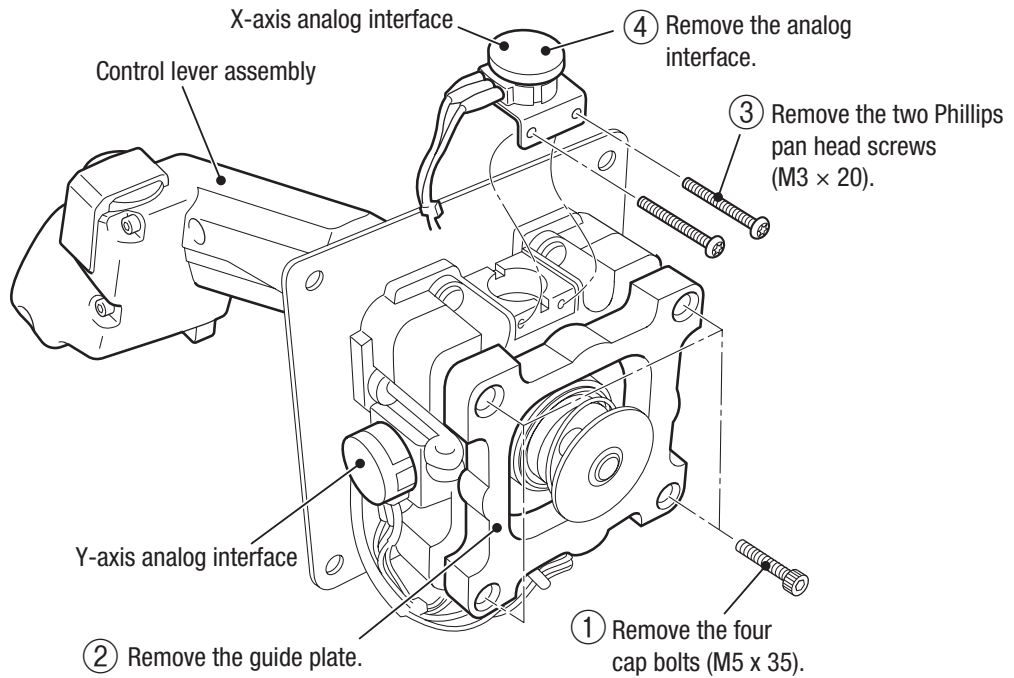
-Must be performed by a technician-

8B-4-12 Replacing the Control Lever Analog Interface

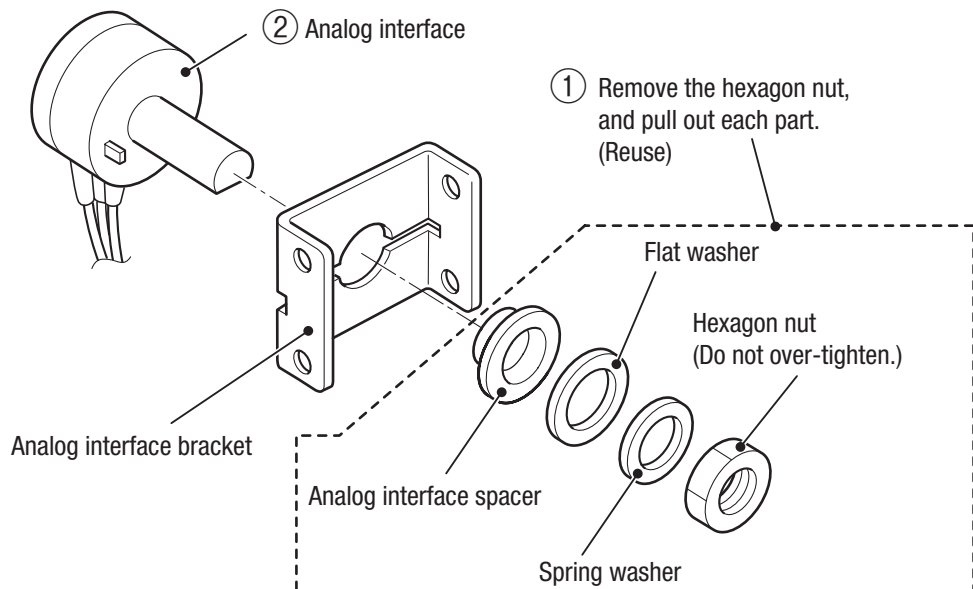
WARNING

● 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Remove the damaged analog interface together with the analog interface bracket.

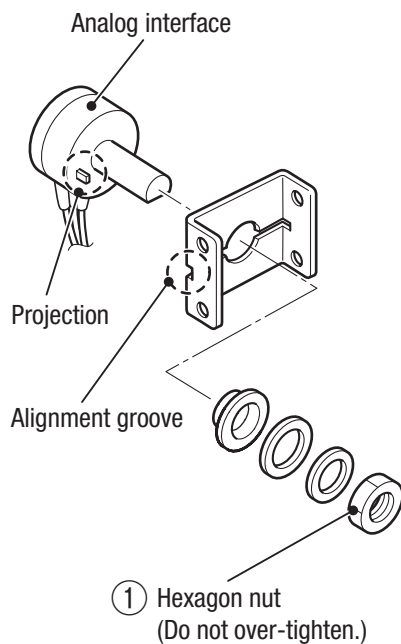


- 4** Remove the damaged analog interface.



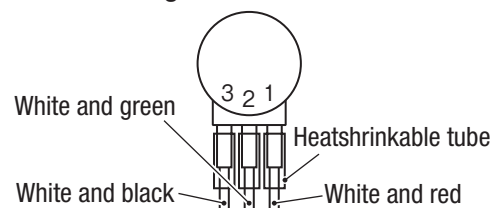
-Must be performed by a technician-

- 5 Install the analog interface by implementing the procedure in reverse.



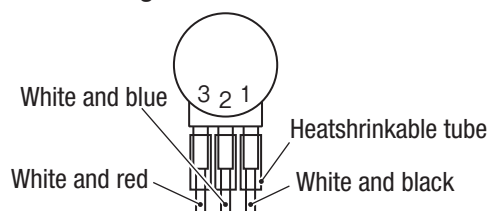
Wiring colors of analog interface terminals and harness for connection

X-axis analog interface



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

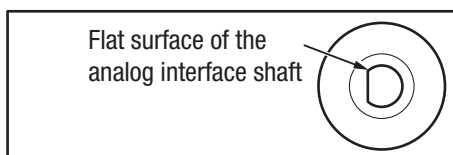
Y-axis analog interface



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

NOTICE

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



- When installing, be careful not to pinch the harness in the lever's moving parts.

- 6 Calibrate the analog interface. (See P-34 "(a) I/F CALIBRATION".)

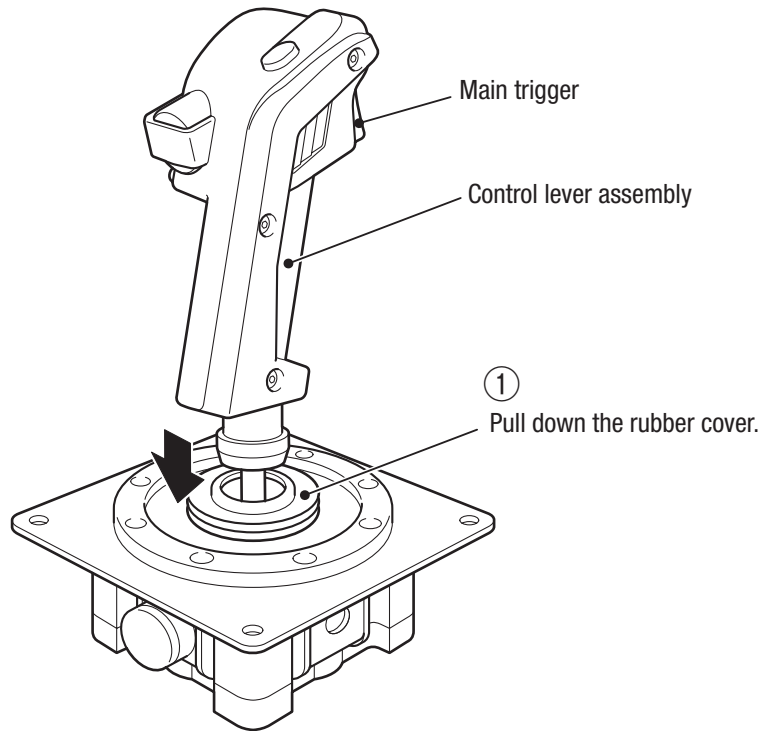
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Service

Test Mode
Troubleshooting

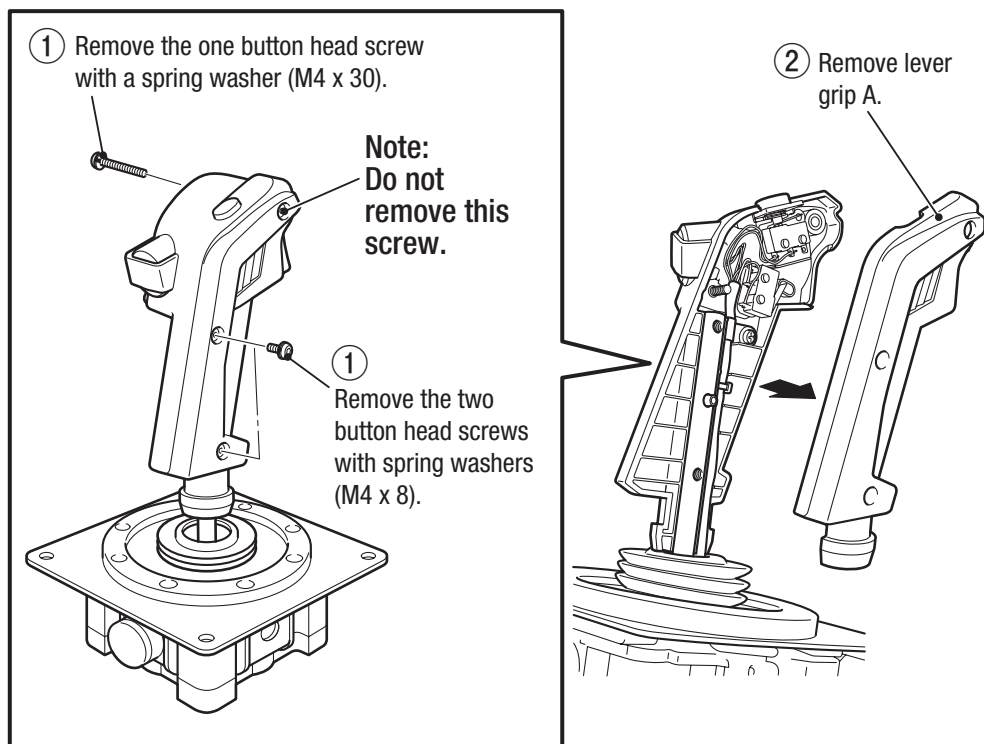
-Must be performed by a technician-

8B-4-13 Replacing the Control Lever Micro Switch

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Pull down the rubber cover.

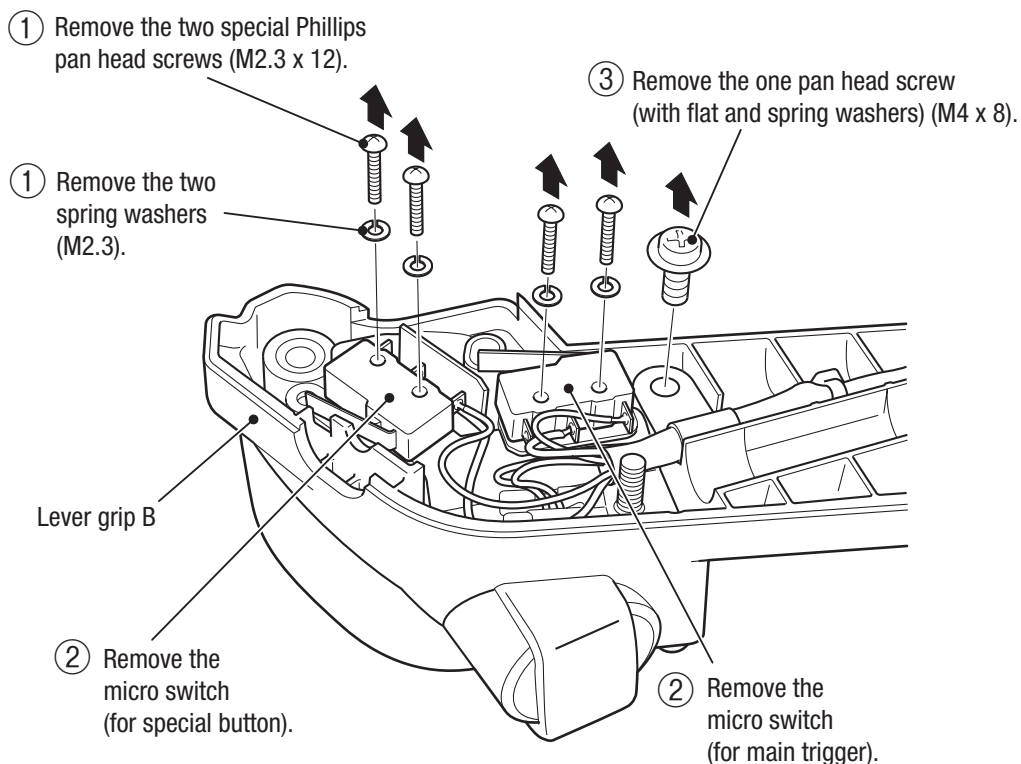


- 4** Disassemble the lever grip.



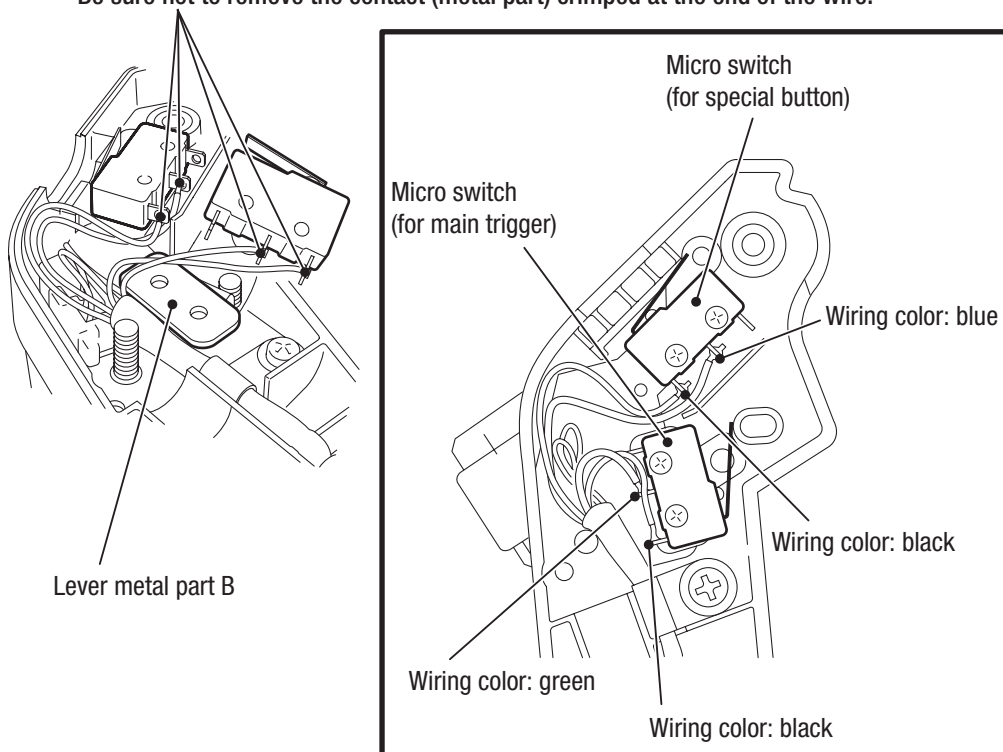
-Must be performed by a technician-

5 Remove the screw.



6 Replace the damaged micro switch.

- ① Melt the solder of the terminals and replace the micro switch.
 * Be sure not to remove the contact (metal part) crimped at the end of the wire.



NOTICE

- When installing, take care not to allow the harness to get caught.
- Be very careful when handling the soldering iron.
- When soldering the wiring to the micro switch, ensure that the combinations of wiring colors and terminals are correct.

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Service

Test Mode
Troubleshooting

8B. Service

-Must be performed by a technician-

- 7 To install, perform the procedure in reverse.
Install the harness along the shaft so that there are no gaps between them.



- After replacement, be sure to perform the I/O test for each switch.
(See P-35 "(b) SWITCH TEST".)

-Must be performed by a technician-

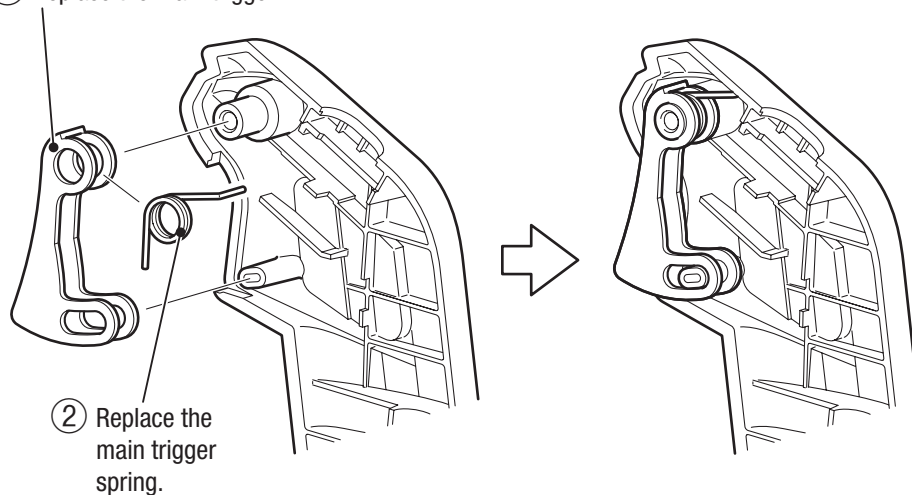
8B-4-14 Replacing the Main Trigger

! WARNING

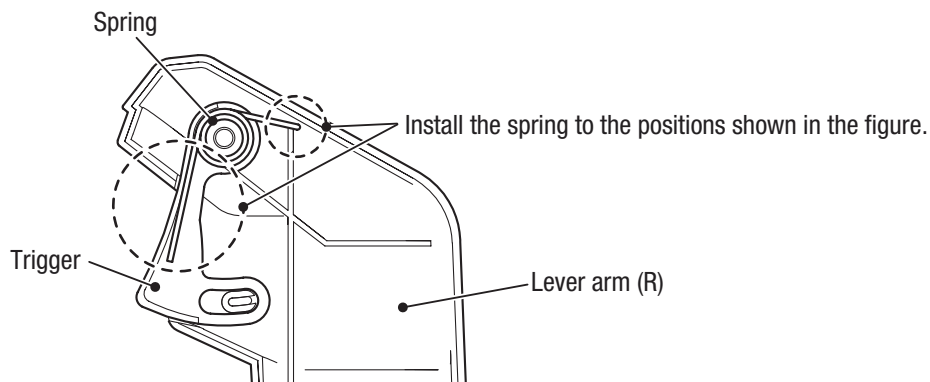
- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Disassemble the lever grip.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **4**.)
- 4** Replace the main trigger and the main trigger spring.

- 1** Replace the main trigger.

**NOTICE**

- Install the spring as shown in the figure. Check that the spring securely latches on the trigger and the lever arm (R).



- 5** To install, perform the procedure in reverse.

NOTICE

- After replacement, be sure to perform the I/O test for each switch.
(See P-35 "(b) SWITCH TEST".)

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Service

Test Mode

Troubleshooting

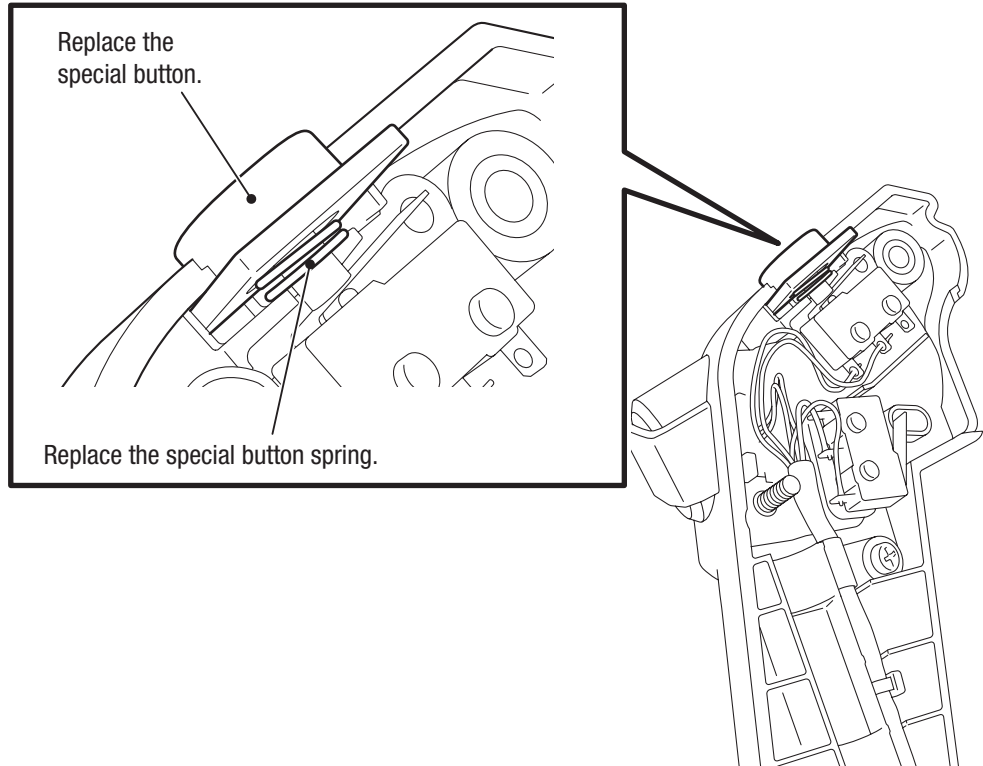
-Must be performed by a technician-

8B-4-15 Replacing the Special Button

! 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Disassemble the lever grip.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **4**.)
- 4** Replace the special button and the spring.



- 5** To install, perform the procedure in reverse.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **4**.)



- After replacement, be sure to perform the I/O test for each switch.
(See P-35 "(b) SWITCH TEST".)

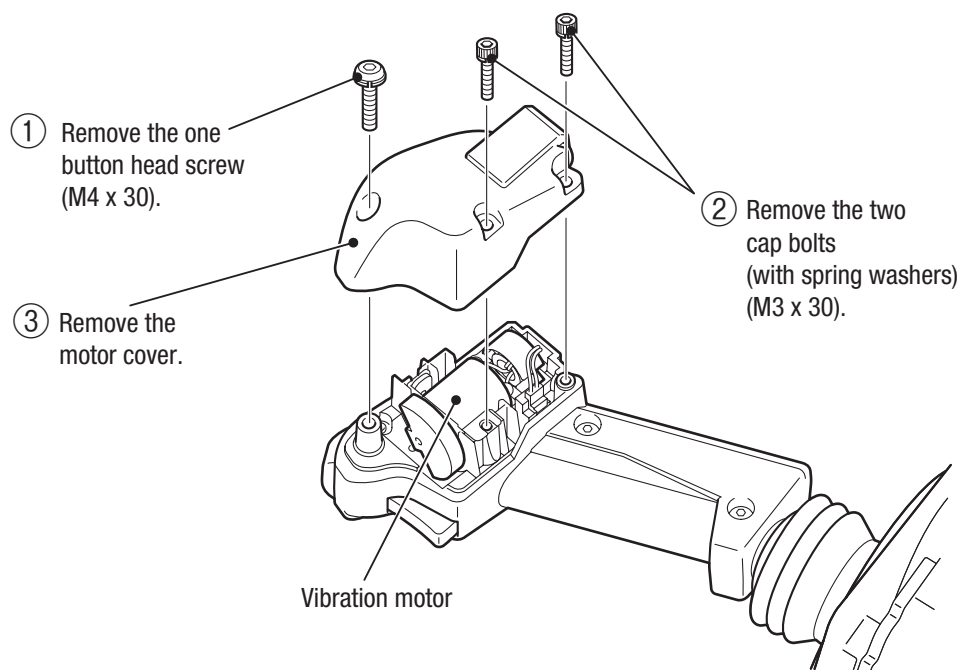
-Must be performed by a technician-

8B-4-16 Replacing the Control Lever Vibration Motor

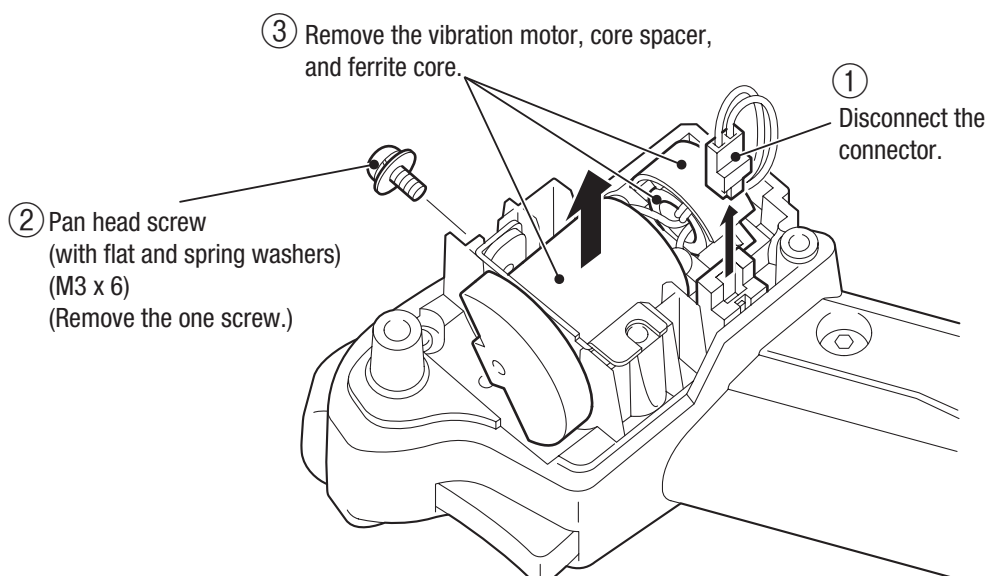
! WARNING

- 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Remove the motor cover.



- 4** Remove the vibration motor, ferrite core and core spacer.



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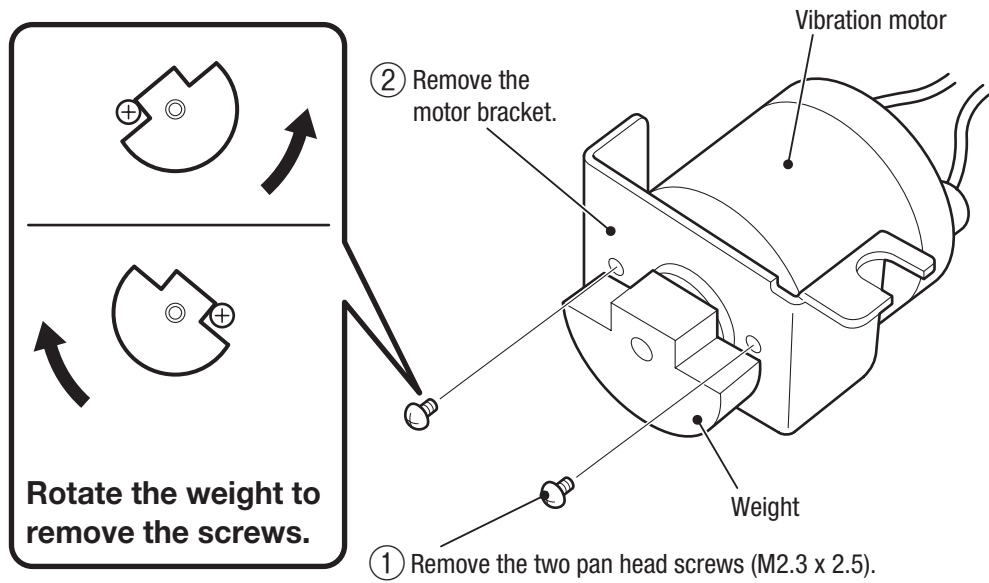
Service

Test Mode

Troubleshooting

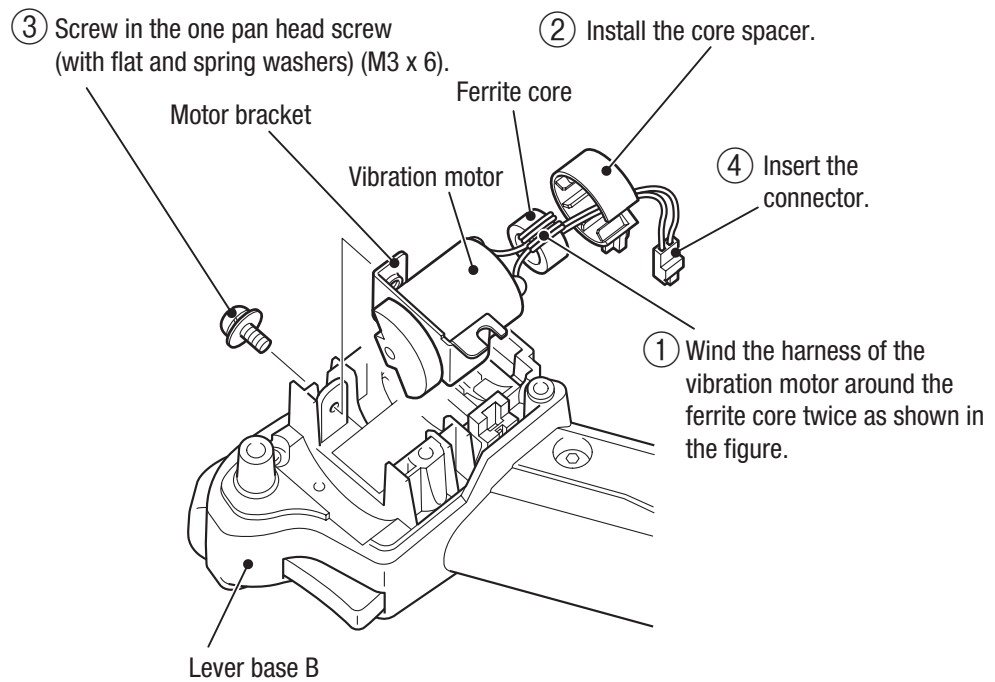
-Must be performed by a technician-

- 5** Replace the vibration motor.



- 6** Install a new vibration motor by implementing the procedure in reverse.

- 7** Mount the vibration motor, the ferrite core and the core spacer on lever base B.



- 8** Be sure to break in the machine after replacing the vibration motor. To break in the machine, refer to P-37 "(c) OUTPUT TEST" and run the motor for approximately 30 seconds with (d) POWER set to 15, and (c) VIBRATION set to ON.

- 9** After breaking in the machine, exit Test mode.



● If any abnormal noises are generated during the break-in operation, check the installation status of the motor for any abnormalities.

-Must be performed by a technician-

8B-4-17 Replacing the Spring or Spring Stopper

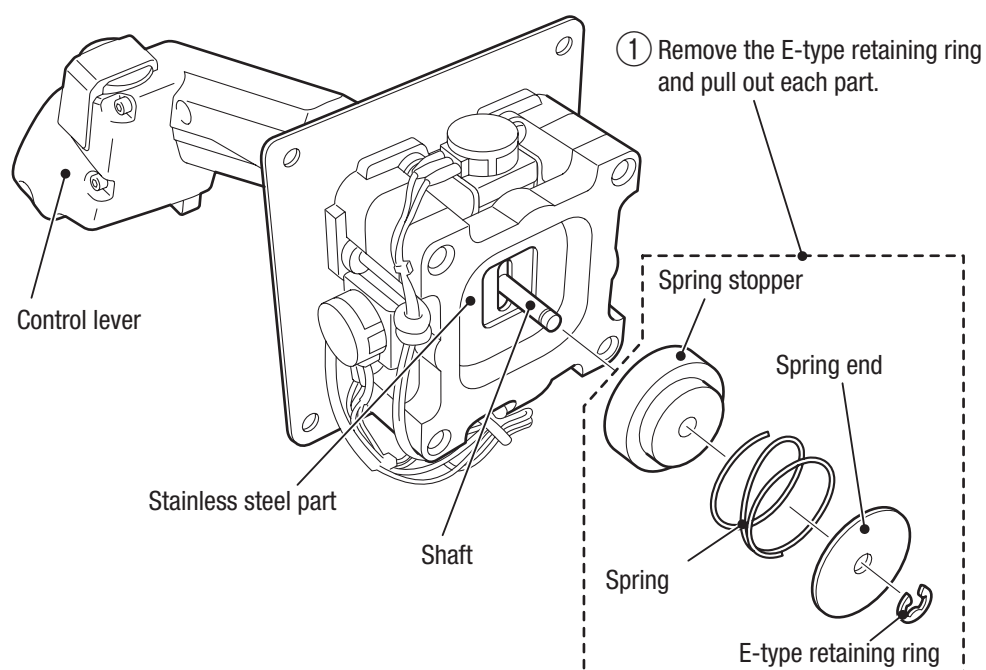
The throttle lever also has the same spring part structure.

The following procedure is explained in the section on the control lever.

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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the throttle lever assembly or the control lever assembly.
(See P-82 "8B-4-8 Replacing the Throttle Lever Assembly", P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Use pliers or a similar tool to remove the E-type retaining ring, and replace the spring or the spring stopper.



Apply silicon grease to the sliding areas of the spring and the spring stopper. (See P-64 "8B-1-2 Points for Service".)

- 4** To install, perform the procedure in reverse.

NOTICE

- When installing, take care not to allow the harness to get caught in the lever's moving parts.

- 5** Calibrate the analog interface. (See P-34 "(a) I/F CALIBRATION".)

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Service

Test Mode

Troubleshooting

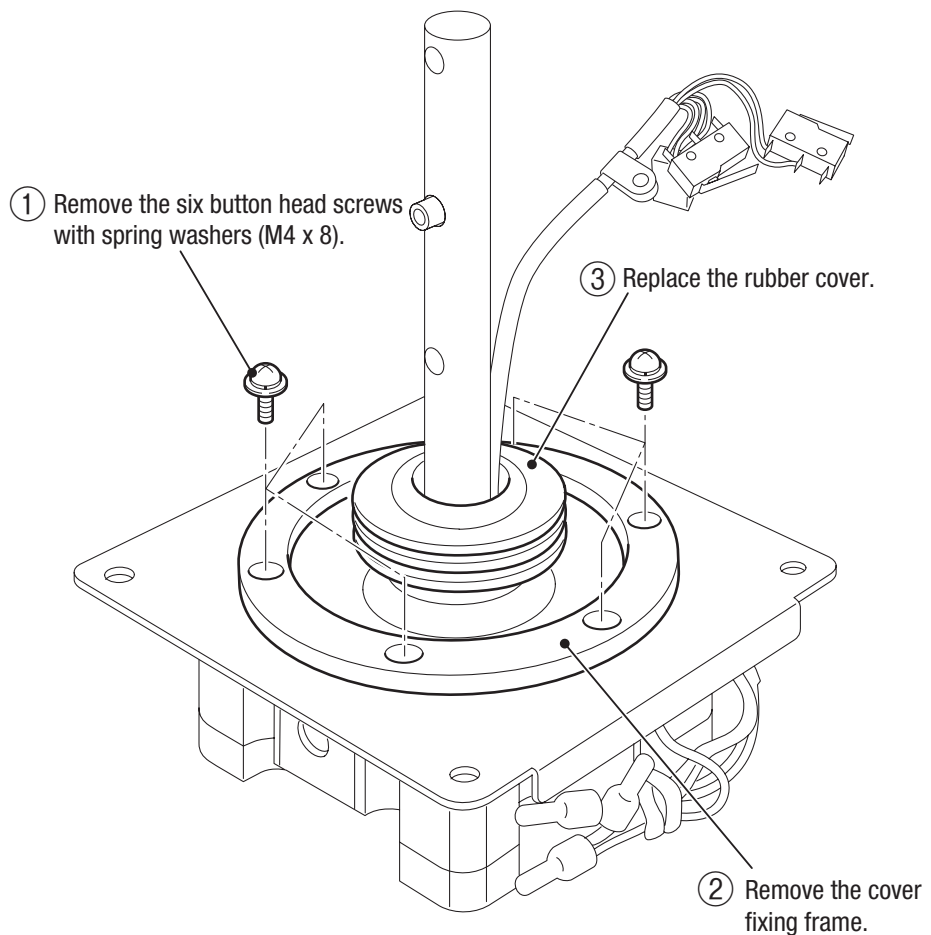
-Must be performed by a technician-

8B-4-18 Replacing the Rubber Cover

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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Remove grips A and B of the control lever assembly.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **5**.)
- 4** Replace the rubber cover.



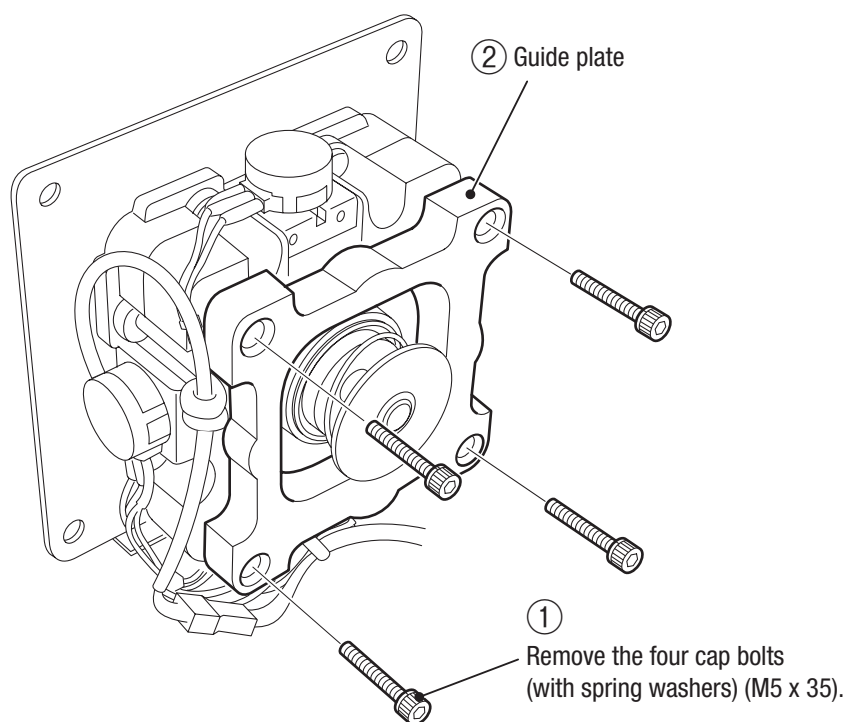
- 5** To install, perform the procedure in reverse.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **5**, **7**, **8**.)

-Must be performed by a technician-

8B-4-19 Replacing the Lever Sub-assembly**! 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Remove grips A and B of the control lever assembly.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **5**.)
- 4** Remove the rubber cover.
(See P-98 "8B-4-18 Replacing the Rubber Cover" **4** to **5**.)
- 5** Remove the guide plate.



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Service

Test Mode

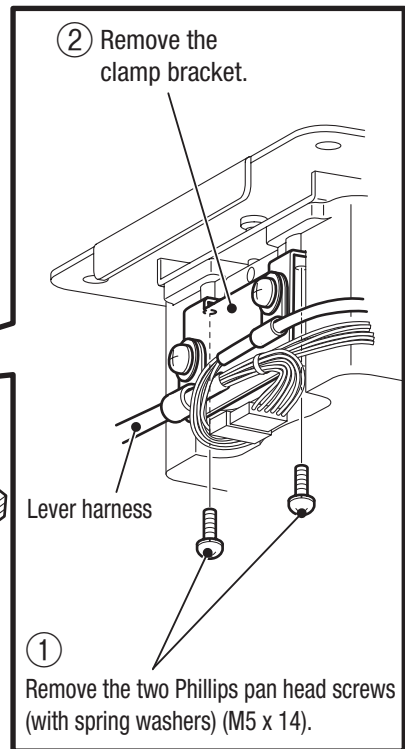
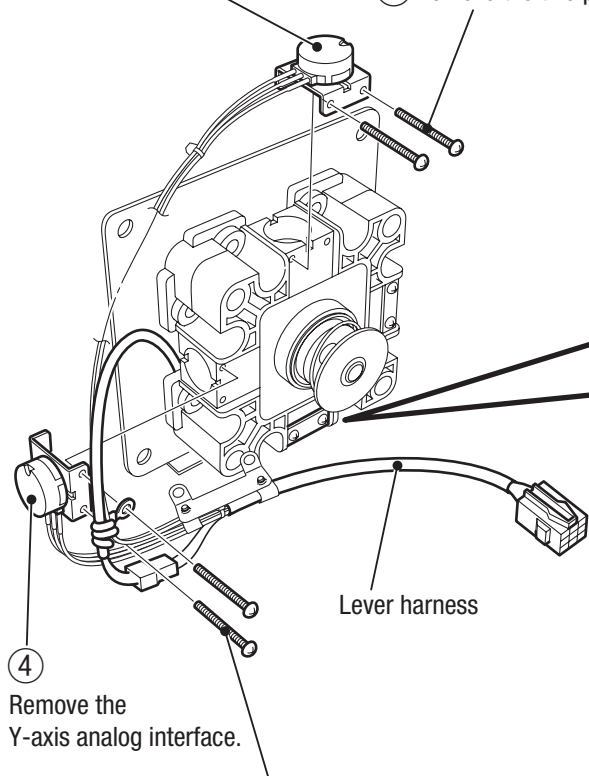
Troubleshooting

-Must be performed by a technician-

6 Remove the analog interface.

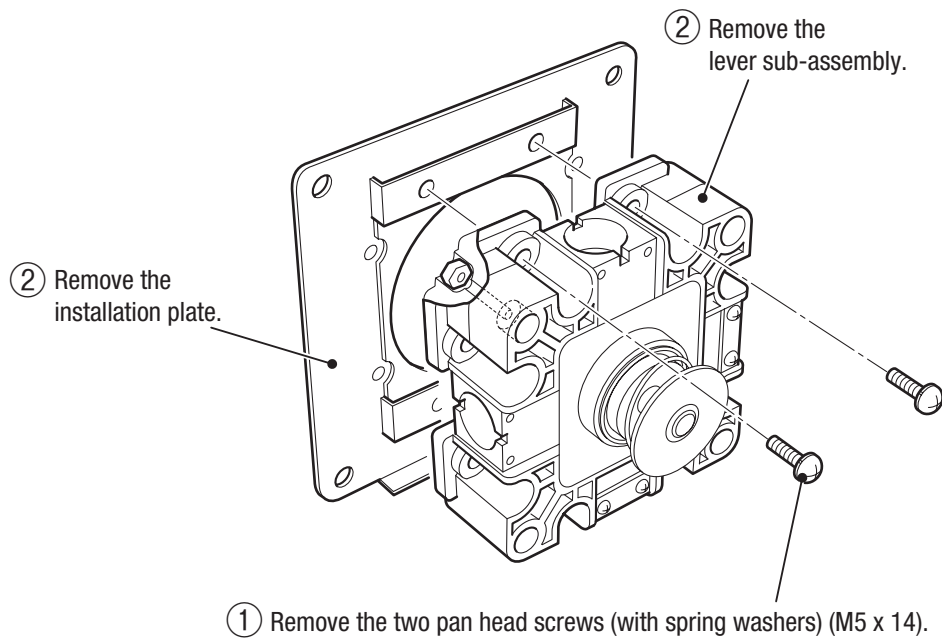
⑥ Remove the X-axis analog interface.

⑤ Remove the two pan head screws (M3 x 20).



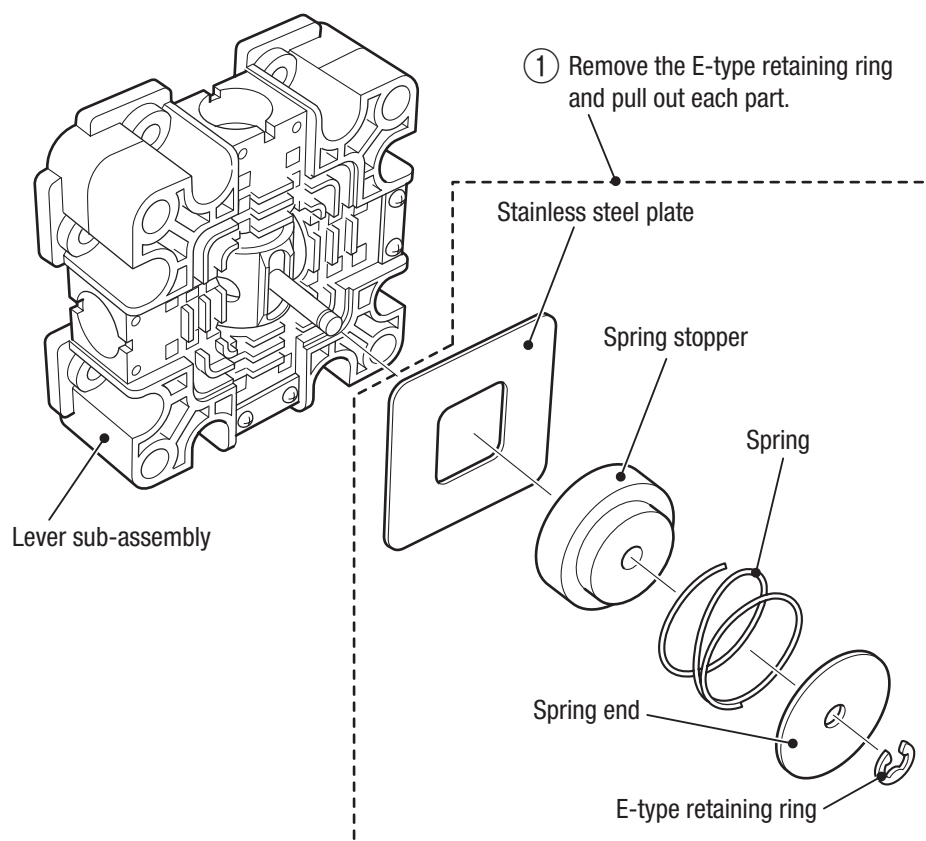
③ Remove the two pan head screws (M3 x 20).

7 Remove the lever sub-assembly.

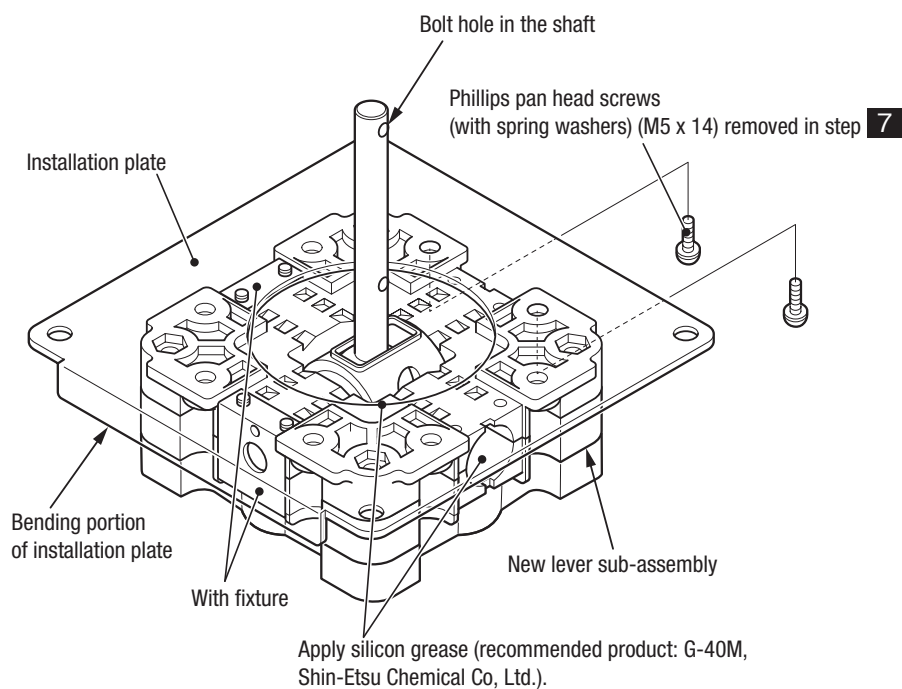


-Must be performed by a technician-

- 8** Use pliers or a similar tool to remove the E-type retaining ring, and remove each part.



- 9** Install the new lever sub-assembly onto the installation plate, using the screws that were removed in step **7**. Refer to the following figure to install it facing the correct direction.



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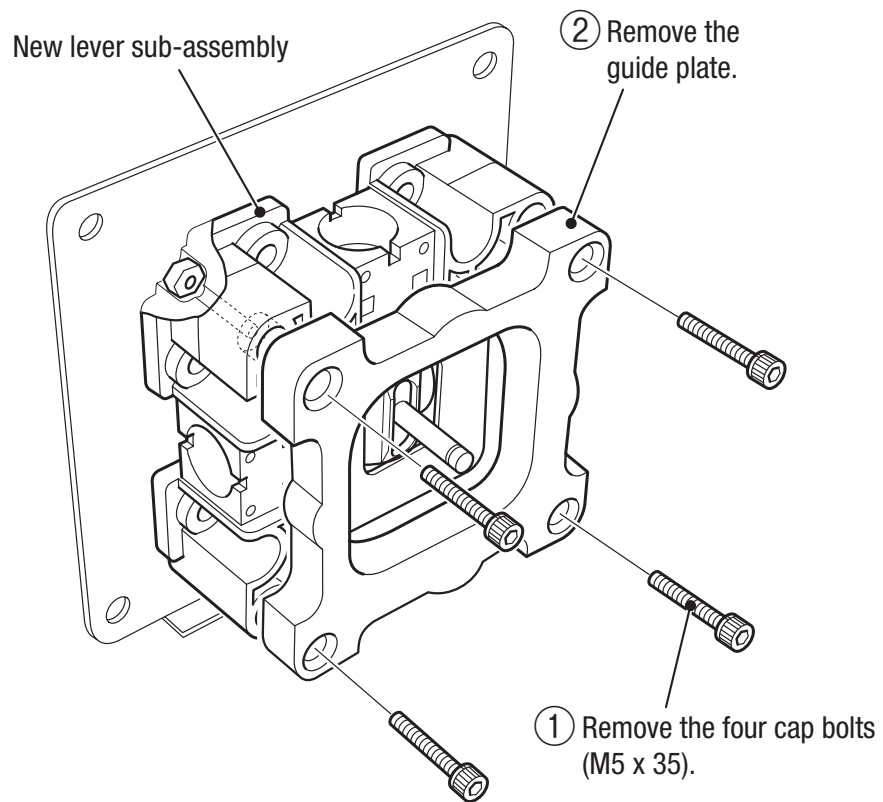
Service

Test Mode

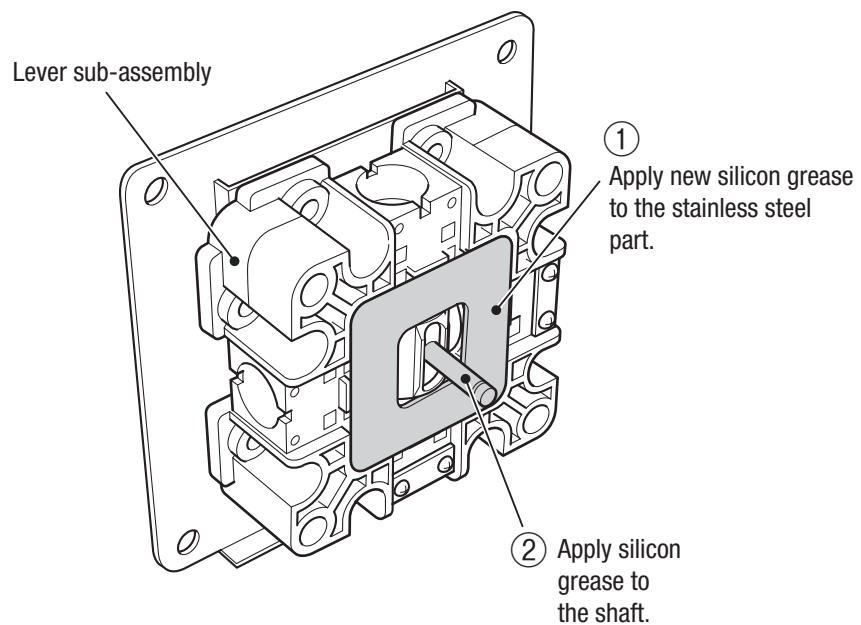
Troubleshooting

-Must be performed by a technician-

- 10** Remove the guide plate.

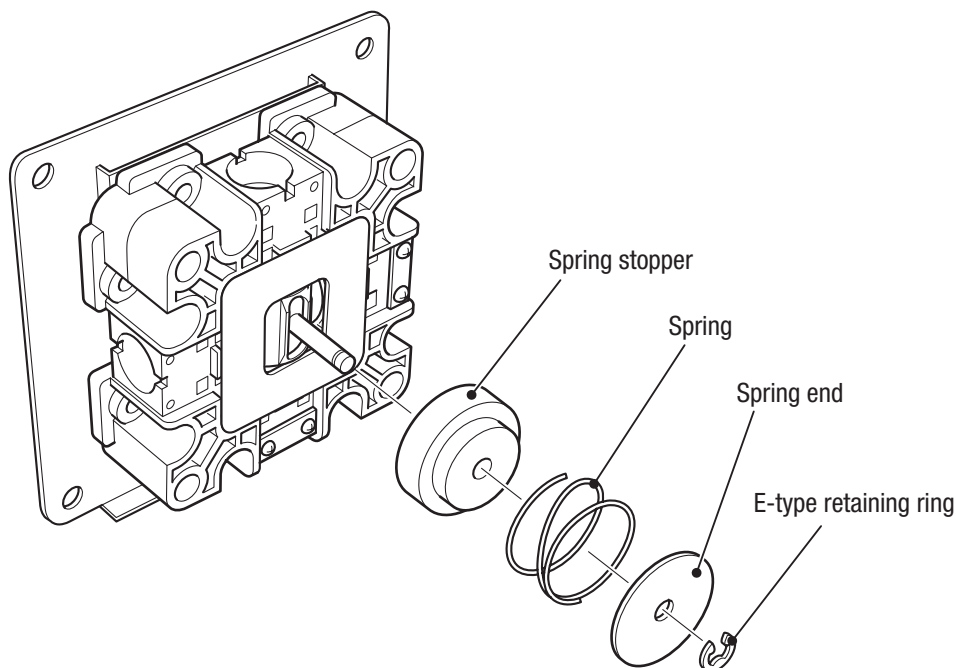


- 11** Apply silicon grease (recommended product: G-40M, Shin-Etsu Chemical Co, Ltd.).

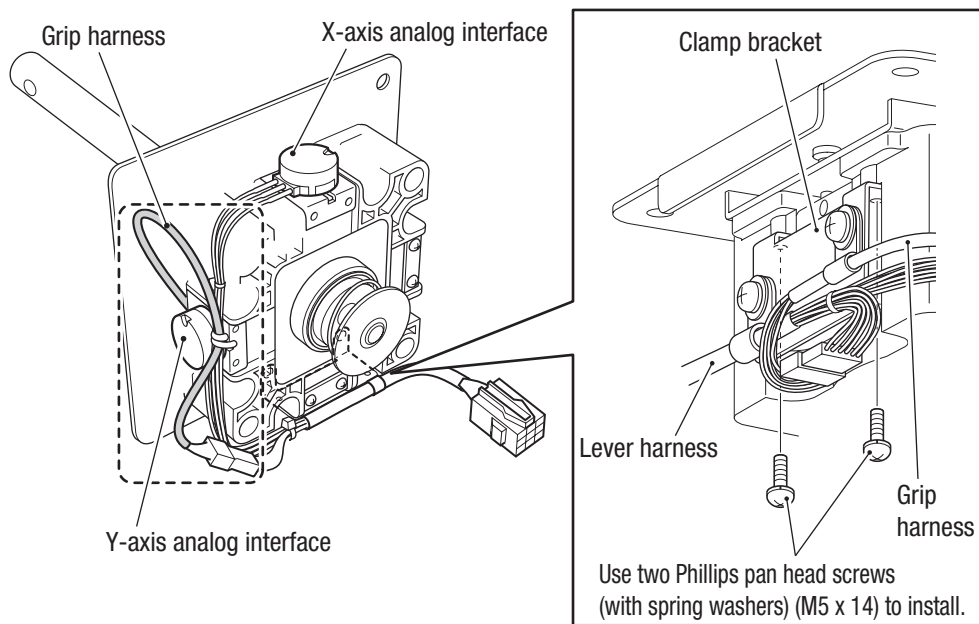


-Must be performed by a technician-

- 12 Apply silicon grease (recommended product: G-40M, Shin-Etsu Chemical Co, Ltd.) to the sliding areas. (See P-64 "8B-1-2 Points for Service".)

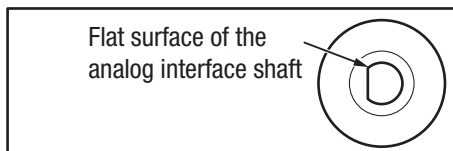


- 13 Install the clamp bracket, the analog interfaces and the harness by implementing the procedures described in step 6 in reverse.



NOTICE

- When installing, take care not to allow the harness to get caught 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.

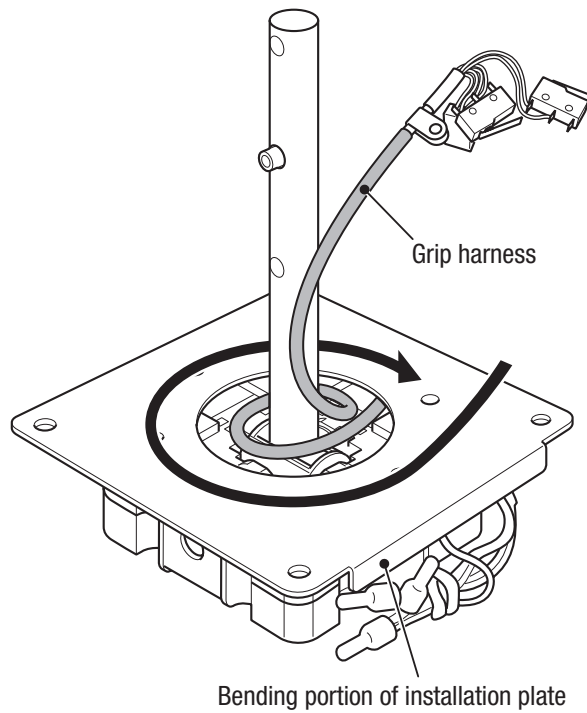


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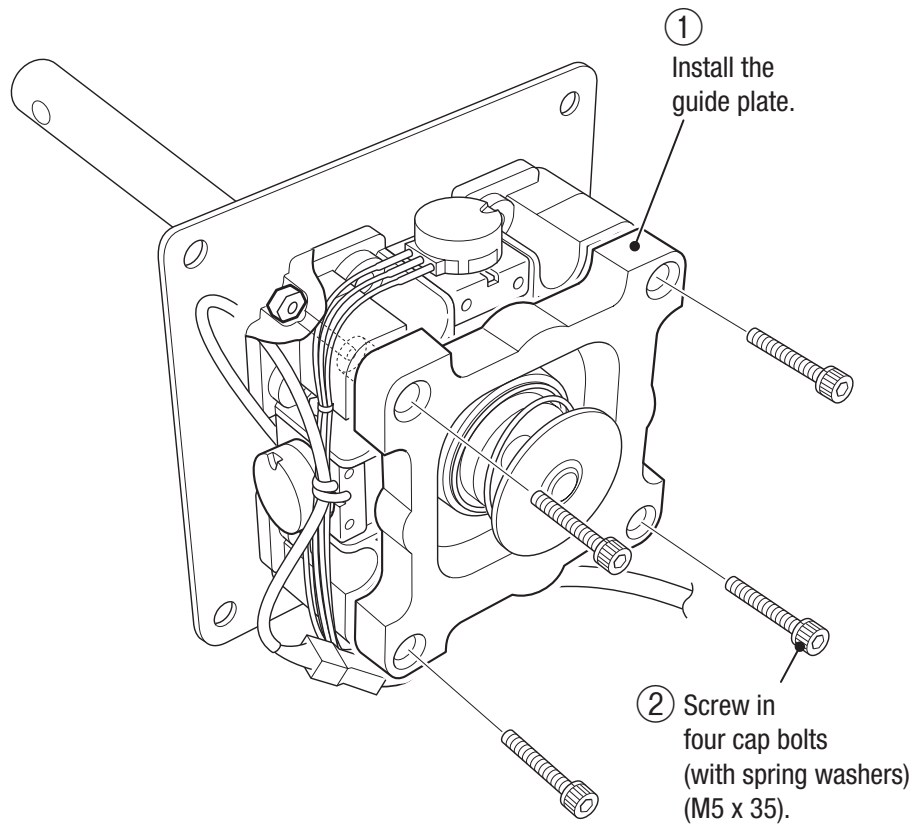
Test Mode
Troubleshooting

-Must be performed by a technician-

- 14** Turn the grip harness once around the shaft clockwise as shown in the following figure.



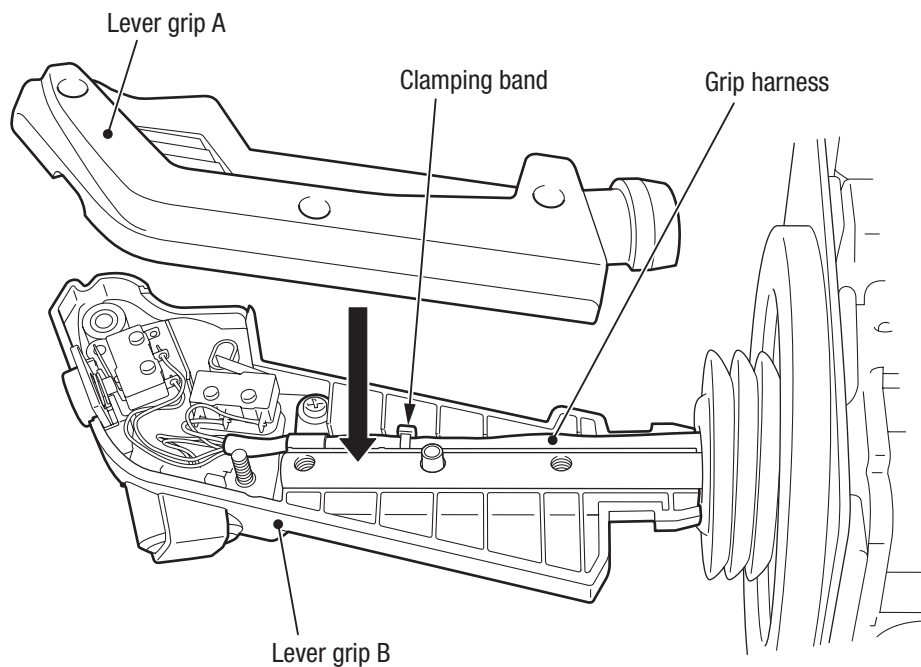
- 15** Install the guide plate that was removed in step **9**.



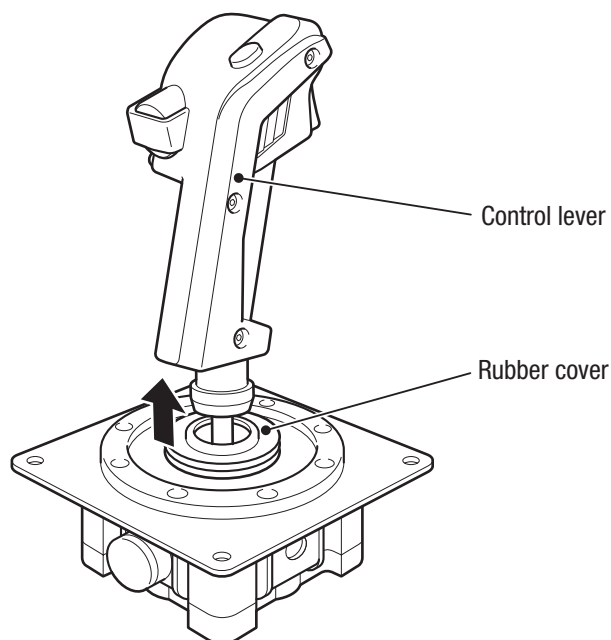
- When installing the guide plate, take care not to allow the stainless steel plate to get caught.

-Must be performed by a technician-

- 16** Install the rubber cover.
(See P-98 "8B-4-18 Replacing the Rubber Cover" **4** to **5**.)
- 17** Install the grip.
(See P-90 "8B-4-13 Replacing the Control Lever Micro Switch" **3** to **5**, **7**.)



- 18** Pull the rubber cover up to the base of the lever arm.



- 19** Install the control lever.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)



- When installing, take care not to allow the harness to get caught.

- 20** Calibrate the analog interface. (See P-34 "(a) I/F CALIBRATION".)

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Service

Test Mode

Troubleshooting

-Must be performed by a technician-

8B-4-20 Replacing the Protection PC Board

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

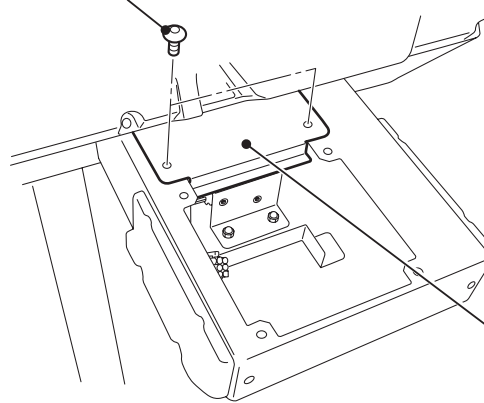
- PC boards are vulnerable to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged.

Before handling a PC board, discharge the static electricity from your body. (Example: touching the surface of grounded metal.)

- Check the connector orientations, connect the connectors firmly to each other, and lock them securely.
- Conduct input/output tests in Test mode.
(See P-33 "7-6-4 Input/Output Test (I/O TEST)".)

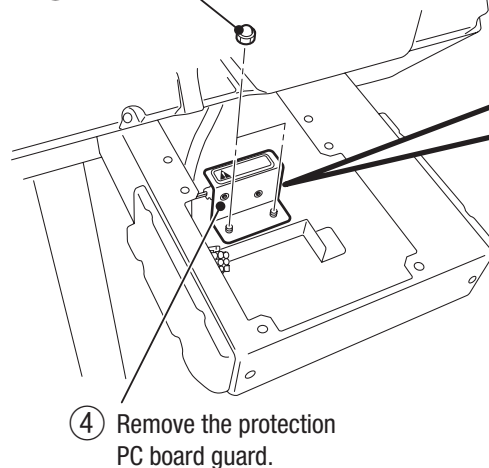
- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the control lever assembly.
(See P-87 "8B-4-11 Replacing the Control Lever Assembly".)
- 3** Remove the protection PC board.

- 1** Remove the two torx bolts (M5 x 12).



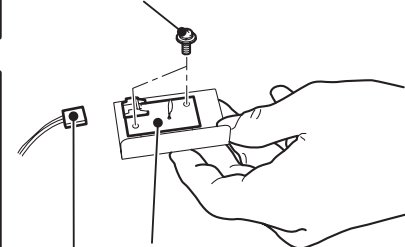
- 2** Remove the lever base cover (R).

- 3** Remove the two cap nuts (M4).



- 4** Remove the protection PC board guard.

- 6** Remove the two Phillips pan head screws (M3 x 6).



- 7** Remove the protection PC board.

- 5** Disconnect the connector.

- 4** To install, perform the procedure in reverse.

-Must be performed by a technician-

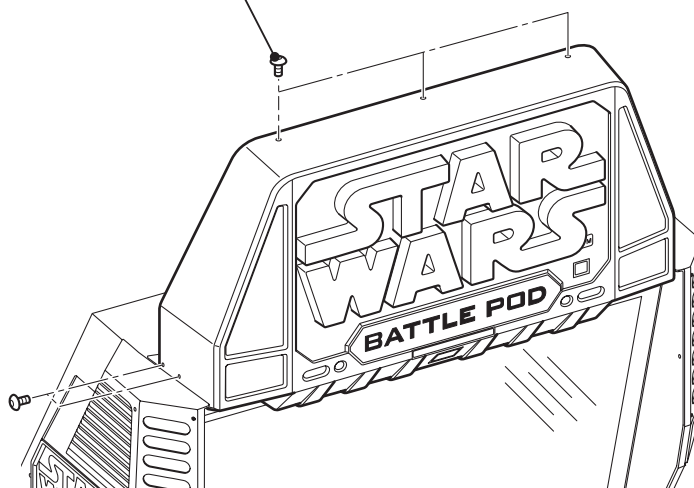
8B-4-21 Replacing the LED Module (Sign Box)

! WARNING

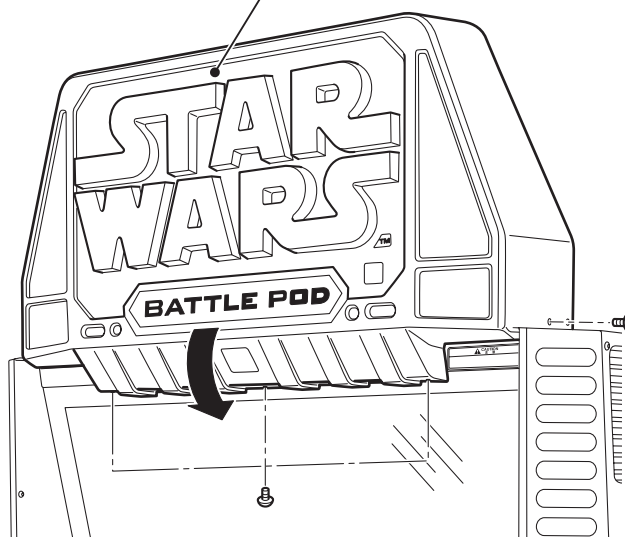
- In order to avoid electric shock, accident or injury to yourself or others as well as damage to the electronic circuits, be sure to turn off the power switch before starting this task.
- Replacement of the LED module (sign box) involves standing at an elevated height. Prepare a footstool or a similar tool in advance. Working in an unnatural body posture may result in injury or machine damage.

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the sign cover.

- 1** Remove the 10 torx bolts (M5 x 12).



- 2** Remove the sign cover.



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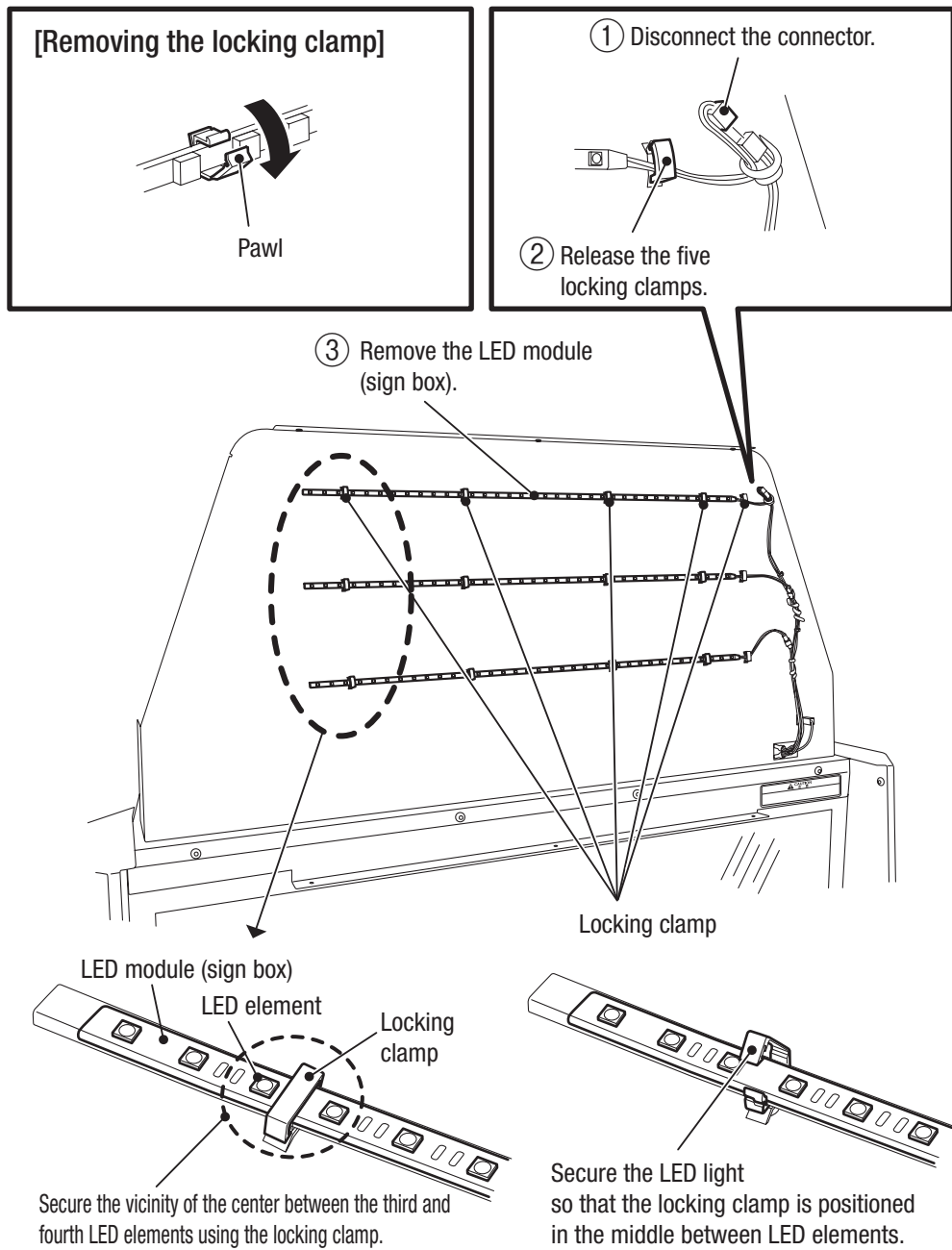
Service

Test Mode

Troubleshooting

-Must be performed by a technician-

3 Replace the LED module (sign box).



4 To install, perform the procedure in reverse.

-Must be performed by a technician-

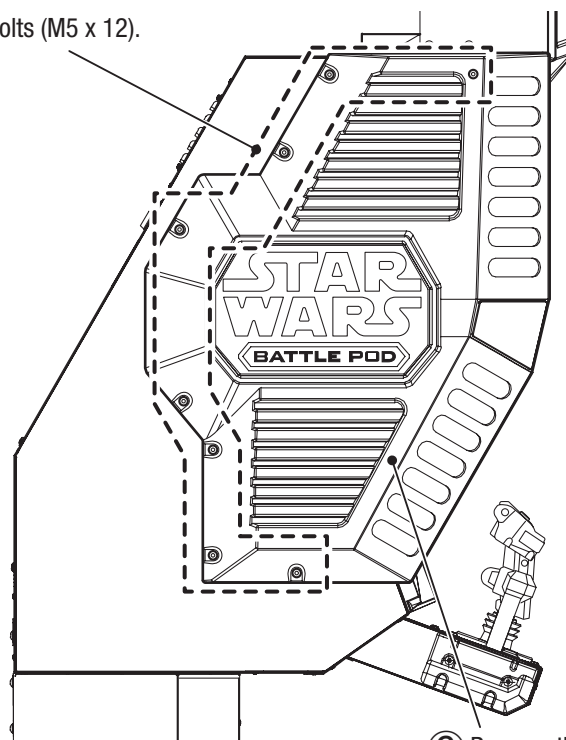
8B-4-22 Replacing the LED Module (Side Cover)

! 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.

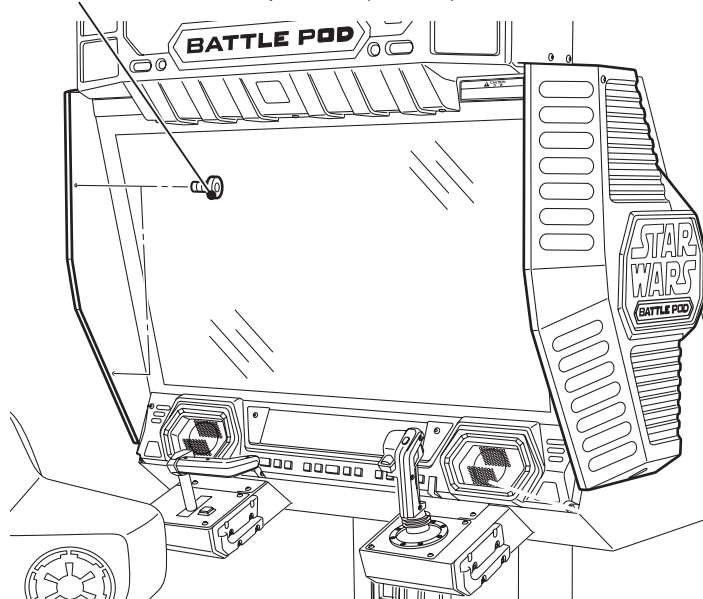
- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Remove the side cover.

- 1** Remove the eight torx bolts (M5 x 12).



- 3** Remove the side cover.

- 2** Remove the two low head cap screws (M5 x 12).



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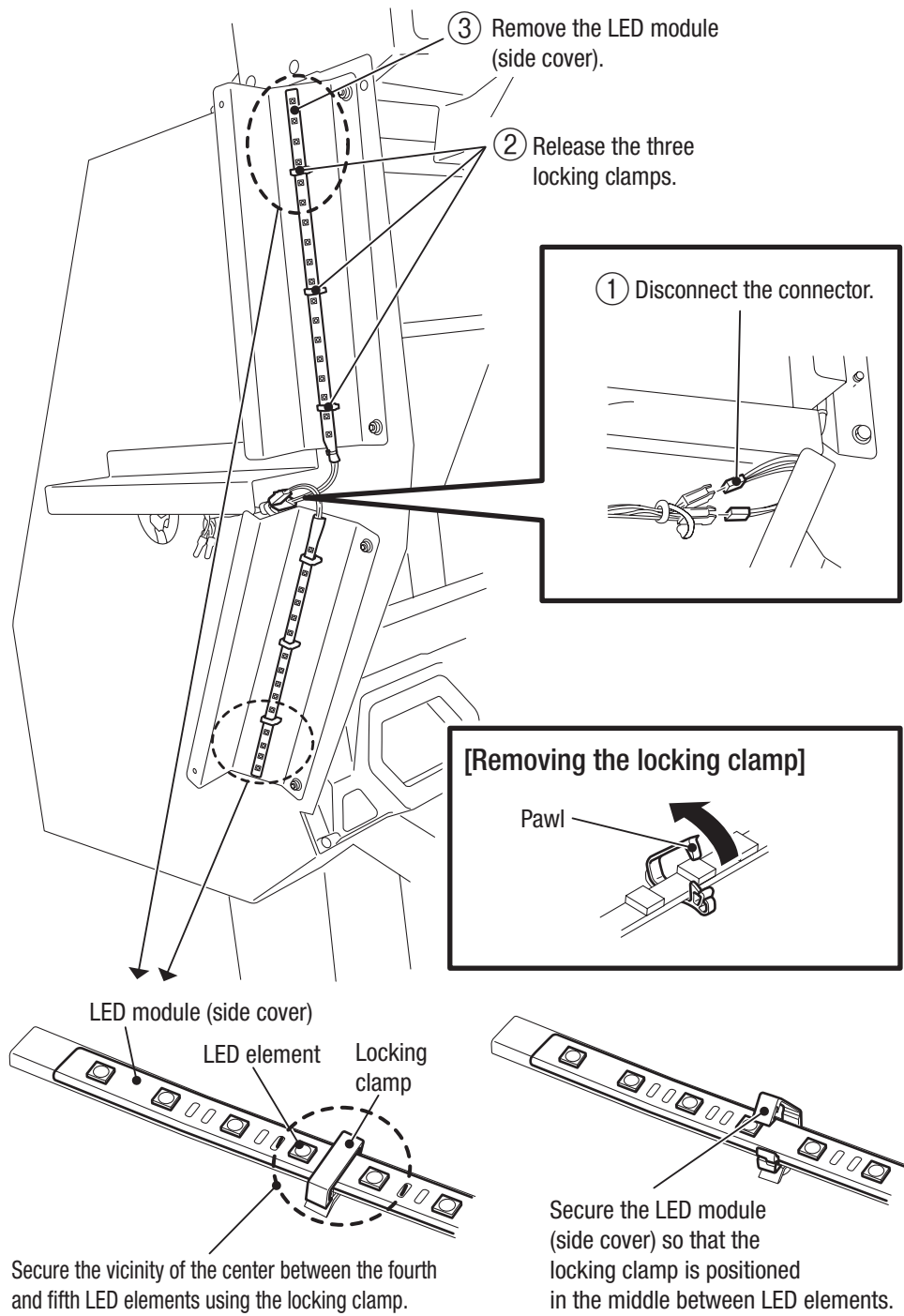
Service

Test Mode

Troubleshooting

-Must be performed by a technician-

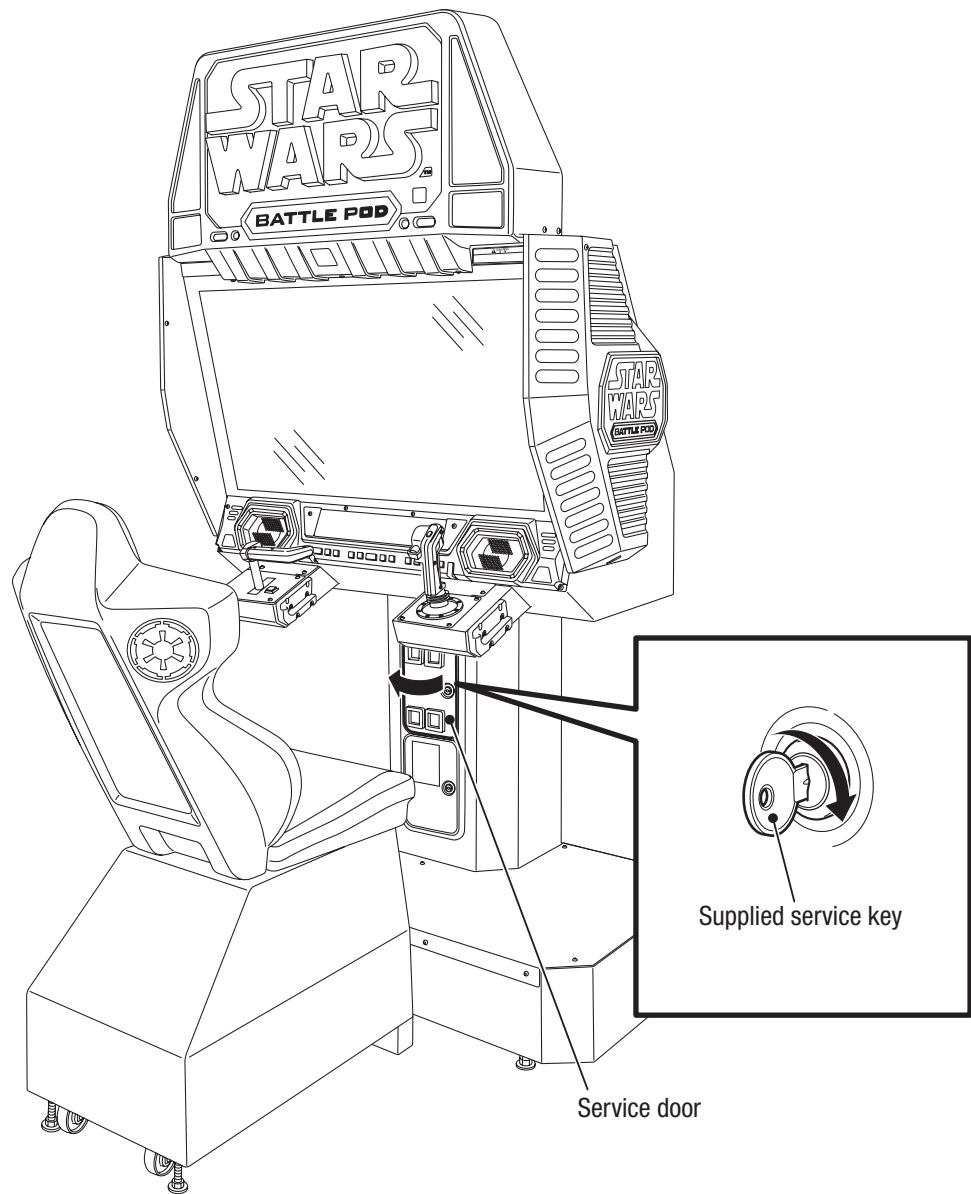
3 Replace the LED module (side cover).



4 To install, perform the procedure in reverse.

-Must be performed by a technician-**8B-4-23 Opening and Closing the Service Door**

- 1** Open the service door using the supplied service key.



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Test Mode

Troubleshooting

-Must be performed by a technician-

8B-4-24 Replacing the Coin Selector (U.S. and Asian Models)

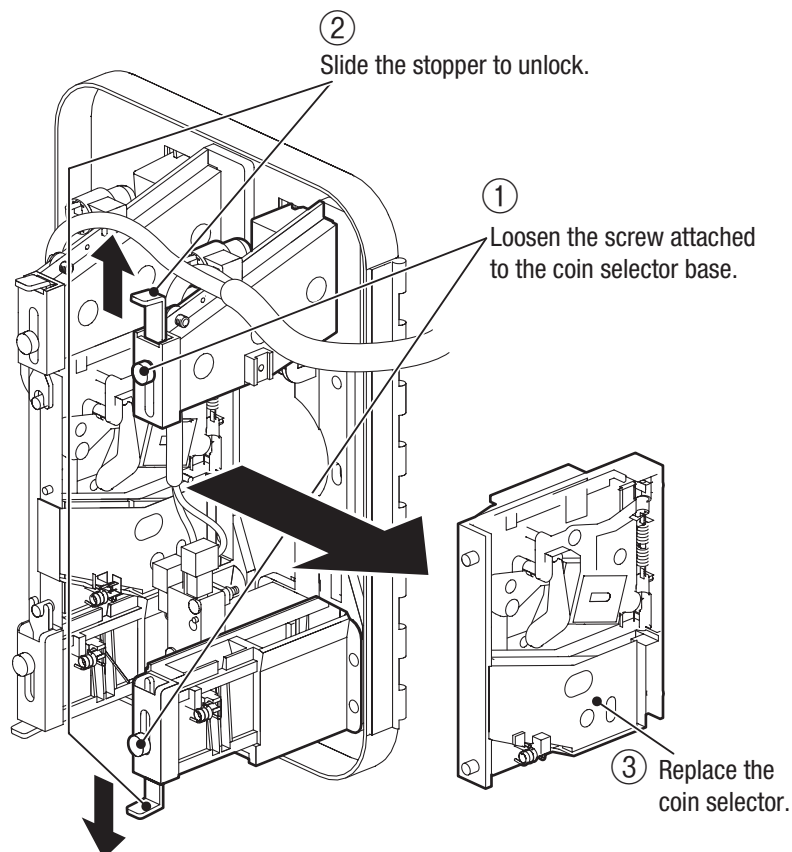
! WARNING

- 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

- When installing the coin selector, take care not to allow the connectors and harnesses to get caught.
- After replacement, be sure to check the operation of the coin switch by dropping a coin into the slot. (See P-33 "7-6-4 Input/Output Test (I/O TEST)".)

- 1** Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Open the service door.
(See P-111 "8B-4-23 Opening and Closing the Service Door".)
- 3** Replace the coin selector.



- 4** Lock the stopper by following the unlocking procedure in reverse, and close the coin door.
- 5** Coin selectors specified by BANDAI NAMCO Entertainment Inc.
 U.S. model: Suzo-Happ \$.25 USA Coin Mech (P/N 42-3079-100)
 Asian model: Asahiseiko AD-81P3B5 (HK 1\$ model)

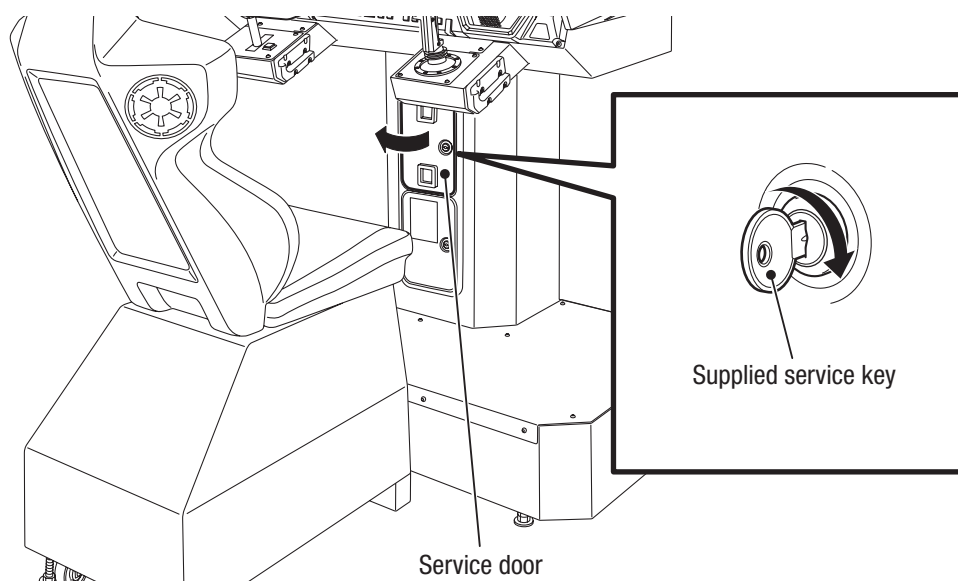
-Must be performed by a technician-

8B-4-25 Replacing the CASHFLOW (European Model)

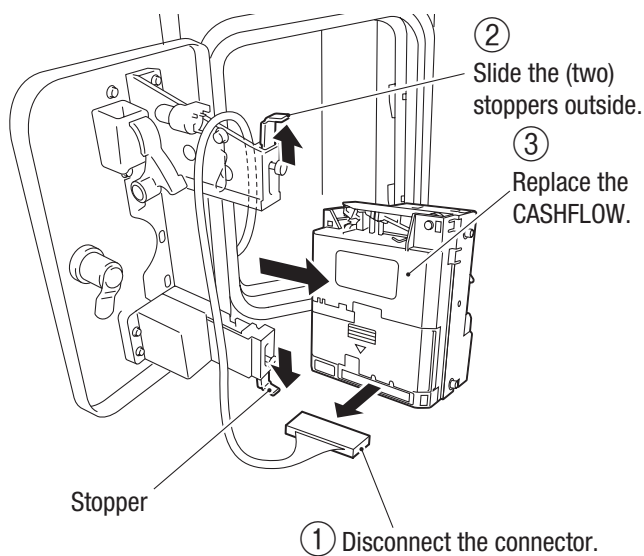
! WARNING

- 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Open the service door.
(See P-111 "8B-4-23 Opening and Closing the Service Door".)



- 3** Remove the connector. Slide the two stoppers to unlock them. Remove and replace the CASHFLOW.



- 4** To install, perform the procedure in reverse.

CASHFLOW specified by BANDAI NAMCO Entertainment Inc.
MEI CASHFLOW340 (P/N 65500327)

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Troubleshooting

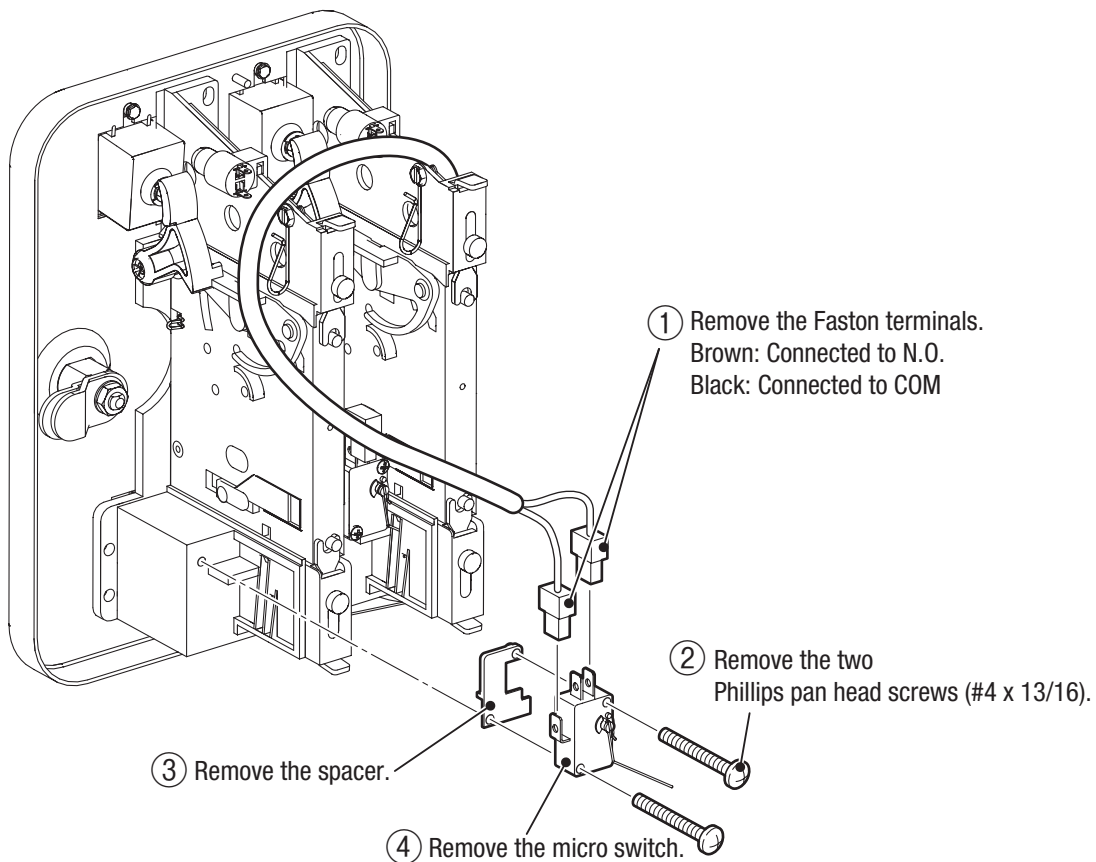
-Must be performed by a technician-

8B-4-26 Replacing the Coin Micro Switch (U.S. and Asian Models)

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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Open the service door. (See P-111 "8B-4-23 Opening and Closing the Service Door".)
- 3** Replace the micro switch.



- 4** To install, perform the procedure in reverse.

NOTICE

- When installing, insert the Faston terminals all the way in position.
- When installing, take care not to allow the connectors and harnesses to get caught.
- Two Faston terminals are provided. When installing them, refer to the above figure for information on how to connect the Faston terminals correctly.
- After replacement, be sure to perform the I/O test for each switch.
(See P-35 "(b) SWITCH TEST".)

-Must be performed by a technician-

8B-4-27 Replacing the Fuse of the Coin Assembly

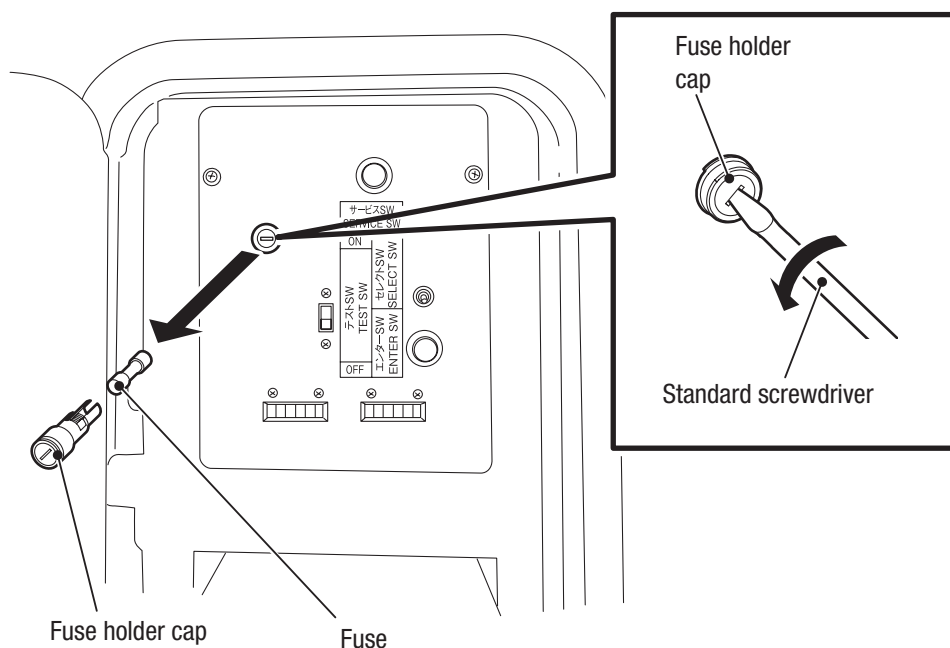
! WARNING

- 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.
- Never use a fuse other than the specified type. The fuse must be installed to prevent fire or accident.
- If the fuse blows out immediately after it is newly installed, other causes may be suspected. Immediately turn off the power switch, pull out the power cord plug from the outlet, and contact your distributor.

NOTICE

- To order a fuse, contact your distributor.

- 1 Turn off the power switch.
(See P-27 "7-5 Power Switch and Adjustment Switch".)
- 2 Open the service door. (See P-111 "8B-4-23 Opening and Closing the Service Door".)
- 3 Remove the fuse.



- 4 Replace the fuse with either of the following fuses according to the machine specifications, and install the new one by following the removal procedure in reverse.
To attach the fuse holder cap, put it in position so that it can be pushed inside the fuse holder, and then attach it by pushing it in and rotating it approximately 45 degrees clockwise.
Model Fuse Rating
U.S. model : SLOW BLOW 6.3 A 250 V
European and Asian models : FAST ACTING 2.0 A 250 V

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Troubleshooting

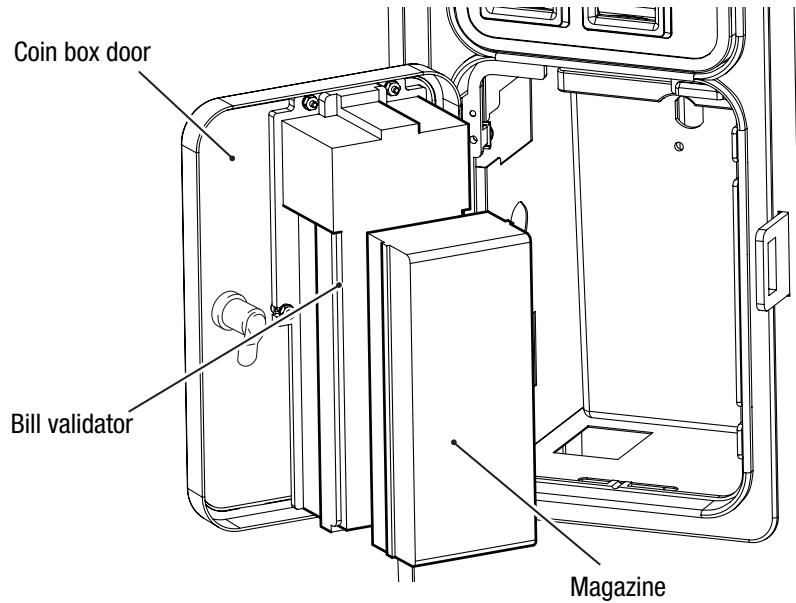
-Must be performed by a technician-

8B-4-28 Replacing the Bill Validator (U.S. Model)

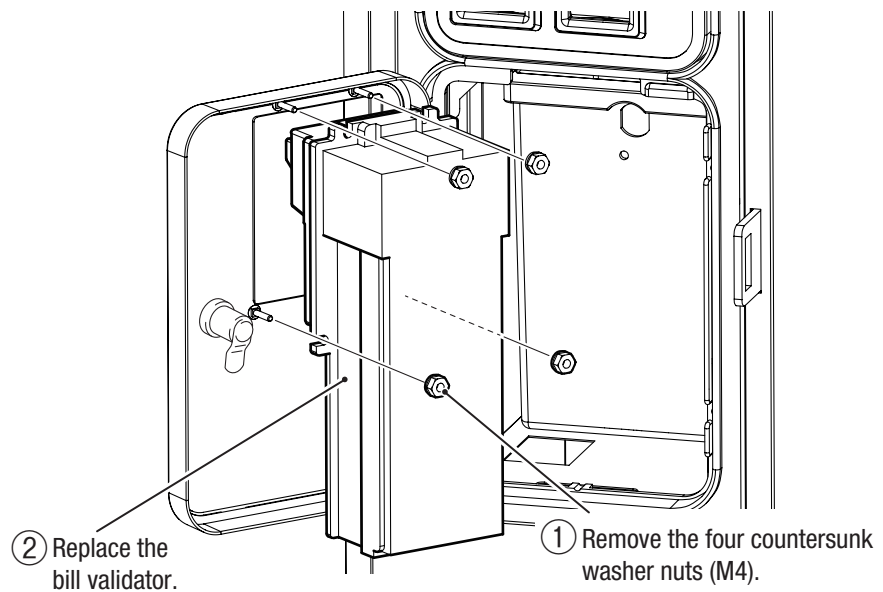
WARNING

● 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 P-27 "7-5 Power Switch and Adjustment Switch".)
- 2** Use the coin box door key to open the coin box door.



- 3** Disconnect the connector, and replace the bill validator.



- 4** To install, perform the procedure in reverse.

9. Disposal

CAUTION

- 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 the work to specialists in each field.

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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.

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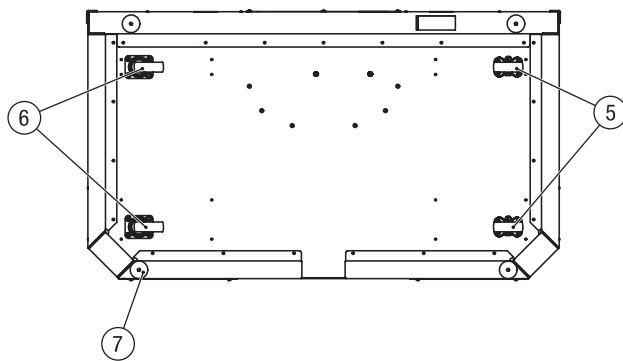
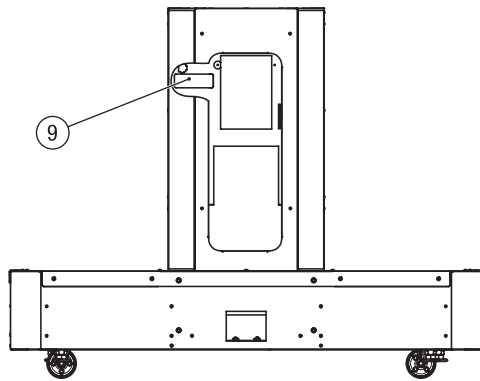
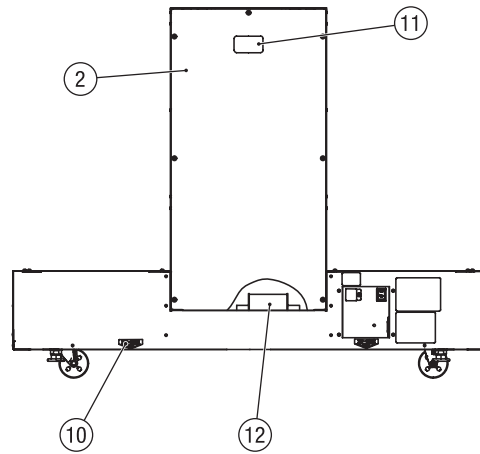
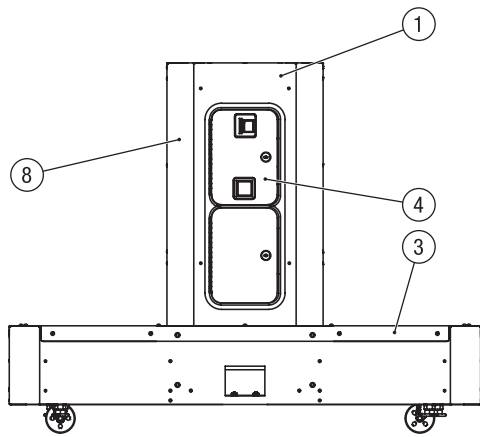
Disposal

Test Mode

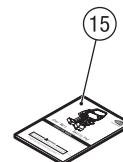
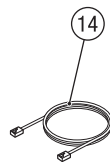
Troubleshooting

10. Parts List

10-1 Under Cabinet Assembly



Power cord for Asian model is not available as service part.



No.	Name	Qty.	Type or Rating	No.
1	Bottom main frame	1		740-171
2	Back door	1		740-172
3	Floor cover	1		740-173
4	Coin door (U.S., Asia)	1	SUZO-HAPP 40-6000-12NM	N01-012
	Coin door (Europe)		SUZO-HAPP 40-0512-06NM	310-945
5	Caster (fixed)	3	STC-75NM	102-201
6	Caster (adjustable)	2	SKC-75NM	102-199
7	Leveling bolt	4	KYW16-75-6B	102-045
8	Underdecal	2		740-174
9	Warning sticker coin mech	1		461-822
10	Fork sticker (SW)	2		461-842
11	Warning sticker Service (B)	1		461-667
12	Transformer	1	S133B3A4PV	004-772
13	Power Cord UL (U.S.)	1	BIZ-UL-AC15A125V-3000	011-164
	Power Cord BIZ (Europe)		BIZ-BSI-AC10A250V-3000	011-165
14	LAN cable 6 m	1	BIZ-LAN-S5eSTP-6000	011-234
15	Operation Manual	1		740-165

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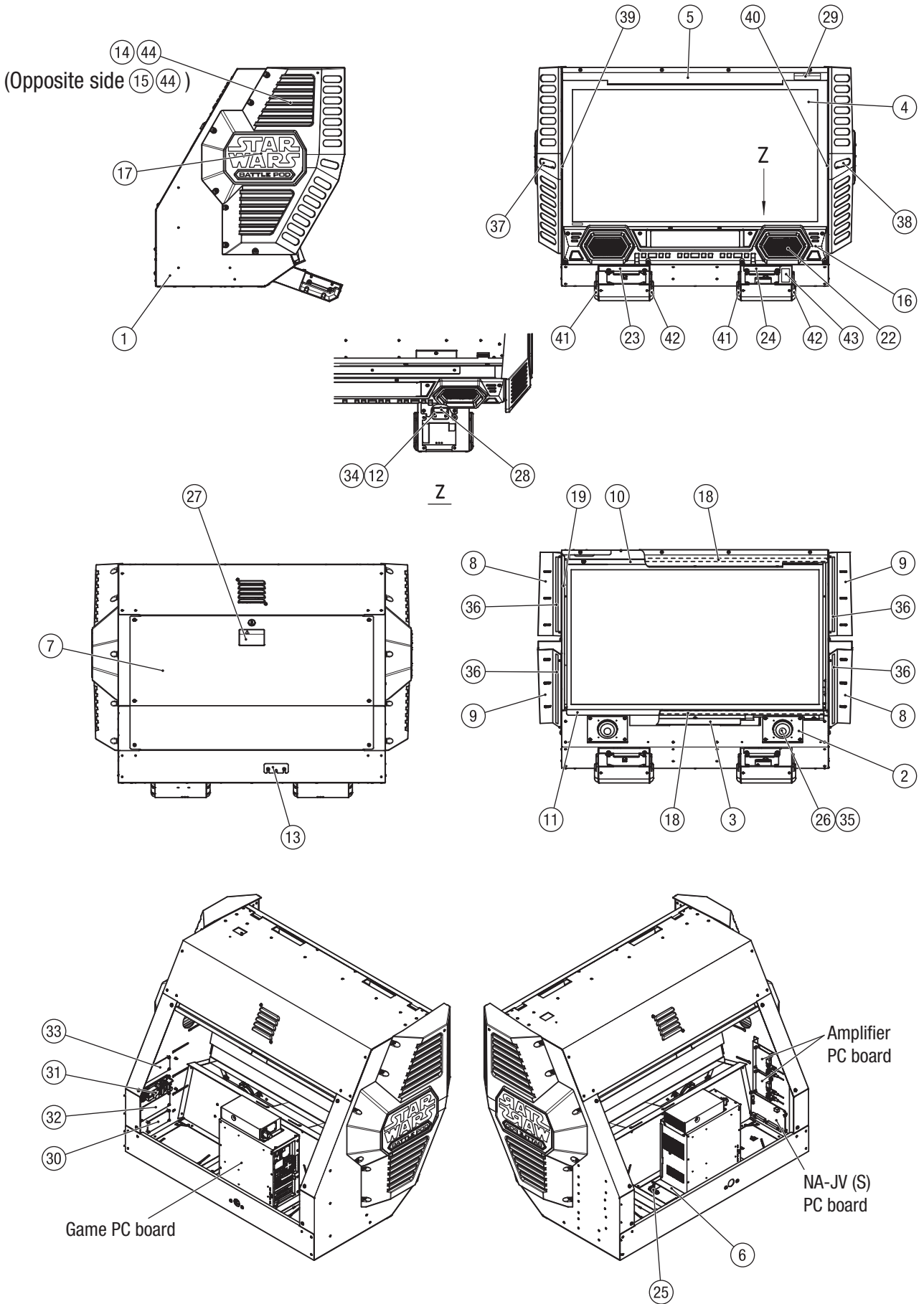
12

Parts List

Test Mode

Troubleshooting

10-2 Monitor Cabinet Assembly



No.	Name	Qty.	Type or Rating	No.
1	Main cabinet	1		740-185
2	Speaker board	2		740-186
3	Control panel cover	1		740-187
4	Monitor glass	1		740-188
5	Top bezel	1		740-189
6	Game PC board base	1		740-190
7	Maintenance door	1		740-191
8	Side LED bracket (A)	2		740-192
9	Side LED bracket (B)	2		740-193
10	Monitor bracket (T)	1		740-202
11	Monitor bracket (U)	1		740-203
12	Protection PC board guard	1		740-207
13	LAN cover	1		740-208
14	Side cover L	1		740-194
15	Side cover R	1		740-209
16	Speaker cover	1		740-195
17	Side logo decal	2		740-196
18	Glass cushion (A)	2		740-198
19	Glass cushion (B)	4		740-199
20	Glass cushion (C)	4		740-200
21	Glass cushion (D)	5		740-201
22	Speaker net	2		740-204
23	Lever base cover (L)	1		740-205
24	Lever base cover (R)	1		740-206
25	Anti-vibration rubber	4		106-181
26	DURACON spacer	8		731-155
27	Warning sticker Service (B)	1		461-539
28	Warning sticker High temperature	1		461-791
29	Caution sticker Hypersensitivity to light (P) EXP	1		461-844
30	Switching regulator 5 V	1	VS15C-5	009-112
31	Switching regulator (12 V, 50 W)	1	VS50E-12	009-266
32	Switching regulator (12 V, 100 W)	1	VS100E-12	009-270
33	Switching regulator 24 V	1	VS100E-24	009-289
34	Protection PC board	1		307-999
35	Speaker	2	F77A136-2	006-193
36	LED module	4	full color, 300mm	002-728
37	Side lamp panel L	1		740-196
38	Side lamp panel R	1		740-197
39	Monitor side decal L	1		740-210
40	Monitor side decal R	1		740-211
41	Lever side cover (L) SWF	2		740-215
42	Lever side cover (R) SW	2		737-210
43	Control base decal B	1		737-215
44	Side hook	4		740-214

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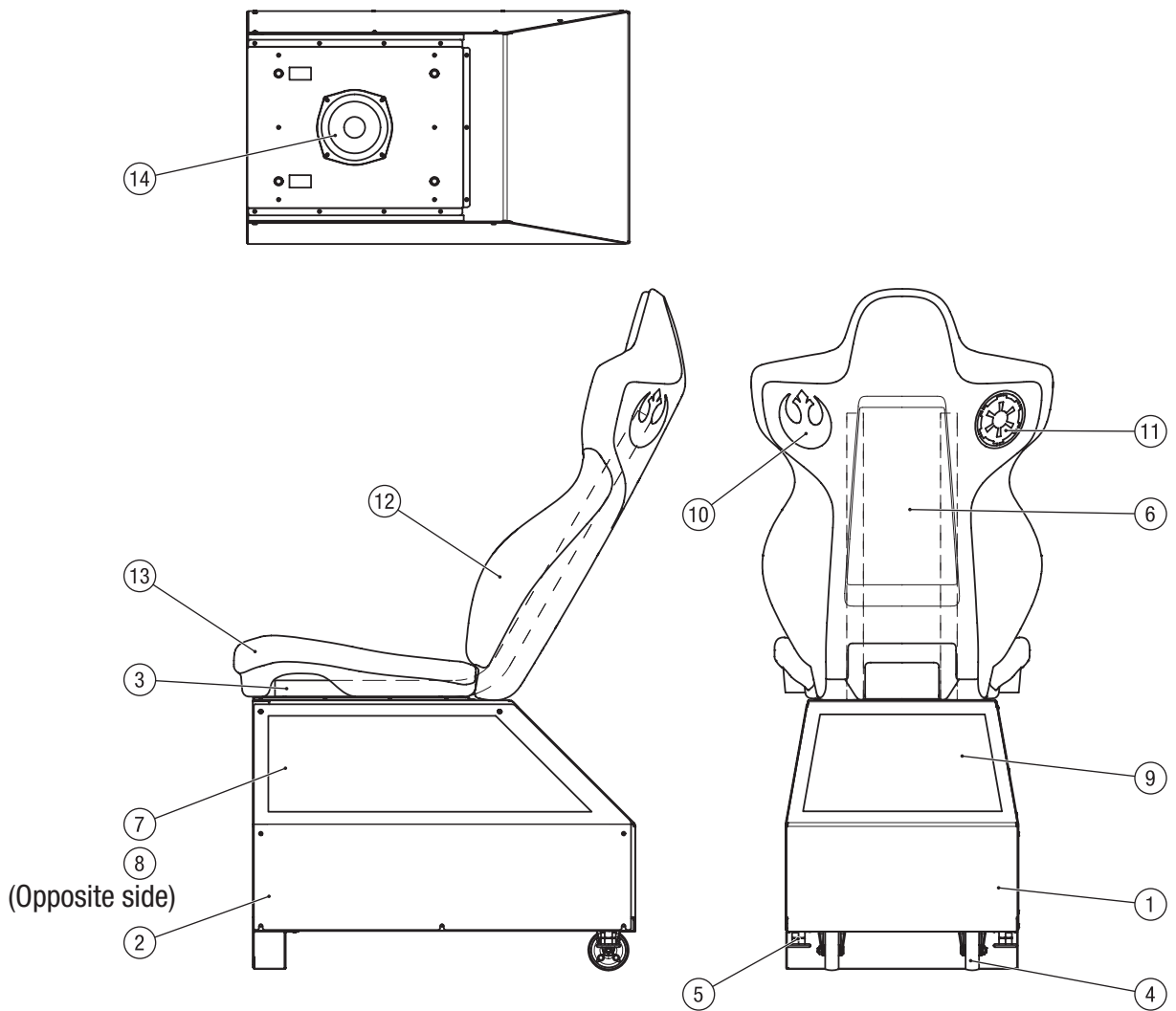
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Parts List

Test Mode

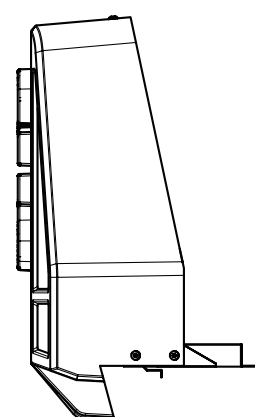
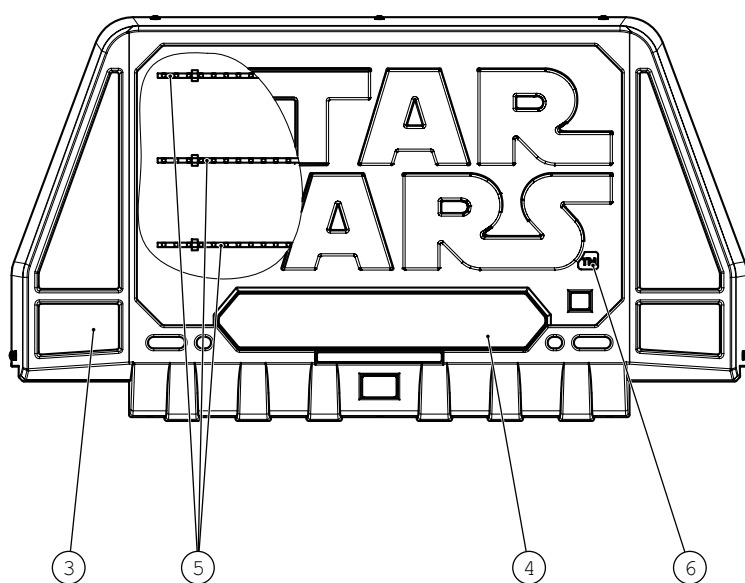
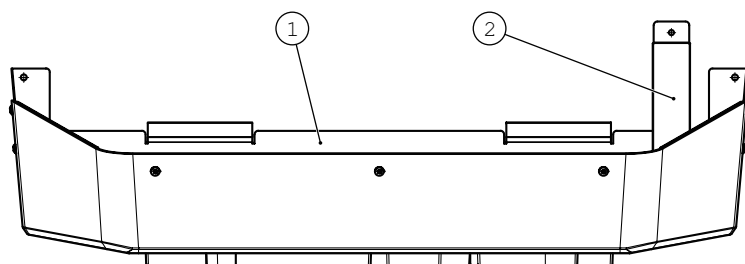
Troubleshooting

10-3 Seat Assembly



No.	Name	Qty.	Type or Rating	No.
1	Seat base	1		740-221
2	Seat maintenance door	1		740-222
3	Seat pipe	2		740-223
4	Caster (fixed)	2	STC-75NM	102-201
5	Level adjuster	2	KYW16-75-6B	102-045
6	Seat back decal	1		740-224
7	Seat back decal L	1		740-225
8	Seat back decal R	1		740-226
9	Seat center decal	1		740-227
10	Symbol mark panel L	1		740-228
11	Symbol mark panel R	1		740-229
12	Seat back SWF	1		740-230
13	Seat cushion SWF	1		740-231
14	Woofer speaker	1	T(140-6)FL-C-PF	006-205

10-4 Sign Box Assembly

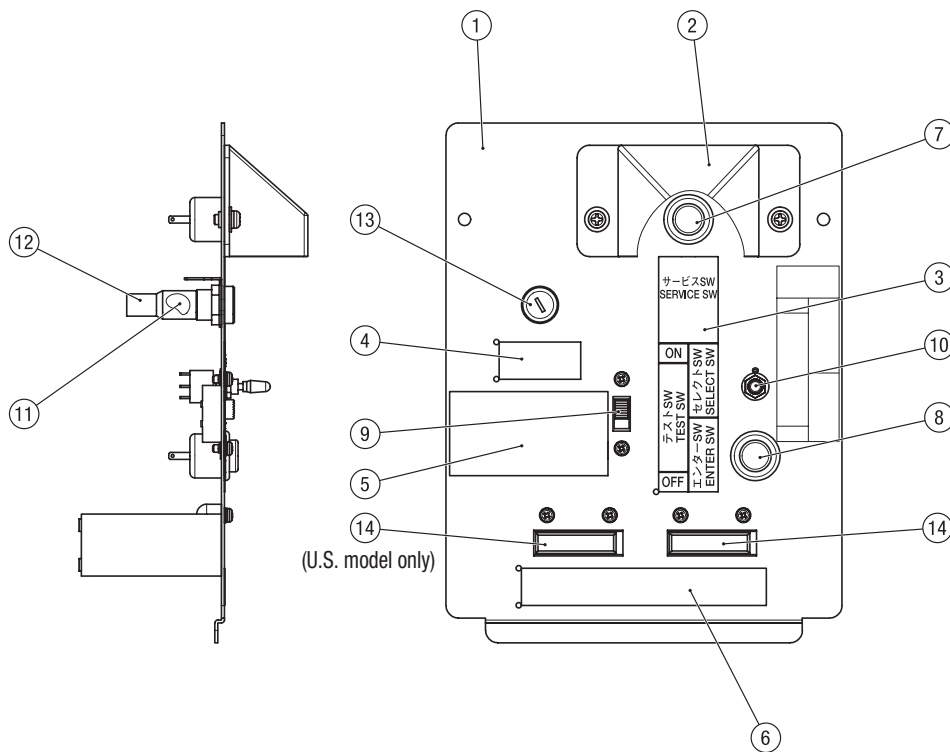


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- Parts List

No.	Name	Qty.	Type or Rating	No.
1	Sign box	1		740-233
2	Sign connector cover	1		740-234
3	Sign cover	1		740-235
4	Subtitle panel	1		737-288
5	LED module	3	white, 600 mm	002-731
6	TM decal	1		740-237

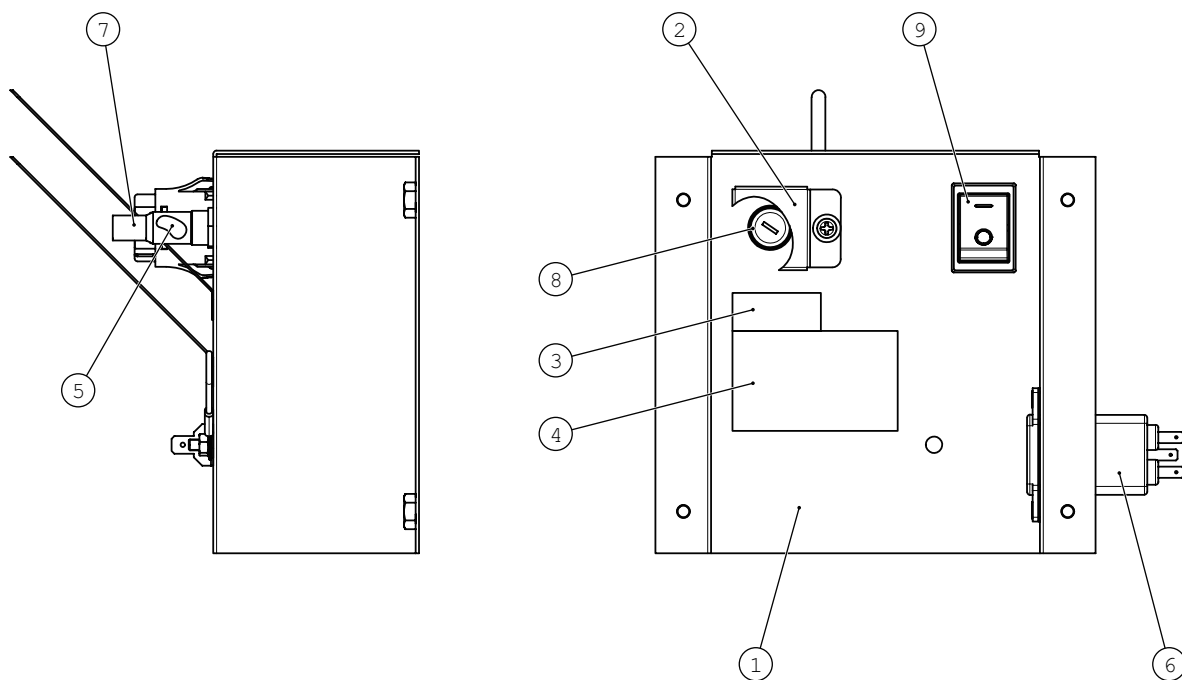
- Test Mode
- Troubleshooting

10-5 Service Panel Assembly



No.	Name	Qty.	Type or Rating	No.
1	Service plate	1		740-180
2	Switch cover	1		729-316
3	Service sticker	1		729-196
4	Fuse sticker (B)	1	110V/120V	735-120
	Fuse sticker (D)		220 V/230 V	735-128
5	Caution label for fuse	1		736-980
6	Coin counter label A	1	(US specifications)	736-986
	Coin counter label B		(EU, Asia specifications)	736-987
7	Push switch (red)	1	SDP-103C-22RB	000-336
8	Push switch (green)	1	SDP-103C-23GB	000-619
9	Slide switch	1	SDS-103A-03#13BJ	000-681
10	Toggle switch	1	SDSA-331G-CR	000-337
11	Fuse (T6.3A 250V)(U.S. specification)	1	Slow-blow	001-114
	Fuse (F2A 250V)(EU, Asia specification)		Fast Acting	001-115
12	Fuse holder	1	0031.1694	001-112
13	Fuse holder cap	1	0031.1663	001-113
14	Coin counter (EU,Asia specification)	1	NX-06FD20 12VDC	003-055
	Coin counter (U.S.)	2		

10-6 Cord box assembly



No.	Name	Qty.	Type or Rating	No.
1	Cord box	1		740-176
2	Fuse cover	1		737-007
3	Fuse sticker (B)	1	110V/120V	735-120
	Fuse sticker (3.15A)		220 V/230 V	740-170
4	Caution label for fuse	1		736-980
5	Fuse (110 VAC / 120 VAC model)	1	02183.15MXP 3.15A 250V	001-120
	Fuse (220 VAC / 230 VAC model)		021806.3MXP 6.3A 250V	001-114
6	Noise filter	1	5662-15GEEG3ER-0	007-184
7	Fuse holder	1	0031.1694	001-112
8	Fuse holder cap	1	0031.1663	001-113
9	Power switch	1	A8A-207-1D	000-906

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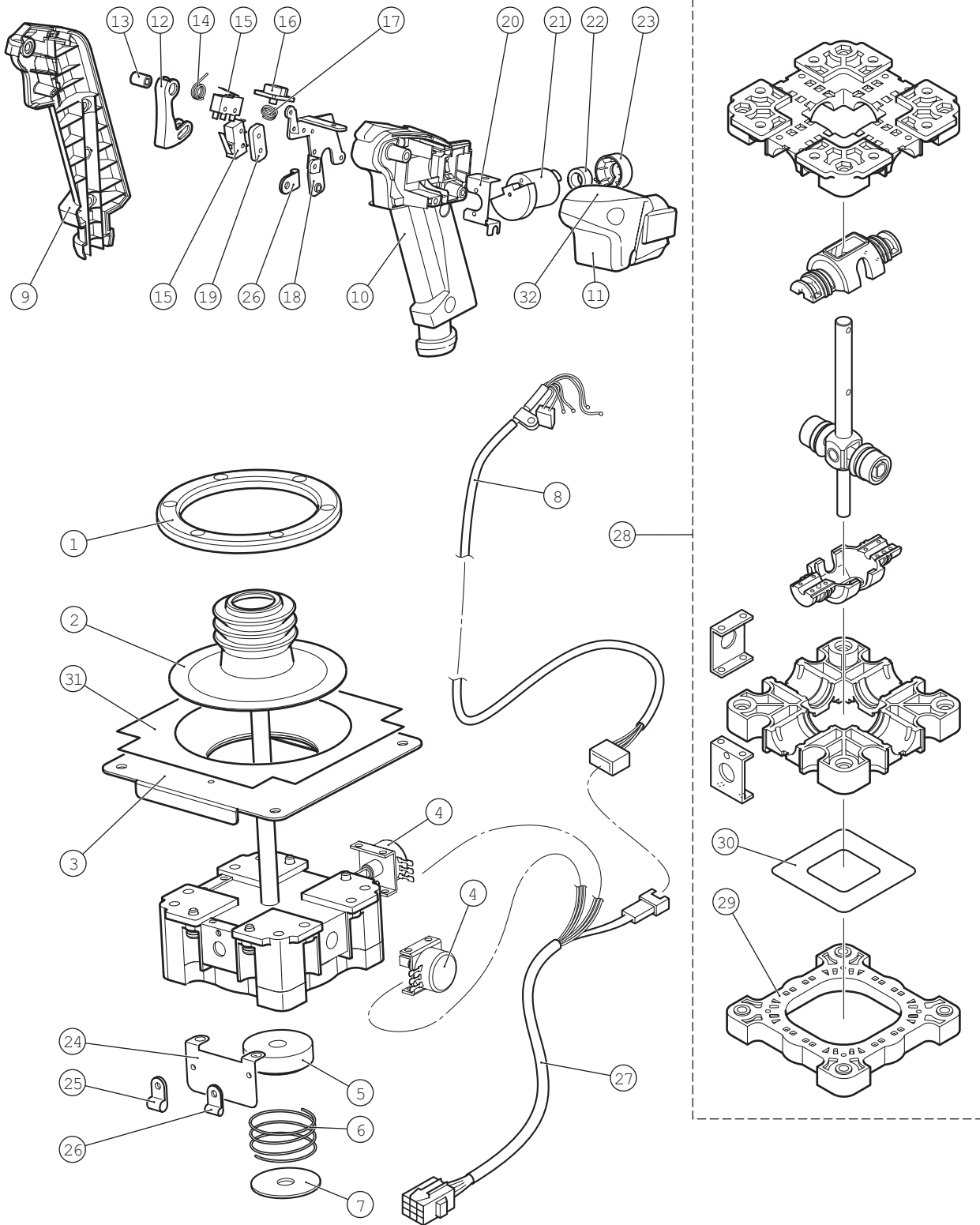
12

Parts List

Test Mode

Troubleshooting

10-7 Control Lever Assembly



No.	Name	Qty.	Type or Rating	No.
1	Cover fixing frame	1		306-829
2	Rubber cover	1		737-319
3	Installation plate	1		306-824
4	Analog interface (with analog interface bracket)	2	RVQ24YN04-06 20FB102 (1 kΩ 60°)	008-079
5	Spring stopper	1		737-316
6	Spring	1		307-849
7	Spring end	1		737-317
8	Grip harness	1		307-850
9	Lever grip A black	1	L, R set	740-240
10	Lever grip B black	1		
11	Motor cover (SW) black	1		740-241
12	Main trigger button	1		306-780
13	Main trigger button spacer	1		737-321
14	Main trigger button spring	1		306-781
15	Switch (for main trigger, special button)	2		307-853
16	Special button	1		306-779
17	Special button spring	1		306-782
18	Lever metal part A	1		307-856
19	Lever metal part B	1		307-857
20	Motor bracket	1		737-323
21	Vibration motor	1	TG-203A-F1578 24V	737-322
22	Core	1		307-860
23	Core spacer (M) SW black	1		740-242
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		737-326
29	Guide plate	1		306-812
30	Stainless steel plate	1		306-823
31	Control base decal A	1		737-214
32	Control base decal	1		737-216

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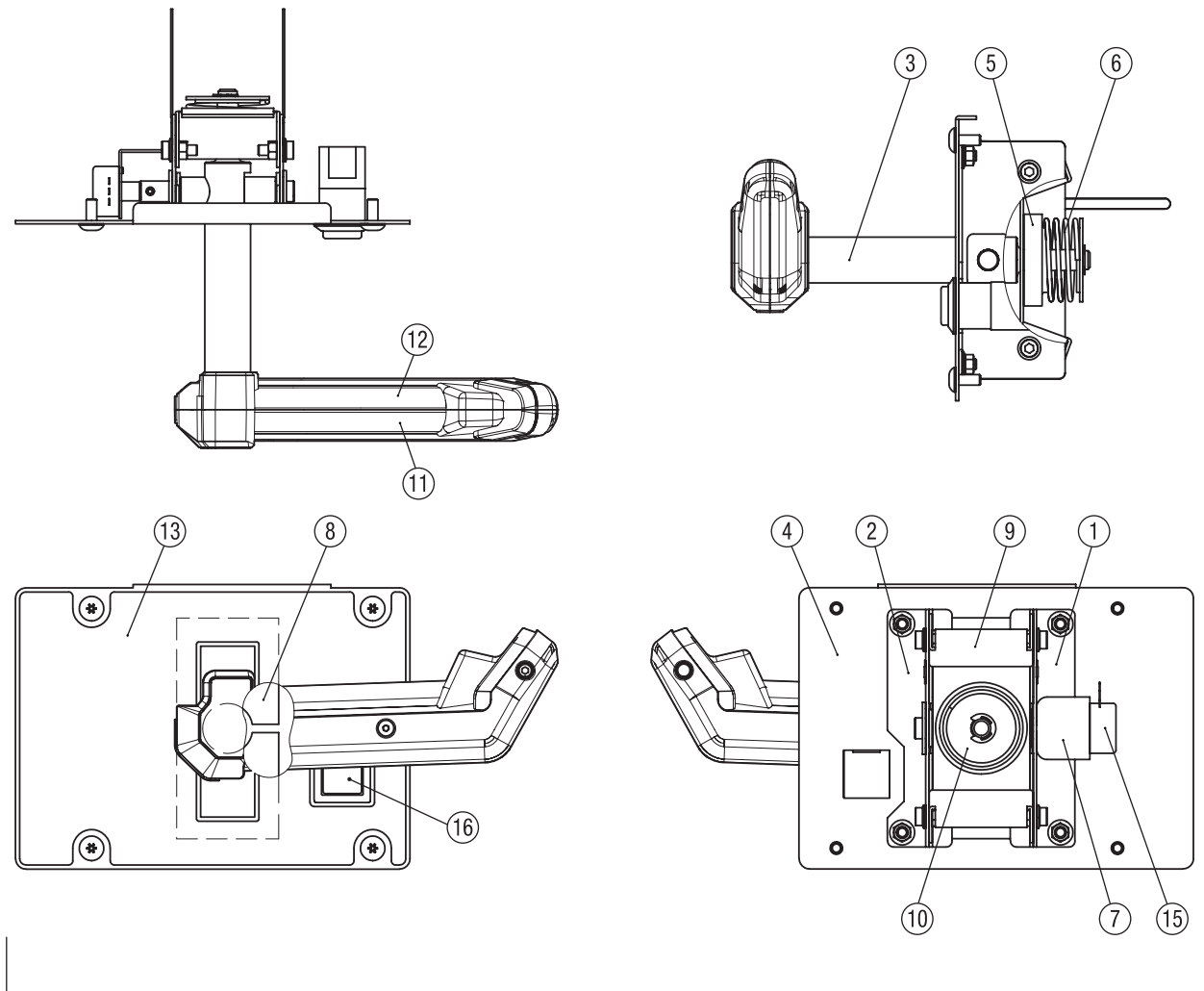
12

Parts List

Test Mode

Troubleshooting

10-8 Throttle Lever Assembly



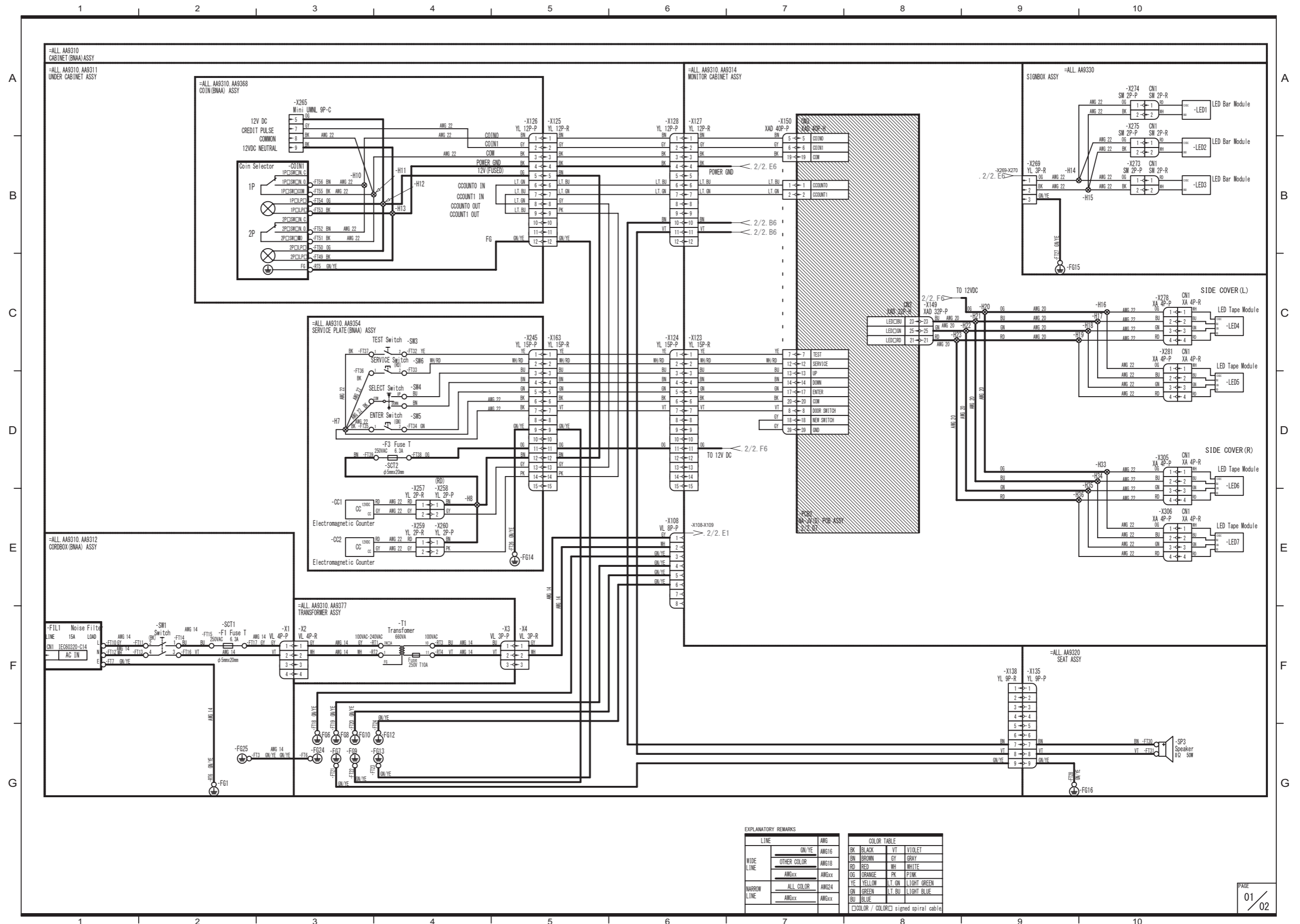
14 (13 None)

No.	Name	Qty.	Type or Rating	No.
1	Side base L	1		737-230
2	Side base R	1		737-231
3	Lever shaft	1		737-232
4	Base plate	1		737-233
5	Spring stopper	1		734-250
6	Spring	1		734-251
7	Analog interface bracket	1		734-252
8	Finger guard	1		734-253
9	Stopper	1		734-254
10	Spring washer	1		734-255
11	Throttle lever grip A (SW) black	1	L, R set	740-243
12	Throttle lever grip B (SW) black	1		
13	Throttle base decal	1		737-234
14	Throttle Lever Assembly (no decal)	1		737-235
15	Analog interface	1	RVQ24YN04-06 20F B102	008-079
16	Illuminated push button switch	1	SS-18UKK-G-LEDT5-W-12V	000-913

11. Wiring Diagram

(1/6)

11-1 Overall Connection Diagram (U.S. model, 120 VAC 1/2)



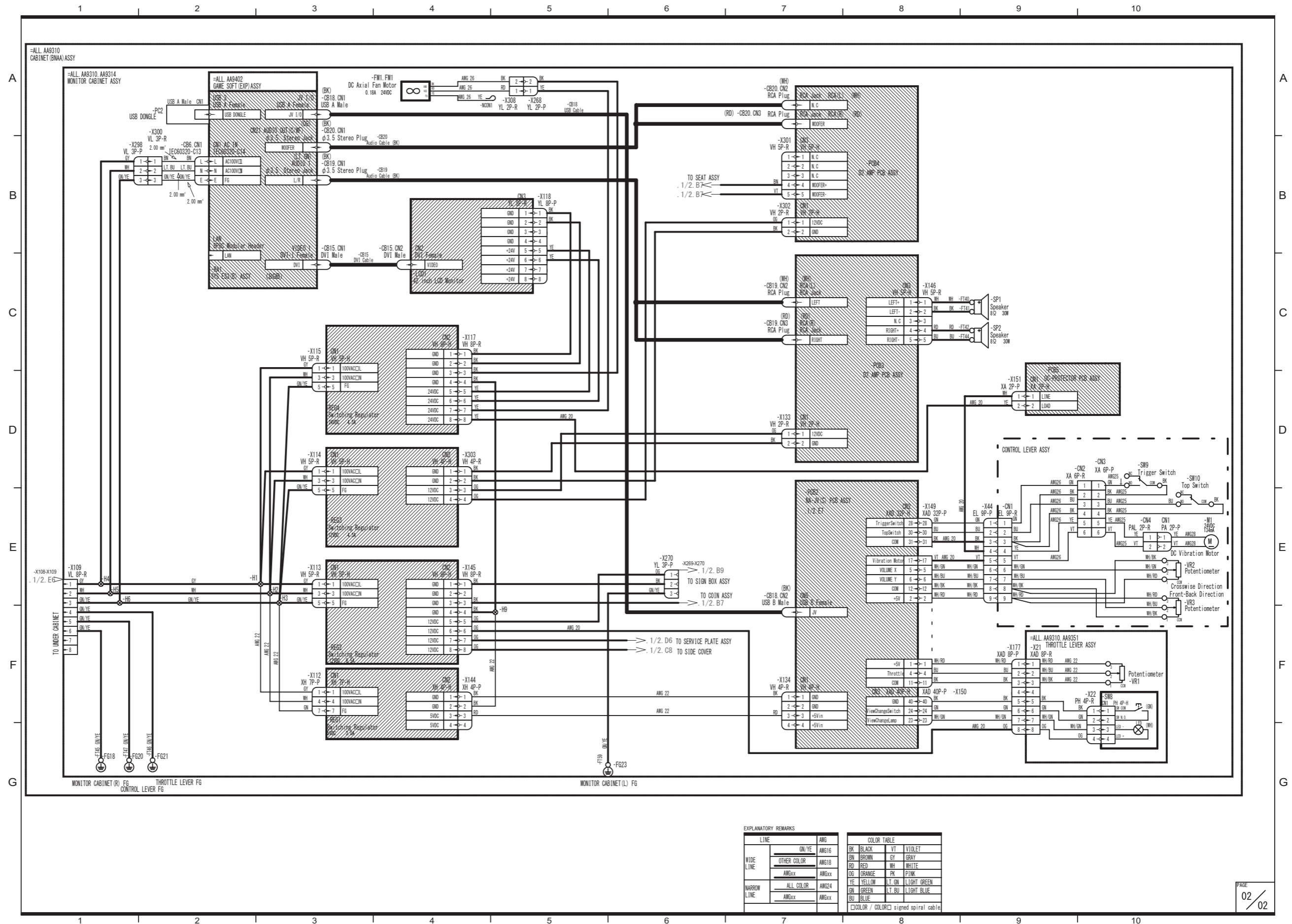
EXPLANATORY REMARKS

LINE	ANG	COLOR TABLE
WIDE LINE	ANG16	BK BLACK VT VIOLET
	ANG18	BR BROWN GY GRAY
	ANG19	RD RED WH WHITE
	ANG20	OR ORANGE PK PINK
NARROW LINE	ANG24	YE YELLOW LT GN LIGHT GREEN
	ANG24	GN GREEN LT BU LIGHT BLUE
	ANG24	BU BLUE

CO/COLOR / CO/CO signed spiral cable

11. Wiring Diagram

(U.S. model, 120 VAC 2/2)



EXPLANATORY REMARKS

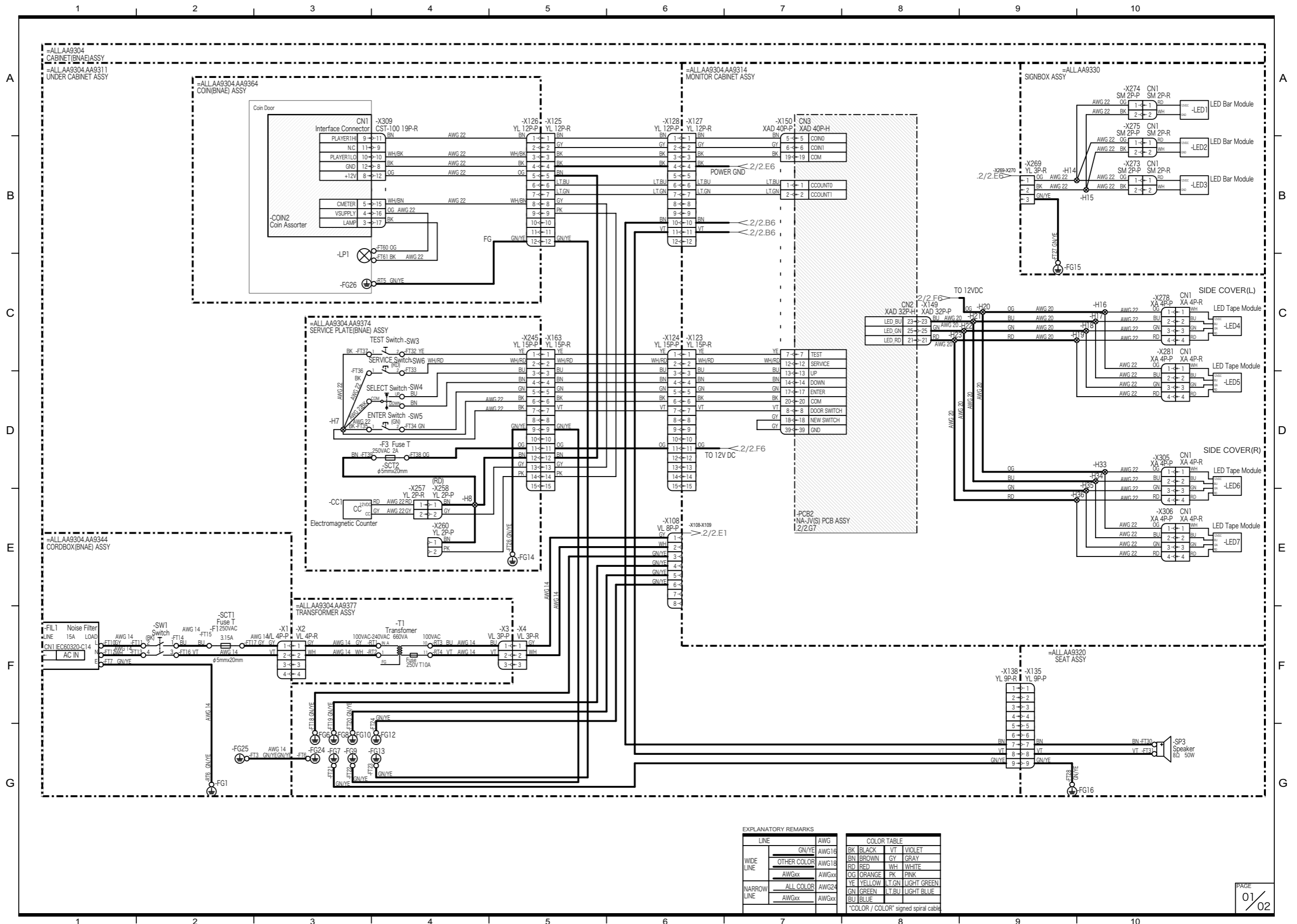
LINE	ANG	COLOR TABLE
WIDE LINE	GN/YE	ANG16
	OTHER COLOR	ANG18
	ANGxxx	ANGxx
NARROW LINE	ALL COLOR	ANG24
	ANGxxx	ANGxx

LINE	ANG	COLOR TABLE
BK		BLACK
BN		BROWN
RD		RED
OG		ORANGE
YE		YELLOW
GN		GREEN
BU		BLUE
VT		VIOLET
GY		GRAY
WH		WHITE
PK		PINK
LT.GN		LIGHT GREEN
LT.BU		LIGHT BLUE

COILOR / COILORC signed spiral cable

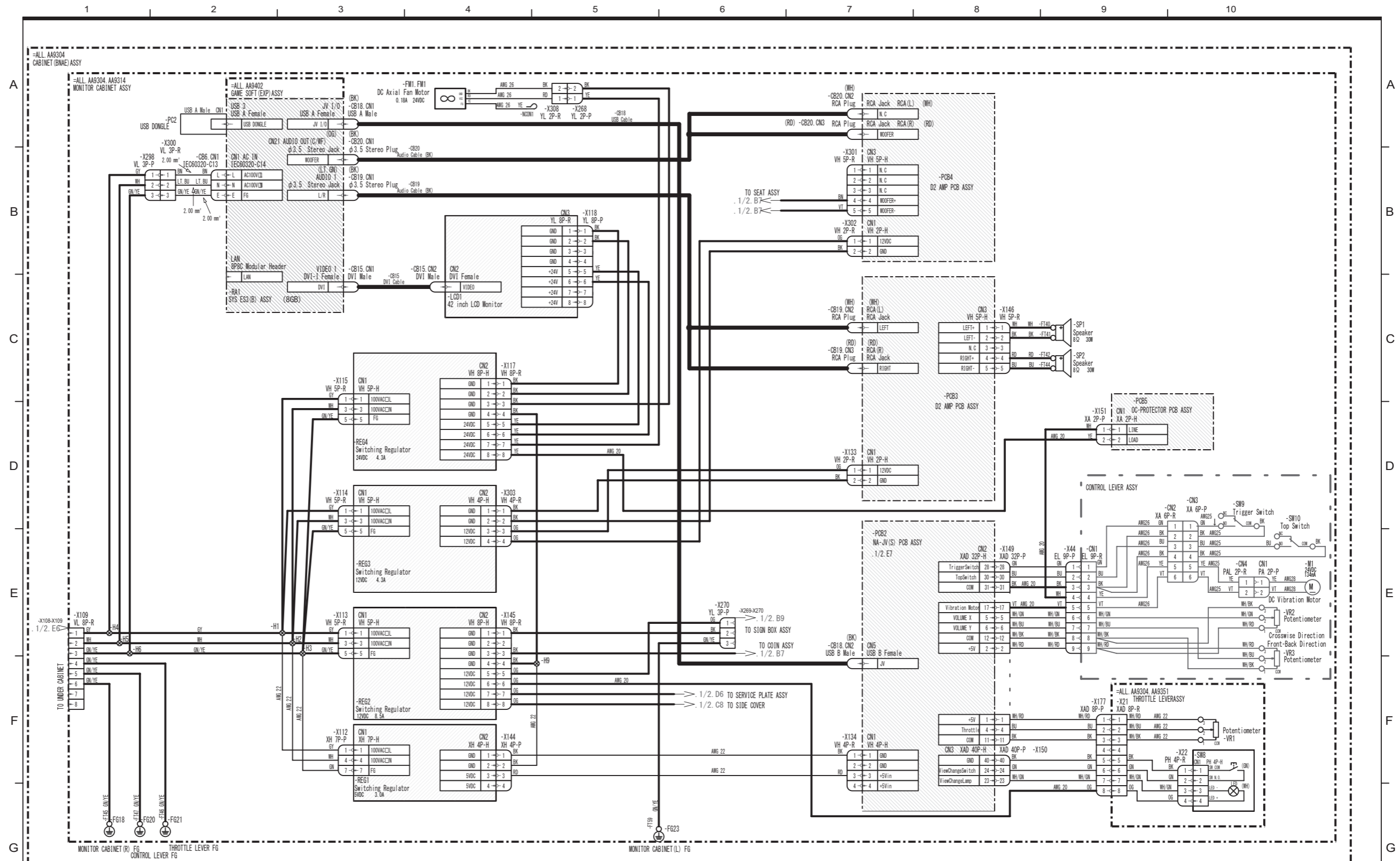
11. Wiring Diagram

11-2 Overall Connection Diagram (European model, 230 VAC 1/2)



11. Wiring Diagram

(European model, 230 VAC 2/2)



EXPLANATORY REMARKS

LINE	ANG	COLOR TABLE
WIDE LINE	ANG16	BK BLACK
	ANG18	RD RED
	ANGxx	OG ORANGE
NARROW LINE	ANG24	YE YELLOW
	ANGxx	GN GREEN
		BU BLUE

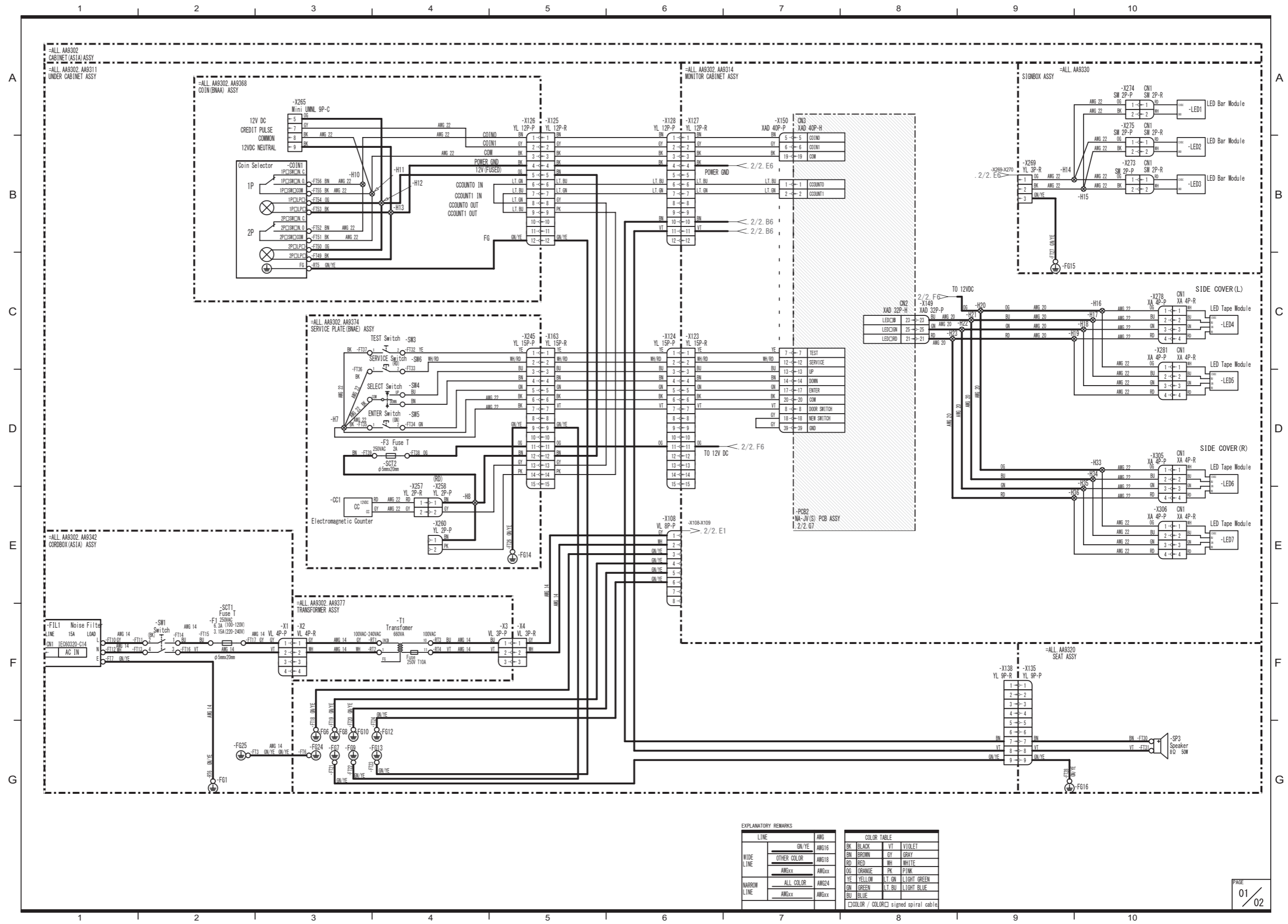
OTHER COLOR TABLE

VT	VIOLET
GY	GRAY
WH	WHITE
PK	PINK
LT.GN	LIGHT GREEN
LT.BU	LIGHT BLUE

CO/COLOR / CO/COI signed spiral cable

11. Wiring Diagram

11-3 Overall Connection Diagram (Asian model, 110 to 120 VAC, 220 to 230 VAC 1/2)



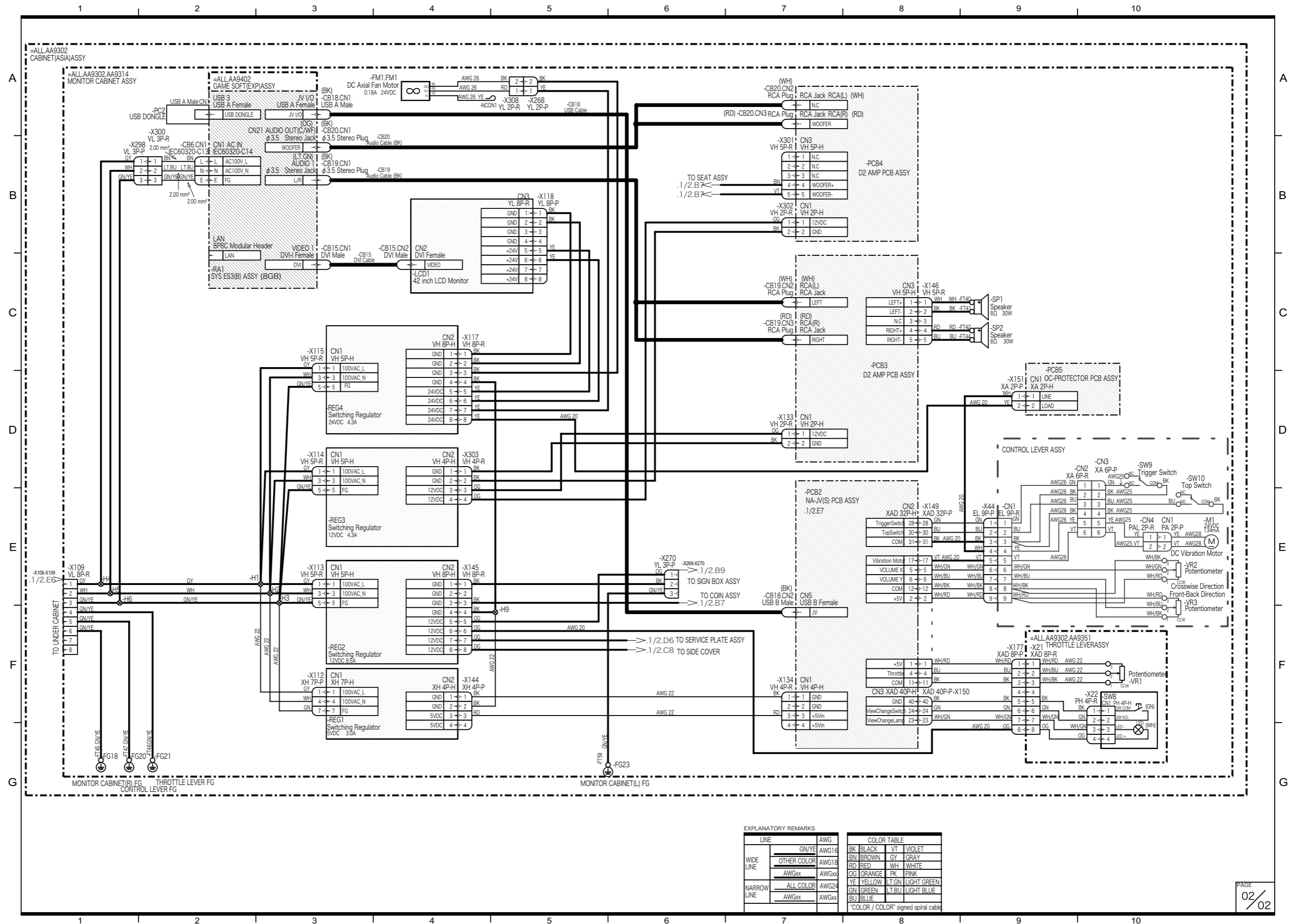
EXPLANATORY REMARKS

LINE	ANG	COLOR TABLE
WIDE LINE	ANG16	BK BLACK VT VIOLET
	ANG18	BN BROWN GY GRAY
	ANG19	RD RED WH WHITE
	ANG20	OG ORANGE PK PINK
NARROW LINE	ANG24	YE YELLOW LT GN LIGHT GREEN
	ANG25	GN GREEN LT BU LIGHT BLUE
	ANG26	BU BLUE

①COLOR / COLOR② signed spiral cable

11. Wiring Diagram

(Asian model, 110 to 120 VAC, 220 to 230 VAC 2/2)



EXPLANATORY REMARKS

LINE	AWG	COLOR TABLE
WIDE LINE	AWG16	BK BLACK VT VIOLET
	AWG18	BN BROWN GY GRAY
	AWG20	RD RED WH WHITE
	AWG22	OG ORANGE PK PINK
NARROW LINE	AWG24	YE YELLOW LT.GN LIGHT GREEN
	AWG26	GN GREEN LT.BU LIGHT BLUE
	AWG28	BU BLUE

COLOR / COLOR signed spiral cable

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pcrc

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Protocol Buffers - Google's data interchange format

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*

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 - **Windows Time Service.** This service synchronizes with www.time.windows.com once a week to provide your I device with the correct time. The connection uses standard NTP protocol.
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