

# DARK ESCAPE 4D

## Operation Manual

### ⚠ 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 for quick access whenever needed.

# Introduction

---

Thank you very much for purchasing DARK ESCAPE 4D (referred to as the “machine” in this manual).

**This Operation Manual describes:**

- 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 this 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, servicing or disposing the machine to other people, ensure that these people read the relevant sections of this operation manual carefully before starting work, and observe the corresponding precautions.


### 1-1 Levels of Risk

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

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

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

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

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

### 1-2 Definition of “Technician”

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

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

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Safety Precautions -Be sure to read to ensure safe operation-

Test Mode

Troubleshooting

## 1-3 Critical Safety Precautions

### WARNING

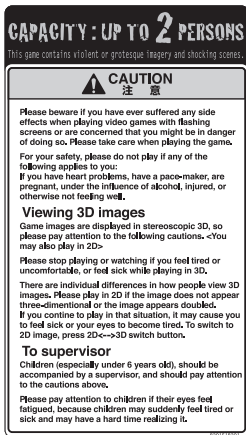
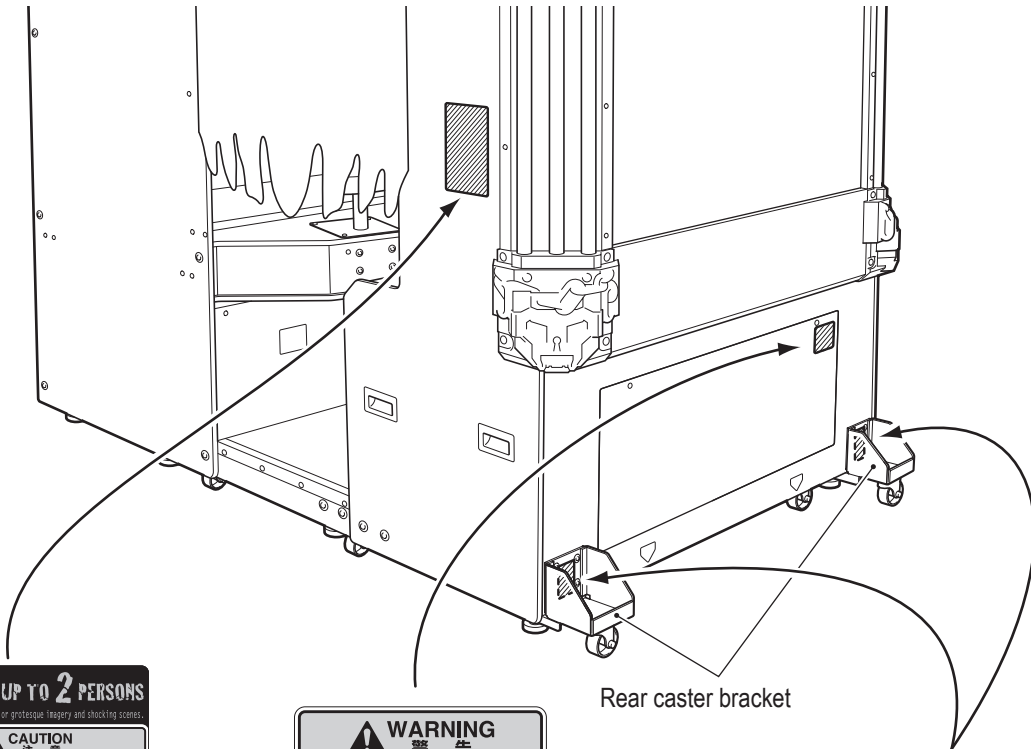
- Should an abnormality occur, turn off the power switch immediately to stop operations. Then, be sure to disconnect the power cord plug from the outlet. Operating the machine while the abnormality persists may result in a fire or accident.
- Sections of the monitor remain at a high temperature and high voltage even after the power switch is turned off. To avoid electric shock or burns, be careful not to accidentally touch these sections.
- Dust accumulating on the power cord plug may result in a 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 a fire or burns.
- Damage to the power cord may result in a 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. It may result in electric shock or electrical leakage.
- Do not touch the power cord plug with wet hands. It may result in electric shock.
- The machine is compatible with different power supplies; 3.2 A for AC 110 V, 1.8 A for AC 220 V and so on. To prevent fire and electric shock, use indoor wiring that conforms to these power supply specifications.
- Use the power supply voltage that falls  $\pm 10\%$  of the default voltage. Using a voltage outside this range may result in a fire or electric shock. However, to ensure that the machine operates in the optimum condition, keep the default voltage as much as possible.
- Use the consumables and service parts (including screws) that are specified by NAMCO BANDAI Games Inc. To order parts, contact your distributor.
- Do not modify the machine without permission. Do not perform any operations that are not described in this Operation Manual. Modifying the machine may create unforeseen hazards.
- When transporting and installing the machine in a different location, be sure to keep this Operation Manual together with the machine.

# 1-4 Machine Warning Labels

## ! WARNING

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

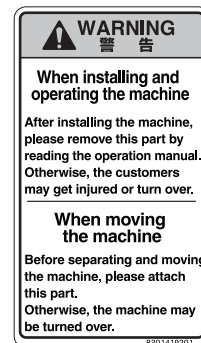
Rear assembly



Caution sticker Capacity Limit DES (EXP)  
Part No.: 461-774



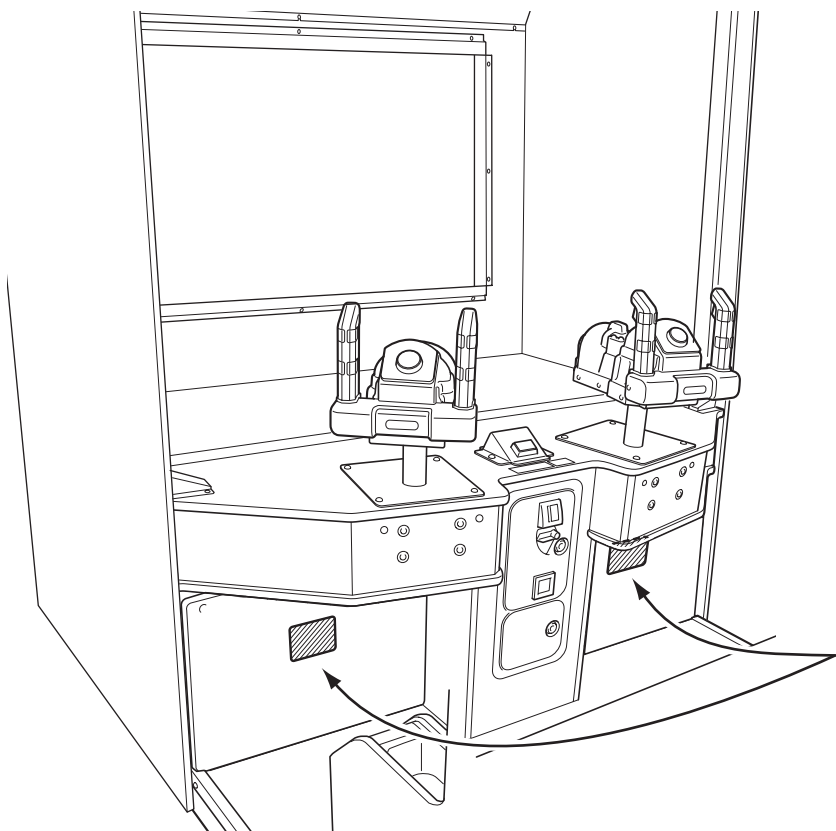
Warning sticker Service (B) EXP  
Part No.: 461-539



Warning sticker Installation and Transport (EXP)  
Part No.: 461-775

\*The rear caster brackets are removed other than during disassembly and transport.

Center assembly



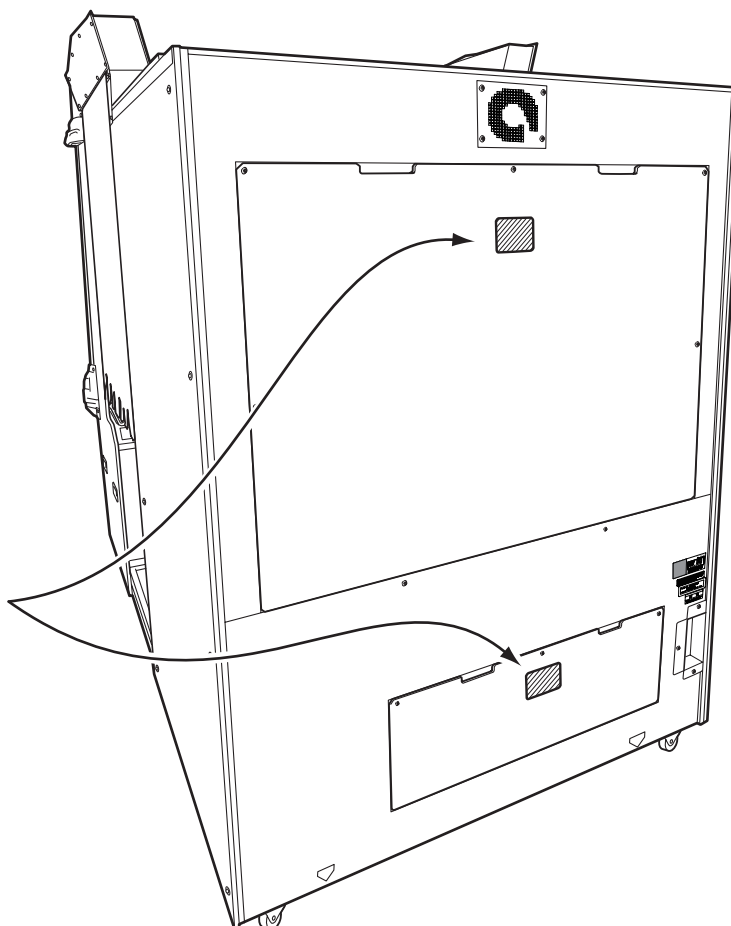
**WARNING**  
警告

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

8301412201

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

Front assembly



**WARNING**  
警告

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

8301412201

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

# Table of Contents

## Introduction

1. Safety Precautions -Be sure to read to ensure safe operation-	1
1-1 Levels of Risk.....	1
1-2 Definition of “Technician”.....	1
1-3 Critical Safety Precautions.....	2
1-4 Machine Warning Labels.....	3
Table of Contents.....	5
2. Specifications .....	10
3. Package Contents .....	14
4. Overall Structure (Part Names) .....	22
5. Delivery and Installation Conditions .....	24
5-1 Installation Conditions.....	24
5-1-1 Installation Locations to Avoid .....	24
5-1-2 Play Zone for the Installed Machine .....	25
5-2 Required Dimensions for the Delivery Route (Such as Doors and Corridors) .....	26
6. Moving and Transporting .....	28
6-1 Moving (On the Same Floor).....	28
6-2 Transporting .....	29
6-2-1 Transporting Manually (Such as Carrying on Stairs).....	29
6-2-2 Loading and Unloading to and from a Vehicle.....	30
6-2-3 Transporting on a Vehicle.....	31
7. Operation.....	32
7-1 People Who Should Avoid Playing.....	32
7-2 Safety Precautions for Playing.....	33
7-3 Important Parts for Ensuring Player and Bystander Safety .....	33
7-4 Pre-operation Inspection.....	34
7-4-1 Safety Inspection (Before Power On).....	34
7-4-2 Function Inspection (After Power On) .....	35
7-5 Playing the Game .....	36
(1) Basic Rules.....	36
(2) Gun Types and Features .....	36
(3) Explanation of the Game System .....	37
(4) START Button .....	37
(5) 2D/3D Switching Button.....	37
7-6 Power Switch and Adjustment Switches .....	38
7-6-1 Power Switch Position and Turning the Power Switch On .....	38
7-6-2 Adjustment Switches .....	39

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Table of Contents

Test Mode

Troubleshooting

---

7-7	Test Mode .....	40
7-7-1	MENU Screen .....	40
	(a) Error Display when the Rack Assembly Internal Battery has Run Out .....	40
7-7-2	Game Cost and Related Settings (COIN OPTIONS) .....	42
7-7-3	Game Contents Settings (GAME OPTIONS) .....	43
7-7-4	Testing the Switches, Sensors and Other Components (I/O TEST).....	45
	(a) SWITCH TEST .....	46
	(b) OUTPUT TEST (Cabinet Gimmick Test).....	47
	(c) GUN TEST (Crosshairs and Gun Vibration Unit Check Screen) .....	48
	● GUN INITIALIZE (Crosshairs Adjustment Screen).....	49
	(d) VITAL SENSOR TEST (Startle Sensor Test) .....	51
	(e) LED TEST.....	52
7-7-5	Monitor Adjustment (MONITOR TEST) .....	53
7-7-6	Sound Adjustment (SOUND TEST).....	55
7-7-7	Displaying and Initializing Game Data (BOOKKEEPING).....	56
7-7-8	Other Options (OTHERS).....	57
	(a) Stereoscopic Display Setting (3D VIEW SETTING) .....	58
	(b) Internal Clock Setting (CLOCK SETTING) .....	59
	(c) HDD CHECK .....	60
	(d) Initializing the Backup Memory (BACKUP MEMORY INITIALIZE).....	61
7-7-9	Software Update (SOFTWARE UPDATE).....	62
7-8	Error Display (For Operators) .....	63
7-8-1	Game Play Using Service Credits .....	63
7-9	Gun Assembly Adjustment (Initialization) after Parts Replacement .....	64
7-9-1	Initializing the Gun Assembly Volume .....	64
7-10	Cleaning.....	65
7-10-1	Cleaning the 3D Glasses.....	65
7-10-2	Cleaning the 3D Glasses Cases .....	65
7-10-3	Cleaning the Monitor Panel .....	65



<b>8. Technician's Manual - Must be performed by a technician -</b> .....	<b>66</b>
<b>8A. Installation and Assembly</b> .....	<b>66</b>
8A-1 Required Tools .....	66
8A-2 Number of Workers and Work Time.....	66
8A-2-1 Number of Workers .....	66
8A-2-2 Work Time .....	66
8A-3 Securing Work Space .....	67
8A-4 Assembly .....	68
8A-4-1 Connecting the Front Assembly and Center Assembly .....	68
8A-4-2 Attaching the 3D Glasses and Glasses Cleaning Cloths .....	71
8A-4-3 Installing the Wall Assemblies .....	74
8A-4-4 Connecting the Center Assembly and Rear Assembly .....	78
8A-4-5 Installing the Signboard Box Assembly .....	80
8A-4-6 Installing the Corner Covers (L) and (R) .....	83
8A-4-7 Installing the Top Cover Center and Top Cover Sides (L) and (R) .....	84
8A-4-8 Installing the Ceiling Tarpaulin and Side Curtains .....	87
8A-4-9 Level Adjuster Adjustment .....	90
8A-5 Inserting the USB Dongle .....	91
8A-6 Connecting the Communication Cables .....	92
(1) Connection Method .....	92
8A-7 Connecting the Power Cord and Ground.....	93
8A-7-1 Connecting the Power Cord to the Cord Box .....	93
8A-7-2 Connecting the Power Cord to the Outlet.....	94
(1) In case of a 3P outlet.....	94
8A-8 Power Switch Position and Turning the Power Switch On.....	95
8A-8-1 Turning the Power Switch On.....	95
8A-9 Checks after Installation.....	96
<b>8B. Service</b> .....	<b>97</b>
8B-1 Inspection and Service.....	97
8B-1-1 Inspection Items .....	97
(1) Level Adjuster Inspection.....	97
(2) Power Cord Plug Inspection .....	97
(3) Screw Looseness Inspection .....	97
(4) Communication Cable Inspection.....	97
(5) Game PC Board Inspection .....	97
8B-2 Troubleshooting .....	98
8B-2-1 Overall .....	98
8B-2-2 Front Assembly.....	99
8B-2-3 Center Assembly .....	99
8B-2-4 Gun Assembly .....	100
8B-2-5 Rear Assembly .....	101
8B-2-6 Signboard Box Assembly .....	101
8B-3 Error Display (For Technicians).....	102

1
2
3
4
5
6
7
8A
8B
9
10
11
12

Table of Contents

Test Mode

Troubleshooting

---

8B-4	Removing, Installing and Replacing Assemblies and Parts .....	104
8B-4-1	Front Assembly .....	104
(1)	Replacing the Rack Assembly .....	104
(2)	Replacing the Switching Regulator .....	106
(3)	Replacing the MCD AMP PC Board .....	108
(4)	Replacing the STRAIGHT PC Board .....	109
(5)	Replacing the AIR CAN PC Board .....	111
(6)	Replacing the Air Cannon Speaker .....	113
(7)	Replacing the LCD Monitor .....	114
8B-4-2	Center Assembly .....	116
(1)	Replacing the USIO (T) PC Board .....	116
(2)	Replacing the GUN DRIVE PC Board .....	118
(3)	Replacing the Illuminated Switch and LED Lamp of the 2D/3D Switching Button .....	119
8B-4-3	Gun Assembly .....	121
(1)	Removing and Installing the Gun Assembly .....	121
(2)	Replacing the Variable Register (for Right/Left) .....	122
(3)	Replacing the Variable Register (for Up/Down) .....	125
(4)	Replacing the Micro Switch .....	127
(5)	Replacing the Trigger and Spring .....	128
(6)	Replacing the Illuminated Switch and LED Lamp of the START Button .....	129
(7)	Replacing the Vibration Unit .....	131
(8)	Replacing the Gun Harness 2 .....	133
(9)	Replacing the Gun Harness 5 .....	135
(10)	Replacing the VSS Module .....	136
8B-4-4	Rear Assembly .....	138
(1)	Replacing the Switching Regulator .....	138
(2)	Replacing the LAM DRIVE PC Board .....	140
(3)	Replacing the Speed Control Driver .....	141
(4)	Replacing the MOTOR IF PC Board .....	142
(5)	Replacing the DC Brushless Motor and Rotor Cover .....	143
(6)	Replacing the Rear Seat Cushion .....	148
(7)	Replacing LED Modules .....	150
●	Replacing a LED module inside the rear sign panel .....	150
●	Replacing the LED module at the front of the top cover center .....	154
(8)	Replacing the 3D Glasses .....	156
(9)	Replacing the Glasses Cleaning Cloth .....	157
8B-4-5	Signboard Box Assembly .....	158
(1)	Replacing LED Modules .....	158
8B-4-6	Wall Assembly .....	160
(1)	Replacing LED Modules .....	160
8B-5	LCD Monitor Adjustment .....	162
8B-5-1	Removing and Installing the Monitor Adjustment Switches .....	162
8B-5-2	LCD Monitor Picture Quality Adjustment .....	164
8B-5-3	LCD Monitor Settings .....	165
9.	Disposal .....	166

---

10. Parts List.....	168
10-1 Front Assembly .....	168
10-2 Cord Box Assembly.....	170
10-3 Regulator Assembly .....	171
10-4 Transformer Assembly .....	172
10-5 Center Assembly.....	174
10-6 Service Plate Assembly .....	176
10-7 Gun Assembly 1/2.....	178
10-7 Gun Assembly 2/2.....	180
10-8 Rear Assembly 1/4.....	182
10-8 Rear Assembly 2/4.....	184
10-8 Rear Assembly 3/4.....	186
10-8 Rear Assembly 4/4.....	188
10-9 Signboard Box Assembly .....	190
10-10 Wall Assembly.....	191
10-11 Other Parts.....	192
11. Wiring Diagram .....	194
11-1 Overall Wiring Diagram.....	194
11-2 Overall Wiring Diagram.....	195
11-3 Overall Wiring Diagram.....	196
11-4 Overall Wiring Diagram.....	197
11-5 Overall Wiring Diagram.....	198
11-6 Overall Wiring Diagram.....	199
11-7 Overall Wiring Diagram.....	200

1
2
3
4
5
6
7
8A
8B
9
10
11
12

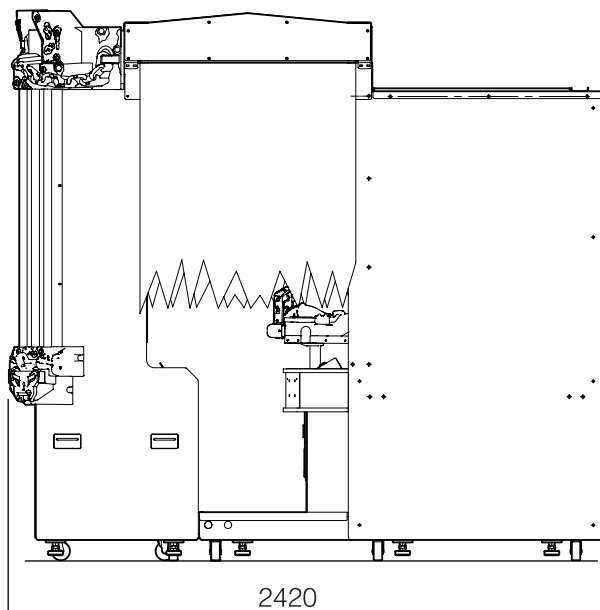
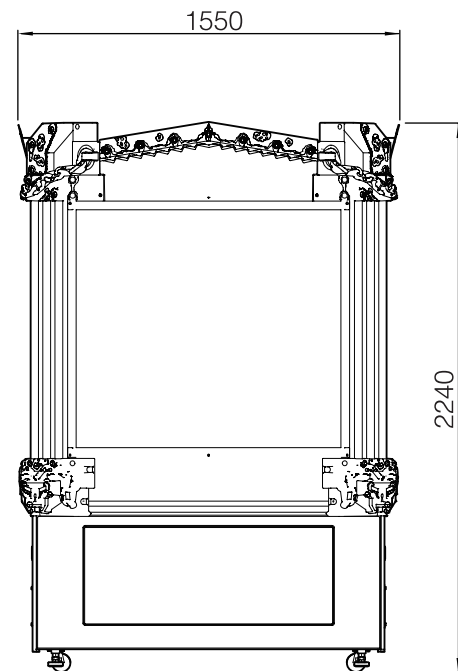
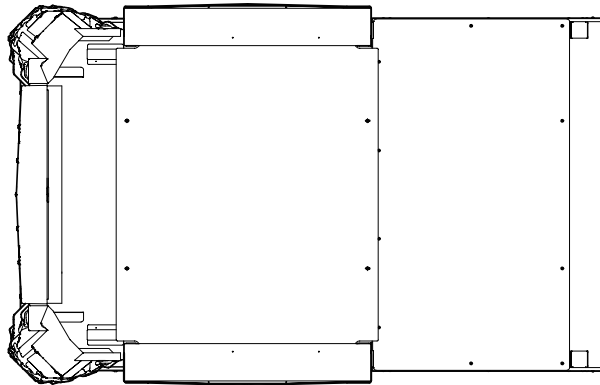
Table of Contents

Test Mode

Troubleshooting

# 2. Specifications

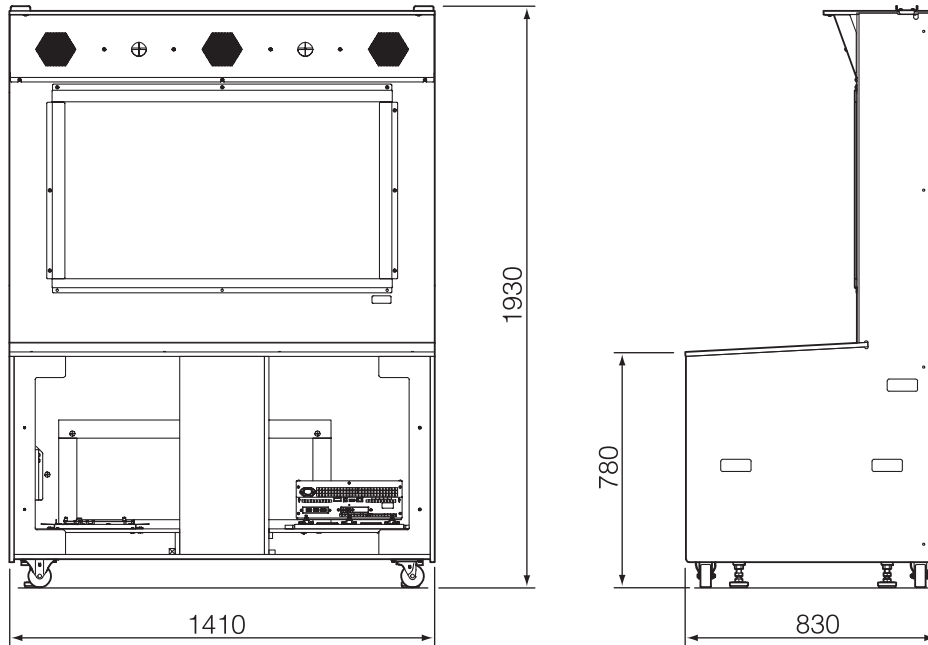
- |                                 |  |
|---------------------------------|--|
| (1) Rated power supply          | One of the following power voltage is set at the factory:<br>AC 110 V $\pm$ 10% (50/60 Hz)<br>AC 120 V $\pm$ 10% (50/60 Hz)<br>AC 220 V $\pm$ 10% (50/60 Hz)<br>AC 230 V $\pm$ 10% (50/60 Hz)<br>AC 240 V $\pm$ 10% (50/60 Hz) |
| (2) Rated power consumption     | 380 W  |
| (3) Maximum current consumption | 3.2 A (AC 110 V power supply), 1.8 A (AC 220 V power supply)   |
| (4) Cashbox capacity            | 1,500 100 yen coins  |
| (5) Monitor                     | LCD monitor (47-inch)  |
| (6) Dimensions                  |  |
| 1) When installed               | Width (W) 1,550 x Depth (D) 2,420 x Height (H) 2,240 [mm]  |



2) When disassembled

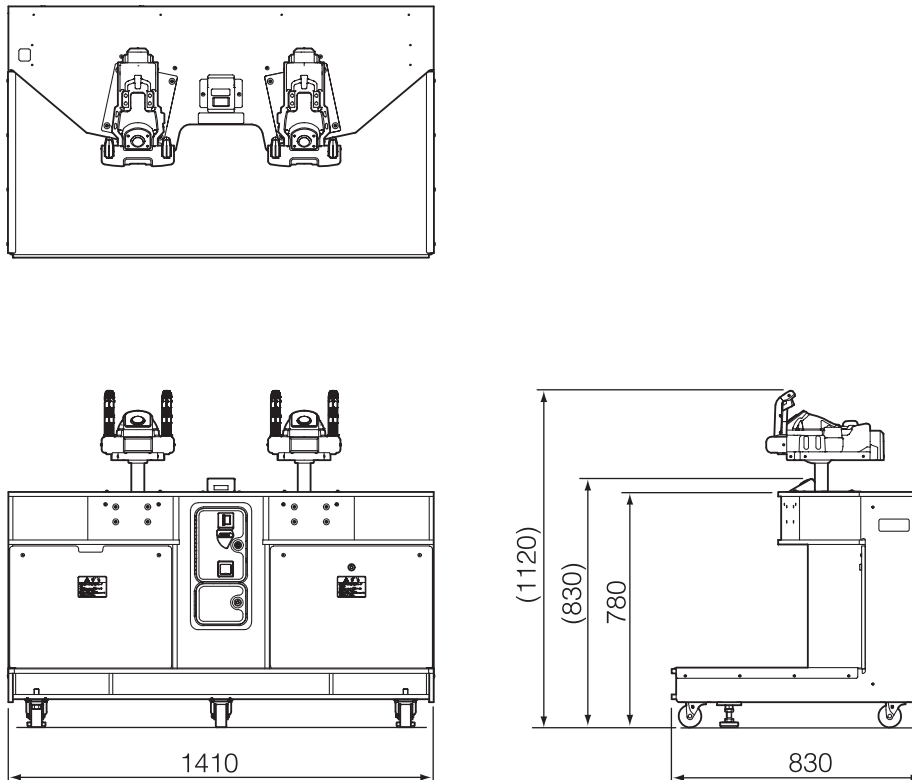
Front assembly

Width (W) 1410 x Depth (D) 830 x Height (H) 1930 [mm]



Center assembly

Width (W) 1410 x Depth (D) 830 x Height (H) 1120 [mm]



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Specifications

Test Mode

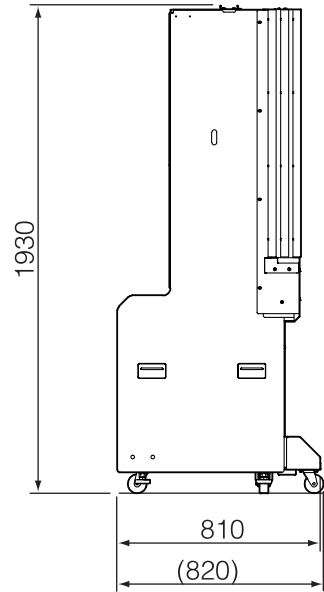
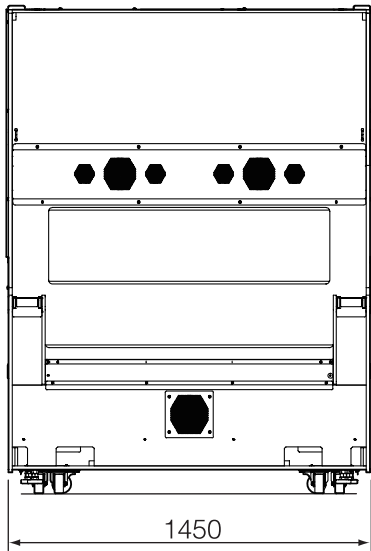
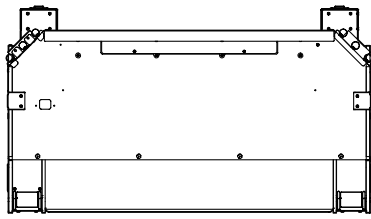
Troubleshooting

## 2. Specifications

---

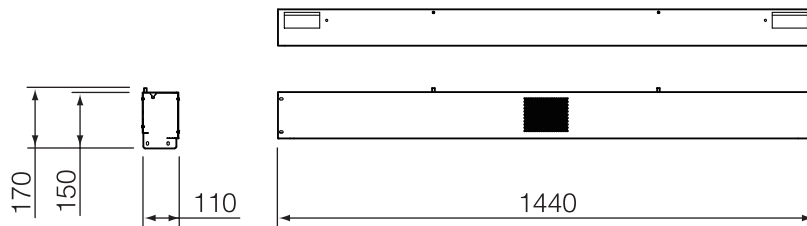
Rear assembly

Width (W) 1450 × Depth (D) 810 × Height (H) 1930 [mm]



Rear top bar

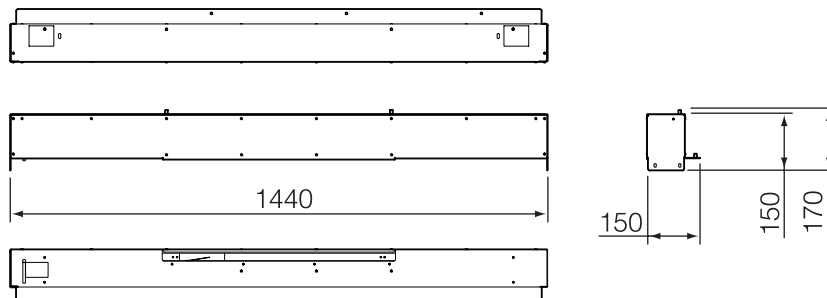
Width (W) 1440 × Depth (D) 110 × Height (H) 170 [mm]



Wall assembly

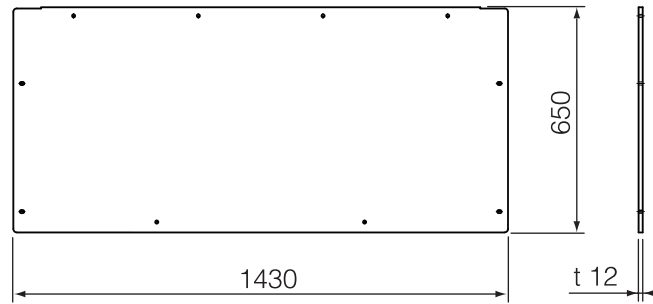
Roof reinforcement assembly

Width (W) 1440 x Depth (D) 150 x Height (H) 170 [mm]



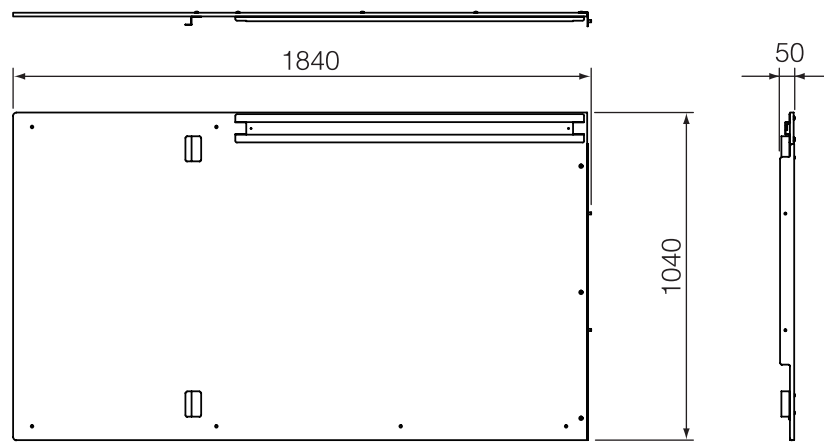
Roof

Width (W) 650 x Depth (D) 1430 x Height (H) 12 [mm]



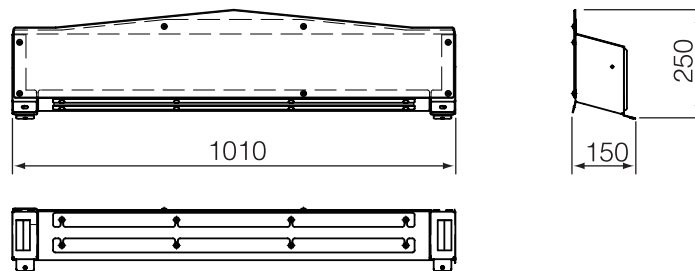
Side walls L and R

Width (W) 1040 x Depth (D) 1840 x Height (H) 50 [mm]



Signboard box assembly

Width (W) 1010 x Depth (D) 150 x Height (H) 250 [mm]



(9) Weight

- |                                  |            |
|----------------------------------|------------|
| 1) When installed                | 525 kg     |
| 2) When disassembled             |            |
| ● Front assembly                 | 165 kg     |
| ● Center assembly                | 90 kg      |
| ● Rear assembly                  | 190 kg     |
| Rear top bar                     | 6 kg       |
| ● Wall assembly                  |            |
| Roof reinforcement               | 8 kg       |
| Roof                             | 8 kg       |
| Side walls L and R               | 20 kg each |
| ● Signboard box assembly (1 pce) | 8 kg       |
| ● Other                          | 12 kg      |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Specifications

Test Mode

Troubleshooting

# 3. Package Contents

The following items are included when this machine is shipped.

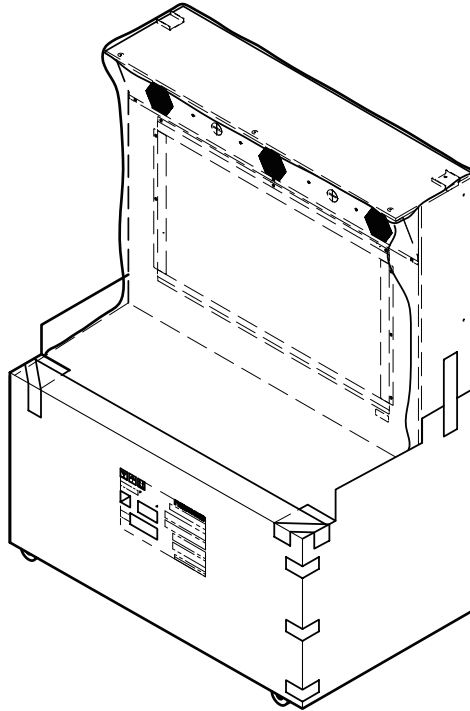


- Make sure that all the items below are contained in the product package.
- If any items are missing, contact your distributor.

## ● Package 1/8 [FRONT ASSY]

Weight: 167 kg

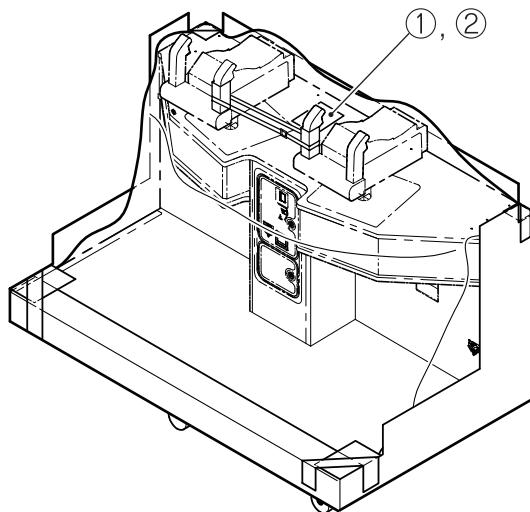
W 1420 x D 840 x H 1930 [mm]





## ● Package 2/8 [CENTER ASSY]

Weight: 88 kg

W 1420 x D 840 x H 120 [mm]



## ● Supplied Item List

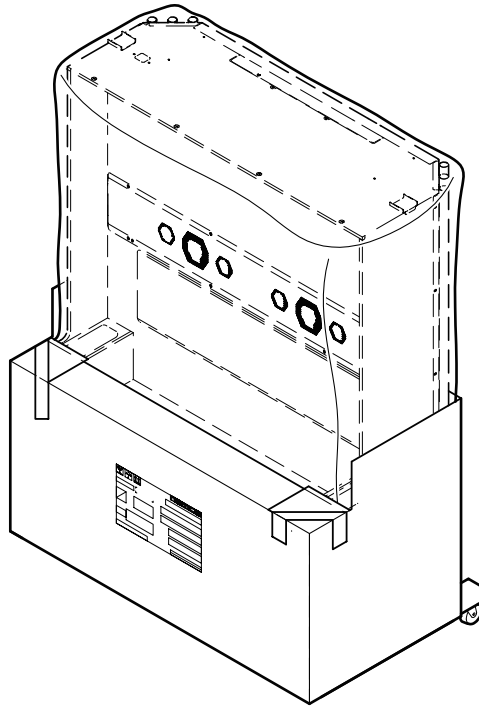
No.	Name	Specification	Qty.
1	Service key		2
2	Cash box key		2



● **Package 3/8 [REAR ASSY]**

Weight: 190 kg

W 1460 x D 830 x H 1930 [mm]



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Package Contents

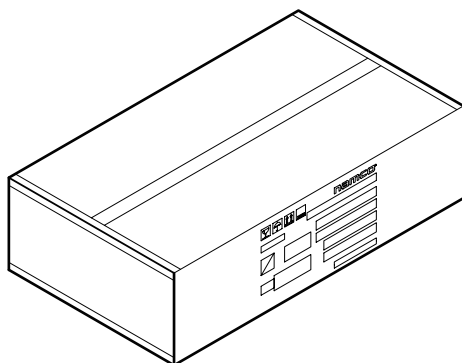
Test Mode

Troubleshooting



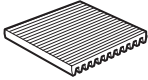







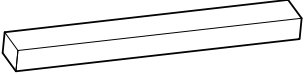

● **Package 4/8 [ACCESSORIES A]**






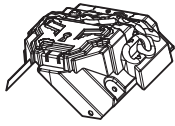
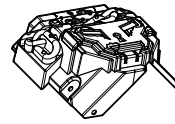
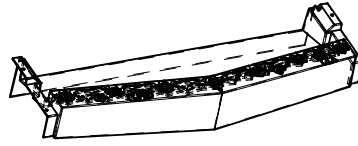
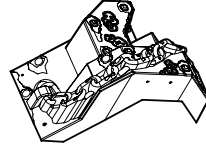
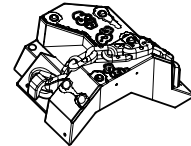



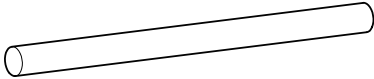




Weight: 16 kg

W 1120 x D 645 x H 340 [mm]



● **Contents List**

No.	Name	Specification		Qty.
1	DARK ESCAPE 4D Operation Manual	(this manual)		1
2	USB dongle			1
3	Anti-vibration pad			10
4	Torx wrench	T25		1
5	Allen wrench	0.05 inches across flats		1
6	3D glasses	Spare		2
7	3D glasses Curly wire cord Curly wire clip	3D glasses x 1 Curly wire cord x 1 Curly wire clip x 2		2
8	Glasses cleaning cloth			2
9	Torx bolt (tamper proof)	M5 x 16 (silver)		4
10	Flat washer	ø5.5 x 20 x t1.0 (silver)		2
11	Poster (DES) EXP	2-card pack		1
12	Communication cable (LAN cable)	20m		1

No.	Name	Specification		Qty.
13	Torx bolt (tamper proof)	M5 x 16 (black)		54
14	Phillips hexagon socket head bolt (with spring washer)	M6 x 40		4
15	Square washer (large)			4
16	Button head bolt	M8 x 50		8
17	Flat washer (large)	ø9 x 30 x t2.3		8
18	Corner cover (L)			1
19	Corner cover (R)			1
20	Top cover center			1
21	Top cover side (L)			1
22	Top cover side (R)			1
23	Torx bolt (tamper proof)	M5 x 8 (black)		32
24	Flat washer	ø5.5 x 20 x t1.0 (black)		24
25	Side curtain EXP			2
26	Ceiling tarpaulin			1
27	Button head bolt	M6 x 30		12
28	Flat washer	ø6.5 x 22 x t1.6 (black)		12
29	Torx bolt (tamper proof)	M5 x 30		2
30	Torx bolt (tamper proof)	M5 x 8 (silver)		2

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Package Contents

Test Mode

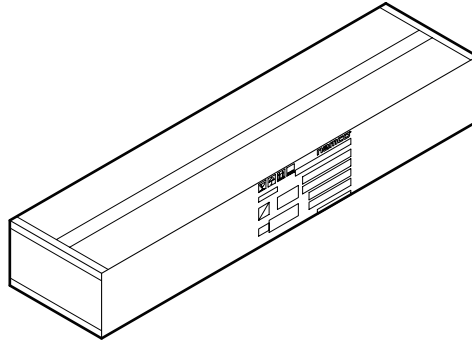
Troubleshooting

### 3. Package Contents

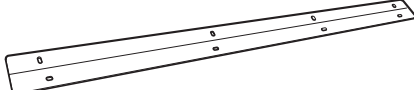
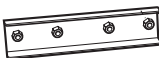

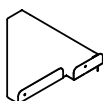
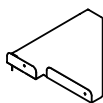
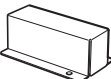
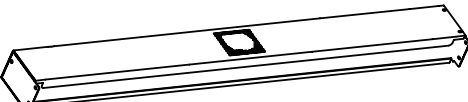
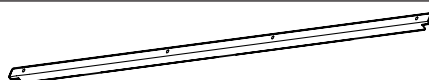
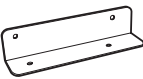
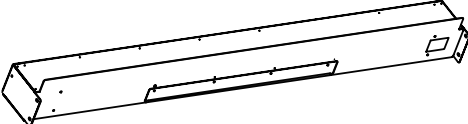
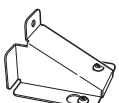
#### ● Package 5/8 [ACCESSORIES B]

Weight: 24 kg

W 1450 x D 370 x H 250 [mm]



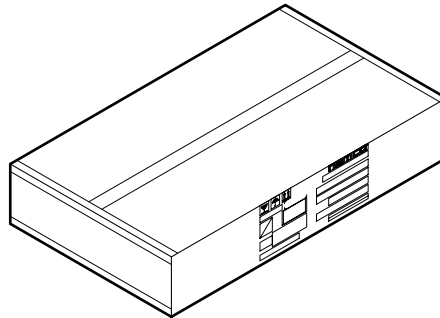
#### ● Contents List

No.	Name	Specification	Qty.
1	FC middle bracket		1
2	Coupling fixture		2
3	Rear corner cover bracket		2
4	Top cover support (R)		1
5	Top cover support (L)		1
6	Top harness cover		1
7	Rear top bar		1
8	Floor mat clamp (B)		1
9	Signboard side bracket (R)		2
10	Roof reinforcement		1
11	Pillar bracket		4

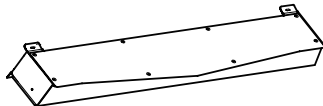
### ● Package 6/8 [SIGN BOX ASSY]

Weight: 20 kg

W 1070 x D 630 x H 230 [mm]



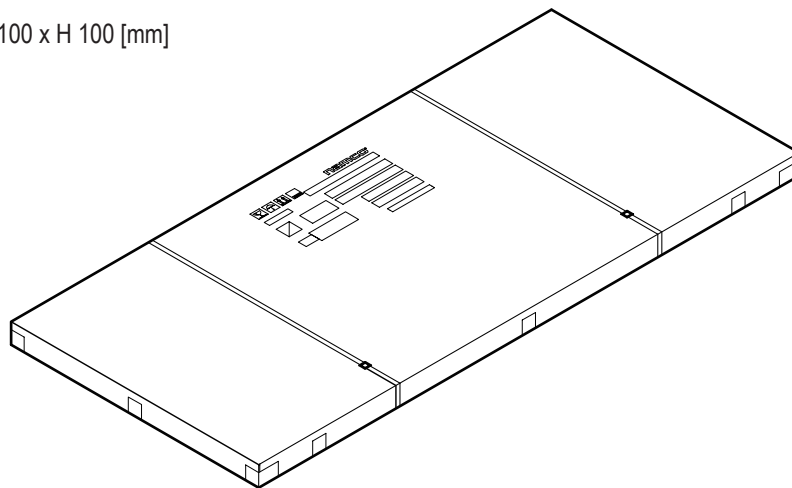
#### ● Contents List

No.	Name	Specification	Qty.
1	Signboard box		2

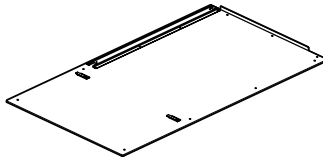
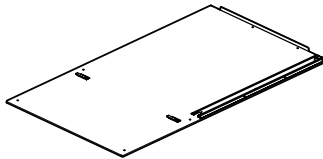
### ● Package 7/8 [SIDE WALL]

Weight: 50 kg

W 1900 x D 1100 x H 100 [mm]



#### ● Contents List

No.	Name	Specification	Qty.
1	Side wall (L)		1
2	Side wall (R)		1

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Package Contents

Test Mode

Troubleshooting

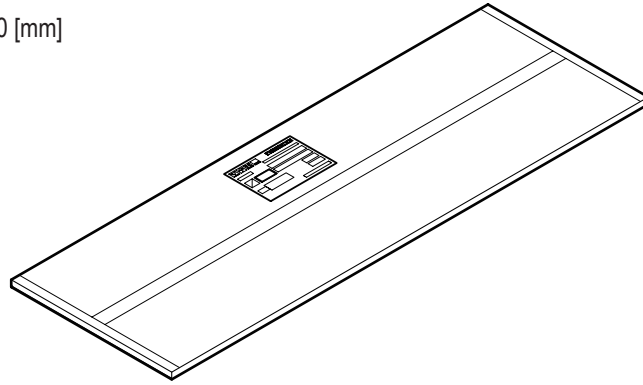
### 3. Package Contents

---

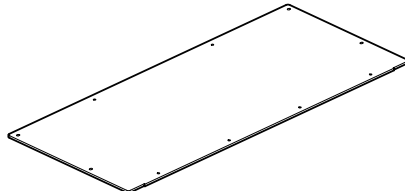
#### ● Package 7/8 [ROOF]

Weight: 12 kg

W 1450 x D 665 x H 30 [mm]



#### ● Contents List

No.	Name	Specification	Qty.
1	Roof		1

# MEMO

- 1
- 2
- 3**
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

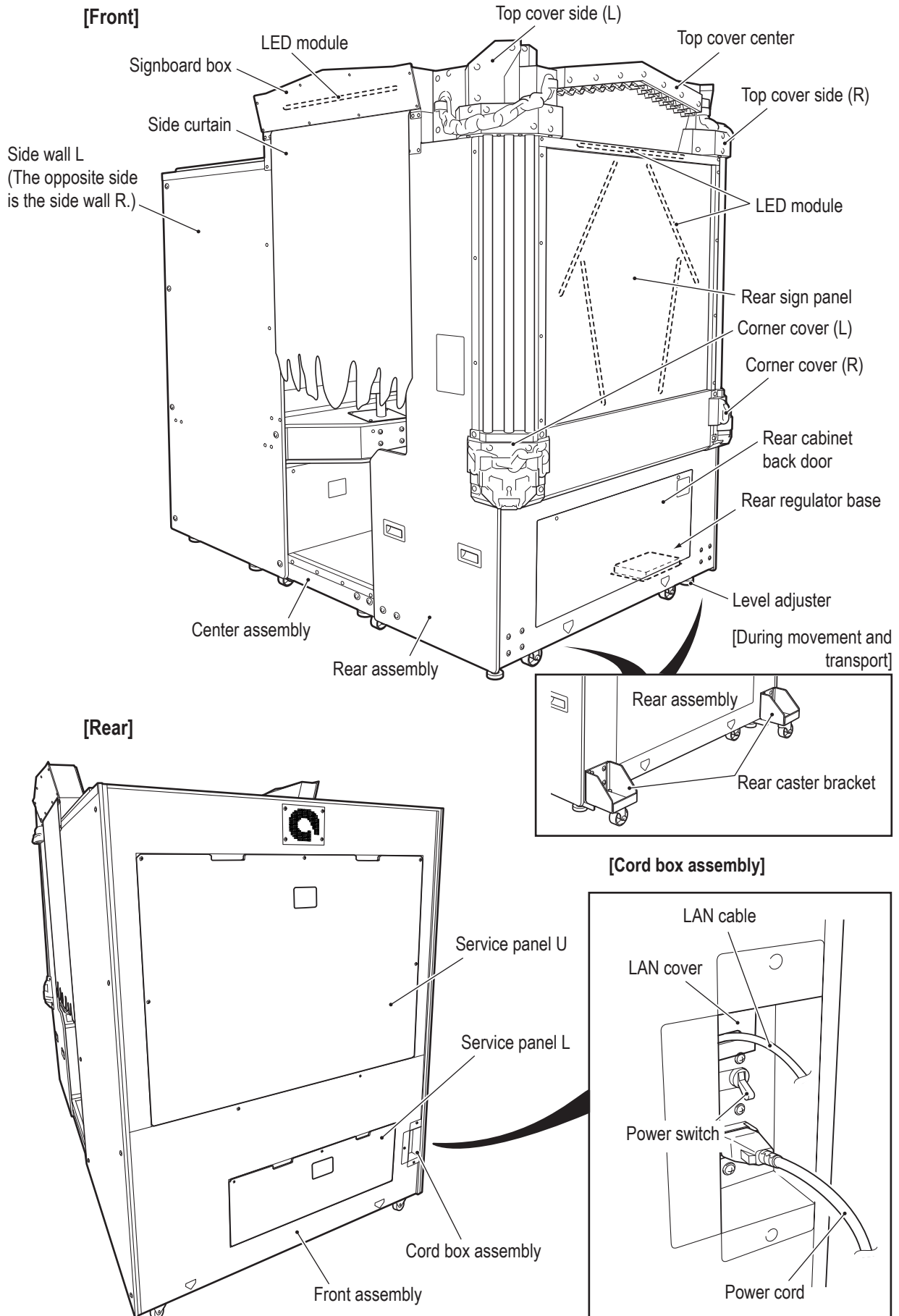
Package Contents

Test Mode

Troubleshooting

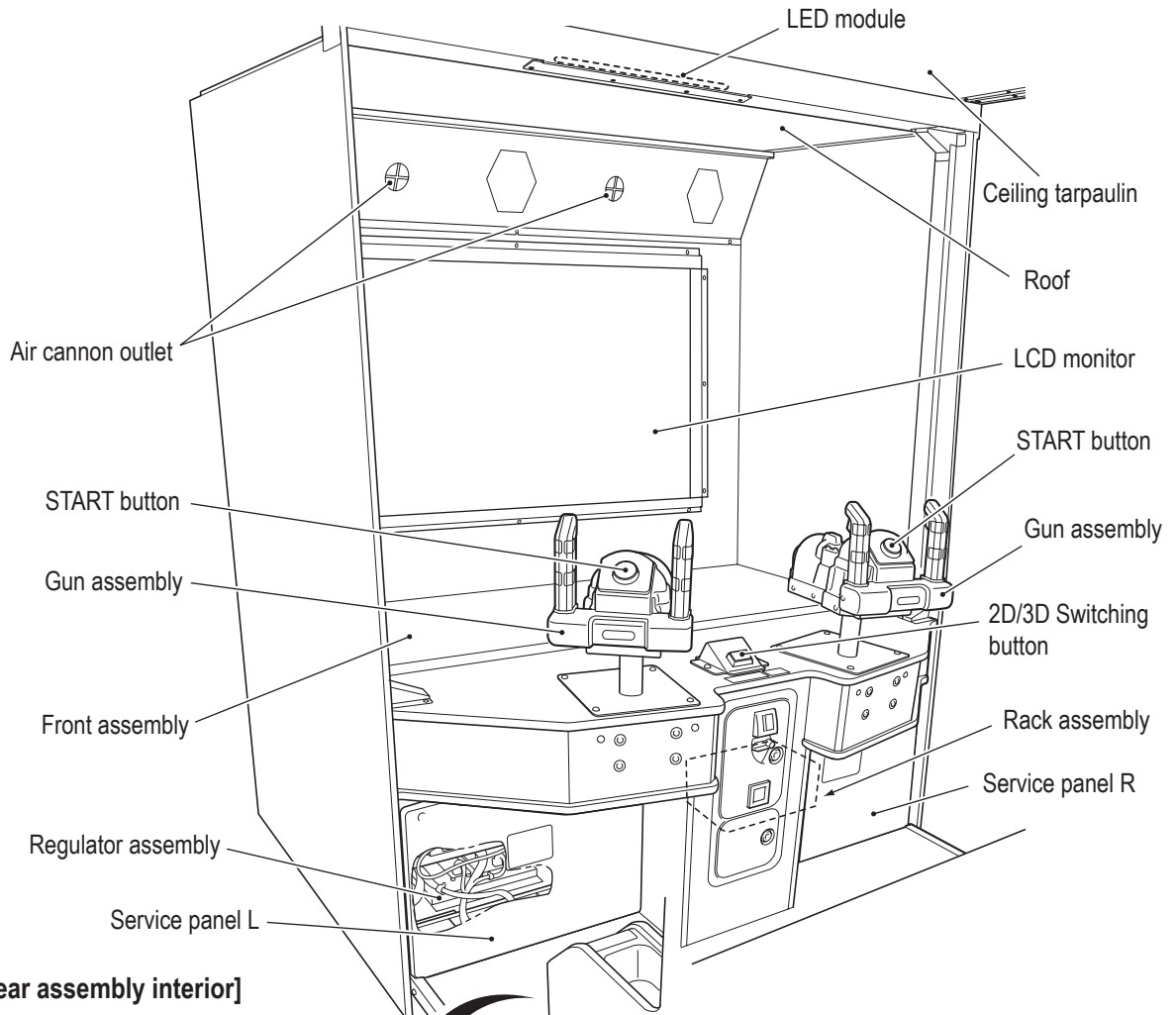
# 4. Overall Structure (Part Names)

\* In this machine, the right side when viewing the LCD monitor from the front is designated as (R), and the left side as (L).

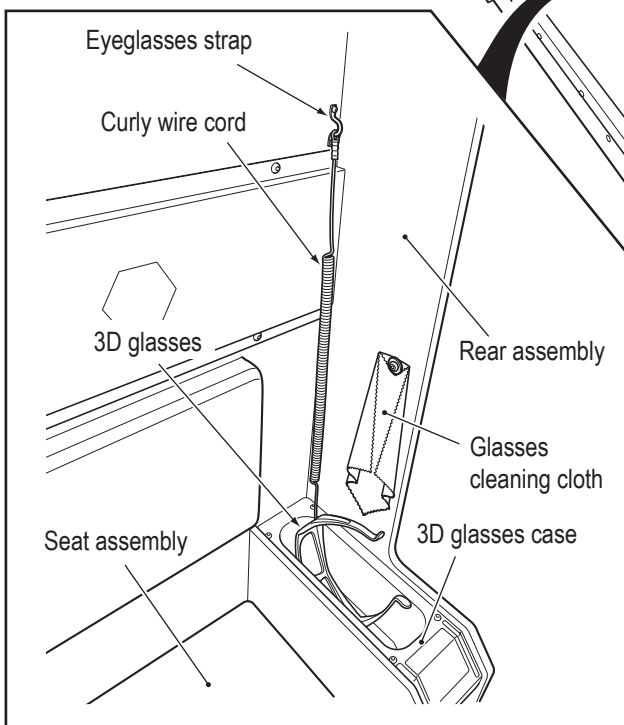




[Front and center assembly interior]



[Rear assembly interior]



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Overall Structure (Part Names)

Test Mode

Troubleshooting

# 5. Delivery and Installation Conditions

---

## WARNING

- Install the machine according to the instructions in this Operation Manual and the procedures described in “8A. Installation and Assembly”. Failure to follow these instructions may result in a fire, electric shock, injury or malfunction.
- Fully insert the power cord plug into the outlet. Poor contact may generate heat and result in a fire or burns.
- Be sure to install the ground wire. Failure to install the ground wire may result in electric shock in the event of electrical leakage. (See “8A-7 Connecting the Power Cord and Ground” on page 93.)
- Install the machine securely by using the level adjusters. Unstable machine installation may result in an accident or injury. (See “8A-4-9 Level Adjuster Adjustment” on page 90.)
- The removed transport casters, rope hooks and attachment screws are necessary when moving and transporting the machine. Be sure to keep them in a safe place.

## 5-1 Installation Conditions

### 5-1-1 Installation Locations to Avoid

## WARNING

- The machine is designed for indoor use. Never install the machine outdoors or in the following locations.
  - A location exposed to direct sunlight
  - A location exposed to rain or water leaks
  - A damp location
  - A dusty location
  - A location close to heaters
  - A hot location
  - An extremely cold location
  - A location exposed to condensation caused by temperature differences
  - A location that obstructs an emergency exit or fire extinguishing equipment
  - An unstable location or a location exposed to vibration

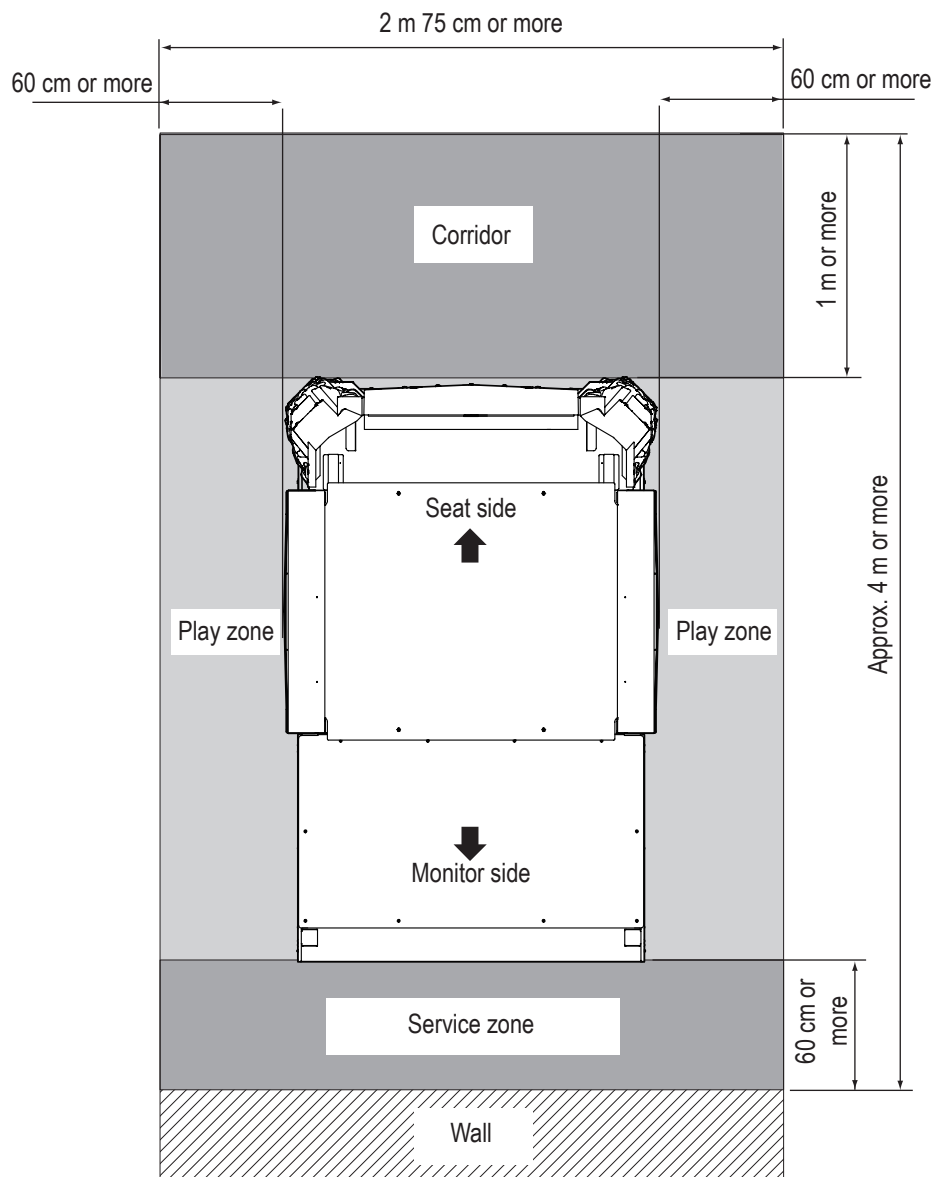
## 5-1-2 Play Zone for the Installed Machine

### ⚠ CAUTION

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

### NOTICE

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



\* A ceiling height of 2 m 40 cm or more is required.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Delivery and Installation Conditions

Test Mode

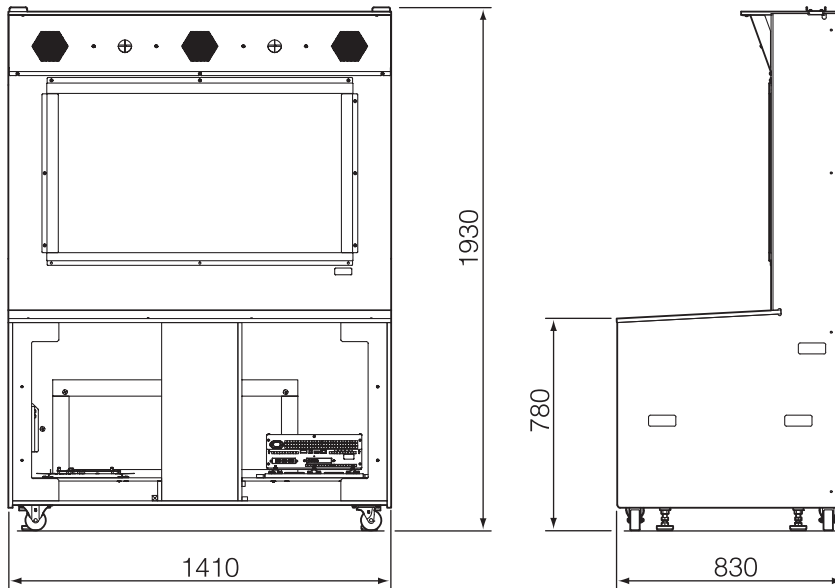
Troubleshooting

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

The delivery route sufficiently larger than the machine height and width must be secured.  
The sizes of the main parts of the machine when shipped are as follows.

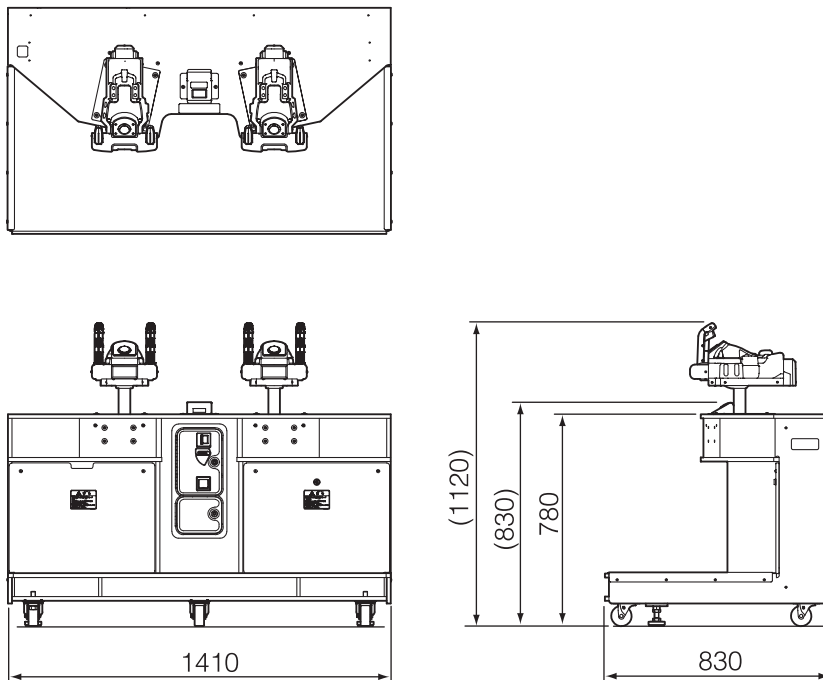
● Front assembly

Width (W) 1,410 x Depth (D) 830 x Height (H) 1,930 [mm]      Weight 165 kg



● Center assembly

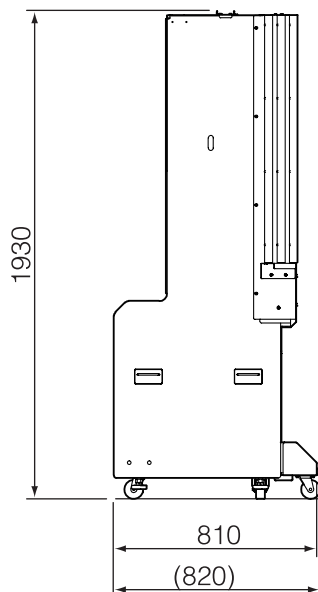
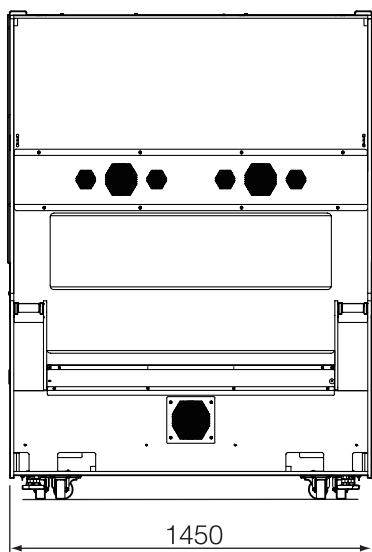
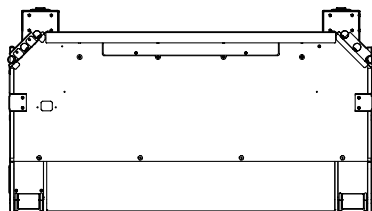
Width (W) 1410 x Depth (D) 830 x Height (H) 1120 [mm]      Weight 90 kg



● Rear assembly

Width (W) 1450 × Depth (D) 810 × Height (H) 1930 [mm]

Weight 190 kg



Refer to the above dimensions and check beforehand that the machine can be carried in without problem.

\* When delivery is complete, go to “8A-4 Assembly” on page 68.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Delivery and Installation Conditions

Test Mode

Troubleshooting

# 6. Moving and Transporting

---

## WARNING

- Do not leave the machine on a slope. It may fall over or result in an accident.
- When moving the machine, first attach the transport casters to the rear assembly, and then separate the assemblies and parts. Failure to do so may cause the machine to fall over or result in an accident.

## 6-1 Moving (On the Same Floor)



- When moving the machine, first separate the front assembly, center assembly, rear assembly, signboard box assembly, curtain, side walls L and R, and roof.
- Even when moving the machine only a short distance, be sure to raise the level adjusters of the front assembly, center assembly and rear assembly to their highest level. (See “8A-4-9 Level Adjuster Adjustment” on page 90.)
- Move the machine carefully to avoid damaging it.
- Handle the communication cable and power cord carefully.  
Be especially careful when connecting and disconnecting the communication cable connectors. (See “8A-6 Connecting the Communication Cable” on page 92 and “8A-7 Connecting the Power Cord and Ground” on page 93.)

## 6-2 Transporting

### 6-2-1 Transporting Manually (Such as Carrying on Stairs)

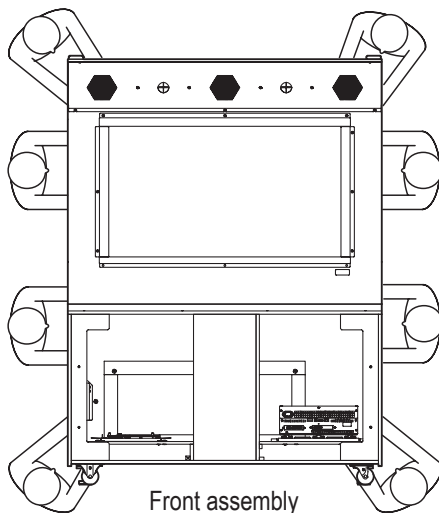
#### ⚠ WARNING

- Before transporting the machine manually, be sure to first attach the transport casters to the rear assembly, and then separate the front assembly, center assembly, rear assembly, signboard box assembly, curtain, side walls L and R, and roof.

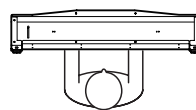
(See "8A-4 Assembly" on page 68.)

- When transporting the machine manually, be sure to use the following number of people. Overburdening yourself may result in an accident or injury.

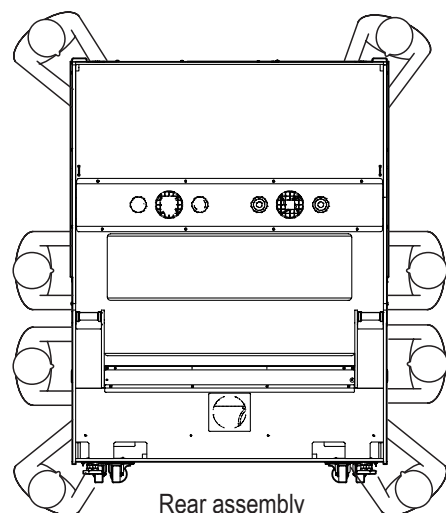
- |                                   |                    |
|-----------------------------------|--------------------|
| • Front assembly (165 kg)         | : 8 people or more |
| • Center assembly (90 kg)         | : 6 people or more |
| • Rear assembly (190 kg)          | : 8 people or more |
| • Signboard box assembly (8 kg)   | : 1 person or more |
| • Side walls L and R (20 kg each) | : 2 people or more |
| • Roof (8 kg)                     | : 2 people or more |



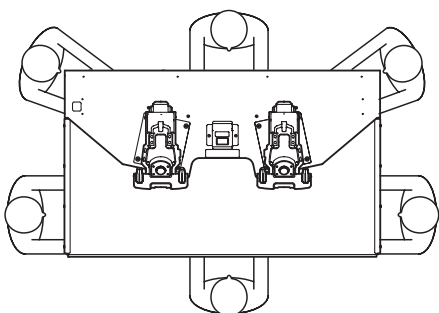
Front assembly



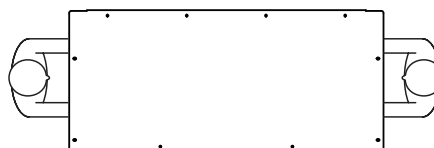
Signboard box assembly



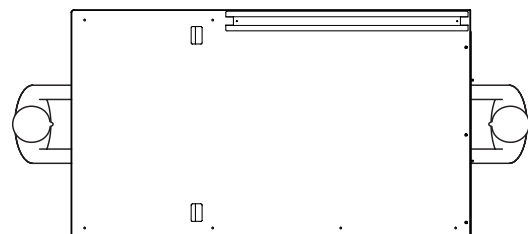
Rear assembly



Center assembly



Roof



Side wall L/R

#### NOTICE

- Do not subject the machine to impact when lowering it.
- Move the machine carefully to avoid damaging it.
- Be sure to raise the level adjusters to their highest level.  
(See "8A-4-9 Level Adjuster Adjustment" on page 90.)

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Moving and Transporting

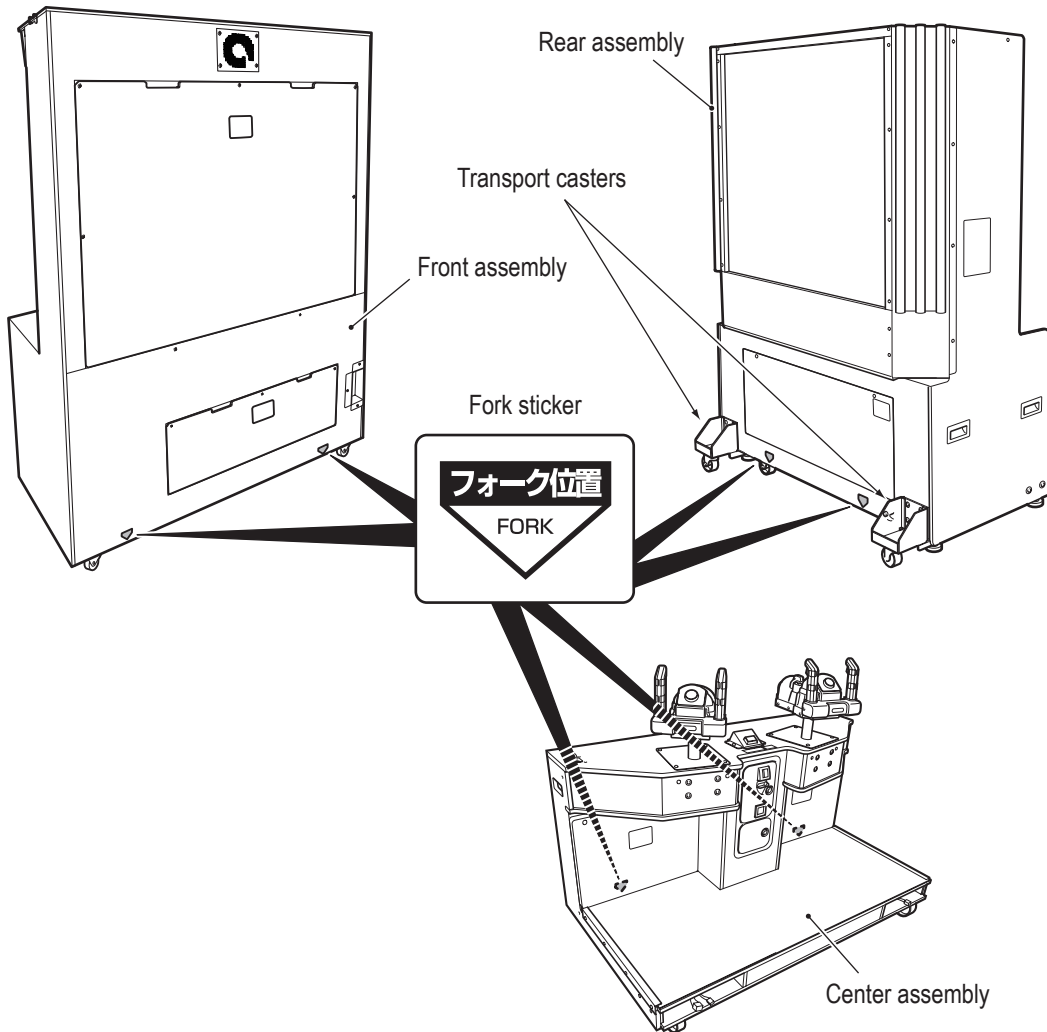
Test Mode

Troubleshooting

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

### ⚠ WARNING

- Before transporting the machine manually, be sure to first attach the transport casters to the rear assembly, and then separate the front assembly, center assembly, rear assembly, signboard box assembly, curtain, side walls L and R, and roof. (See “8A-4 Assembly” on page 68.)
- When using a forklift to transport the front assembly, center assembly and rear assembly, observe the following.  
Failure to observe the following instructions may result in an accident, such as the machine falling over.
  - Be sure to insert the fork to the specified positions.
  - Make sure that the machine is balanced properly during transportation.



- When manually loading or unloading to or from a vehicle, perform the work according to “6-2-1 Transporting Manually (Such as Carrying on Stairs)” on page 29.

### NOTICE

- Move the machine carefully to avoid damaging it.
- Be sure to raise the level adjusters of the front assembly, center assembly and rear assembly to their highest level. (See “8A-4-9 Level Adjuster Adjustment” on page 90.)
- Do not subject the machine to impact when lowering it.



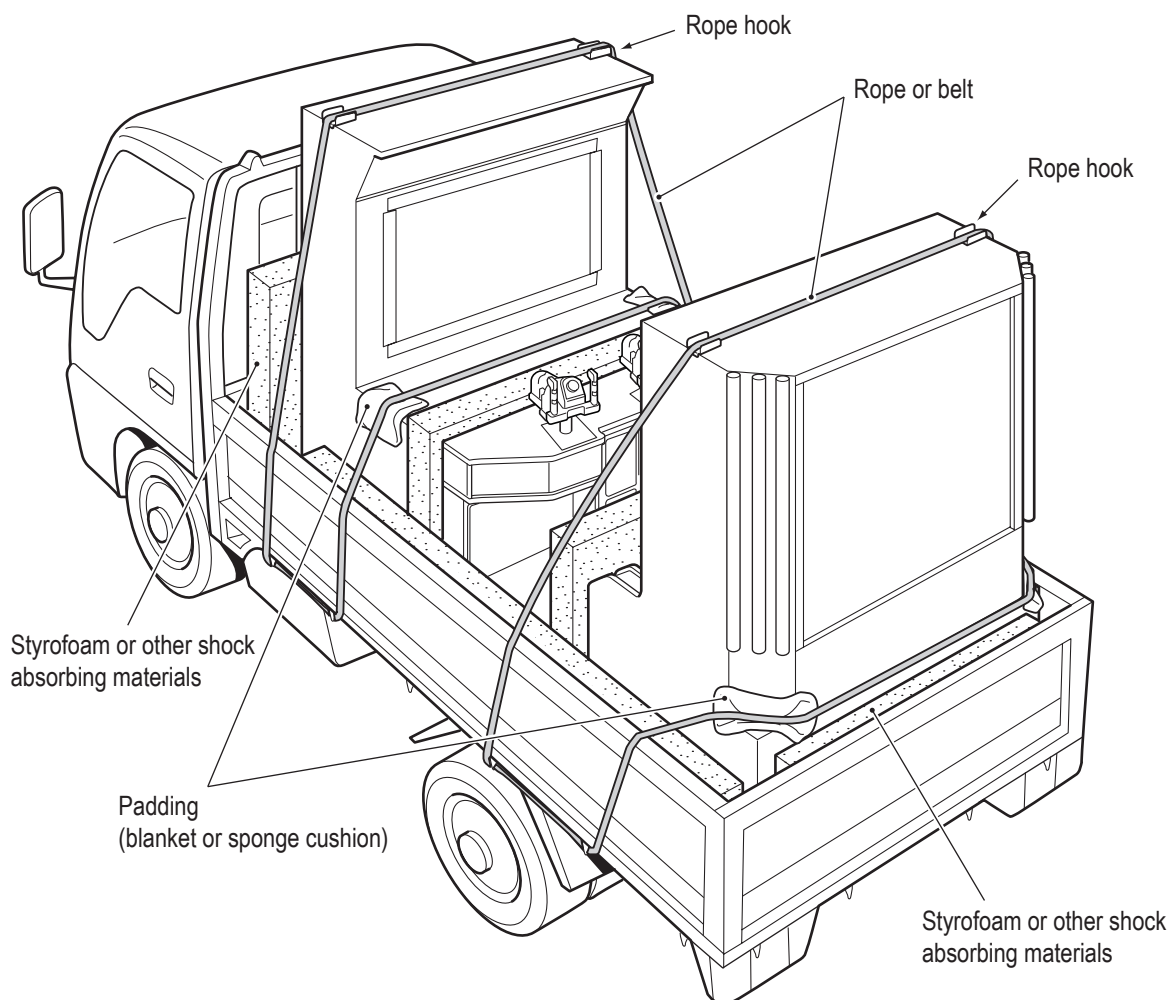
## 6-2-3 Transporting on a Vehicle

**! WARNING**

- When transporting the machine on a vehicle, secure the machine firmly so that it does not move during vehicle transport. Failure to secure the machine may result in an accident.
- When transporting the machine on a vehicle, attach the transport casters to the rear assembly. Failure to do so may cause the machine to fall over or result in an accident.  
(See step **5** of “8A-4-4 Connecting the Center Assembly and Rear Assembly” on page 79.)

**NOTICE**

- Do not subject the machine to impact when lowering it.
- Move the machine carefully to avoid damaging it.
- When securing the machine with ropes, observe the following.
  - Be sure to secure the machine with ropes or belts in the positions shown in the figure below.
  - Place Styrofoam or other shock absorbing material between the machine and the truck bed and any other equipment or items to protect the machine surfaces.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Moving and Transporting

Test Mode

Troubleshooting

# 7. Operation

---

## WARNING

- Should an abnormality occur, turn off the power switch immediately to stop operations. Then, be sure to disconnect the power cord plug from the outlet. Operating the machine while the abnormality persists may result in a fire or accident.
- Dust accumulating on the power cord plug may result in a 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 a fire or burns.
- Before operating the machine, be sure to check that installation has been performed according to the instructions and specified procedures (See “5. Delivery and Installation Conditions” on page 24.) in this Operation Manual. Failure to install the machine correctly may result in a fire, electric shock, injury or malfunction.
- The warning labels contain important information for ensuring safety. Be sure to observe the following. (For the warning label locations, see “1-4 Machine Warning Labels” on page 3.)
  - To ensure that the warning labels attached to the machine are always clearly visible, install the machine in an appropriate location with ample illumination and keep the labels clean at all times. 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.
- To ensure safe use of the machine, be sure to perform the pre-operation inspection (See “7-4 Pre-operation Inspection” on page 34.) and service (See “8B. Service” on page 97.) described in this Operation Manual. Omitting these inspections or service may result in an accident.

## 7-1 People Who Should Avoid Playing

### WARNING

- To ensure the safety of players, be careful not to let the following types of people play. Otherwise, this may result in an accident.
  - People who are sensitive to light stimulation
  - People who disregard the warning labels attached to the machine

## 7-2 Safety Precautions for Playing

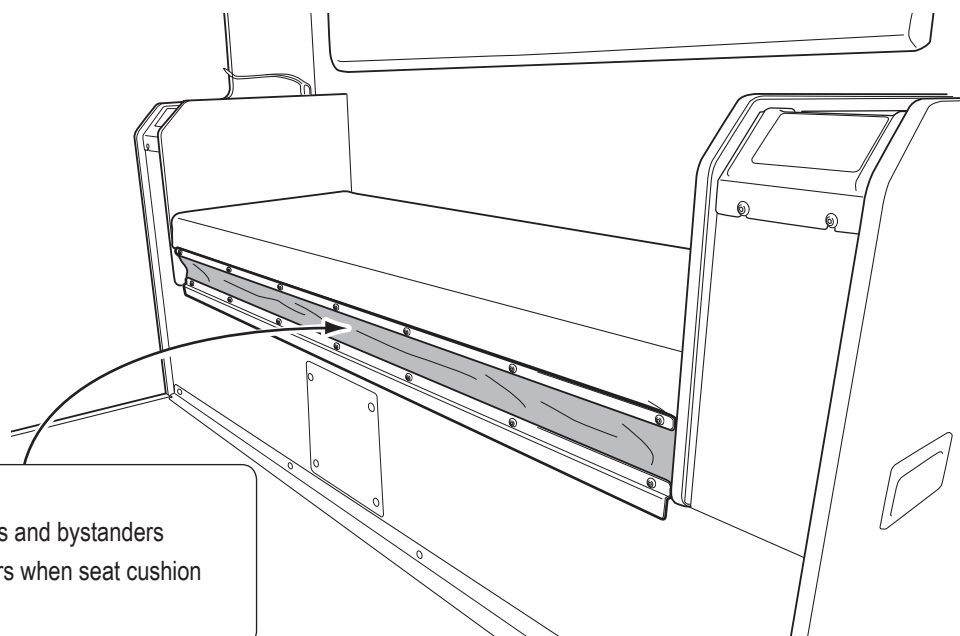
### ! WARNING

- If players start feeling ill because of the game images or light stimulation, they must stop playing and take a break immediately.
- In rare cases, stimulation by lights or video images may cause the player to have a seizure or lose consciousness. If this happens, advise the player to consult a doctor as soon as possible. When preschool children play, instruct their parents or guardians to observe them.

## 7-3 Important Parts for Ensuring Player and Bystander Safety

### ! WARNING

- This machine includes important parts used to ensure the safety of players and bystanders. Operating the machine while these “important parts for ensuring player and bystander safety” are broken, damaged or deteriorated, or with defective installation may result in an injury to the players or bystanders. If you discover an abnormality, replace the affected part immediately. To order parts, contact your distributor.



Seat guard tarpaulin:  
This part protects players and bystanders from pinching their fingers when seat cushion movement is enabled.

Seat guard tarpaulin      Part No.: 731-129

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

Troubleshooting

---

## 7-4 Pre-operation Inspection

Check the items below before starting machine operations.

If there is an abnormality, resolve it by referring to “8B-2 Troubleshooting” on page 98.

### 7-4-1 Safety Inspection (Before Power On)

#### **WARNING**

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

- (1) Are all warning labels legible?  
(See “1-4 Machine Warning Labels” on page 3.)
- (2) Are all level adjusters adjusted properly so that the machine is stable?  
(Front assembly, center assembly and rear assembly) (See “8A-4-9 Level Adjuster Adjustment” on page 90.)
- (3) Is the specified play zone provided? (See “5-1-2 Play Zone for the Installed Machine” on page 25.)
- (4) Are the front assembly and center assembly fixed securely to each other?  
(See steps and of “8A-4-1 Connecting the Front Assembly and Center Assembly” on page 68.)
- (5) Are the center assembly and rear assembly fixed securely to each other?  
(See step of “8A-4-4 Connecting the Center Assembly and Rear Assembly” on page 78.)
- (6) Is the signboard box assembly fixed securely?  
(See “8A-4-5 Installing the Signboard Box Assembly” on page 80.)
- (7) Are the gun assembly screws tightened securely? (See “8B-4-3 Gun Assembly” on page 121.)
- (8) Is the power cord laid out safely so that it will not cause players or other customers to trip over it?
- (9) Is the power cord securely connected to the outlet and the cord box assembly of the machine? (See “8A-7 Connecting the Power Cord and Ground” on page 93.)
- (10) Is the seat guard tarpaulin damaged?  
(See “8B-4-4(5) Replacing the DC Brushless Motor and Rotor Cover” on page 143.)
- (11) Are the 3D glasses broken, cracked or sharp in any areas?  
(See “8B-4-4(8) Replacing the 3D Glasses” on page 156.)
- (12) Are the lenses of the 3D glasses scratched or dirty?  
(See “8B-4-4(8) Replacing the 3D Glasses” on page 156.)
- (13) Is the glasses cleaning cloth dirty or otherwise unpleasant to use?  
(See “8B-4-4(9) Replacing the Glasses Cleaning Cloth” on page 157.)

Inspect the following items after turning on the power switch. If you discover an abnormality, turn off the power switch immediately to stop operations. Then, disconnect the power cord plug from the outlet and contact your distributor.

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

## 7-4-2 Function Inspection (After Power On)

Turn on the power switch and check the following items.

(See "7-6-1 Power Switch Position and Turning the Power Switch On" on page 38.)

- (1) Check the displayed images. (Does the monitor operate properly?) (See "7-7-5 Monitor Adjustment (MONITOR TEST)" on page 53.)
- (2) Check the audio. (Is sound produced by each speaker?) (See "7-7-6 Sound Adjustment (SOUND TEST)" on page 55.)
- (3) Check the LED module. (Do the lamps light up?)
- (4) Is any part of the power cord or plug abnormally hot?
- (5) Does touching the machine give a tingling electric shock?
- (6) Is there a burning smell, abnormal noise or vibration?
- (7) Is there any other abnormality or malfunction?

To inspect the following items, press the Service button and actually play the game. (See "7-6-2 Adjustment Switches" on page 39.)

- (8) Check the gun assembly operation.  
(See "7-7-4 Testing the Switches, Sensors and Other Components (I/O TEST)" on page 45.)
- (9) Check the gun assembly vibration operation.  
(See "7-7-4 Testing the Switches, Sensors and Other Components (I/O TEST)" on page 45.)
- (10) Check the button and switch operations.  
(See "7-7-4 Testing the Switches, Sensors and Other Components (I/O TEST)" on page 45.)



- After all inspections are finished, turn off the power switch.  
(See "7-6-1 Power Switch Position and Turning the Power Switch On" on page 38.)

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

Troubleshooting

---

## 7-5 Playing the Game

### CAUTION

- If players start feeling ill because of the game images or light stimulation, they must stop playing and take a break immediately.
- In rare cases, stimulation by lights or video images may cause the player to have a seizure or lose consciousness. If this happens, advise the player to consult a doctor as soon as possible. When pre-school children play, instruct their parents or guardians to observe them.

#### (1) Basic Rules

1. Players shoot the guns to try and destroy approaching monsters.
2. The gun type automatically changes according to the game progress.
3. When playing in two-player mode, the players can use combination shots that have high offensive power by shooting with the crosshairs of both guns close to each other.
4. When the screen in front of a player is bit by a monster or hit by a bottle thrown by a monster or liquid spit by a monster, that player's life gauge decreases. When the life gauge reaches zero, the game is over.
5. Round target markers may be displayed on a monster's body, in the background, or on objects that come flying toward the player. If these target markers cannot be destroyed within a certain time, the life gauge decreases.
6. There are two types of target marker: a normal marker and a combination marker with the text: "Shoot together!" Combination markers can be destroyed only by a combination shot.
7. Sensors built into the gun controller (gun assembly) grips judge whether the player is startled during game play, and record the number of startled times.
8. The number of startled times is displayed in the results screen at the end of each stage. In addition, when playing in two-player mode, the combination rate is also displayed. The combination rate increases when players work together to skillfully destroy enemies with combination shots.

#### (2) Gun Types and Features

1. Machine gun  
Bullets are fired when the player pulls the trigger of the gun controller (gun assembly). Bullets are fired in rapid succession while the trigger is held down.
2. Magnum  
Like the machine gun, bullets are fired in rapid succession while the trigger is held down, but the repeat firing speed is slower than that of the machine gun. In addition, in some scenes during game play, a spotlight is shined in the direction the gun is pointing.
3. Rocket launcher  
Like the machine gun, rockets are fired in rapid succession while the trigger is held down, but the repeat firing speed is much slower than that of the machine gun. In addition, the rockets fly at a slower speed than bullets, so in order to hit the targets well, the player must aim in consideration of the time difference until the rockets hit.

### (3) Explanation of the Game System

1. Combination shots  
When playing in two-player mode, by bringing each gun's crosshairs close to each other, the crosshairs become larger and players can use combination shots with high offensive power. Combination markers can be destroyed only by combination shots, and effective use of combination shots lets players destroy monsters more easily.
2. Horror selection  
Events occur partway through stages where players select one of two choices. By shooting and selecting one of the choices, a horror event occurs or the player gets a life box that restores their life gauge.
3. Red drum cans  
The red drum cans scattered throughout a stage explode when shot, enabling to destroy all enemies around the drum that are caught in the explosion.
4. Continue bonus  
When playing in two-player mode and a player whose life gauge has fallen to zero continues play, the life gauge of the other player also recovers slightly.
5. Stage selection  
Players can select and play four different stages (Prison, Death Chamber, Cabin, Lab Complex) in the desired order. However, if "Prison" is not selected as the first stage, it cannot be selected thereafter.
6. Secret stage  
After all stages have been cleared in succession (including when "Prison" was not selected first), players can advance to a secret stage.
7. Emergency event  
The game ending differs according to the result of the emergency event that occurs partway through the secret stage.

### (4) START Button

1. The game starts on the side where the START button was pressed.  
The crosshairs are red when the START button on the left side is pressed, or blue when the START button on the right side is pressed.
2. A second player can join at any time during a game.
3. When "Press the START button to skip." is displayed during the demonstration scenes inserted at different points during the game, players can press the START button to skip the demonstration scene.

### (5) 2D/3D Switching Button

1. The display can be switched between 2D mode and 3D mode by pressing this button at any time during game play. However, when the Test mode is used to switch the machine to 2D mode during the Attract mode before game play starts, the display mode cannot be switched.
2. The supplied 3D glasses must be used to view the 3D display.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

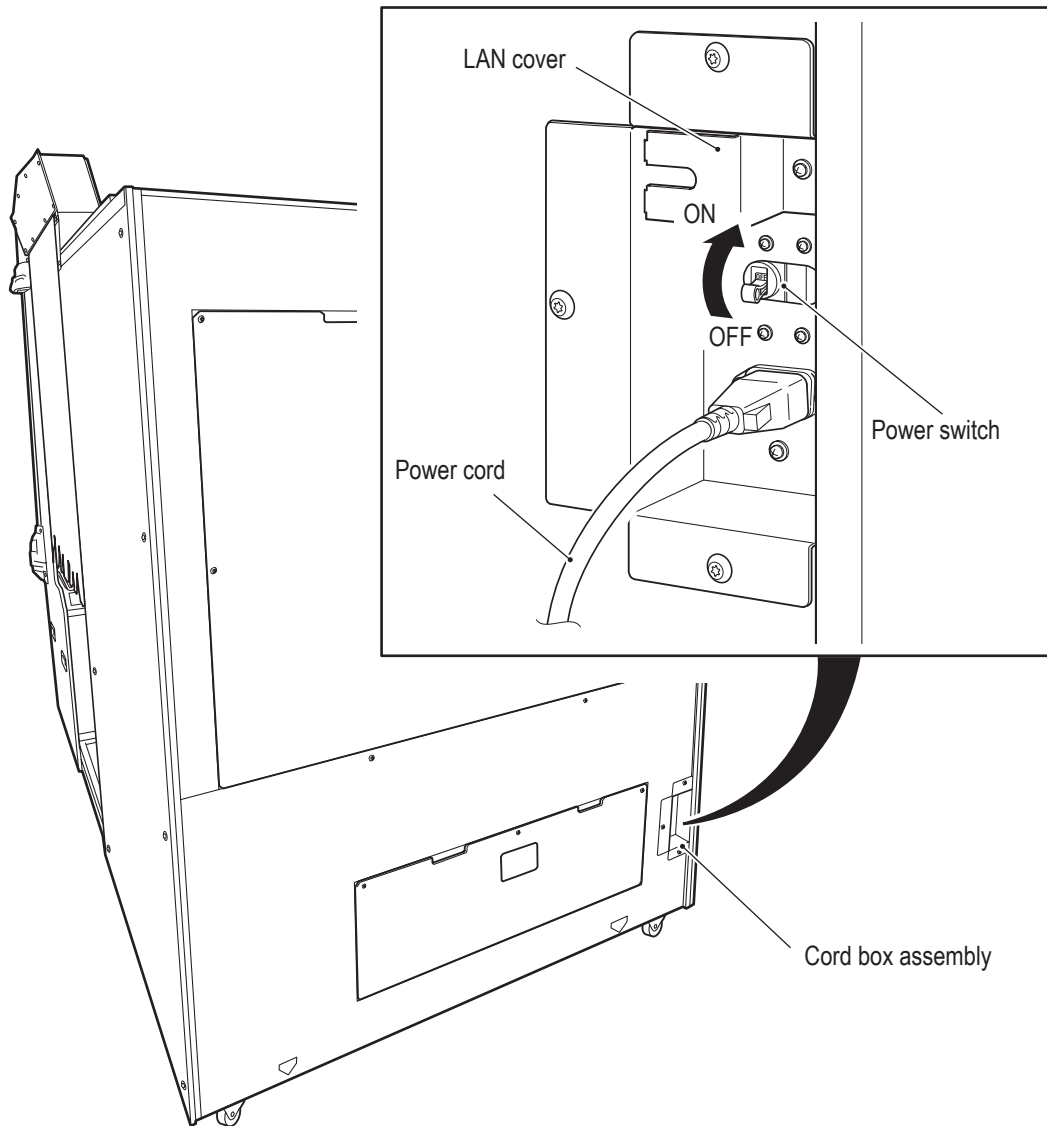
Test Mode

Troubleshooting

## 7-6 Power Switch and Adjustment Switches

### 7-6-1 Power Switch Position and Turning the Power Switch On

- 1 Turn on the power switch located inside the cord box on the rear of the front assembly.

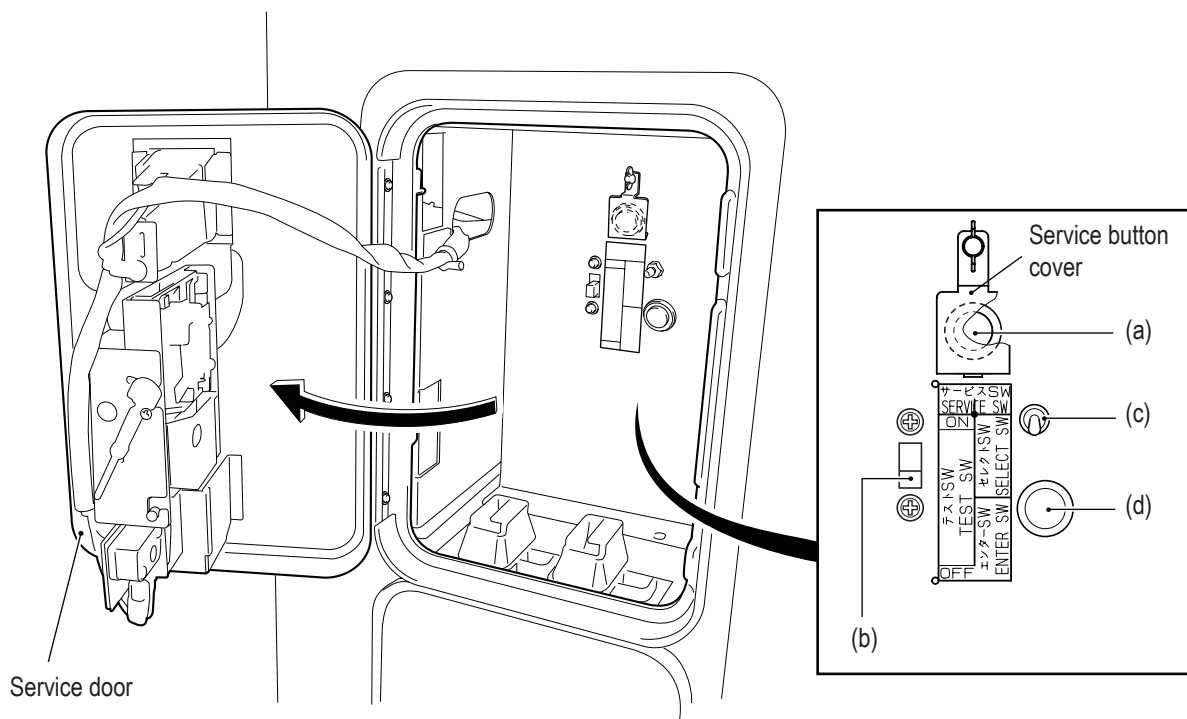


- Do not turn the power switch on and off needlessly. Doing so may result in a machine malfunction.
- When turning the power switch off and on, wait 30 seconds or more between operations.



## 7-6-2 Adjustment Switches

Use the supplied service key to open the service door of the center assembly for access to the adjustment switches.



### (a) Service button (red)

Press this button to increase the credit count without operating the coin counter.

### (b) Test switch

Set this switch to ON to enter Test mode.

Test mode is used to switch the game cost and other settings and to test the various part of the machine.  
(See "7-7 Test Mode" on page 40.)

### (c) Select switch

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

### (d) Enter button (green)

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



- Press the buttons slowly and firmly.  
If pressed too fast, the button may not operate.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

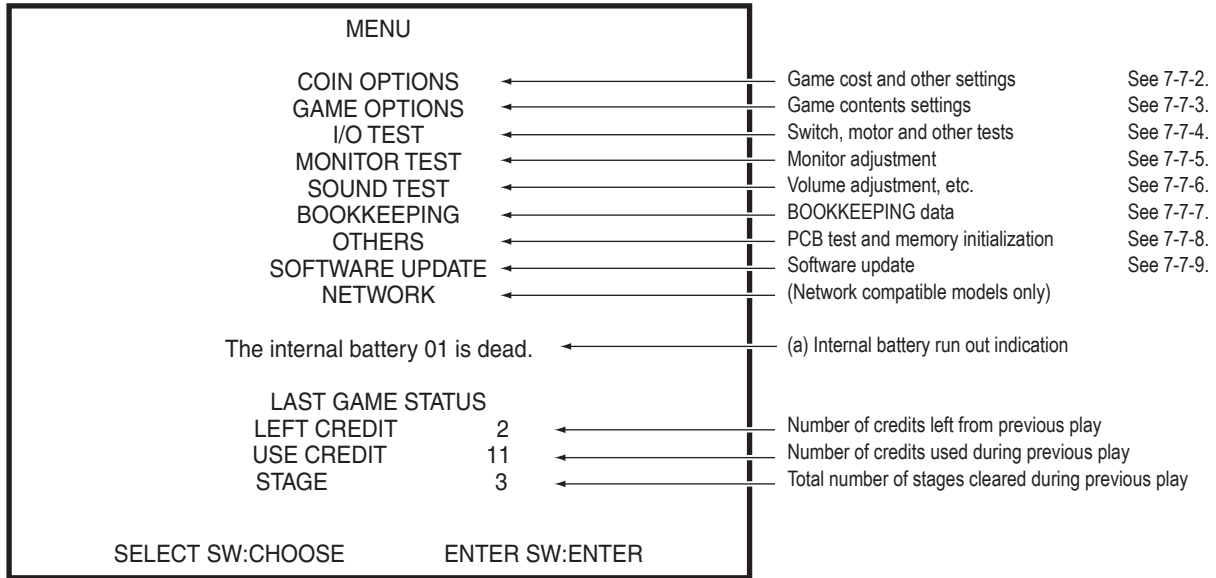
Test Mode

Troubleshooting

## 7-7 Test Mode

### 7-7-1 MENU Screen

- 1** Open the service door of the center assembly and set the Test switch to ON. The MENU screen appears on the monitor. (See “7-6-1 Power Switch Position and Turning the Power Switch On” on page 38.)



MENU screen

**(a) Error Display when the Rack Assembly Internal Battery has Run Out  
(The battery number may also appear as “02”)**

- When this message is displayed, turn off the power switch and wait for approximately 10 minutes. Then, turn on the power switch again, and if the “BACKUP MEMORY ERROR” error message appears during startup, set the Test switch to ON to enter Test mode, and initialize the backup memory. (See “7-7-8 Other Options (OTHERS)” on page 57.) After that, turn the power switch off and then on again. If the same error message appears, the internal battery may have run out or a malfunction may have occurred. Turn off the power switch immediately to stop operations, and contact your distributor.

- 
- 2** Flip the Select switch up or down to select an item.  
The selected item blinks.
  - 3** Press the Enter button to enter the selection.
  - 4** After finishing the adjustments, select EXIT and press the Enter button.  
The monitor returns to the MENU screen.
  - 5** After finishing all the adjustments, set the Test switch to OFF.  
The display returns to the game screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

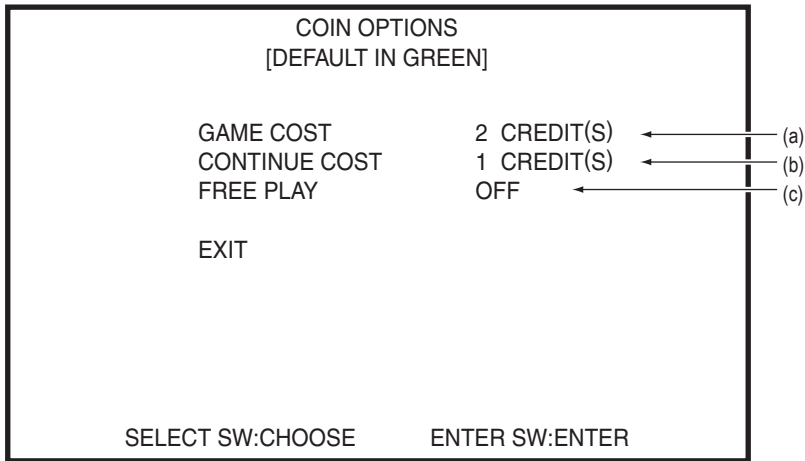
Test Mode

Troubleshooting

### 7-7-2 Game Cost and Related Settings (COIN OPTIONS)

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

- 1** In the MENU screen on page 40, select COIN OPTIONS and press the Enter button. The COIN OPTIONS screen appears.



COIN OPTIONS screen

Item	Description	Default setting
(a) GAME COST	Sets the number of coins required for game play. 1 COIN to 19 COINS	2
(b) CONTINUE COST*1	Sets the number of coins required to continue game play. 1 COIN to GAME COST setting value	1
(c) FREE PLAY	Free play setting NO/YES	NO

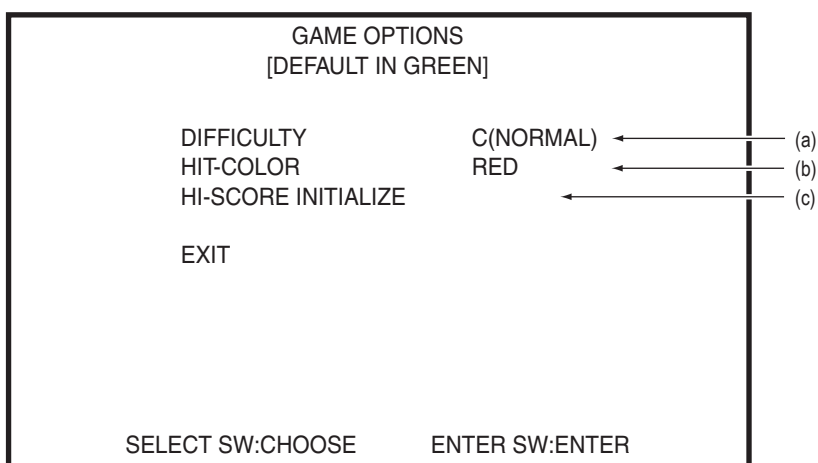
- 2** Flip the Select switch up or down to select an item. The selected item blinks.
- 3** Press the Enter button to enter the selection.
- 4** After entering the selection, flip the Select switch up or down to change the item setting.
- 5** After changing the setting, press the Enter button to return to the item selection.
- 6** Select EXIT and press the Enter button to return to the MENU screen.

\*1: CONTINUE COST cannot be set to a value higher than GAME COST.

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

This screen is used to make various game settings.

- 1 In the MENU screen on page 40, select GAME OPTIONS and press the Enter button. The GAME OPTIONS screen appears. Default settings are indicated in green. The only exception to this is HIT-COLOR, which is indicated in green when set to GREEN, or red when set to RED.



GAME OPTIONS screen

Item	Description	Default setting
(a) DIFFICULTY	Game difficulty setting A (VERY EASY) B (EASY) C (NORMAL) D (HARD) E (VERY HARD)	C (NORMAL)
(b) HIT-COLOR	Player damage color GREEN, RED	RED
(c) HI-SCORE INITIALIZE	Initializes the recorded high score. When this is selected and the Enter button is pressed, the message "HIGH SCORE INITIALIZE?" is displayed and YES or NO can be selected. NO: The high score is not initialized, and the screen returns to the status before this item was selected. YES: The high score is initialized. After initialization is complete, the message "COMPLETE!" is displayed and the screen returns to the status before this item was selected.	

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

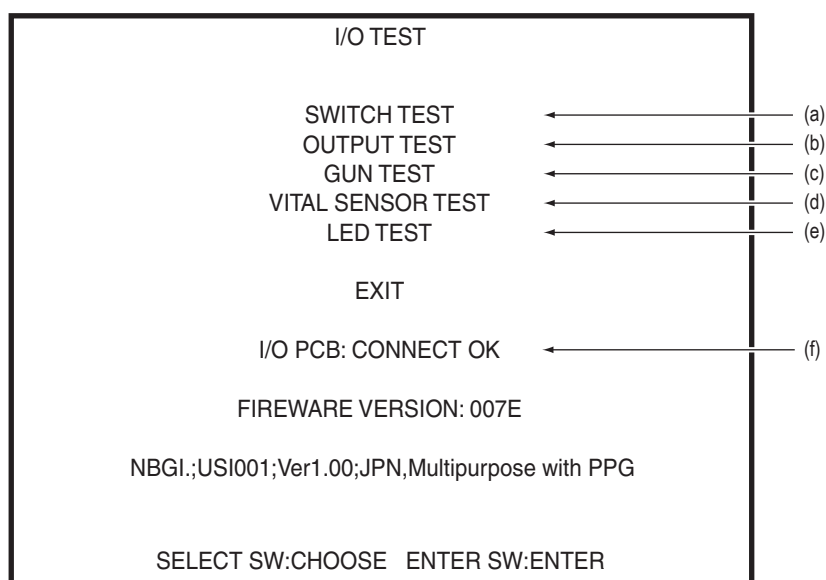
Troubleshooting

- 2** Flip the Select switch up or down to select an item.  
The selected item blinks.
- 3** Press the Enter button to enter the selection.
- 4** After entering the selection, flip the Select switch up or down to change the item setting.
- 5** After changing the setting, press the Enter button to return to the item selection.
- 6** Select EXIT and press the Enter button to return to the MENU screen.

## 7-7-4 Testing the Switches, Sensors and Other Components (I/O TEST)

This screen is used to perform input/output tests for the various switches and other components.

- 1 In the MENU screen on page 40, select I/O TEST and press the Enter button. The I/O TEST screen appears.



I/O TEST screen

Item	Description	Reference page
(a) SWITCH TEST	Switch input test	Page 46
(b) OUTPUT TEST	Output test (cabinet gimmick test)	Page 47
(c) GUN TEST	Gun test	Page 48
(d) VITAL SENSOR TEST	Vital sensor test (Startle sensor test)	Page 51
(e) LED TEST	LED test	Page 52
(f) I/O PCB	I/O PC board check "CONNECT OK" is displayed when normal.	-

- 2 Flip the Select switch up or down to select an item.  
The selected item blinks.
- 3 Press the Enter button to switch to the Test screen for the blinking item.
- 4 Select EXIT and press the Enter button to return to the MENU screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

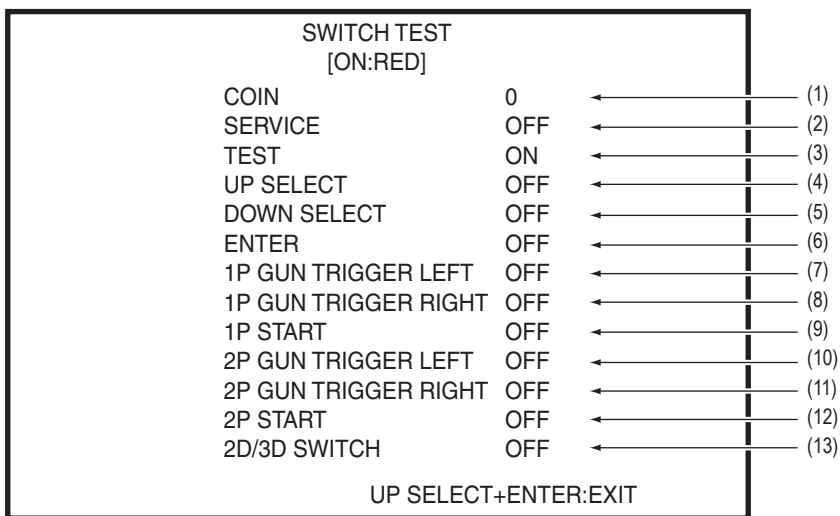
Operation

Test Mode

Troubleshooting

**(a) SWITCH TEST**

This screen is used to test the various switches and buttons.



SWITCH TEST screen

- 1** The SWITCH TEST screen displays the status of each switch and button.
- 2** The status indication changes when each switch or button is operated.

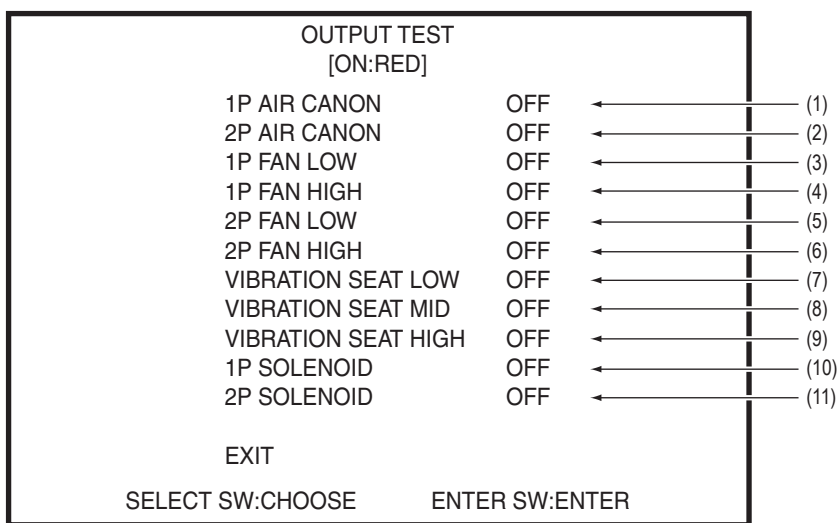
Item	Description
(1) COIN	Coin switch Each time the switch is activated, the counter increments by +1. The counter returns to 0 after 999. The coin counter also operates.
(2) SERVICE	ON while the Service button is pressed. (In Test mode, credits are not added even when this button is pressed.)
(3) TEST	ON while the Test switch is set to ON.
(4) UP SELECT	ON while the Select switch is flipped up.
(5) DOWN SELECT	ON while the Select switch is flipped down.
(6) ENTER	ON while the Enter button is pressed.
(7) 1P GUN TRIGGER LEFT	ON while the 1P side left gun trigger is pressed.
(8) 1P GUN TRIGGER RIGHT	ON while the 1P side right gun trigger is pressed.
(9) 1P START	ON while the 1P side START button is pressed.
(10) 2P GUN TRIGGER LEFT	ON while the 2P side left gun trigger is pressed.
(11) 2P GUN TRIGGER RIGHT	ON while the 2P side right gun trigger is pressed.
(12) 2P START	ON while the 2P side START button is pressed.
(13) 2D/3D SWITCH	ON while the 2D/3D switching button is pressed.

- 3** While the Select switch is flipped up, press the Enter button to return to the I/O TEST screen.



**(b) OUTPUT TEST (Cabinet Gimmick Test)**

This screen is used to switch each output (cabinet gimmick) on and off.



OUTPUT TEST screen

- 1** The OUTPUT TEST screen displays the status of each cabinet gimmick.
- 2** Select an item (1) to (11), and press the Enter button to switch that output ON and OFF. The default setting is OFF, indicated in white. When set to ON, the setting is indicated in red.

Item	Description
(1) 1P AIR CANON	1P air cannon ON/OFF (After the air cannon fires, it automatically returns to OFF.)
(2) 2P AIR CANON	2P air cannon ON/OFF (After the air cannon fires, it automatically returns to OFF.)
(3) 1P FAN LOW	1P fan (low) ON/OFF
(4) 1P FAN HIGH	1P fan (high) ON/OFF
(5) 2P FAN LOW	2P fan (low) ON/OFF
(6) 2P FAN HIGH	2P fan (high) ON/OFF
(7) VIBRATION SEAT LOW	Vibration seat (low) ON/OFF
(8) VIBRATION SEAT MID	Vibration seat (medium) ON/OFF
(9) VIBRATION SEAT HIGH	Vibration seat (high) ON/OFF
(10) 1P SOLENOID	1P gun vibration unit ON/OFF
(11) 2P SOLENOID	2P gun vibration unit ON/OFF

- 3** Select EXIT and press the Enter button to return to the I/O TEST screen.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Operation

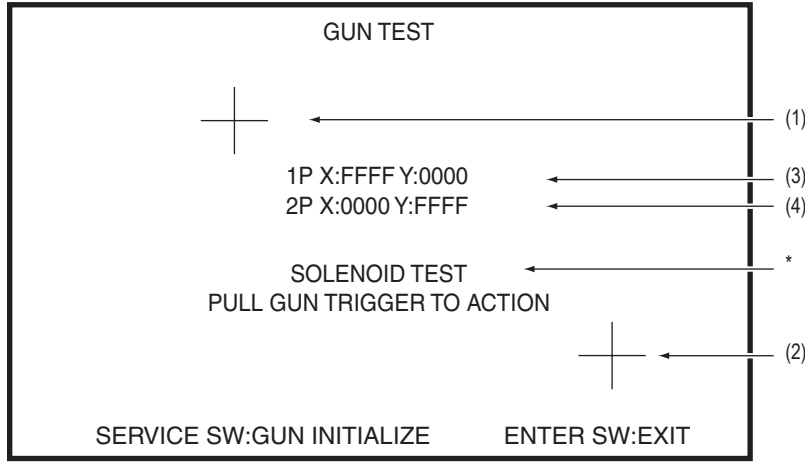
Test Mode

Troubleshooting

**(c) GUN TEST (Crosshairs and Gun Vibration Unit Check Screen)**

This screen is used to check the gun controller crosshairs and to check the gun vibration unit operation.

- 1** In the I/O TEST screen on page 45, select GUN TEST and press the Enter button. The GUN TEST screen appears.



GUN TEST screen

Item	Description
(1) Gun crosshairs (red)	Displays the 1P side gun crosshairs position.
(2) Gun crosshairs (blue)	Displays the 2P side gun crosshairs position.
(3) 1P X coordinate, Y coordinate	Displays the crosshairs position of the 1P side gun as X and Y coordinates.
(4) 2P X coordinate, Y coordinate	Displays the crosshairs position of the 2P side gun as X and Y coordinates.

- 2** \* When the trigger of the gun controller is pulled, the gun vibration unit operates.
- 3** Press the Service button to go to GUN INITIALIZE (crosshairs adjustment screen). (See the following page.)
- 4** Press the Enter button to return to the I/O TEST screen.

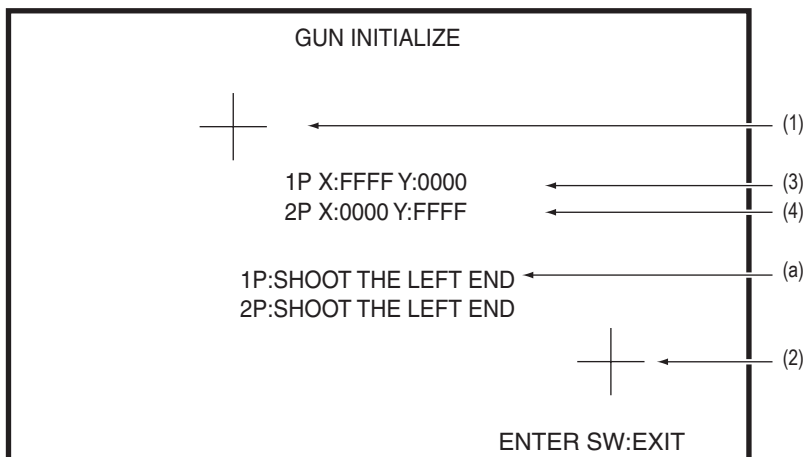
● GUN INITIALIZE (Crosshairs Adjustment Screen)

This screen is used to separately adjust the 1P and 2P gun controller crosshairs.



● Be sure to perform this procedure during initial start-up.

- 1 At the GUN TEST screen on page 48, press the Service switch to display the GUN INITIALIZE screen.  
\* When switched to this screen, the gun crosshairs disappear. The gun crosshairs reappear after finishing the adjustment procedure below.



GUN INITIALIZE screen

Item	Description
(1) Gun crosshairs (red)	Displays the 1P side gun crosshairs position (after adjustment is finished).
(2) Gun crosshairs (blue)	Displays the 2P side gun crosshairs position (after adjustment is finished).
(3) 1P X coordinate, Y coordinate	Displays the crosshairs position of the 1P side gun as X and Y coordinates.
(4) 2P X coordinate, Y coordinate	Displays the crosshairs position of the 2P side gun as X and Y coordinates.
(a) Crosshairs adjustment instructions	Displays the gun operation procedure during crosshairs adjustment. Move and operate the gun controllers according to the following procedure to adjust the 1P and 2P side crosshairs. 1) [SHOOT THE LEFT END]: Point the gun controller as far to the left as possible, and press the trigger button one time. 2) [SHOOT THE RIGHT EDGE]: Point the gun controller as far to the right as possible, and press the trigger button one time. 3) [SHOOT THE TOP]: Point the gun controller as far upward as possible, and press the trigger button one time. 4) [SHOOT THE BOTTOM]: Point the gun controller as far downward as possible, and press the trigger button one time. 5) [FINISHED]: Finished. The adjustment data is saved and the crosshairs are displayed.

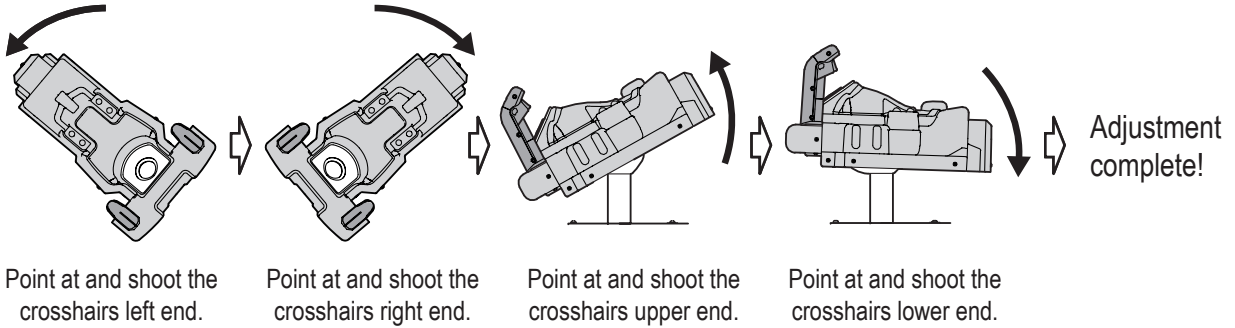
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Operation

Test Mode

Troubleshooting

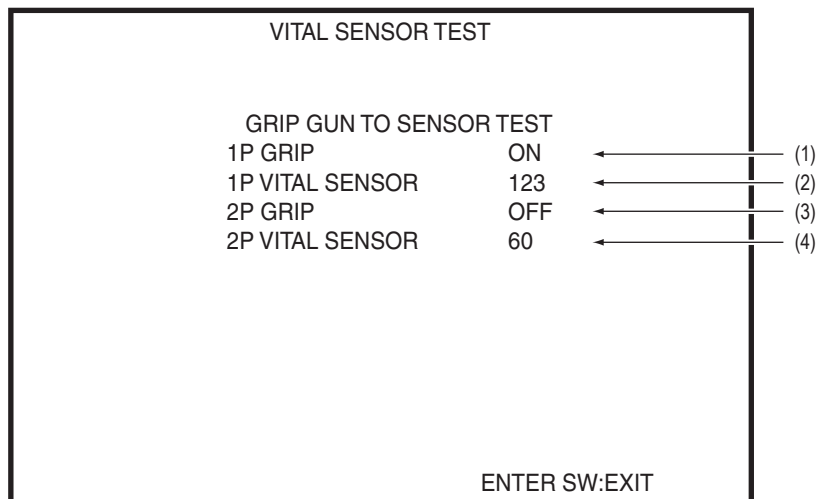
- 2** Follow the crosshair adjustment instructions displayed on the monitor, point the gun controller to be adjusted as far to the left as possible, and pull the trigger. Repeat the same operation in the right, up and down directions.



- 3** Press the Enter button to return to the GUN TEST screen.

**(d) VITAL SENSOR TEST (Startle Sensor Test)**

- 1** In the I/O TEST screen on page 45, select VITAL SENSOR TEST and press the Enter button. The VITAL SENSOR TEST screen appears.



VITAL SENSOR TEST screen

Item	Description
(1) 1P GRIP	ON while the 1P side startle sensor is gripped.
(2) 1P VITAL SENSOR	Heart rate value measured by the 1P side startle sensor *
(3) 2P GRIP	ON while the 2P side startle sensor is gripped.
(4) 2P VITAL SENSOR	Heart rate value measured by the 2P side startle sensor *
<p>* Grip the gun grips correctly with both hands. After a short while, your heart rate will be displayed. "0" is displayed when the gun grips are released, and "255" is displayed when the gun grips are gripped but a stable heart rate value cannot be obtained.</p> <p>* This product is not a health device.</p>	

- 2** Hold the gun controller grips with your bare hands, and check each item.
- 3** Press the Enter button to return to the I/O TEST screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

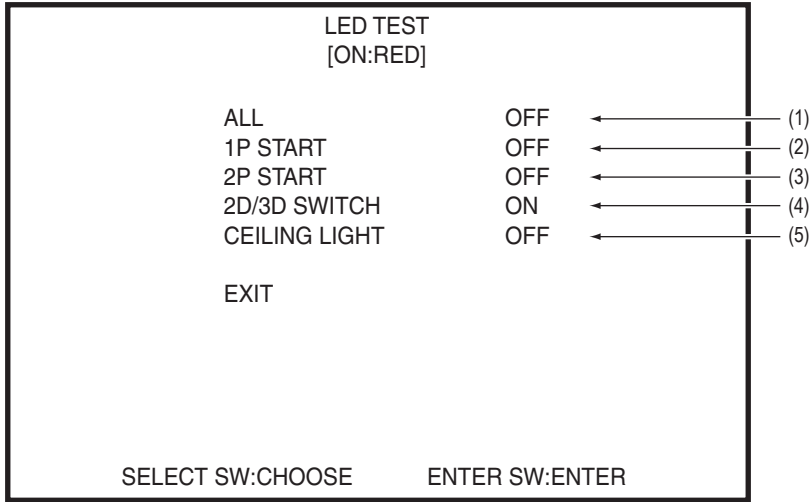
Test Mode

Troubleshooting

**(e) LED TEST**

This screen is used to test the LED lighting.

- 1** In the I/O TEST Screen on page 45, select LED TEST and press the Enter button. The LED TEST screen appears.



LED TEST screen

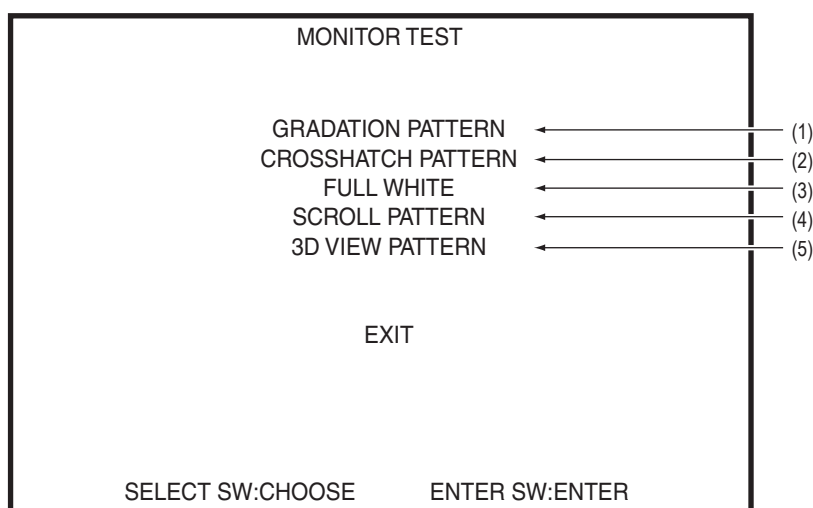
Item	Description
(1) ALL	When this is set to ON, all LEDs light up.
(2) 1P START	When this is set to ON, the 1P START button LED lights up.
(3) 2P START	When this is set to ON, the 2P START button LED lights up.
(4) 2D/3D SWITCH	When this is set to ON, the 2D/3D switching button LED lights up.
(5) CEILING LIGHT	When this is set to ON, the ceiling light LED inside the cabinet lights up.

- 2** Flip the Select switch up or down to select an item, and press the Enter button to switch the corresponding LED ON and OFF.  
The default setting is OFF, indicated in white. When set to ON, the setting is indicated in red.  
\* Each LED is lit up when ALL is set to ON or the corresponding item is ON.  
\* (5) CEILING LIGHT only fades on and off over approximately 2 seconds.
- 3** Select EXIT and press the Enter button to return to the I/O TEST screen.

## 7-7-5 Monitor Adjustment (MONITOR TEST)

This screen is used to make various monitor adjustments.

- 1 In the MENU screen on page 40, select MONITOR TEST and press the Enter button. The MONITOR TEST screen appears.



MONITOR TEST screen

Item	Description
(1) GRADATION PATTERN	Displays a 16-gradation pattern.
(2) CROSSHATCH PATTERN	Displays a crosshatch pattern.
(3) FULL WHITE	Displays a white pattern over the entire screen.
(4) SCROLL PATTERN	Displays a pattern with white lines scrolling across the screen.
(5) 3D VIEW PATTERN	Displays a stereoscopic check pattern. When using the 3D glasses, the L can be seen with the left eye, and the R can be seen with the right eye.

- 2 Flip the Select switch up or down to select an item, and press the Enter button to enter the selection and display the selected pattern. (See the following page.)  
Press the Enter button while a pattern is displayed to return to the MONITOR TEST screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

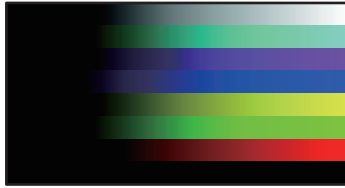
12

Operation

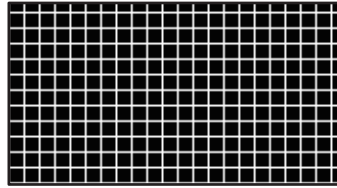
Test Mode

Troubleshooting

(1) Gradation pattern



(2) Crosshatch pattern



(3) All-white pattern



(4) Scrolling pattern



(5) Stereoscopic pattern



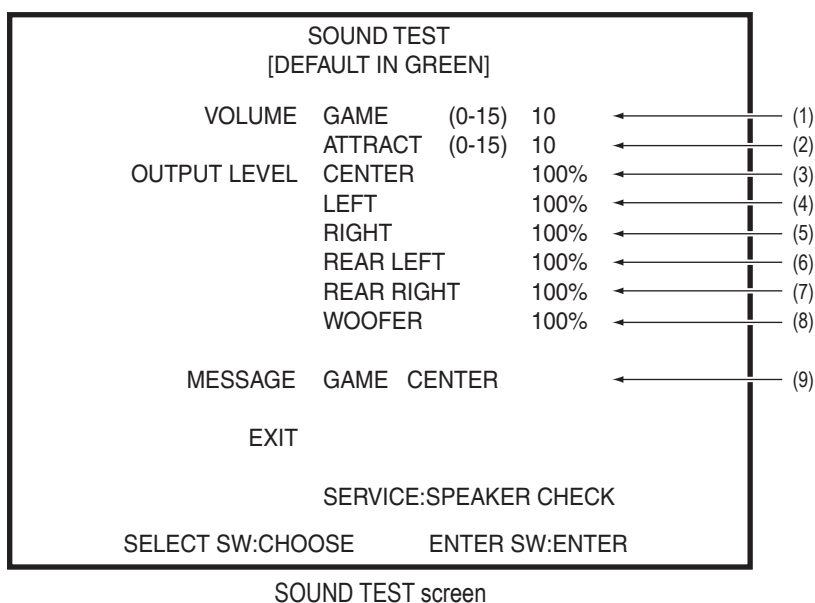
- 3** Select EXIT and press the Enter button to return to the MENU screen.



## 7-7-6 Sound Adjustment (SOUND TEST)

This screen is used to perform volume adjustment, stereo checks and other settings.

- In the MENU screen on page 40, select SOUND TEST and press the Enter button. The SOUND TEST screen appears.



Item	Description	Default setting
(1) VOLUME GAME	Master volume in Game mode 0 (mute) to 15 (maximum)	10
(2) ATTRACT	Master volume in Attract mode 0 (mute) to 15 (maximum)	10
(3) OUTPUT LEVEL CENTER	Center volume	100%
(4) LEFT	Left volume	100%
(5) RIGHT	Right volume	100%
(6) REAR LEFT	Rear left volume	100%
(7) REAR RIGHT	Rear right volume	100%
(8) WOOFER	Woofer volume	100%
(9) MESSAGE	Message display* * [MESSAGE] displays the current volume (GAME, ATTRACT) and the speaker playing the sound (CENTER, LEFT, RIGHT, REAR LEFT, REAR RIGHT, WOOFER).	

- Select an item (1) to (8), and press the Enter button to enter the selection and enable the volume to be changed.
  - Each time the Service button is pressed, the speaker check sound is played back at the Game mode volume. The speaker check sound is played back at the Attract mode volume only when ATTRACT is selected.
  - The speaker check sound is played back in the order of CENTER → LEFT → RIGHT → REAR LEFT → REAR RIGHT → WOOFER.
- Select EXIT and press the Enter button to return to the MENU screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

Troubleshooting

### 7-7-7 Displaying and Initializing Game Data (BOOKKEEPING)

This screen displays various game related data.

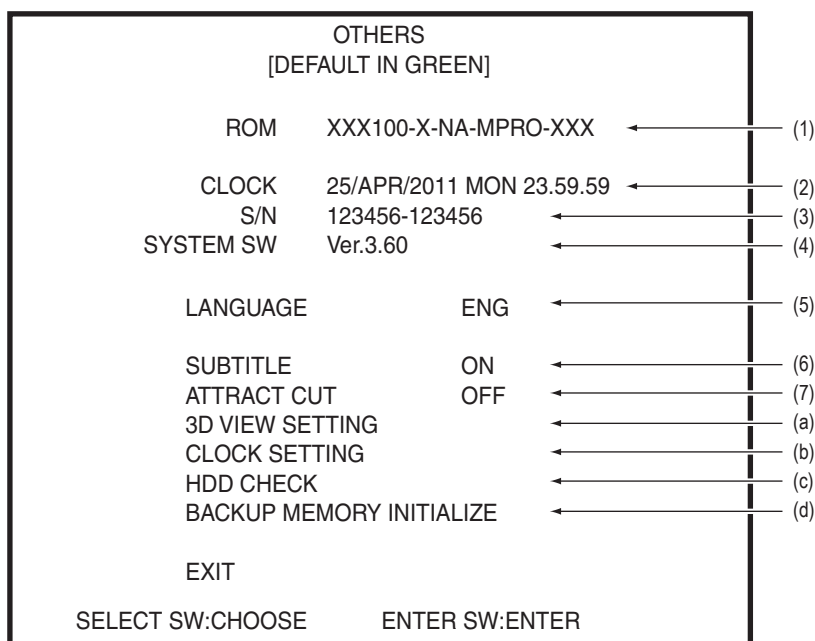
- 1** In the MENU screen on page 40, select BOOKKEEPING and press the Enter button. The BOOKKEEPING screen appears on the monitor.
- 2** This screen is used to view various game related data and initialize the data.
- 3** Select EXIT and press the Enter button to return to the MENU screen.

## 7-7-8 Other Options (OTHERS)

This screen is used to initialize the backup memory and perform other operations.

- \* When the backup memory is initialized, each item returns to the default setting.  
After initializing the backup memory, set each item again as necessary.

- 1** In the MENU screen on page 40, select BOOKKEEPING and press the Enter button. The OTHERS screen appears.



OTHERS screen

Item	Description
(1) ROM	Displays the program version.
(2) CLOCK	Displays the current date and time.
(3) S/N	Displays the serial number of the software.
(4) SYSTEM SW	Displays the system firmware version.
(5) LANGUAGE * <sup>1</sup>	Displays the language setting. ENG → RUS → ITA → SPA → ENG
(6) SUBTITLE * <sup>2</sup>	Displays the subtitle setting. This sets whether to display subtitles.
(7) ATTRACT CUT	Displays the Attract cut setting. This sets whether to display the Attract demonstration. When set to ON, the Attract demonstration normally played back during the Attract sequence is skipped.
(a) 3D VIEW SETTING	Displays the stereoscopic display setting. (page 58)
(b) CLOCK SETTING	Displays the internal clock setting. (page 59)
(c) HDD CHECK	Displays the HDD check contents. (page 60)
(d) BACKUP MEMORY INITIALIZE	Initializes the backup memory. (page 61)*
*1: Languages other than KOR are not available for the Korean model.	
*2: Not available for some language models.	

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

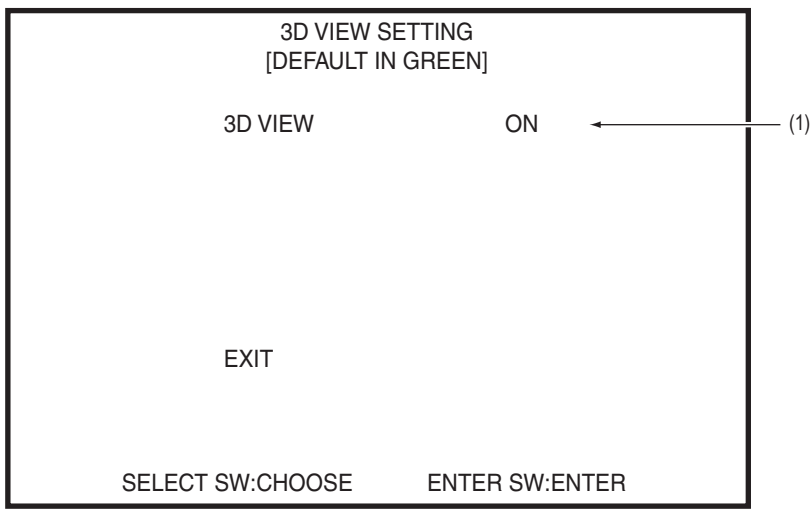
Troubleshooting

- 2** Flip the Select switch up or down to select an item.  
The selected item blinks.
- 3** Select EXIT and press the Enter button to return to the MENU screen.

**(a) Stereoscopic Display Setting (3D VIEW SETTING)**

This screen is used to set stereoscopic display.

- 1** In the OTHERS screen on page 57, select 3D VIEW SETTING and press the Enter button.  
The 3D VIEW SETTING screen appears.



3D VIEW SETTING screen

Item	Description
(1) 3D VIEW	Switches stereoscopic display ON and OFF.

- 2** Select the item (1) and press the Enter button to switch stereoscopic display ON and OFF.
- 3** Select EXIT and press the Enter button to return to the OTHERS screen.

**(b) Internal Clock Setting (CLOCK SETTING)**

This screen is used to set the internal clock.

- 1** In the OTHERS screen on page 57, select CLOCK SETTING and press the Enter button. The CLOCK SETTING screen appears.

CLOCK SETTING

CLOCK 01/Aug/2012 WED 12:34:56

YEAR	01 + 2011			← (a)
MONTH	08 Aug			← (b)
DAY	01			← (c)
HOUR	12			← (d)
MINUTE	34			← (e)
SET				← (f)
EXIT				

SELECT SW:CHOOSE      ENTER SW:ENTER

CLOCK SETTING screen

Item	Description
(a) YEAR	Sets the year (00 to 88).
(b) MONTH	Sets the month (01 Jan to 12 Dec).
(c) DAY	Sets the day (01 to 31).
(d) HOUR	Sets the hour (00 to 23).
(e) MINUTE	Sets the minute (00 to 59).
(f) SET	Applies the values of (a) to (e) above to the internal clock.

- 2** Flip the Select switch up or down to select an item. The selected item blinks.
- 3** Press the Enter button to enter the selection.
- 4** After entering the selection, flip the Select switch up or down to change the item setting.
- 5** After changing the setting, press the Enter button to return to the item selection.
- 6** After changing the item (a) to (e) settings, select SET and press the Enter button to apply the changed settings to the internal clock and restart the count from 00 seconds.
- 7** Select EXIT and press the Enter button to return to the OTHERS screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

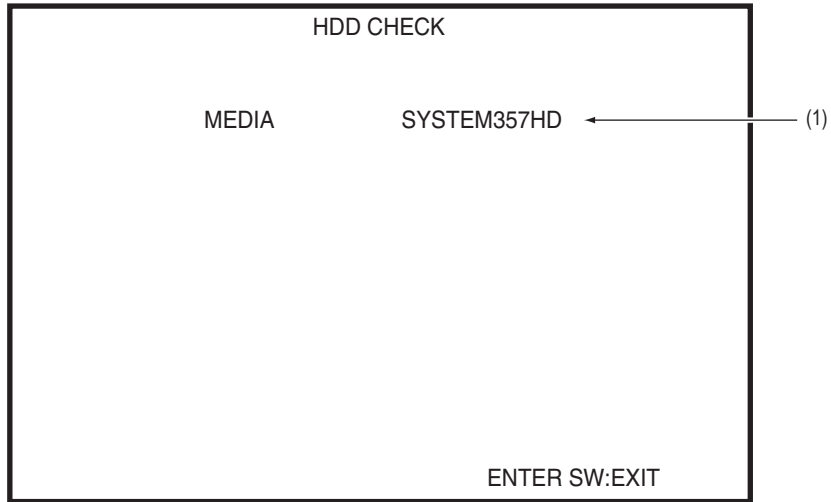
Test Mode

Troubleshooting

**(c) HDD CHECK**

This screen displays the HDD check contents.

- 1** In the OTHERS Screen on page 57, select HDD CHECK and press the Enter button. The HDD CHECK screen appears.



HDD CHECK screen

Item	Description
(1) MEDIA	Displays the connected media. When this screen display is not as shown above, the hard disk or the game PC board may have malfunctioned. Contact your distributor.

- 2** Press the Enter button to return to the OTHERS screen.

---

**(d) Initializing the Backup Memory (BACKUP MEMORY INITIALIZE)**

This screen is used to initialize the backup memory.

- 1** In the OTHERS screen on page 57, select BACKUP MEMORY INITIALIZE and press the Enter button.
- 2** The message "BACKUP MEMORY INITIALIZE?" is displayed together with a NO/YES selection. Select YES to initialize the backup memory. When initialization is complete, the message "COMPLETE!" is displayed.
- 3** Select EXIT and press the Enter button to return to the MENU screen.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

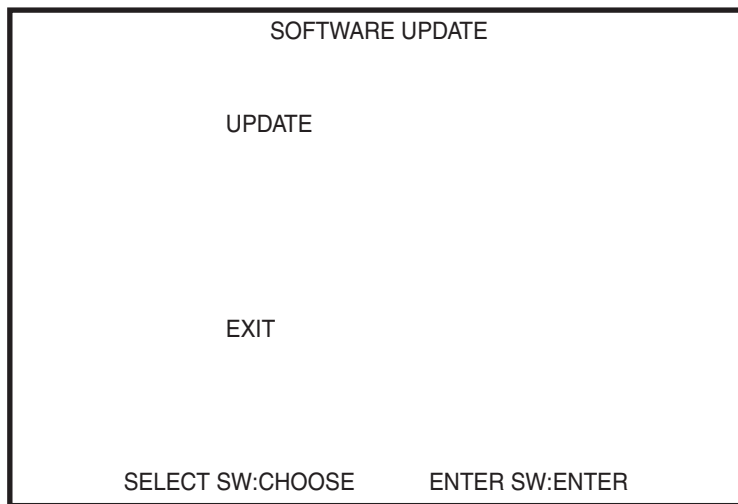
Test Mode

Troubleshooting

### 7-7-9 Software Update (SOFTWARE UPDATE)

This screen is used to update the software. (This is normally not used.)

- 1** In the MENU screen on page 40, select SOFTWARE UPDATE and press the Enter button. The SOFTWARE UPDATE screen appears.



SOFTWARE UPDATE screen

- 2** Select EXIT and press the Enter button to return to the MENU screen.



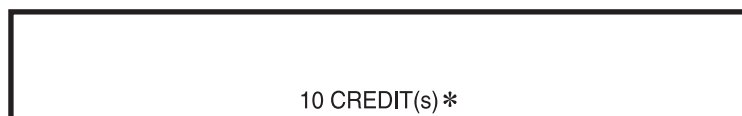
---

## 7-8 Error Display (For Operators)

### 7-8-1 Game Play Using Service Credits

When playing a game paid for using credits that include credits added using the Service button, an asterisk (\*) mark is displayed to the right of the credits display.

\* This asterisk mark is displayed when even one service credit is included.



Game play using service credits screen

If the credits were added intentionally using the Service button, this is a normal machine operation.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

Troubleshooting

## 7-9 Gun Assembly Adjustment (Initialization) after Parts Replacement



- Be sure to initialize the gun assembly after replacing the rack assembly, USIO (T) PC board or gun assembly, or initializing the backup data. If the gun assembly is not initialized, the game cannot be played properly.
- After initializing the gun assembly, perform the switch test (See “7-7-4 (c) GUN TEST” on page 48.) and check that the gun assembly operates properly.

### 7-9-1 Initializing the Gun Assembly Volume

Refer to “● GUN INITIALIZE” of “7-7-4 (c) GUN TEST”, on page 49 and initialize (calibrate) the gun assembly.

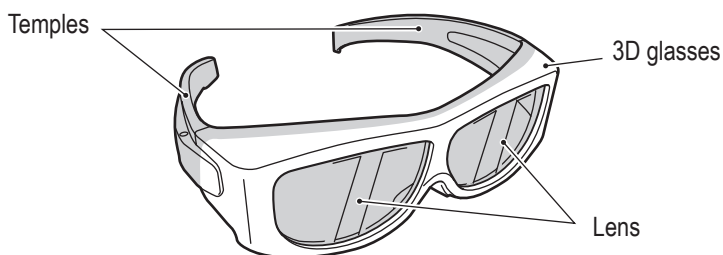
## 7-10 Cleaning



- Do not use alcohol, acetone or other organic solvents. This may degrade the materials.
- Do not use alkali or acidic cleansers.

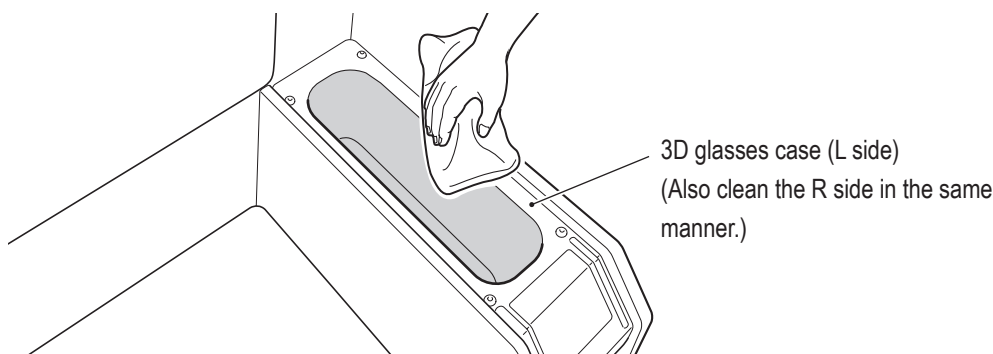
### 7-10-1 Cleaning the 3D Glasses

- 1 Wipe clean the lenses, temples and other parts that may touch the player's face with the supplied glasses cleaning cloth (dry).



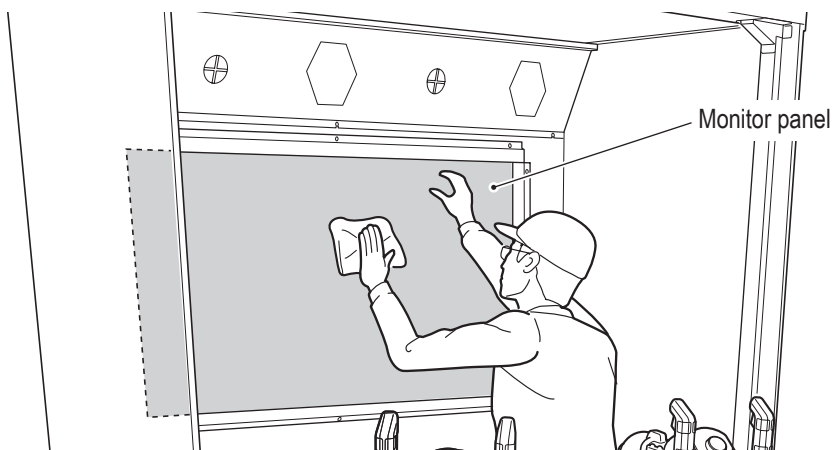
### 7-10-2 Cleaning the 3D Glasses Cases

- 1 Wipe away any dirt with a dry soft cloth. When the 3D glasses cases become extremely dirty, wipe away the dirt using a soft cloth moistened with a neutral cleanser, then wipe lightly using a cloth dampened with a small amount of water, and finally wipe dry using a dry soft cloth.



### 7-10-3 Cleaning the Monitor Panel

- 1 Wipe away any dirt with a dry soft cloth. When the monitor panel become extremely dirty, wipe away the dirt using a soft cloth moistened with a neutral cleanser, then wipe lightly using a cloth dampened with a small amount of water, and finally wipe dry using a dry soft cloth.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Operation

Test Mode

Troubleshooting

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

## 8A. Installation and Assembly

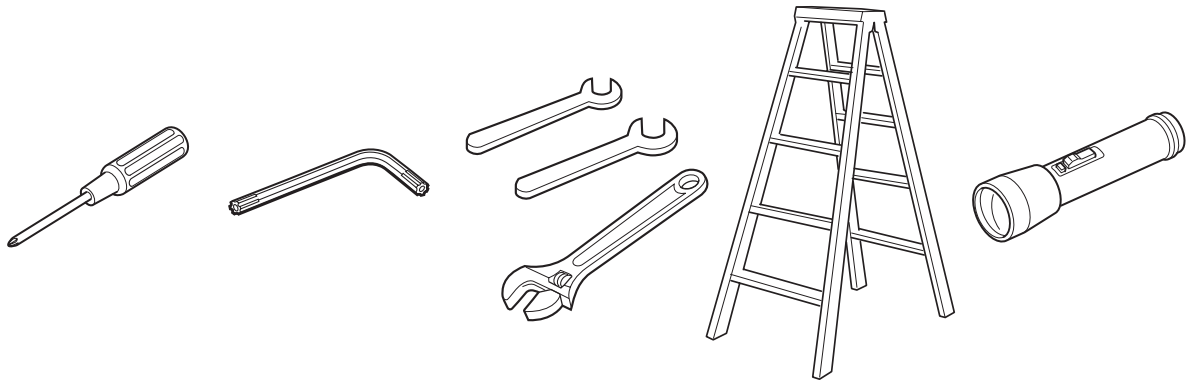
### ⚠ WARNING

- Work is performed in dark locations such as inside the machine, so prepare adequate lighting before starting the work.

### 8A-1 Required Tools

Prepare the following tools for the installation and assembly work.

- Phillips screwdrivers (No. 1, No. 2)
- Torx wrench (T25) (supplied)
- Open-end wrench (11 mm across flats)
- Open-end wrench (22 mm across flats) or monkey wrench
- Stools or ladders (2)
- Flashlight (as necessary)



### 8A-2 Number of Workers and Work Time

#### 8A-2-1 Number of Workers

The work should be performed by two technicians or more.

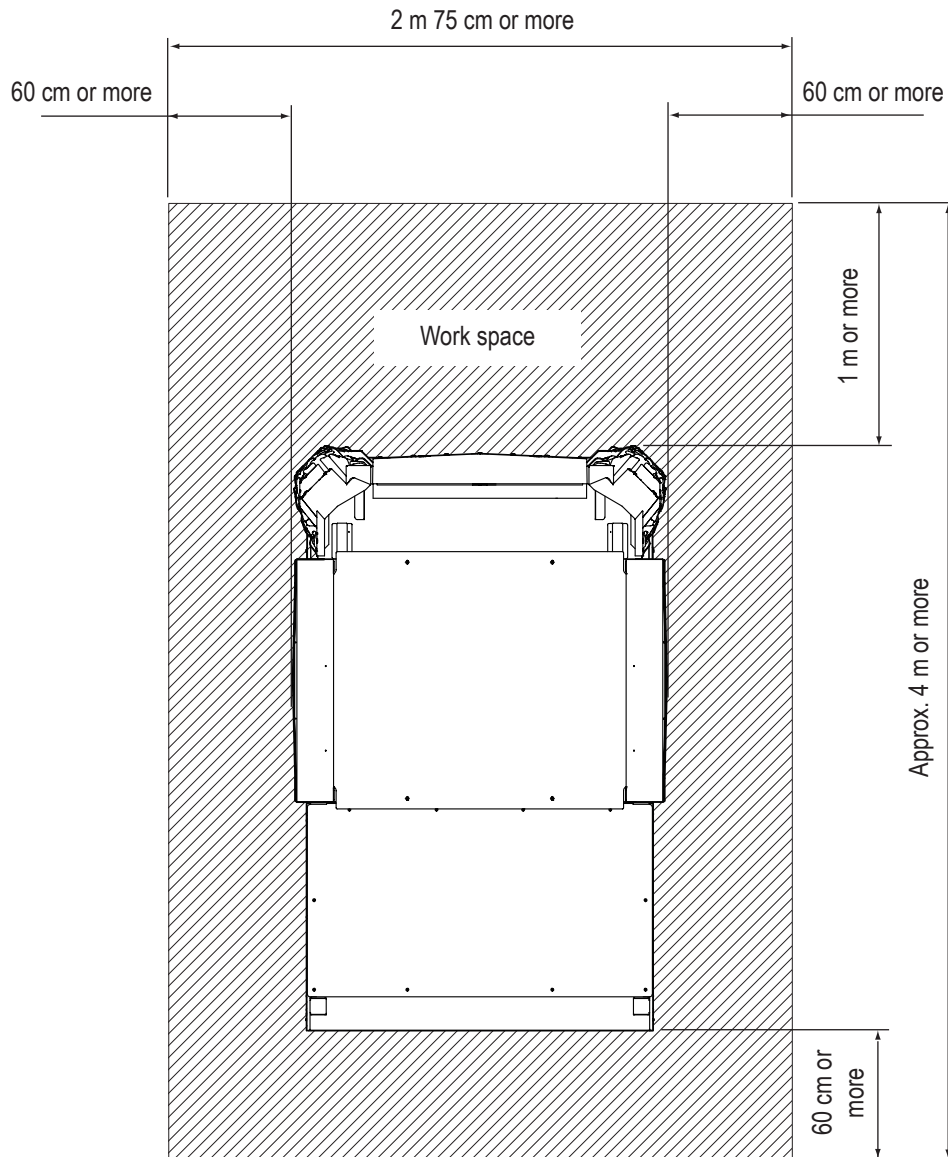
#### 8A-2-2 Work Time

The estimated work time for two workers (technicians) is 120 minutes.

**- Must be performed by a technician -**

## 8A-3 Securing Work Space

Secure a space of 60 cm to 1 m or more around the machine for performing the installation and assembly work.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

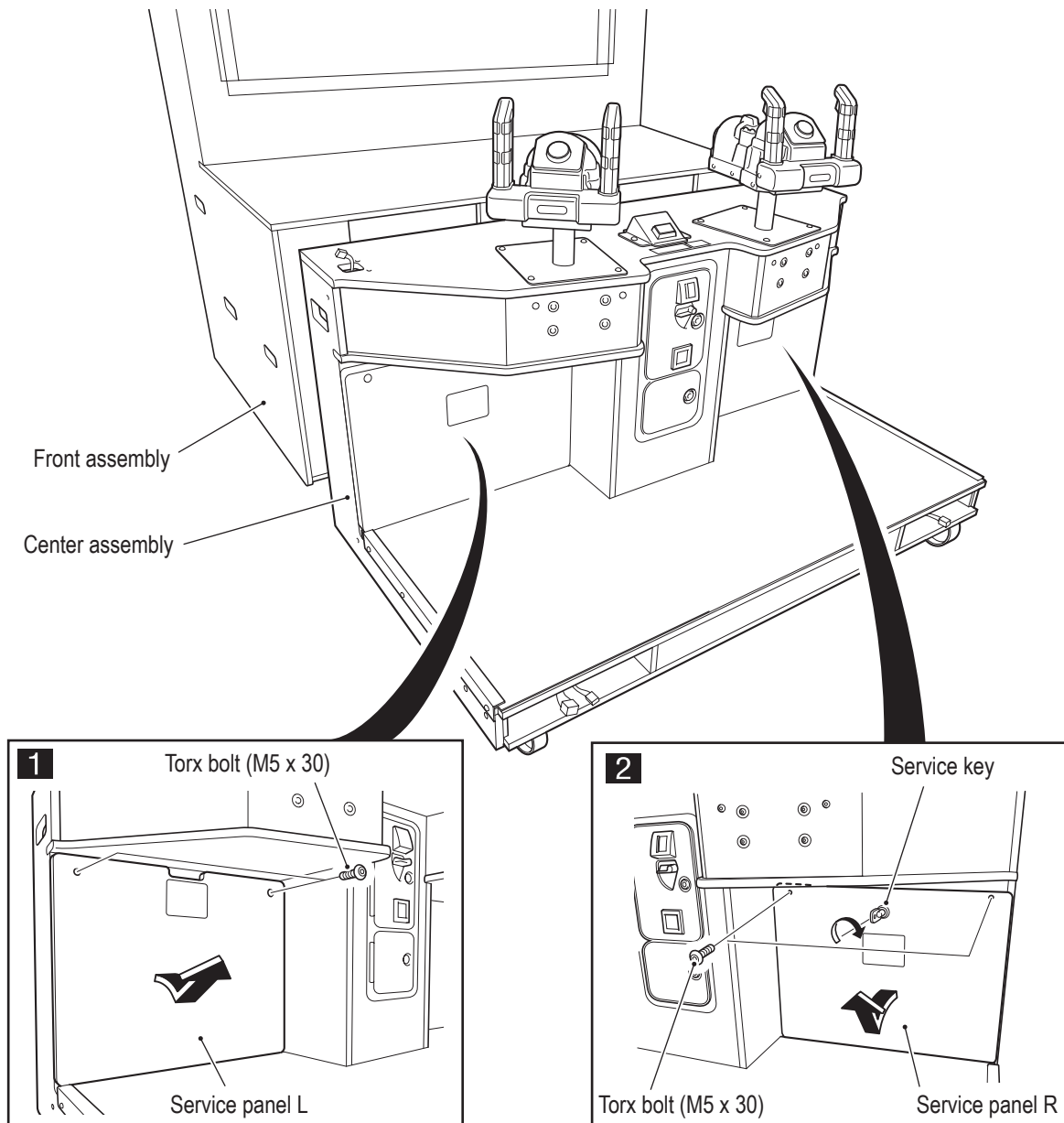
Troubleshooting

- Must be performed by a technician -

## 8A-4 Assembly

### 8A-4-1 Connecting the Front Assembly and Center Assembly

- 1** Remove the two Torx bolts (M5 x 30), and pull the service panel L at the lower left of the center assembly forward and down to remove it.
- 2** Remove the two Torx bolts (M5 x 30), use the service key to release the lock, and pull the service panel R at the lower right of the center assembly forward and down to remove it.



**- Must be performed by a technician -**

**3** While being careful not to pinch the harnesses and connectors, join the front assembly and center assembly, and secure the assemblies to each other with two square washers (large) and two Phillips hexagon socket head bolts (with flat and spring washers) (M6 x 40) on each side (total four washers and four bolts).

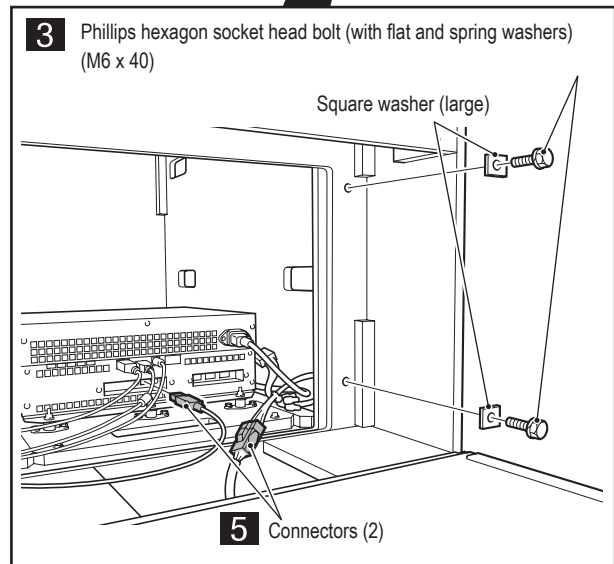
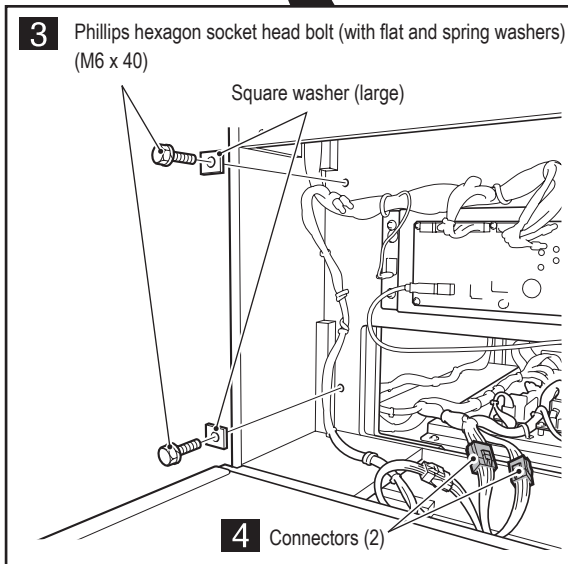
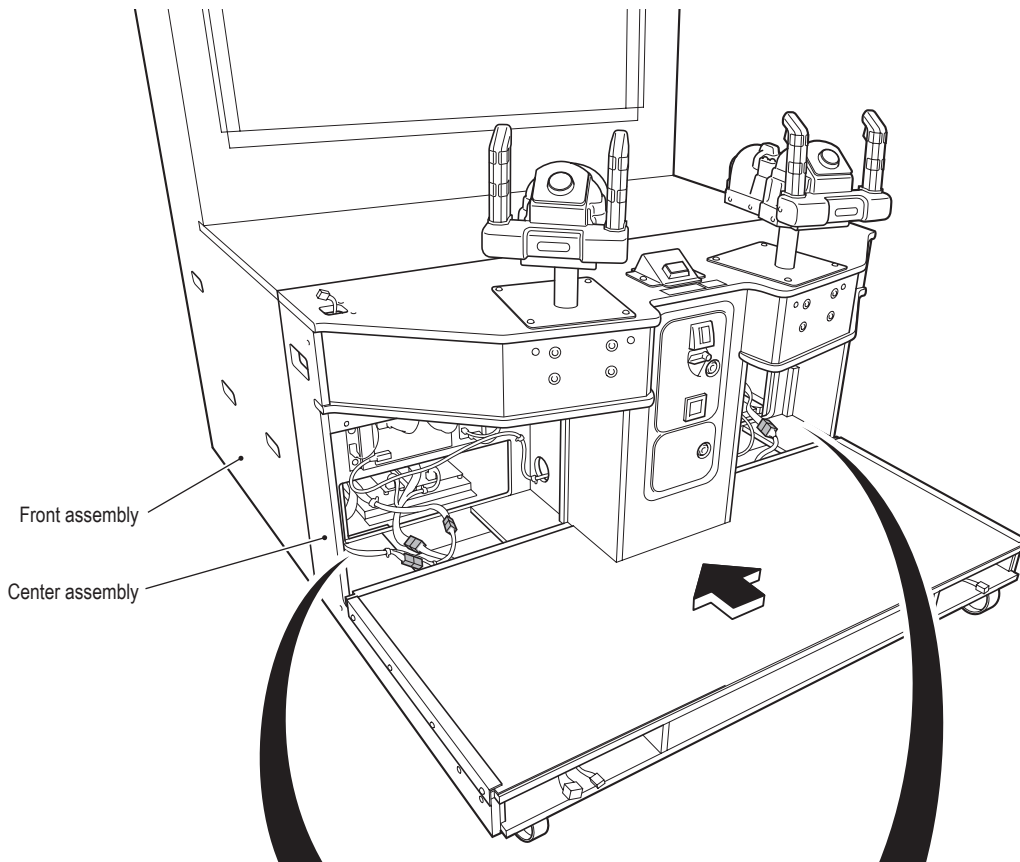
When securing the assemblies, align the outsides of the front assembly and center assembly in the lateral direction, and the top panel heights in the longitudinal direction.

If the top panel heights do not match, adjust the level adjusters.

(See "8A-4-9 Level Adjuster Adjustment" on page 90.)

**4** Lead out the harness from the center assembly, and connect the two L side connectors.

**5** Lead out the harness from the center assembly, and connect the two R side connectors.

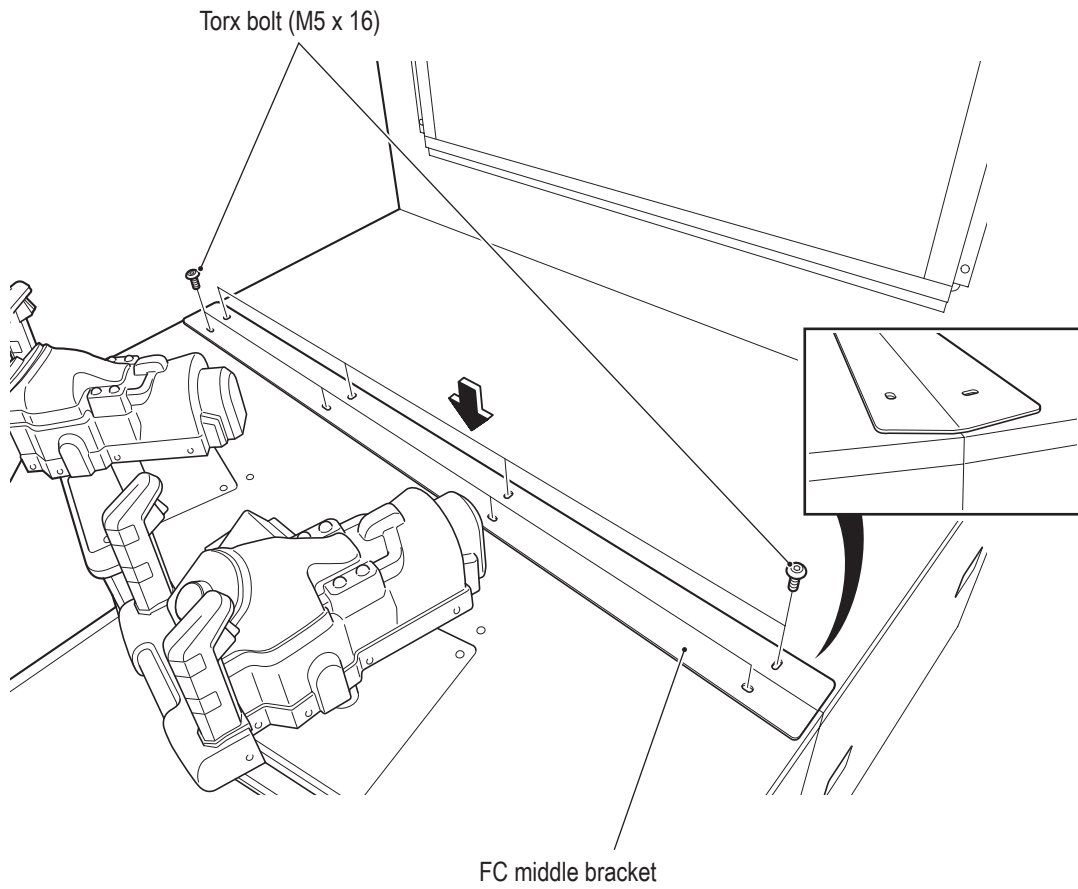


- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A**
- 8B
- 9
- 10
- 11
- 12

**- Must be performed by a technician -**

---

- 6** Secure the FC middle bracket over the joint between the front assembly and center assembly with eight Torx bolts (M5 x 16).



\* There is further assembly work to be performed, so leave the service panel L and service panel R open.



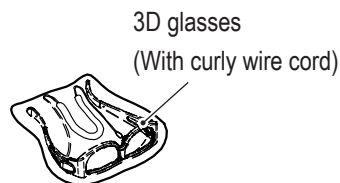
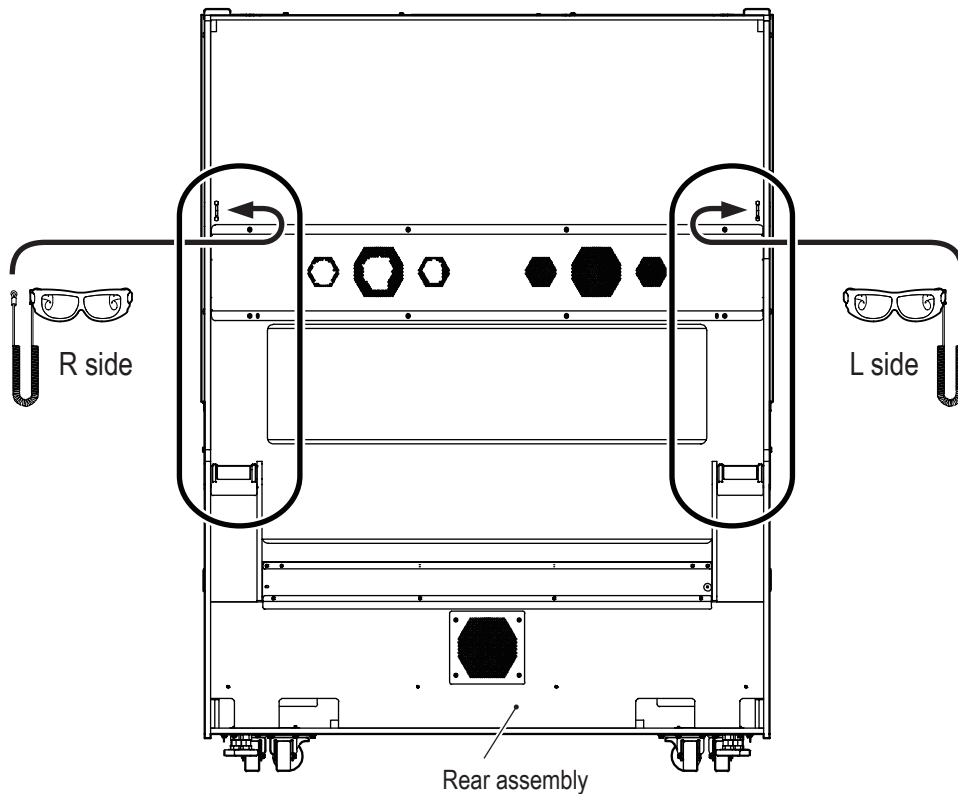
**- Must be performed by a technician -**

## 8A-4-2 Attaching the 3D Glasses and Glasses Cleaning Cloths

3D glasses and glasses cleaning cloths are attached to both the L and R sides of the rear assembly. The description below explains how to attach the L side 3D glasses and glasses cleaning cloth. Perform the same procedure to attach the R side 3D glasses and glasses cleaning cloth.



- Attach the L side 3D glasses so that the curly wire cord is connected to the left temple with worn.
- Attach the R side 3D glasses so that the curly wire cord is connected to the right temple with worn.



- \* Use the supplied 3D glasses that have curly wire cords attached. The 3D glasses without a curly wire cord attached are spares.

Replace the attached 3D glasses in the event they become broken or otherwise unusable.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

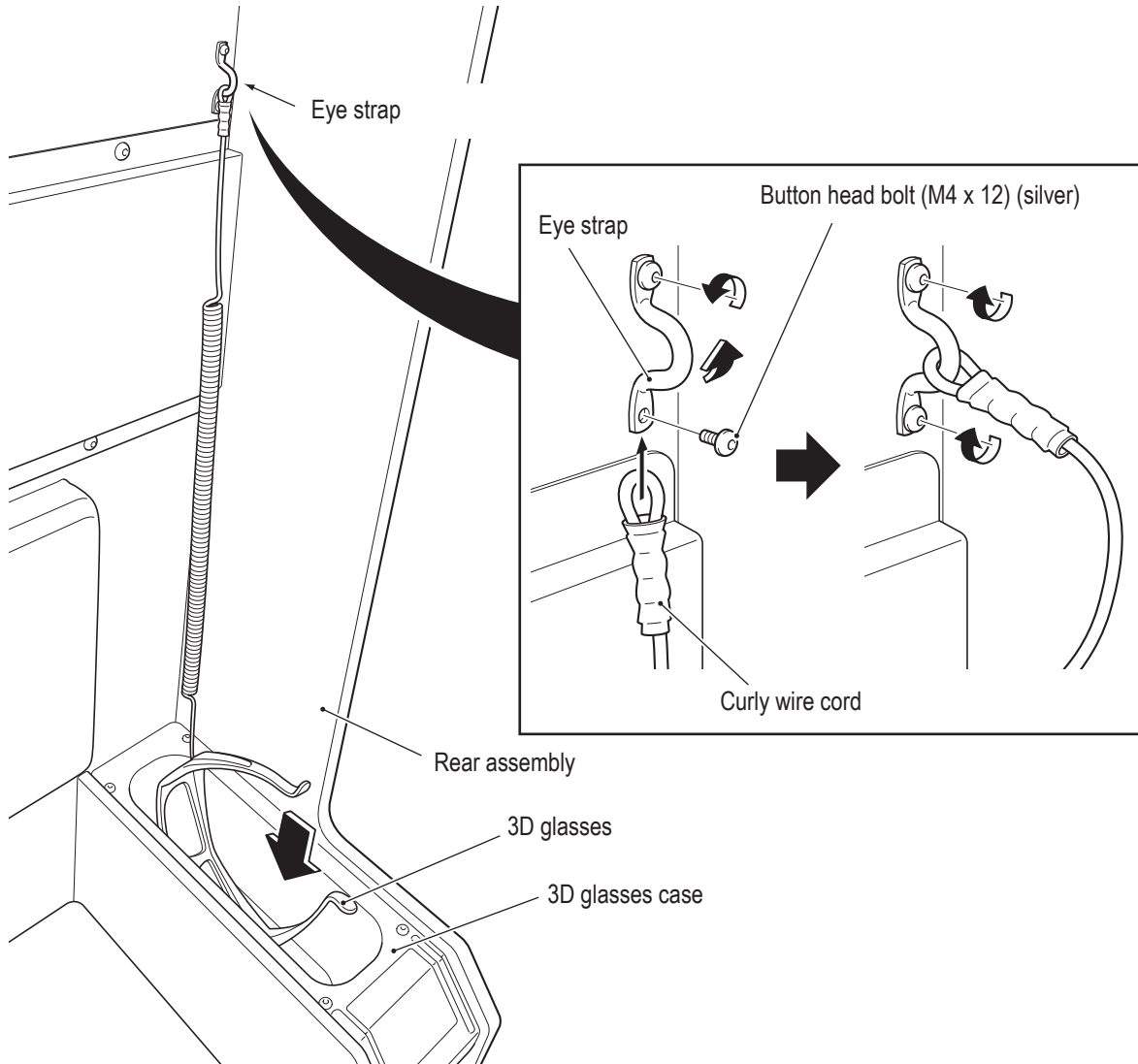
Test Mode

Troubleshooting

**- Must be performed by a technician -**

● **Attaching the 3D Glasses**

- 1** Loosen one and remove the other button head bolt (M4 x 12) (silver) of the eye strap located above the 3D glasses case inside the rear assembly, thread the ring at the end of the curly wire cord onto the eye strap, and then reattach the removed bolt and tighten both bolts.
- 2** Place the 3D glasses in the 3D glasses case.

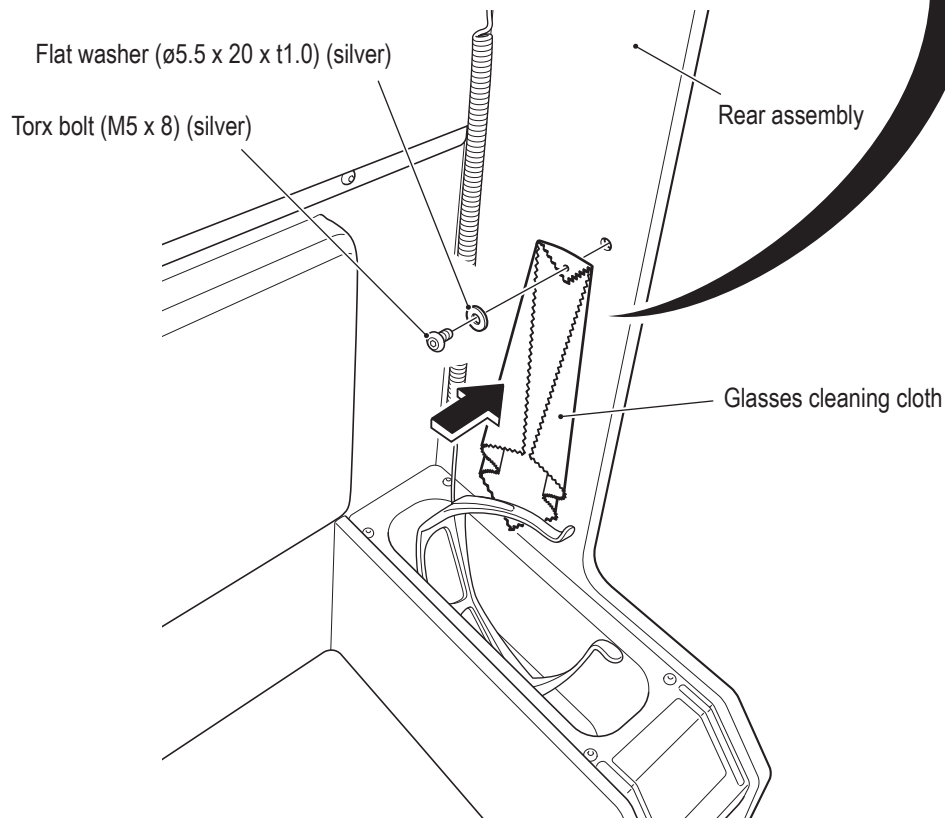
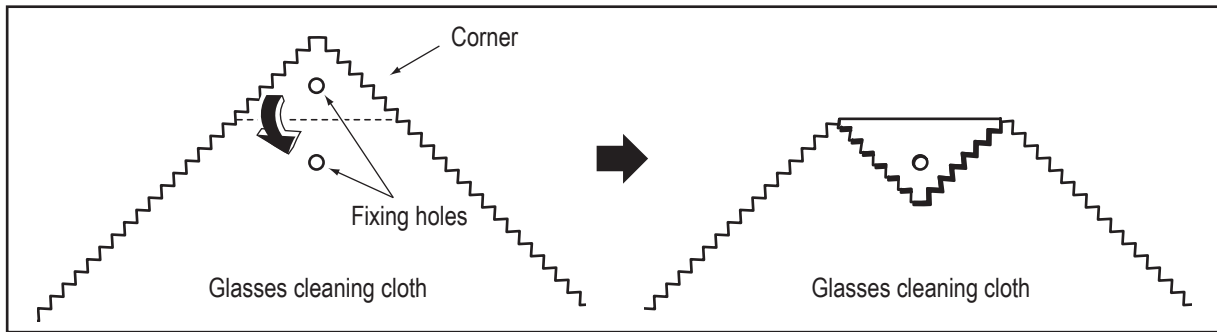


- 3** Perform the same procedure to attach the R side 3D glasses.

**- Must be performed by a technician -**

● **Attaching the Glasses Cleaning Cloths**

- 4** Fold over the corner of the glasses cleaning cloth with the fixing holes so that the fixing holes are aligned.
- 5** Attach the glasses cleaning cloth securely to the inside of the rear assembly with the supplied Torx bolt (M5 x 8) (silver) and flat washer (ø5.5 x 20 x t1.0) (silver).



- 6** Perform the same procedure to also attach the R side glasses cleaning cloth.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

---

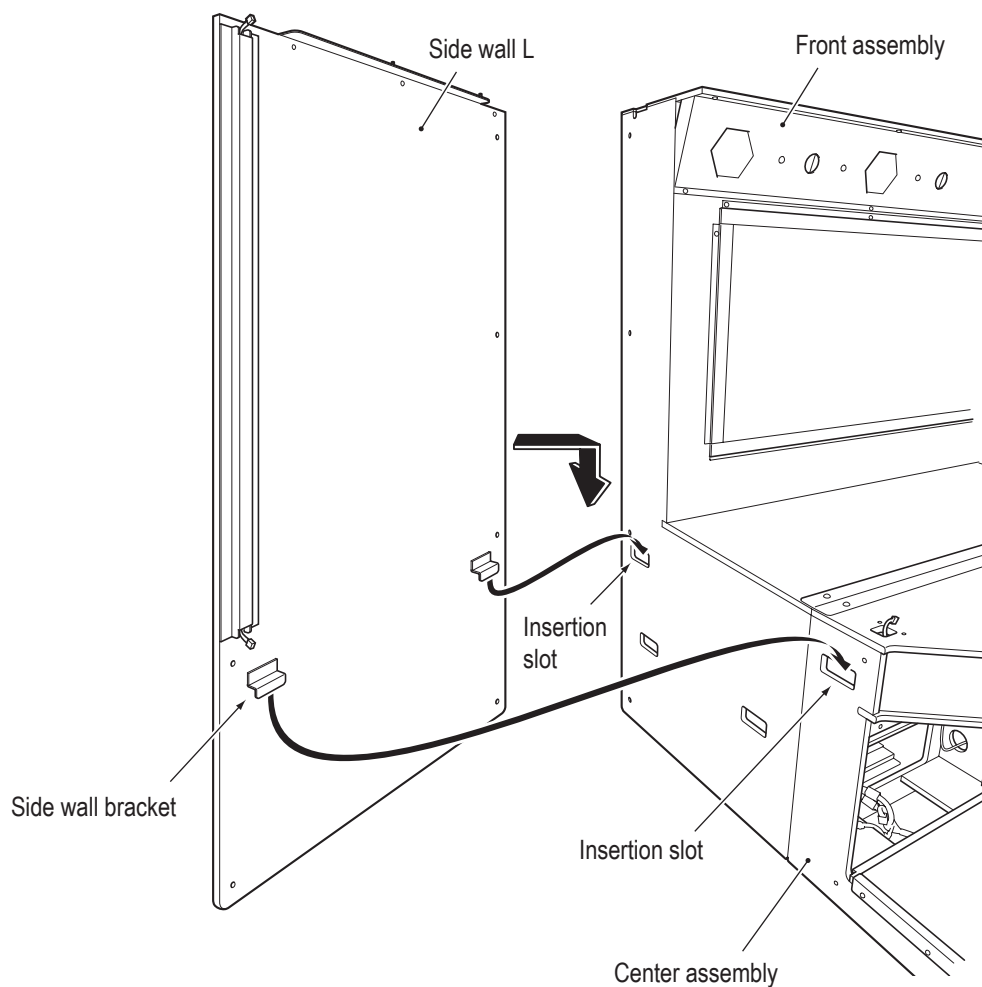
### 8A-4-3 Installing the Wall Assemblies

The description below explains how to install the L side. Perform the same procedure to install the R side.

#### **WARNING**

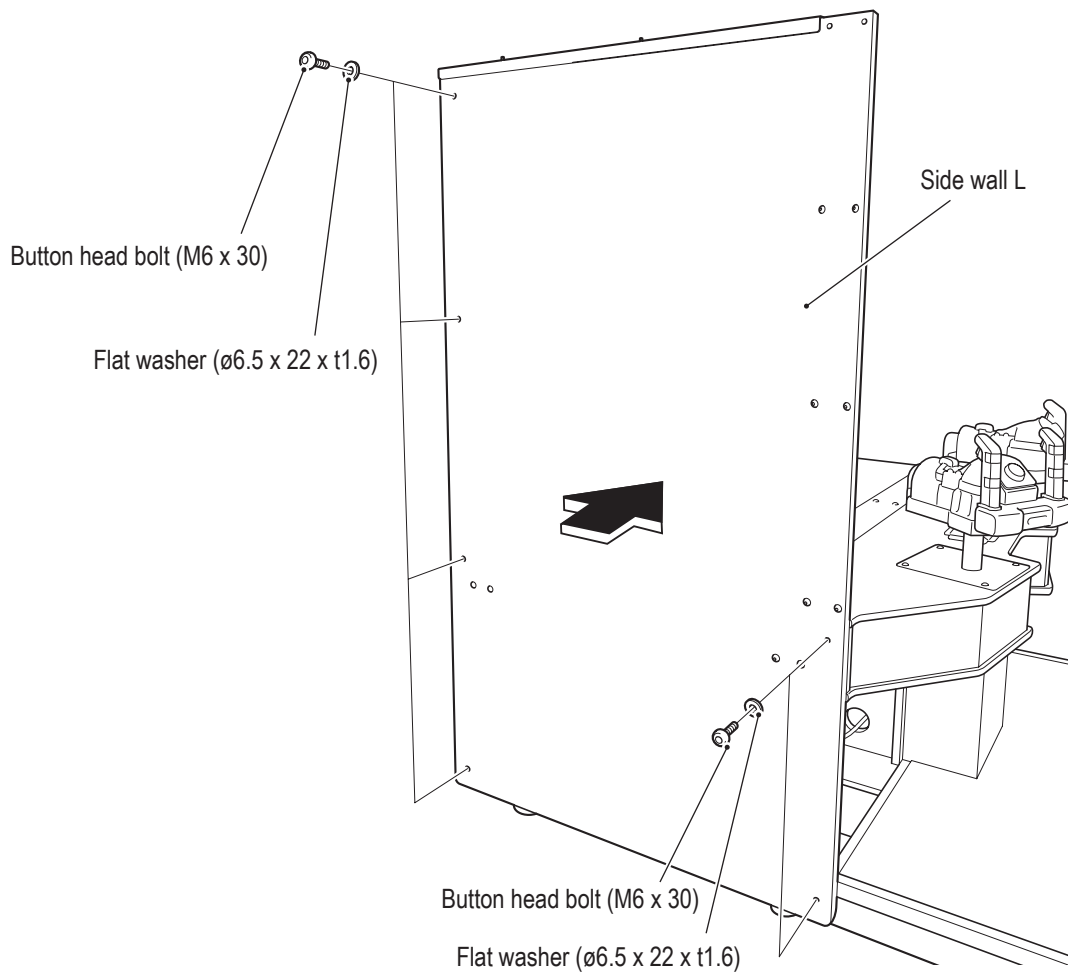
- The wall assembly is installed while standing in a high location. Use a stool or ladder. Working in an unnatural body posture may result in injury or machine damage.

- 1** Install the side wall L by inserting the two side wall brackets on the side wall L into the insertion slots on the L side of the front assembly and center assembly as shown in the figure below.

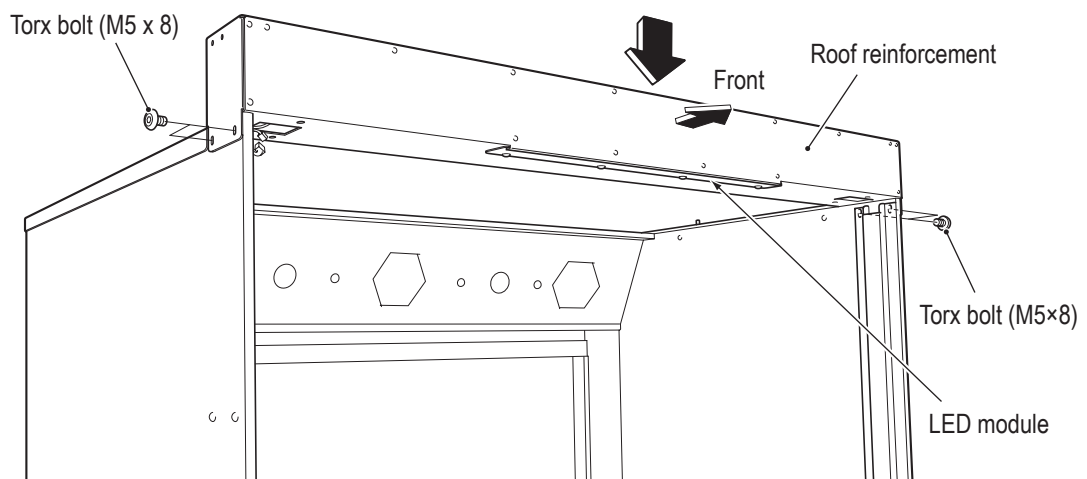


**- Must be performed by a technician -**

- 2** Secure the side wall L to the front assembly and center assembly with six flat washers ( $\phi 6.5 \times 22 \times t1.6$ ) and six button head bolts (M6 x 30).
- 3** Perform the same procedure to install the side wall R to the R side.



- 4** Place the roof reinforcement on top of the side wall L and side wall R, and secure it with four Torx bolts (M5 x 8). At this time, install the roof reinforcement so that the LED module is toward the front.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

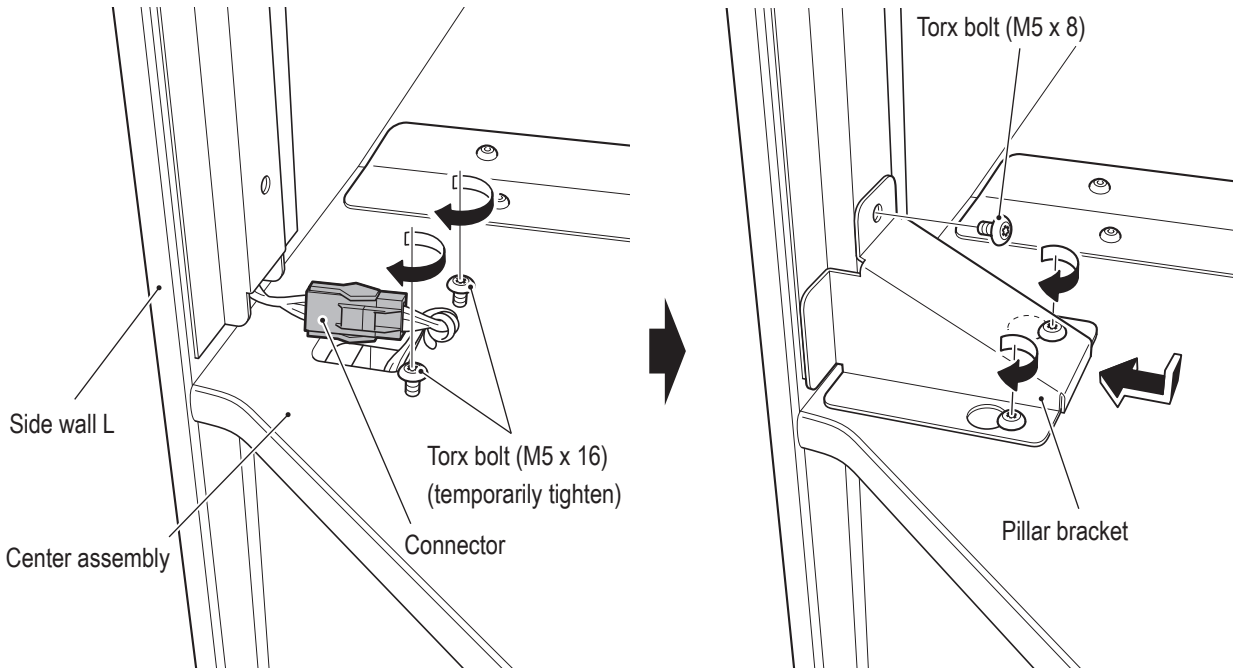
Installation and Assembly/Technician's Manual

Test Mode

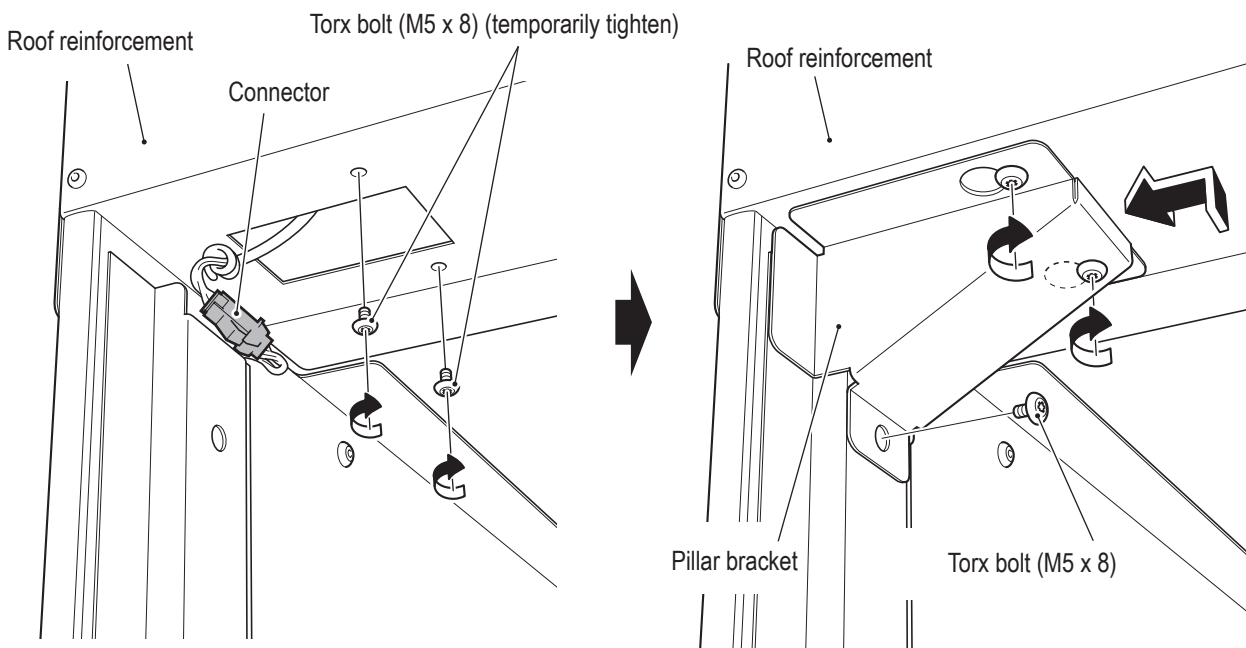
Troubleshooting

**- Must be performed by a technician -**

- 5** Connect the connector on top of the L side of the center assembly.
- 6** Temporarily tighten the two Torx bolts (M5 x 16), insert and secure the supplied pillar bracket with one Torx bolt (M5 x 8), and then fully tighten the two Torx bolts.



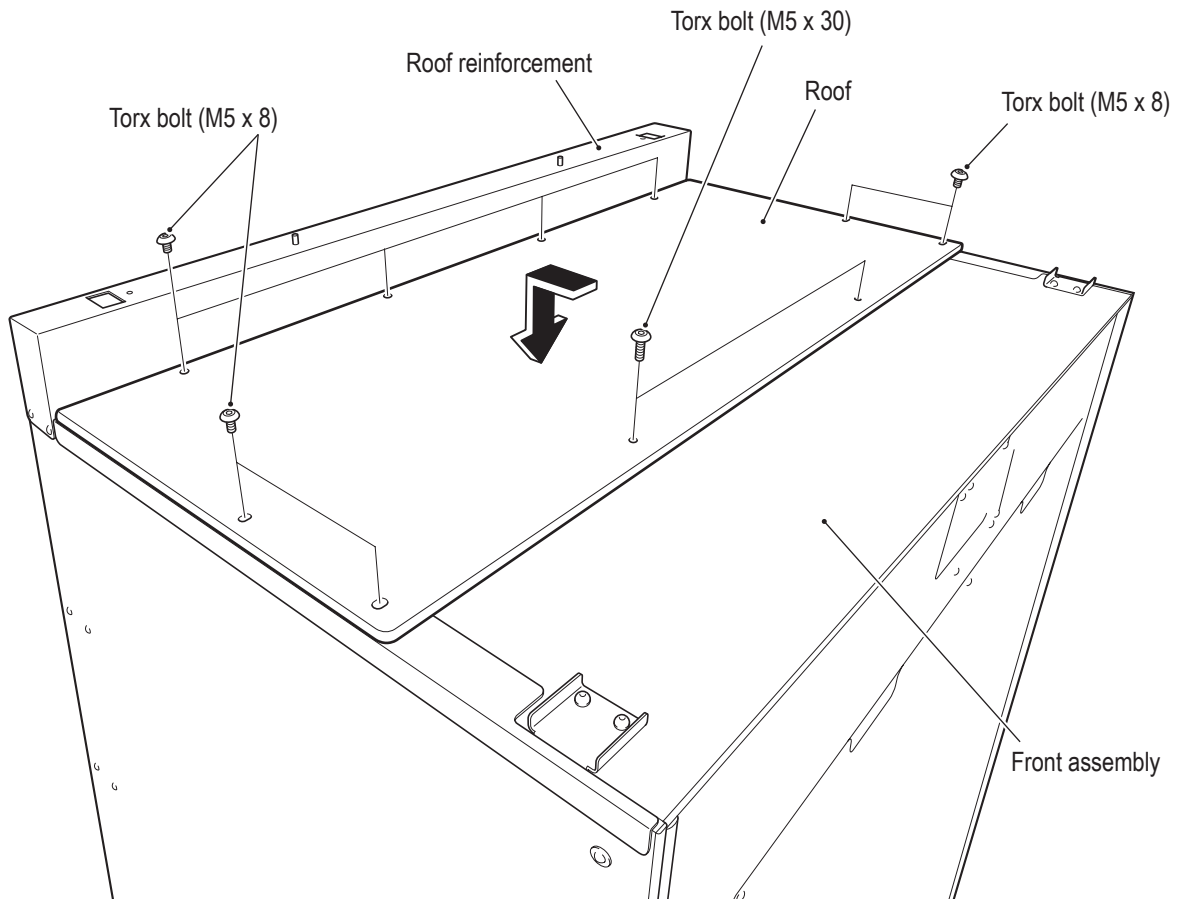
- 7** Connect the connector on the L side of the roof reinforcement.
- 8** Perform the procedure in step **6** to attach the pillar bracket.



- 9** Perform the same procedure to attach the two pillar brackets to the R side. (There are no connectors on the R side.)

**- Must be performed by a technician -**

- 10** Place the roof on top of the side wall L and side wall R from the front assembly side, and secure it with eight Torx bolts (M5 x 8) and two Torx bolts (M5 x 30).



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

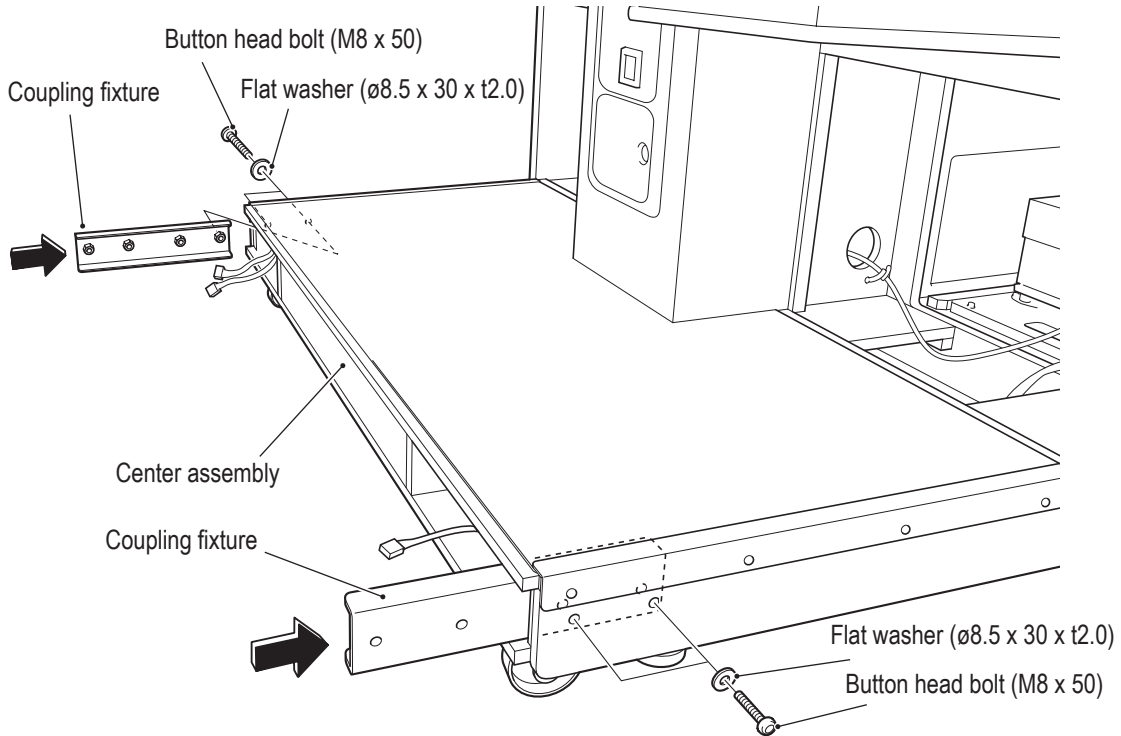
Test Mode

Troubleshooting

**- Must be performed by a technician -**

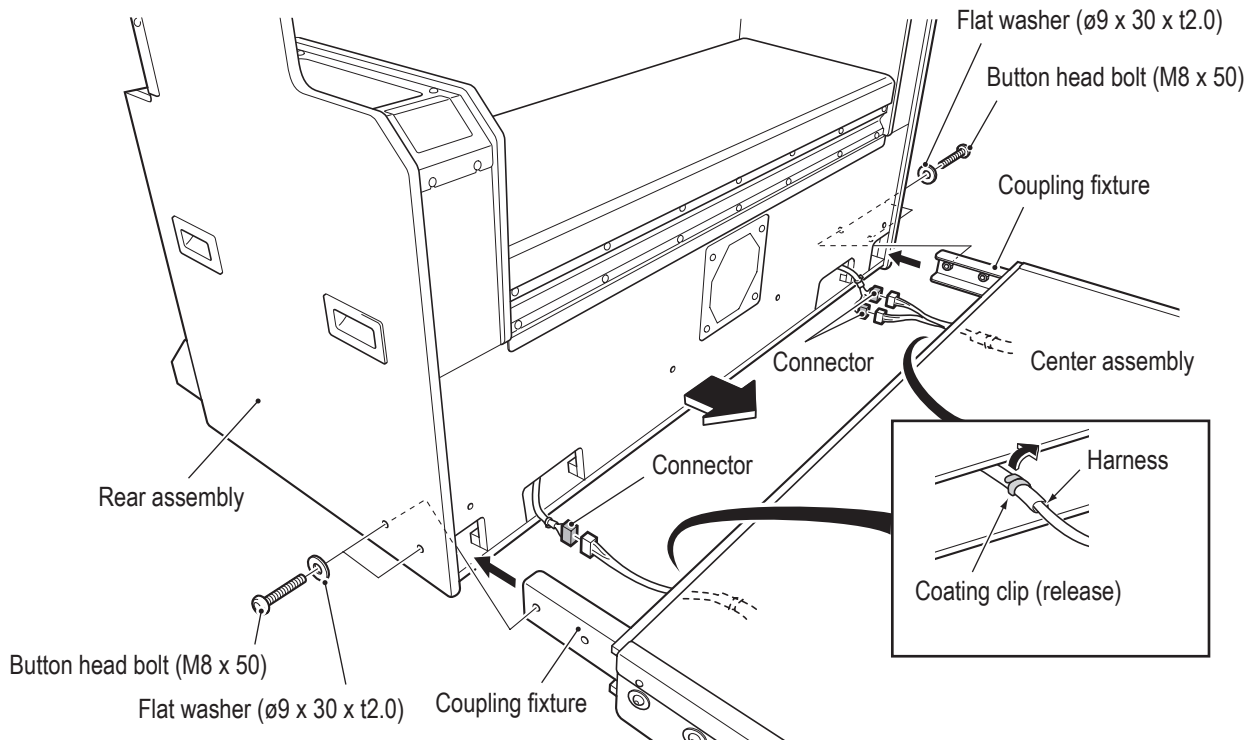
### 8A-4-4 Connecting the Center Assembly and Rear Assembly

- 1 Insert the two coupling fixtures into the center assembly, and secure them with two flat washers (ø8.5 x 30 x t2.0) and two button head bolts (M8 x 50) each (total four washers and four bolts).



- 2 Release the two coating clips securing the harnesses on the center assembly side, bring the center assembly close to the rear assembly, align the positions, and connect the total three connectors on the left and right.

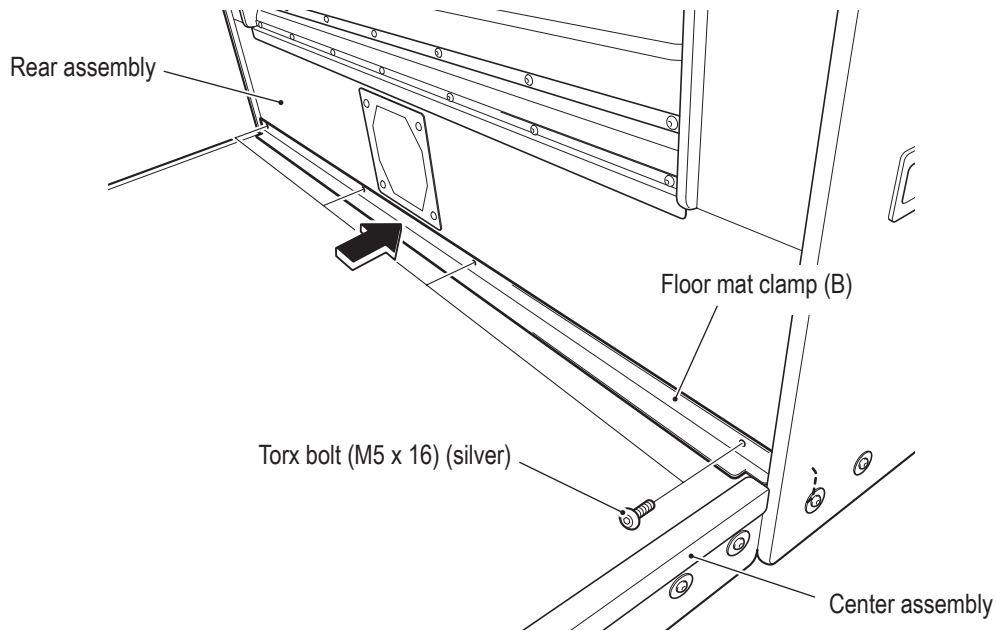
- 3 Join the rear assembly to the center assembly, and secure the assemblies to each other with two flat washers (ø8.5 x 30 x t2.0) and two button head bolts (M8 x 50) on each side (total four washers and four bolts). At this time, house the connectors and harnesses inside the assemblies so that they are not pinched.





**- Must be performed by a technician -**

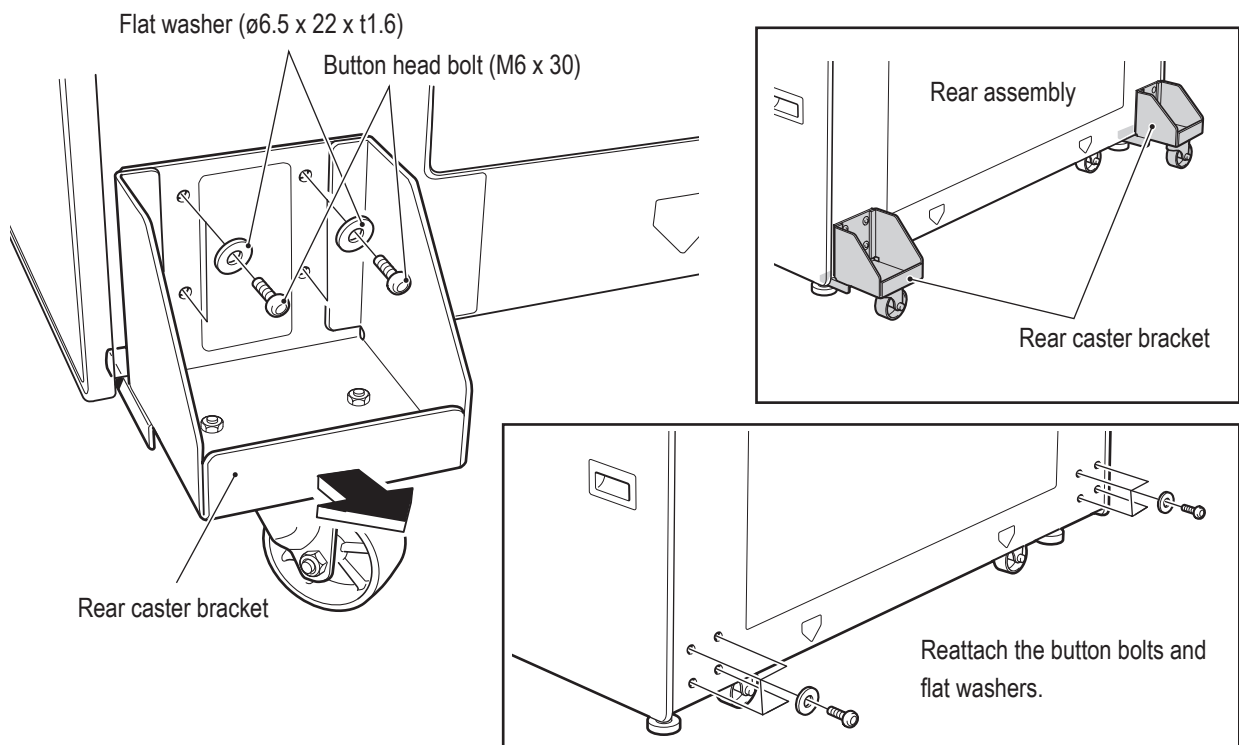
- 4** Secure the floor mat clamp (B) with four Torx bolts (M5 x 16) (silver).



- 5** Remove the four flat washers ( $\varnothing 6.5 \times 22 \times t1.6$ ) and four button head bolts (M6 x 30) from each side (total eight washers and eight bolts), and remove the two rear caster brackets from the back of the rear assembly.

Reattach the removed button head bolts and flat washers.

The two removed rear caster brackets are used during movement and transport, so be sure to keep them in a safe place.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

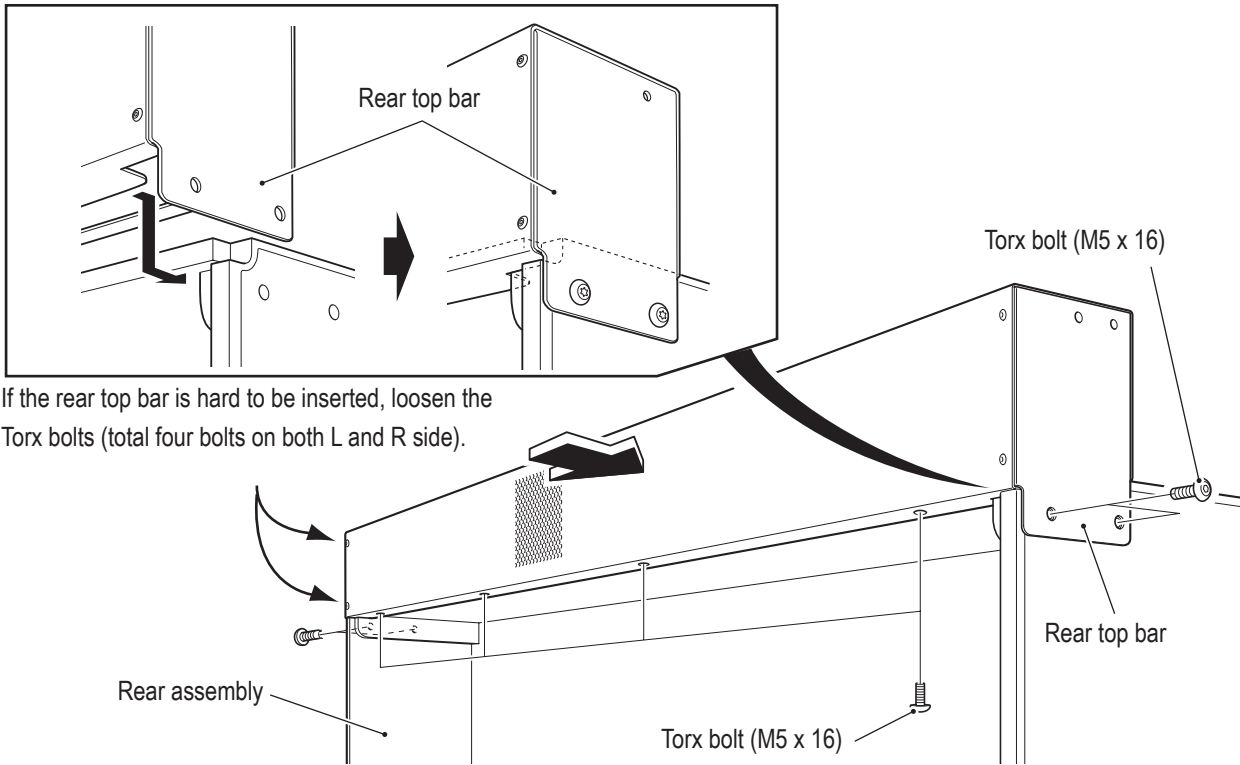
- Must be performed by a technician -

### 8A-4-5 Installing the Signboard Box Assembly

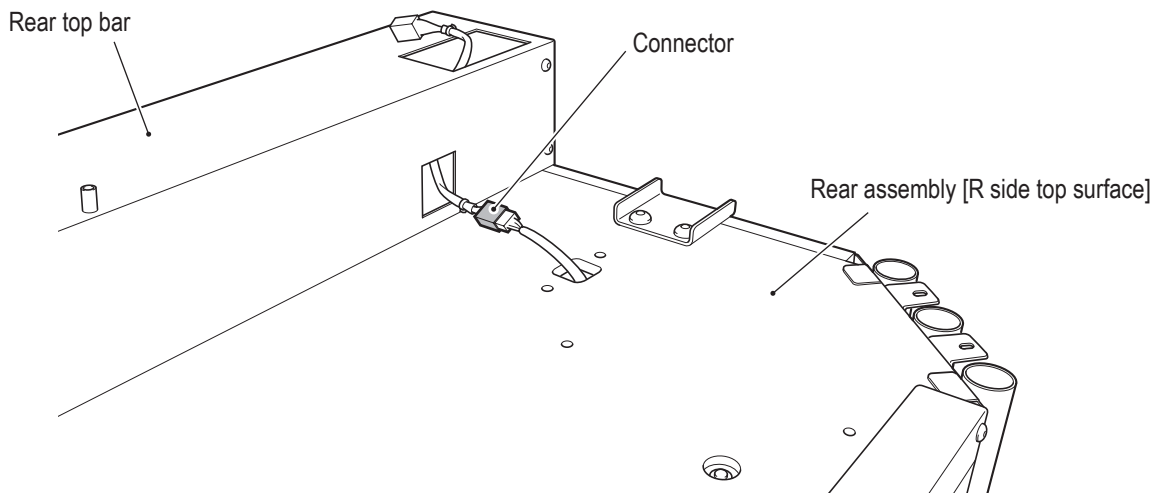
#### ⚠ WARNING

- The signboard box assembly is installed while standing in a high location. Use a stool or ladder. Working in an unnatural body posture may result in injury or machine damage.

- 1 Insert the rear top bar horizontally onto the top of the rear assembly, and secure it with eight Torx bolts (M5 x 16).

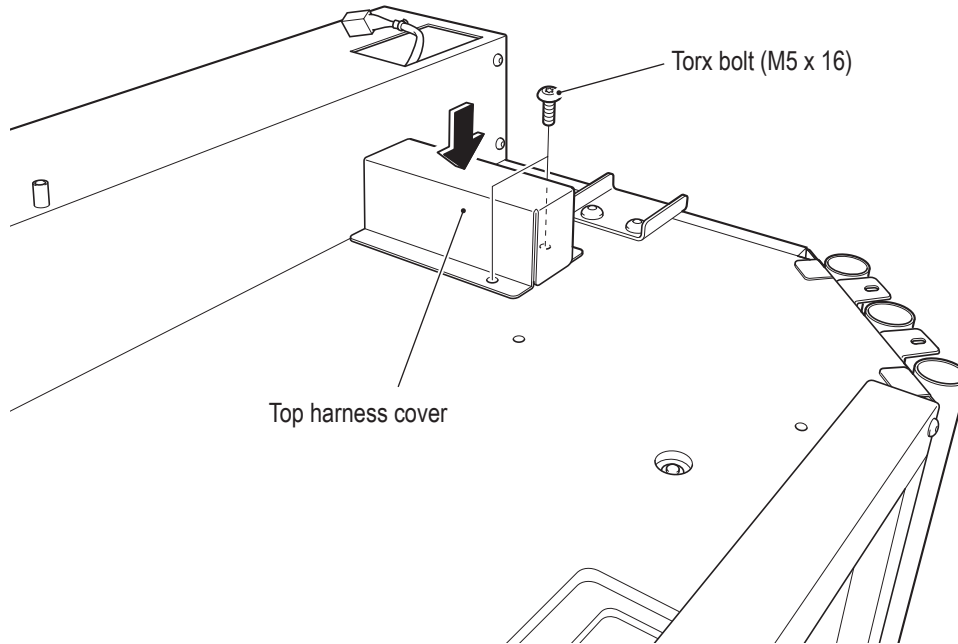


- 2 Lead out the harnesses from the rear assembly and the rear top bar, and connect the connector located on the R side top surface of the rear assembly.

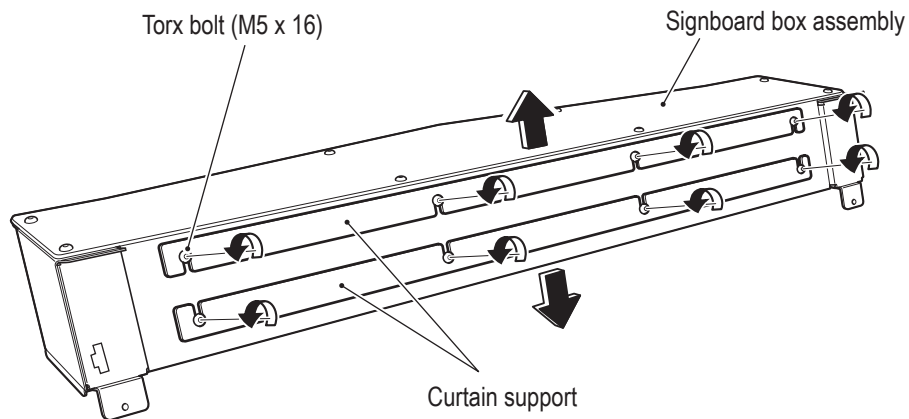


**- Must be performed by a technician -**

- 3** Place the top harness cover over the harness, and secure it with two Torx bolts (M5 x 16).



- 4** Loosen the eight Torx bolts (M5 x 16), and remove the two curtain supports from the bottom of the signboard box assembly. Do not retighten the loosened eight Torx bolts (M5 x 16) at this time. In addition, the removed curtain supports are used in "8A-4-8 Installing the Ceiling Tarpaulin and Side Curtains" on page 87, so keep them in a safe place.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

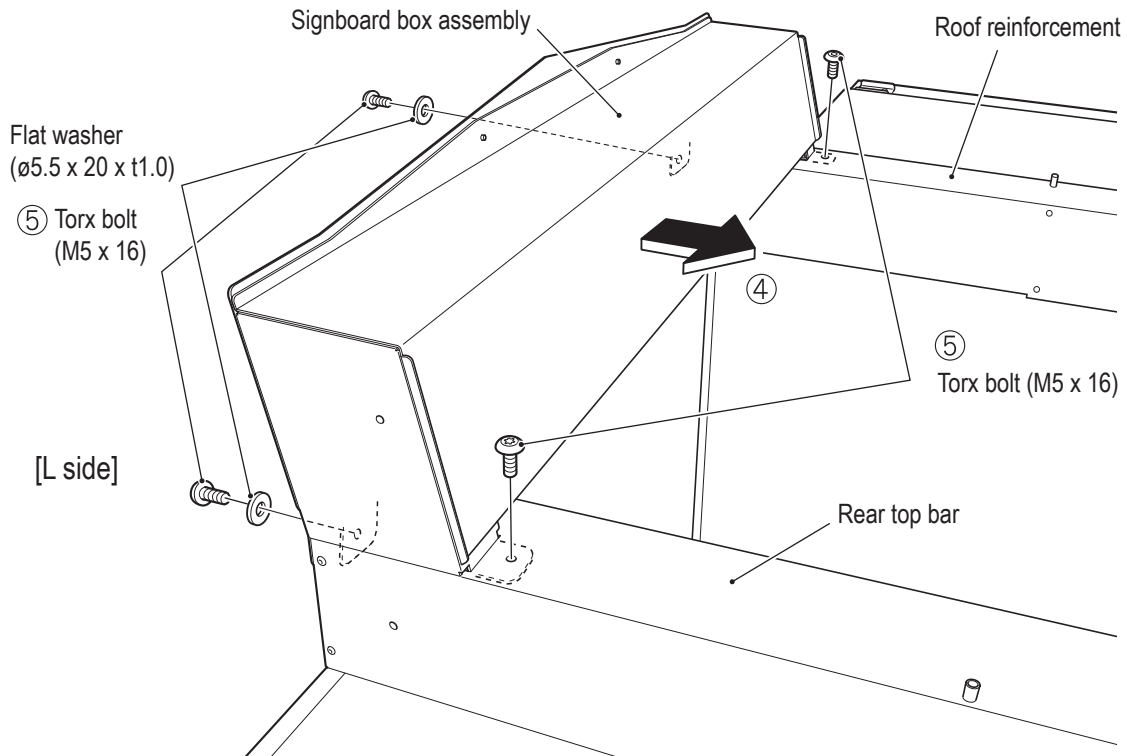
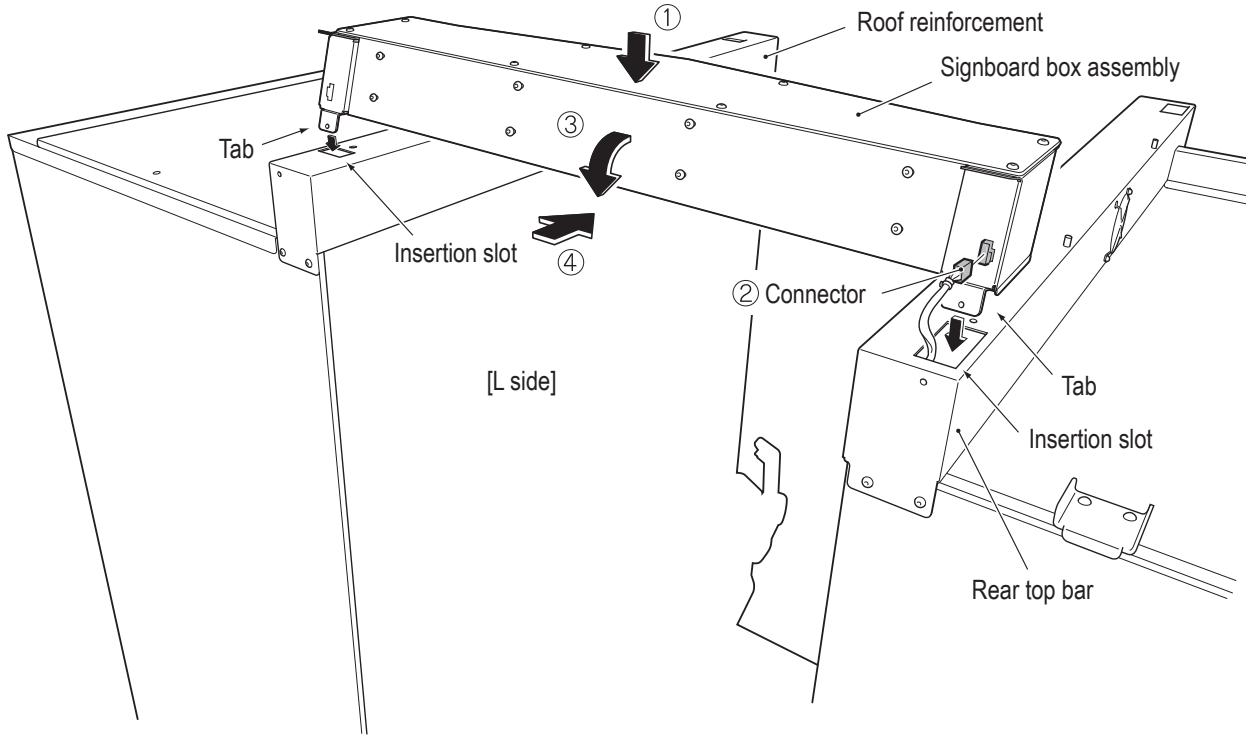
Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

- 5** Insert the tabs of the signboard box assembly into the insertion slots on top of the roof reinforcement and the rear top bar. (①)
- 6** Connect the connector. (②)
- 7** Rotate the signboard box assembly toward you so that it is right side up (③), slide it toward the back to align the position (④), and secure it with two flat washers (ø5.5 x 20 x t1.0) and four Torx bolts (M5 x 16). (⑤)



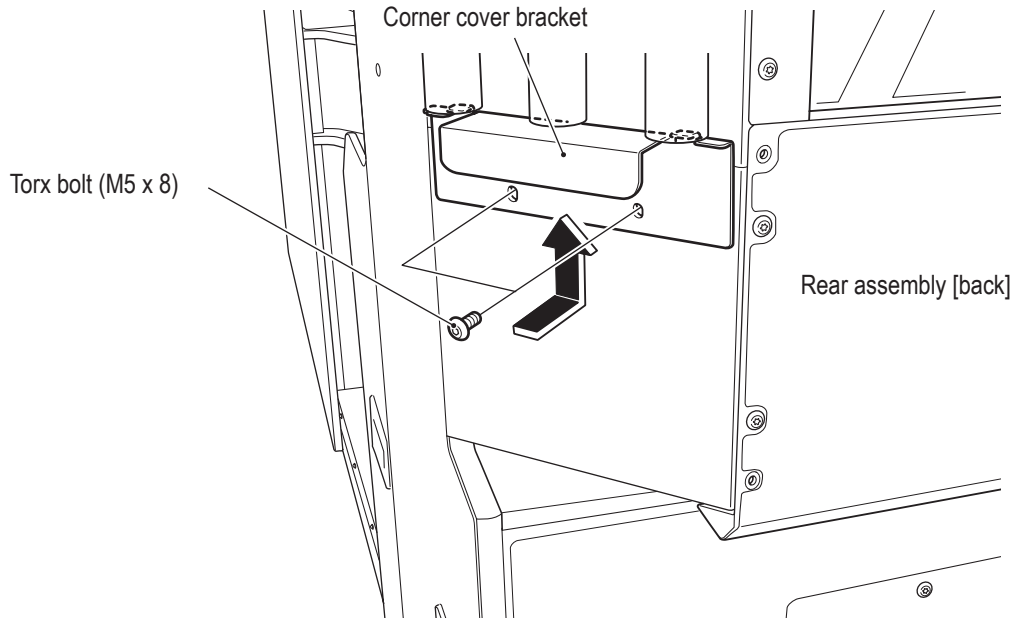
- 8** Perform the same procedure to install the R side signboard box assembly.

**- Must be performed by a technician -**

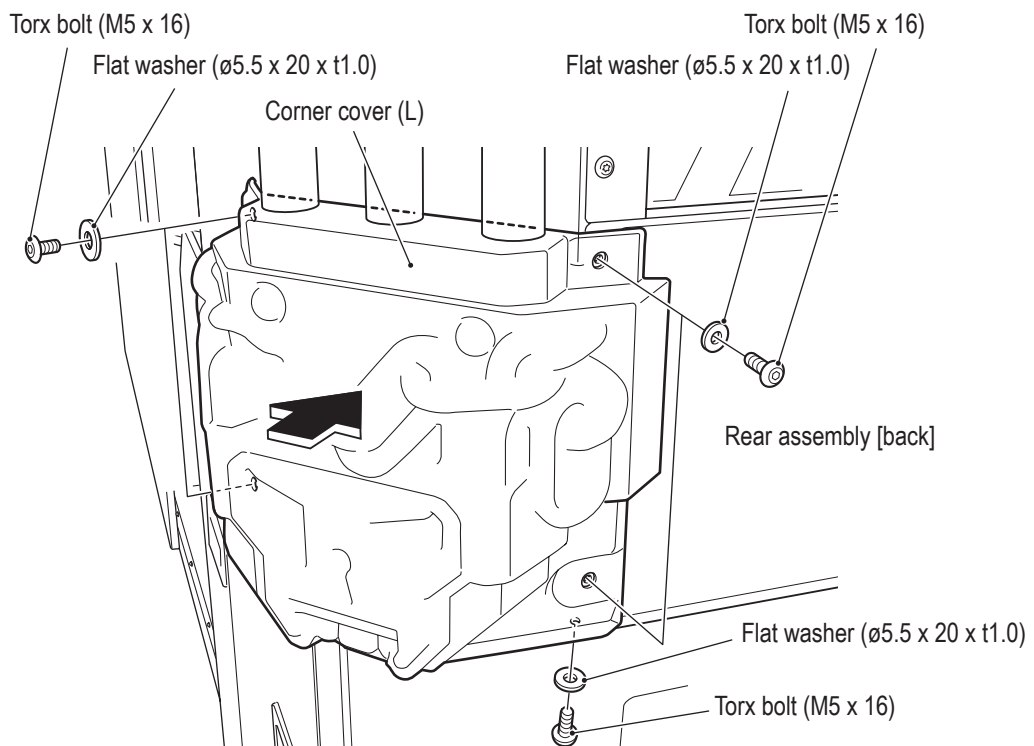
### 8A-4-6 Installing the Corner Covers (L) and (R)

The description below explains how to install the L side. Perform the same procedure to install the R side.

- 1** Install the corner cover bracket to the back corner of the rear assembly with two Torx bolts (M5 x 8). At this time, press the corner cover bracket upward when installing it.



- 2** Install the corner cover (L) with five flat washers (ø5.5 x 20 x t1.0) and five Torx bolts (M5 x 16).



- 3** Perform the same procedure to install the R side corner cover.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

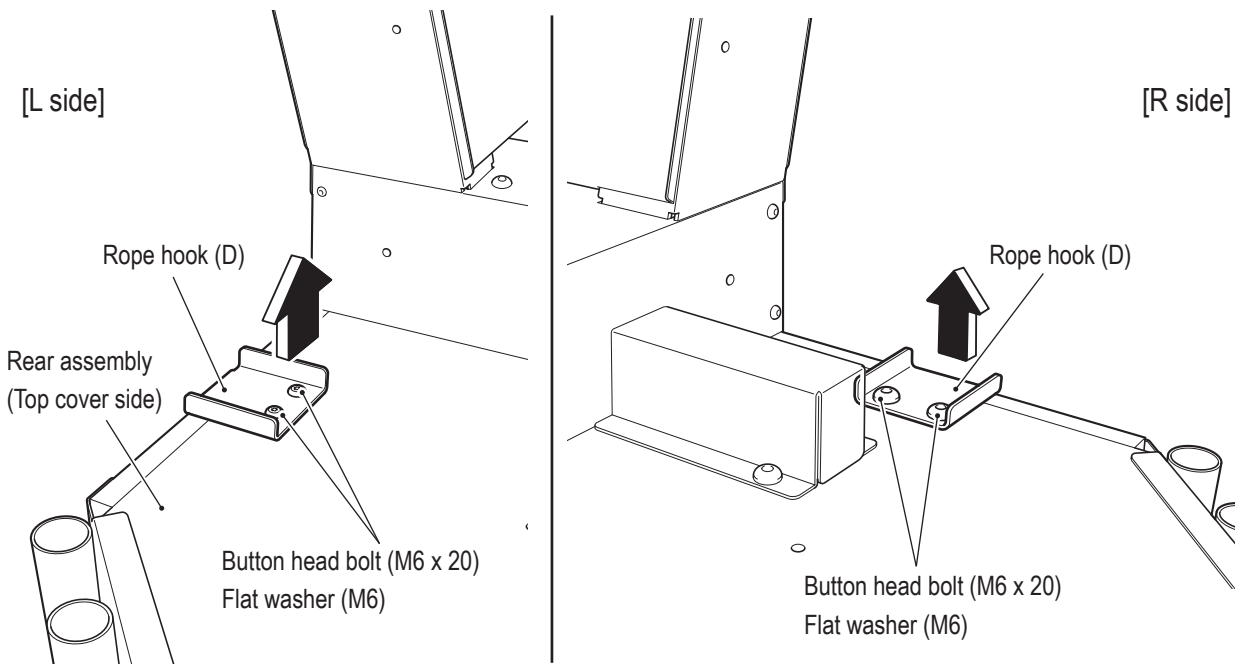
**- Must be performed by a technician -**

### 8A-4-7 Installing the Top Cover Center and Top Cover Sides (L) and (R)

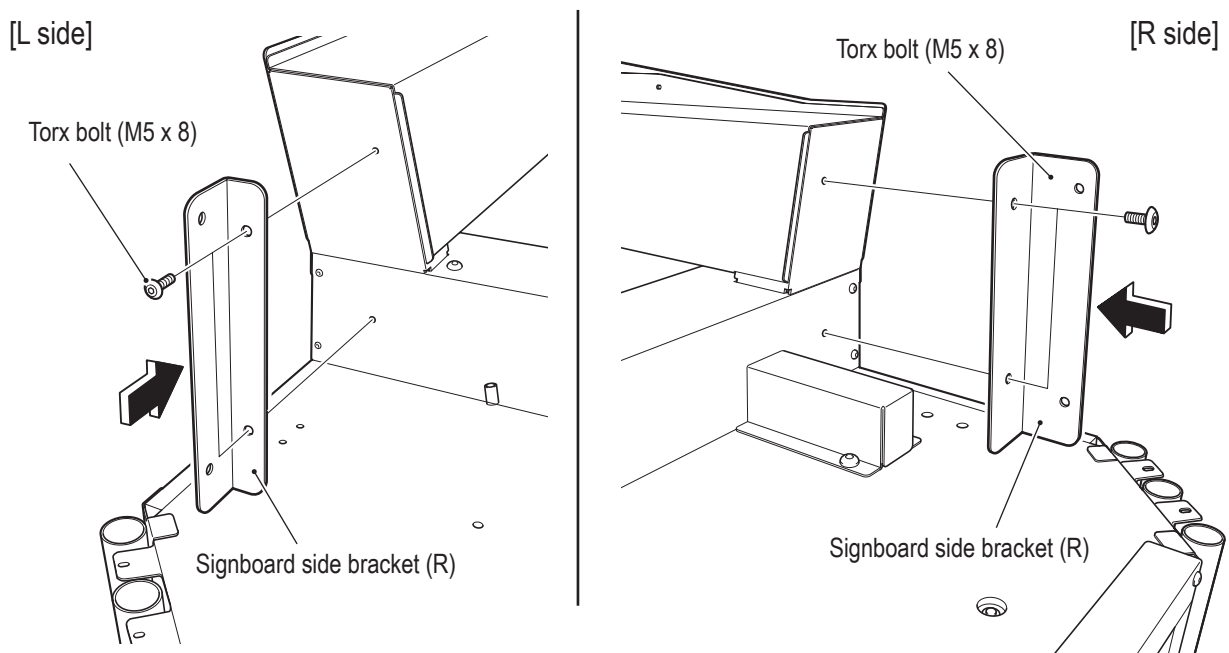
#### ⚠ WARNING

- The top cover center, top cover side (L) and top cover side (R) are installed while standing in a high location. Use a stool or ladder. Working in an unnatural body posture may result in injury or machine damage.

- 1 Remove the two flat washers (M6) and two button head bolts (M6 x 20) from each side of the rear assembly top surface (total four washers and four bolts), and remove the two rope hooks. The removed two rope hooks, four flat washers (M6) and four button head bolts (M6 x 20) are used during movement and transport, so be sure to keep them in a safe place.

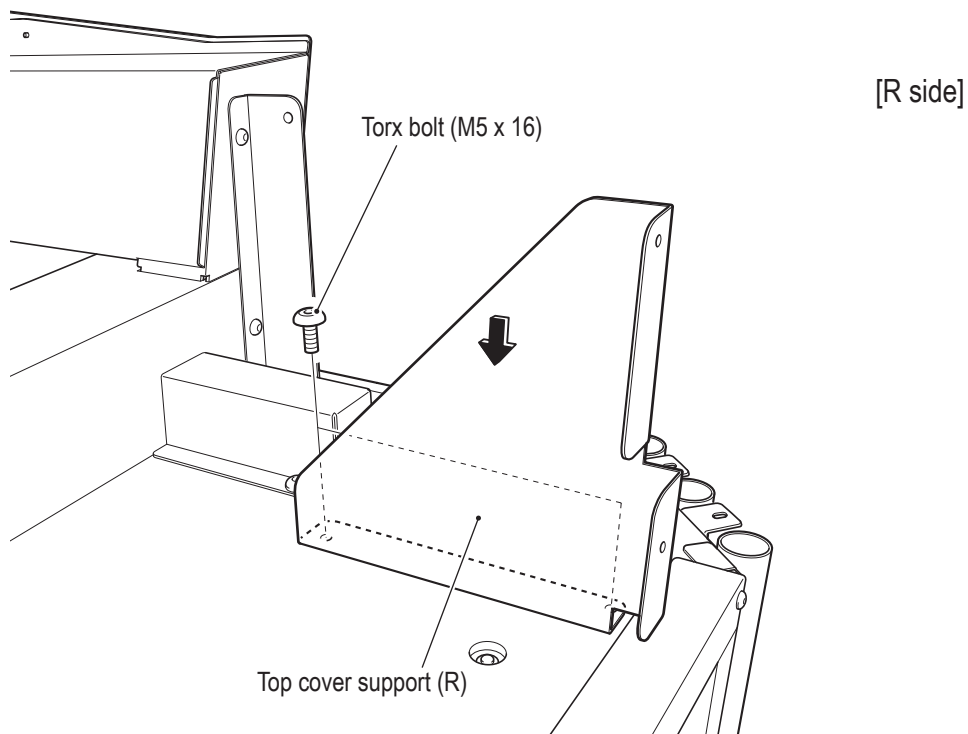
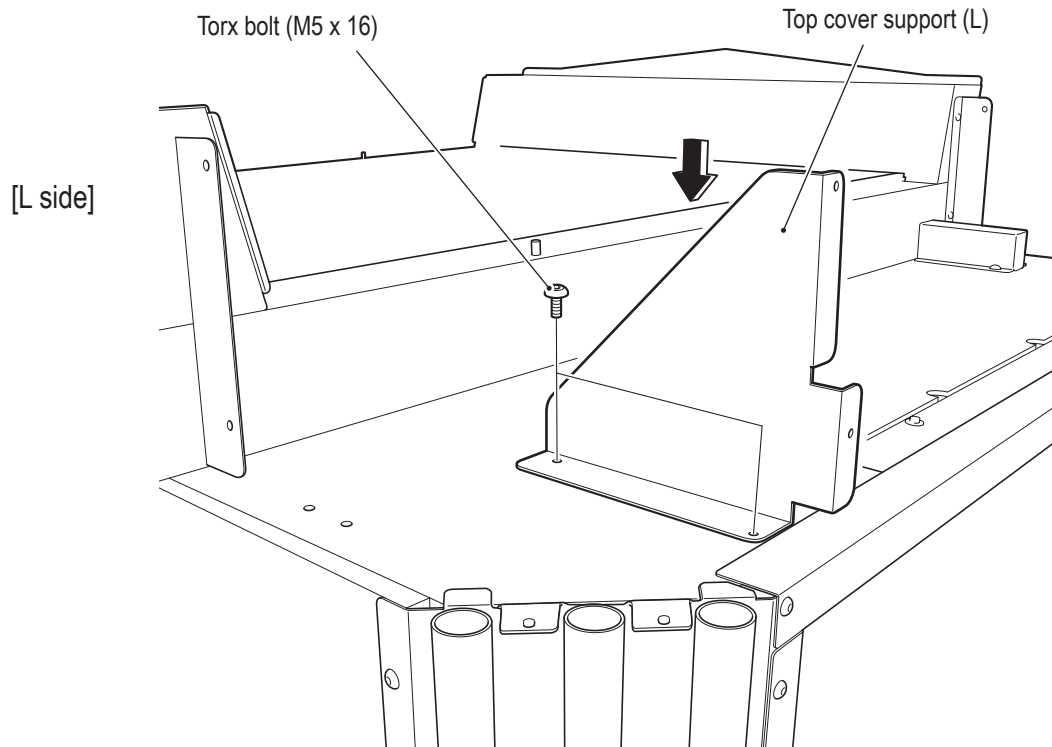


- 2 Install the signboard side bracket (R) to the L side with two Torx bolts (M5 x 8). Perform the same procedure to install the signboard side bracket (R) to the R side.



**- Must be performed by a technician -**

- 3** Install the top cover support (L) to the L side of the rear assembly top surface with two Torx bolts (M5 x 16). Perform the same procedure to install the top cover support (R) to the R side.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

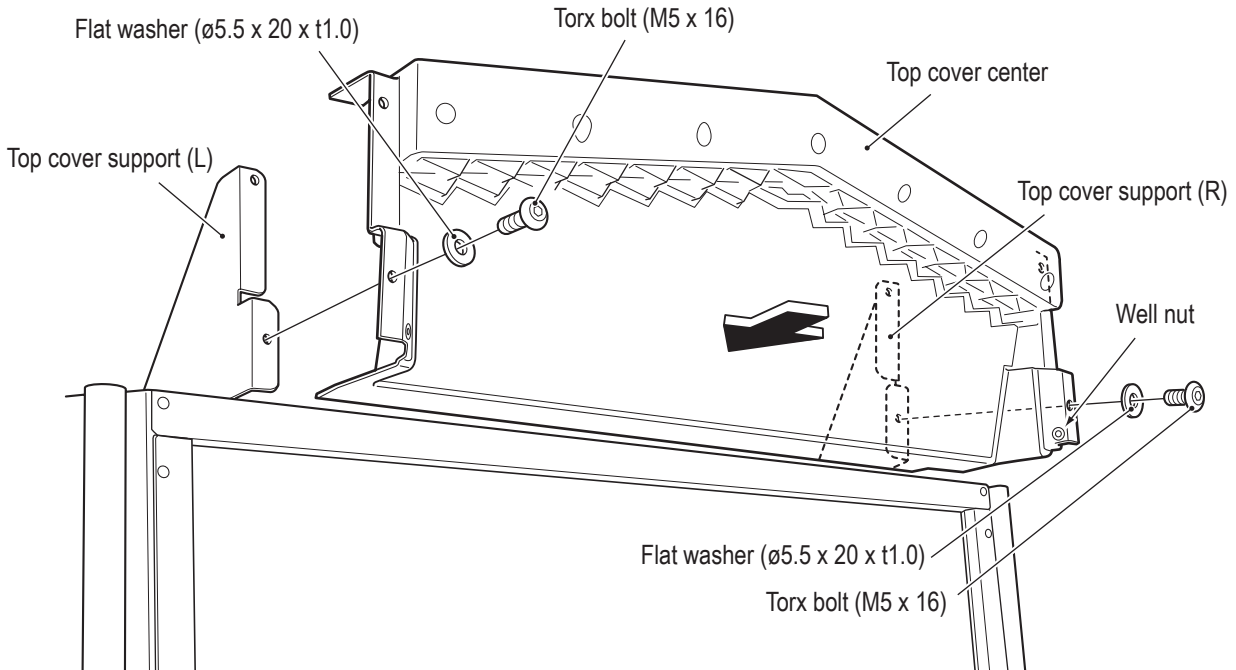
Installation and Assembly/Technician's Manual

Test Mode

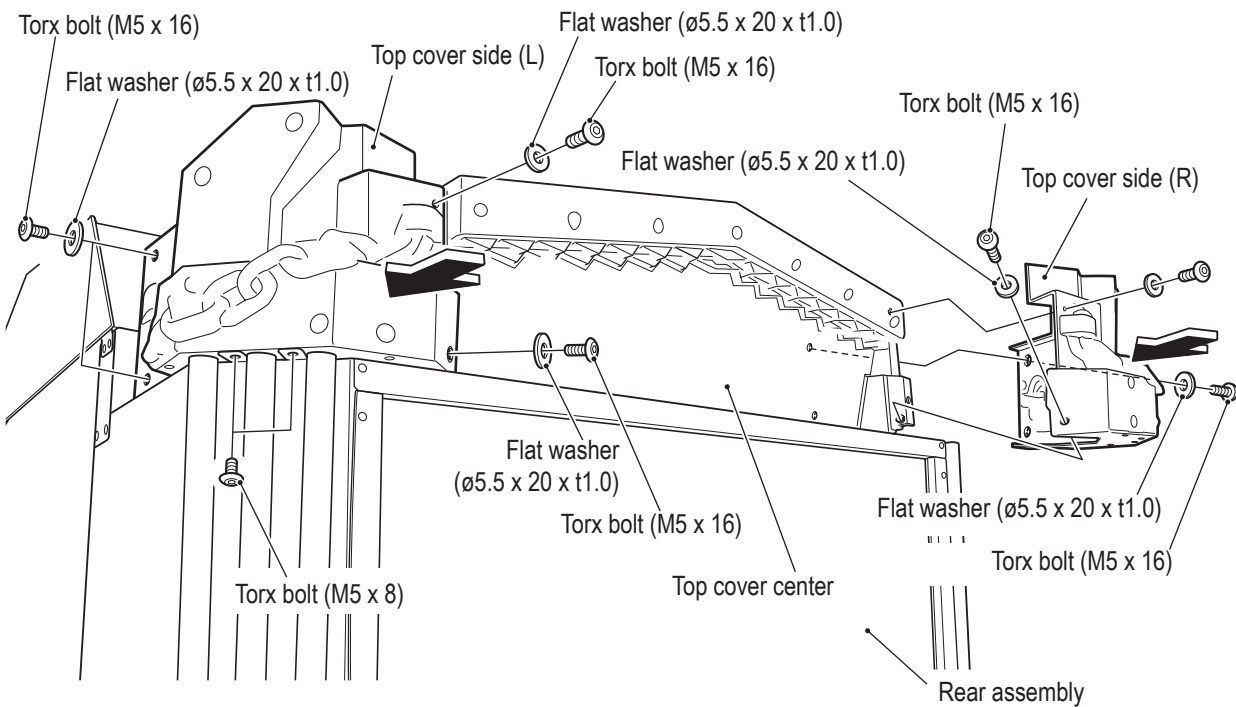
Troubleshooting

**- Must be performed by a technician -**

- 4** Insert the top cover center as shown in the figure, and secure the lower part to the top cover supports (L) and (R) with two flat washers ( $\phi 5.5 \times 20 \times t1.0$ ) and two Torx bolts (M5 x 16).



- 5** Insert the top cover side (L) onto the L side of the rear assembly top surface from the front, and secure it with four flat washers ( $\phi 5.5 \times 20 \times t1.0$ ) and four Torx bolts (M5 x 16). At this time, the upper part of the top cover center is also secured. Next, secure the bottom of the top cover side (L) with two Torx bolts (M5 x 8). Perform the same procedure to install the top cover side (R) to the R side.





- Must be performed by a technician -

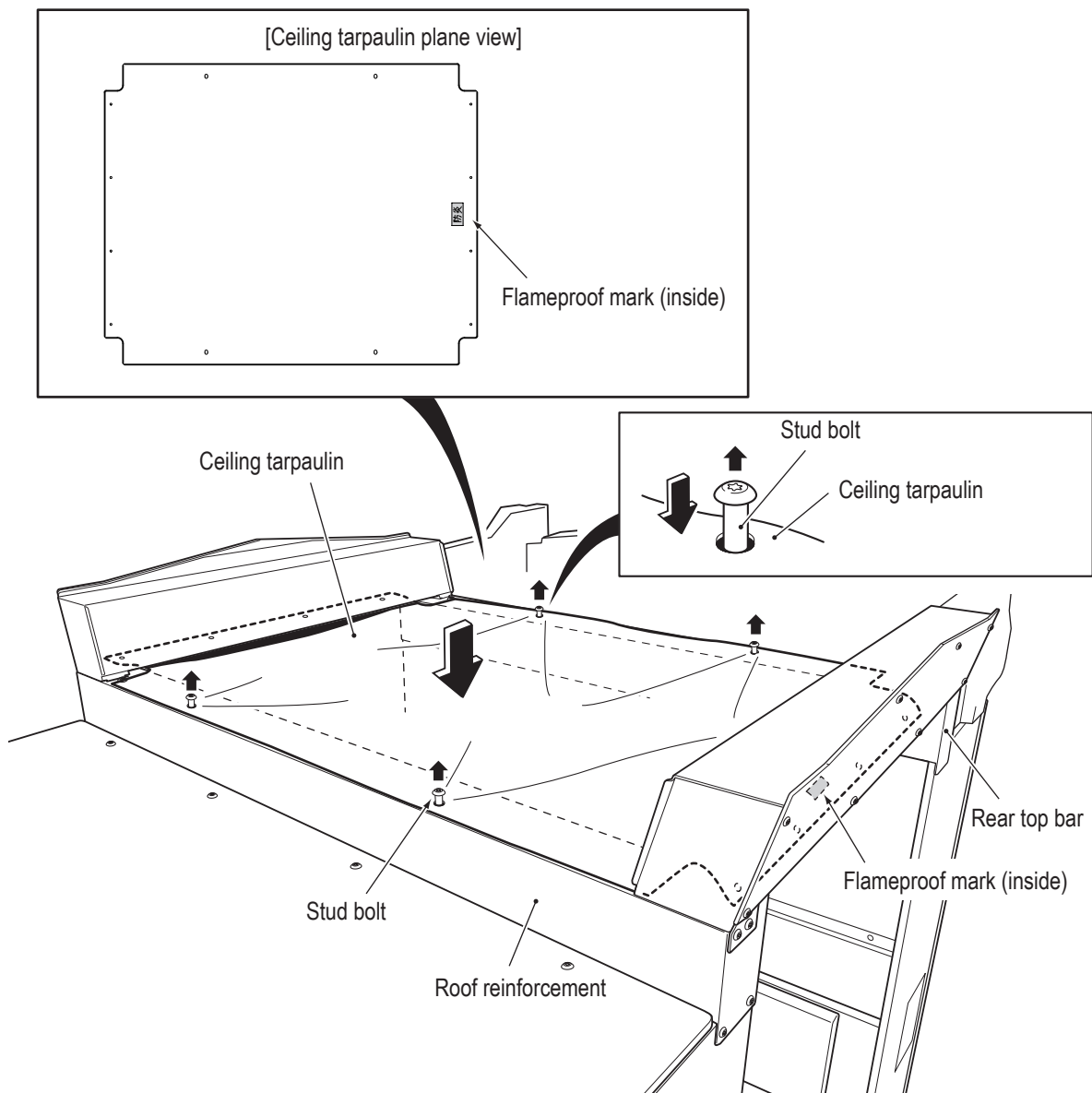
### 8A-4-8 Installing the Ceiling Tarpaulin and Side Curtains

The description below explains how to install the L side. Perform the same procedure to install the R side.

#### ! WARNING

- The ceiling tarpaulin and side curtains are installed while standing in a high location. Use a stool or ladder. Working in an unnatural body posture may result in injury or machine damage.

- 1 Orient the ceiling tarpaulin so that the flameproof mark faces the inside, and hook it over the stud bolts of the roof reinforcement and the rear top bar. (Total four locations)



1

2

3

4

5

6

7

8A

8B

9

10

11

12

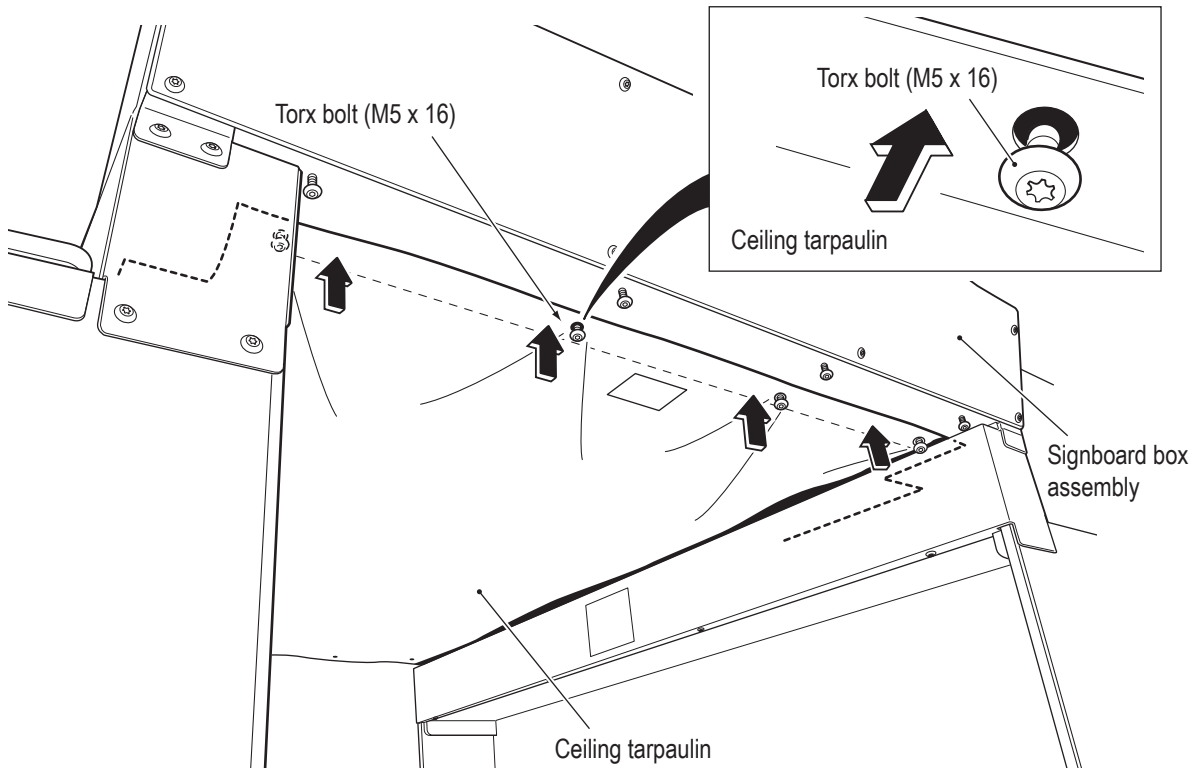
Installation and Assembly/Technician's Manual

Test Mode

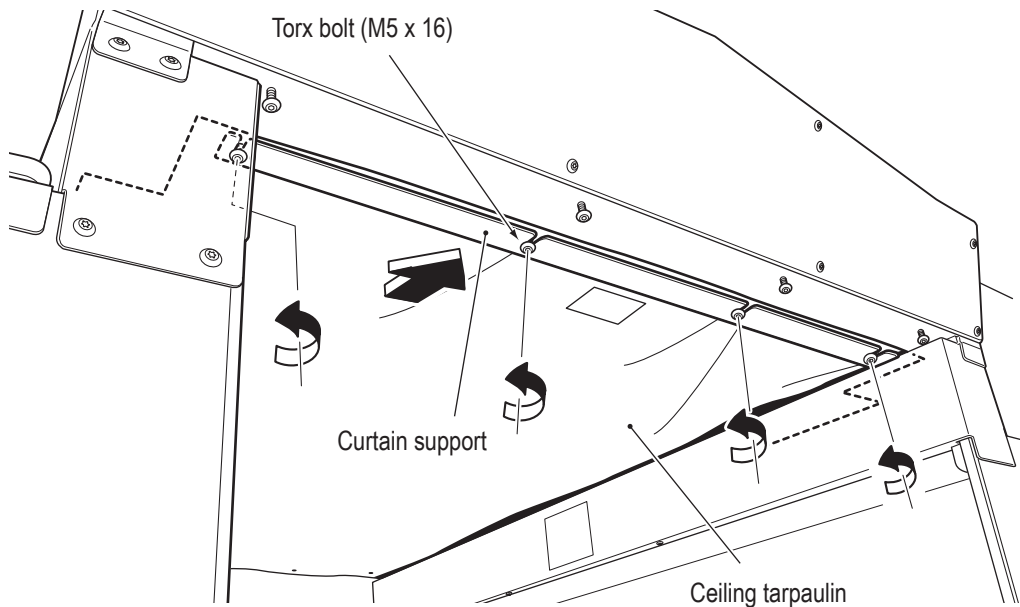
Troubleshooting

**- Must be performed by a technician -**

- 2** Hook the ceiling tarpaulin over the four Torx bolts (M5 x 16) on the bottom of the signboard box assembly. (Four locations per side, total eight locations)

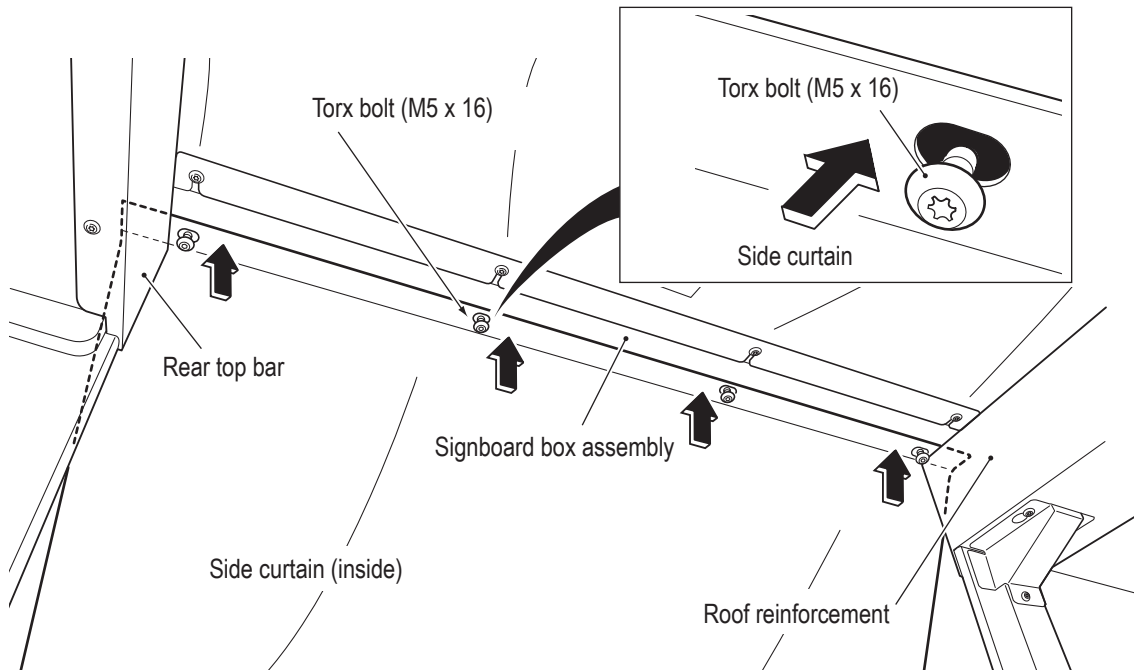


- 3** Insert the curtain support removed in step **4** of "8A-4-5 Installing the Signboard Box Assembly" on page 80 so that it clamps the ceiling tarpaulin from the inside, and tighten the four Torx bolts (M5 x 16). Perform the same procedure to install the R side curtain support.

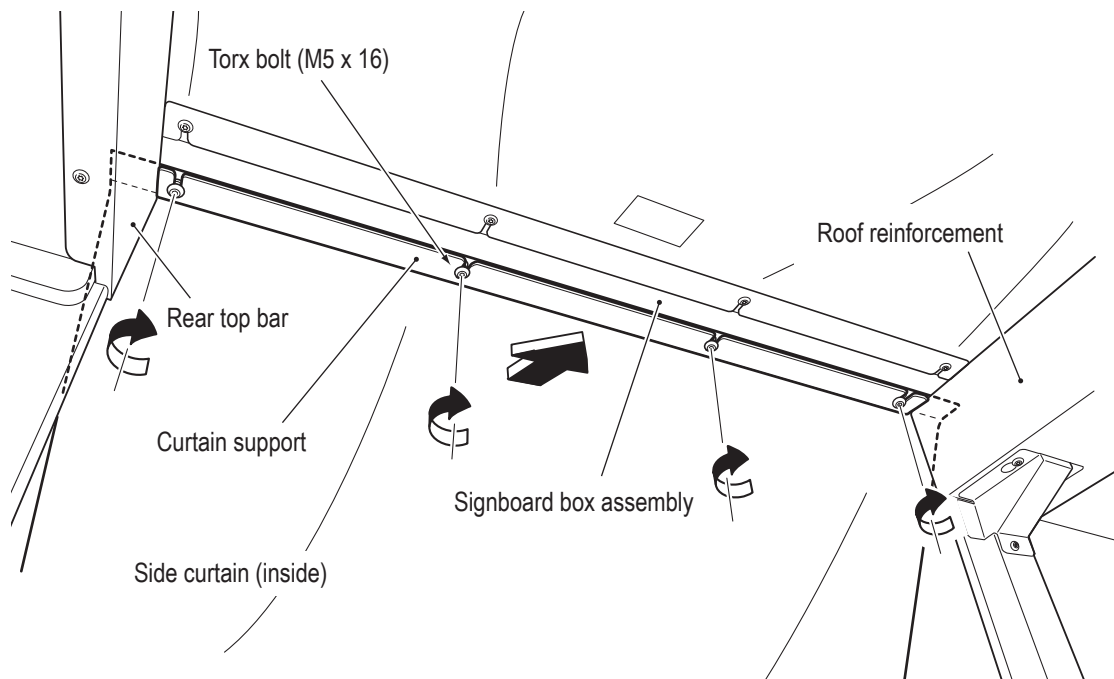


**- Must be performed by a technician -**

- 4** Orient the side curtain so that the printing faces the outside, and hook it over the four outer Torx bolts (M5 x 16) on the bottom of the signboard box assembly.



- 5** Insert the curtain support so that it clamps the side curtain from the outside, and tighten the four Torx bolts (M5 x 16). Perform the same procedure to install the R side curtain support.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

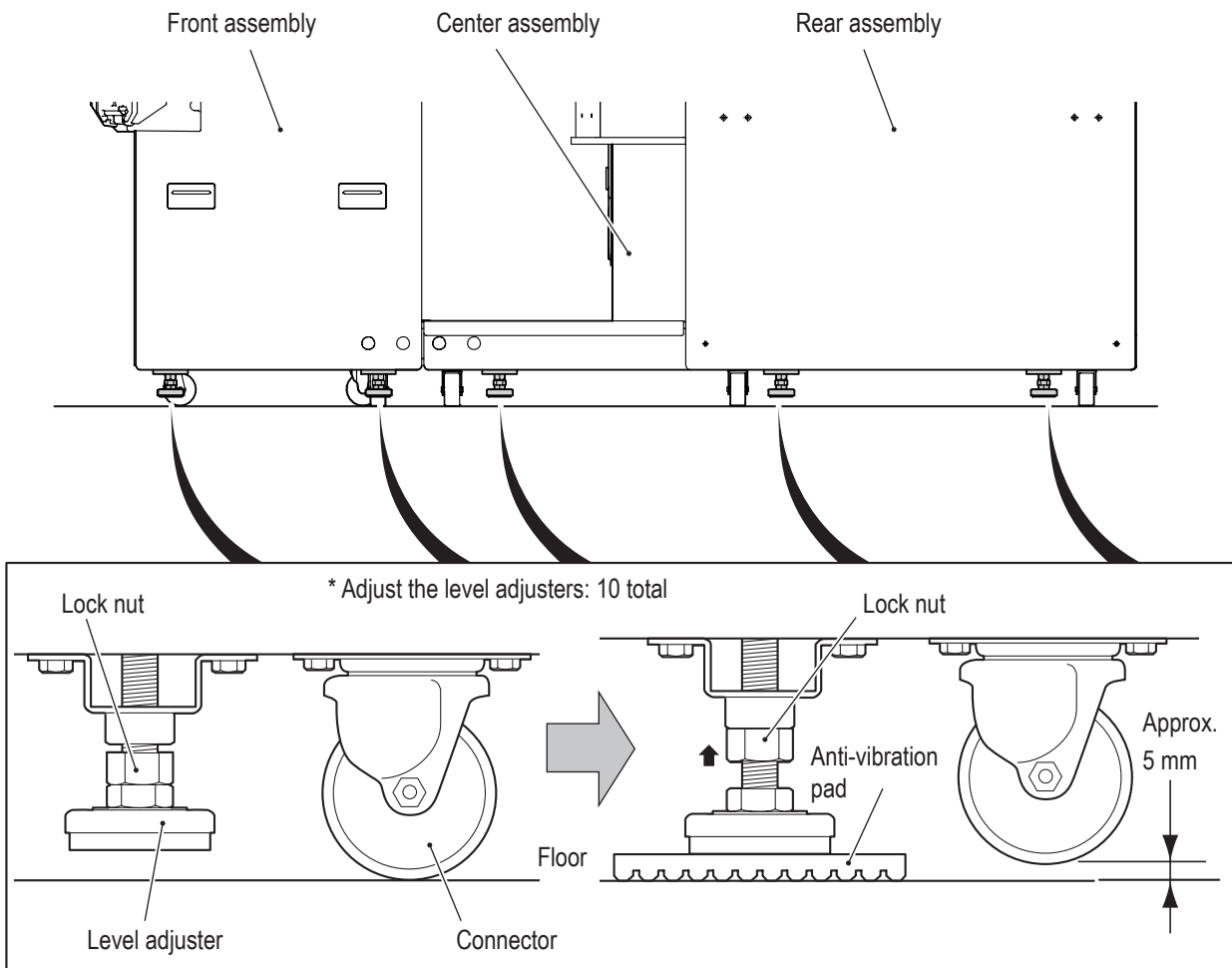
Test Mode

Troubleshooting

**- Must be performed by a technician -**

### 8A-4-9 Level Adjuster Adjustment

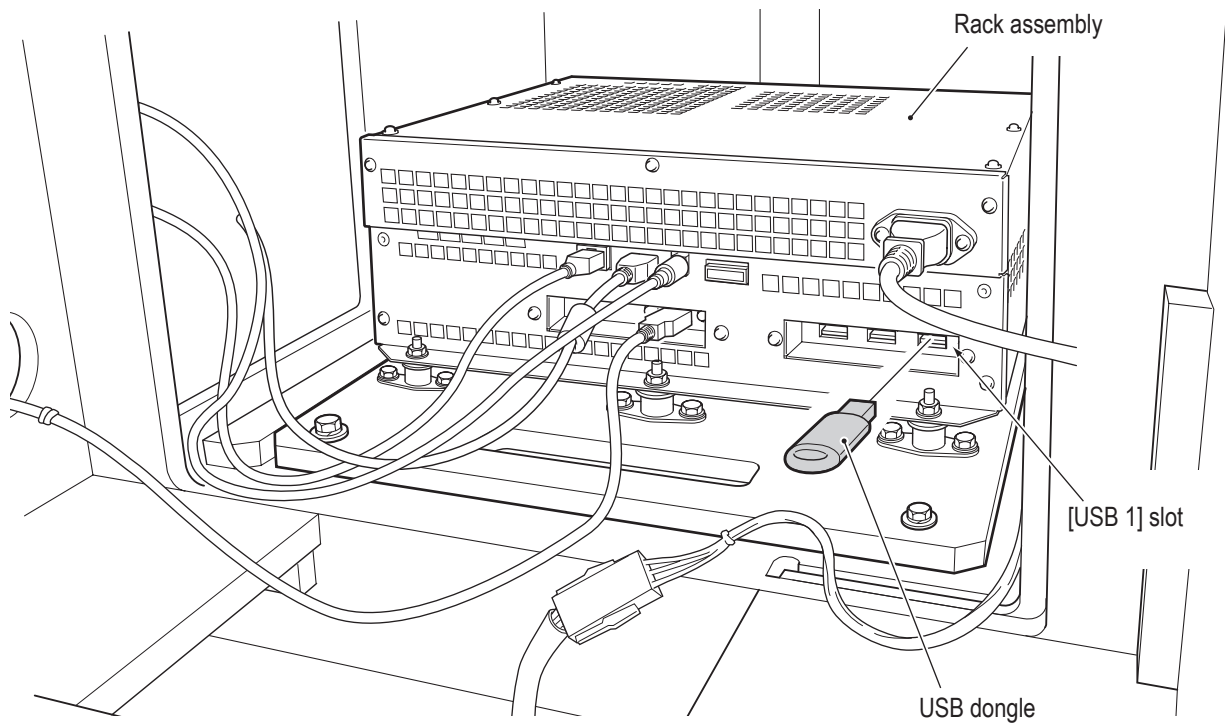
- 1** After the machine is fully assembled, place anti-vibration pads below the total ten level adjusters of the front assembly, center assembly and rear assembly, and then lower the level adjusters according to "5-1 Installation Conditions" on page 24 until the casters of each assembly are at a height approximately 5 mm from the floor. Adjust the level adjusters so that the machine is both stable and level, and then raise the lock nuts to lock the level adjusters.



- Must be performed by a technician -

## 8A-5 Inserting the USB Dongle

- 1** Insert the USB dongle firmly into the USB1 slot of the rack assembly located inside the service door R on the R side of the center assembly.



- 2** Attach the service panel L and service panel R. (See steps **1** and **2** of "8A-4-1 Connecting the Front Assembly and Center Assembly" on page 68.)

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

- Must be performed by a technician -

## 8A-6 Connecting the Communication Cables \*Network compatible models only

### (1) Connection Method

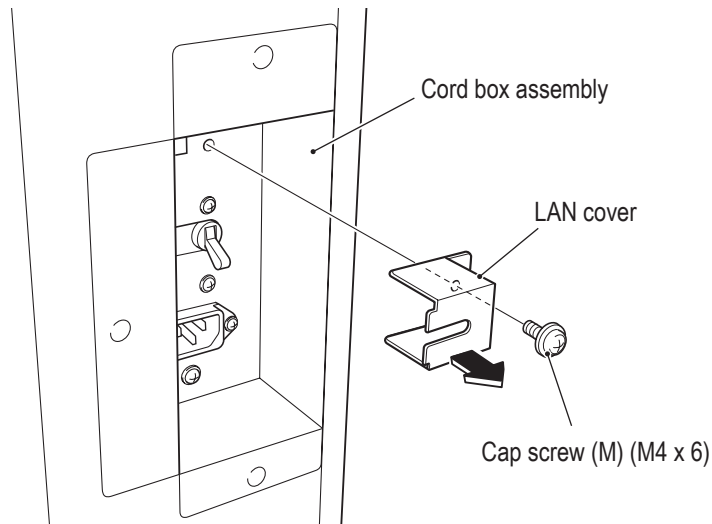
#### ⚠ WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

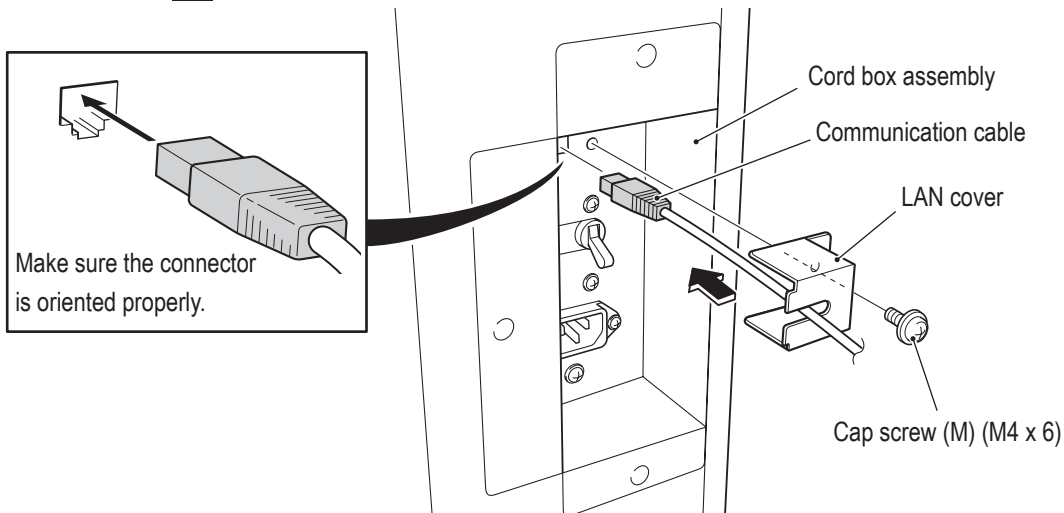
#### ⚠ CAUTION

- Lay out the communication cable so that it will not cause players, bystanders or passers by to trip over it.

- 1 Check that the power switch is off. (See "8A-8 Power Switch Position and Turning the Power Switch On" on page 95.)
- 2 Remove the cap screw (M) (M4 x 6) from the cord box assembly located on the back of the front assembly, and remove the LAN cover.



- 3 Connect the supplied communication cable, and then reattach the removed LAN cover.



- 4 Connect the other end of the communication cable to the NB line router (the router connected to the NB line).

- Must be performed by a technician -

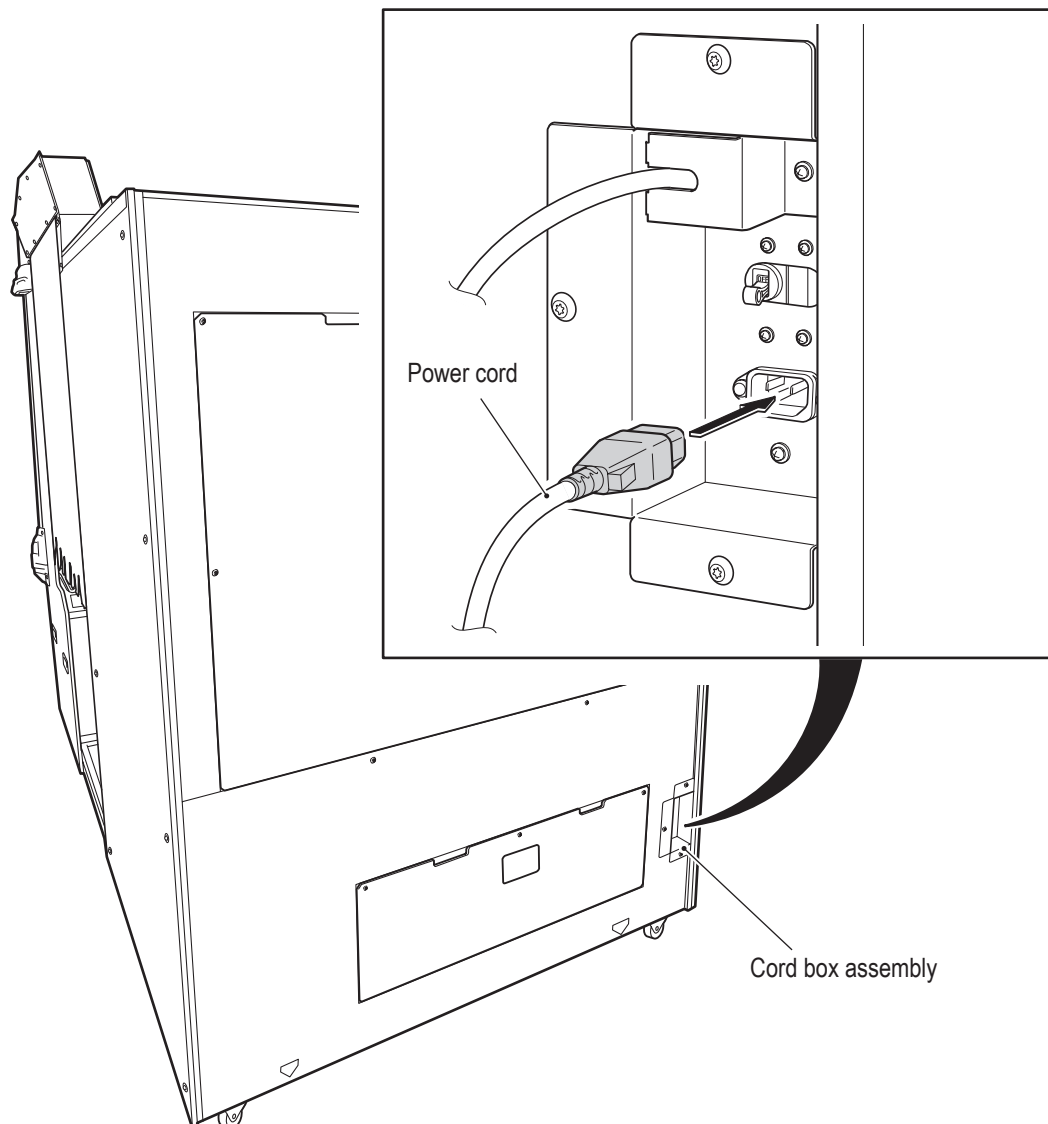
## 8A-7 Connecting the Power Cord and Ground

### ⚠ WARNING

- Be sure to install the ground wire using the method below. Failure to install the ground wire may result in electric shock in the event of electrical leakage.  
(1) Connect the ground using a 3P plug.

### 8A-7-1 Connecting the Power Cord to the Cord Box

- 1** Insert the socket side of the power cord into the socket of the cord box.



- Insert the socket side of the power cord firmly into the socket of the cord box.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

---

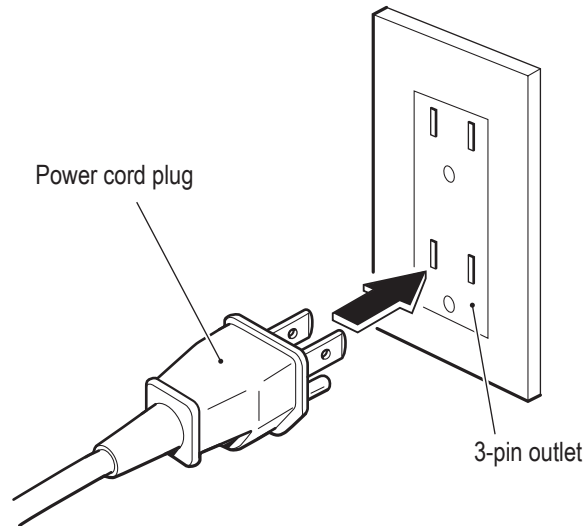
### 8A-7-2 Connecting the Power Cord to the Outlet

(1) In case of a 3P outlet

Insert the power cord plug into the outlet.



- The shape and specification of the power cord plug and outlet may vary depending on the country.



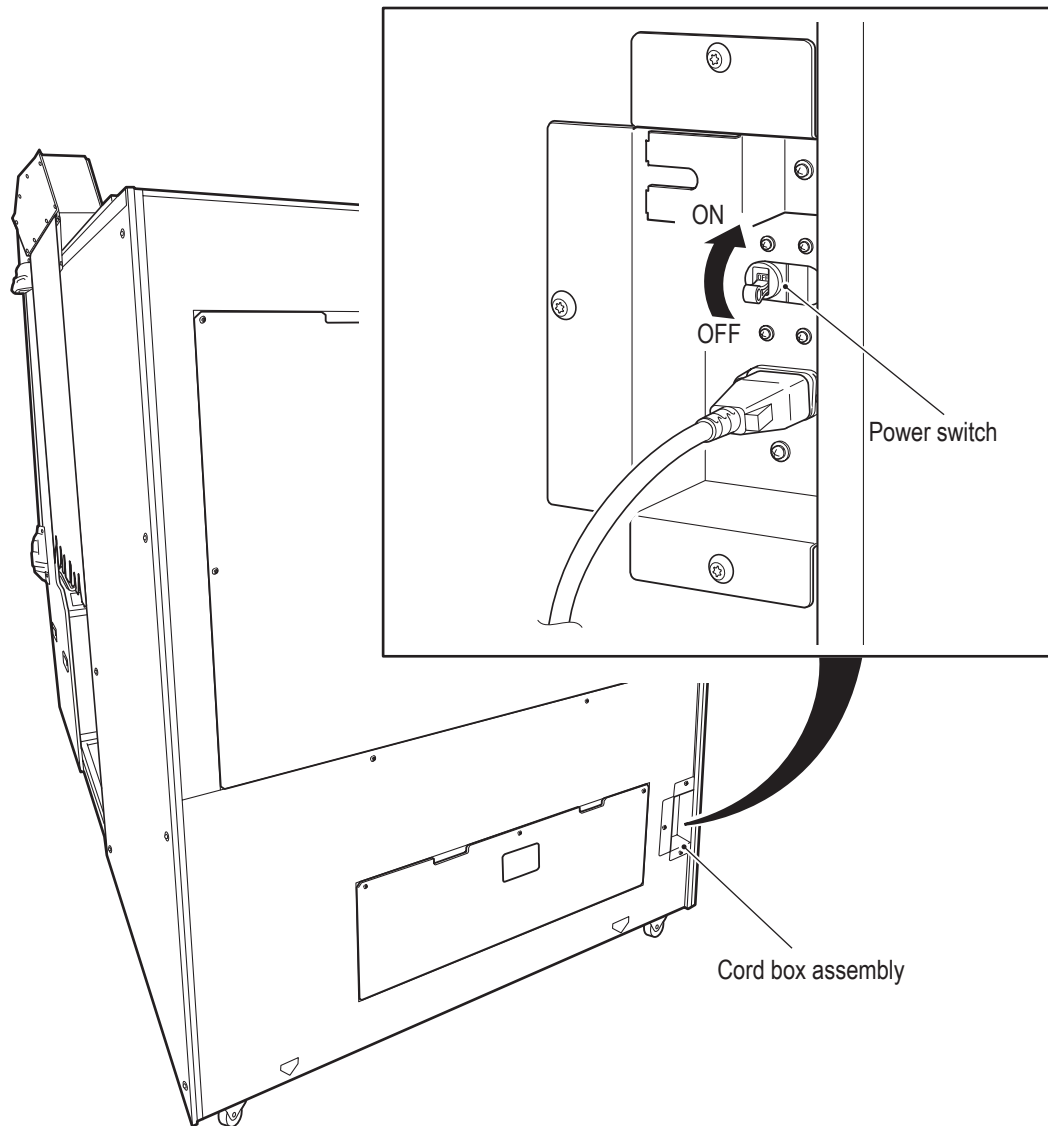


- Must be performed by a technician -

## 8A-8 Power Switch Position and Turning the Power Switch On

### 8A-8-1 Turning the Power Switch On

- 1 Turn on the power switch located inside the cord box assembly on the back of the front assembly.



#### NOTICE

- Do not turn the power switch on and off needlessly. Doing so may result in a machine malfunction.
- When turning the power switch off and on, wait 30 seconds or more between operations.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Installation and Assembly/Technician's Manual

Test Mode

Troubleshooting

- Must be performed by a technician -

---

## 8A-9 Checks after Installation

Check the following items.

- 1** Have all parts been installed and assembled according to the instructed procedures?
  
- 2** Are any screws or bolts loose, fallen out or missing?
  - Have all screws and bolts in installation and assembly locations been tightened?
  - Are any screws or bolts in other than installation and assembly locations loose, fallen out or missing?
  - Other inspections concerning safety and functionalities (See “7-4 Pre-operation Inspection” on page 34.)
  
- 3** Insert the power cord plug into the outlet, turn on the power switch, start up the machine, and check that images are displayed on the monitor.

When images are not displayed, check the connections of the rack assembly and monitor connectors. (See “8B-4-1 (1) Replacing the Rack Assembly” on page 104 and “8B-4-1 (7) Replacing the LCD Monitor” on page 114.)

# 8B. Service

## ⚠ WARNING

- To avoid electric shock, accidents or injuries 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 inspections every day before starting operations. These are required to prevent accidents. (See “7-4 Pre-operation Inspection” on page 34.)

### 8B-1-1 Inspection Items

#### (1) Level Adjuster Inspection

1. Check that the level adjusters are fixed securely. (See “8A-4-9 Level Adjuster Adjustment” on page 90.)

#### (2) Power Cord Plug Inspection

1. Check that the power cord is firmly inserted into the socket in the machine’s cord box.
2. Clean any dust or dirt from the connection parts.
3. 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) Screw Looseness Inspection

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

1. Fixing screws connecting the front assembly and center assembly
2. Fixing screws connecting the center assembly and rear assembly

#### (4) Communication Cable Inspection

1. Check that the LAN cable connectors are inserted securely, and that there are no abnormalities on the LAN cables.

#### (5) Game PC Board Inspection

1. Check that the cable connectors are inserted correctly and securely.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

- Must be performed by a technician -

## 8B-2 Troubleshooting

### WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work
- If the problem is not described in “8B-2 Troubleshooting” or the problem persists despite taking the appropriate action, turn off the power switch immediately to stop operations, and contact your distributor. Continuing operations may result in an accident.

### NOTICE

- If a malfunction occurs, first make sure that all the connectors are connected securely.
- Repair of PC boards will be performed by NAMCO BANDAI Games Inc., so never perform a conductivity check of a board with a tester or any other tool. The IC may be damaged by the internal voltage of the tester.
- When sending parts for repair, be sure to pack them properly. Particularly when sending the rack assembly, wrap the part in sponge, air bubble wrapping or other protective materials before packing it in a cardboard box to make sure that the part is not exposed to external force.

### 8B-2-1 Overall

Symptom	Cause	Action	Reference page
• The machine does not start.	• A rack assembly connector is disconnected.	• Insert the connector securely.	Page 104
	• A rack assembly malfunction.	• Contact your distributor.	—
• Operation is not stable or the machine operates incorrectly.	• The power supply voltage is not within the range of AC 110 V $\pm$ 10% or AC 220 V $\pm$ 10%.	• 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 circuit protector has operated to turn the power switch off. * The circuit protector turns off the current when an abnormal current occurs.	• Turn on the power switch again. If the circuit protector operates frequently, there is a machine abnormality. Contact your distributor.	—
• The game cannot be played.	• The machine is not connected to the NB line.	• Check the communication cable and the connector connections.	Page 92
		• Contact your distributor.	—

- Must be performed by a technician -

**8B-2-2 Front Assembly**

Symptom	Cause	Action	Reference page
<ul style="list-style-type: none"> <li>Images are not displayed on the monitor.</li> </ul>	<ul style="list-style-type: none"> <li>A monitor connector is disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Check the connector connections.</li> </ul>	Page 114
	<ul style="list-style-type: none"> <li>A rack assembly connector is disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Check the connector connections.</li> </ul>	Page 104
	<ul style="list-style-type: none"> <li>A monitor malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the monitor.</li> </ul>	Page 114
	<ul style="list-style-type: none"> <li>A rack assembly malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Contact your distributor.</li> </ul>	–
<ul style="list-style-type: none"> <li>The air cannon does not function.</li> </ul>	<ul style="list-style-type: none"> <li>A Faston terminal connected to the air cannon speaker is disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Connect the Faston terminal.</li> </ul>	Page 113
	<ul style="list-style-type: none"> <li>An AIR CAN PC board connector is disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Check the connector connections.</li> </ul>	Page 111
	<ul style="list-style-type: none"> <li>An air cannon speaker malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the air cannon speaker.</li> </ul>	Page 113
	<ul style="list-style-type: none"> <li>An AIR CAN PC Board malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the AIR CAN PC board.</li> </ul>	Page 111
<ul style="list-style-type: none"> <li>Sound is not output from the speaker.</li> </ul>	<ul style="list-style-type: none"> <li>The volume setting is low.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the volume setting in Test mode.</li> </ul>	Page 55
	<ul style="list-style-type: none"> <li>A speaker Faston terminal is disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Connect the Faston terminal.</li> </ul>	–
	<ul style="list-style-type: none"> <li>A connector is disconnected or is not connected securely.</li> </ul>	<ul style="list-style-type: none"> <li>Insert the connector securely.</li> </ul>	–
	<ul style="list-style-type: none"> <li>An MCD AMP PC board malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the MCD AMP PC board.</li> </ul>	Page 108

**8B-2-3 Center Assembly**

Symptom	Cause	Action	Reference page
<ul style="list-style-type: none"> <li>The 2D/3D switching button does not function.</li> </ul>	<ul style="list-style-type: none"> <li>A Faston terminal is disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>Insert the Faston terminal securely.</li> </ul>	Page 119
	<ul style="list-style-type: none"> <li>A button malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the 2D/3D switching button.</li> </ul>	Page 119
<ul style="list-style-type: none"> <li>The inside lighting does not light up.</li> </ul>	<ul style="list-style-type: none"> <li>A connector is disconnected.</li> <li>*The inside lighting lights up only in Attract mode.</li> </ul>	<ul style="list-style-type: none"> <li>Insert the connector securely.</li> </ul>	Page 160

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

**8B-2-4 Gun Assembly**

Symptom	Cause	Action	Reference page
• The gun does not function.	• The variable register is not initialized.	• Perform initialization in Test mode.	Page 49
	• A connector is disconnected.	• Insert the connector securely.	Page 121
	• The variable register is installed incorrectly.	• Install the variable register correctly.	Pages 122, 125
	• A variable register malfunction.	• Replace the interface malfunction.	Pages 122, 125
• The trigger does not function.	• A connector is disconnected.	• Insert the connector securely.	Page 127
	• A trigger micro switch malfunction.	• Replace the micro switch.	Page 127
• The START button does not function.	• A Faston terminal is disconnected.	• Insert the Faston terminal securely.	Page 129
	• A button malfunction.	• Replace the START button.	Page 129
• The gun does not vibrate.	• A GUN DRIVE PC board malfunction.	• Replace the GUN DRIVE PC board.	Page 118
	• A vibration unit malfunction.	• Replace the vibration unit.	Page 131
• The vital signs sensor does not function.	• A connector is disconnected.	• Insert the connector securely.	Page 136
	• A VSS module malfunction.	• Replace the VSS module.	Page 136

- Must be performed by a technician -

**8B-2-5 Rear Assembly**

Symptom	Cause	Action	Reference page
• The seat does not vibrate.	• A connector is disconnected.	• Insert the connector securely.	Page 141
	• A MONITOR IF PC Board malfunction.	• Replace the MONITOR IF PC board.	Page 142
	• A speed control driver malfunction.	• Replace the speed control driver.	Page 141
• The rear sign panel does not light up.	• A connector is disconnected.	• Insert the connector securely.	Page 150
	• An LED module malfunction.	• Replace the LED module.	Page 150
	• A LAM DRIVE PC Board malfunction.	• Replace the LAM DRIVE PC board.	Page 140
• The blower fan does not operate.	• A connector is disconnected.	• Insert the connector securely.	–
	• A LAM DRIVE PC module malfunction.	• Replace the LAM DRIVE PC board.	Page 140
	• A blower fan malfunction.	• Replace the blower fan.	–
• Sound is not output from the speaker.	• A connector is disconnected.	• Insert the connector securely.	–
	• A speaker malfunction.	• Replace the speaker.	–
	• An MCD AMP PC board malfunction.	• Replace the MCD AMP PC board.	Page 108
• The upper fan motor does not operate.	• A connector is disconnected.	• Insert the connector securely.	–
	• A fan motor malfunction.	• Replace the fan motor.	–

**8B-2-6 Signboard Box Assembly**

Symptom	Cause	Action	Reference page
• The LED module does not light.	• A connector is disconnected.	• Insert the connector securely.	Page 158
	• An LED module malfunction.	• Replace the LED module.	Page 158

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

## 8B-3 Error Display (For Technicians)

Symptom	Cause	Action	Reference page
1-1 COIN ERROR	• The coin selector is jammed.	• Check the coin selector and resolve the trouble.	–
	• A coin selector malfunction.	• Replace the coin selector.	–
	• An abnormality in the harness around the coin selector.	• Contact your distributor.	–
1-2 COIN ERROR	• An abnormality in the Service switch or the surrounding harness.	• Contact your distributor.	–
1-3 COIN ERROR	• An abnormality in the coin counter or the surrounding harness.	• Contact your distributor.	–
2-1 BATTERY ERROR	• The rack assembly board battery has run out.	• Replace the rack assembly.	Page 104
3-1 NOT CONNECT	• I/O-PCB USIO (T) PC board malfunction.	• Replace the USIO (T) PC board.	Page 116
	• The USB cable is disconnected.	• Connect the USB cable.	Page 104
3-2 BACKUP MEMORY ERROR	• The backup memory is corrupted.	• Initialize the backup memory.	Page 56
	• USIO (T) PC board malfunction.	• Replace the USIO (T) PC board.	Page 116
3-3 FIRMWARE ERROR	• USIO (T) PC board malfunction.	• Replace the USIO (T) PC board.	Page 116
3-4 MEMORY ERROR	• USIO (T) PC board malfunction.	• Replace the USIO (T) PC board.	Page 116
3-5 VITAL SIGNS SENSOR ERROR	• Temporary vital signs sensor trouble.	• Turn the machine power switch off and then on again.	Page 38
	• A vital signs sensor malfunction.	• Contact your distributor.	–
*1 5-1 ERROR	• An initial start-up communication error.	• Resolve the problem in the network connection.	–
19-1 SYSTEM ERROR	• A rack assembly board or hard disk malfunction.	• Replace the rack assembly.	Page 104
19-11 SYSTEM ERROR	• A rack assembly board or hard disk malfunction.	• Replace the rack assembly.	Page 104
19-12 SYSTEM ERROR	• A rack assembly board or hard disk malfunction.	• Replace the rack assembly.	Page 104
19-13 SYSTEM ERROR	• A rack assembly board or hard disk malfunction.	• Replace the rack assembly.	Page 104
19-21 USB DONGLE ERROR (INVALID DONGLE)	• An incorrect USB dongle is inserted.	• Insert the USB dongle for this product.	Page 91
19-22 USB DONGLE ERROR (NO DONGLE)	• The USB dongle is not inserted.	• Insert the USB dongle for this product.	Page 91
19-23 USB DONGLE ERROR (I/O ERROR)	• A USB dongle malfunction.	• Replace the USB dongle.	Page 91
	• A rack assembly malfunction.	• Replace the rack assembly.	Page 104



**- Must be performed by a technician -**

Symptom	Cause	Action	Reference page
20-1 VERSION UP ERROR	• The version update file is corrupted.	• Contact your distributor.	-
20-2 VERSION UP ERROR	• Insert the version update USB memory.	• Contact your distributor.	-
	• There is no version update file.	• Contact your distributor.	-
*1 22-1 ERROR	• 14 days or more have passed in offline operation mode.	• Resolve the problem in the network connection.	-
*1 22-2 ERROR	• There is a discrepancy between the server data and the machine data.	• Contact your distributor.	-
22-11 ERROR	• USIO (T) PC board malfunction.	• Replace the USIO (T) PC board.	Page 116
An asterisk (*) appears to the right of the credits indication. → Free play (service credits)	• The game was paid for using credits that include credits added using the Service button.	• If the credits were added intentionally using the Service button, this is a normal machine operation.	Page 63
	• An abnormality in the Service switch or the surrounding harness.	• Contact your distributor.	-
*1 A "D" mark appears in the lower left corner of the screen during the Attract loop.	• There is trouble in the network connection, and the machine is temporarily operating in offline mode.	• Resolve the problem in the network connection.	-

**\*1 Errors occur only for the network compatible models**

• Troubleshooting when there is trouble in the network connection.	<b>Cause</b>	<b>Action</b>	<b>Reference page</b>
	• The machine is not connected to the NB line.	• Connect the machine to the NB line.	-
	• The communication cable is disconnected from the connector inside the cord box.	• Insert the communication cable.	Page 92
	• The communication cable is disconnected from the connector on the front of the rack assembly.	• Insert the communication cable.	Page 104
	• A communication cable malfunction.	• Replace the communication cable.	Page 92
	• A STRAIGHT PC board malfunction.	• Replace the STRAIGHT PC board.	Page 109

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

- Must be performed by a technician -

## 8B-4 Removing, Installing and Replacing Assemblies and Parts

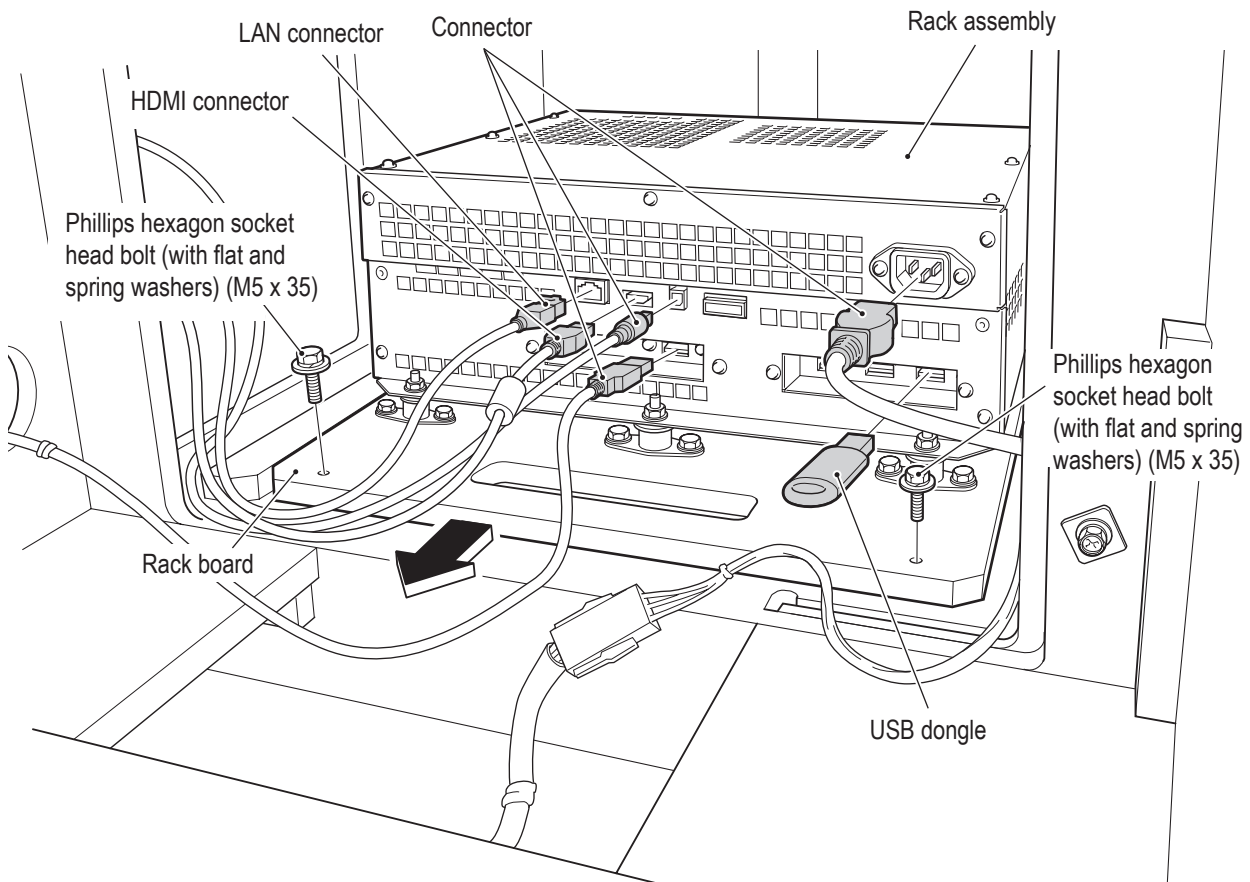
### 8B-4-1 Front Assembly

#### (1) Replacing the Rack Assembly

#### ⚠ WARNING

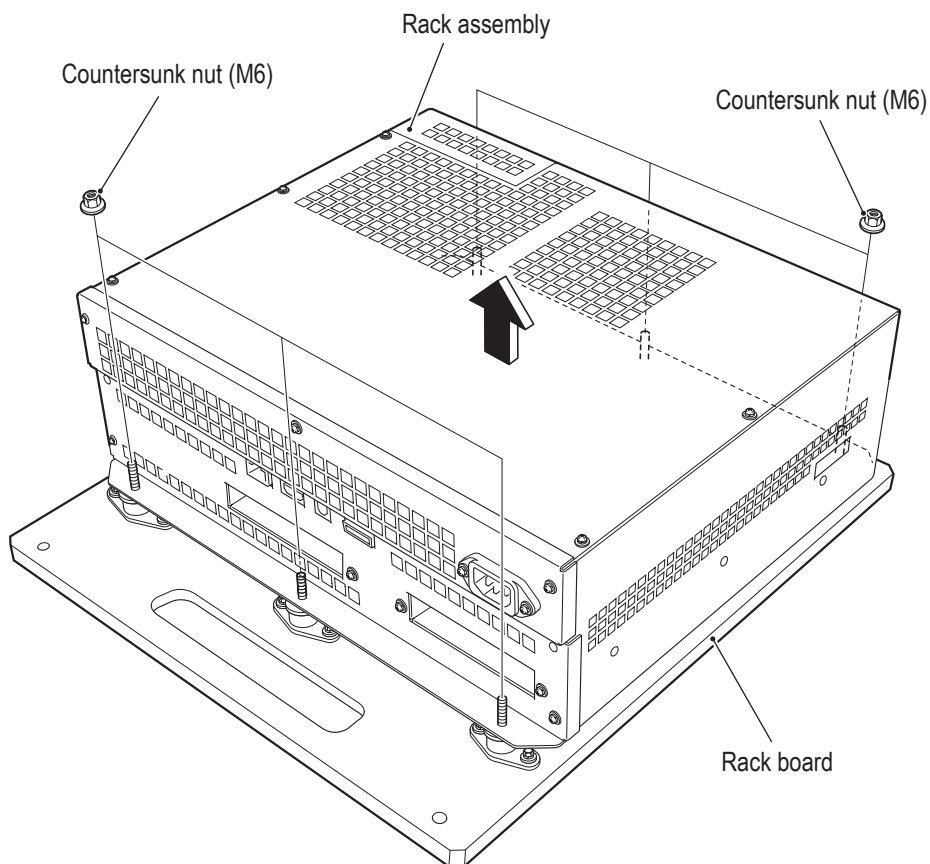
- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel R on the R side of the center assembly. (See step **2** of "8A-4-1 Connecting the Front Assembly and Center Assembly" on page 68.)
- 3** Disconnect the three connectors, the LAN connector and the HDMI connector, and remove the USB dongle.
- 4** Remove the two Phillips hexagon socket head bolts (with flat and spring washers) (M5 x 35), and pull the rack board forward to remove it.



**- Must be performed by a technician -**

- 5** Remove the six countersunk nuts (M6), and remove and replace the rack assembly.



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



- Be sure to insert the removed USB dongle into the new rack assembly after replacement.
- The USB dongle must be inserted to connect with the network. (See “8A-5 Inserting the USB Dongle” on page 91.)

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

## - Must be performed by a technician -

### (2) Replacing the Switching Regulator

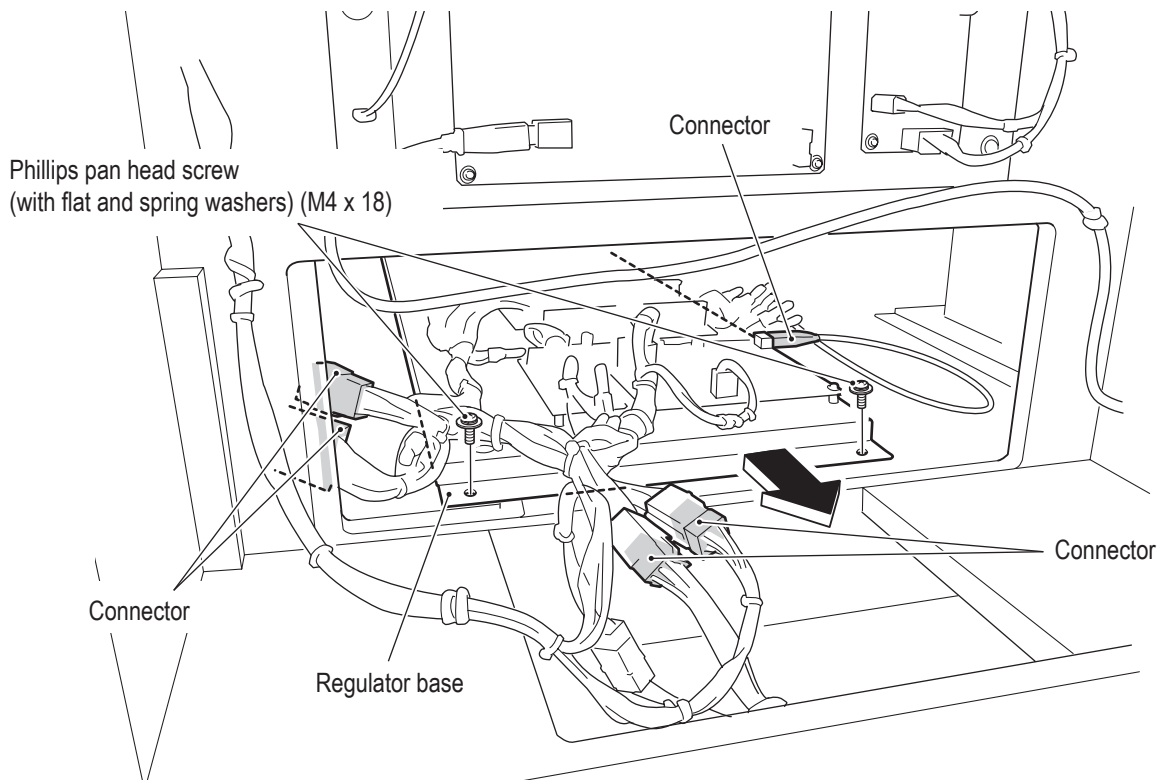
#### ⚠ WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

#### NOTICE

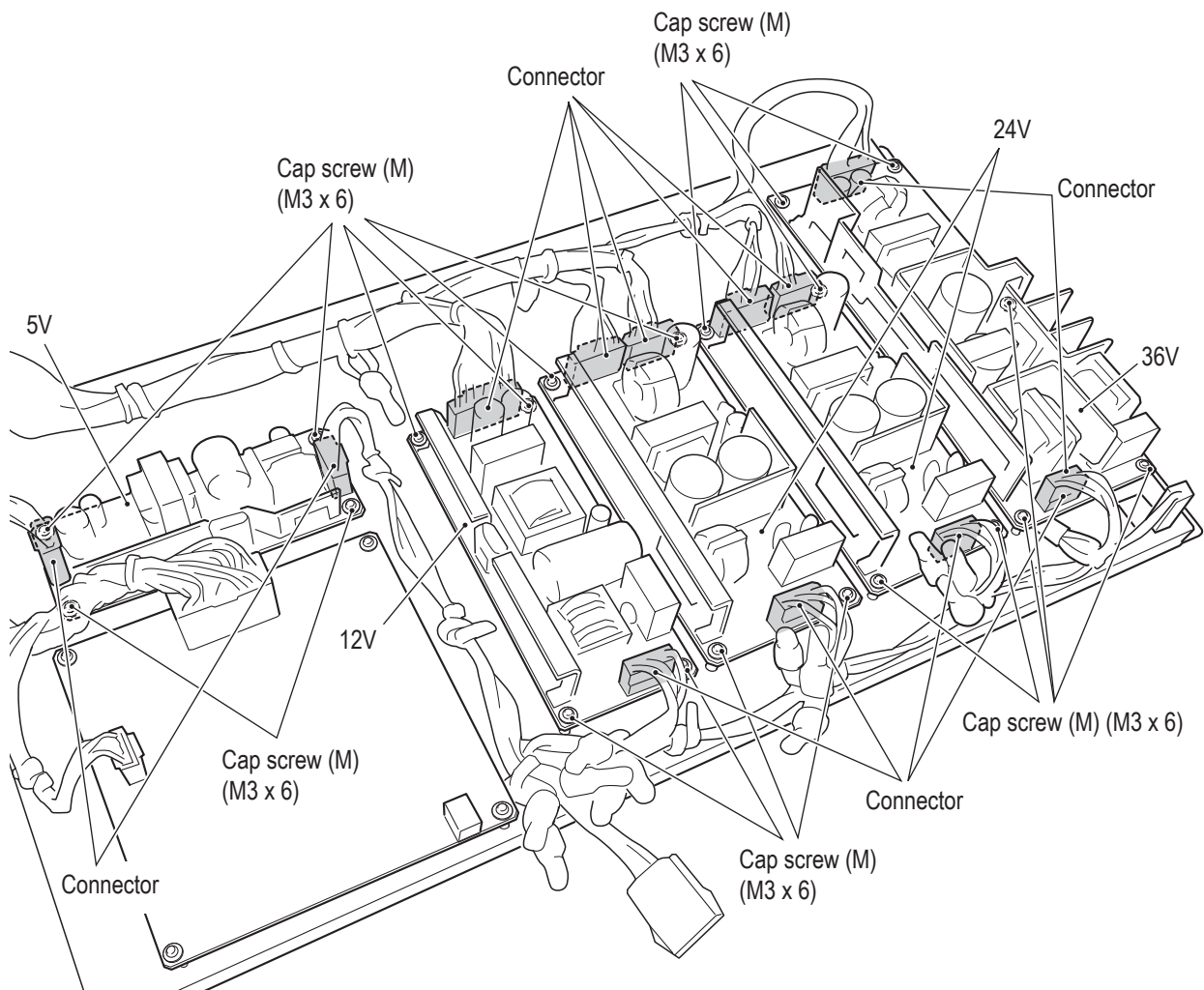
- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel L on the L side of the center assembly. (See step **1** of "8A-4-1 Connecting the Front Assembly and Center Assembly" on page 68.)
- 3** Disconnect the five connectors, remove the two Phillips pan head screws (with flat and spring washers) (M4 x 18), and pull the regulator base forward to remove it.



**- Must be performed by a technician -**

- 4** Select the switching regulator to be replaced, disconnect the two or three connectors from the regulator base, remove the four or five cap screws (M) (M3 x 6), and remove and replace the switching regulator.



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



- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- When removing, be careful not to damage the PC boards or other parts.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

## - Must be performed by a technician -

### (3) Replacing the MCD AMP PC Board

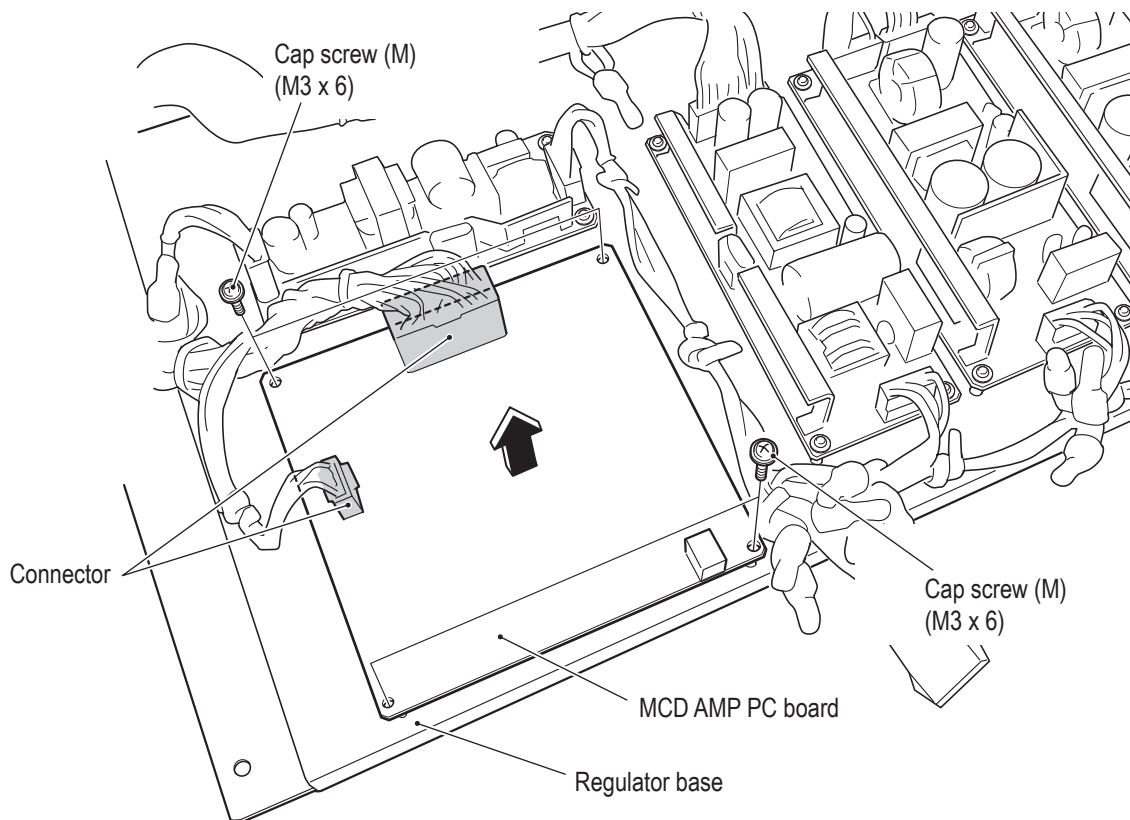
#### ⚠ WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

#### NOTICE

- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel L on the L side of the center assembly. (See step **1** of "8A-4-1 Connecting the Front Assembly and Center Assembly" on page 68.)
- 3** Remove the regulator base. (See step **3** of "8B-4-1-(2) Replacing the Switching Regulator" on page 106.)
- 4** Disconnect the two connectors, remove the four cap screws (M) (M3 x 6), and remove and replace the MCD AMP PC board.



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

#### NOTICE

- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- When removing, be careful not to damage the PC boards or other parts.

**- Must be performed by a technician -**

#### (4) Replacing the STRAIGHT PC Board

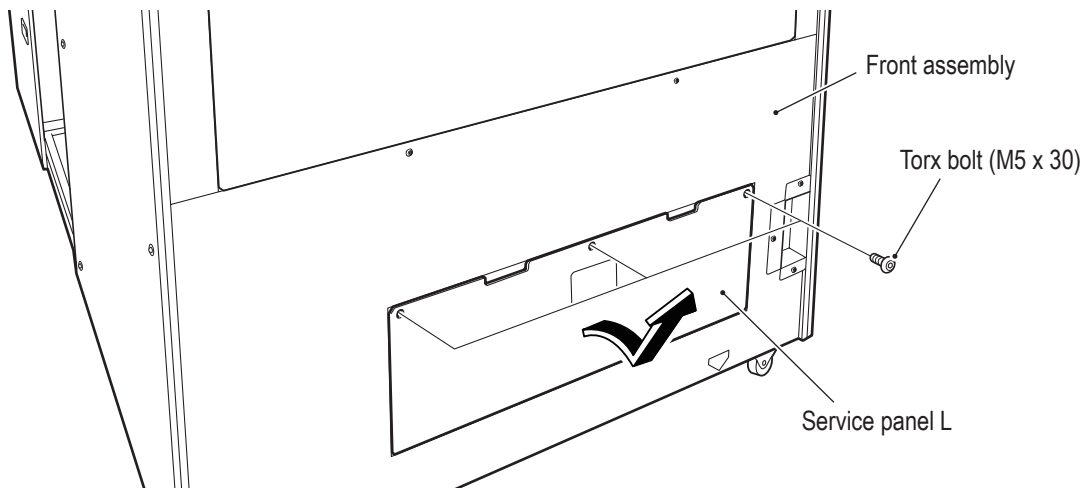
### ! WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

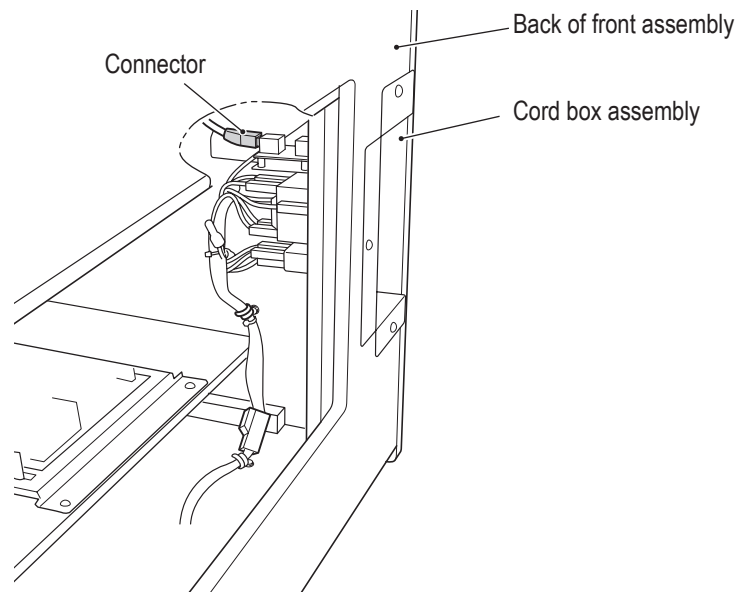
### NOTICE

- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the three Torx bolts (M5 x 30), and remove the service panel L from the back of the front assembly.



- 3** Disconnect the connector.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

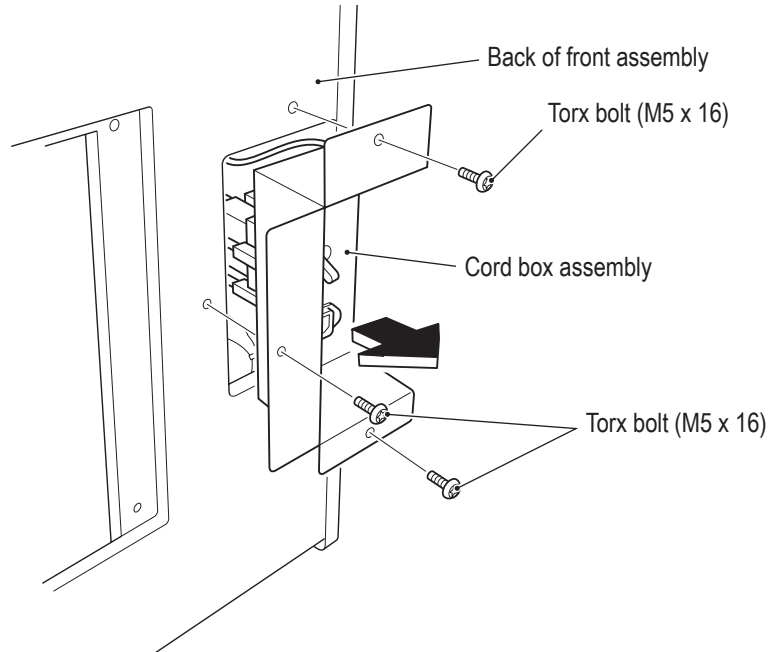
Test Mode

Troubleshooting

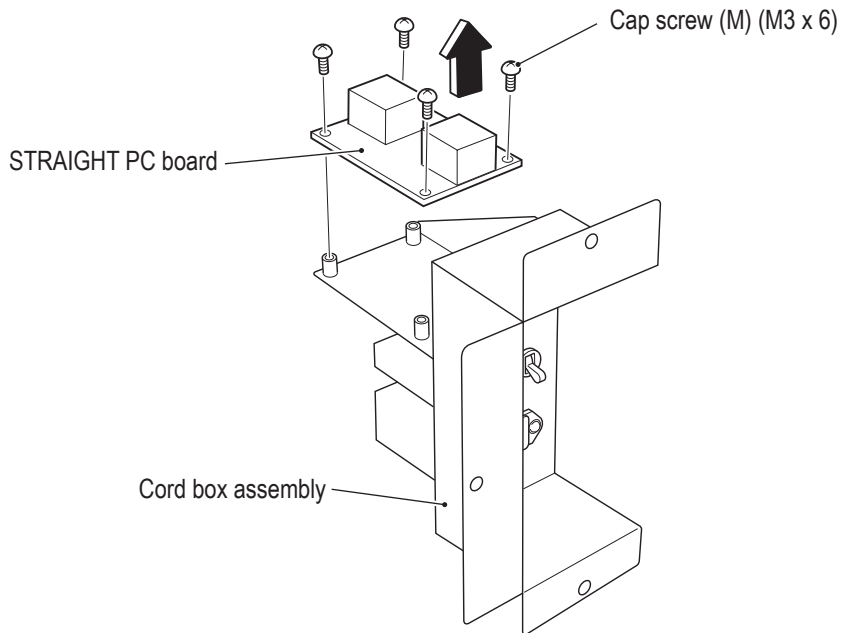
**- Must be performed by a technician -**

---

- 4** Remove the three Torx bolts (M5 x 16), and remove the cord box assembly from the back of the front assembly.



- 5** Remove the four cap screws (M) (M3 x 6), and remove and replace the STRAIGHT PC board.



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



**- Must be performed by a technician -**

**(5) Replacing the AIR CAN PC Board**

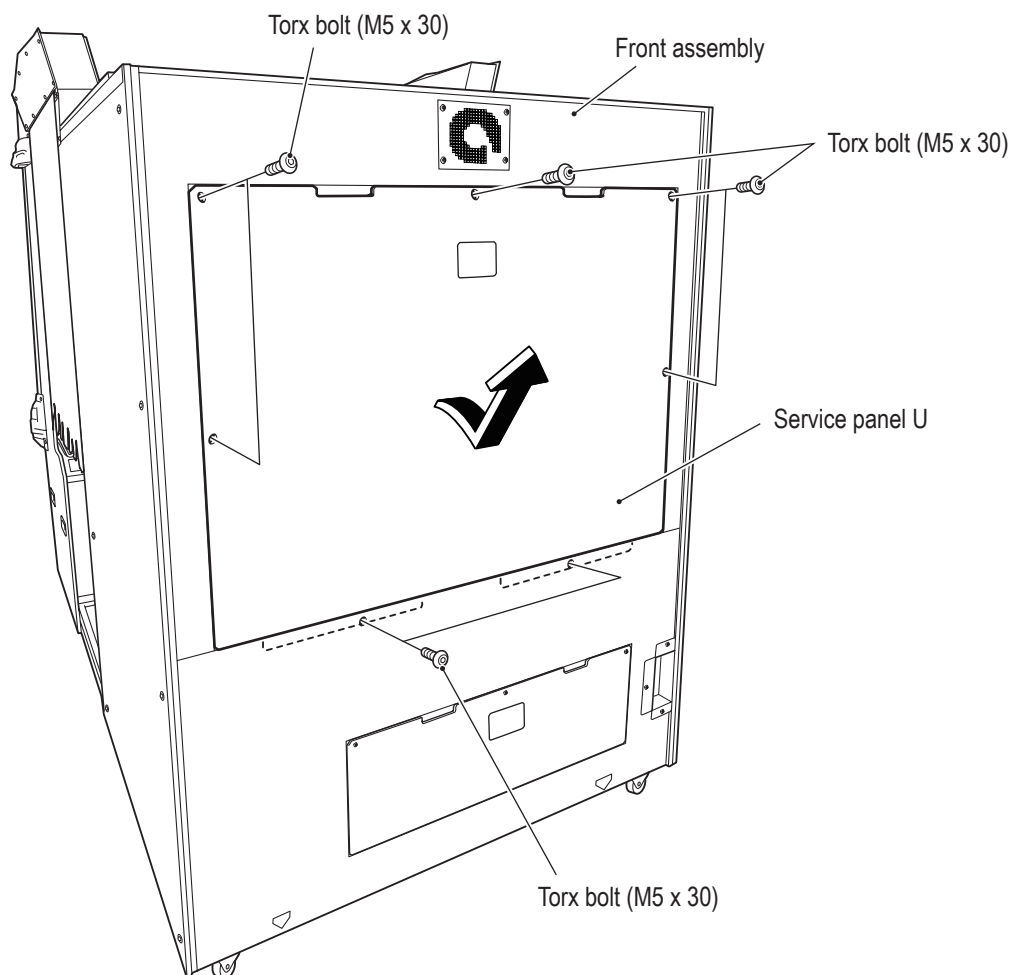
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

**NOTICE**

- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the seven Torx bolts (M5 x 30), and remove the service panel U from the back of the front assembly.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

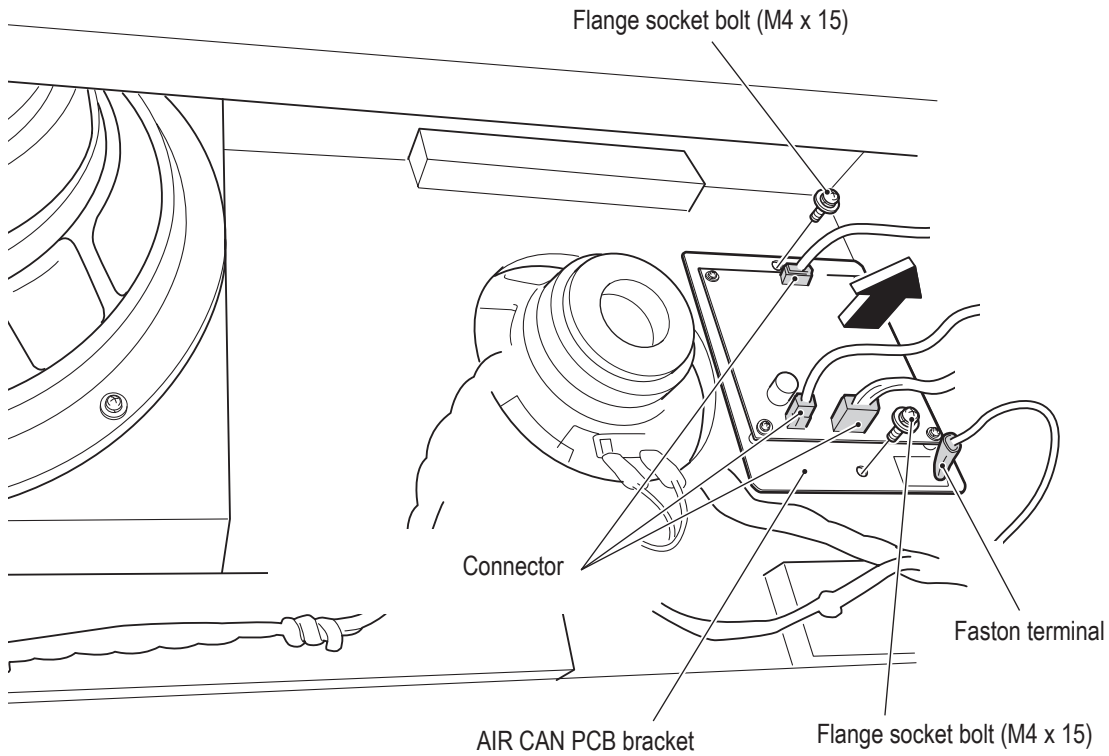
Service/Technician's Manual

Test Mode

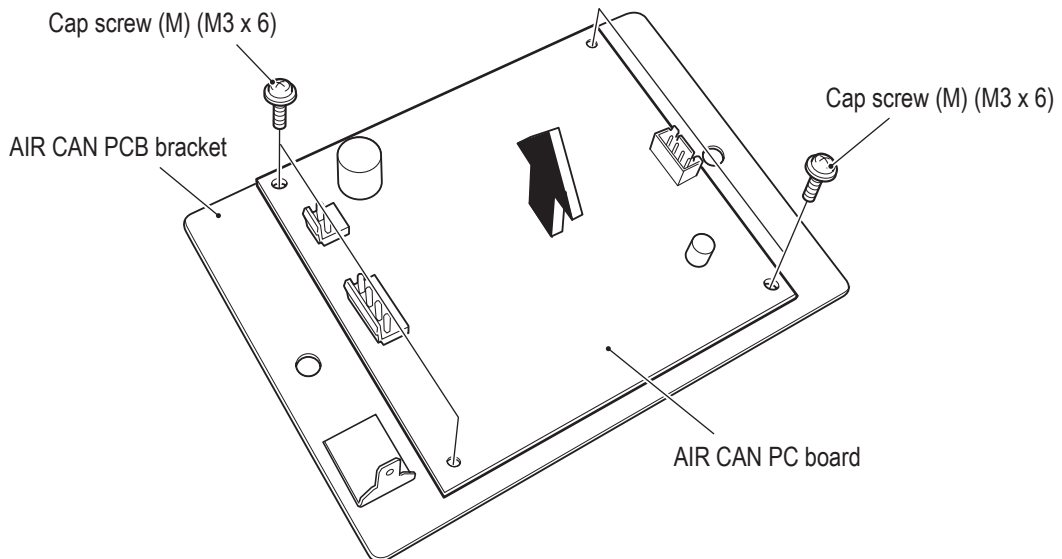
Troubleshooting

**- Must be performed by a technician -**

- 3** Disconnect the three connectors and the Faston terminal, remove the two flange socket bolts (M4 x 15), and remove the AIR CAN PCB bracket.



- 4** Remove the four cap screws (M) (M3 x 6), remove the AIR CAN PC board from the AIR CAN PCB bracket, and replace the AIR CAN PC board.



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

**- Must be performed by a technician -**

### (6) Replacing the Air Cannon Speaker

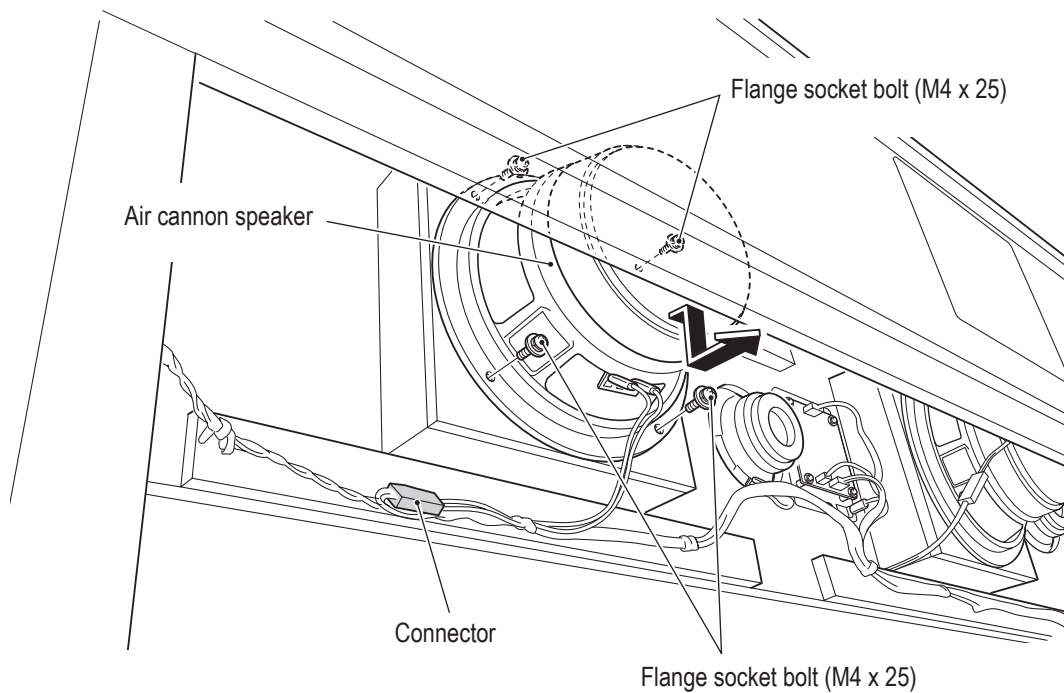
#### ! WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

#### NOTICE

- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel U from the front assembly. (See step **2** of "8B-4-1(5) Replacing the AIR CAN PC Board" on page 111.)
- 3** Disconnect the connector, remove the four flange socket bolts (M4 x 25) while holding the air cannon speaker in place, and then remove and replace the air cannon speaker.



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

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

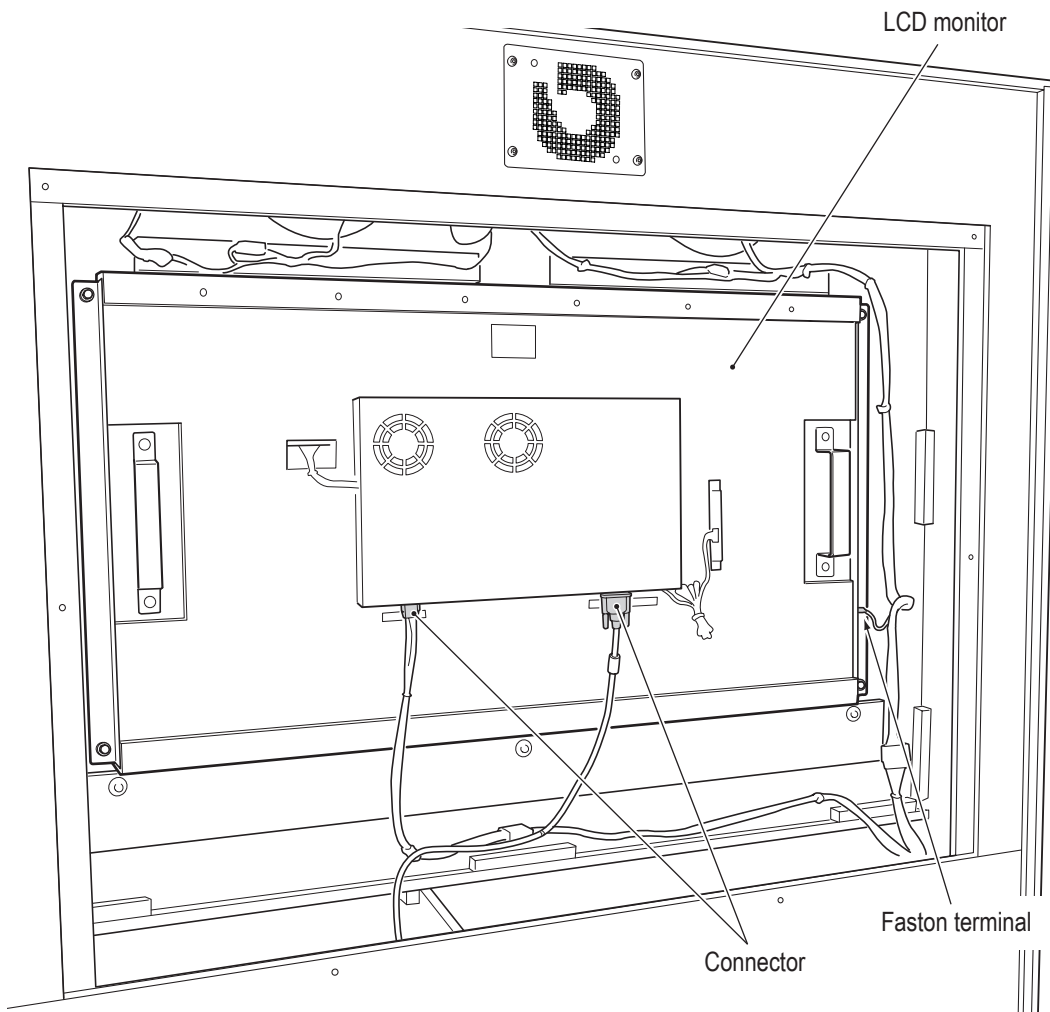
**- Must be performed by a technician -****(7) Replacing the LCD Monitor****! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

**! CAUTION**

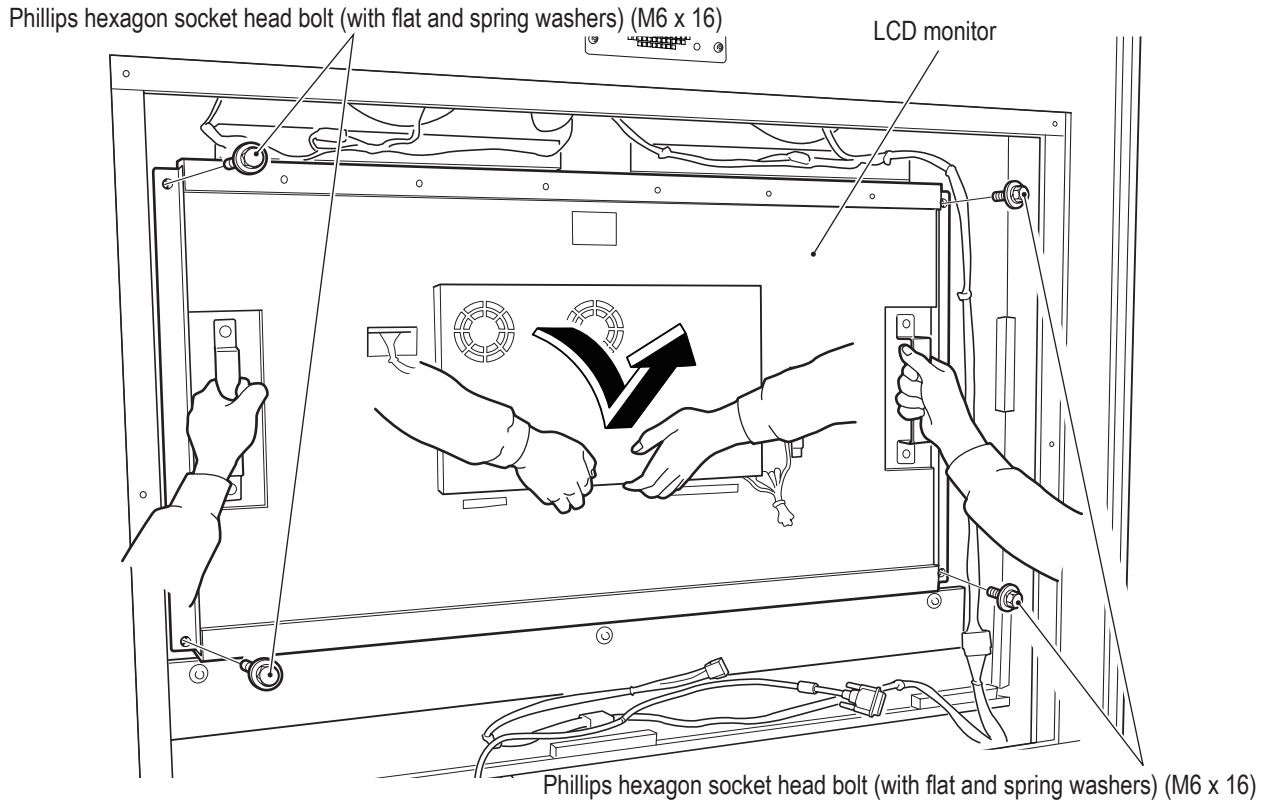
- The LCD monitor weighs approximately 25 kg. To prevent accidents when removing the LCD monitor, perform the work with two people or more and secure sufficient work space.

- 1** Turn off the power switch. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel U from the front assembly. (See step **2** of "8B-4-1(5) Replacing the AIR CAN PC Board" on page 111.)
- 3** Disconnect the two connectors and the Faston terminal of the LCD monitor.



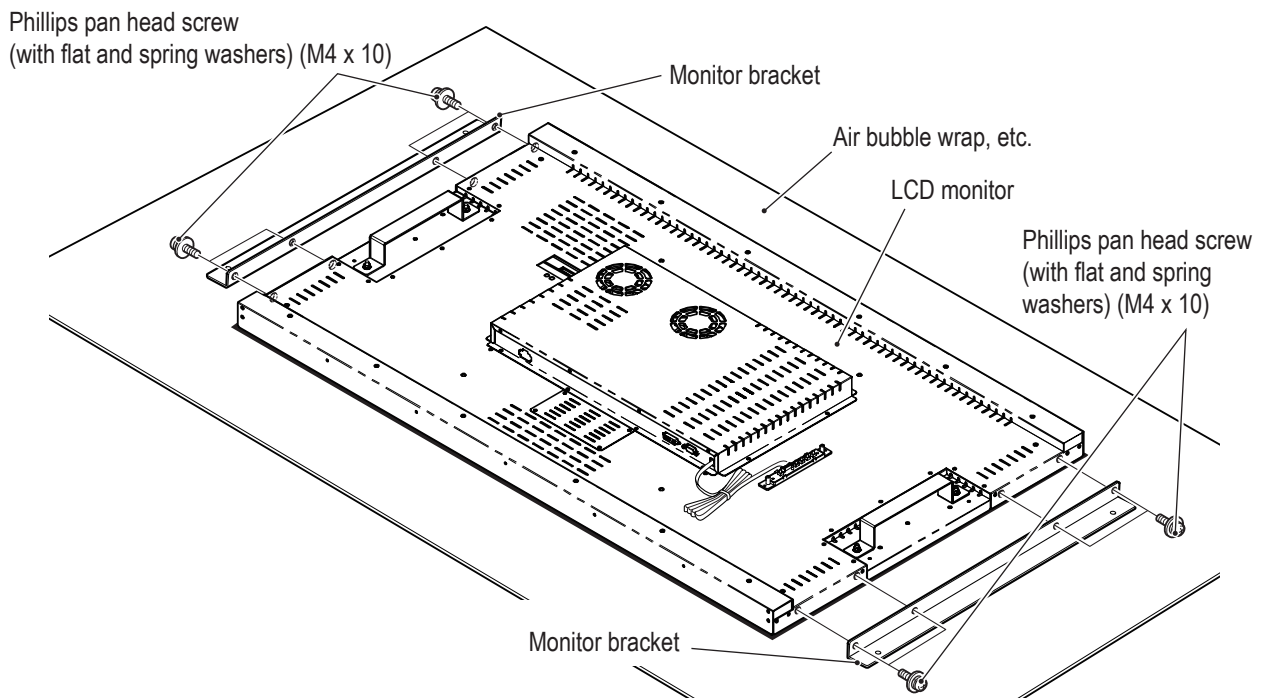
**- Must be performed by a technician -**

- 4** Remove the four Phillips hexagon socket head bolts (with flat and spring washers) (M6 x 16), tilt the top of the LCD monitor toward you, and then lift up and remove the LCD monitor.



- Place the LCD monitor onto a piece of air bubble wrapping, etc. to avoid scratching it when performing the work.

- 5** Remove the four Phillips pan head screws (with flat and spring washers) (M4 x 10) on each side (total eight screws), remove the right and left monitor brackets, and replace the LCD monitor.



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

1  
2  
3  
4  
5  
6  
7  
8A  
8B  
9  
10  
11  
12

Test Mode  
Troubleshooting

**- Must be performed by a technician -**

## 8B-4-2 Center Assembly

### (1) Replacing the USIO (T) PC Board

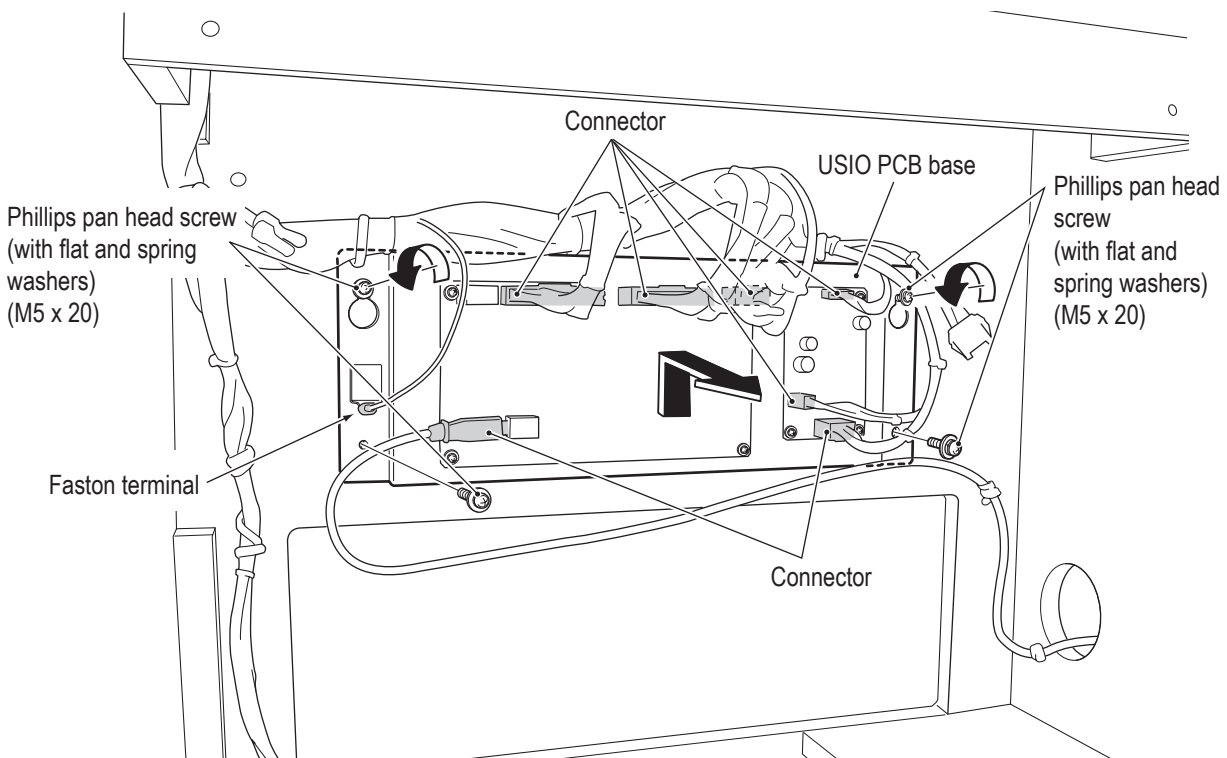
#### **! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

#### **NOTICE**

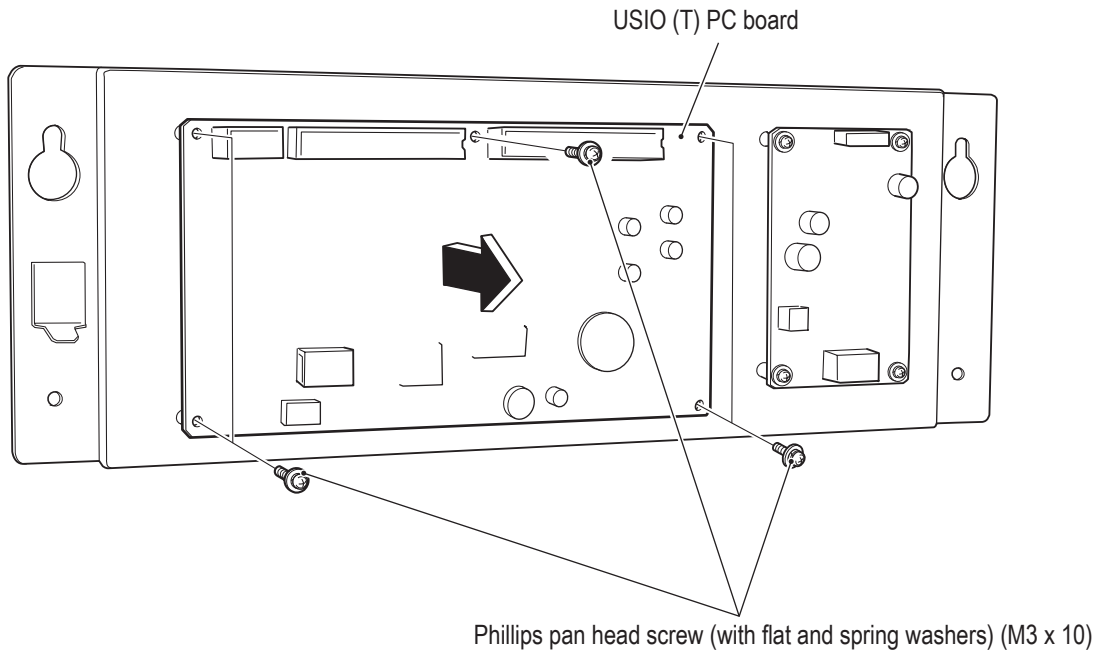
- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel L on the L side of the center assembly. (See step **1** of "8A-4-1 Connecting the Front Assembly and Center Assembly" on page 68.)
- 3** Disconnect the seven connectors and the Faston terminal, remove the two lower and loosen the two upper Phillips pan head screws (with flat and spring washers) (M5 x 20), and remove the USIO PCB base.



**- Must be performed by a technician -**

- 4** Remove the five Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the USIO (T) PC board.



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



- After replacement, be sure to make the settings and perform initialization in Test mode. (See “7-7 Test Mode” on page 40.)

1

2

3

4

5

6

7

8A

**8B**

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

## - Must be performed by a technician -

### (2) Replacing the GUN DRIVE PC Board

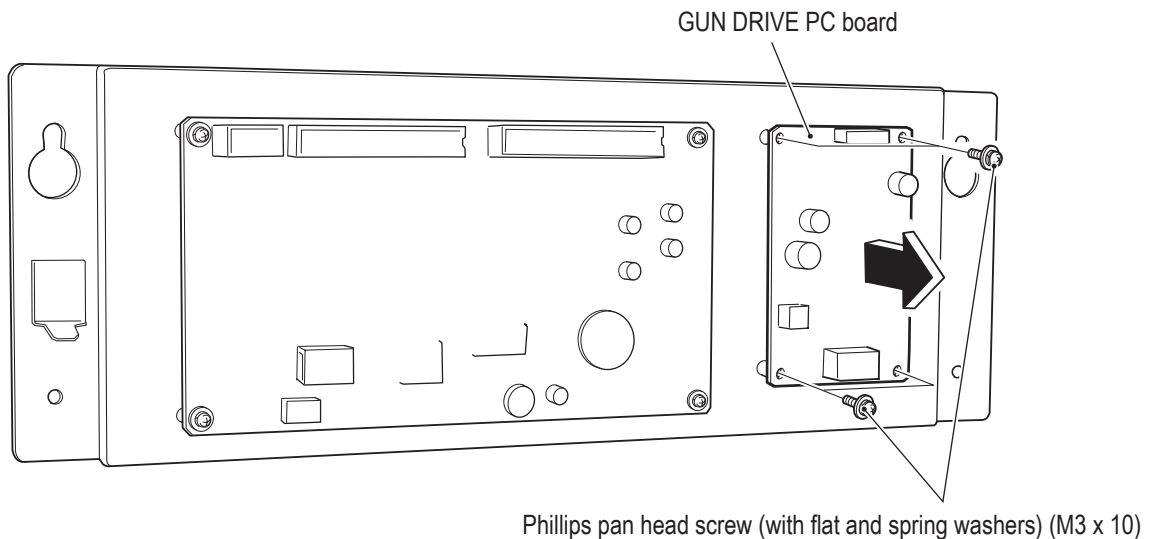
#### ⚠ WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

#### NOTICE

- PC boards are sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling a PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel L on the L side of the center assembly. (See step **1** of "8A-4-1 Connecting the Front Assembly and Center Assembly" on page 68.)
- 3** Remove the USIO PCB base. (See step **3** of "8B-4-2(1) Replacing the USIO (T) PC Board" on page 116)
- 4** Remove the four Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the GUN DRIVE PC board.



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



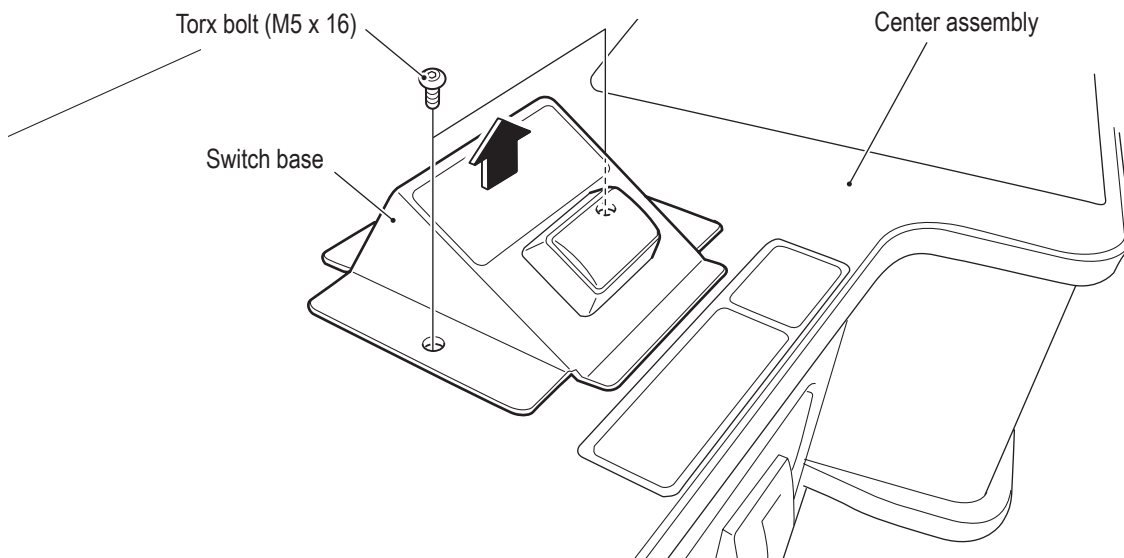
**- Must be performed by a technician -**

**(3) Replacing the Illuminated Switch and LED Lamp of the 2D/3D Switching Button**

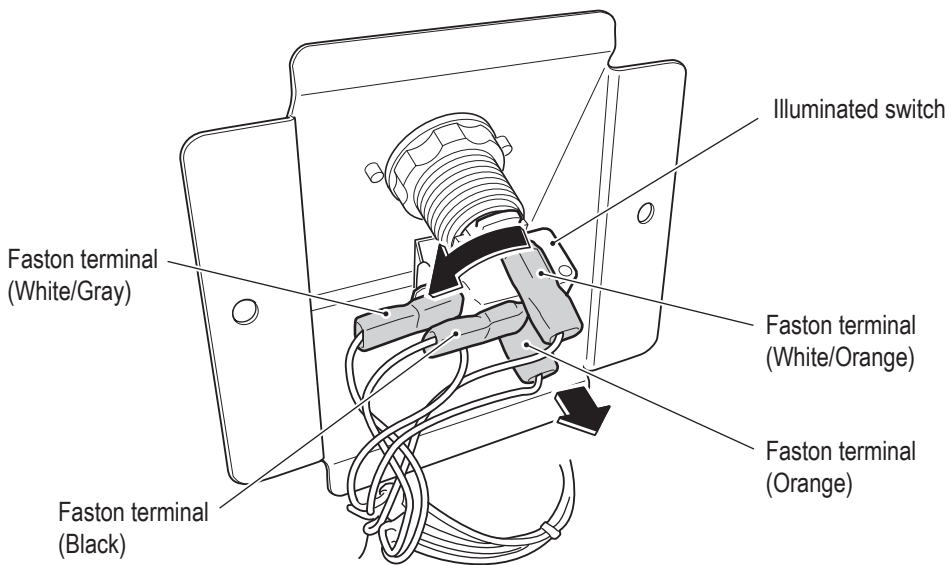
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See “8A-8-1 Turning the Power Switch On” on page 95.)
- 2** Remove the two Torx bolts (M5 x 16), and pull out the switch base from the top of the center assembly.



- 3** Disconnect the four Faston terminals, and rotate the illuminated switch counter-clockwise to remove it.



1  
2  
3  
4  
5  
6  
7  
8A  
8B  
9  
10  
11  
12

Service/Technician's Manual

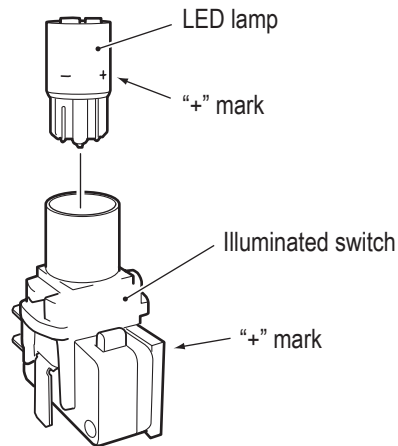
Test Mode

Troubleshooting

**- Must be performed by a technician -**

---

- 4** Replace the illuminated switch or LED lamp, and then install by reversing the procedure.



- When installing the LED lamp, be careful to insert the LED lamp with the correct orientation.
- When connecting the connectors, match the connector colors with the illuminated switch button colors.
- When installing, be careful not to pinch the connectors and harness.
- After finishing replacement, be sure to check the illuminated switch and LED lighting operation. (See "7-7-4(e) LED TEST" on page 52.)

**- Must be performed by a technician -**

### 8B-4-3 Gun Assembly

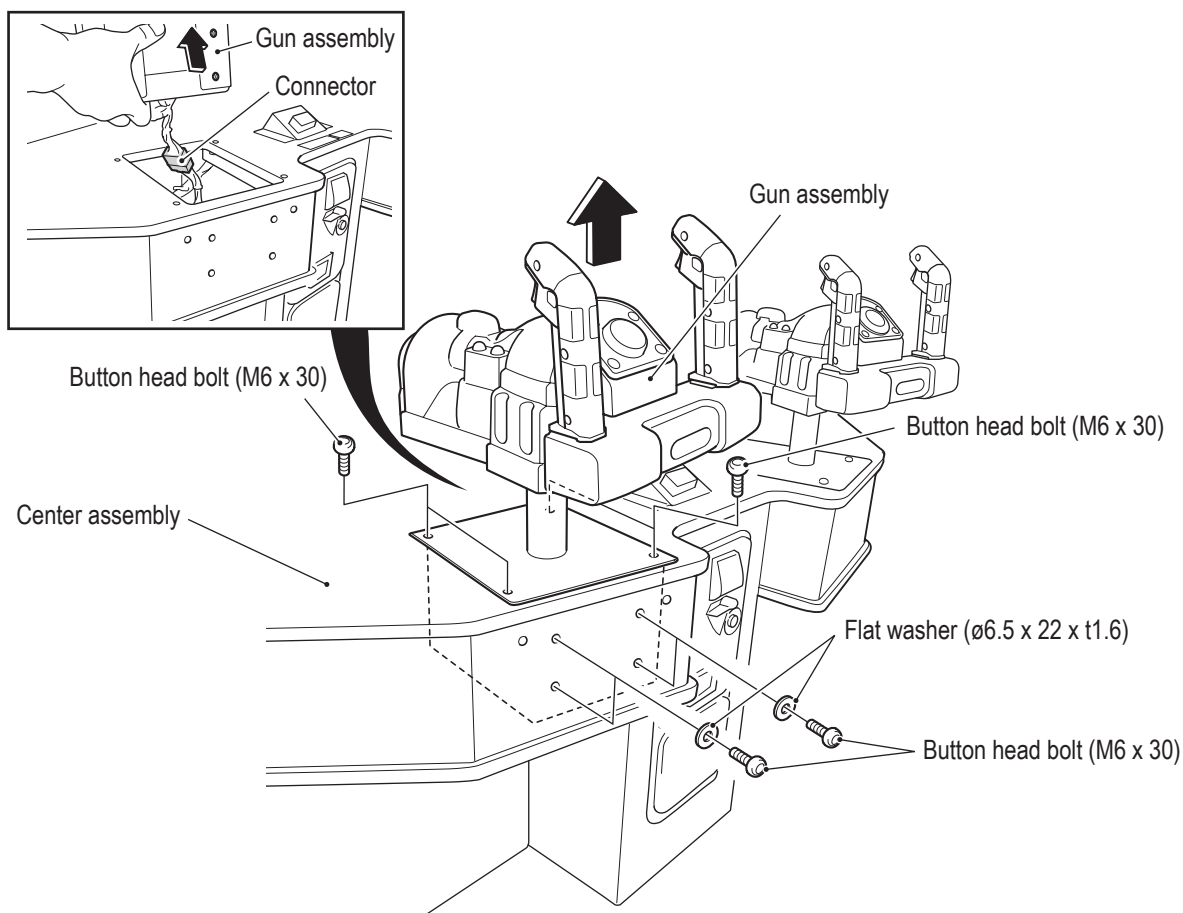
The description below explains how to remove and install the L side. Perform the same procedure to remove and install the R side.

#### (1) Removing and Installing the Gun Assembly

#### **! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the four button head bolts (M6 x 30) from the top of the center assembly, remove the four flat washers (ø6.5 x 22 x t1.6) and four button head bolts (M6 x 30) from the front of the center assembly, and then pull the gun assembly upward.
- 3** Disconnect the connector on the bottom of the gun assembly, and remove and replace the gun assembly.



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

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

(2) Replacing the Variable Register (for Right/Left)

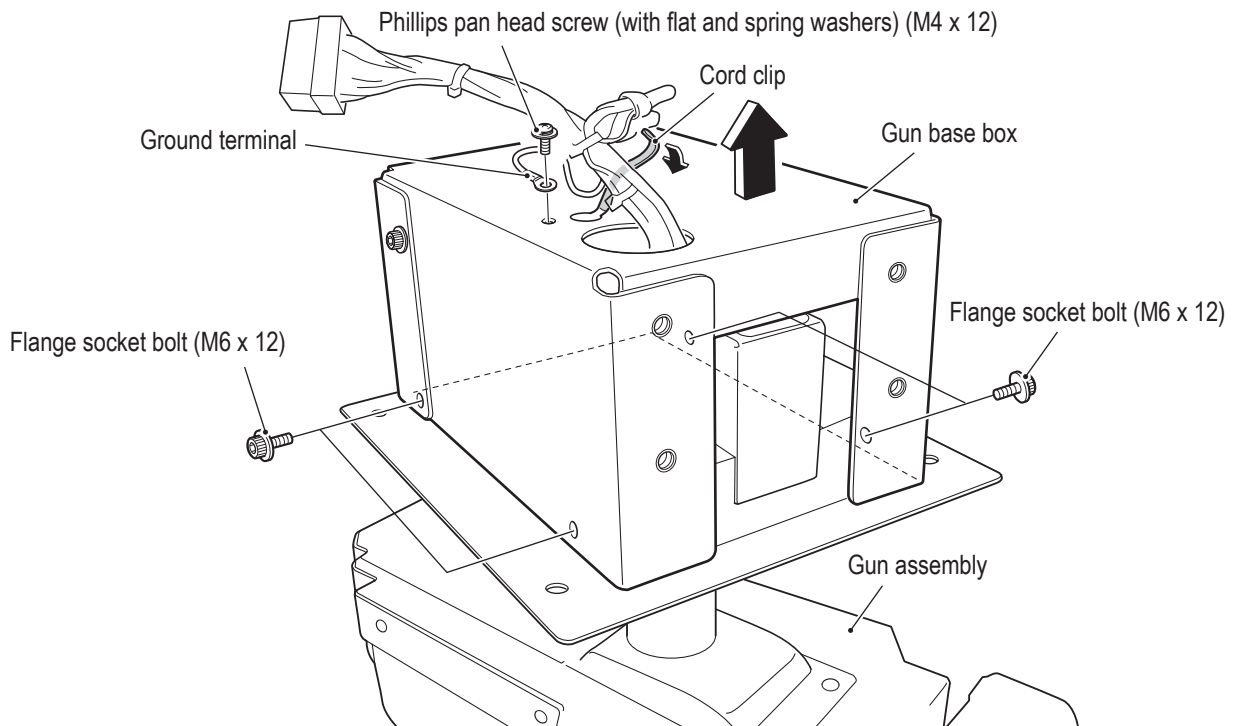
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the gun assembly. (See "8B-4-3(1) Removing and Installing the Gun Assembly" on page 121.)
- 3** Turn over the gun assembly and place it in a stable position with the gun base box on top.

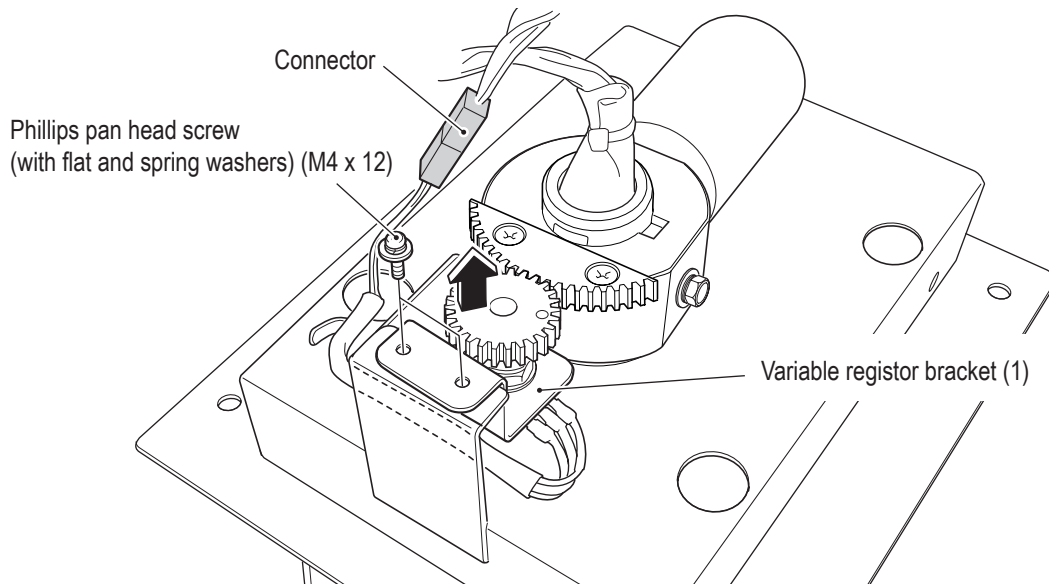
**NOTICE**

- Place the gun assembly onto a piece of air bubble wrapping, etc. to avoid scratching it when performing the work.
- 4** Remove the Phillips pan head screw (with flat and spring washers) (M4 x 12), and disconnect the ground terminal.
  - 5** Remove the four flange socket bolts (M6 x 12), loosen the cord clip, and remove the gun base box while pulling out the harness and connectors.

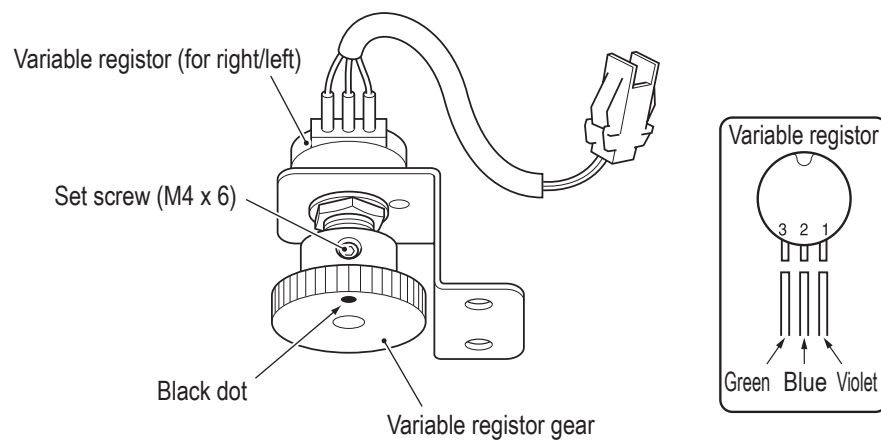


**- Must be performed by a technician -**

- 6** Disconnect the connector, remove the two Phillips pan head screws (with flat and spring washers) (M4 x 12), and remove the variable register bracket (1).



- 7** Loosen the set screw (M4 x 6), and remove the variable register gear.  
 \* When installing, align the black dot on the variable register gear with the blue harness terminal of the variable register volume (for right/left).



1

2

3

4

5

6

7

8A

8B

9

10

11

12

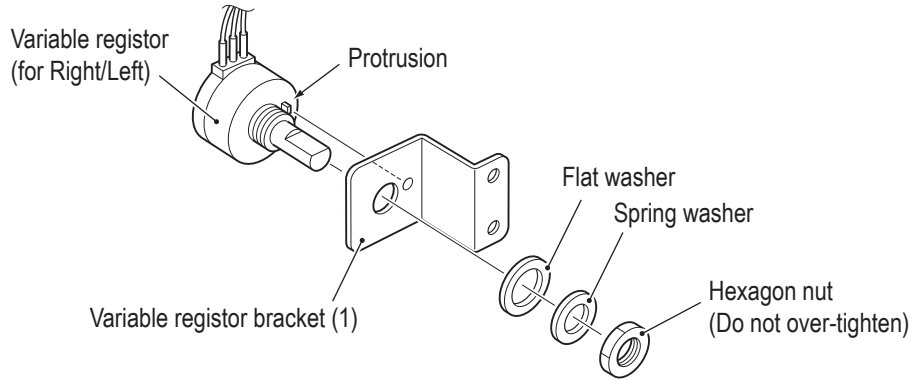
Service/Technician's Manual

Test Mode

Troubleshooting

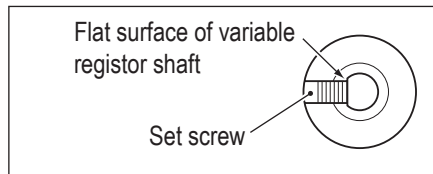
**- Must be performed by a technician -**

- 8** Remove the hexagon nut, spring washer and flat washer, and remove the variable register (for right/left) from the variable register bracket (1).
- 9** Replace the variable register.



**NOTICE**

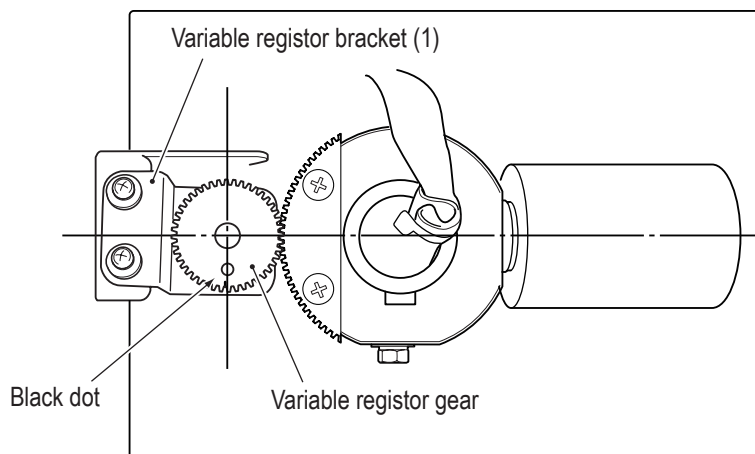
- The variable register (for right/left) appears the same as the variable register (for up/down). Check the harness colors before replacing the variable register.
- When installing, lock the connectors securely.
- When installing the variable register, align the flat surface of the variable register shaft with the set screw position.



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

**NOTICE**

- When installing, install each part in the relative position shown in the figure below.



- When installing, be careful not to pinch the harness in the gears.
- After replacement, be sure to initialize the variable register.  
(See "7-7-4(c) Crosshairs and Gun Vibration Unit Check Screen (GUN TEST)" on page 48.)

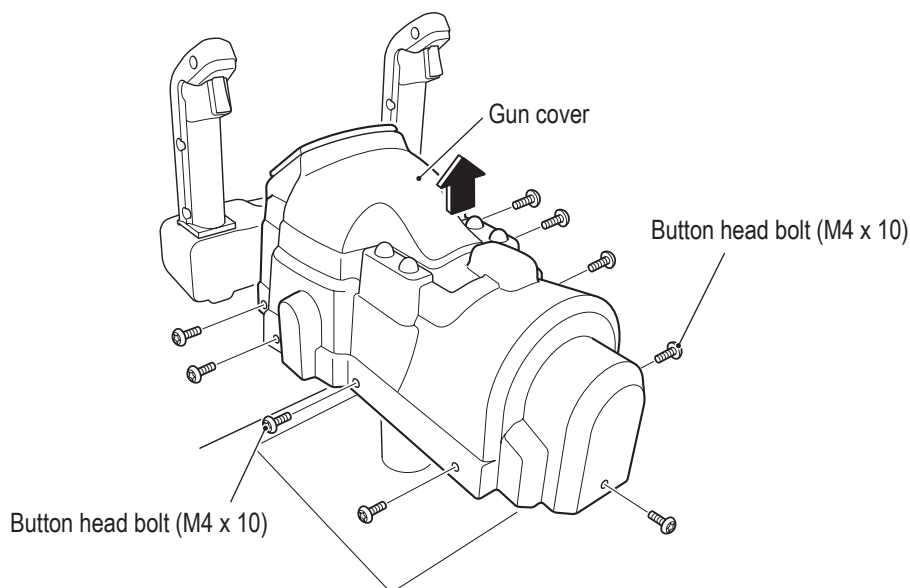
**- Must be performed by a technician -**

### (3) Replacing the Variable Register (for Up/Down)

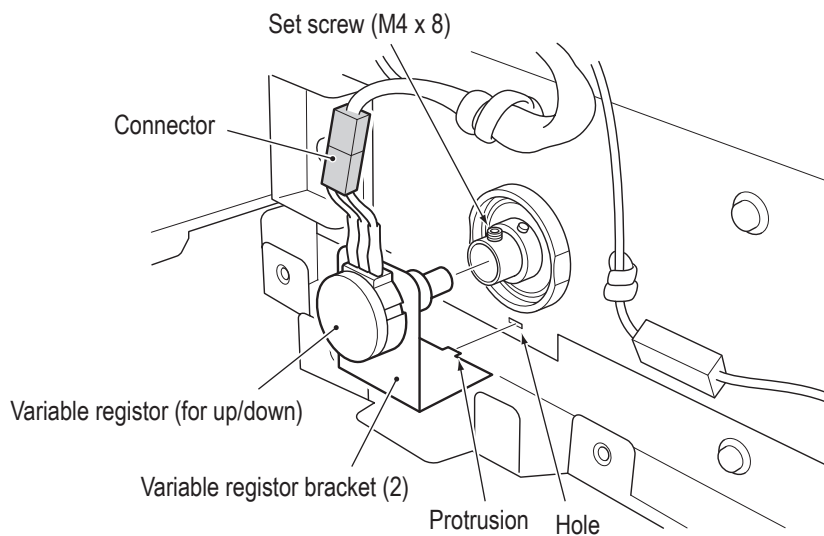
#### ! WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1 Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2 Remove the switch bezel. (See steps 2 and 3 of "8B-4-3(6) Replacing the Illuminated Switch and LED Lamp of the START Button" on page 129.)
- 3 Remove the nine button head bolts (M4 x 10), and remove the gun cover.



- 4 Disconnect the connector, remove the set screw (M4 x 8), and remove the variable register (for up/down) together with the variable register bracket (2).



1

2

3

4

5

6

7

8A

8B

9

10

11

12

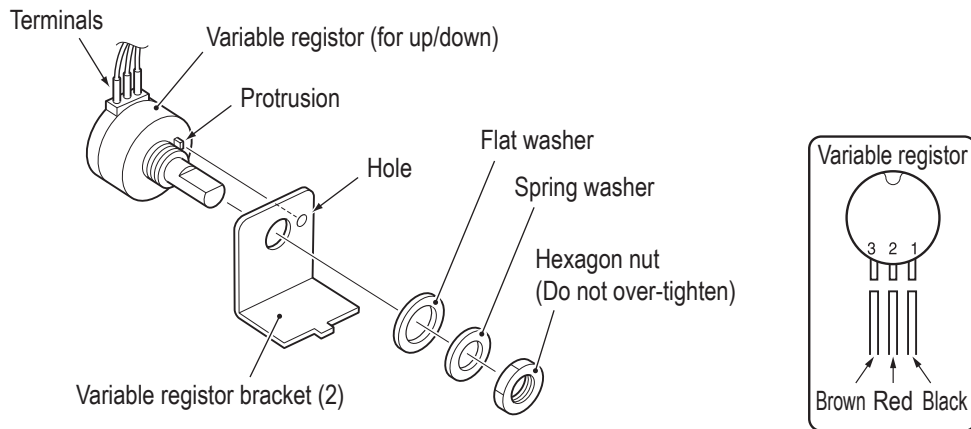
Service/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

- 5** Remove the variable register (for up/down) from the variable register bracket (2).



- 6** Replace the variable register (for up/down).

\* When installing the variable register (for up/down), orient the variable register so that the terminals are on top (so that the protrusion on the variable register enters the hole in the variable register bracket (2)).

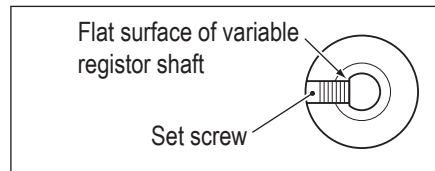


- The variable register (for up/down) appears the same as the variable register (for right/left). Check the harness colors before replacing the variable register.

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



- When installing the variable register, align the flat surface of the variable register shaft with the set screw position.



- After replacement, be sure to initialize the variable register.  
(See "7-7-4(c) Crosshairs and Gun Vibration Unit Check Screen (GUN TEST)" on page 48.)



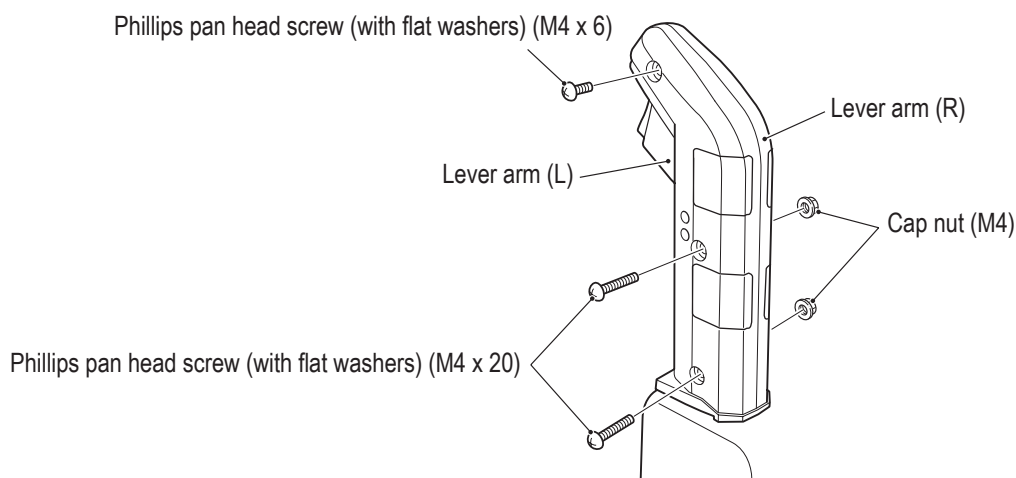
**- Must be performed by a technician -**

#### (4) Replacing the Micro Switch

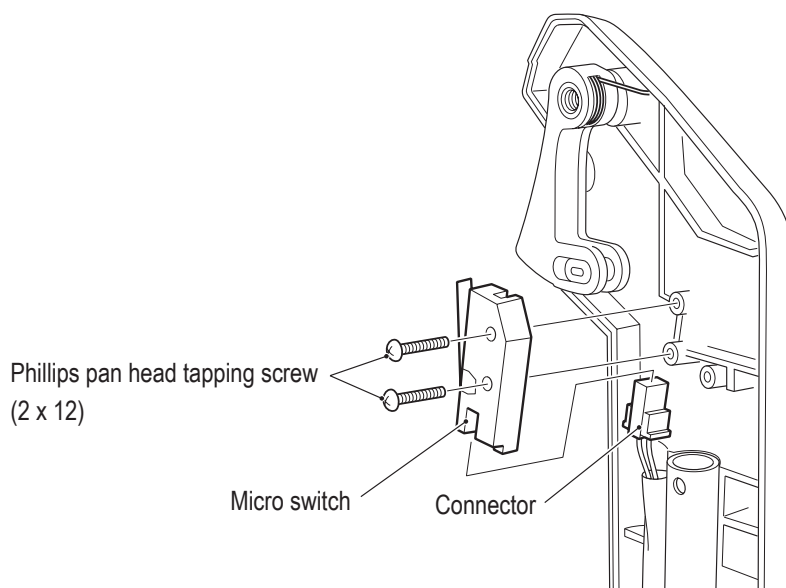
### ! WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 20), two cap nuts (M4), and one Phillips pan head screw (with flat and spring washers) (M4 x 6), and remove the lever arm (L).



- 3** Disconnect the connector, remove the two Phillips pan head tapping screws (2 x 12), and replace the micro switch.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

## - Must be performed by a technician -



- When installing, check the connector orientation, and insert the connector firmly until it locks securely.
- When installing, be careful not to pinch the connectors and harness.

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



- After replacement, be sure to check operation in Test mode. (See “7-7-4(a) SWITCH TEST” on page 46.)

### (5) Replacing the Trigger and Spring

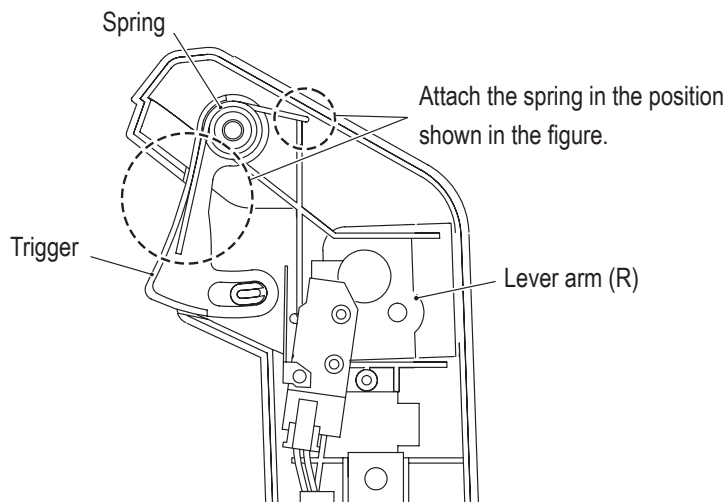
#### WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See “8A-8-1 Turning the Power Switch On” on page 95.)
- 2** Remove the lever arm (L). (See step **2** of “8B-4-3(4) Replacing the Micro Switch” on page 127.)
- 3** When an abnormality occurs in the trigger and spring, replace the abnormal parts.



- Install the spring as shown in the figure, and check that the spring is set firmly against the trigger and the lever arm (R).



- 4** Install the lever arm (L) by reversing the procedure. (See step **2** of “8B-4-3(4) Replacing the Micro Switch” on page 127.)

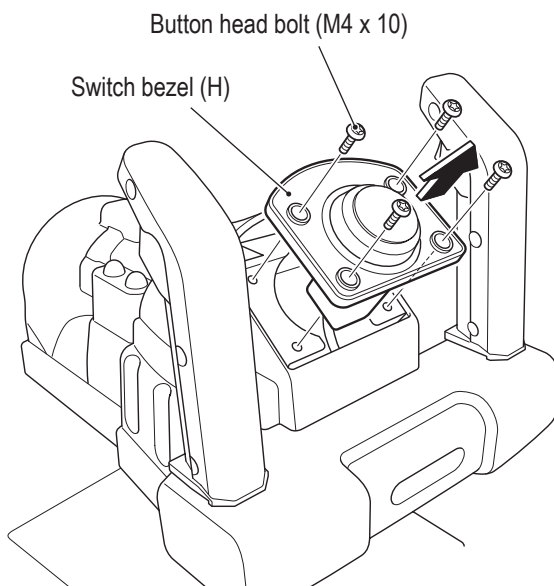
- Must be performed by a technician -

(6) Replacing the Illuminated Switch and LED Lamp of the START Button

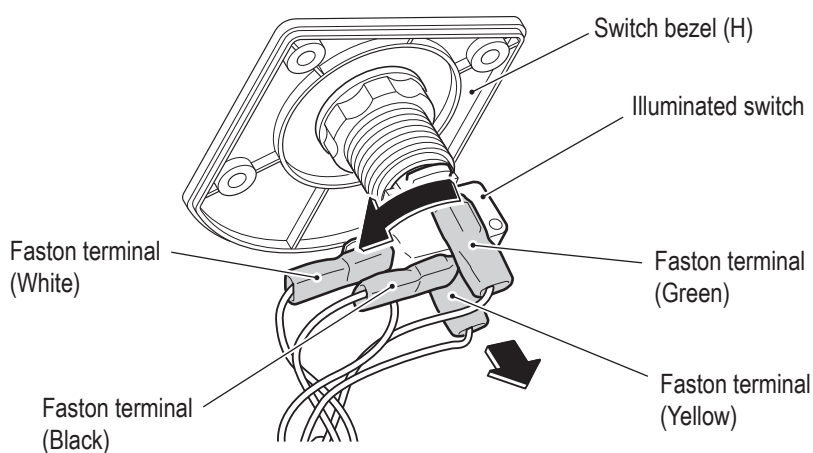
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1 Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2 Remove the four button head bolts (M4 x 10), and remove the switch bezel (H).



- 3 Rotate the illuminated switch counter-clockwise by 45 degrees, and remove it from the switch bezel (H).



1  
2  
3  
4  
5  
6  
7  
8A  
8B  
9  
10  
11  
12

Service/Technician's Manual

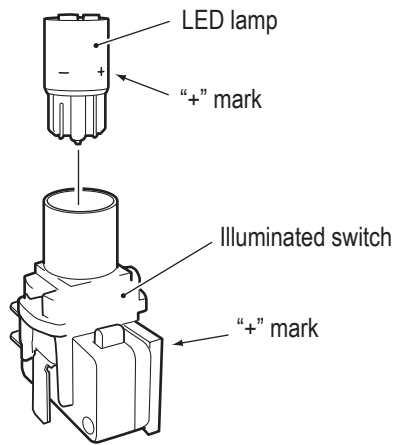
Test Mode

Troubleshooting

**- Must be performed by a technician -**

---

- 4** Remove the LED lamp from the illuminated switch, and replace the LED lamp.  
\* The LED lamp has plus and minus marks. When replacing, be careful to align the LED lamp correctly.



- 5** When replacing the illuminated switch, disconnect the four Faston terminals, and replace the illuminated switch.
- 6** To install, perform the procedure in reverse.



- After replacement, be sure to check operation in Test mode. (See "7-7-4(a) SWITCH TEST" on page 46 and "7-7-4(b) OUTPUT TEST" on page 47.)

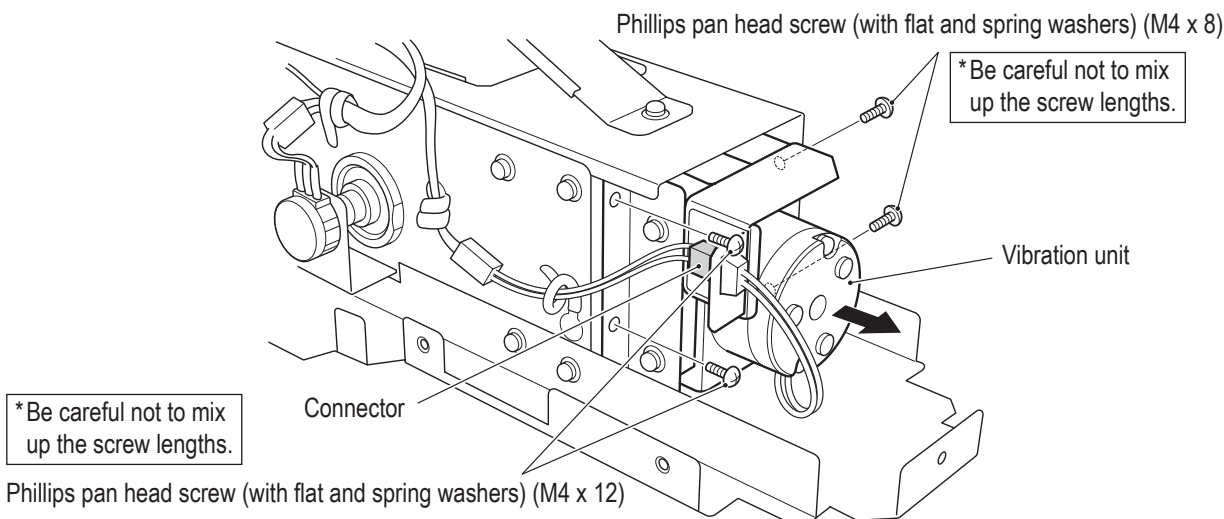
- Must be performed by a technician -

(7) Replacing the Vibration Unit

**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

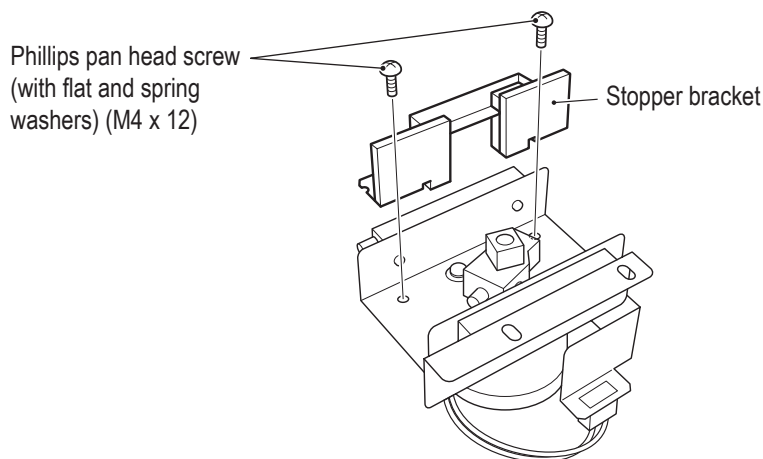
- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the START button and the switch bezel (H). (See steps **2** and **3** "8B-4-3(6) Replacing the Illuminated Switch and LED Lamp of the START Button" on page 129.)
- 3** Remove the gun cover. (See step **2** of "8B-4-3 (3) Replacing the Variable Register (for Up/Down)" on page 125.)
- 4** Disconnect the connector.
- 5** Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 12) and the two Phillips pan head screws (with flat and spring washers) (M4 x 8), and remove the vibration unit.



**NOTICE**

- The Phillips pan head screws (with flat and spring washers) (M4) have different lengths, so be careful not to mix up the screws during assembly.

- 6** Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 12), and remove the stopper bracket.



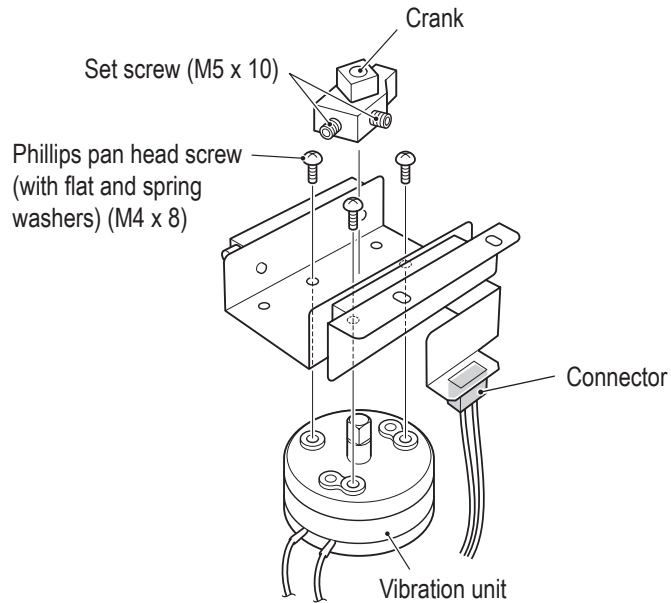
1  
2  
3  
4  
5  
6  
7  
8A  
8B  
9  
10  
11  
12

Service/Technician's Manual

Test Mode  
Troubleshooting

**- Must be performed by a technician -**

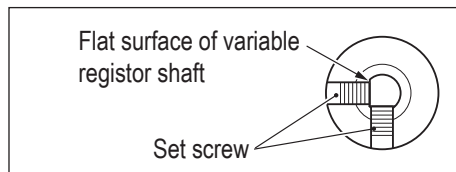
- 7** Loosen the two set screws (M5 x 10), and remove the crank.
- 8** Disconnect the connector.
- 9** Remove the three Phillips pan head screws (with flat and spring washers) (M4 x 8), and remove and replace the vibration unit.



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



- When installing the vibration unit, align the flat surfaces (two locations) of the vibration unit shaft with the set screw positions.



- When installing, be careful not to pinch the connectors and harness.
- Check vibration unit operation in Test mode. (See “7-7-4(b) OUTPUT TEST” on page 47.)

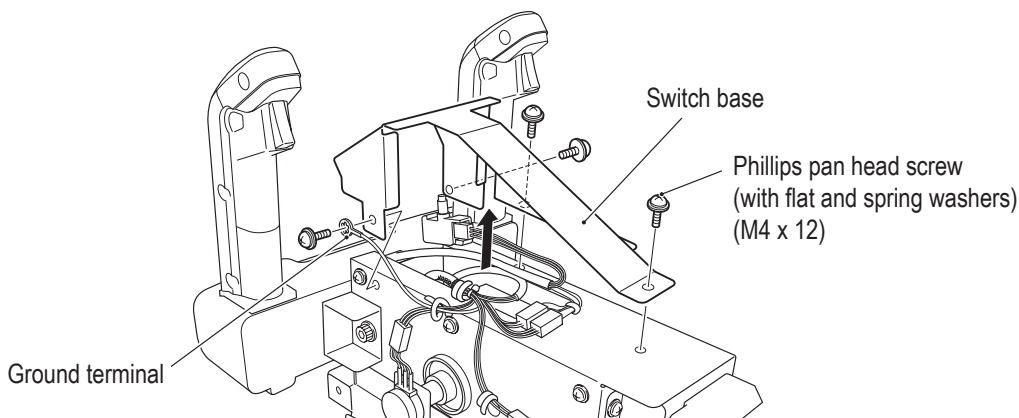
- Must be performed by a technician -

(8) Replacing the Gun Harness 2

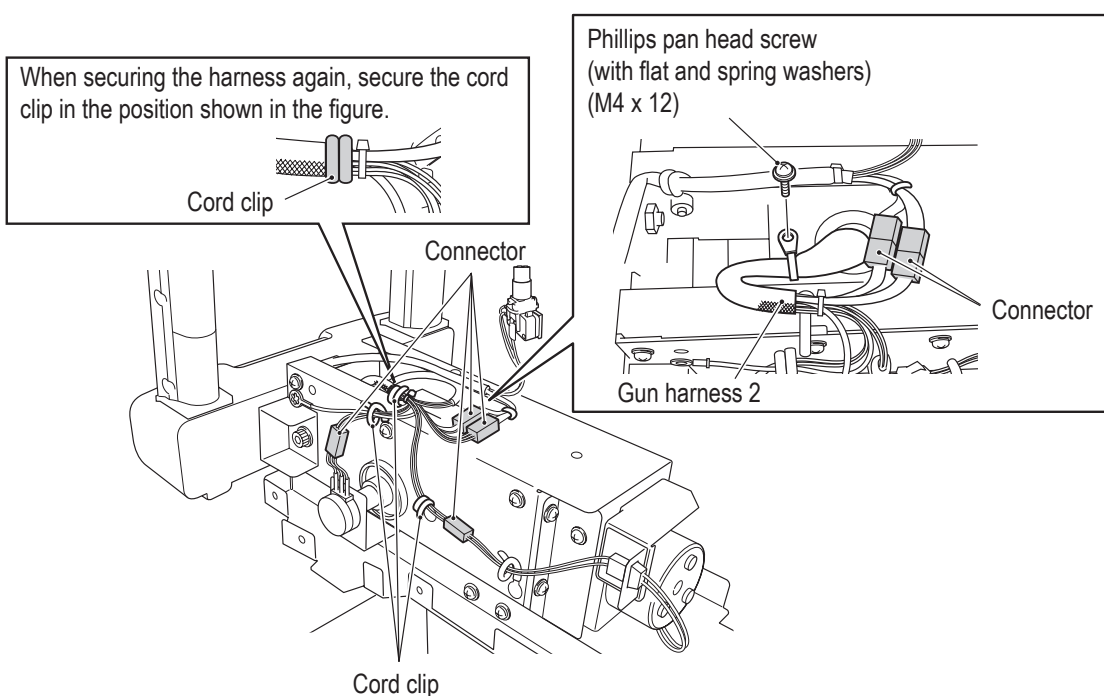
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1 Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2 Remove the gun assembly. (See "8B-4-3(1) Removing and Installing the Gun Assembly" on page 121.)
- 3 Remove the gun base box. (See steps 3 to 5 of "8B-4-3 (2) Replacing the Variable Register (for Right/Left)" on page 122.)
- 4 Remove the gun cover. (See steps 2 and 3 of "8B-4-3 (3) Replacing the Variable Register (for Up/Down)" on page 125.)
- 5 Remove the four Phillips pan head screws (with flat and spring washers) (M4 x 12), disconnect the ground terminal, and remove the switch base.



- 6 Disconnect the four connectors and open the three cord clips of the gun harness 2.
- 7 Remove the Phillips pan head screw (with flat and spring washers) (M4 x 12), and open the cord clip.



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Service/Technician's Manual

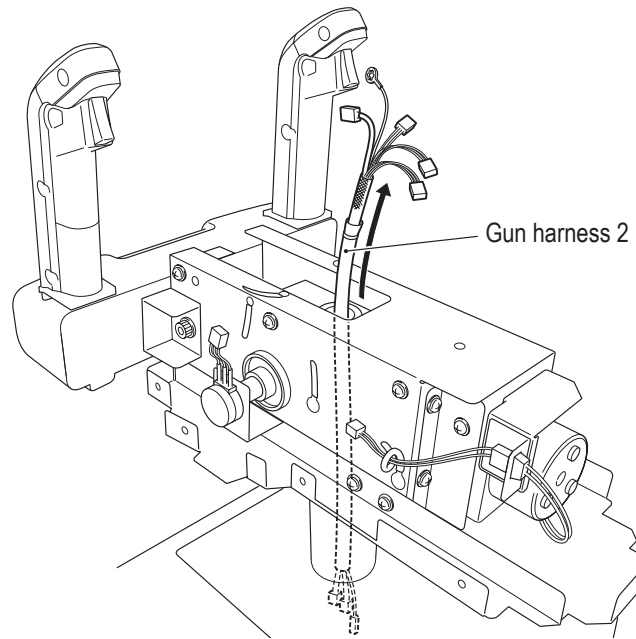
Test Mode

Troubleshooting

**- Must be performed by a technician -**

---

- 8** Pull out the gun harness 2.



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



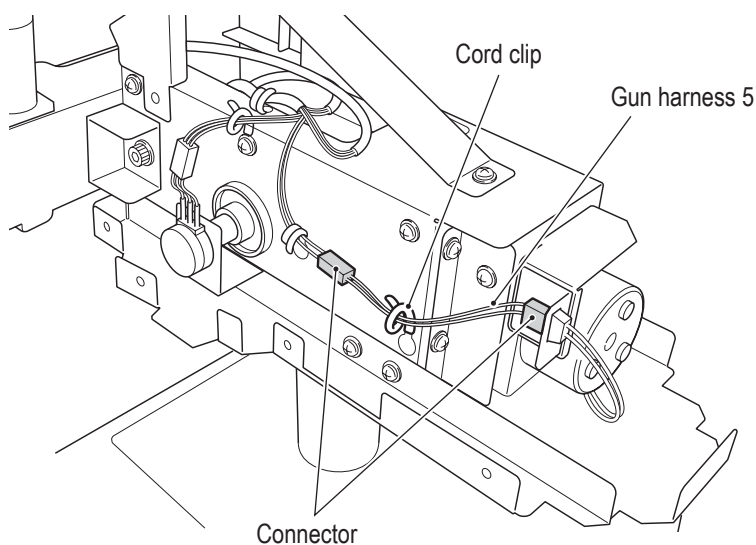
**- Must be performed by a technician -**

**(9) Replacing the Gun Harness 5**

**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the gun cover. (See step **2** of "8B-4-3 (3) Replacing the Variable Register (for Up/Down)" on page 125.)
- 3** Disconnect the two connectors, open the cord clip, and remove the gun harness 5.



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

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

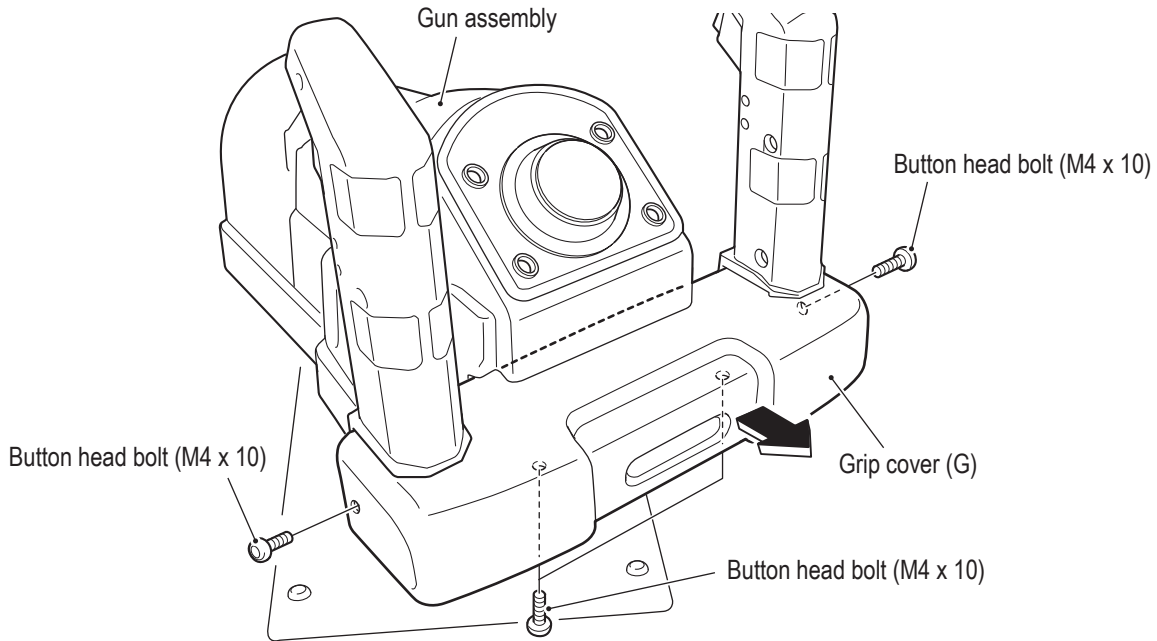
**- Must be performed by a technician -**

(10) Replacing the VSS Module

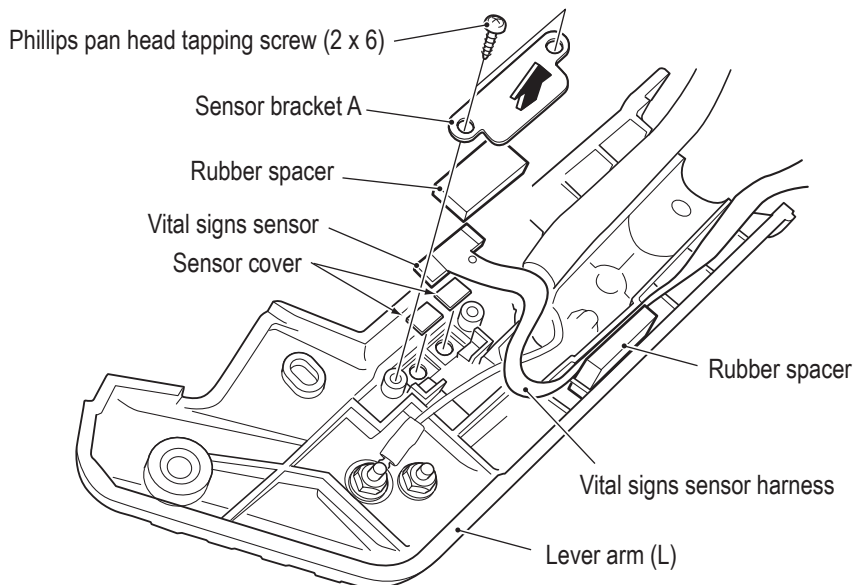
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1 Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2 Remove the four button head bolts (M4 x 10), and remove the grip cover (G).

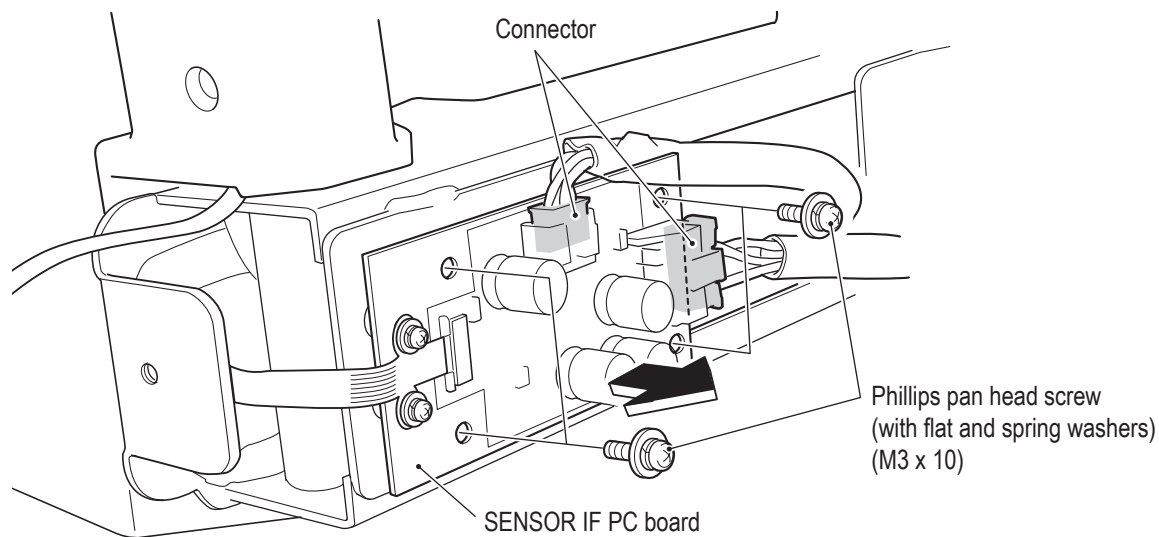


- 3 Remove the lever arm (L). (See step 2 of "8B-4-3(4) Replacing the Micro Switch" on page 127.)
- 4 Remove the two Phillips pan head tapping screws (2 x 6), and remove the sensor bracket A, rubber spacer, and vital signs sensor.
- 5 Remove the rubber spacer clamping the vital signs sensor harness, and remove the vital signs sensor harness.



**- Must be performed by a technician -**

- 6** Disconnect the two connectors, remove the four Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the SENSOR IF PC board.



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



- When replacing the vital signs sensor harness, be careful not to lose the two sensor covers.
- When installing, be careful not to pinch the connectors and harness.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

- Must be performed by a technician -

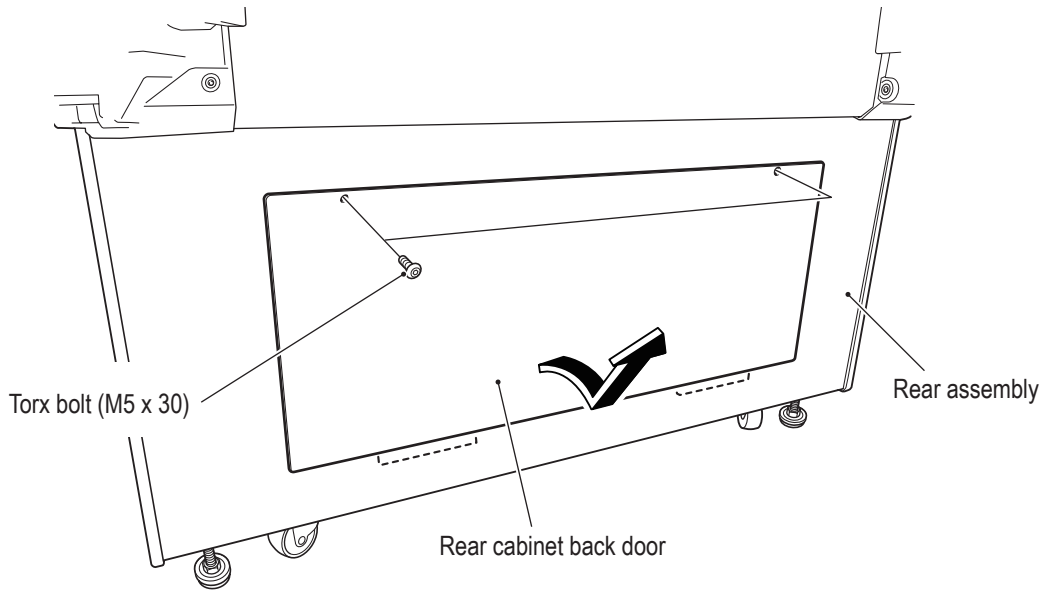
### 8B-4-4 Rear Assembly

#### (1) Replacing the Switching Regulator

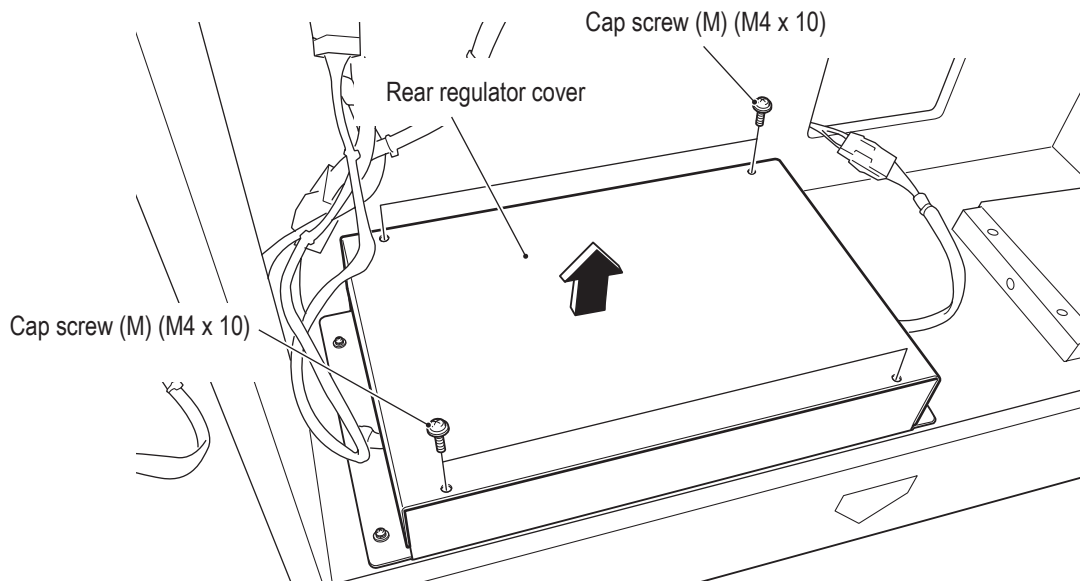
#### **⚠ WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the two Torx bolts (M5 x 30), and remove the rear cabinet back door from the rear assembly.

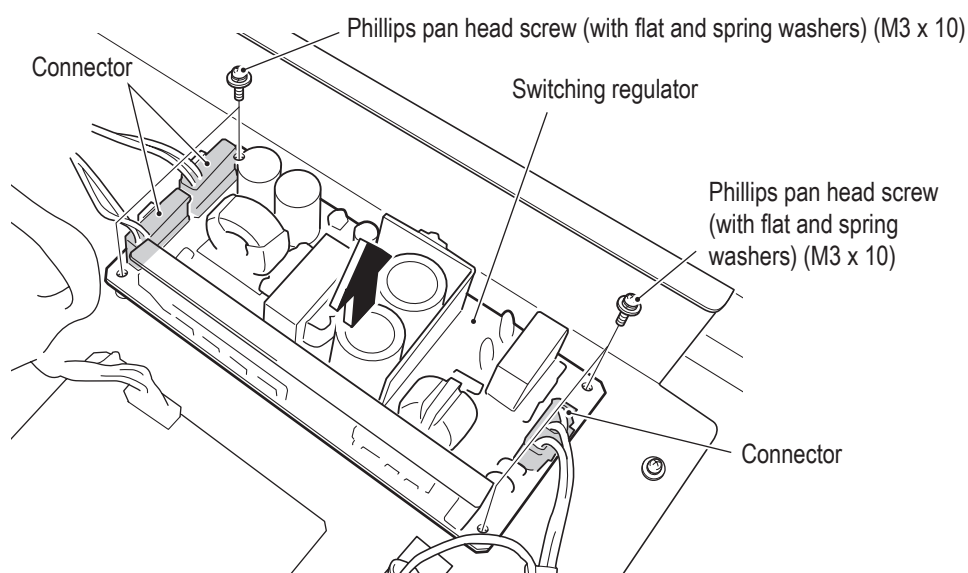
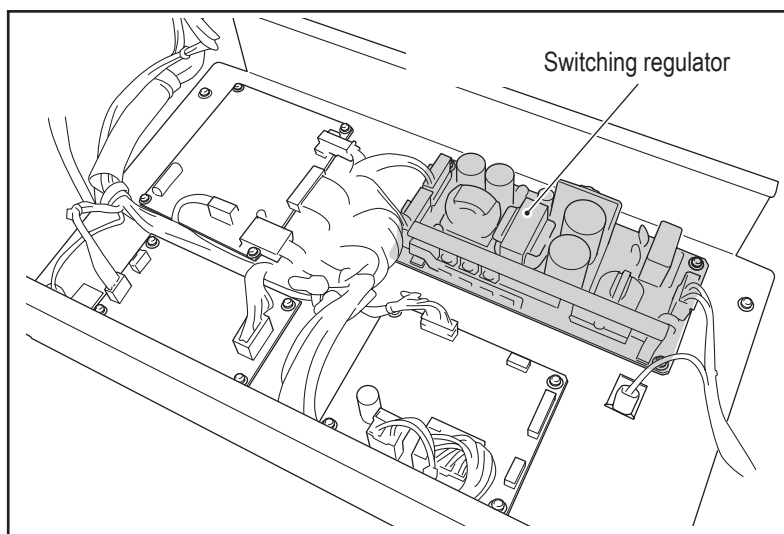


- 3** Remove the four cap screws (M) (M4 x 10), and remove the rear regulator cover.



**- Must be performed by a technician -**

- 4** Disconnect the three connectors, remove the four Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the switching regulator (12V).



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



- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- When removing, be careful not to damage the PC boards or other parts.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

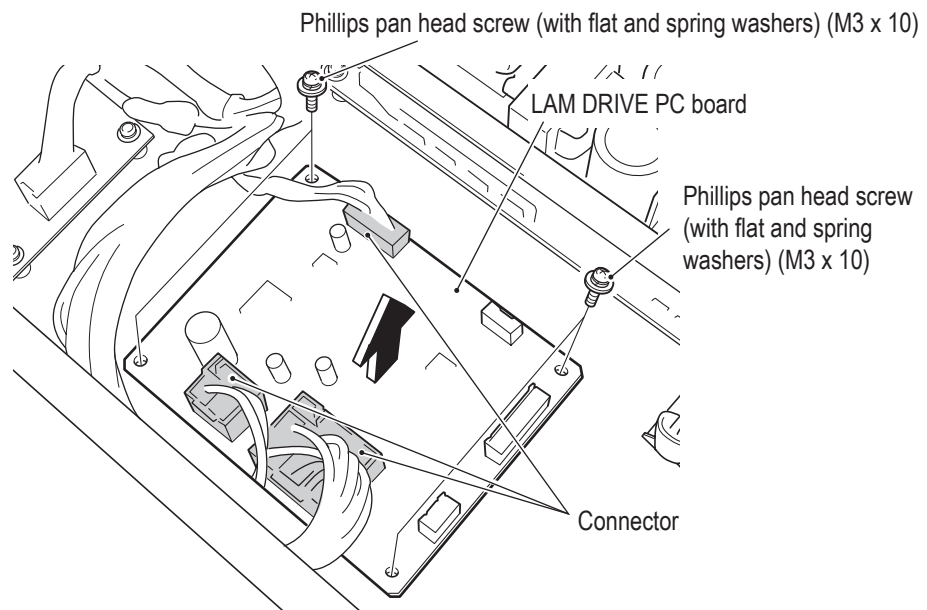
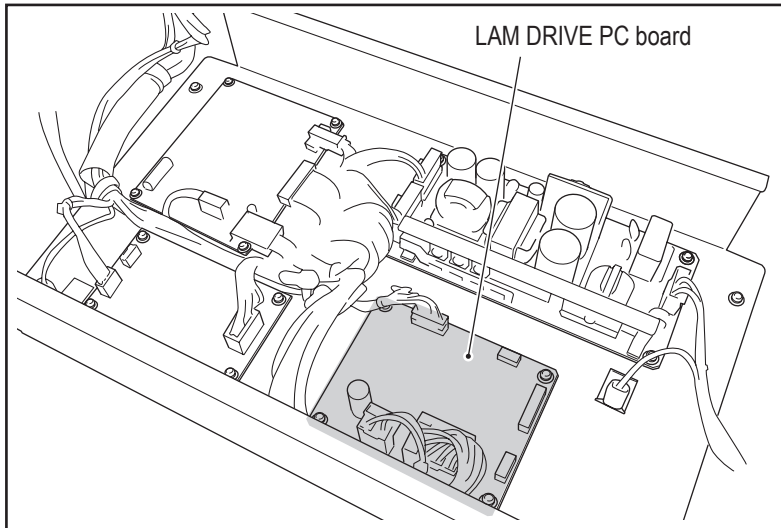
**- Must be performed by a technician -**

(2) Replacing the LAM DRIVE PC Board

**⚠ WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the rear cabinet back door. (See step **2** of "8B-4-4(1) Replacing the Switching Regulator on page 138.)
- 3** Remove the rear regulator cover. (See step **3** of "8B-4-4(1) Replacing the Switching Regulator on page 138.)
- 4** Disconnect the three connectors, remove the four Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the LAM DRIVE PC board.



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

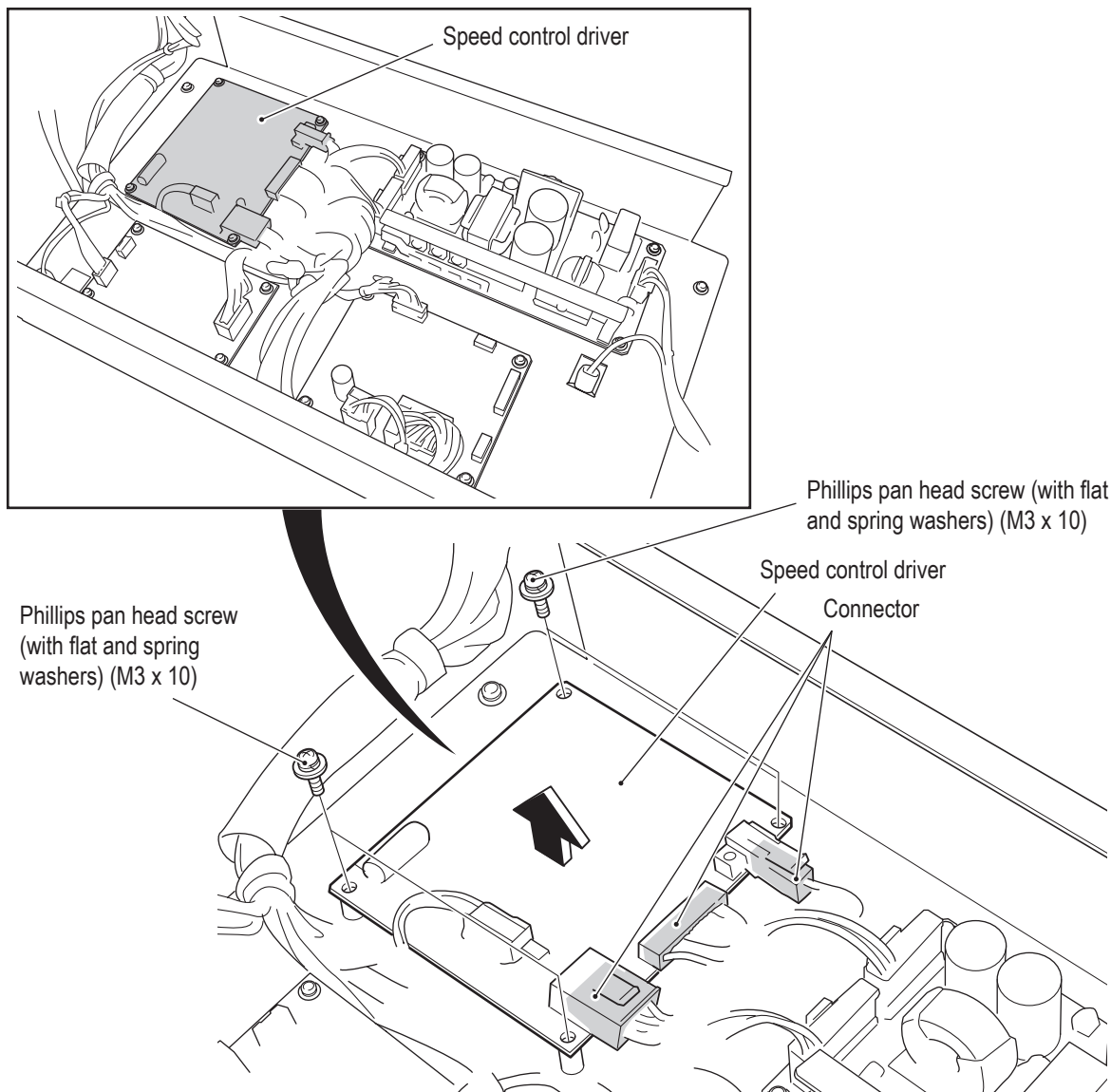
**- Must be performed by a technician -**

### (3) Replacing the Speed Control Driver

#### ! WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the rear cabinet back door. (See step **2** of "8B-4-4(1) Replacing the Switching Regulator on page 138.)
- 3** Remove the rear regulator cover. (See step **3** of "8B-4-4(1) Replacing the Switching Regulator on page 138.)
- 4** Disconnect the three connectors, remove the four Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the speed control driver.



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

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

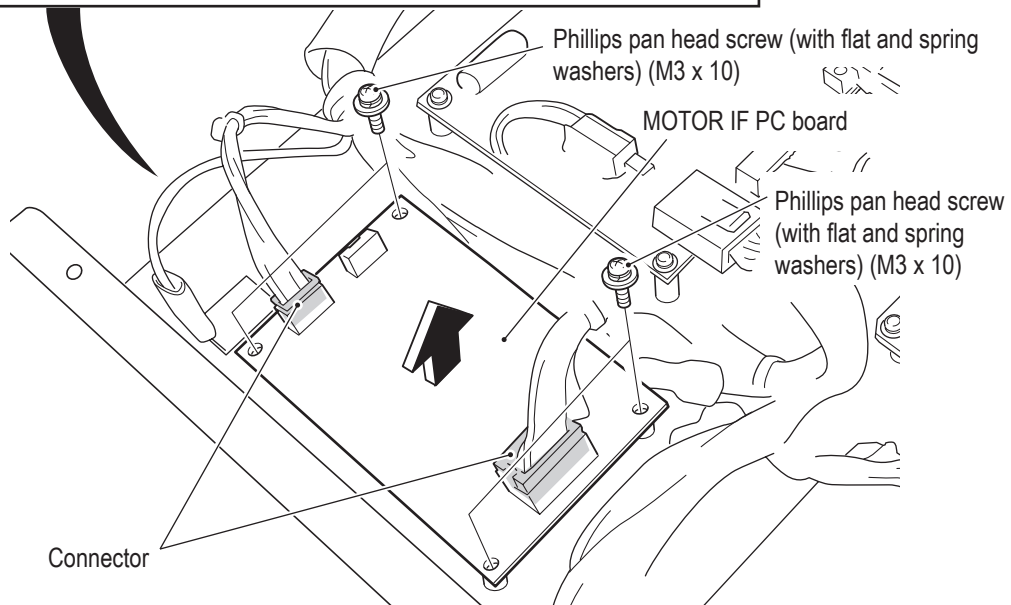
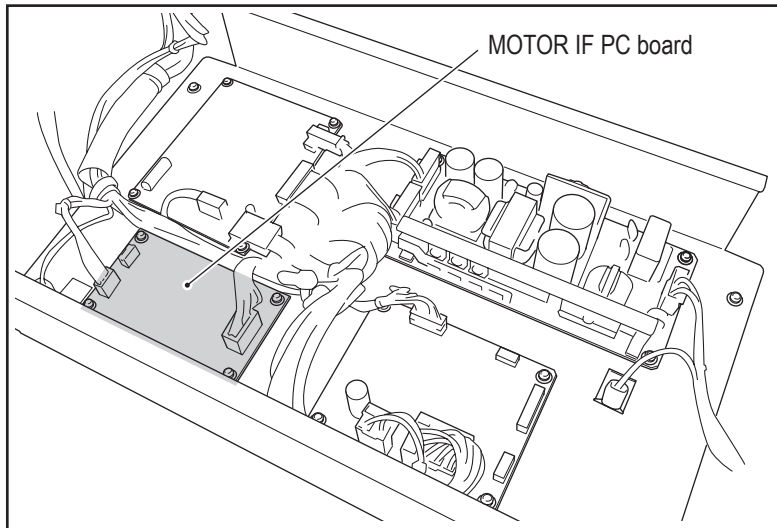
**- Must be performed by a technician -**

(4) Replacing the MOTOR IF PC Board

**⚠ WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the rear cabinet back door. (See step **2** of "8B-4-4(1) Replacing the Switching Regulator on page 138.)
- 3** Remove the rear regulator cover. (See step **3** of "8B-4-4(1) Replacing the Switching Regulator on page 138.)
- 4** Disconnect the two connectors, remove the four Phillips pan head screws (with flat and spring washers) (M3 x 10), and remove and replace the MOTOR IF PC board.



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



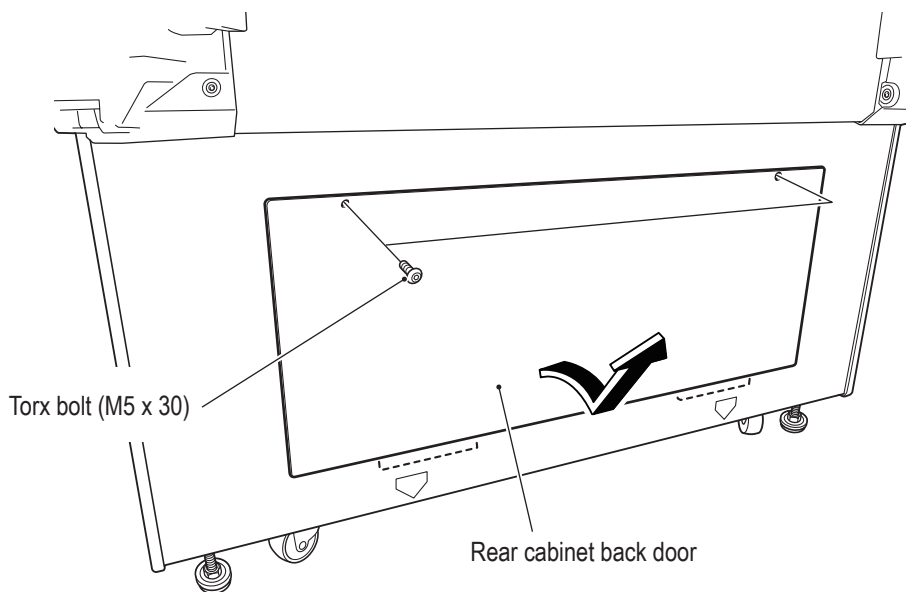
**- Must be performed by a technician -**

**(5) Replacing the DC Brushless Motor and Rotor Cover**

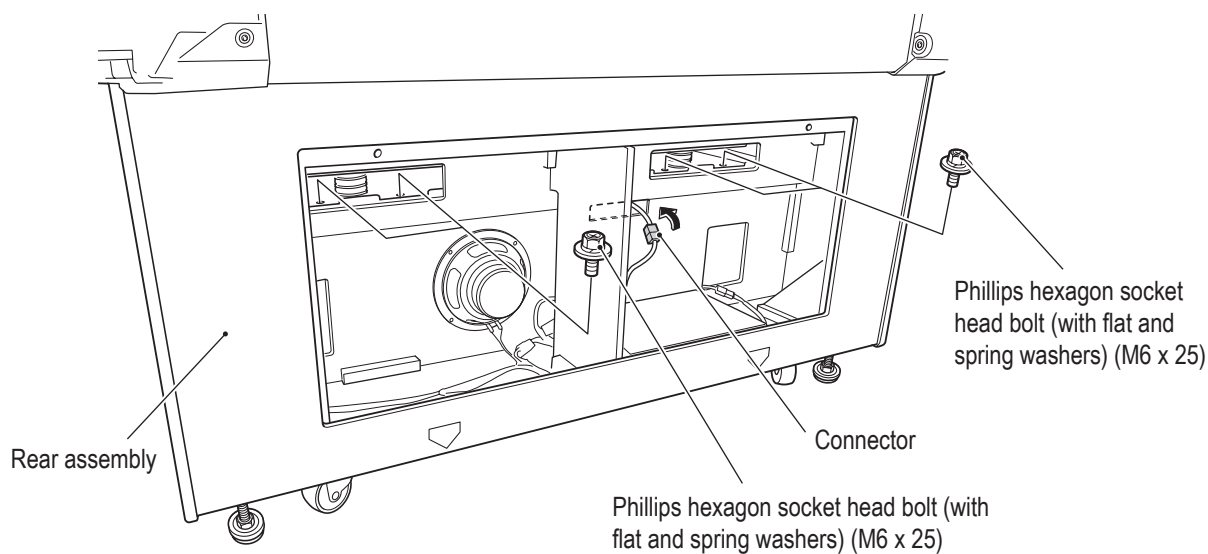
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the two Torx bolts (M5 x 30), and remove the rear cabinet back door from the front of the rear assembly.



- 3** Remove the four Phillips hexagon socket head bolts (with flat and spring washers) (M6 x 25) from the outside of the rear assembly.
- 4** Disconnect the connector, and push the connector together with the cable into the rear assembly.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

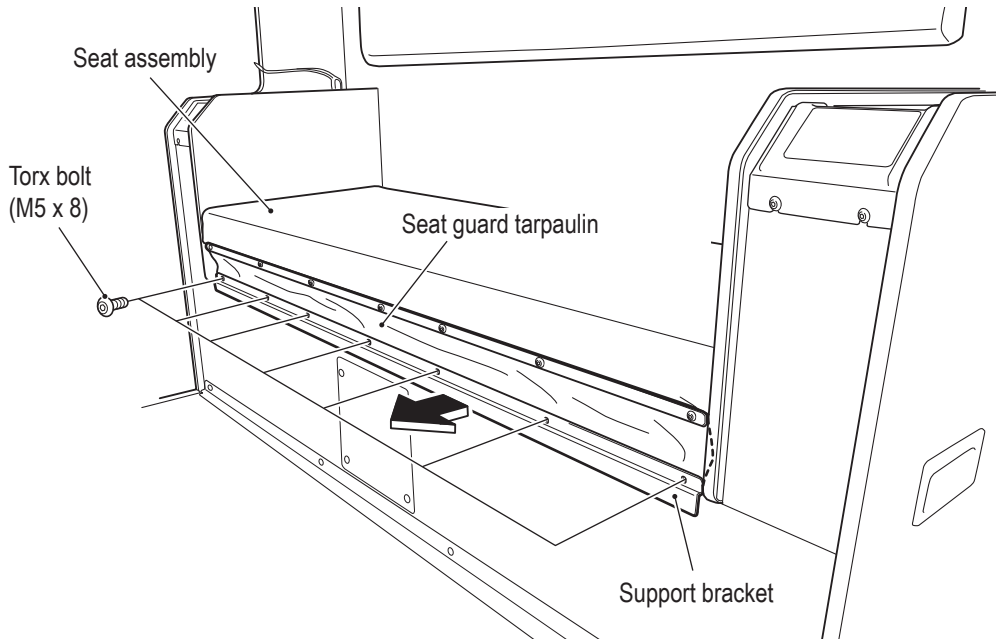
Test Mode

Troubleshooting

**- Must be performed by a technician -**

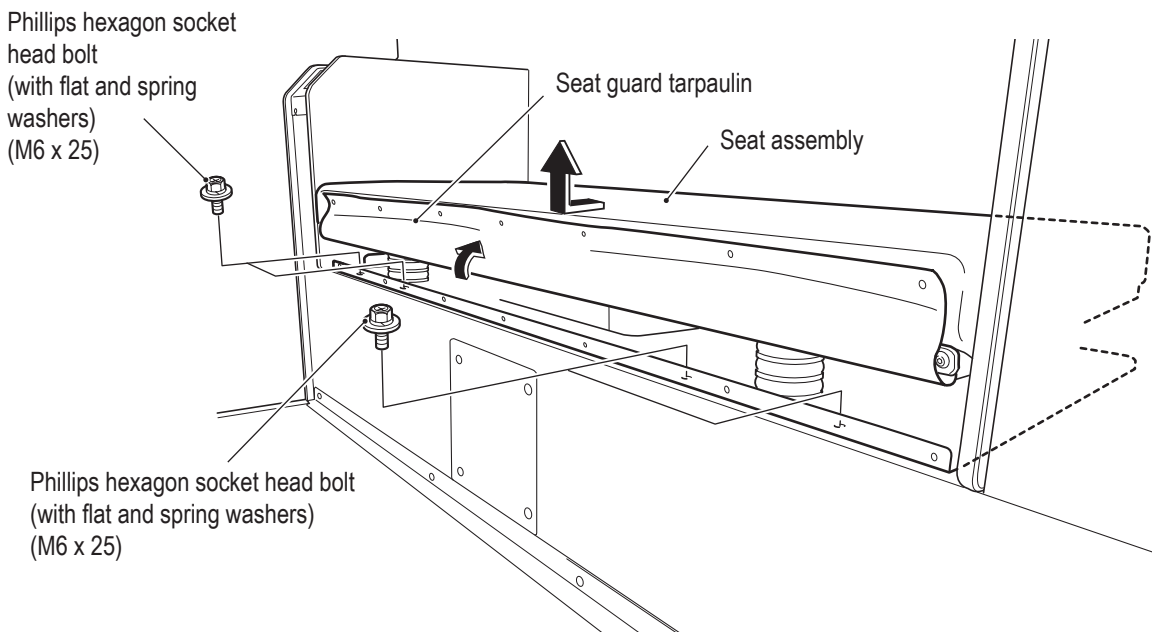
---

- 5** Remove the seven Torx bolts (M5 x 8), and remove the support bracket from the seat assembly.



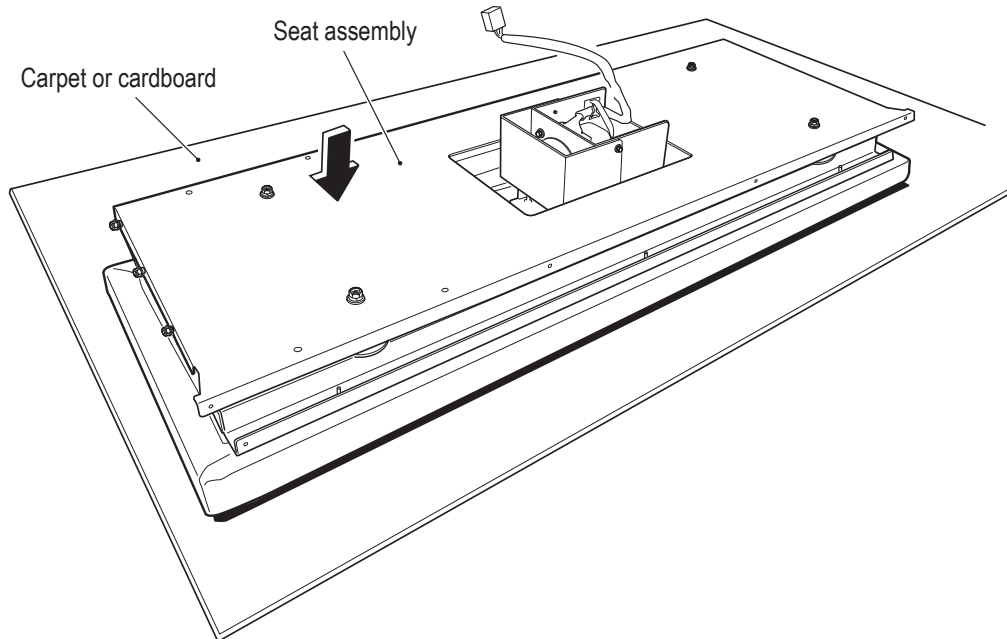
- 6** Lift up the seat guard tarpaulin, and remove the four Phillips hexagon socket head bolts (with flat and spring washers) (M6 x 25) from inside the seat assembly.

- 7** Pull the seat assembly slightly forward and then lift it up and remove it.

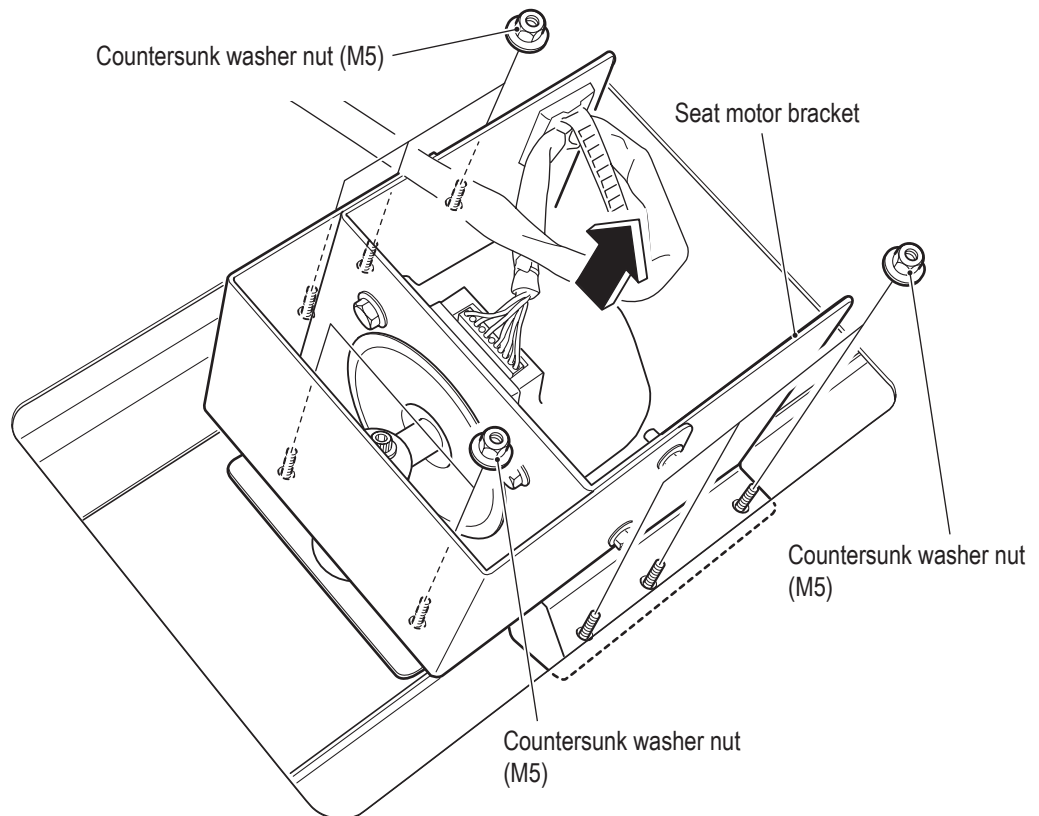


**- Must be performed by a technician -**

- 8** Remove the seat assembly, and place it upside down onto a piece of carpet or cardboard laid out on the floor.



- 9** Remove the eight countersunk washer nuts (M5), and remove the seat motor bracket.



1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

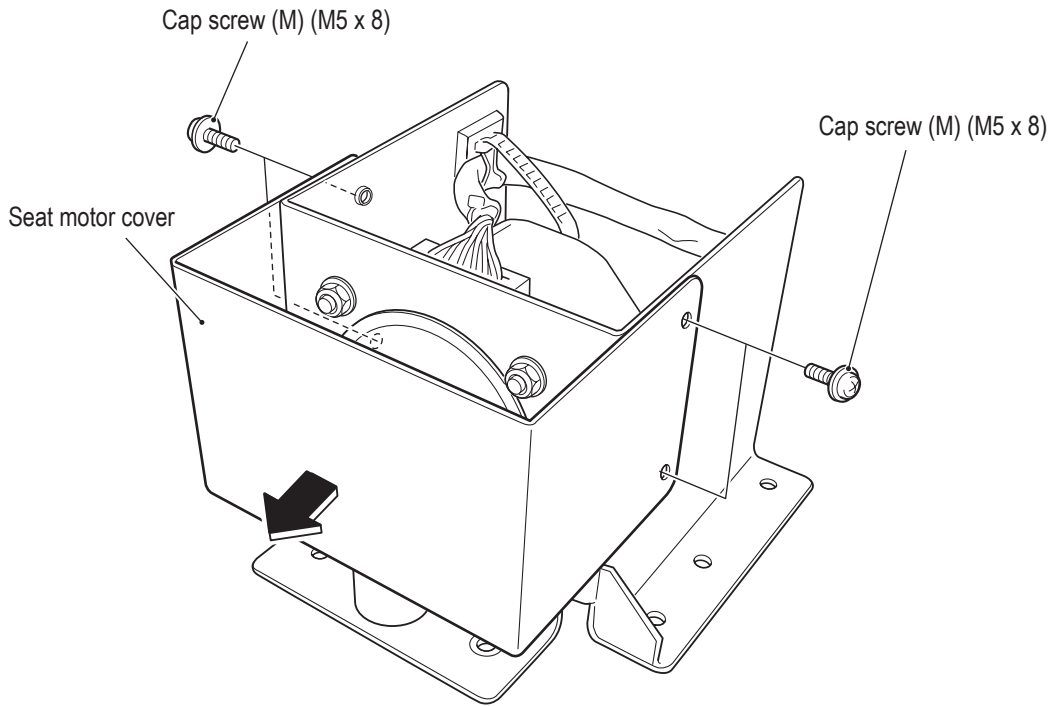
Test Mode

Troubleshooting

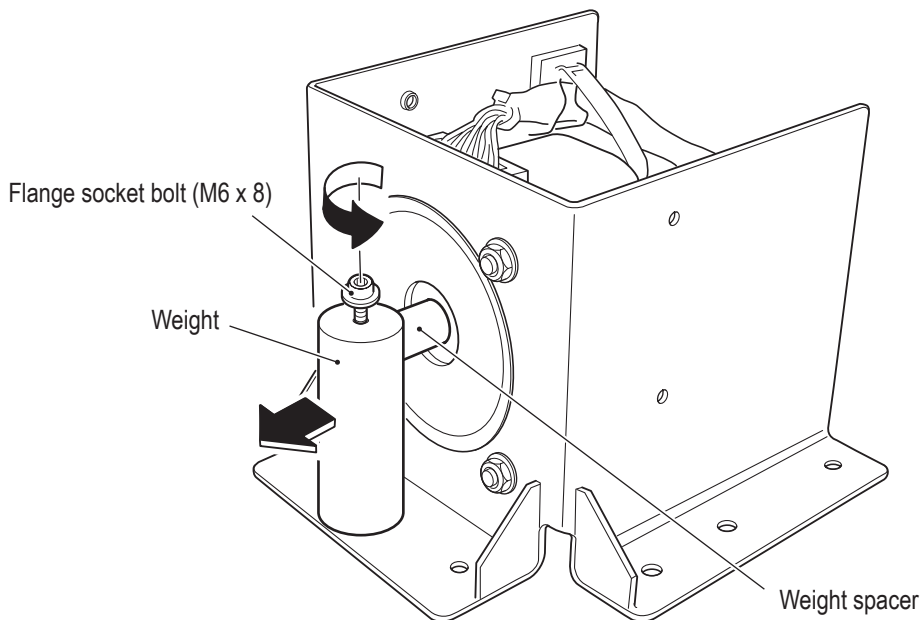
**- Must be performed by a technician -**

---

- 10** Remove the four cap screws (M) (M5 x 8), and remove the seat motor cover.

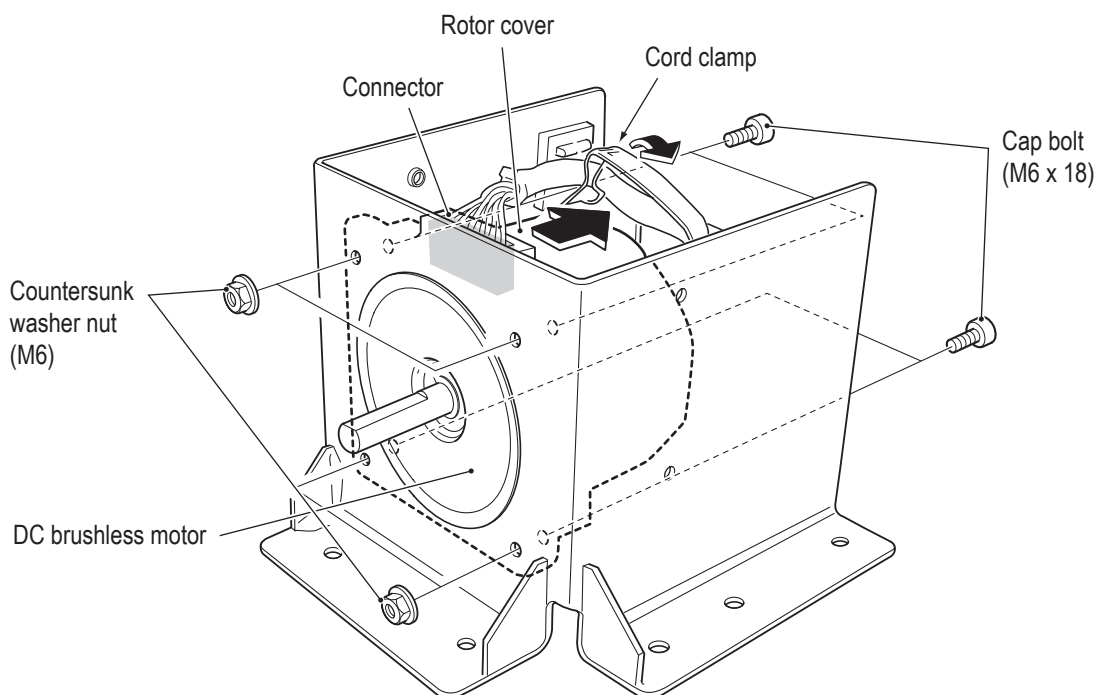


- 11** Loosen the flange socket bolt (M6 x 8), and remove the weight and the weight spacer.



**- Must be performed by a technician -**

- 12** Disconnect the connector, open the cord clamp, remove the four cap bolts (M6 x 18) and four countersunk washer nuts (M6), and remove and replace the DC brushless motor.



- 13** To install, perform the procedure in reverse.  
When installing the weight, secure it so that there is no gap between the weight and the weight spacer.

**⚠ CAUTION**

- When installing the seat assembly, be careful not to pinch your fingers.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

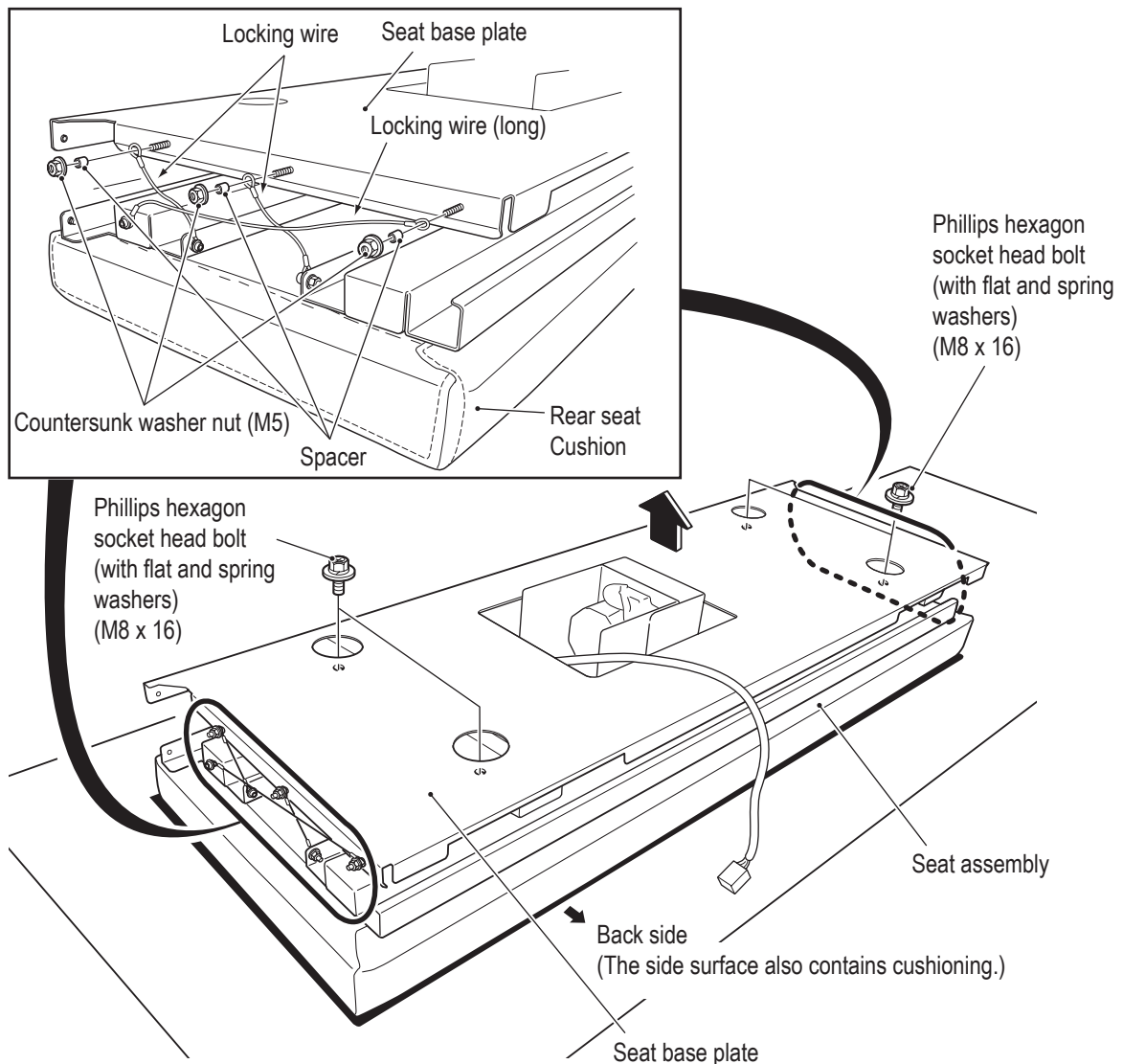
## - Must be performed by a technician -

### (6) Replacing the Rear Seat Cushion

#### ⚠ WARNING

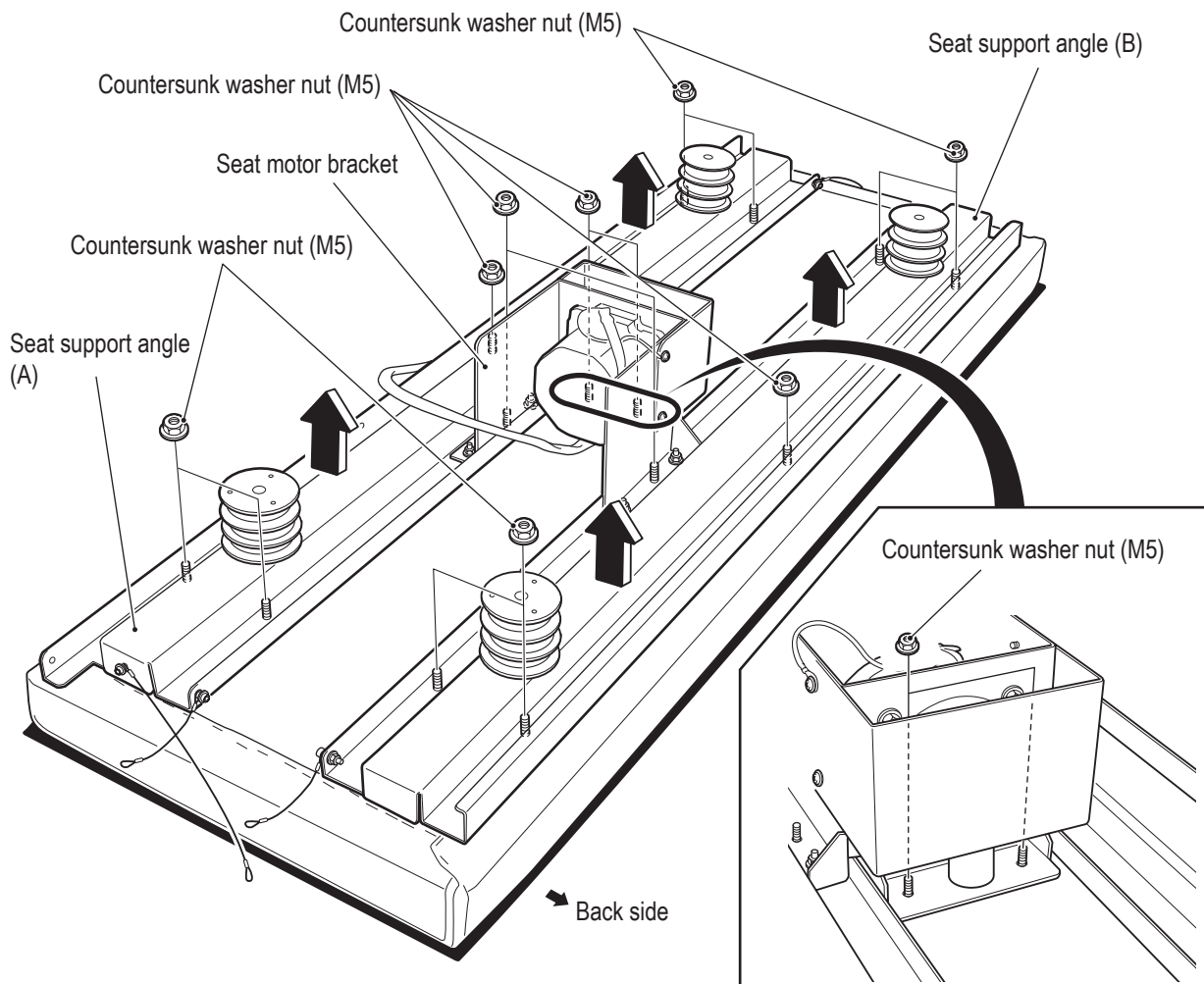
- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the seat assembly. (See steps **2** to **8** of "8B-4-4(5) Replacing the DC Brushless Motor and Rotor Cover" on page 143.)
- 3** Remove the three countersunk washer nuts (M5) and three spacers from the side of the seat assembly, and remove the two locking wires and one locking wire (long). Perform the same procedure to remove the locking wires on the opposite side.
- 4** Remove the four Phillips hexagon socket head bolts (with flat and spring washers) (M8 x 16), and remove the seat base plate.



**- Must be performed by a technician -**

- 5** Remove the 18 countersunk washer nuts (M5), and remove the seat support angles (A) and (B) and the seat motor bracket.



- 6** Replace the rear seat cushion, and install by reversing the procedure.



- When installing, be careful not to mistake the front and back of the rear seat cushion. The direction with cushion attached to the side surface is the back.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

**- Must be performed by a technician -**

---

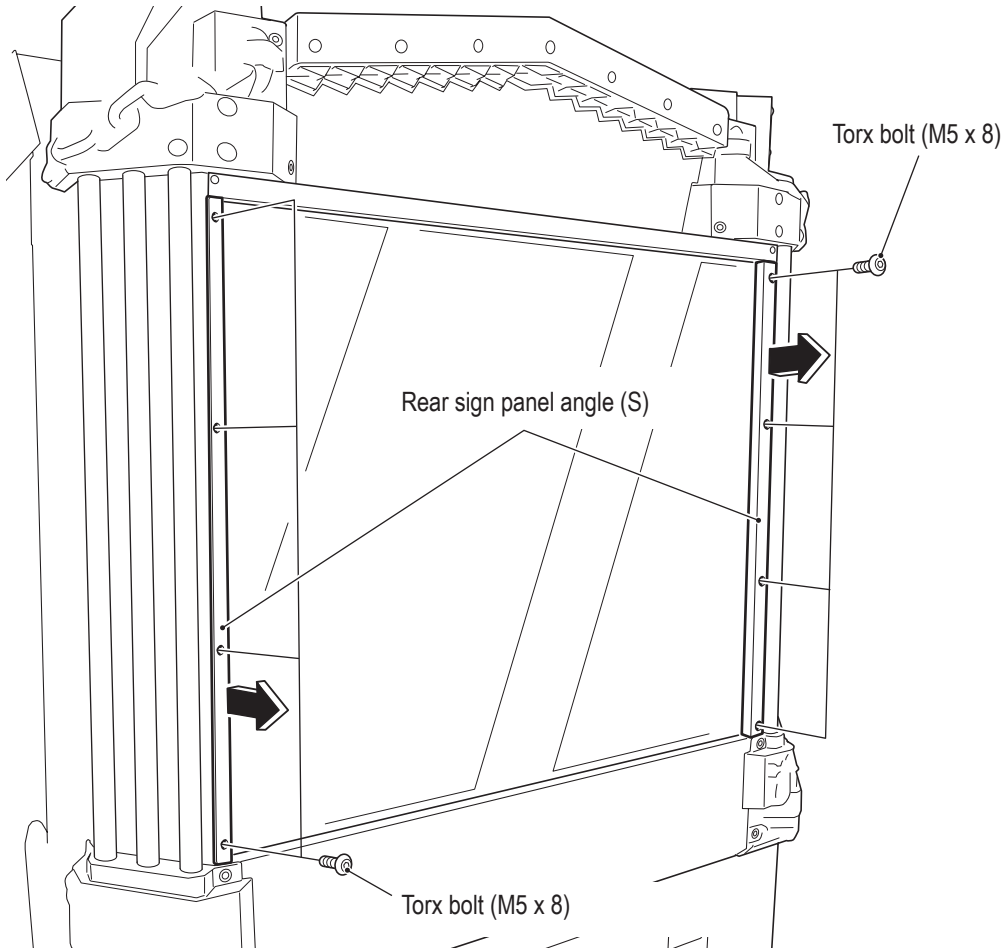
(7) Replacing LED Modules

- Replacing a LED module inside the rear sign panel.

**⚠ WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

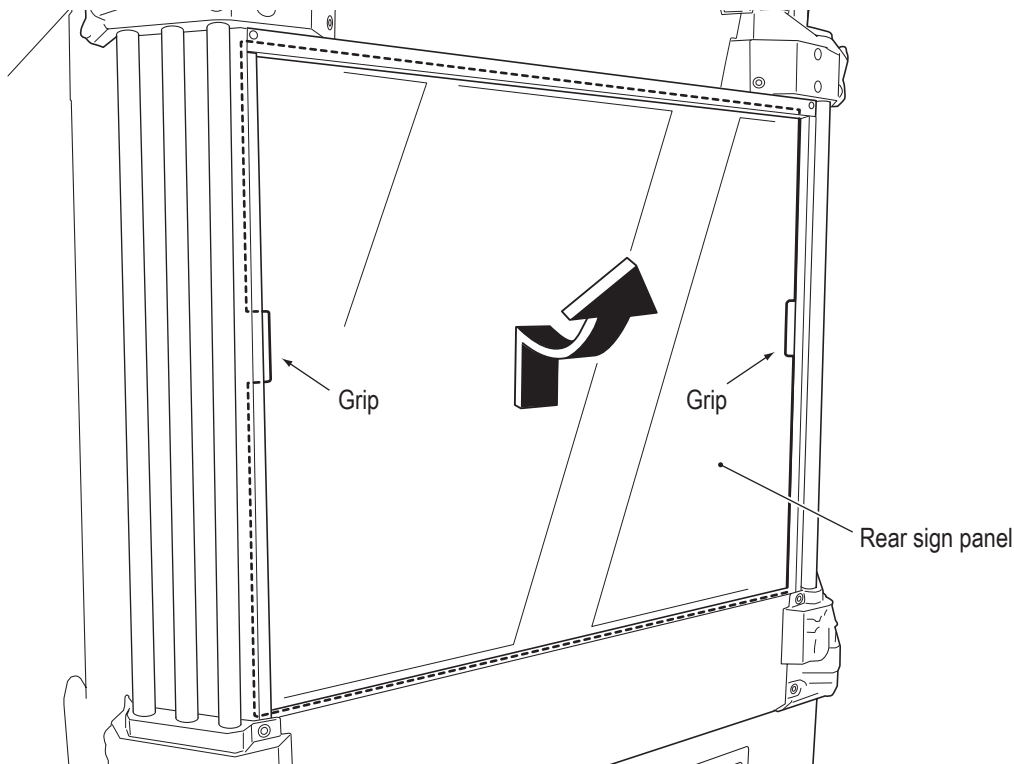
- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the four Torx bolts (M5 x 8) from each side (total eight bolts), and remove the two rear sign panel angles (S) from the front of the rear assembly.



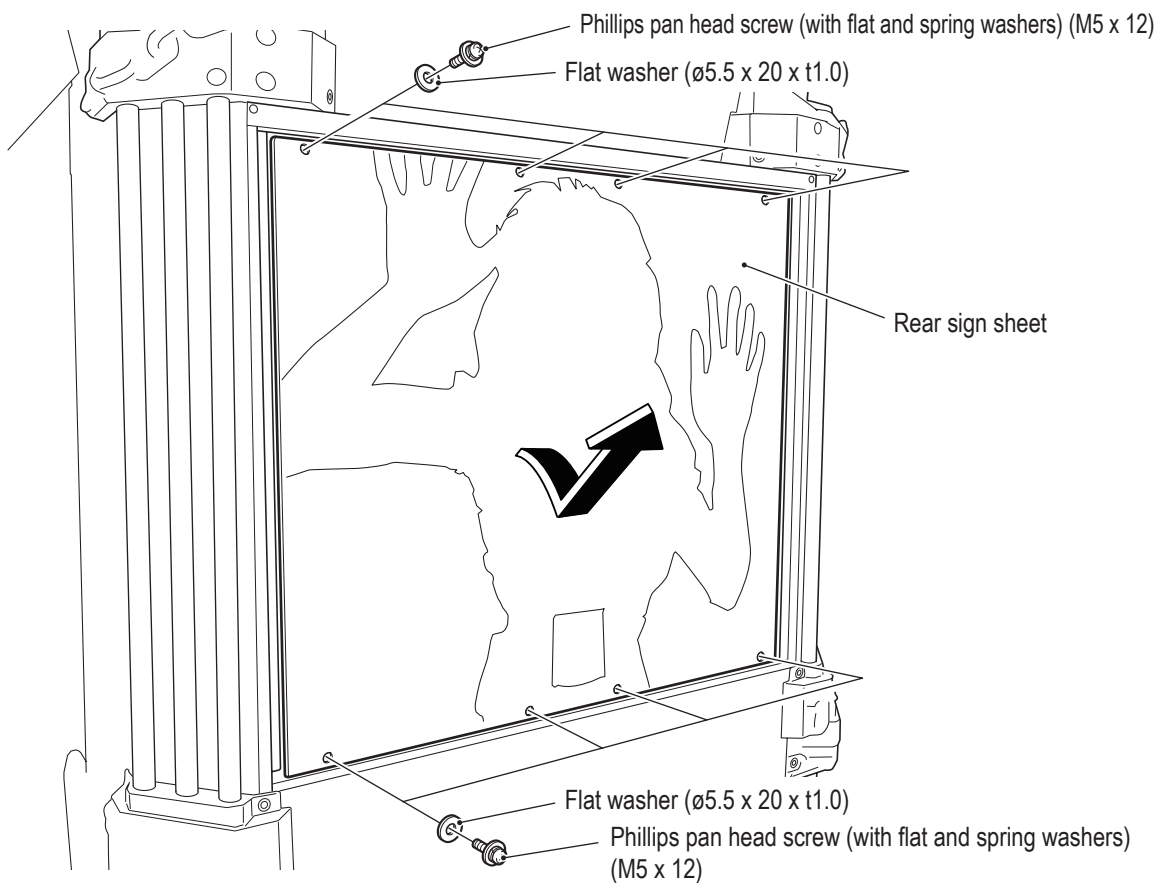


**- Must be performed by a technician -**

- 3** Hold the grips of the rear sign panel, lift up slightly, and then pull downward and out to remove the panel.



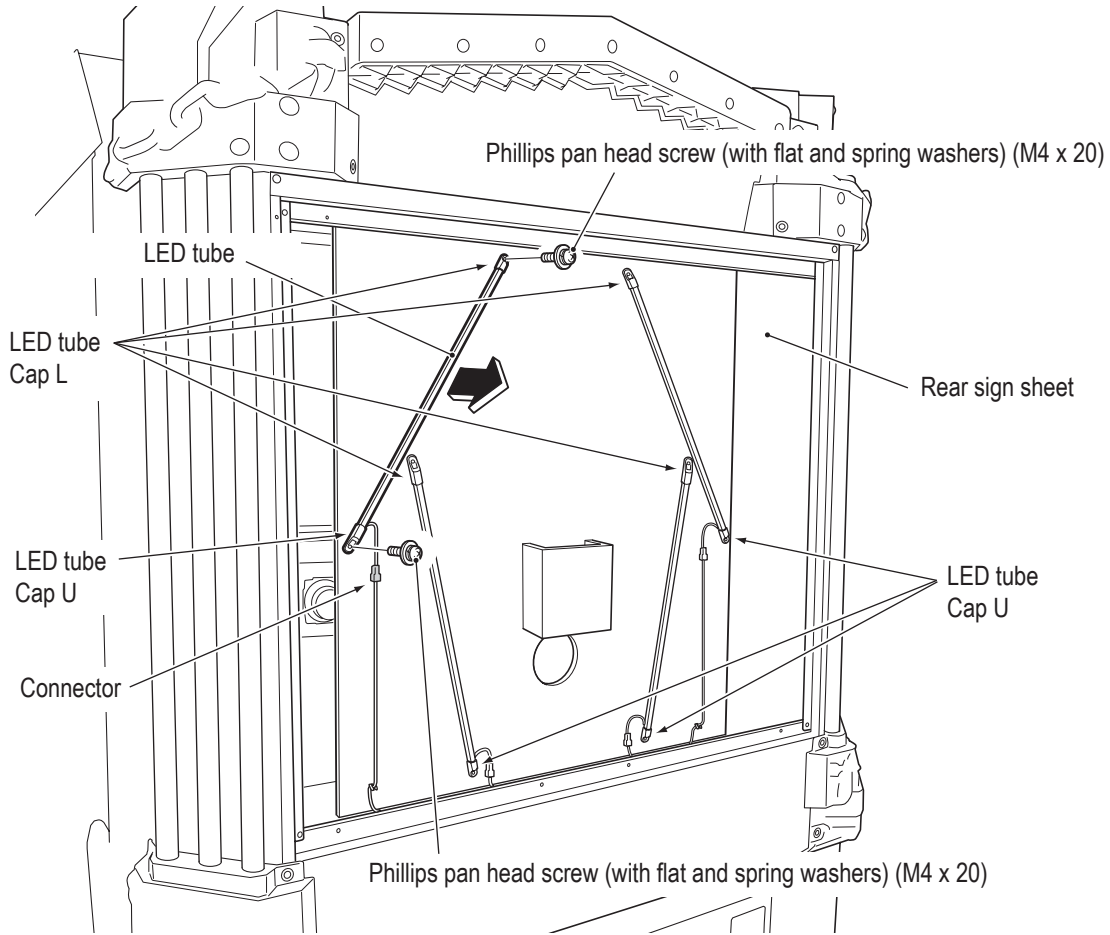
- 4** Remove the eight flat washers (ø5.5 x 20 x t1.0) and eight Phillips pan head screws (with flat and spring washers) (M5 x 12), and remove the rear sign sheet.



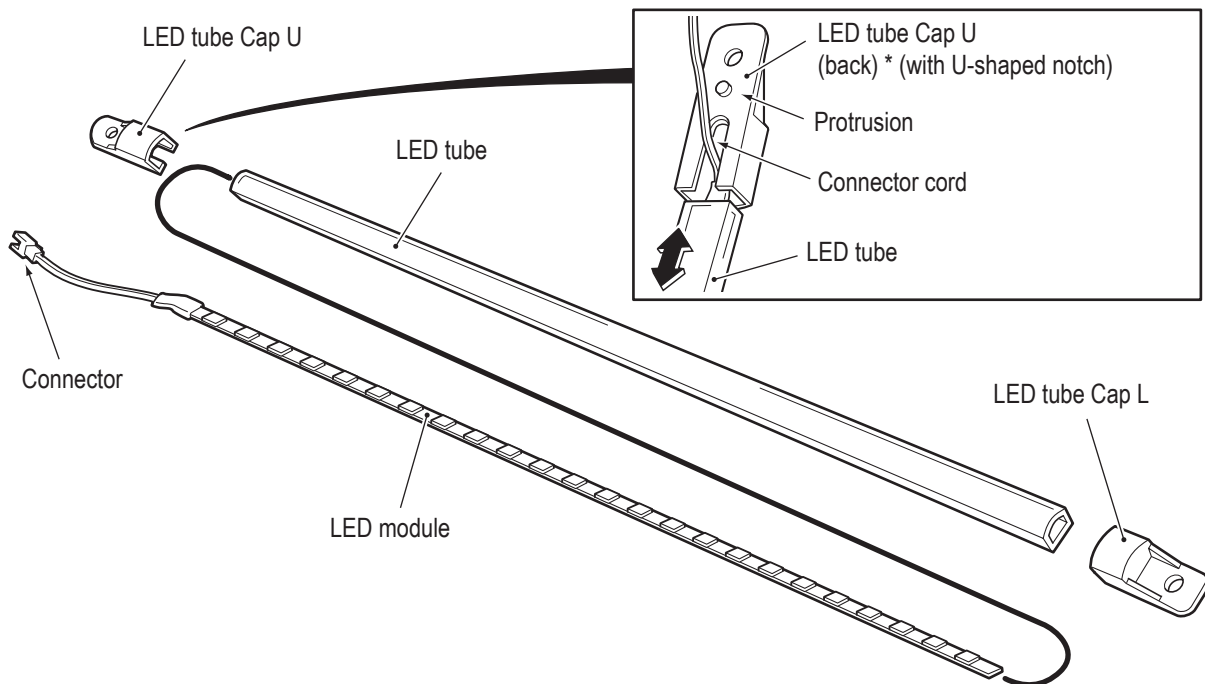
1  
2  
3  
4  
5  
6  
7  
8A  
8B  
9  
10  
11  
12

**- Must be performed by a technician -**

- Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 20) securing the LED tube caps U and L at the top and bottom of the LED tube containing the LED module to be replaced, disconnect the connector, and then remove the LED tube.



- Remove the LED tube caps U and L, and remove and replace the LED module.



- Must be performed by a technician -

---

**7** To install, perform the procedure in reverse.



- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- After replacing the LED module, turn on the power switch and check the LED lighting operation.

1

2

3

4

5

6

7

8A

**8B**

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

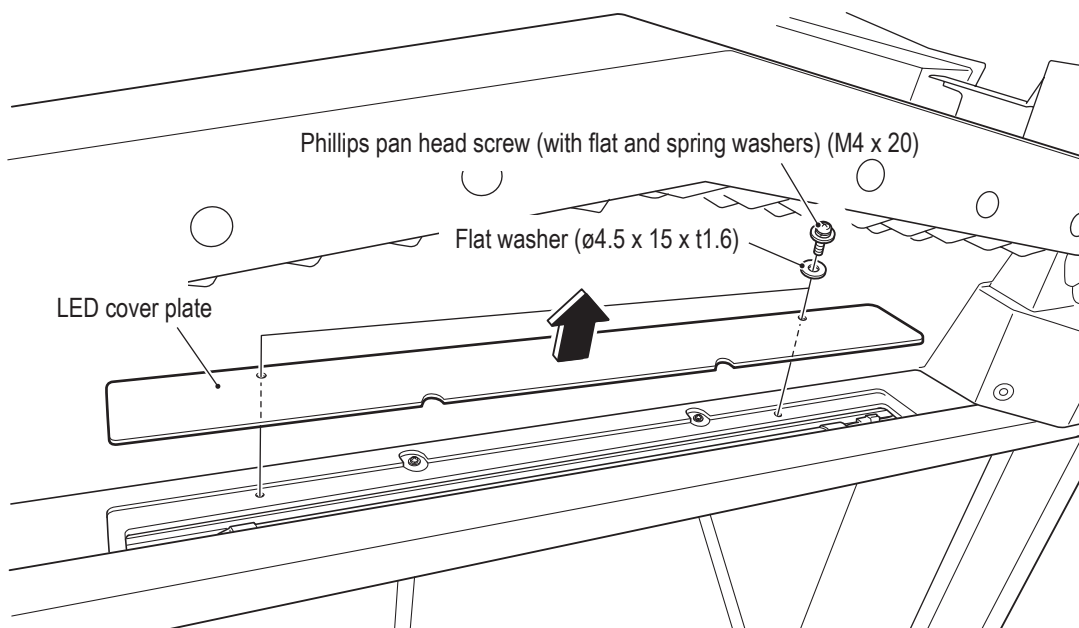
**- Must be performed by a technician -**

- Replacing the LED module at the front of the top cover center

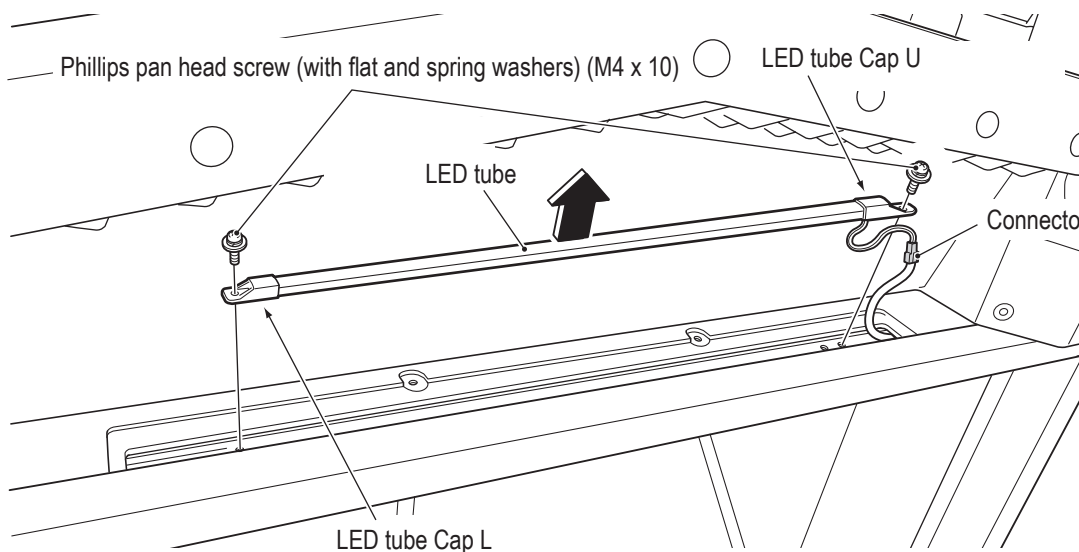
**! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.
- The work is performed while standing in a high location. Use a stool or ladder. Working in an unnatural body posture may result in injury or machine damage.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the two flat washers ( $\phi 4.5 \times 15 \times t1.6$ ) and two Phillips pan head screws (with flat and spring washers) (M4 x 20), and remove the top LED cover plate.

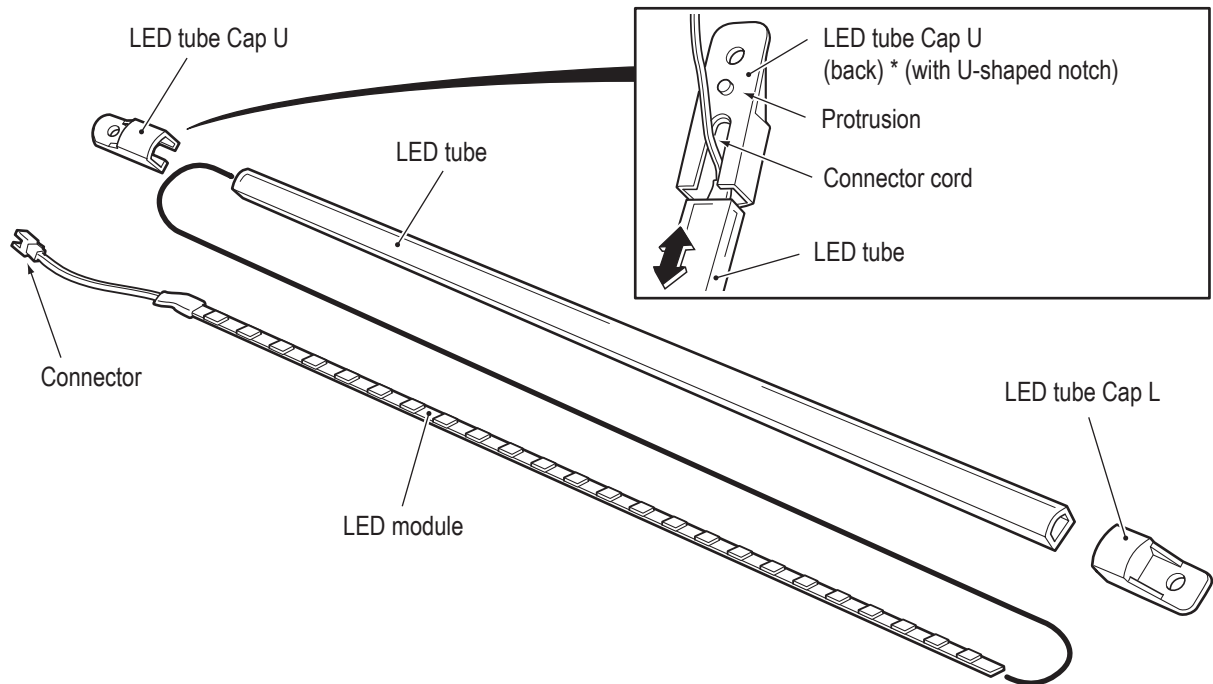


- 3** Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 10), disconnect the connector, and remove the LED tube.



**- Must be performed by a technician -**

**4** Remove the LED tube caps U and L, and remove and replace the LED module.



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

**NOTICE**

- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- After replacing the LED module, turn on the power switch and check the LED lighting operation.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B**
- 9
- 10
- 11
- 12

Service/Technician's Manual

- Test Mode
- Troubleshooting

## - Must be performed by a technician -

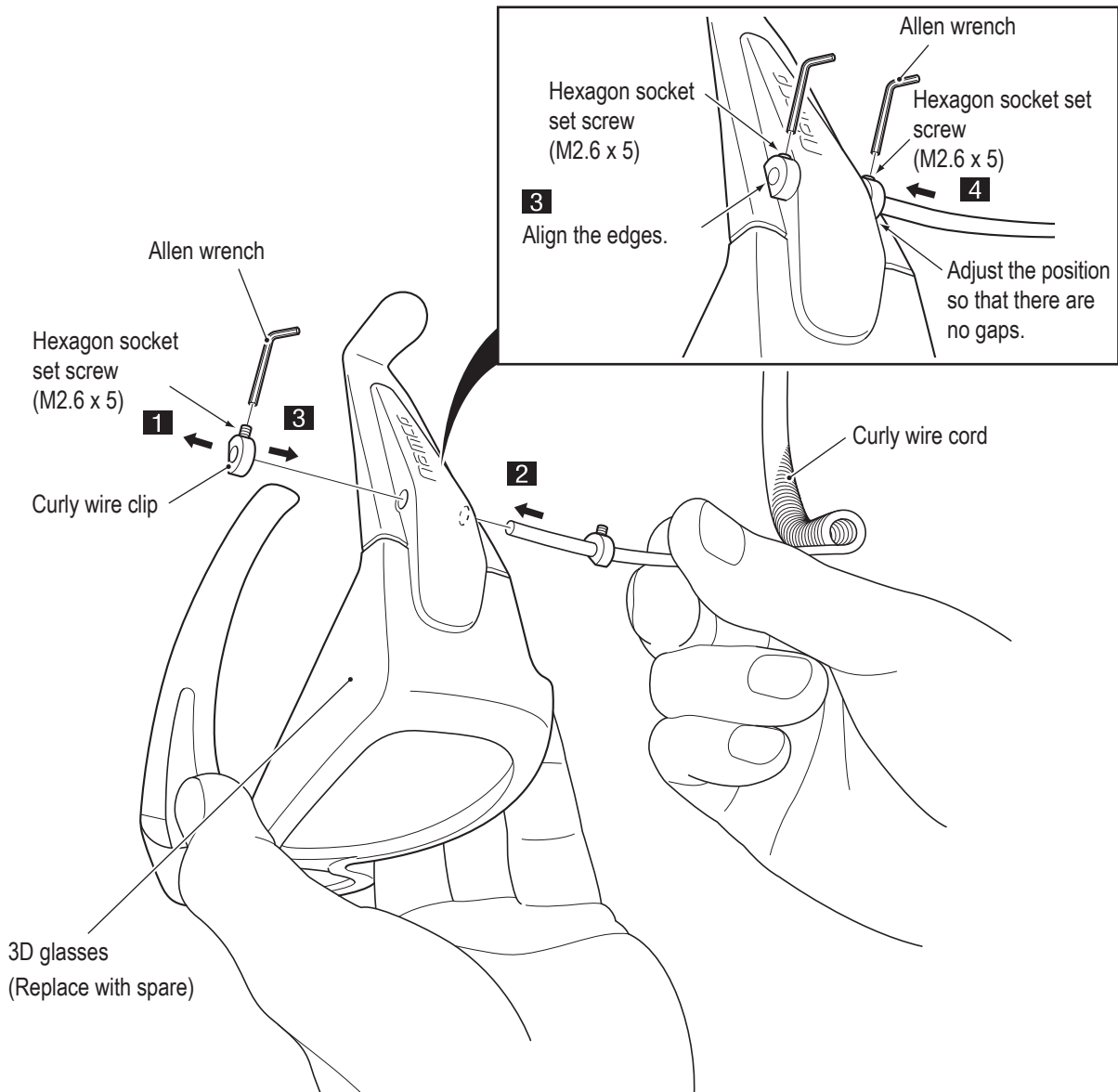
### (8) Replacing the 3D Glasses

3D glasses are attached to both the L and R sides of the rear assembly. The description below explains how to replace the 3D glasses on the L side. Perform the same procedure to replace the 3D glasses on the R side.



- Replace the 3D glasses when they become damaged or excessively dirty.

- 1** Use the supplied Allen wrench to loosen the hexagon socket set screw (M2.6 x 5), remove the curly wire clip, and remove the 3D glasses from the curly wire cord.
- 2** Insert the curly wire cord into the hole in the temple of the new 3D glasses from the bottom.
- 3** Attach the curly wire clip so that the edge is aligned flat with the tip of the curly wire cord, and tighten the hexagon socket set screw (M2.6 x 5) with the supplied Allen wrench to secure the curly wire clip.
- 4** Adjust the curly wire clip on the other side so that there are no gaps between the curly wire clips and the temple of the 3D glasses.



- 5** Perform the same procedure to replace the 3D glasses on the R side.



- The curly wire cord is attached to different sides of the 3D glasses for the R and L sides. Be careful to attach the curly wire cord to the correct side.

**- Must be performed by a technician -**

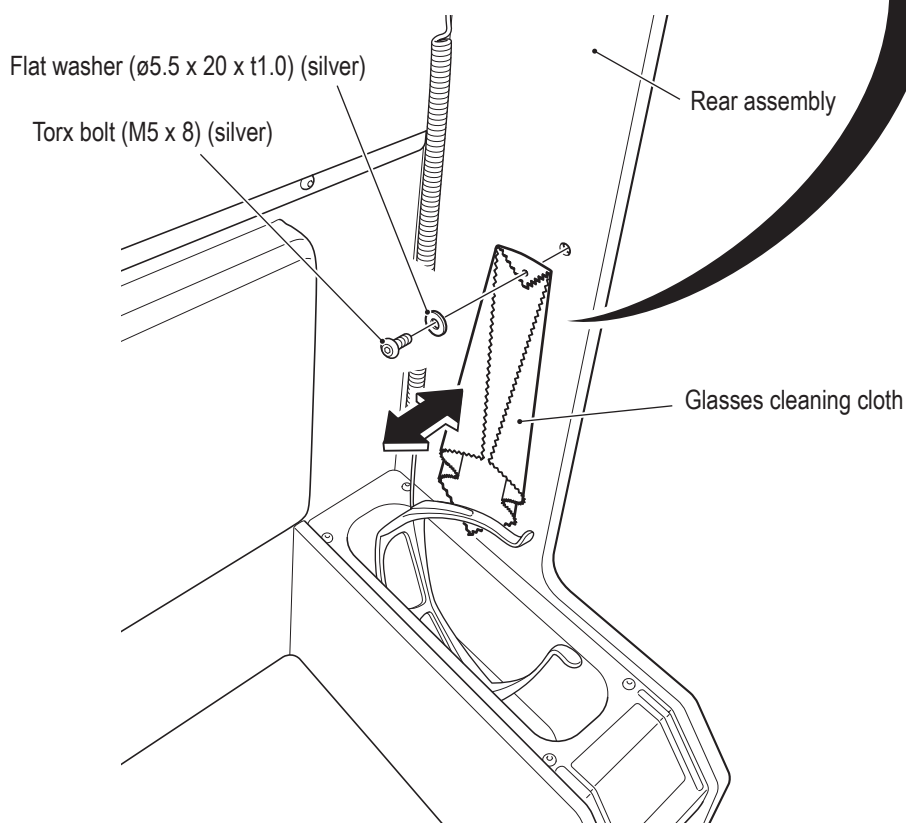
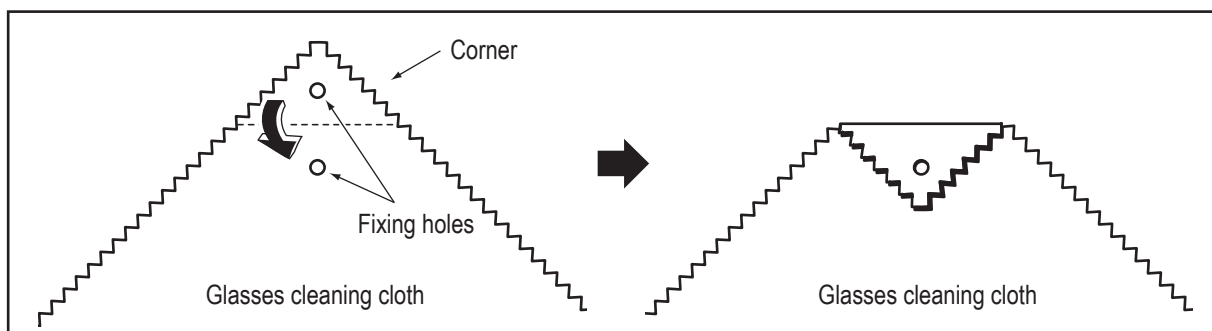
### (9) Replacing the Glasses Cleaning Cloth

Glasses cleaning cloths are attached to both the L and R sides of the rear assembly. The description below explains how to replace the glasses cleaning cloths on the L side. Perform the same procedure to replace the glasses cleaning cloths on the R side.



● **Replace the glasses cleaning cloth when it becomes damaged or excessively dirty.**

- 1** Fold over the corner of the glasses cleaning cloth with the fixing holes so that the fixing holes are aligned.
- 2** Remove the Torx bolt (M5 x 8) (silver) and the flat washer (ø5.5 x 20 x t1.0) (silver), and remove the old glasses cleaning cloth.
- 3** Reverse the procedure in step **2** to attach the glasses cleaning cloth to the inside of the rear assembly.



- 4** Perform the same procedure to also attach the R side glasses cleaning cloth.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

- Must be performed by a technician -

---

## 8B-4-5 Signboard Box Assembly

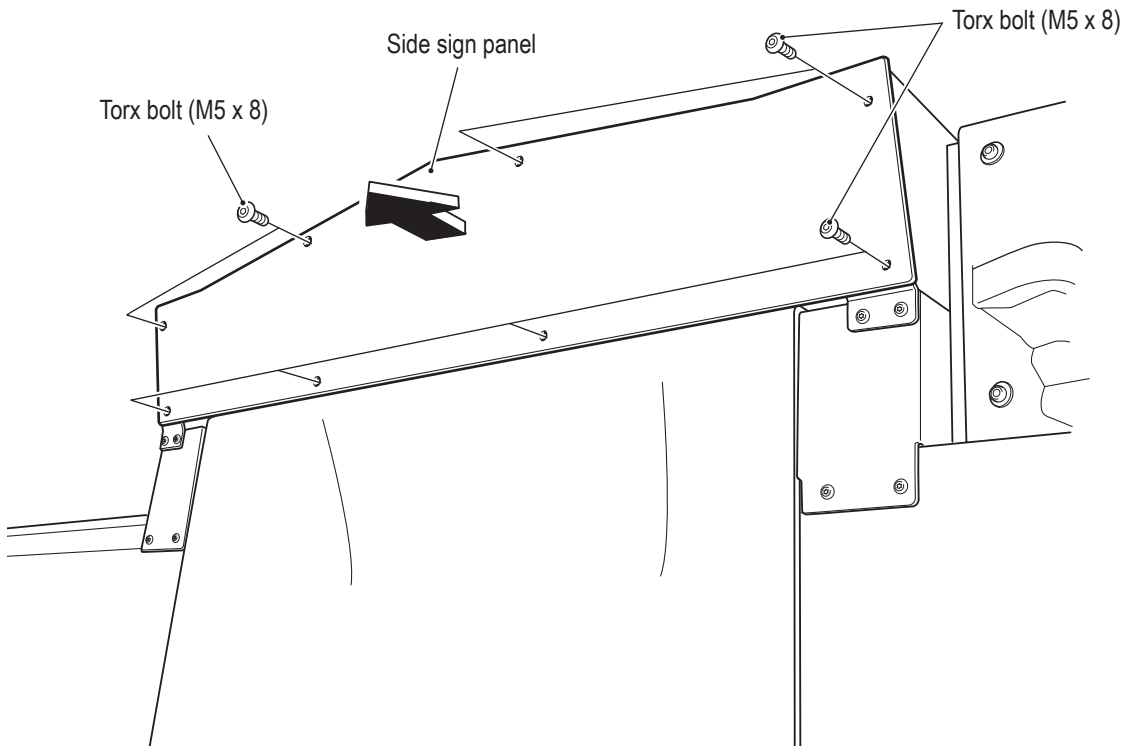
### (1) Replacing LED Modules

The description below explains how to remove and install the L side. Perform the same procedure to remove and install the R side.

#### **! WARNING**

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.
- The work is performed while standing in a high location. Use a stool or ladder. Working in an unnatural body posture may result in injury or machine damage.

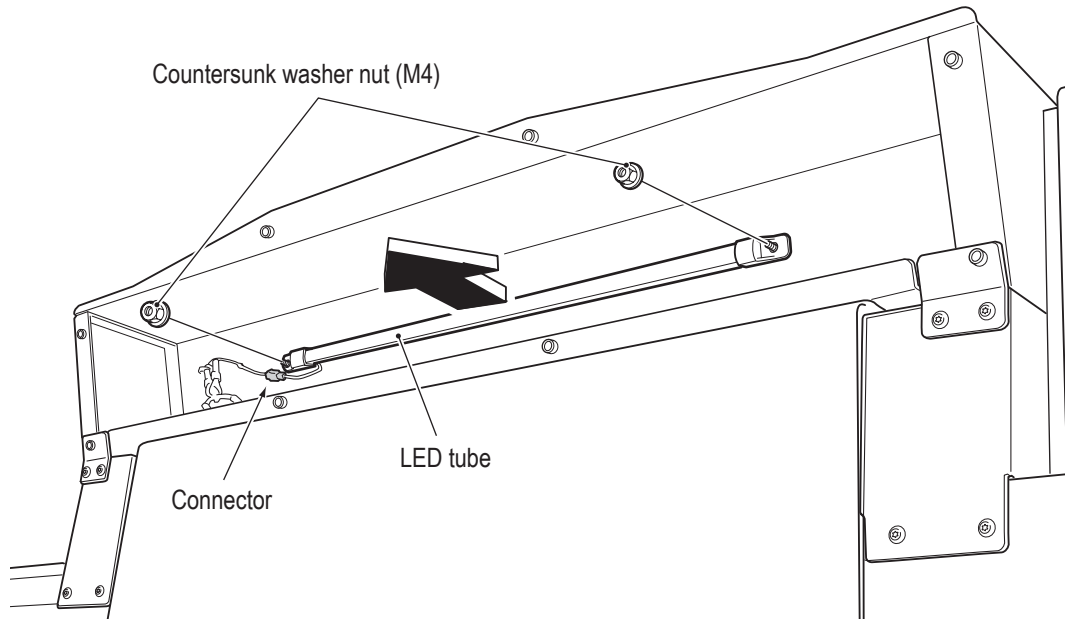
- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the eight Torx bolts (M5 x 8), and remove the side sign panel.



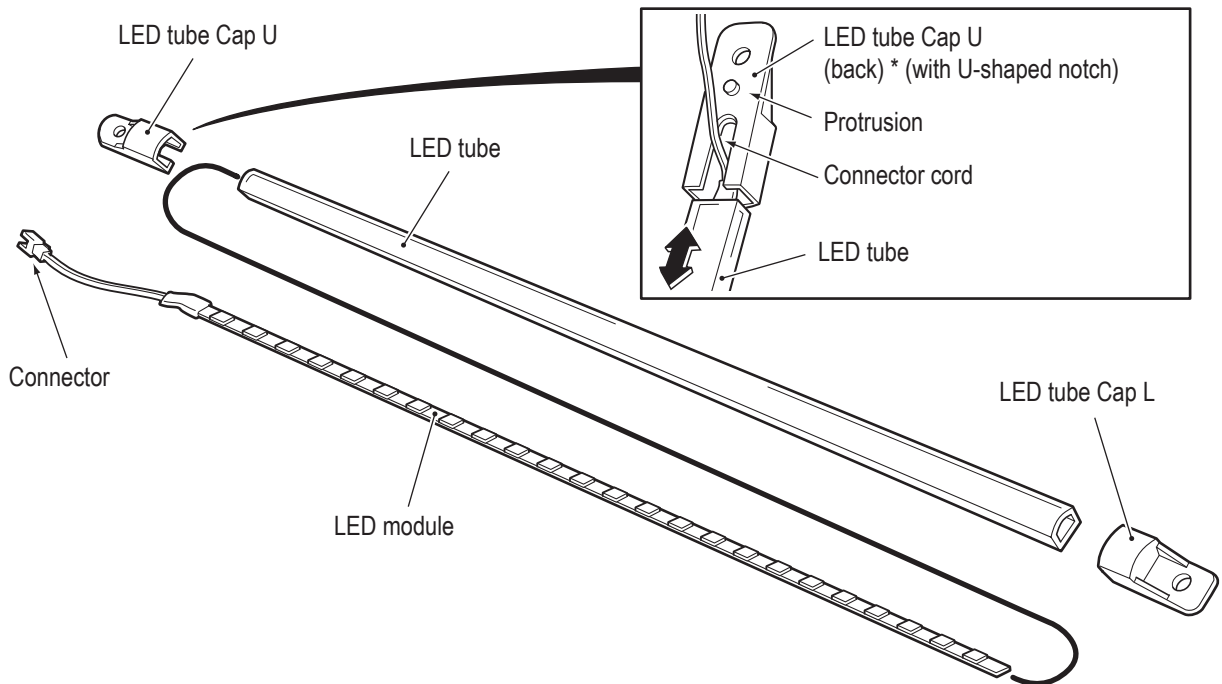


**- Must be performed by a technician -**

**3** Remove the two countersunk washer nuts (M4), disconnect the connector, and remove the LED tube.



**4** Remove the LED tube caps U and L, and remove and replace the LED module.



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

**NOTICE**

- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- After replacing the LED module, turn on the power switch and check the LED lighting operation.

1  
2  
3  
4  
5  
6  
7  
8A  
8B  
9  
10  
11  
12

Service/Technician's Manual

Test Mode  
Troubleshooting

- Must be performed by a technician -

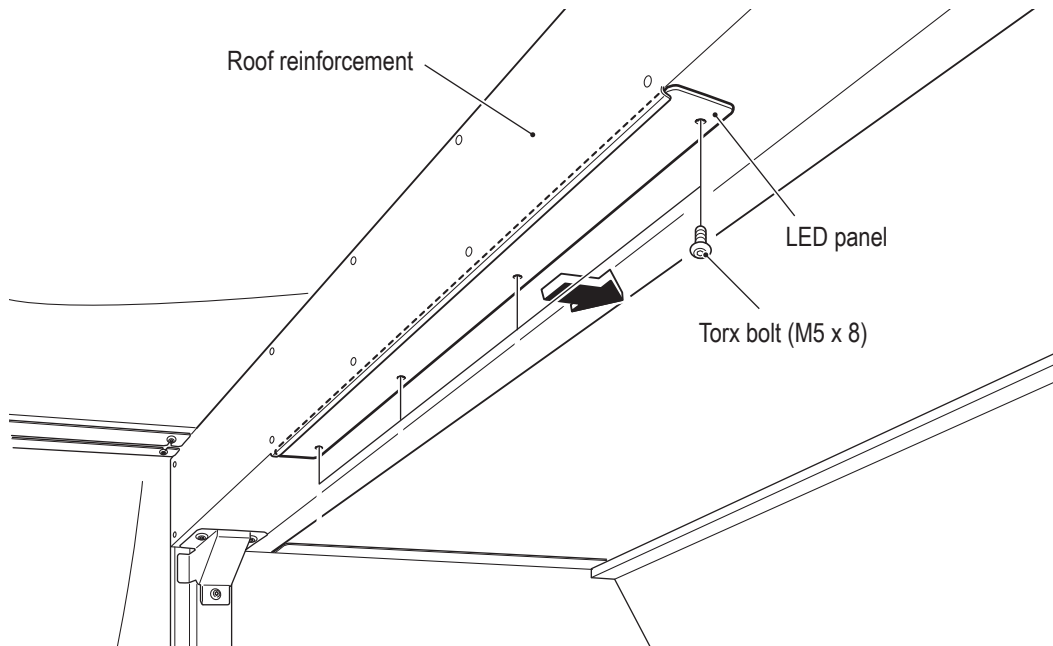
## 8B-4-6 Wall Assembly

### (1) Replacing LED Modules

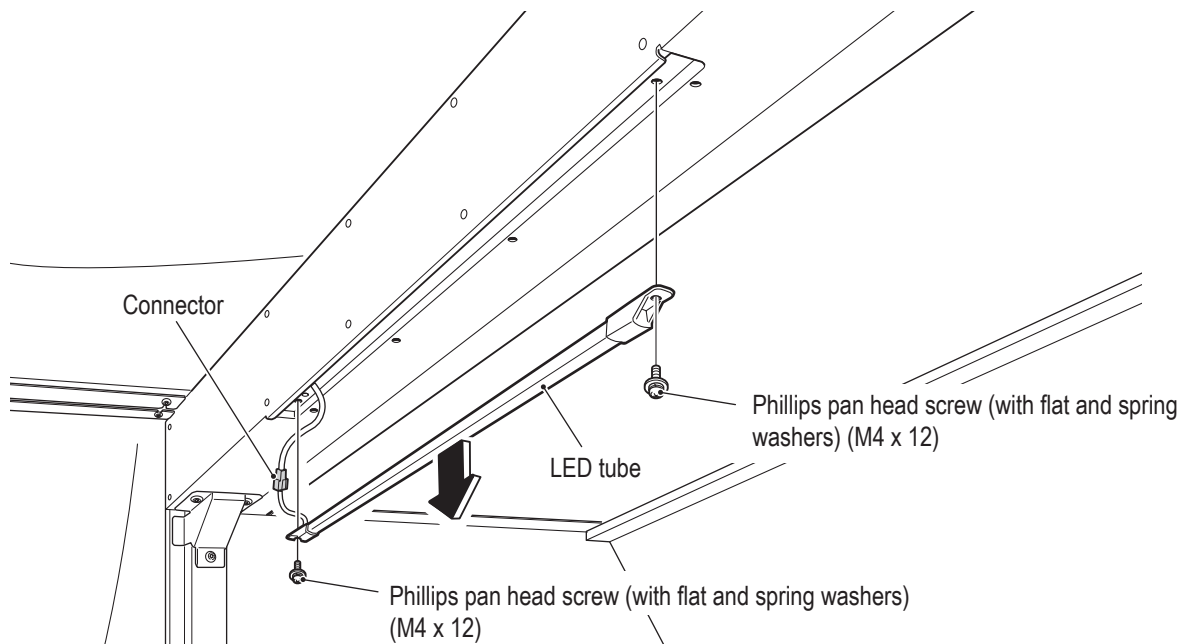
#### WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

- 1** Turn off the power switch of the machine. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the four Torx bolts (M5 x 8), and remove the LED panel from the roof reinforcement.

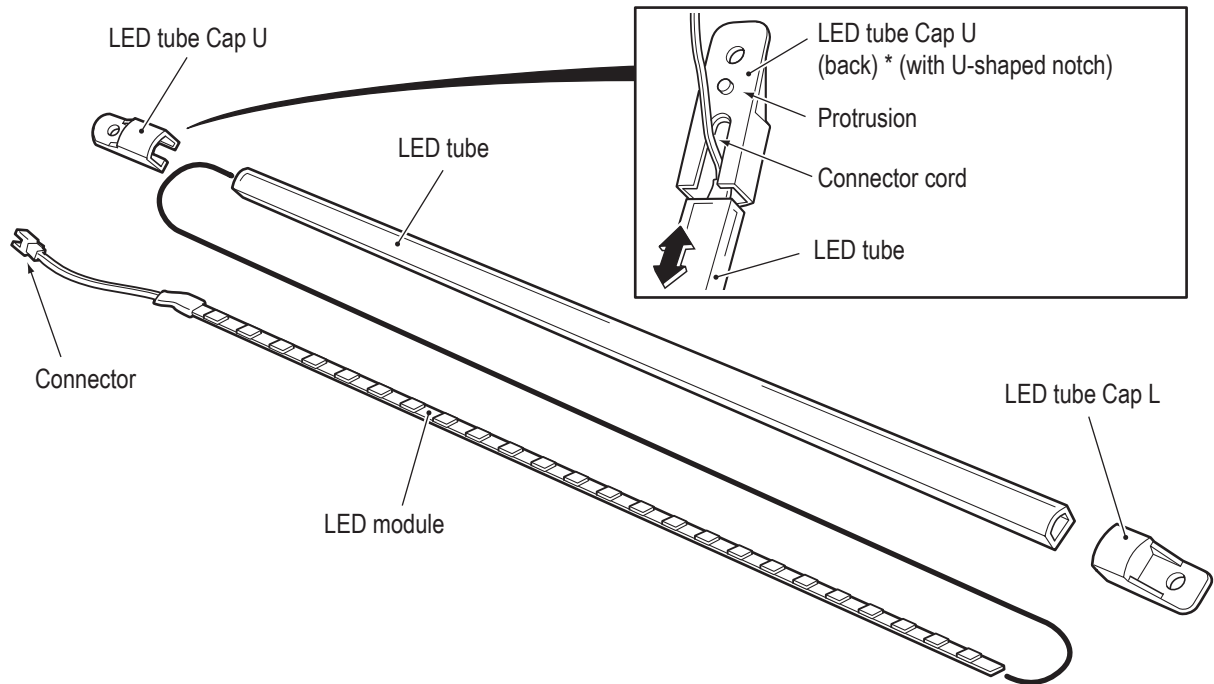


- 3** Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 12), disconnect the connector, and remove the LED tube.



**- Must be performed by a technician -**

- 4** Remove the LED tube caps U and L, and remove and replace the LED module.



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

**NOTICE**

- When installing, lock the connectors securely.
- When installing, be careful not to pinch the connectors and harness.
- After replacing the LED module, turn on the power switch and check the LED lighting operation.

1

2

3

4

5

6

7

8A

8B

9

10

11

12

Service/Technician's Manual

Test Mode

Troubleshooting

- Must be performed by a technician -

## 8B-5 LCD Monitor Adjustment

### ⚠ WARNING

- To avoid electric shock, accidents or injuries to yourself or other people, or damage to the electronic circuits, be sure to turn off the power switch before starting work.

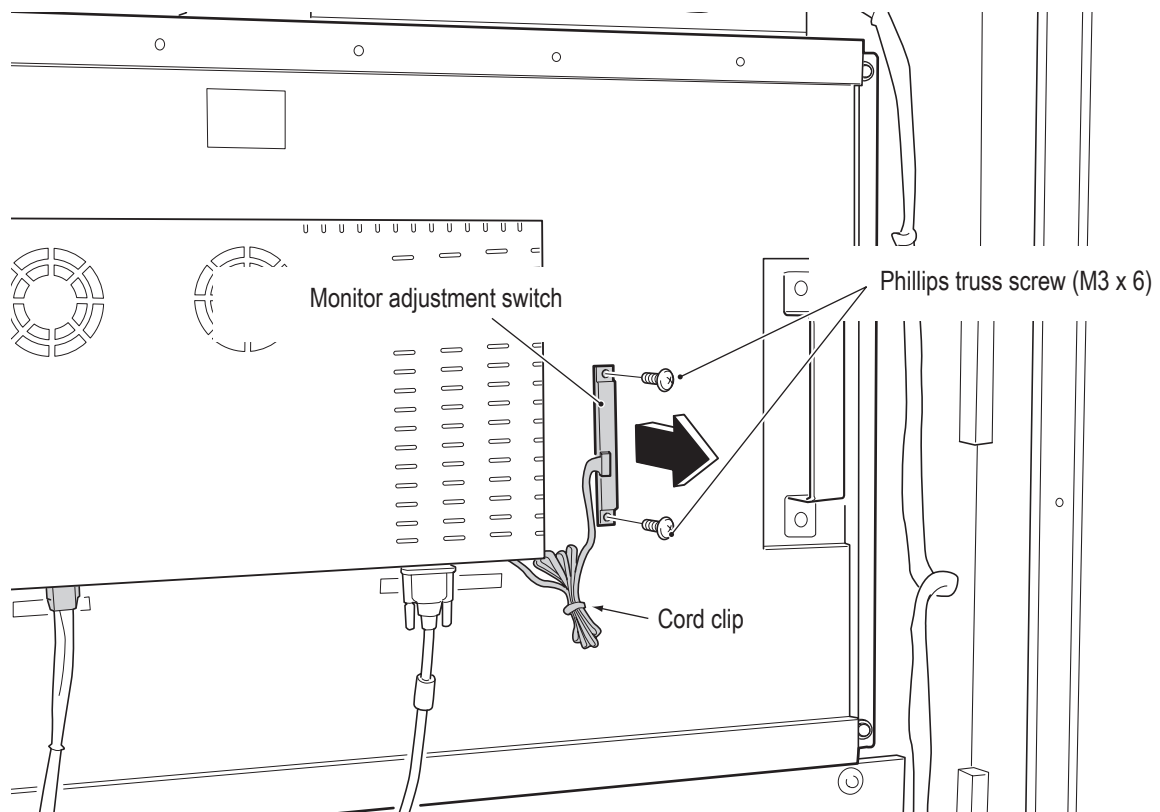
### NOTICE

- The LCD monitor is adjusted to the optimal condition for the machine when shipped from the factory. Normally there is no need for further adjustment.

### 8B-5-1 Removing and Installing the Monitor Adjustment Switches

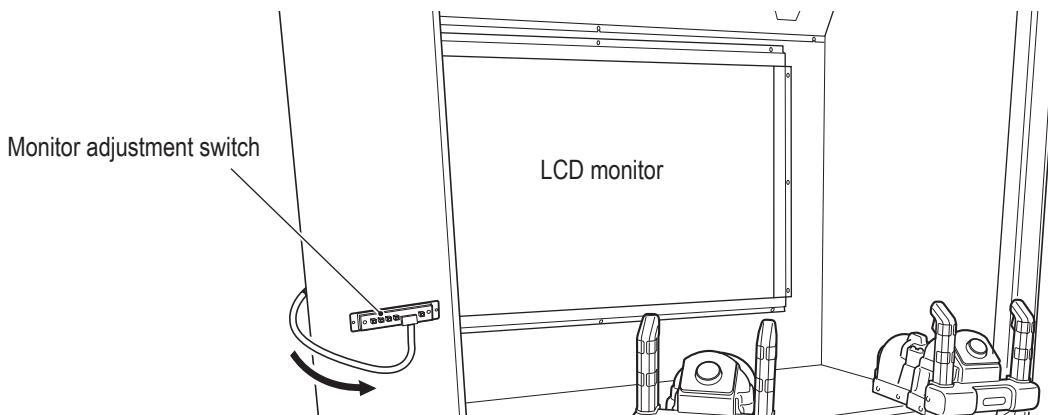
The monitor adjustment switches are located on the back of the monitor. When adjusting the LCD monitor, the monitor adjustment switches must be pulled out to a position from where the monitor screen can be seen.

- 1** Turn off the power switch. (See "8A-8-1 Turning the Power Switch On" on page 95.)
- 2** Remove the service panel U from the front assembly. (See step **2** of "8B-4-1(5) Replacing the AIR CAN PC Board" on page 111.)
- 3** Remove the two Phillips truss screws (M3 x 6), and remove the monitor adjustment switches.

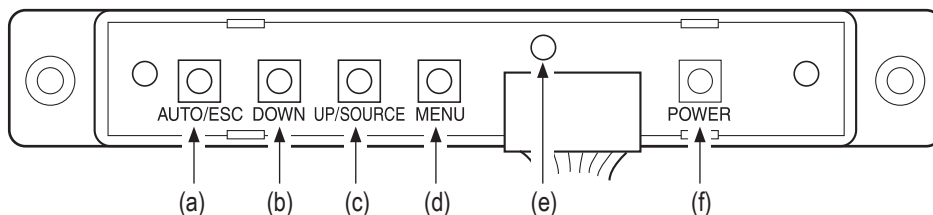


**- Must be performed by a technician -**

- 4** Open the cord clip, and pull the monitor adjustment switches around the outside of the front assembly to a position from where the monitor screen can be seen.



- 5** Turn on the power switch and adjust the LCD monitor. (See "8B-5-2 LCD Monitor Picture Quality Adjustment" on page 164 and "8B-5-3 LCD Monitor Settings" on page 165.)



OSD key	Function
(a) AUTO/ESC button	Returns to the previous item.
(b) DOWN button	Selects the next lower item or increases the value.
(c) UP/SOURCE button	When pressed during OSD screen display, this selects the next upper item or decreases the value. (When pressed other than during OSD screen display, this selects the input source. Normally this button is not used.)
(d) MENU button	Displays the menu and enters the selected item or setting.
(e) LED lamp	Green: Power ON Red: Power ON (no signal) Off: Power OFF
(f) POWER button	Turns the monitor on and off. (Normally this button is not used.)

- 6** After finishing the adjustments, turn off the power switch and install the monitor adjustment switches by reversing the procedure in steps **2** to **4**.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B**
- 9
- 10
- 11
- 12

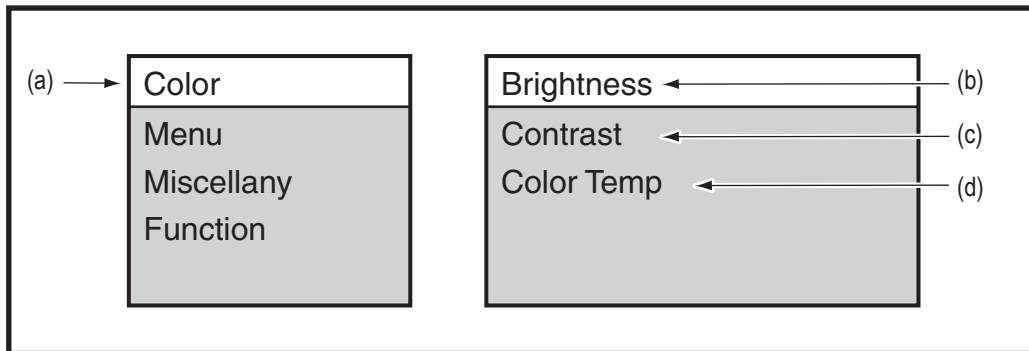
Service/Technician's Manual

- Test Mode
- Troubleshooting

**- Must be performed by a technician -**

**8B-5-2 LCD Monitor Picture Quality Adjustment**

- 1** Move the monitor adjustment switches to a position from where the monitor images can be checked. (See “8B-5-1 Removing and Installing the Monitor Adjustment Switches” on page 162.)
- 2** Turn on the power switch of the machine (cabinet), and also turn on the power switch of the LCD monitor if it is off. (See step **5** of “8B-5-1 Removing and Installing the Monitor Adjustment Switches” on page 163.)
- 3** Press the MENU button to display the OSD screen.



Picture Quality Adjustment screen

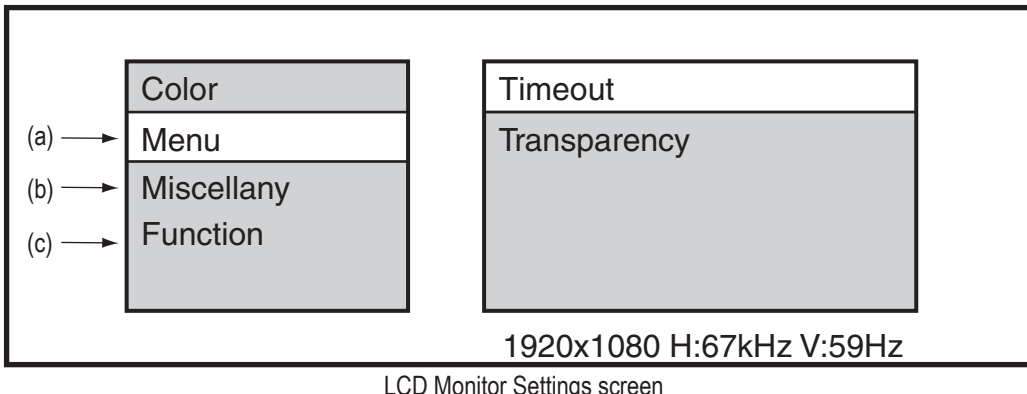
Item	Function
(a) Color	Picture quality adjustment
(b) Brightness	Brightness adjustment
(c) Contrast	Contrast adjustment
(d) Color Temp	Color temperature adjustment

- 4** Press the MENU button to select “Color”.
- 5** Press the UP/SOURCE button or DOWN button to select the item to be adjusted, and then press the MENU button to enter the selection.
- 6** Press the UP/SOURCE button or DOWN button to change the item setting, and then press the MENU button to enter the setting.
- 7** After finishing the adjustments, press the AUTO/ESC button repeatedly until the OSD screen disappears.
- 8** Turn off the power switch of the machine (cabinet).
- 9** Return the monitor adjustment switches to their original position. (See “8B-5-1 Removing and Installing the Monitor Adjustment Switches” on page 162.)

**- Must be performed by a technician -**

### 8B-5-3 LCD Monitor Settings

- 1** Move the monitor adjustment switches to a position from where the monitor images can be checked. (See “8B-5-1 Removing and Installing the Monitor Adjustment Switches” on page 162.)
- 2** Turn on the power switch of the machine (cabinet), and also turn on the power switch of the LCD monitor if it is off. (See step **5** of “8B-5-1 Removing and Installing the Monitor Adjustment Switches” on page 163.)
- 3** Press the MENU button to display the OSD screen.



Item	Function
(a) Menu	Time out: Sets the OSD time-out time. Transparency: Sets the OSD transparency.
(b) Miscellany	Select “Reset” and then “Yes” to return to the default settings.
(c) Function	Sets the screen aspect ratio. [4:3, 16:9]

- 4** Press the MENU button to select the item.
- 5** Press the UP/SOURCE button or DOWN button to select the item to be adjusted, and then press the MENU button to enter the selection.
- 6** Press the UP/SOURCE button or DOWN button to change the item setting, and then press the MENU button to enter the setting.
- 7** After finishing the adjustments, press the AUTO/ESC button repeatedly until the OSD screen disappears.
- 8** Turn off the power switch of the machine (cabinet).
- 9** Return the monitor adjustment switches to their original position. (See “8B-5-1 Removing and Installing the Monitor Adjustment Switches” on page 162.)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B**
- 9
- 10
- 11
- 12

Service/Technician's Manual

Test Mode  
Troubleshooting

# 9. Disposal

---

## WARNING

- When disposing of the machine, follow the applicable regulations for collection, transportation and disposal.
- When delegating the collection, transportation and disposal of the machine, be sure to delegate to specialists in each field.
- Dispose of used lithium batteries in accordance with applicable regulations.
- When disposing of lithium batteries, wrap tape or other insulating material around the (+) and (-) electrodes to insulate them. Contact between the electrodes and other metals or batteries may cause the lithium battery to ignite or rupture.



# MEMO

1

2

3

4

5

6

7

8A

8B

**9**

10

11

12

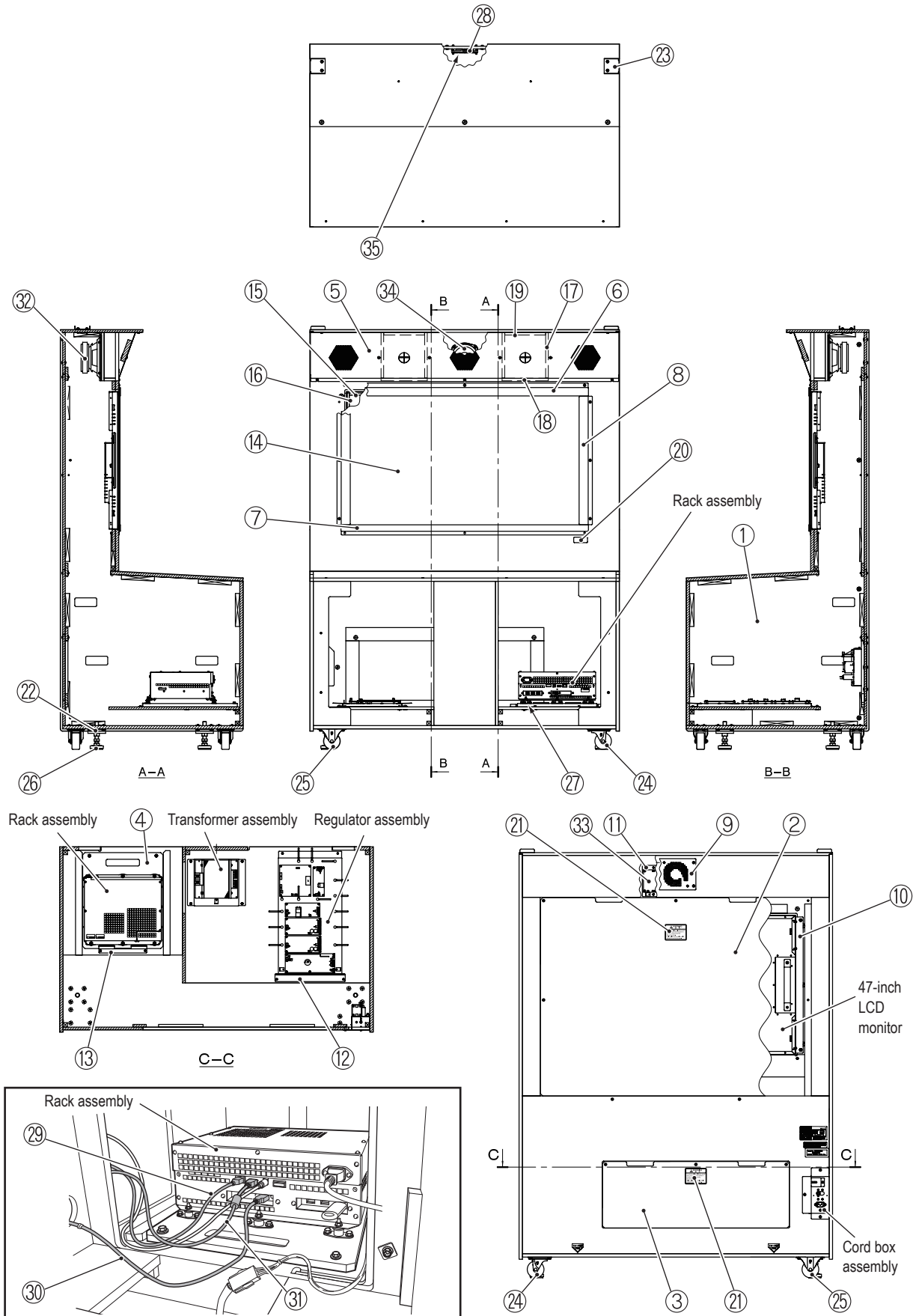
Disposal

Test Mode

Troubleshooting

# 10. Parts List

## 10-1 Front Assembly



No.	Name	Qty.	Type and rating	Part No.
1	Front cabinet	1		730-980
2	Service panel U	1		730-981
3	Service panel L	1		730-982
4	Rack board	1		730-983
5	Front plate	1		730-984
6	Monitor panel retainer upper	1		730-985
7	Monitor panel retainer lower	1		730-986
8	Monitor panel retainer side	2		730-987
9	Fan plate	1		730-988
10	Monitor bracket	2		730-989
11	Air cannon PCB bracket	1		730-990
12	Regulator holder	1		730-991
13	Rack holder	1		730-992
14	Monitor panel	1		730-993
15	Panel cushion A	2		730-994
16	Panel cushion B	2		730-995
17	Air cannon cushion A	4		730-996
18	Air cannon cushion B	2		730-997
19	Air cannon cushion C	2		730-998
20	DTS logo sticker	1		461-761
21	Warning sticker Service (B) EXP	2		461-539
22	Adjuster bracket	4		450-120
23	Rope hook (D)	2	MFZn II-C, B	450-139
24	Caster (swivel type)	2	MG-75N	102-248
25	Caster (stationary type)	2	MR-75N	102-247
26	Adjuster bolt	4	D-B3 16X100	102-171
27	Round anti-vibration rubber	6	KB-20, free from hexavalent chromium	106-181
28	Fan motor	1	PAAD2A225BM-Y369	005-516
29	LAN cable	1	BIZ-LAN-S-3000	007-974
30	TOSLINK cable	1	BIZ-TOS-2000	007-973
31	HDMI-DVI cable	1	HV2500mm GB-BNG	007-919
32	Speaker	2	SD210-384X-1203	006-192
33	AIRCAN-PCB	1	RD0355-2	307-670
34	Speaker	3	F00213D0	006-166
35	Fan guard	1	109-019E	005-515

1

2

3

4

5

6

7

8A

8B

9

10

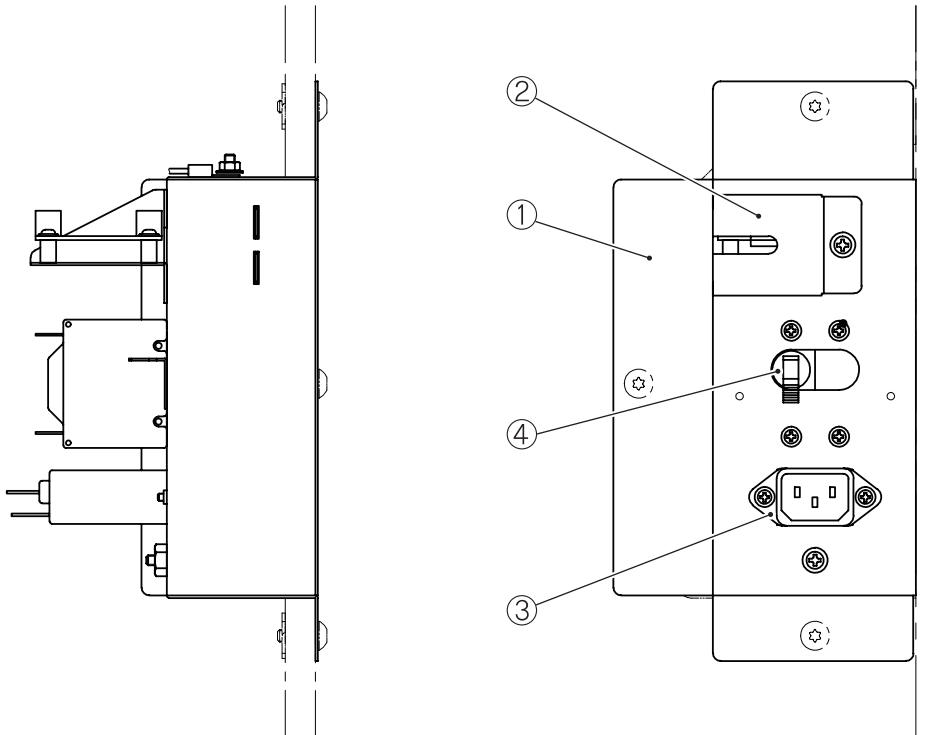
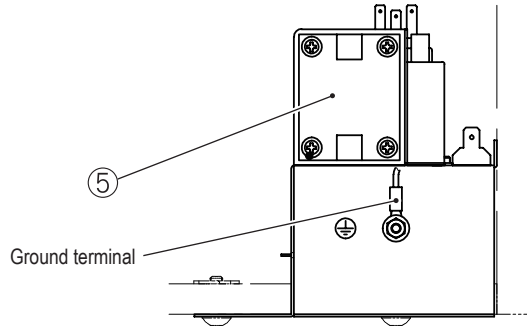
11

12

Parts List

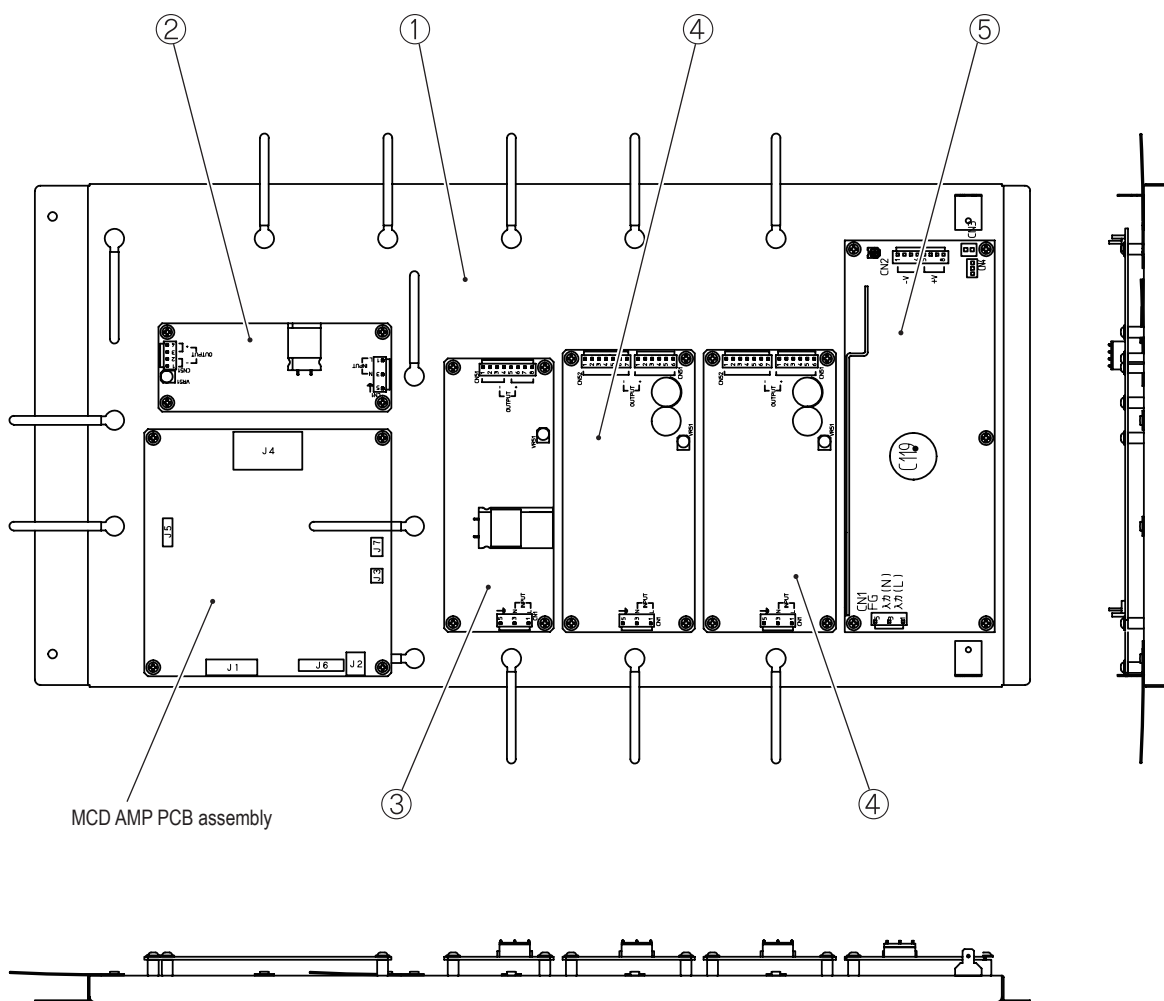
Troubleshooting

## 10-2 Cord Box Assembly



No.	Name	Qty.	Type and rating	Part No.
1	Cord box	1		731-020
2	LAN cover	1		731-021
3	Noise filter	1	10GEEG3E-R	007-205
4	Circuit Protector	1	ICP30-L-11-608-10-Z811 (AC 110V)	000-743
			ICP30-L-11-608-5-Z811 (AC 220V)	000-744
5	straight PCB	1	2642 9601	307-308

# 10-3 Regulator Assembly



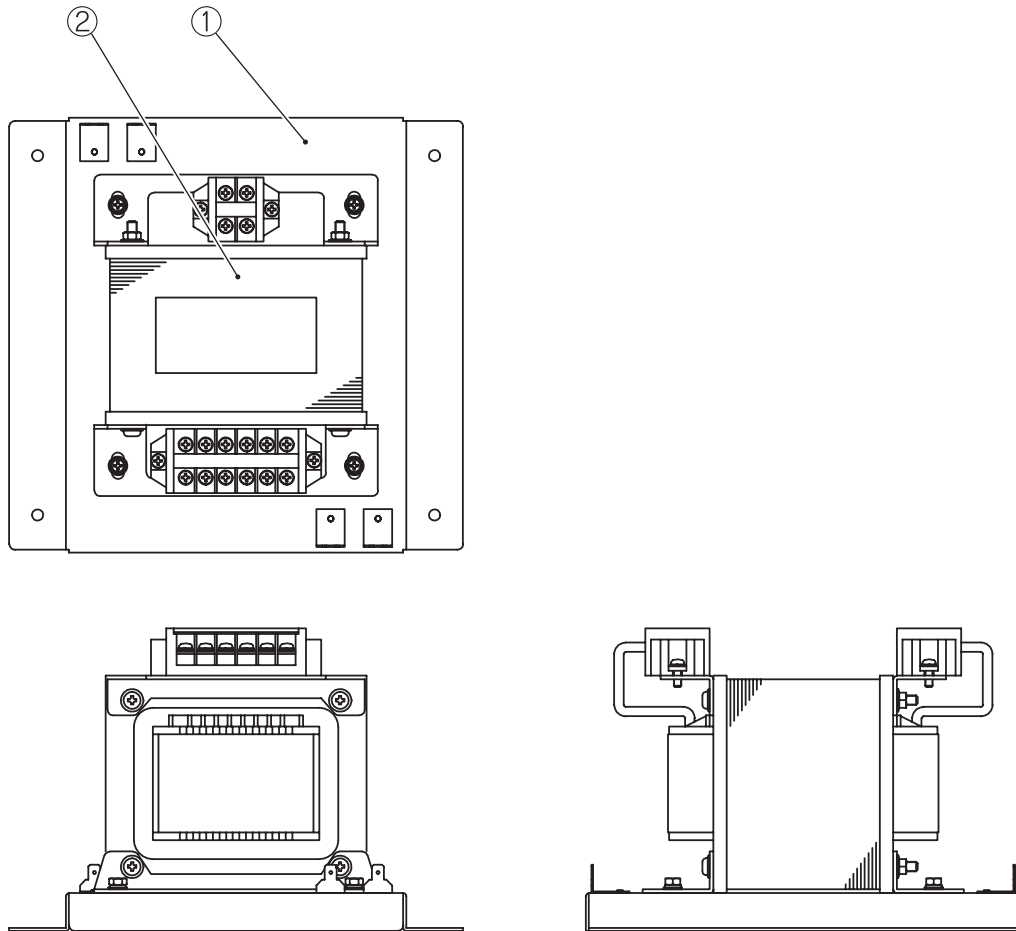
No.	Name	Qty.	Type and rating	Part No.
1	Regulator base	1		731-025
2	Switching regulator (5V)	1	VS50E-5	009-250
3	Switching regulator (12 V)	1	VS100E-12	009-270
4	Switching regulator (24V)	2	VS150E-24	009-269
5	Switching regulator (36V)	1	LEP150F-36	009-271

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Parts List

Troubleshooting

## 10-4 Transformer Assembly



No.	Name	Qty.	Type and rating	Part No.
1	Transformer base	1		731-030
2	Insulated transformer	1	S133V100PV	004-746

# MEMO

1

2

3

4

5

6

7

8A

8B

9

10

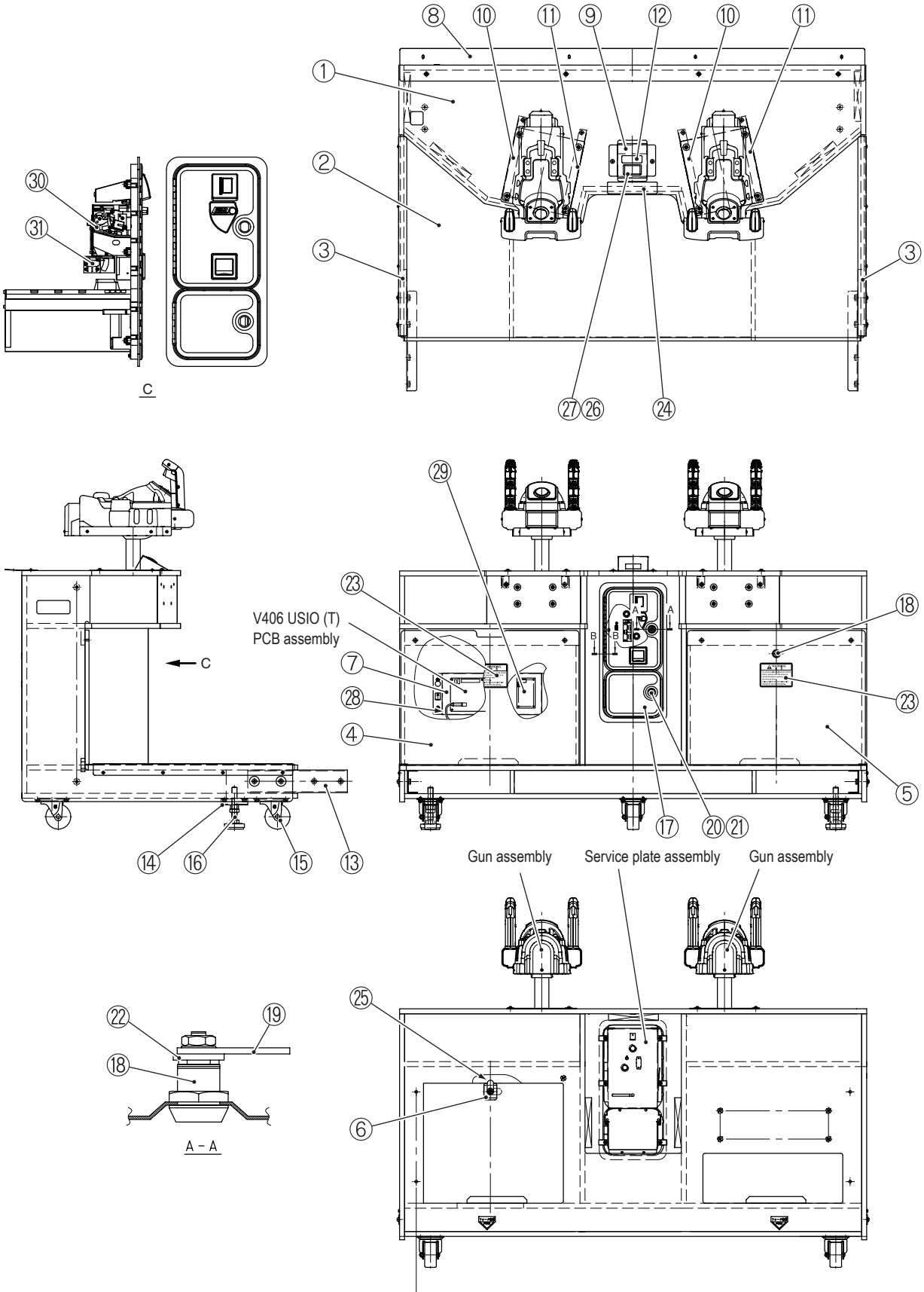
11

12

Parts List

Troubleshooting

# 10-5 Center Assembly





No.	Name	Qty.	Type and rating	Part No.
1	Center cabinet	1		731-034
2	Floor mat	2		731-035
3	Floor mat clamp	2		731-036
4	Service panel L	1		731-037
5	Service panel R	1		731-038
6	Key washer	1		450-124
7	USIO PCB base	1		731-040
8	FC middle bracket	1		731-041
9	Switch base	1		731-042
10	Gun mount bracket L	2		731-043
11	Gun mount bracket R	2		731-044
12	Switching sticker (EXP)	1		731-221
13	Coupling fixture	2		731-046
14	Adjuster bracket	2		731-158
15	Caster (swivel type)	5	MG-75N	102-248
16	Adjuster bolt	2	D-B3 16X100	102-171
17	Coin box door	1	ALD-W1-NAM-HK-A HK\$1 AD-81P3	100-400
18	Coin box lock	2	F750-DS8	101-175
19	Stopper plate (combined-use type)	1	M7	101-229
20	Cam lock	1	N92-L10	101-142
21	Stopper plate (type E)	1		450-143
22	Cam washer (B)	1		450-131
23	Warning sticker Service (B) EXP	2		461-539
24	Game cost sticker (EXP)	1		731-222
25	Key plate	1		724-623
26	3D switching button sticker	1		731-048
27	2D/3D switching button (illuminated switch)	1	75-L012-55	000-845
28	USB cable	1	BIZ-USB-AB-MM-2000-C	007-976
29	GUN DRIVE PCB assembly	1	2639 9601	307-071
30	Coin selector	1	AD-81P3 HK\$1	100-356
31	Coin micro switch	1		000-352

1

2

3

4

5

6

7

8A

8B

9

10

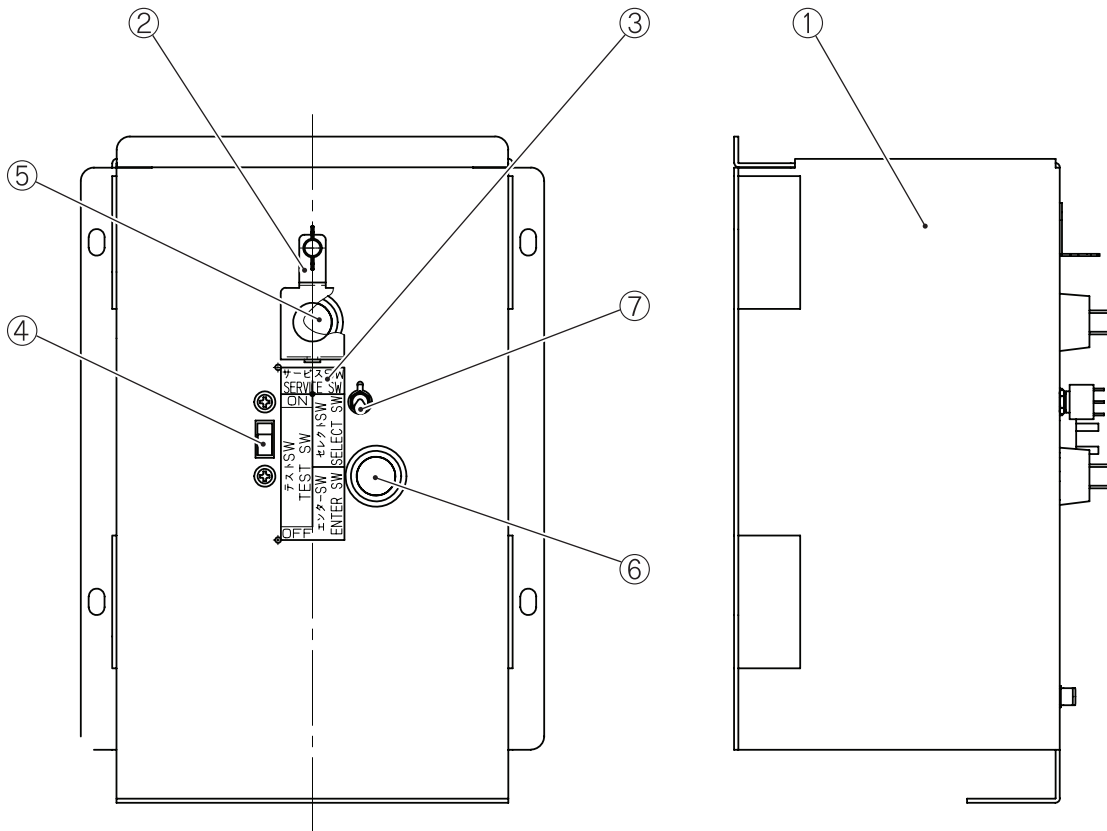
11

12

Parts List

Troubleshooting

## 10-6 Service Plate Assembly



No.	Name	Qty.	Type and rating	Part No.
1	Service plate	1		731-065
2	Service switch cover	1		731-066
3	Service sticker M (B)	1		461-722
4	Slide switch	1	SDS-103A-03#13BJ	000-681
5	Push button	1	SDP-103C-22RB	000-336
6	Push button	1	SDP-103C-22GB	000-619
7	Toggle switch	1	SDSA-331G-CR	000-337

# MEMO

1

2

3

4

5

6

7

8A

8B

9

**10**

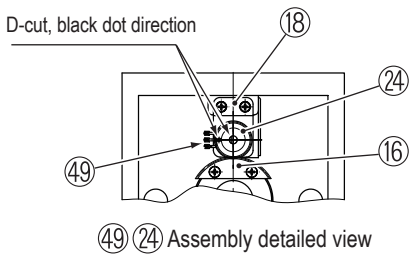
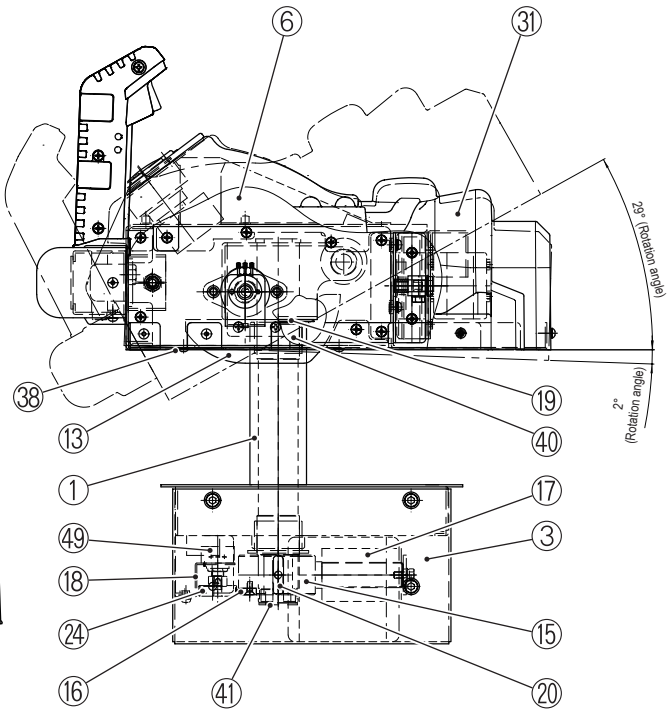
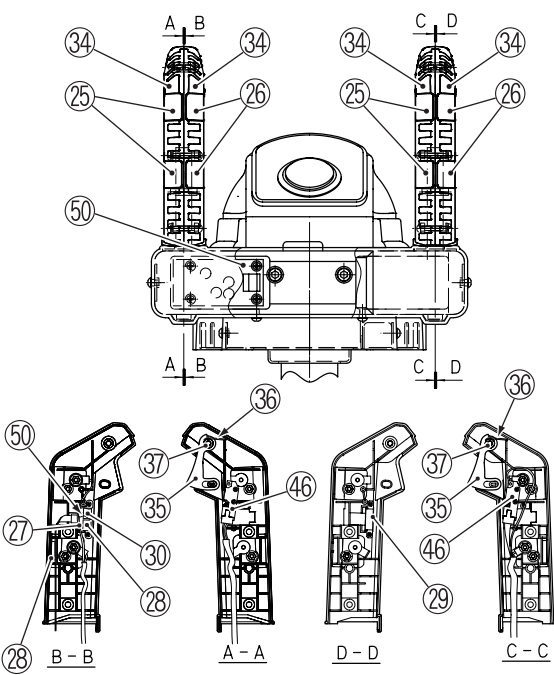
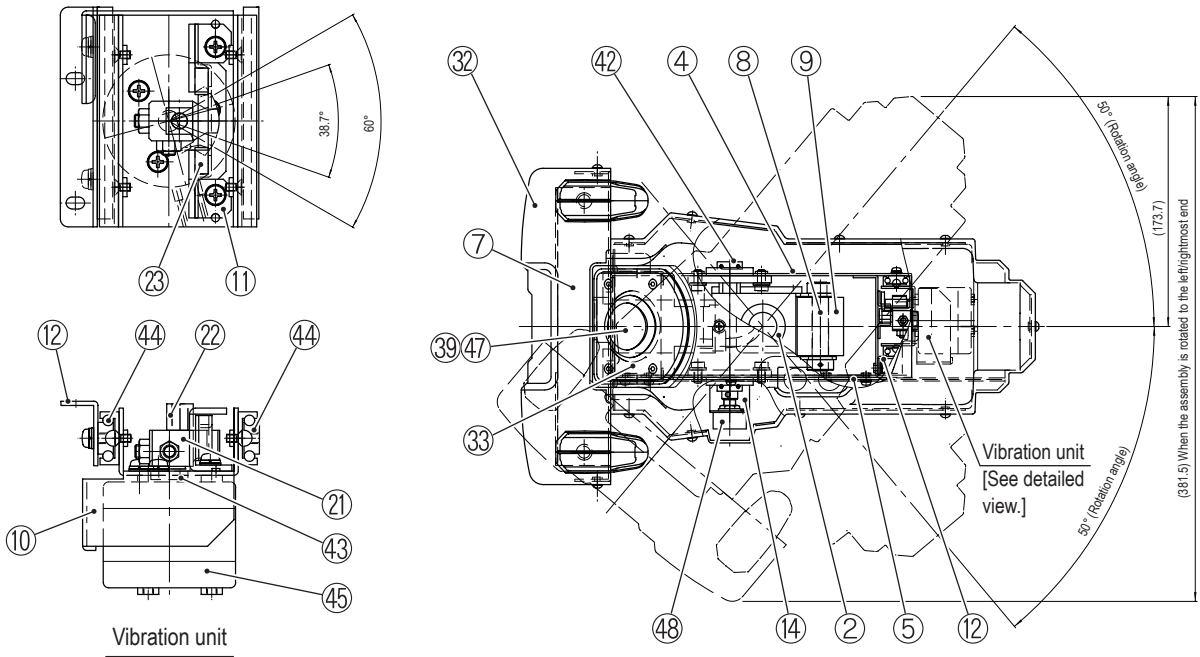
11

12

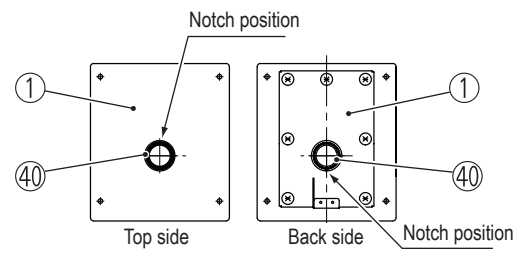
Parts List

Troubleshooting

# 10-7 Gun Assembly 1/2



(49) (24) Assembly detailed view



(40) Assembly detailed view

No.	Name	Qty.	Type and rating	Part No.
1	Neck	1		731-070
2	Core shaft	1		724-771
3	Gun base box	1		731-071
4	Frame cover (2)	1		731-072
5	Frame cover (1)	1		731-073
6	Switch base	1		731-074
7	Grip	1		731-075
8	Stopper shaft	1		724-076
9	Stopper rubber (1)	1		724-776
10	Motor frame	1		724-778
11	Stopper frame	1		724-779
12	Slide bracket	1		724-780
13	Under cover	1		724-781
14	Variable resistor bracket (2)	1		724-782
15	Pipe end	1		724-783
16	Gear	1		724-784
17	Stopper rubber (2)	1		724-785
18	Variable resistor bracket (1)	1		724-786
19	Spacer	1		724-787
20	Key	1		724-788
21	Crank	1		723-238
22	Slider	1		723-239
23	Stopper rubber	2		723-240
24	Gear	1		724-789
25	Sensor plate L	4		731-076
26	Sensor plate R	4		731-077
27	Sensor bracket A	1		731-078
28	Rubber spacer	2		731-079
29	Blind plate	1		731-080
30	Sensor cover	2		731-081
31	Gun cover (G)	1		731-082
32	Grip cover (G)	1		731-083
33	Switch bezel (H)	1		731-084
34	Lever arm (L and R set)	2		731-085
35	Trigger button	2	SN-07170 ABS Red	306-780
36	Trigger spring	2	SN-07171 SWC $\varnothing$ 0.8	306-781
37	Trigger spacer	2	SN-07177	306-830
38	Gap filling plate	2		724-796
39	Button sticker	1		731-086
40	Flange bushing	2	LFF-3220	255-634
41	One-touch bush	1	NB-19	103-204
42	Diamond-shaped pillow	2	KFL001	103-205
43	Miniature bearing	1	MF148ZZ	108-158

1

2

3

4

5

6

7

8A

8B

9

10

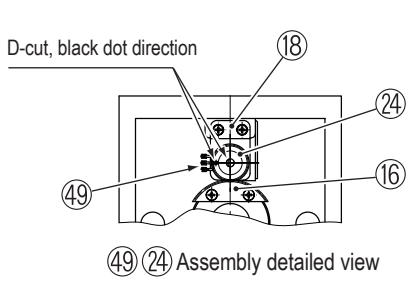
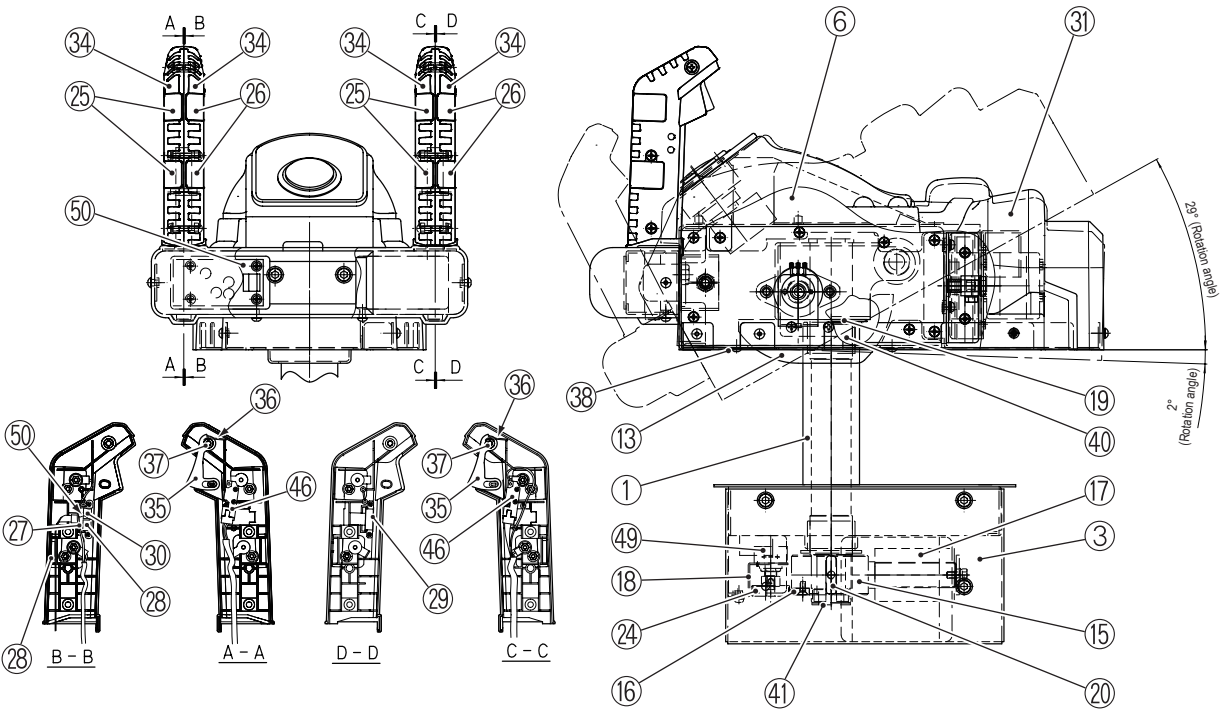
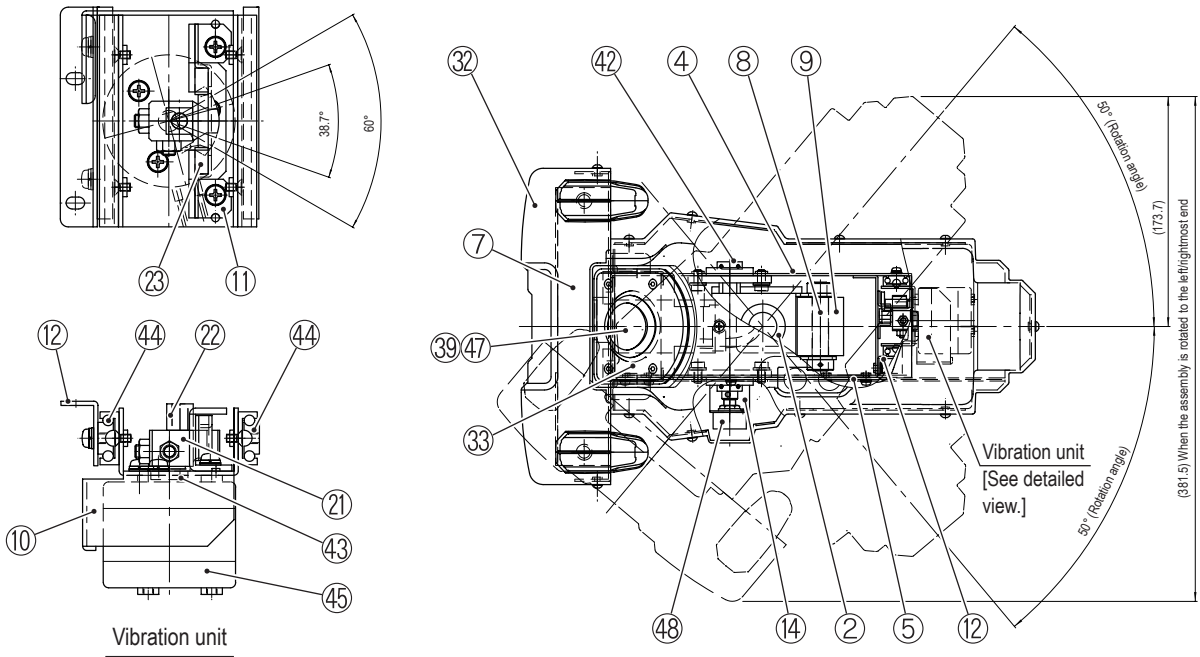
11

12

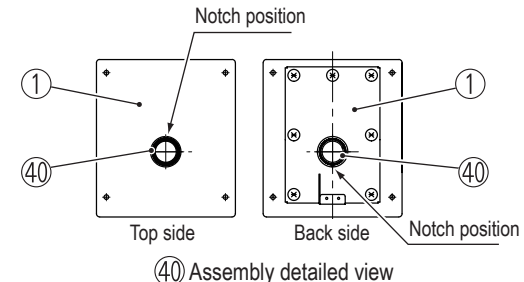
Parts List

Troubleshooting

# 10-7 Gun Assembly 2/2



④⑨ ②④ Assembly detailed view



④⑩ Assembly detailed view

No.	Name	Qty.	Type and rating	Part No.
44	Slide rail	2	AR2-60 (2 x 10 balls)	107-166
45	Rotary solenoid	1	RSR20/10-CAB0-BNG	004-666
46	Micro switch	2	D3M-01L1-3	000-673
47	Illuminated switch	1	75-L012-61	000-846
48	Variable resistor	1	RVQ24YN04-06 20F B102 (60°)	008-079
49	Variable resistor	1	RVQ24YN0406 20F B102	008-077
50	VSS module	1	Vital signs sensor and sensor IF PC board Vital signs sensor harness set MVS-NSPCB-S2B	307-672

1

2

3

4

5

6

7

8A

8B

9

10

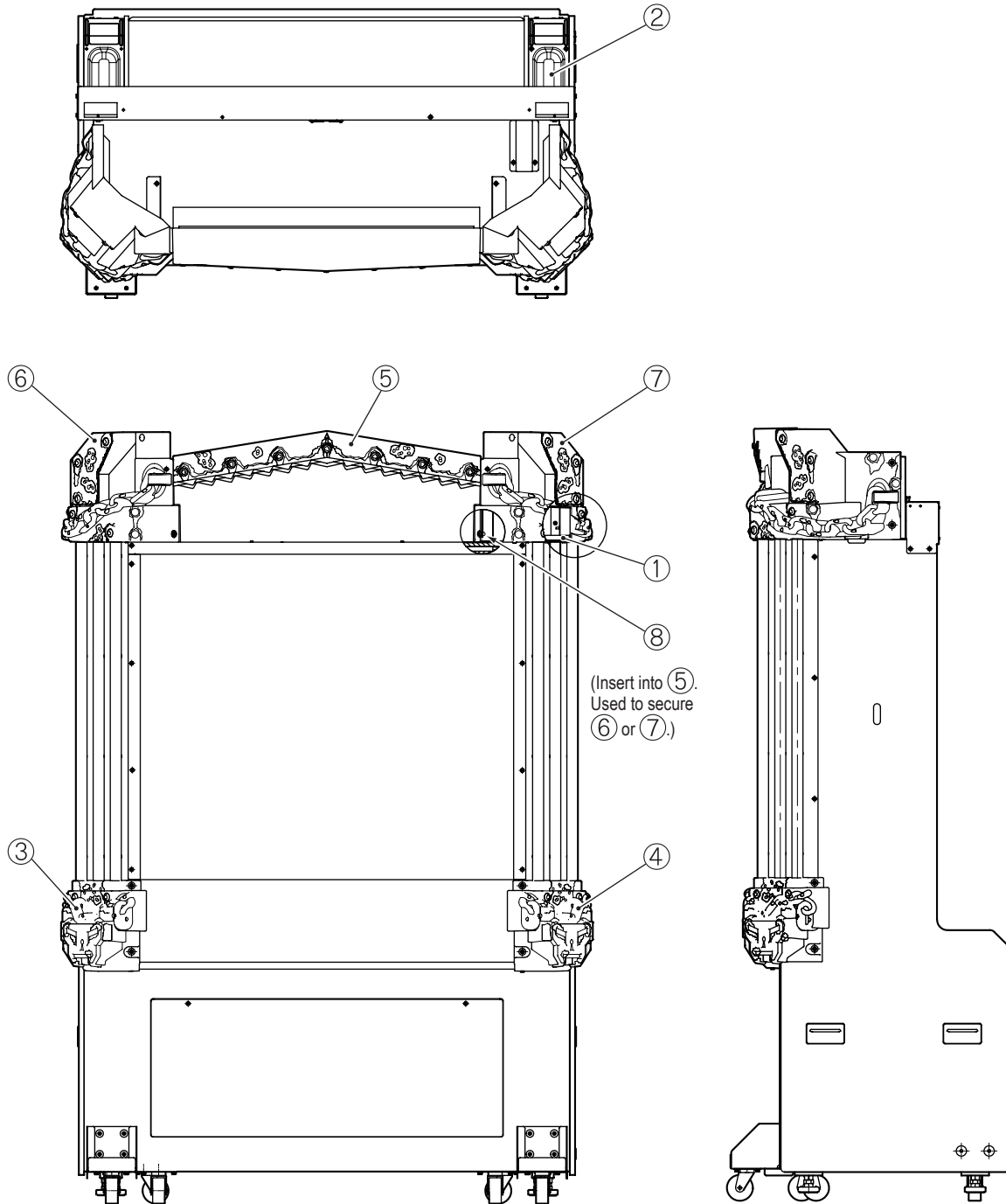
11

12

Parts List

Troubleshooting

# 10-8 Rear Assembly 1/4





No.	Name	Qty.	Type and rating	Part No.
1	Top cover side support	2		731-113
2	3D glasses case	2		731-132
3	Corner cover (L)	1		731-133
4	Corner cover (R)	1	Mirror image of 3	731-134
5	Top cover center	1		731-135
6	Top cover side (L)	1		731-136
7	Top cover side (R)	1		731-137
8	Well nut	2	C-550 (for M5)	294-560

1

2

3

4

5

6

7

8A

8B

9

10

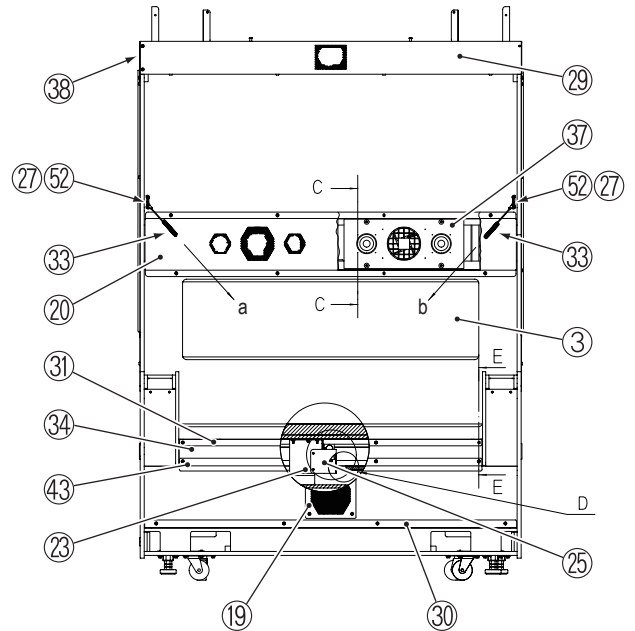
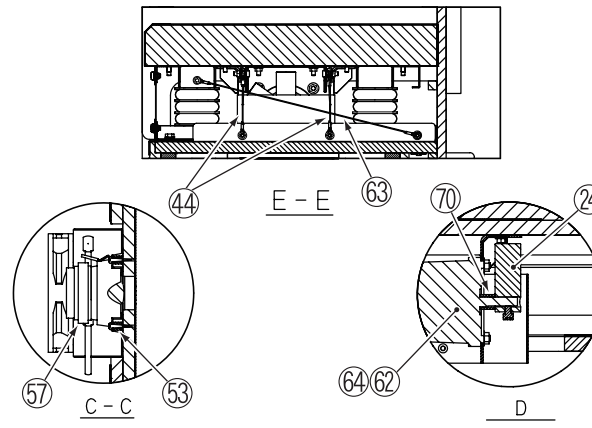
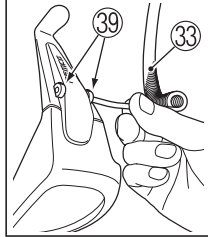
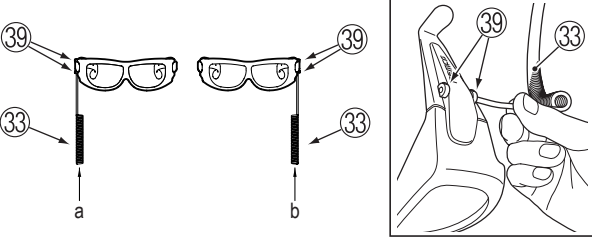
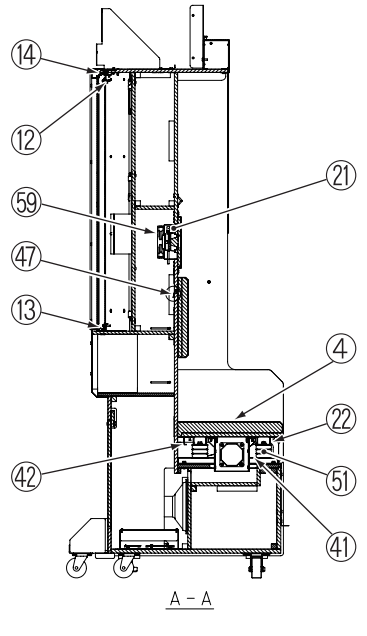
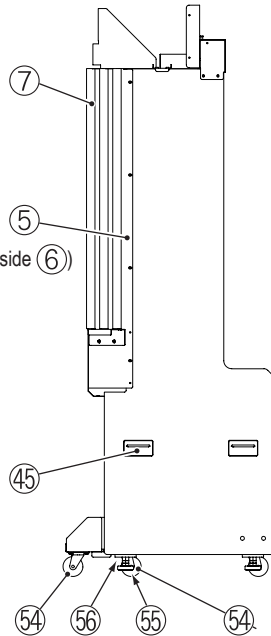
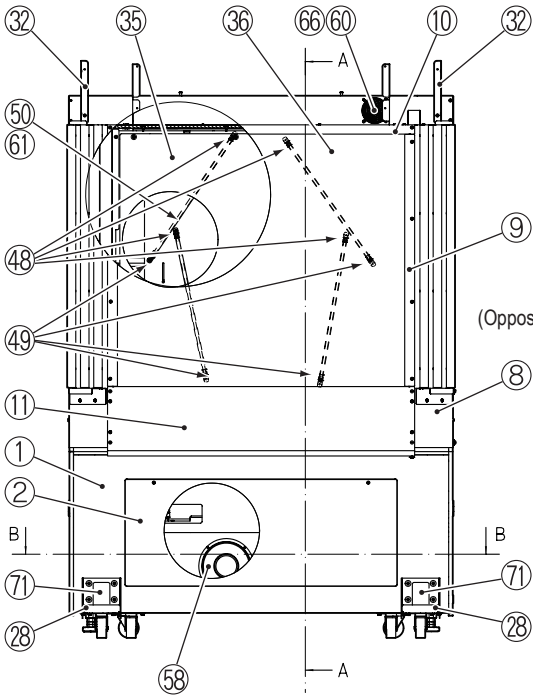
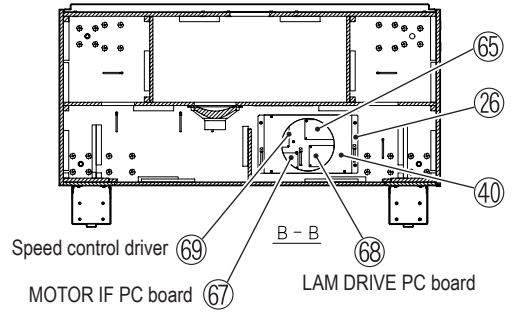
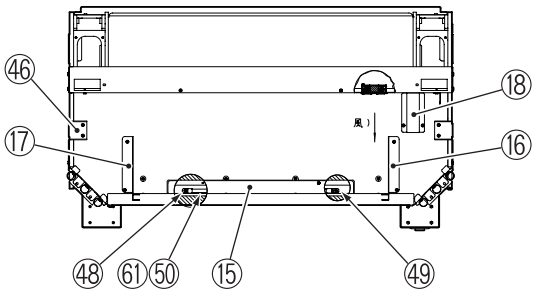
11

12

Parts List

Troubleshooting

# 10-8 Rear Assembly 2/4



No.	Name	Qty.	Type and rating	Part No.
1	Rear cabinet	1		731-095
2	Rear cabinet back door	1		731-096
3	Rear back cushion	1		731-097
4	Rear seat cushion	1		731-098
5	Rear corner base (R)	1		731-099
6	Rear corner base (L)	1		731-100
7	Rear corner pipe	6		731-101
8	Rear corner cover bracket	2		731-102
9	Rear sign panel angle (S)	2		731-103
10	Rear sign panel angle (T)	1		731-104
11	Rear sign panel angle (U)	1		731-105
12	Rear sign sheet support (T)	1		731-106
13	Rear sign sheet support (U)	1		731-107
14	Top support angle	1		731-108
15	Top LED cover plate	1		731-109
16	Top cover support (R)	1		731-110
17	Top cover support (L)	1		731-111
18	Top harness cover	1		731-112
19	Woofer cover plate	1		731-114
20	Rear speaker fan cover	1		731-115
21	Rear speaker fan bracket	2		731-116
22	Seat support angle (A)	1		731-117
23	Seat motor bracket	1		731-118
24	Weight	1		731-119
25	Seat motor cover	1		731-120
26	Rear regulator base	1		731-121
27	Strap plate	2		731-122
28	Rear caster bracket	2		731-123
29	Rear top bar	1		731-124
30	Floor mat clamp (B)	1		731-125
31	Support plate	1		731-126
32	Sign side bracket (R)	2		731-127
33	Curly wire cord	2		731-128
34	Seat guard tarpaulin	1		731-129
35	Rear sign sheet	1		731-130
36	Rear sign panel (EXP)	1		731-231
37	Rear speaker board	2		731-145
38	Rear top bar bracket	1		731-146
39	Curly wire clip	4		731-147
40	Rear regulator cover	1		731-148
41	Seat base plate	1		731-149
42	Seat support angle (B)	1		731-150
43	Support bracket	1		731-151

1

2

3

4

5

6

7

8A

8B

9

10

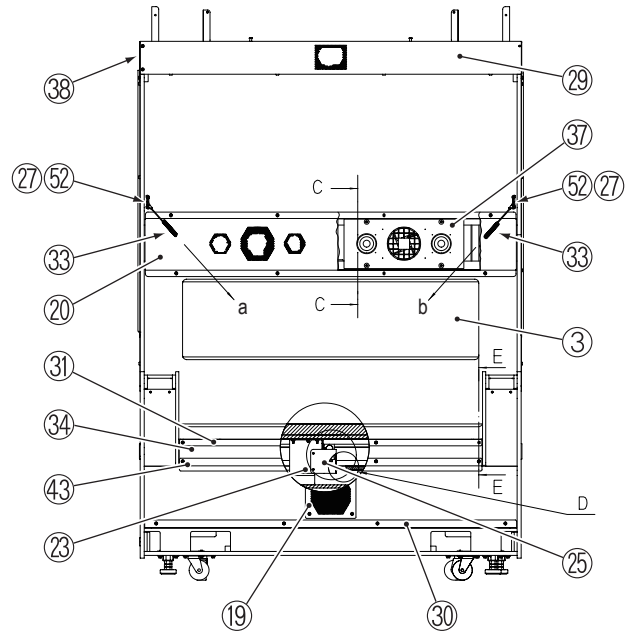
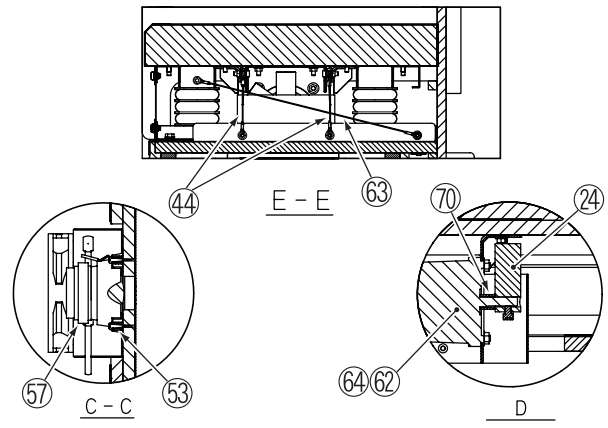
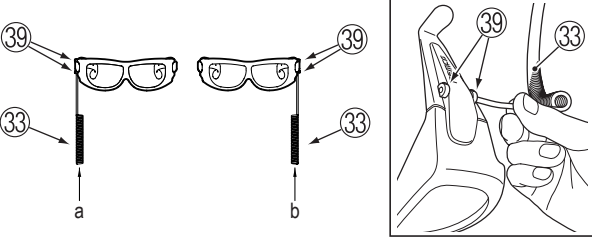
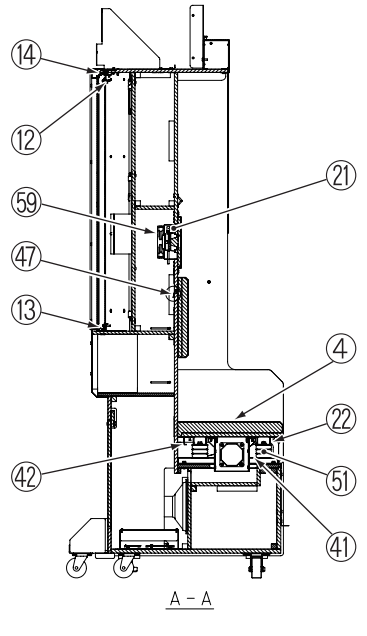
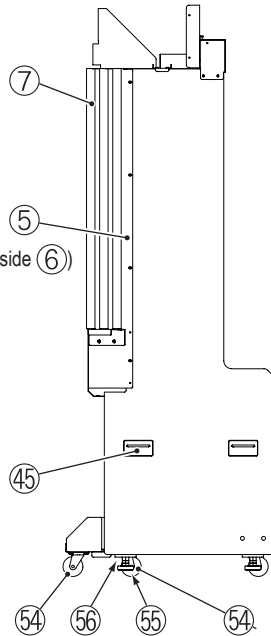
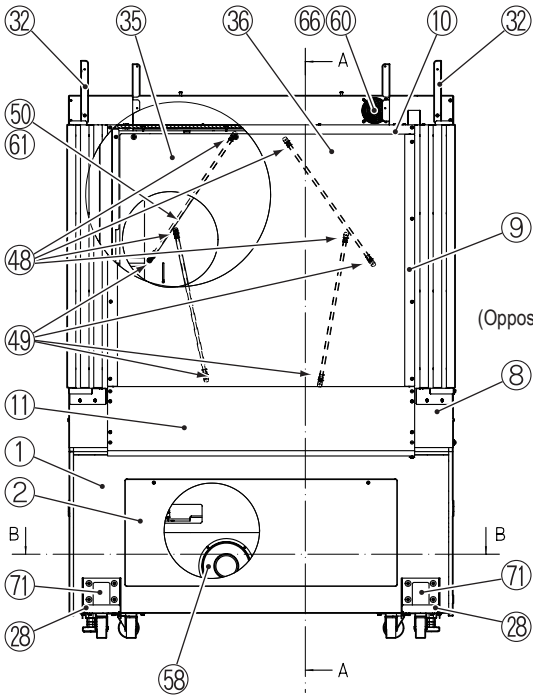
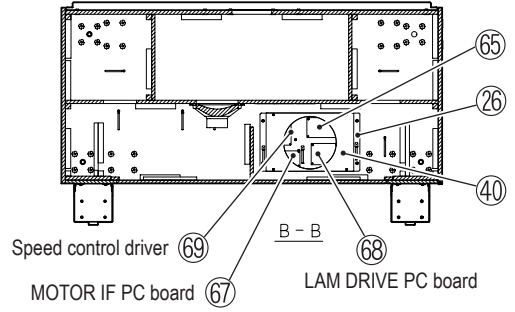
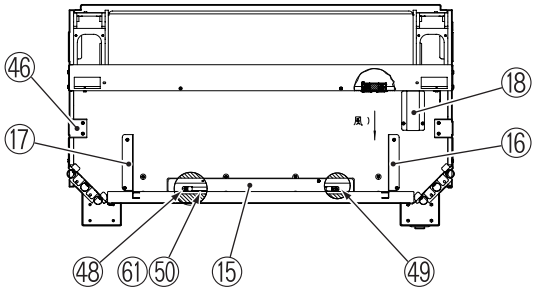
11

12

Parts List

Troubleshooting

# 10-8 Rear Assembly 3/4



No.	Name	Qty.	Type and rating	Part No.
44	Locking wire	4		731-152
45	Embedded pulls (for t15)	4		101-247
46	Rope hook (F)	2		450-417
47	Seat hook	2		724-755
48	LED tube Cap L	5		727-162
49	LED tube Cap U	5		727-161
50	LED tube	5		727-163
51	Anti-vibration rubber (ring mount)	4		731-153
52	Eye strap (SUS)	2	TIS-5	731-154
53	DURACON spacer	16	C-410	731-155
54	Caster (swivel type)	6	MG-75N	102-248
55	Adjuster bolt	4	D-B3 16X100	102-171
56	Adjuster bracket	4		731-158
57	Speaker	4	F77A136-2	006-193
58	Speaker	1	S20F04	006-194
59	Fan motor (120 mm x 120 mm)	2	9G1224P4E01	005-518
60	Fan motor (92mm x 92 mm)	1	PSAD19225BL-A422	005-519
61	LED module	5	LM-B-RDX24-50006-W100-C	002-651
62	DC brushless motor	1	FY9S40H-D3	005-520
63	Locking wire: long	2		731-156
64	Rotor cover	1	F-RC961	005-521
65	Switching regulator (12 V)	1	VS150E-12	009-231
66	Fan guard	1	109-099E	005-517
67	MOTOR IF PC board	1	2686 9601	307-673
68	LAM DRIVE PC board	1	2686 9611	307-674
69	Speed control driver	1	FYD940HD3	005-522
70	Weight spacer	1		731-157
71	Warning sticker Installation and Transport (EXP)	2		461-775

1

2

3

4

5

6

7

8A

8B

9

10

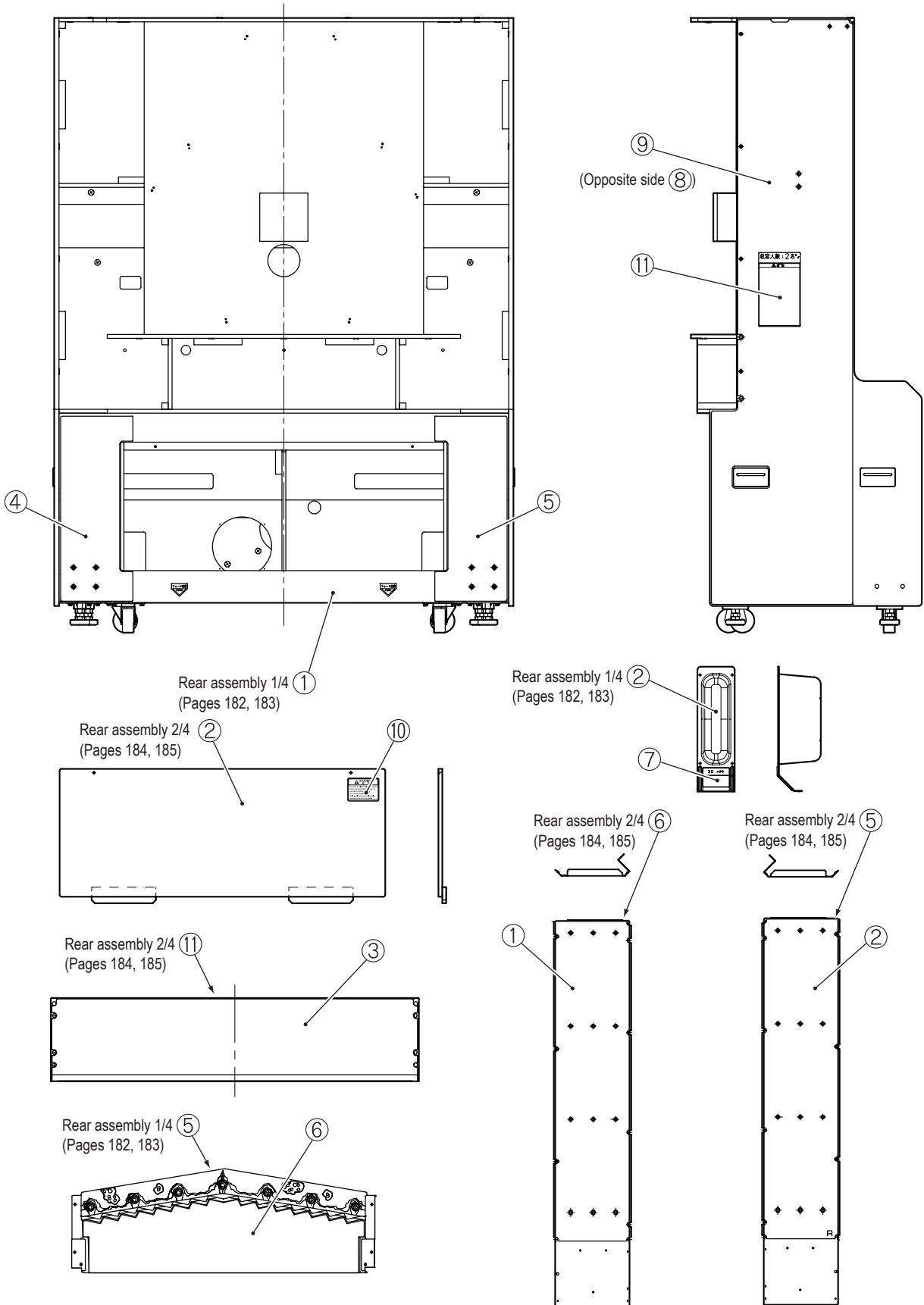
11

12

Parts List

Troubleshooting

# 10-8 Rear Assembly 4/4



No.	Name	Qty.	Type and rating	Part No.
1	Corner base sticker (L)	1		731-138
2	Corner base sticker (R)	1	Mirror image of 1	731-139
3	Rear angle sticker (EXP)	1		731-226
4	Rear cabinet sticker (L)	1		731-141
5	Rear cabinet sticker (R)	1		731-142
6	Top cover sticker (EXP)	1		731-227
7	3D glasses case sticker (EXP)	2		731-228
8	Rear side sticker (L)	1		731-159
9	Rear side sticker (R)	1		731-160
10	Warning sticker Service (B) EXP	1		461-539
11	Caution sticker Capacity Limit DES (EXP)	2		461-774

1

2

3

4

5

6

7

8A

8B

9

10

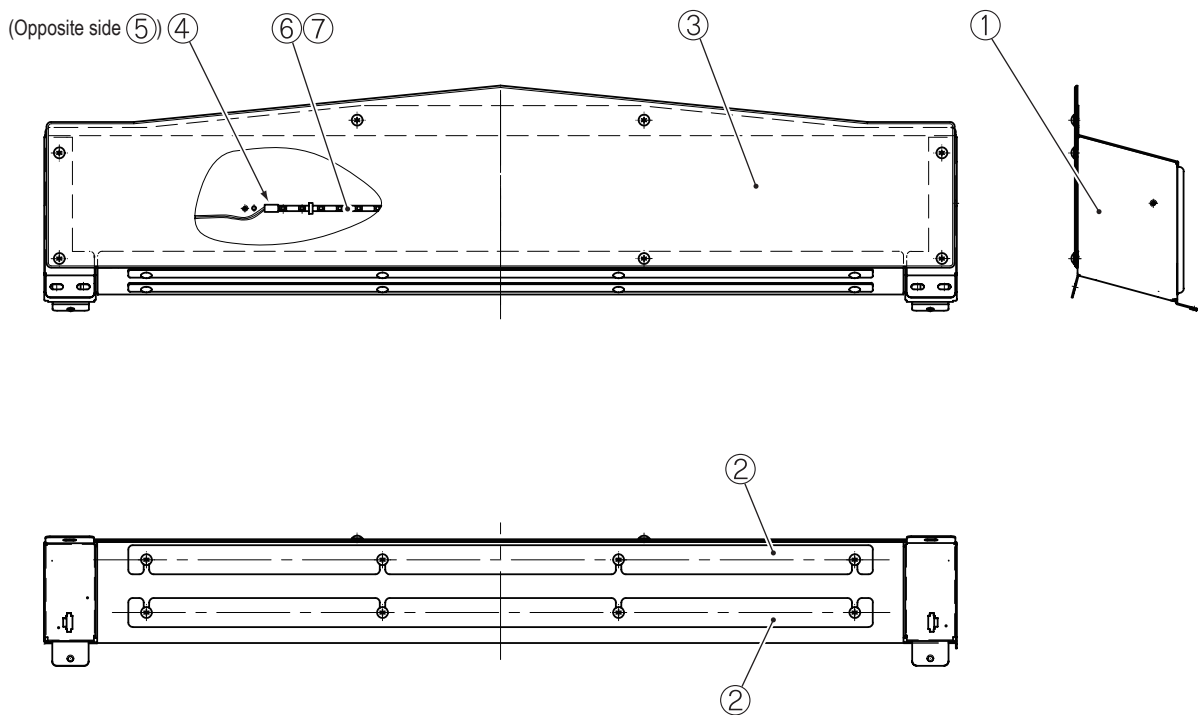
11

12

Parts List

Troubleshooting

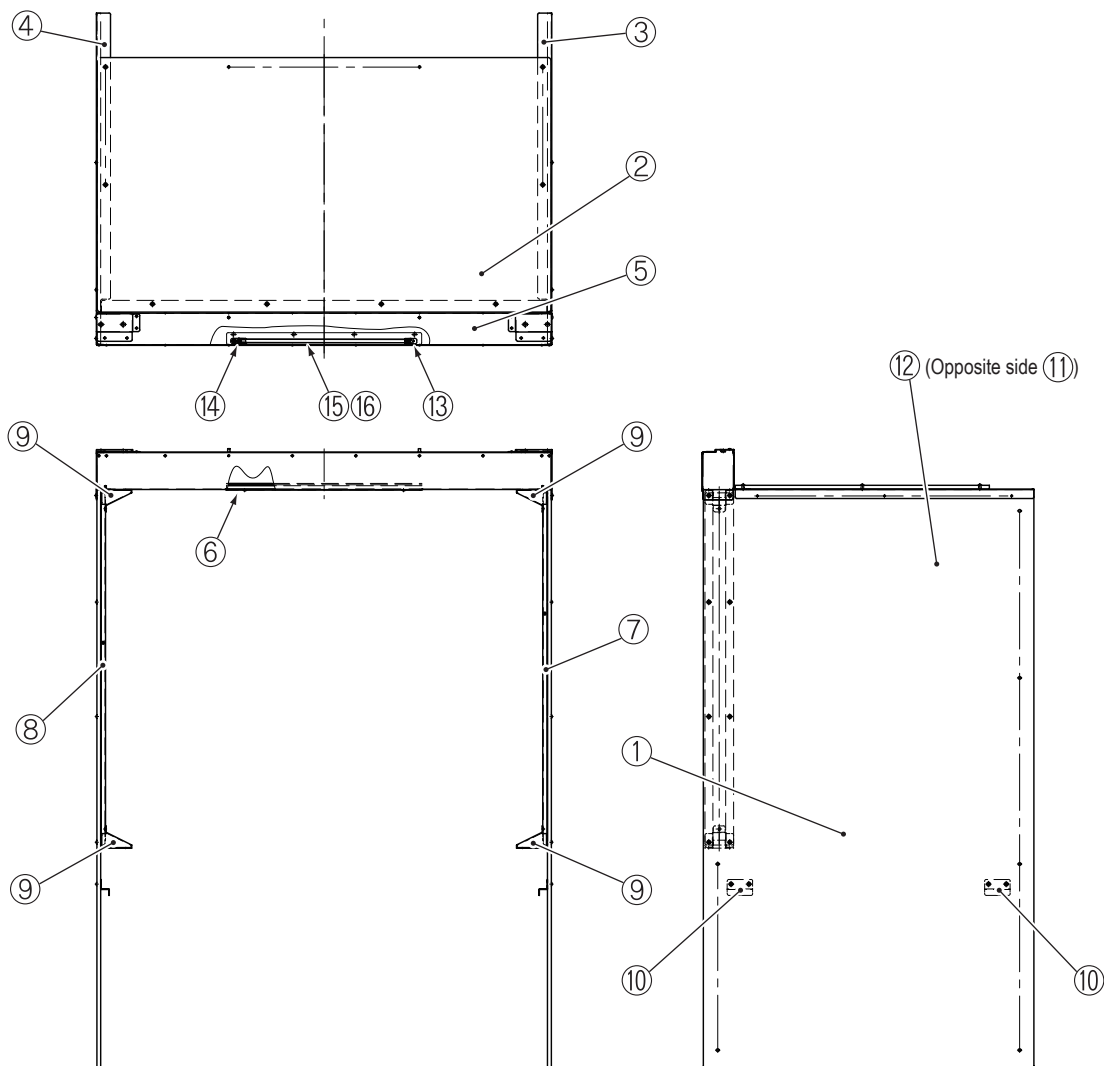
## 10-9 Signboard Box Assembly



No.	Name	Qty.	Type and rating	Part No.
1	Signboard box	1		731-170
2	Curtain support	2		731-171
3	Side sign panel EXP	1		731-223
4	LED tube Cap L	1		727-162
5	LED tube Cap U	1		727-161
6	LED tube	1		727-163
7	LED module	2	LM-B-RDX24-50006-W100-C	002-651



# 10-10 Wall Assembly

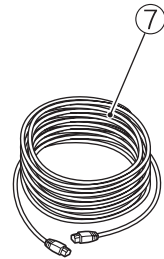
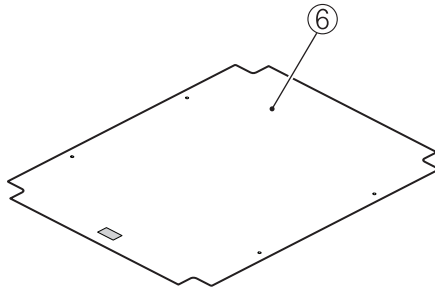
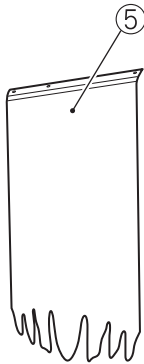
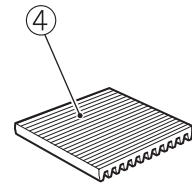
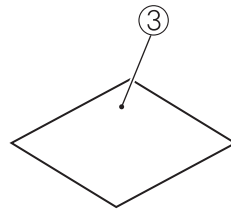
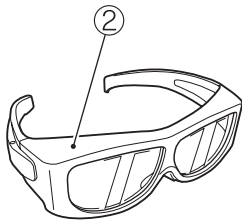
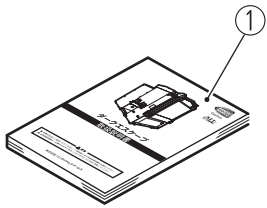


No.	Name	Qty.	Type and rating	Part No.
1	Side wall	2		731-190
2	Roof	1		731-191
3	Side reinforcement R	1		731-192
4	Side reinforcement L	1		731-193
5	Roof reinforcement	1		731-194
6	LED panel	1		731-195
7	Side pillar R	1		731-196
8	Side pillar L	1		731-197
9	Pillar bracket	4		731-198
10	Side wall bracket	4		731-199
11	Wall side sticker (L)	1		731-200
12	Wall side sticker (R)	1		731-201
13	LED tube Cap L	1		727-162
14	LED tube Cap U	1		727-161
15	LED tube	1		727-163
16	LED module	1	LM-B-RDX24-50006-W100-C	002-651

- 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8A
  - 8B
  - 9
  - 10
  - 11
  - 12
- Parts List

Troubleshooting

## 10-11 Other Parts



No.	Name	Qty.	Type and rating	Part No.
1	DARK ESCAPE Operation Manual (EXP)	1	(this manual)	731-220
2	3D glasses	4		730-961
3	Glasses cleaning cloth	2		730-962
4	Anti-vibration pad	10	KHL-10-100-0001	106-204
5	Side curtain EXP	2		731-224
6	Ceiling tarpaulin	1		731-181
7	LAN cable	1	20 m LAN20.0m GB-BNG	007-928

1

2

3

4

5

6

7

8A

8B

9

10

11

12

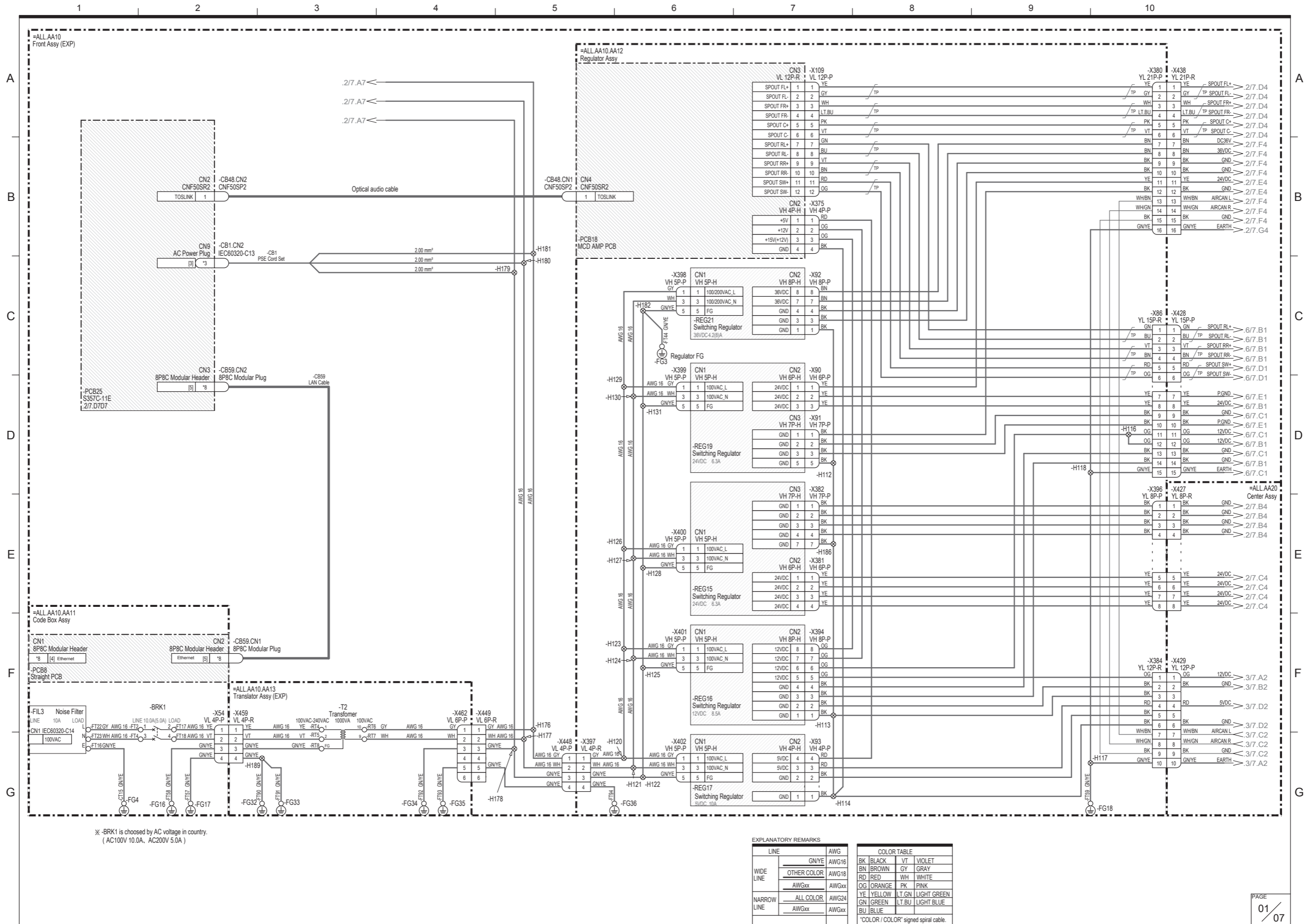
Parts List

Troubleshooting



# 11. Wiring Diagram

## 11-1 Overall Wiring Diagram

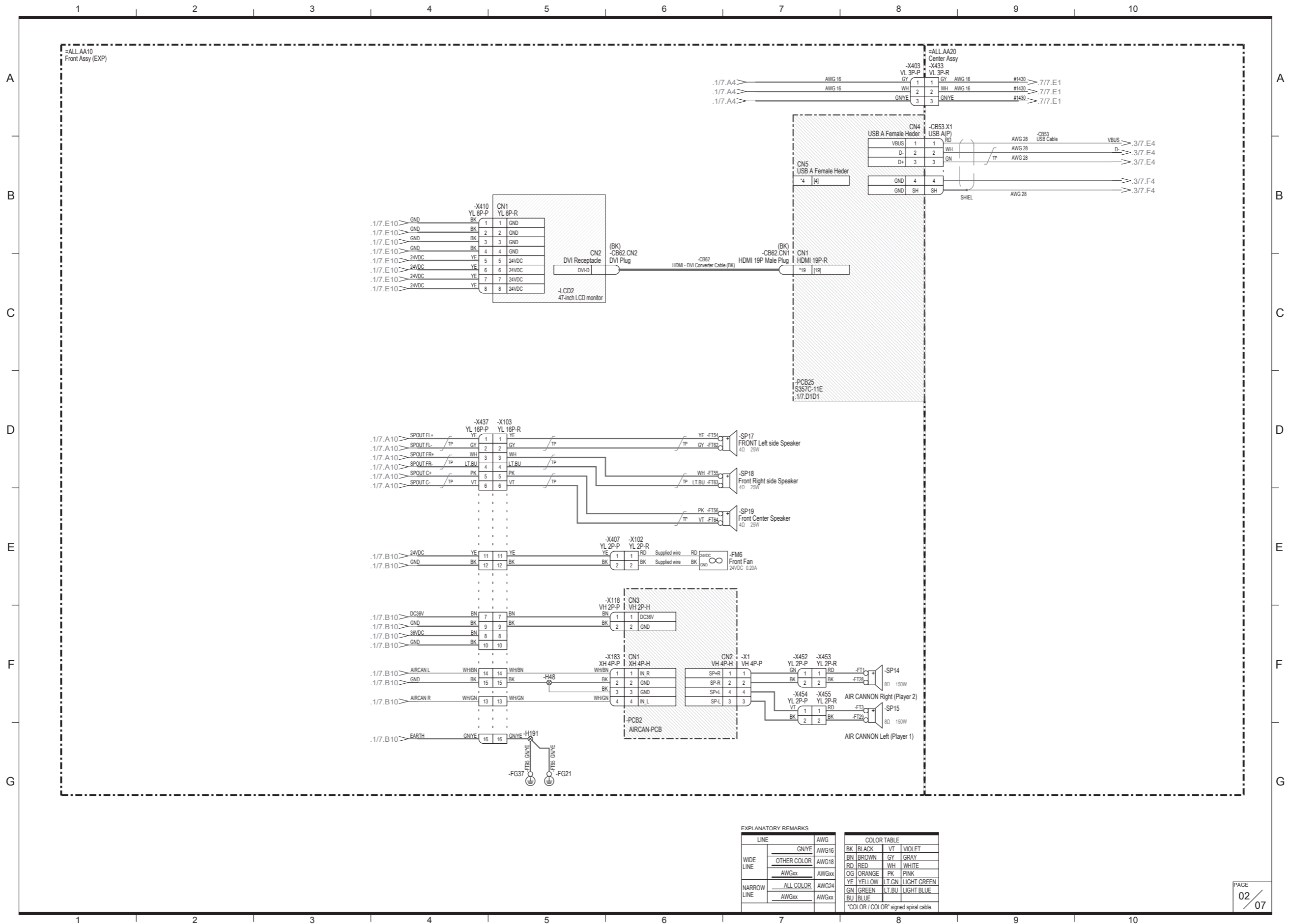


- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting

# 11-2 Overall Wiring Diagram

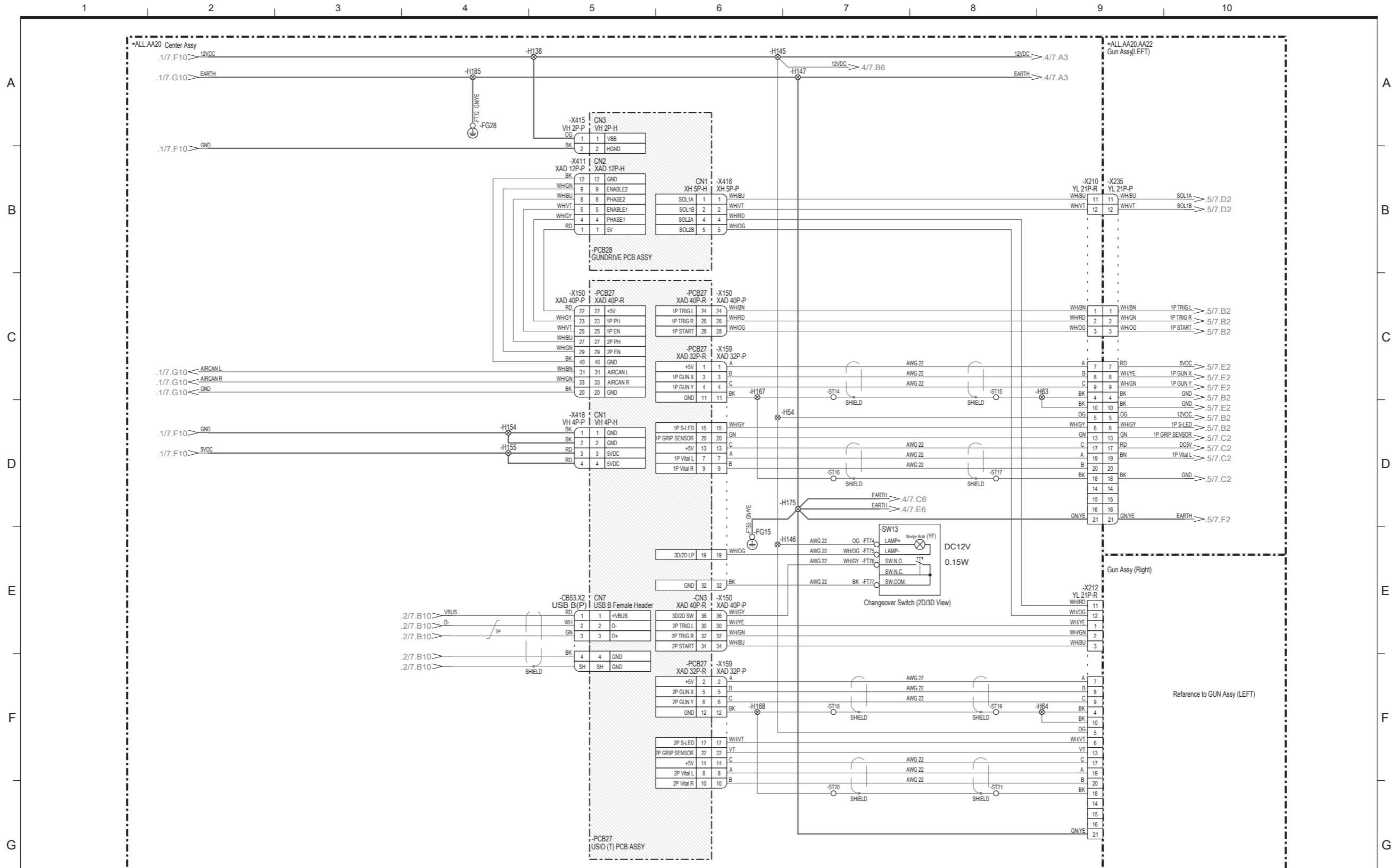


- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting

# 11-3 Overall Wiring Diagram



EXPLANATORY REMARKS

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

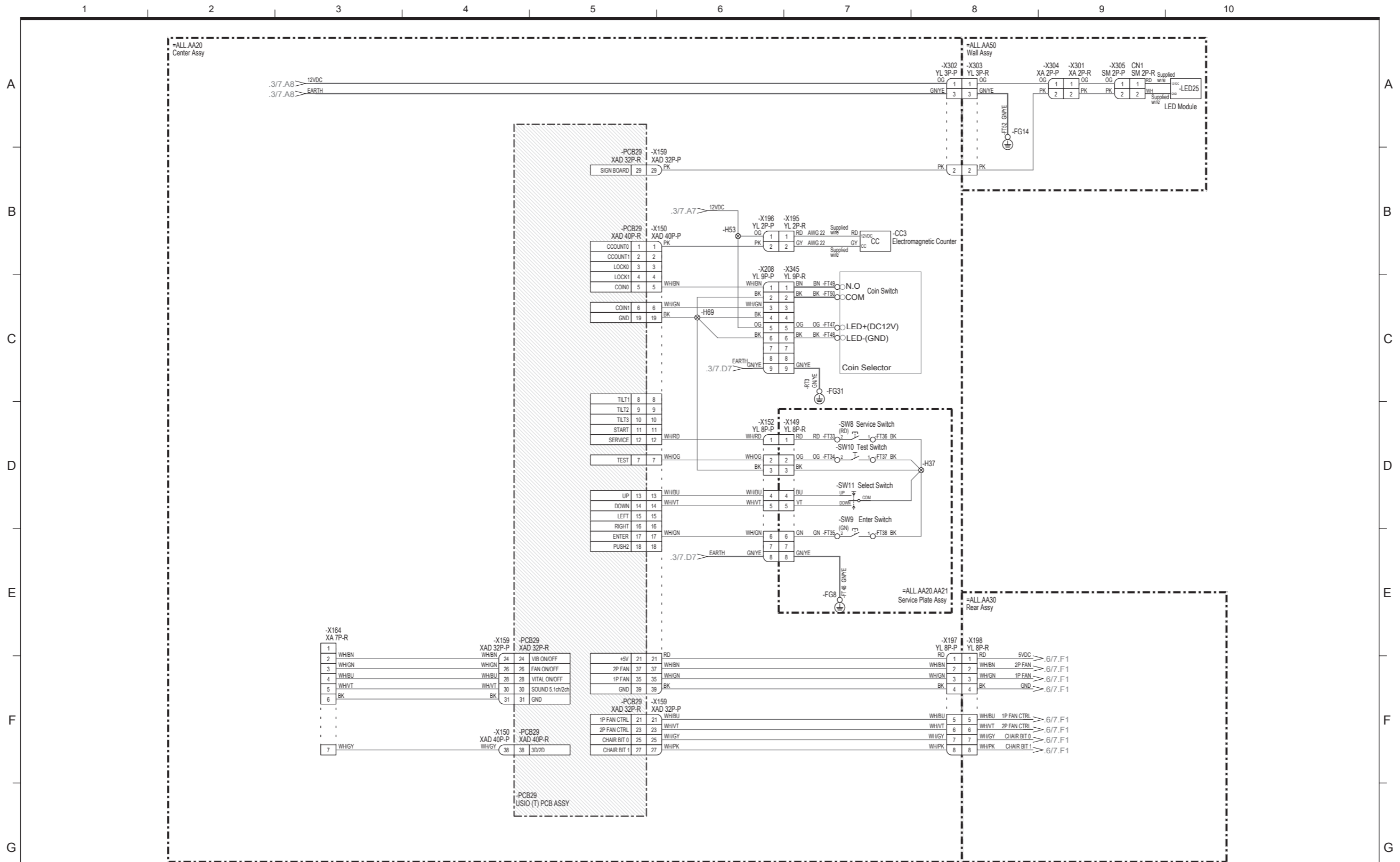
\*"COLOR / COLOR" signed spiral cable.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting

# 11-4 Overall Wiring Diagram



EXPLANATORY REMARKS

LINE	AWG	
	AWG	AWG
WIDE LINE	GNVE	AWG16
	OTHER COLOR	AWG18
NARROW LINE	AWGxx	AWGxx
	ALL COLOR	AWG24
	AWGxx	AWGxx

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

\*COLOR / COLOR\* signed spiral cable.

PAGE 04/07

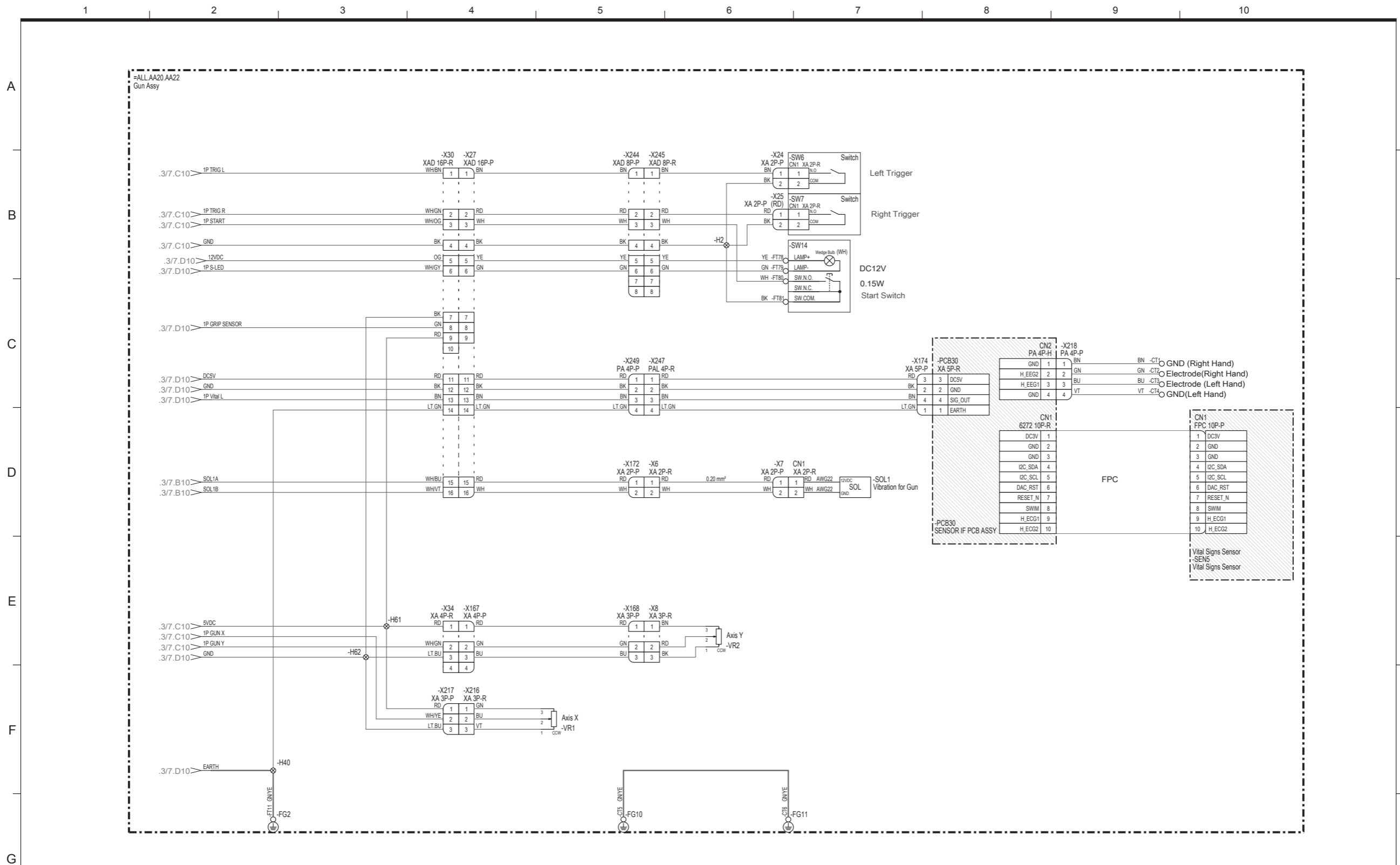
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting



# 11-5 Overall Wiring Diagram



EXPLANATORY REMARKS

LINE	AWG	COLOR TABLE
WIDE LINE	GN/YE	AWG16
	OTHER COLOR	AWG18
	AWGxx	AWGxx
NARROW LINE	ALL COLOR	AWG24
	AWGxx	AWGxx
	*COLOR / COLOR* signed spiral cable.	

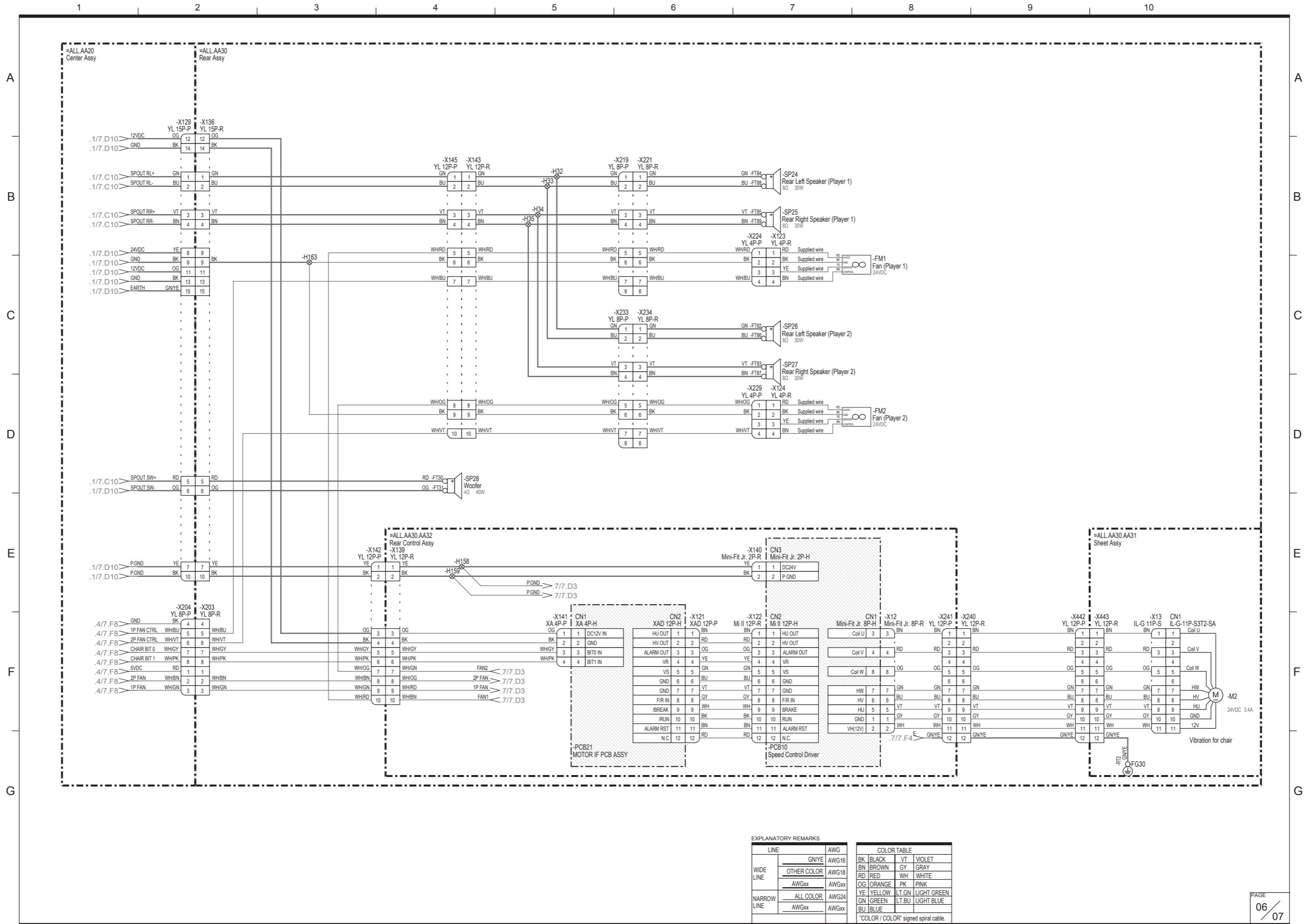
LINE	AWG	COLOR TABLE	
BK	BLACK	VT	VIOLET
BN	BROWN	GY	GRAY
RD	RED	WH	WHITE
OG	ORANGE	PK	PINK
YE	YELLOW	LT.GN	LIGHT GREEN
GN	GREEN	LT.BU	LIGHT BLUE
BU	BLUE		

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting

# 11-6 Overall Wiring Diagram

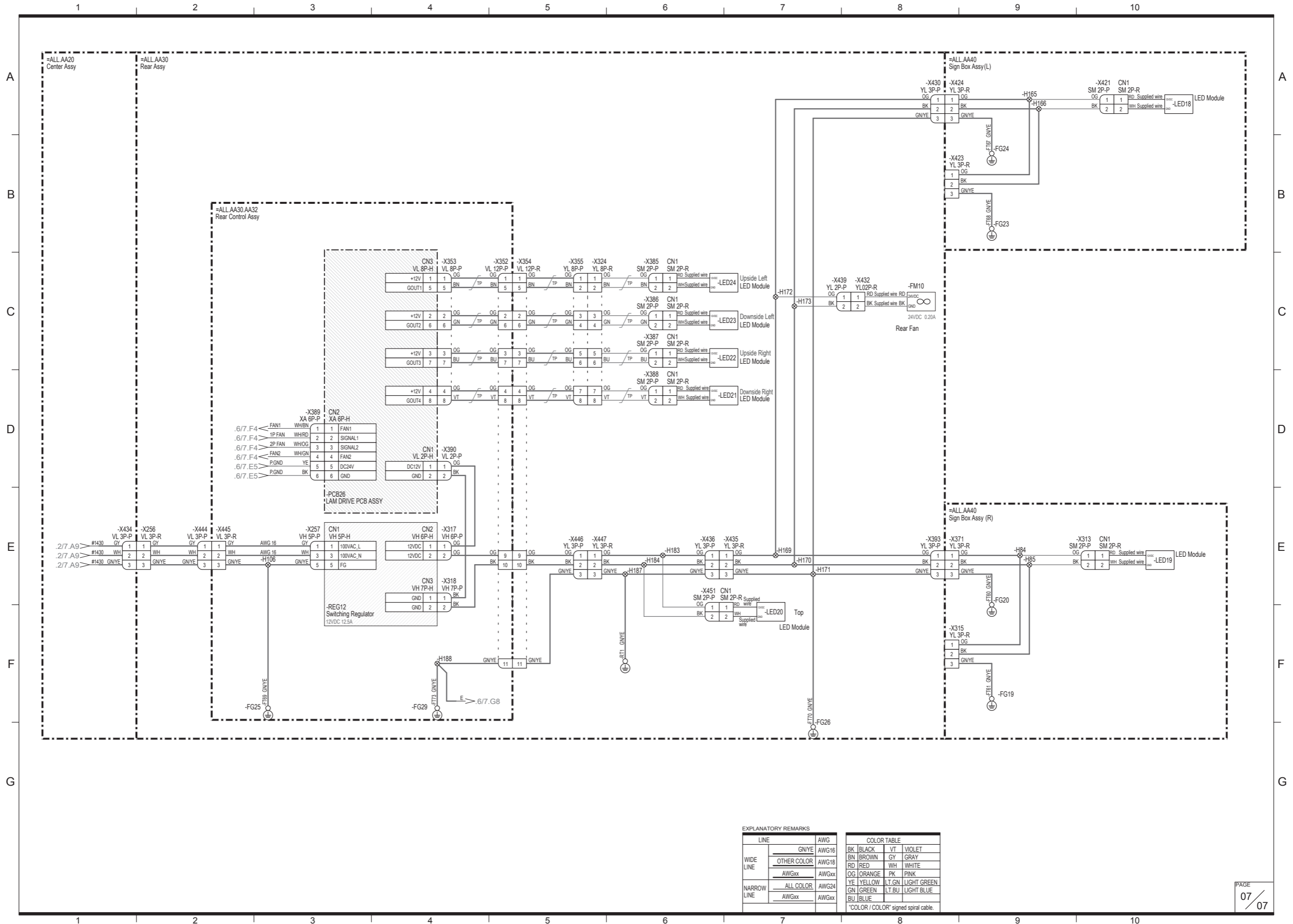


- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting

# 11-7 Overall Wiring Diagram



EXPLANATORY REMARKS

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

\*"COLOR / COLOR" signed spiral cable.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8A
- 8B
- 9
- 10
- 11
- 12

Wiring Diagram

Troubleshooting

## Copyrights and Trademarks

This software uses fonts produced by Fontworks Inc.

Fontworks, and font names are trademarks or registered trademarks of Fontworks Inc.

Fonts used in-game are provided by Bitstream Inc. All rights reserved.

(C) Beijing Founder Electronics Co.,Ltd.

This software uses fonts produced by JIKJISOFT Inc.

JIKJISOFT and font names are trademarks or registered trademarks of JIKJISOFT Inc.

This machine uses the RSA® BSAFE™ software made by RSA Security Inc.

RSA is a registered trademark of RSA Security Inc. BSAFE is a registered trademark of RSA Security Inc. in the U.S. and other countries.

RSA Security Inc. All rights reserved.



This machine uses the S3 Texture Compression (S3TC) technology of S3 Graphics Co., Ltd.

Portions of this software are copyright 1996-2007 The FreeType Project

([www.freetype.org](http://www.freetype.org)). All rights reserved.

This software is based in part on the work of the Independent JPEG Group.

This product includes the following software used under third party license.

See below for the license conditions and other information.

protobuf-c.c: public protobuf c runtime implementation

Copyright 2008, Dave Benson.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

“License” shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

“Licensor” shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

“Legal Entity” shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, “control” means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

“You” (or “Your”) shall mean an individual or Legal Entity exercising permissions granted by this License.

“Source” form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

“Object” form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

“Work” shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

“Derivative Works” shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

“Contribution” shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, “submitted” means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as “Not a Contribution.”

“Contributor” shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a “NOTICE” text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an “AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS



DTS and DTS Digital Surround are trademarks of DTS Inc.

Camellia

Copyright 2006,2007

NTT (Nippon Telegraph and Telephone Corporation) . All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.
  2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- THIS SOFTWARE IS PROVIDED BY NTT ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL NTT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

For other license and trademark information, see the following web page:

<http://www.bandainamcogames.co.jp/am/vg/s357-license/>

System names and product names used in this machine and manual that are not described at the above URL are general registered trademarks or trademarks of the respective companies.

Faston is a registered trademark of TE Connectivity Ltd.





© NAMCO BANDAI Games Inc.

Part No.: 731-220

First edition issued September 2012