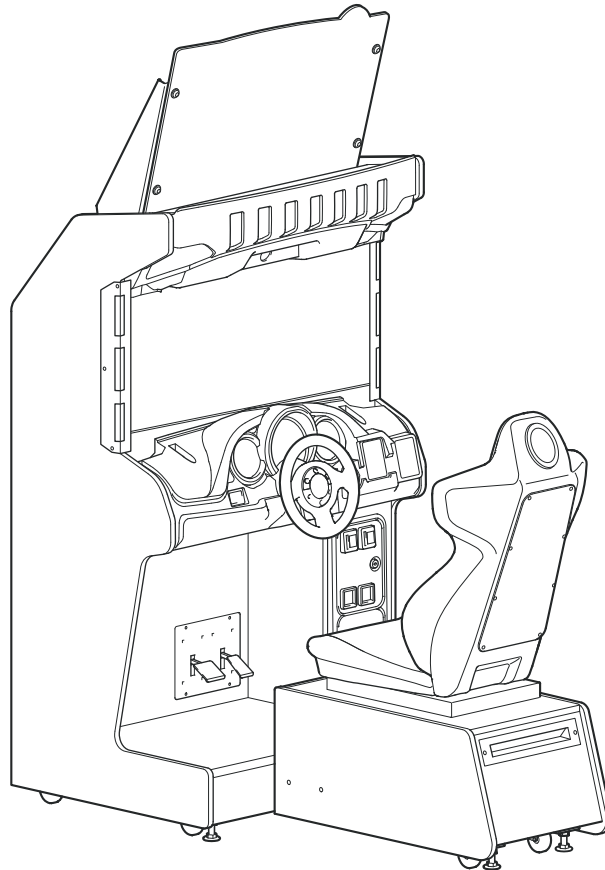




MARIOKART ARCADE GP DX

Operation Manual

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

**AS OF 12/2016 ALL VERSIONS OF MARIO KART ARCADE GP DX ARE NOW
OFFLINE VERSIONS**

**FOR MARIO KART SERIAL NUMBERS BEGINNING IN SERIAL NUMBERS MKFC2*
THROUGH MKFC306336 – Please refer to page 109**

**FOR MARIO KART SERIAL NUMBERS STARTING FROM SERIAL NUMBERS
MKFC306337– Please refer to page 114**

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 MARIOKARKARCADE GP DX (referred to as the “machine” in this manual).

This Operation Manual describes:

- How to safely install, operate, move, transport, maintain and dispose of the machine.
- How to make full use of the machine’s functions and operate it correctly
- How to ensure the safety of players and bystanders.

Contact for Machine and Machine Repair Inquiries

- For inquiries regarding the machine or machine repairs, contact your distributor

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

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

Instructions to the Owner

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

1-1 Levels of Risk

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

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

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

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



: Information about product functions or protection

1-2 Definition of “Technician”

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

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

1-3 Critical Safety Precautions

WARNING

- Should an abnormality occur, turn off the power switch immediately to stop operations. Then, be sure to disconnect the power cord plug from the outlet. Operating the machine while the abnormality persists may result in a fire or accident.
- Sections of the LCD 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 cause 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 cause 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 power capacity of the machine is AC 120 V (or AC 230 V), 3.2 A. To prevent fire and electric shock, use interior wiring that conforms to these power supply specifications.
- Use a power supply voltage range of AC 110 V to 130 V (or AC 230 V). 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 voltage at AC 120 V (or AC 230 V) as much as possible.
- To ensure safe use of the machine, be sure to perform the pre-operation inspection (see “7-2 Pre-operation Inspection” on page 20) and service (see “8B. Service” on page 59) described in this Operation Manual. Omitting these inspections or service may result in an accident.
- Use the consumables and service parts (including screws) that are specified by our company. To order parts, contact your distributor.
- Do not modify the machine without permission. Do not perform any operations that are not described in this Operation Manual. Modifying the machine may create unforeseen hazards.
- If you decide to transfer the ownership of this machine, be sure to provide this Operation Manual with the machine.

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. Make sure that the labels are not hidden by other game 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.

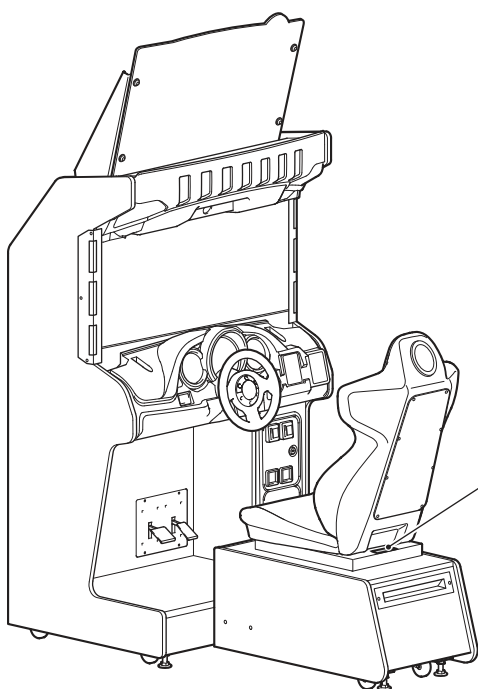
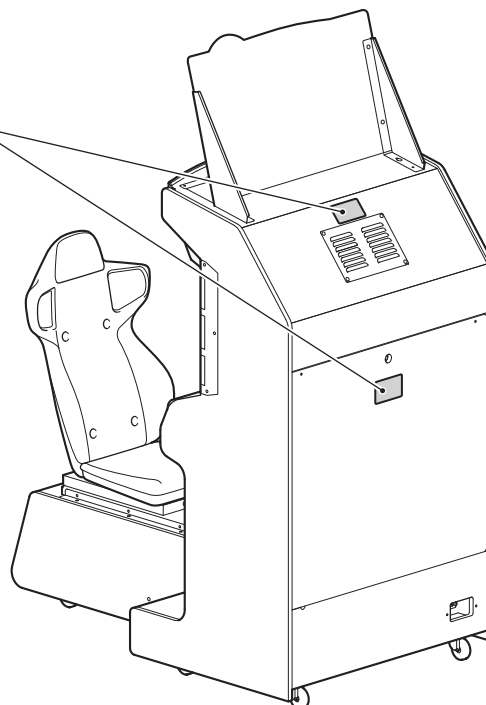


Table of Contents

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
Kable of Contents	4
2. Specifications	8
3. Package Contents	10
4. Overall Structure (Part Names)	12
5. Delivery and Installation Conditions	13
5-1 Installation Conditions	13
5-1-1 Installation Locations to Avoid	13
5-1-2 Play Zone for the Installed Machine	14
5-2 Required Dimensions for the Delivery Route (Such as Doors and Corridors)	15
6. Moving and Kransporting	16
6-1 Moving (On the Same Floor)	16
6-2 Transporting	17
6-2-1 Kransporting Manually (Such as Carrying on Stairs)	17
6-2-2 Transporting on a Vehicle	18
7. Operation	19
7-1 Safety Precautions for Playing	19
7-2 Pre-operation Inspection	20
7-2-1 Safety Inspection (Before Power On)	20
7-2-2 Function Inspection (After Power On)	21
7-3 Playing the Game	22
7-4 Explanation of the Power Switch and Adjustment Switches	24
7-4-1 Power Switch Position and Kurning the Power Switch On	24
7-4-2 Adjustment Switches	25
7-5 Flow during Game Startup	26
7-5-1 Self-test	26
7-6 Test Mode	27
7-6-1 MENU Screen	27
7-6-2 Game Cost and Free Play Settings (COIN OPTIONS)	29
7-6-3 Game Contents Settings (GAME OPTIONS)	30

7-6-4 Input/Output Test of Switches (I/O TEST)	32
(a) SWITCH TEST	33
(b) LAMP TEST	35
(c) NAMCAM (CAMERA) TEST	36
7-6-5 Screen Adjustment (MONITOR TEST)	37
7-6-6 Volume Adjustment (SOUND TEST)	38
7-6-8 Displaying Game Data (BOOKKEEPING)	40
7-6-9 OTHER OPTIONS	41
(a) REFORMAT OPTIONS	42
7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)	43
7-7 Daily Cleaning	44
8. Technician's Manual — Must be performed by a technician —	45
8A. Installation and Assembly	45
8A-1. Assembly	55
8A-1-1 Installing the Signboard Assembly	45
8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment	47
8A-1-3 Inserting the USB Dongle	49
8A-2. Connecting the Communication Cables	51
8A-2-1 Connection Diagrams	52
(1) Example of connection	52
8A-2-2 Connection Method	53
8A-2-3 Connecting the Power Cord and Ground	56
8A-2-4 Power Switch Position and Turning the Power Switch On	57
8A-3. Setting the PCB ID	58
8B. Service	59
8B-1 Inspections and Service	59
8B-1-1 Inspection Items	59
(1) Level Adjuster Inspection	59
(2) Power Cord Plug Inspection	59
(3) Screw Looseness Inspection	59
8B-2 Troubleshooting	60
8B-2-1 General	60
8B-2-2 Front Assembly	61
8B-2-3 Steering Assembly	61
8B-2-4 Pedal Assembly	62
8B-2-5 Seat Assembly	62

8B-3 Error Displays	63
(2) Steering Assembly Errors	64
(3) Other Hardware Errors.....	65
8B-4 Removing and Installing Assemblies and Parts.....	66
8B-4-1 Front Assembly	66
(1) Replacing the Rainbow PC Board (top cover)	66
(2) Removing and Installing the Control Cover	67
(3) Replacing the Item Button, Mario Button and Lamps	68
(4) Replacing the LCD Monitor.....	69
(5) Replacing the Steering Assembly	73
(6) Replacing the Rainbow PC Board (monitor side)	75
(7) Replacing the Camera	76
(8) Replacing the LED Bar (L)	77
8B-4-2 Front Assembly Rear Side	78
(1) Replacing the Game PC Board.....	78
(2) Replacing the STR4 (M) PC Board.....	81
(3) Replacing the NA-JV (M) PC Board.....	82
(4) Replacing the Amp PC Board	83
(5) Replacing the Switching Regulator (12 V)	84
(6) Replacing the Fuse.....	85
8B-4-3 Pedal Assembly	86
(1) Removing and Installing the Pedal Assembly	86
8B-4-4 Seat Assembly	87
(1) Replacing the Slide Unit.....	87
(2) Replacing the LED Bar (S).....	88
(3) Replacing the Rainbow PC Board (seat)	91
9.Disposal.....	93
10.Parts List	94
11. Wiring Diagram.....	105
12.BNA1Lite Wiring Diagram.....	109

MEMO

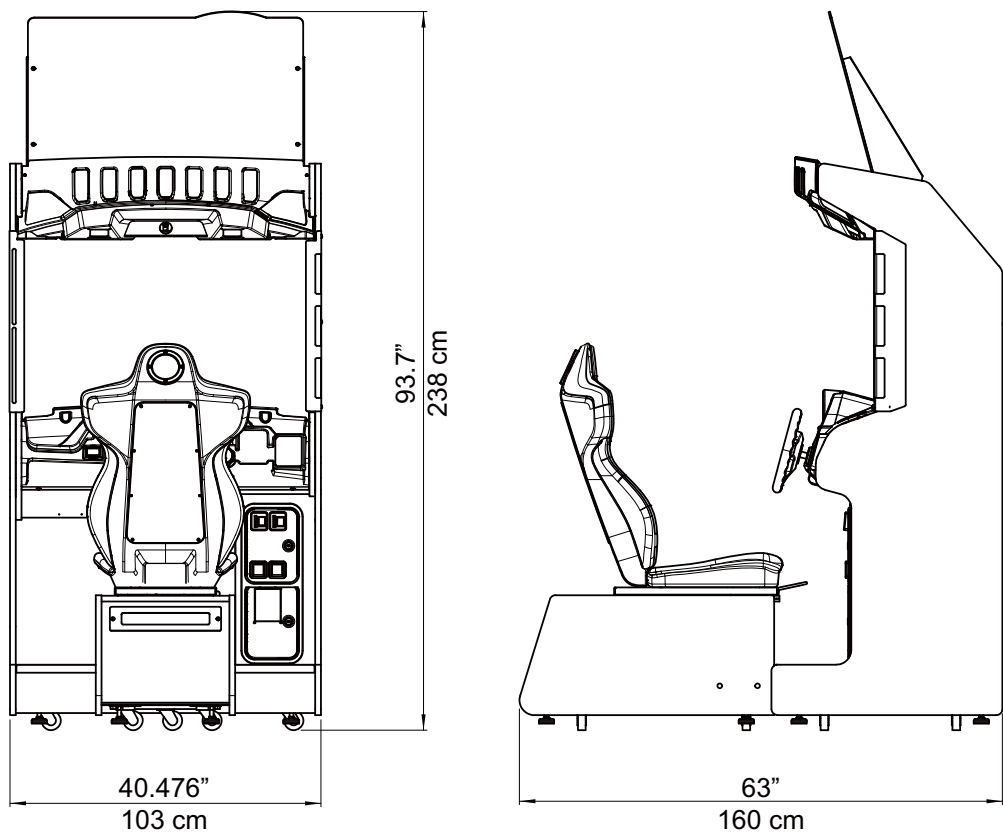
1
2
3
4
5
6
7
8A
8B
9
10
11

Table of Contents

Test Mode
Troubleshooting

2. Specifications

(1) Rated power supply AC	120 ± 10 V (50/60 Hz)/230 V ± 10 V (50/60 Hz)
(2) Rated power consumption	570 W
(3) Maximum consumption current	4.75 A/2.4 A
(4) Monitor	LCD monitor (42-inch)
(5) Dimensions when installed	Width (W) 40.476" × depth (D) 63" × height (H) 93.7"
	103 cm 160 cm 238 cm

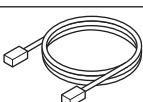
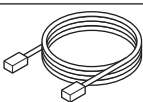
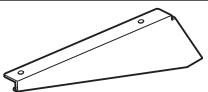
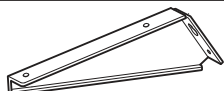
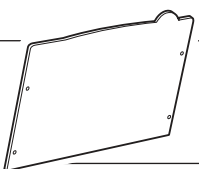
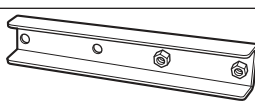
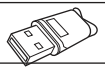


3. Package Contents



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

● Supplied Item List

No.	Name	Specification	Qty.
1	Operation Manual	(this manual) 	1
2	Service key (FRONT)		2
3	Service key (BACK)		2
4	Cashbox key		2
5	Communication cable	1 m 	1*2
6	Communication cable	5 m 	1
7	POP bracket (L)		1
8	POP bracket (R)		1
9	Title panel		1
10	Torx bolt	M5 x 16 	8
11	Connection bracket		2
12	Button head bolt (black)	M8 x 30 	8
13	Flat washer	ø9 x 30 x 2.3 	4
14	Torx wrench	M5-T25 	1
15	Torx wrench	M8-T40 	1
16	USB dongle		1
17	Power cord		1

*1 Keep any unused contents routers in a safe place to avoid losing them.

*2 The quantity noted in the table above is the quantity per 2 ~ 4 machines.

MEMO

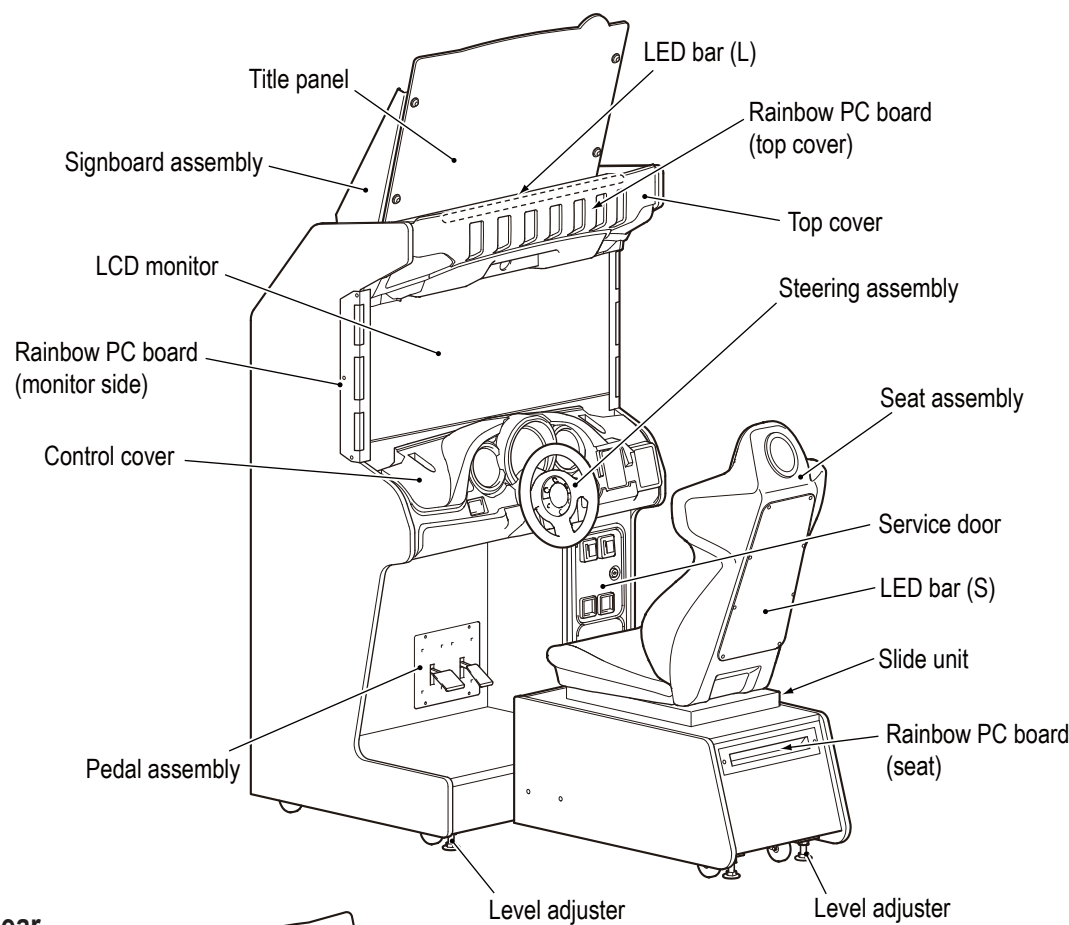
1
2
3
4
5
6
7
8A
8B
9
10
11

Package Contents

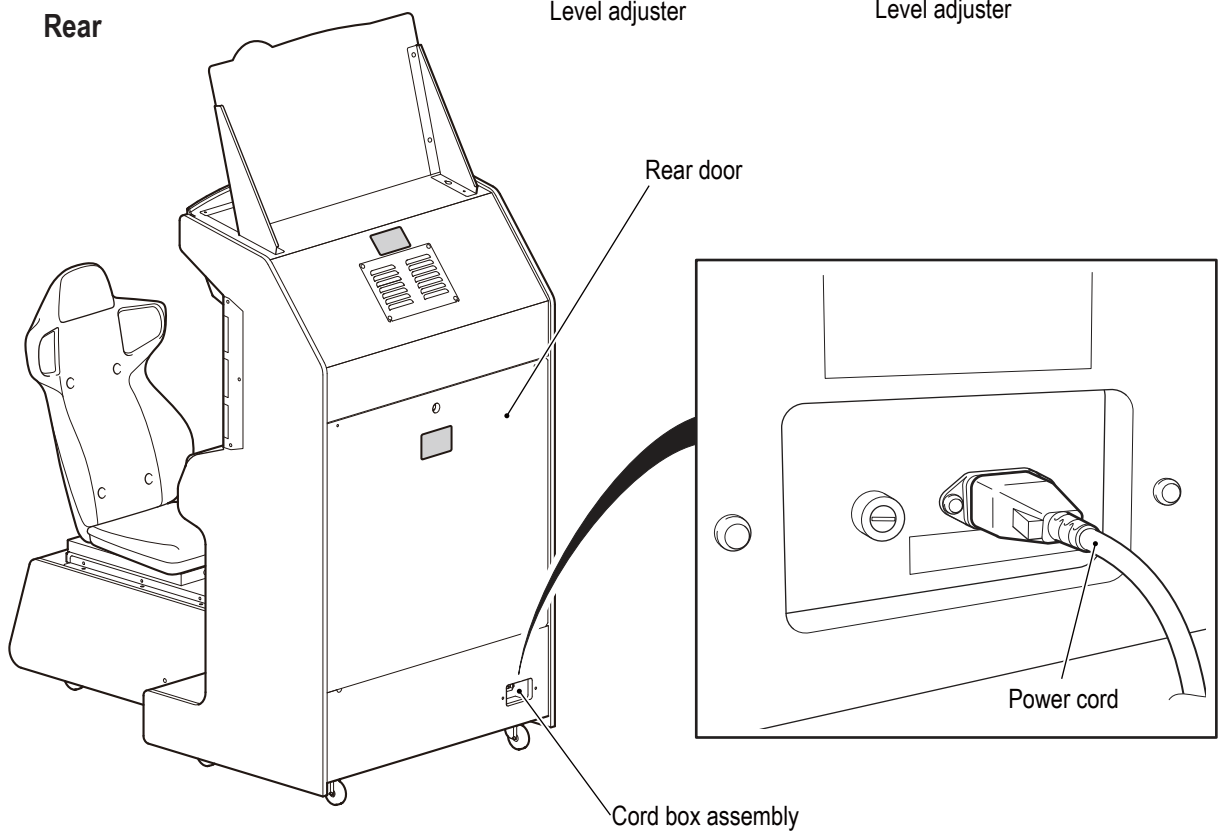
Test Mode
Troubleshooting

4. Overall Structure (Part Names)

Front



Rear



5. Delivery and Installation Conditions

⚠ WARNING

- Install the machine according to the instructions in this Operation Manual. If you do not follow these instructions, it 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 cause 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-2-3 Connecting the Power Cord and Ground” on page 66.)
- Install the machine securely by using the level adjusters. Unstable machine installation may result in an accident or injury. (See “8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment” on page 47)

5-1 Installation Conditions

5-1-1 Installation Locations to Avoid

⚠ WARNING

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

1

2

3

4

5

6

7

8A

8B

9

10

11

Delivery and Installation Conditions

Test Mode

Troubleshooting

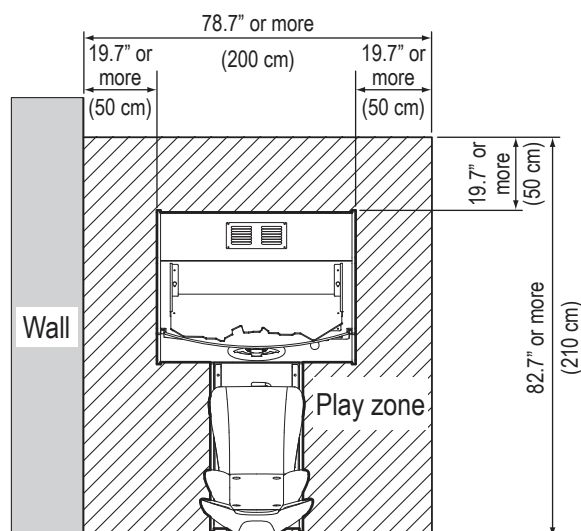
5-1-2 Play Zone for the Installed Machine

⚠ CAUTION

- Create a play zone around the machine so that the player does not make contact with bystanders or passersby.

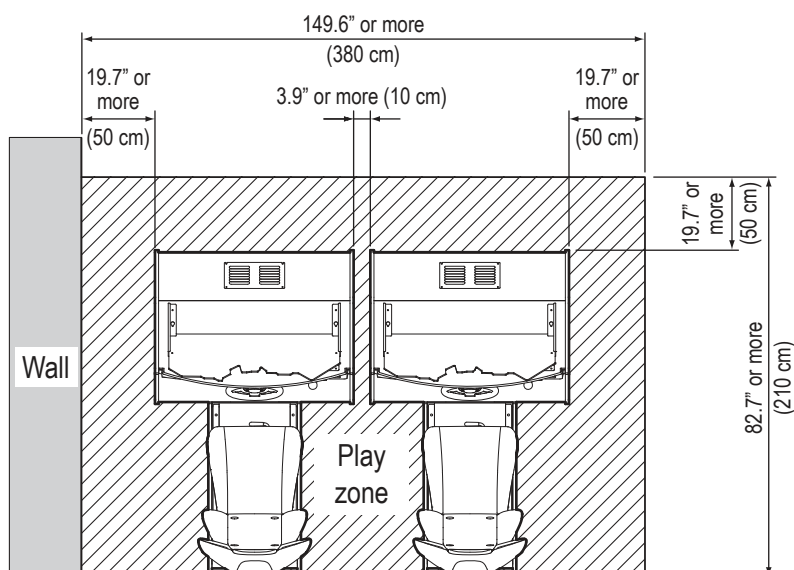
NOTICE

- Keep 19.7" (50 cm) or more between the rear of the machine and the wall or other machines to enable the rear door to be removed for service.
- The room height must be 94.5" (240 cm) or more from the floor to the ceiling.



- When installing two or more machines, keep a gap of 3.9" (10 cm) or more between the machines.

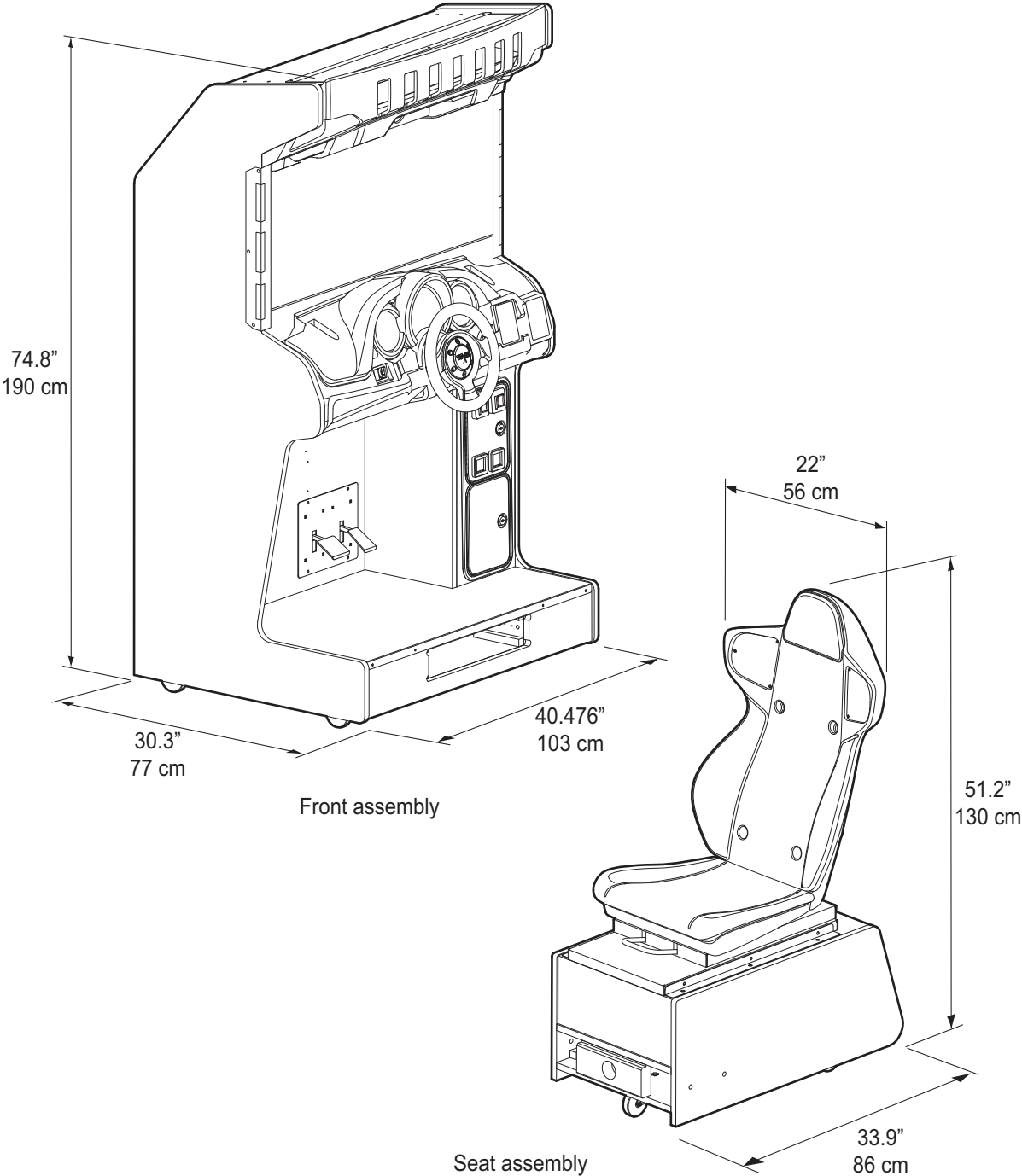
Example: Installing two machines



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

The machine is disassembled at the time of shipment. The sizes of the main parts are as follows.

- Front assembly Width (W) 40.476" (103 cm.) (x depth (D) 30.3" (77cm.) x height (H) 74.8" (190 cm.) Weight 402.6 lb 183 Kg.
- Seat assembly Width (W) 22"(56 cm.) x depth (D) 33.9"(86 cm.) x height (H) 51.2"(130cm) H eight 96.8 lb 44 kg



6. Moving and Transporting

WARNING

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

6-1 Moving (On the Same Floor)

WARNING

- When moving the machine on the same floor, first separate the front assembly from the seat assembly.
Failure to do this may result in floor damage, or the machine may block your view and result in a collision or other accident.
(See “8A-1 Assembly” on page 55.)
- (See **6** in “8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment” on page 57.)



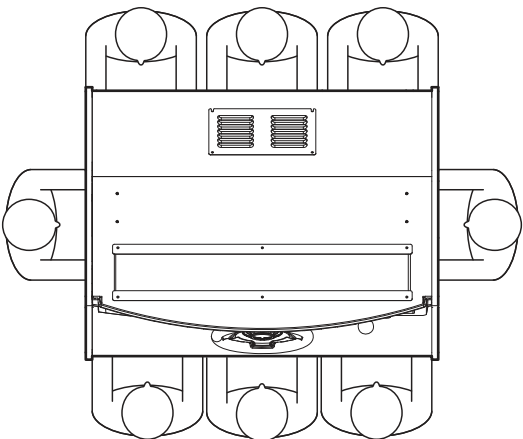
- Move the machine carefully to avoid damaging it.
- The plastic areas are weak. Do not exert strong amounts of force on them.
- Even when moving the machine only a short distance, be sure to raise the level adjusters to their highest level.
(See “8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment” on page 57.)
- Be sure to turn the power off before performing these operations.
- Handle the power cord carefully. (See “8A-2-3 Connecting the Power Cord and Ground” on page 66.)

6-2 Transporting

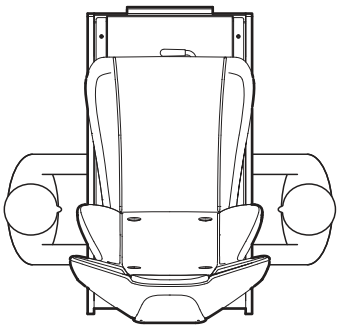
6-2-1 Transporting Manually (Such as Carrying on Stairs)

⚠ WARNING

- Before transporting the machine manually, be sure to separate the front assembly, seat assembly and signboard assembly, and raise all the level adjusters to their highest level. (See “8A-1 Assembly” on page 55.) Transporting the machine (such as carrying it on stairs) while it is fully assembled may result in an accident.
- 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 (approx. 402.6 lb 183 kg): 8 people or more
 - Seat assembly (approx. 96.8 lb 44 kg): 2 people or more



Front assembly



Seat assembly



- Do not subject the machine to impact while lowering it.

6-2-2 Transporting on a Vehicle

WARNING

- Before transporting the machine on a vehicle, be sure to separate the front assembly, seat assembly and signboard assembly, and raise all the level adjusters to their highest level.

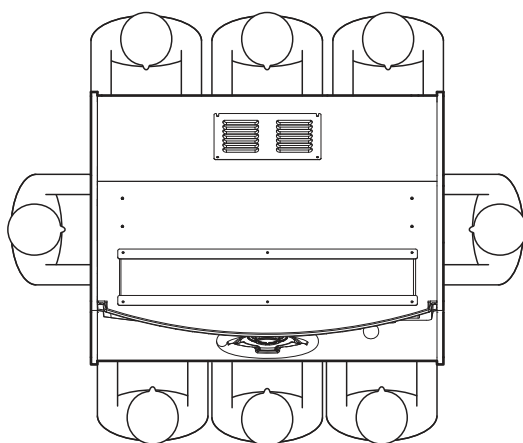
Transporting the machine while it is fully assembled may result in an accident.

- When using a fork lift to transport the machine, observe the following. Failure to observe the following instruction may result in an accident, such as the machine falling over.

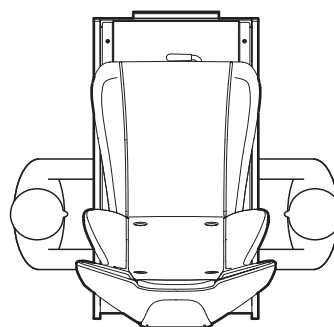
%Make sure that the machine is balanced properly during transportation.

- 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 (approx. 402.6 lb 183 kg) : 8 people or more
- Seat assembly (approx. 96.8 lb 44 kg) : 2 people or more



Front assembly



Seat assembly



- Do not subject the machine to impact while lowering it.

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 cause 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 cause a fire or burns.
- Before operating the machine, be sure to check that installation has been performed according to the instructions and specified procedures (5. Delivery and Installation Conditions, page 13) 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.
 - 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 game 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 “7-2 Pre-operation Inspection” on page 20) and service (see “8B. Service” on page 69) described in this Operation Manual. Omitting these inspections or service may result in an accident.

7-1 Safety Precautions for Playing

⚠ CAUTION

- If players start feeling ill because of the game images or light stimulation, they must stop playing 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

2

3

4

5

6

7

8A

8B

9

10

11

Operation

Test Mode

Troubleshooting

7-2 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 70.

7-2-1 Safety Inspection (Before Power On)

WARNING

- Before operating the machine, perform “7-2-1 Safety Inspection (Before Power On)” on page 20.
This is required to prevent accidents or injuries.
- Before operating the machine, check “5-1-1 Installation Locations to Yvoid” on page 13. This is required to prevent accidents or injuries.
- Operating the machine while parts are broken, damaged or deteriorated, or while the installation is defective, may result in an injury to the player or a bystander. If you discover an abnormality, replace the affected part immediately. To order parts, contact your distributor.

- (1) Are all warning labels in place? (See “1-4 Machine Warning Labels” on page 3.)
- (2) Are all warning labels legible? (See “1-4 Machine Warning Labels” on page 3.)
- (3) Are all level adjusters adjusted properly? (See “8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment” on page 57.)
- (4) Is the specified play zone provided? (See “5-1-2 Play Zone for the Installed Machine” on page 14.)
- (5) Are the power cord and communication cables laid out safely so they will not cause players or other customers to trip over them?
- (6) Is the power cord securely connected to the outlet and the cord box assembly on the bottom of the machine rear? (See “8A-2-3 Connecting the Power Cord and Ground” on page 66.)
- (7) Is the power cord plug free from dust? (See “8A-2-3 Connecting the Power Cord and Ground” on page 66.)
- (8) Are molded parts such as the seat assembly free from damage?

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.

- (9) Is any part of the power cord or plug abnormally hot?
- (10) Does touching the machine give a tingling electric shock?
- !>1) Is there a burning smell, abnormal noise or vibration?
- (12) Is there any other abnormality, damage or malfunction?

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

Check the following items in Kest mode. (See “7-4-2 Adjustment Switches” on page 25.)

- (1) Check the lamps. (Do the fluorescent lamp and Mario button light up?)
(See “7-6-4 (b) LAMP TEST” on page 39.)
- (2) Check the Mario button operation.
(See “7-6-4 (a) SWITCH TEST” on page 37.)
- (3) Check the steering operation.
(See “7-6-4 (a) SWITCH TEST” on page 37.)
- (4) Check the pedal operation.
(See “7-6-4 (a) SWITCH TEST” on page 37.)
- (5) Check the displayed images. (Does the monitor operate properly?)
(See “7-6-5 Screen Adjustment (MONITOR TEST)” on page 41.)
- (6) Check the audio. (Is sound produced by each speaker?)
(See “7-6-6 Volume Adjustment (SOUND TEST)” on page 42.)

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

Test Mode

Troubleshooting

7-3 Playing the Game

CAUTION

- If you discover anyone behaving as follows, tell them to stop immediately. Such behavior may cause an accident.
 - Two people sitting on the machine at the same time.
 - Y person other than the player touching the control parts (steering wheel).
- If players start feeling ill because the game images or light stimulation, they must stop playing 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.

■ Game Overview

- This action racing game allows communication-linked VS Race game play by up to four players. Players operate karts driven by game characters and participate in races. During a race players can use items to obstruct rival karts or power-up their own kart in order to gain advantages with the goal of ultimately winning the race.
- Three game modes are available to support game play by various numbers of players. These are the single-player GRAND PRIX mode, the Kwo Player CO-OP mode, and a VERSUS mode for two to four players (in case of two players this becomes Kwo Player VERSUS mode).

■ Flow when starting the game

- When a player inserts the required number of coins, the player-s entry in a VS Race is registered.
At this time the displays of other communication-linked cabinets change to the VS Race entry screen and the game waits for other players to join. If other players insert the required number of coins within the time limit, a VS Race game is established. The game starts when VS Race entry is registered at all communication-linked cabinets or when the entry time limit counts down to "0". (When there are no VS Race challengers, a single-player game starts.)
- After that the players select their characters, shoot facial photos, and make other selections, and then operation shifts to the respective game mode according to the number of players.

■ GRAND PRIX Mode (single-player game)

- In this mode the player competes in various Cup races consisting of distinctive courses such as the KOAD CUP or the MARIO CUP
- All race opponents are played by the CPU (computer).
- Each Cup race consists of four rounds. Rounds 1 and 3 and Rounds 2 and 4 use the same courses, but the difficulty level differs.
- One game play consists of a single round.

■ Two Player CO-OP mode (two-player game)

- Two Player CO-OP mode can be selected when two players register to enter a game. Unlike a normal race, in this mode the two players form a team and compete against teams played by the CPU. The race results convert each player's ranking into a point score, and the total points of the two players in each team are compared to determine the team rankings.
- In Two Player CO-OP mode, players can use a special item called a Fusion Kart. When either player uses this item, the team member in the rear is instantly transported to the position of the team member in front, and the players' karts fuse together to form a single large kart.
In addition, in the Fusion Kart state, the player that used the item becomes the gunner and the other player becomes the driver.
The gunner rotates the turret by operating the steering wheel, and can fire projectiles to attack rival karts by pressing the Item button.
The driver performs the same operations as normal to drive the kart.
In addition, in the Fusion Kart state the players' kart becomes invincible and opponents' attacks have no effect. The Fusion effect ends after a certain time, and the Fusion Kart splits into two karts at that point. (* Fusion Kart is not available to CPU teams.)
- When the two players of the player team drive within a certain closeness to each other, a Friendship shield is generated.
This shield lets players defend against attacks from CPU teams. (* The Friendship shield effect is not available to CPU teams.)

■ VERSUS mode (2-player to 4-player game * In case of two players this is displayed as Two Player VERSUS mode.)

- This mode allows players within the same venue to race against each other.
- The course selection is decided by a majority vote. If two courses receive the same number of votes, the easier course is selected.

■ Auto-Accel function

- To enable children who are too small to reach the accelerator pedal to play the game, all modes feature an Auto-Accel function that automatically starts running the kart when the accelerator pedal is not pressed for one second or more.
The screen displays the message "Auto-Accel is on!" during auto acceleration.
If the accelerator pedal or the brake pedal is pressed, the Auto-Accel function is canceled.

■ Easy facial photos

- This product has a function that uses software to automatically recognize the position of the player's face and align the frame with that position when taking the facial photo displayed during the race.
This lets players take photos without having to adjust their face position.

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

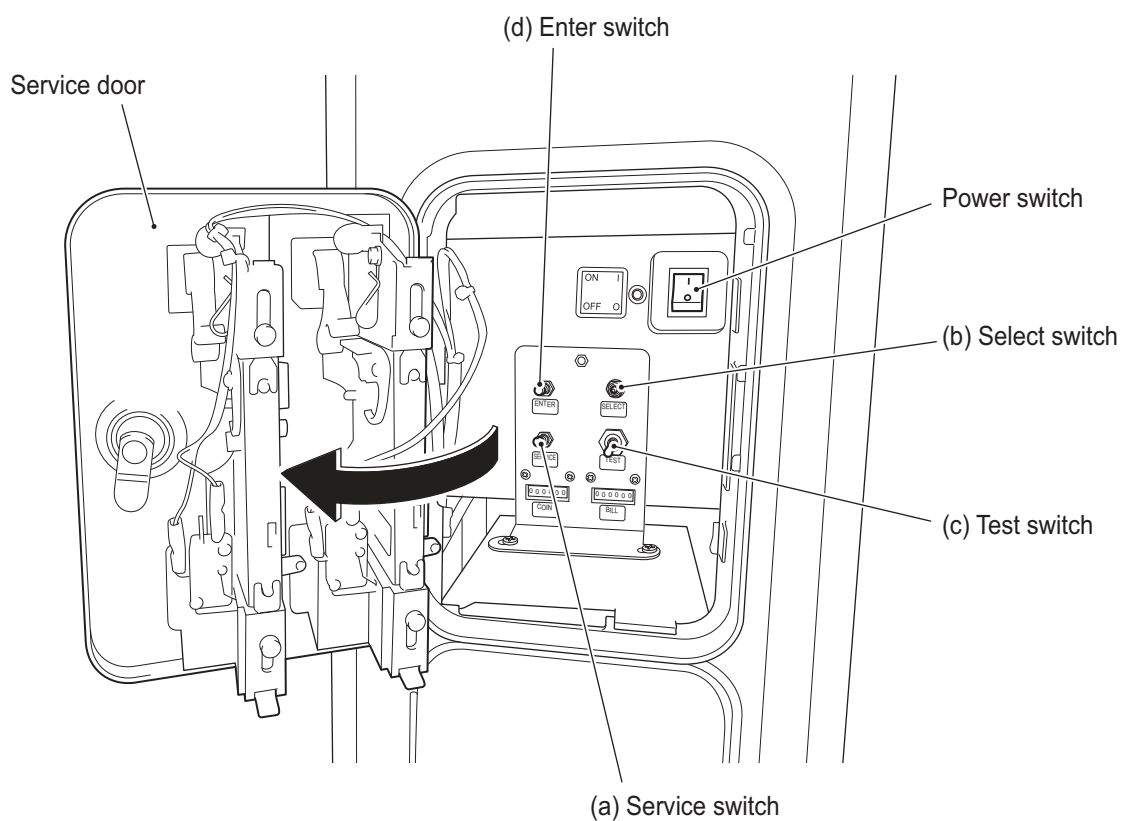
Test Mode

Troubleshooting

7-4 Explanation of the Power Switch and Adjustment Switches

7-4-1 Power Switch Position and Turning the Power Switch On

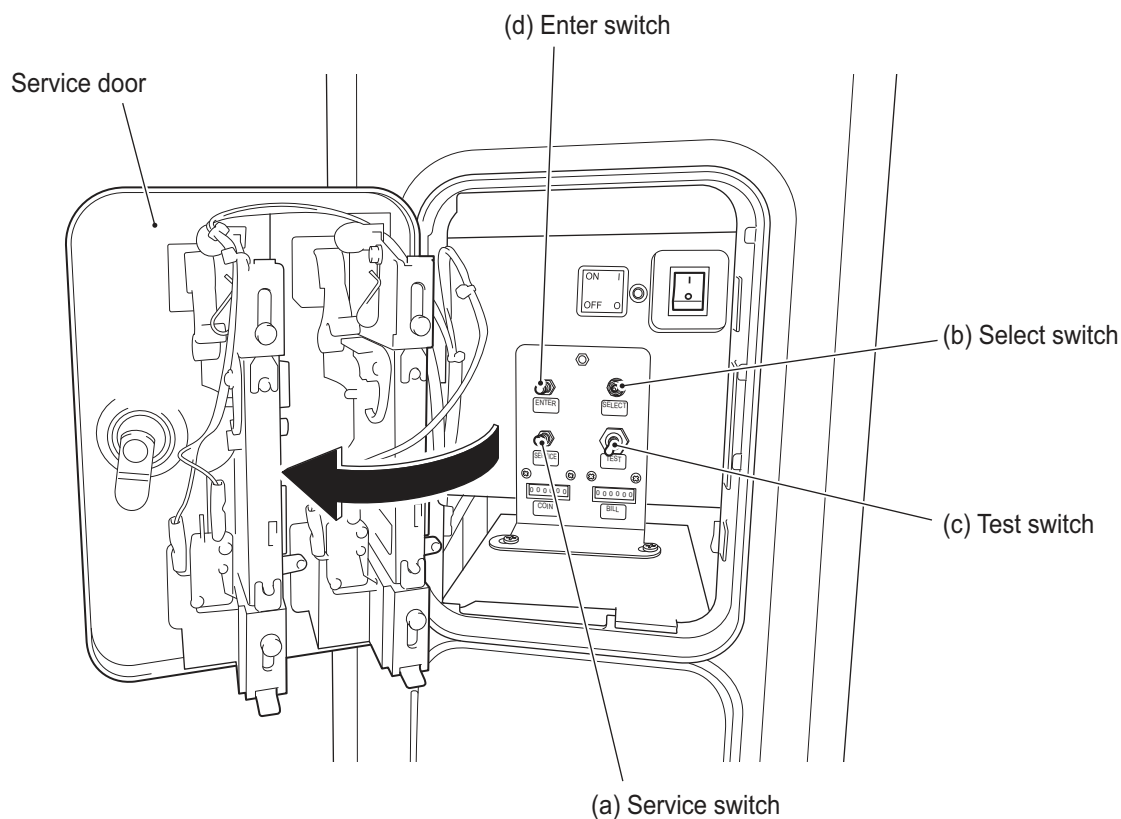
- 1 Turn on the power switch of the machine.



- Do not turn the power switch on and off repeatedly, because it may cause a machine malfunction.

7-4-2 Adjustment Switches

Open the service door for access to the adjustment switches.



(a) Service switch (red)

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

(b) Select switch

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

(c) Test switch

Turn this switch on to activate Kest mode.

Test mode is used to test the monitor and other parts.

(d) Enter switch (red)

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

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

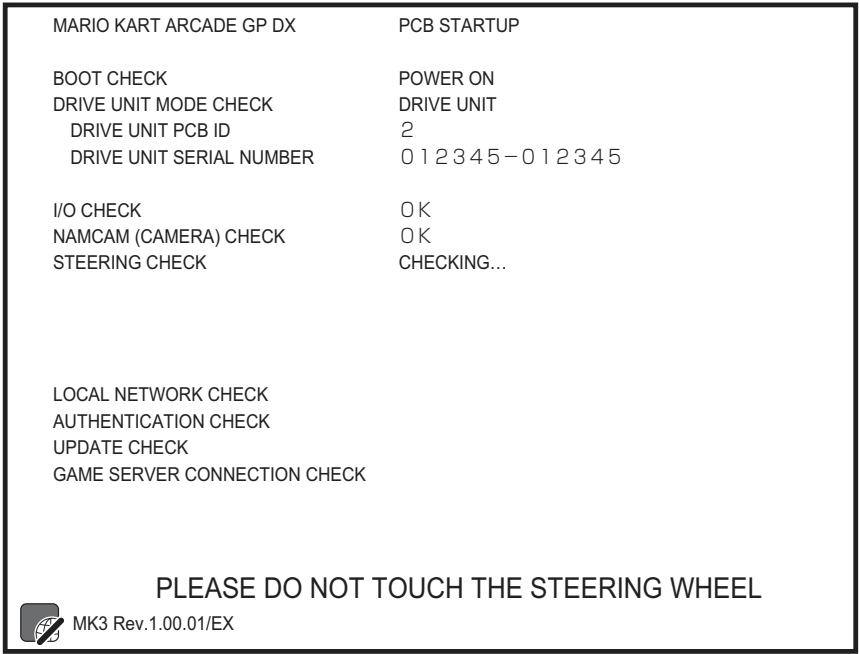
Test Mode

Troubleshooting

7-5 Flow during Game Startup

7-5-1 Self-test

The machine automatically executes a self-test after the power is turned on. When the power switch is turned on, the self-test screen appears on the monitor. If no problems are found, the display then changes to the title screen. If an abnormality is found, an error message is displayed on the monitor and the machine stops operating. When an error message is displayed, refer to “8B-2 Kroubleshooting” on page 70 and cancel the error.



Self-test screen

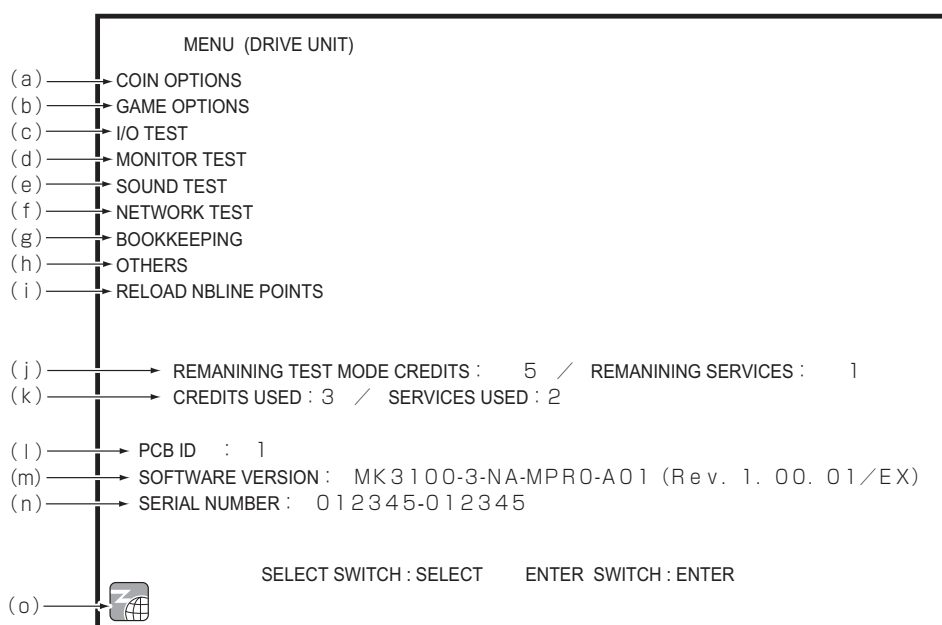


- Do not touch the steering wheel while the self-test is underway. If the steering wheel is moved, the machine may display an error message and stop operating.

7-6 Test Mode

7-6-1 MENU Screen

- 1** Use the supplied service key to open the service door(
- 2** When the Kest switch is set to ON, the MENU screen appears on the monitor.
(See "7-4-2 Adjustment Switches" on page 25.)
- 3** Flip the Select switch up and down to select the item.
The selected item blinks.
- 4** Press the Enter switch to enter the selected item.
When the selection is entered, the Kest menu for that item appears.
- 5** After finishing all the adjustments, set the Kest switch to Off. The display returns to the game screen.



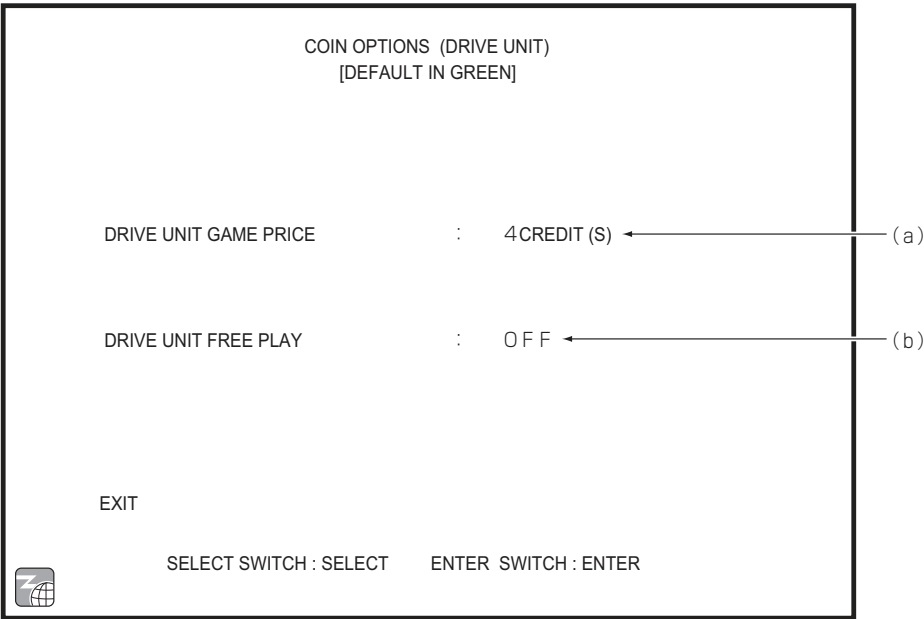
MENU screen

Item	Description	Reference section
(a) COIN OPTIONS	Game cost and other settings	See 7-6-2.
(b) GAME OPTIONS	Game contents and equipment use settings	See 7-6-3.
(c) I/O TEST	Switch, light and other settings	See 7-6-4.
(d) MONITOR TEST	This displays the monitor adjustment screen.	See 7-6-5.
(e) SOUND TEST	[olume adjustment, etc.	See 7-6-6.
(f) NETWORK TEST	Network related settings	See 7-6-7.
(g) BOOKKEEPING	This displays play conditions and error log	See 7-6-8.
(h) OTHERS	Setting initialization, etc.	See 7-6-9.
(i) RELOAD NBLINE POINTS	Displays the RELOAD NBLINE POINTS screen.	See 7-6-10.
(j) REMAINING TEST MODE CREDITS	When Kest mode is activated, all remaining credits (coins) and service credits disappear, so this displays the number of credits and service credits remaining just before Kest mode activation.	
(k) PREVIOUS CONDITIONS NAME	This displays the play conditions (CREDITS USED, SERVICES USED) just before Kest mode activation.	
(l) PCB ID	This displays the PCB ID.	See 7-6-3.
(m) SOFTWARE VERSION	This displays the software version and revision number(	
(n) SERIAL NUMBER	This displays the serial number of the inserted USB dongle. When the serial number cannot be displayed, “-” appears.	
(o) Online/Offline icon	This indicates the online/offline status.	See 7-5-4.

7-6-2 Game Cost and Free Play Settings (COIN OPTIONS)

This screen displays the various game cost settings.

- 1 In the MENU screen, select COIN OPTIONS. The following screen appears.
- 2 After checking all the items, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.



COIN OPTIONS screen

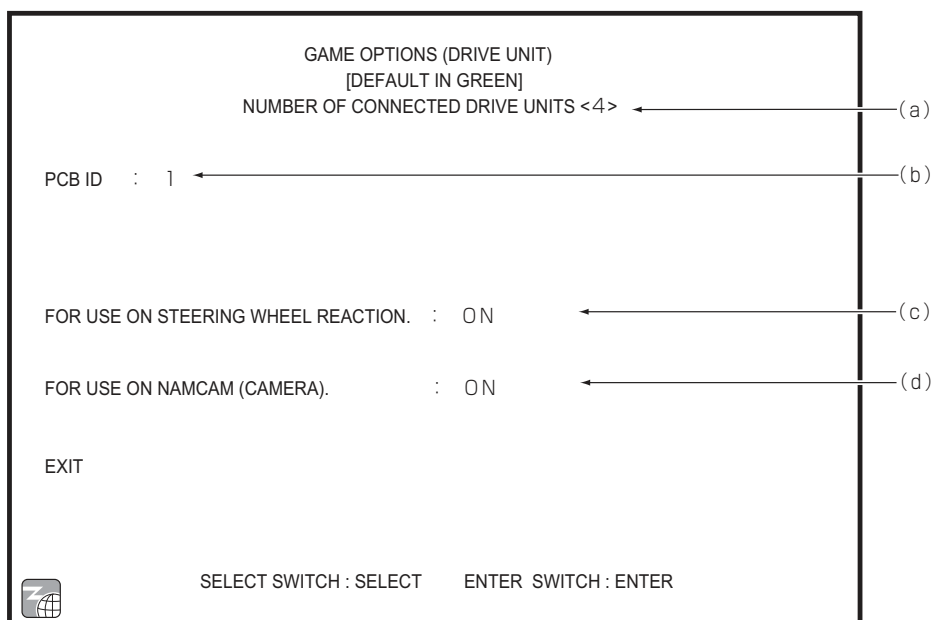
Item	Description	Default
(a) DRIVE UNIT GAME PRICE	Setting for the number of coins required for a game Setting range: 1 to 19	4
(b) DRIVE UNIT FREE PLAY*1	Free play setting OFF: Normal coin operation ON: Free play operation	OFF

*1 When FREE PLAY is set to ON, all other COIN OPTIONS items appear grayed-out and cannot be selected. (The settings are held.)
When FREE PLAY is returned to OFF, operation returns to the held settings.

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

This screen is used to make various game settings.

- 1** In the MENU screen, select GAME OPTIONS. The following screen appears.
- 2** Flip the Select switch up and down to select the item. The selected item blinks.
- 3** Press the Enter switch to enter the selected item. When the selection is entered, the setting for that item can be changed.
- 4** Flip the Select switch up or down to set the desired setting.
When the desired value is set, press the Enter switch to save the setting value.
- 5** When finished making all the settings, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.



GAME OPTIONS screen

Default settings (factory settings) are indicated in green, and other settings are in yellow.

Item	Description	Default
(a) NUMBER OF CONNECTED DRIVE UNITS	This displays the number of communication-linked Driver Cabinets. NUMBER OF CONNECTED DRIVE UNITS <4>: Proper communication by four machines NUMBER OF CONNECTED DRIVE UNITS <3>: Proper communication by three machines NUMBER OF CONNECTED DRIVE UNITS <2>: Proper communication by two machines NUMBER OF CONNECTED DRIVE UNITS <1>: Proper communication by one machine	
(b) PCB ID and duplicate ID notice display	This sets the PCB ID. Setting range: 1→2→3→4→1... When the same PCB ID is already in use by another Driver Cabinet, the following notice appears. <PCB ID CONFLICT. PLEASE CHANGE PCB ID.>	1
(c) FOR USE ON STEERING WHEEL REACTION* ¹	Enables or disables the steering wheel feedback (reactive force) feature. ON : Provides feedback (reactive force) to the steering wheel. OFF : Does not provide feedback (reactive force) to the steering wheel.	ON
(d) FOR USE ON NAMCAM (CAMERA)* ¹	Enables or disables use of NAMCAM (camera) game. ON : Uses NAMCAM (camera) OFF : Does not uses NAMCAM (camera)	ON

*¹ When FOR USE ON STEERING WHEEL REACTION and FOR USE ON NAMCAM (CAMERA) are set to OFF, the corresponding equipment cannot be tested in Test mode.
Even when FOR USE ON STEERING WHEEL REACTION is changed from OFF to ON, the Kest switch must be set to Off and the self-test performed in order to check the usage and operation of the equipment.

Items for equipment that requires self-test are indicated by *¹ in the table above.

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

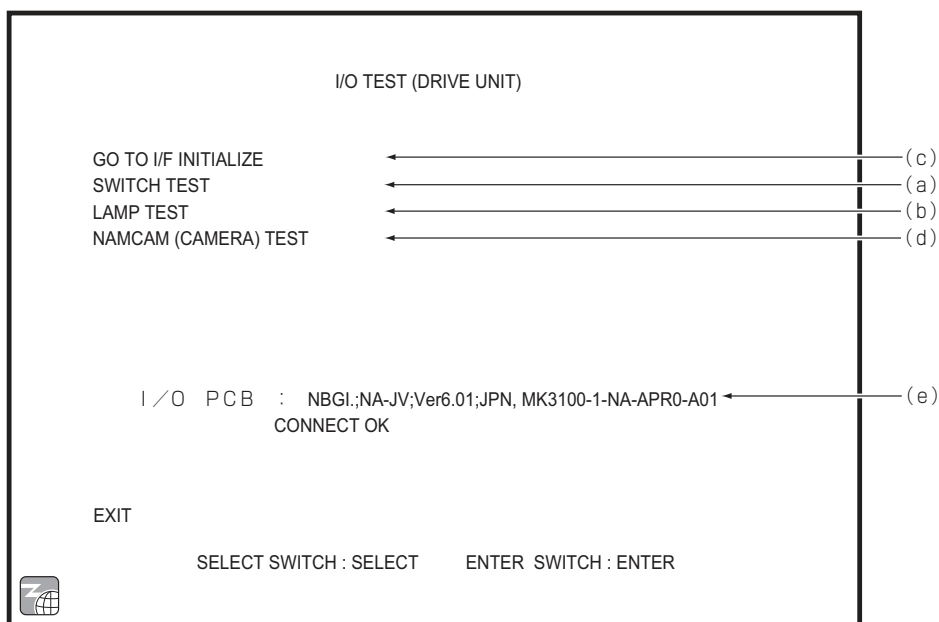
Test Mode

Troubleshooting

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

This screen is used to initialize the analog potentiometer and perform tests for each switch and light, etc.

- 1** In the MENU screen, select I/O TEST. The following screen appears.
- 2** Flip the Select switch up and down to select the item. The selected item blinks.
- 3** Press the Enter switch to enter the selected item. When the selection is entered, the Test menu for that item appears.
- 4** After checking all the items, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.

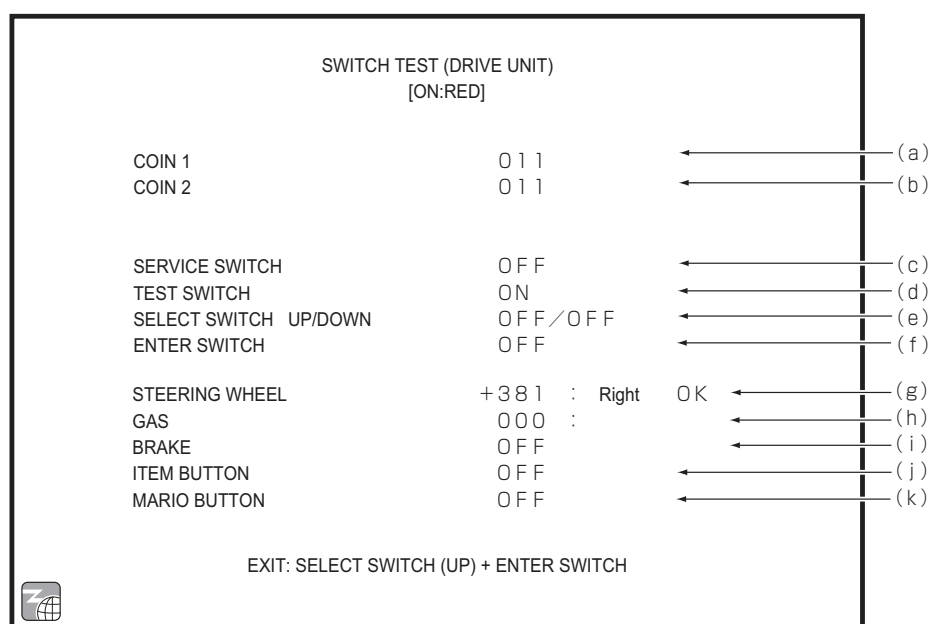


I/O TEST screen

Item	Description
(a) SWITCH TEST	This screen is used to test each switch and button.
(b) LAMP TEST	This screen is used to test the lighting of illuminated buttons and decorative lights.
(c) GO KO I/F INITIALIZE	This is used to initialize the analog potentiometer. (See "7-6-11 Adjustments after Parts Replacement (GO KO I/F INITIALIZE)" on page 53.)
(d) NAMCAM (CAMERA) TEST	This screen is used to test NAMCAM (camera).
(e) I/O PCB	This displays the I/O PCB connection status. CONNECT OK (green): Communication can be performed normally(CONNECT NG! (red): Communication cannot be performed normally. Check the I/O PCB connection.

(a) SWITCH TEST

This screen is used to test each switch and button.



SWITCH TEST screen

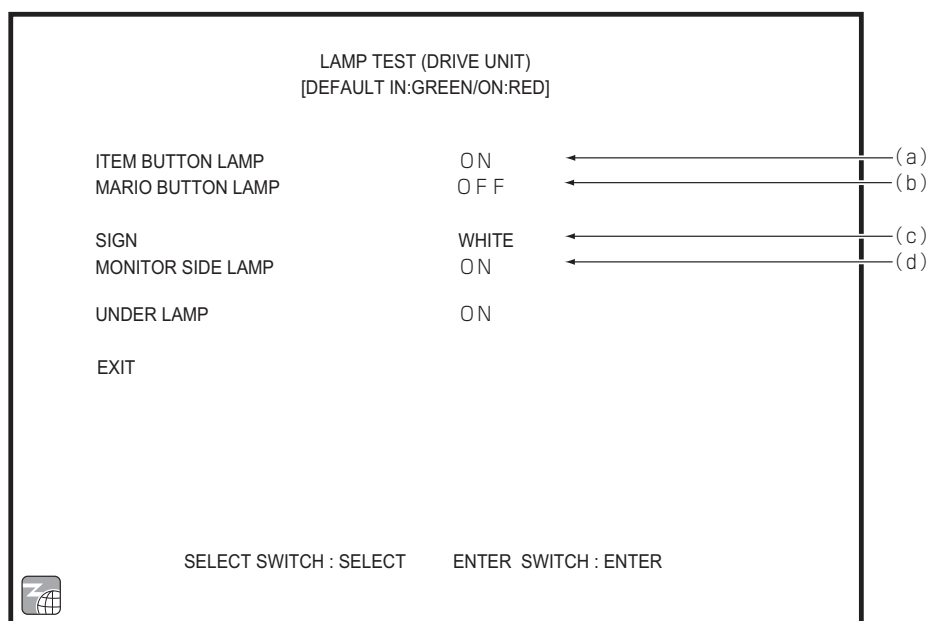
Item	Description
(a) COIN 1	Status of coin switch 1 Each time the switch 1 is activated, the counter increments by one. 000 to 999 (The counter returns to 000 after 999.)
(b) COIN 2	Status of coin switch 2 Each time the switch 2 is activated, the counter increments by one. 000 to 999 (The counter returns to 000 after 999.)
(c) SERVICE SWITCH	Status of Service switch OFF : Normal ON (red) : Pressed in
(d) TEST SWITCH	Status of Test switch OFF : Normal ON (red) : Pressed in
(e) SELECT SWITCH UP/DOWN	Status of Select switch OFF : Normal ON (red) : Flipped up or down
(f) ENTER SWITCH	Status of Enter switch OFF : Normal ON (red) : Pressed in
(g) STEERING WHEEL	Status of steering wheel Turning the steering wheel to the right changes the numerical value in the positive direction, and turning the steering wheel to the left changes the numerical value in the negative direction. Right (Left) OK (red) appears on the screen when normal right (left) operation is detected. (* Note)

Item	Description
(h) GAS	Status of accelerator pedal Stepping on the pedal changes the numerical value in the positive direction. OK (red) appears on the screen near the setting limit. (* Note)
(i) BRAKE	Status of brake pedal OFF : Normal ON : Stepped on
(j) ITEM BUTTON	Status of Item button OFF : Normal ON (red) : Pressed in
(k) MARIO BUTTON	Status of Mario button OFF : Normal ON (red) : Pressed in

* If OK is not displayed when the steering wheel/pedal is turned/depressed fully, the steering wheel or pedal must be initialized. (See "7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)" on page 53.)
Flip the Select switch up and press the Enter switch to return to the I/O TEST screen.

(b) LAMP TEST

This screen is used to test the lighting of illuminated buttons and decorative lights.



LAMP TEST screen

Default settings (factory settings) are indicated in green, and other settings are in red.

Item	Description
(a) ITEM BUTTON LAMP	Lighting status of Item button light OFF : Off ON (red) : Lighted
(b) MARIO BUTTON LAMP	Lighting status of Mario button light OFF : Off ON (red) : Lighted
(c) SIGN (d) MONITOR SIDE LAMP (e) UNDER LAMP	Lighting status of signboard, monitor side lamp and under lamp OFF : Off RED : Lighted red GREEN : Lighted green BLUE : Lighted blue WHITE : Lighted white PATTERN 1 PATTERN 2 PATTERN 3 PATTERN 4 PATTERN 5 PATTERN 6 PATTERN 7 } Lighting variation patterns used in the game

* Lights that are lighted turn off when the LAMP TEST screen is exited.

To return to the I/O TEST screen, select EXIT and press the Enter switch.

1

2

3

4

5

6

7

8A

8B

9

10

11

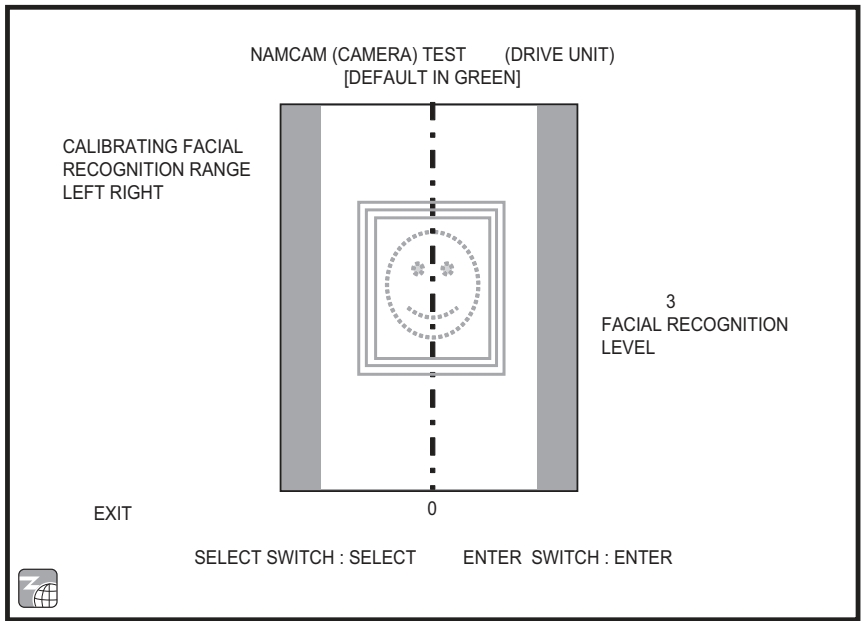
Operation

Test Mode

Troubleshooting

(c) NAMCAME (CAMERA) TEST

This screen is used to adjust the facial recognition position of the NamCam (camera).



NAMCAME (CAMERA) TEST screen



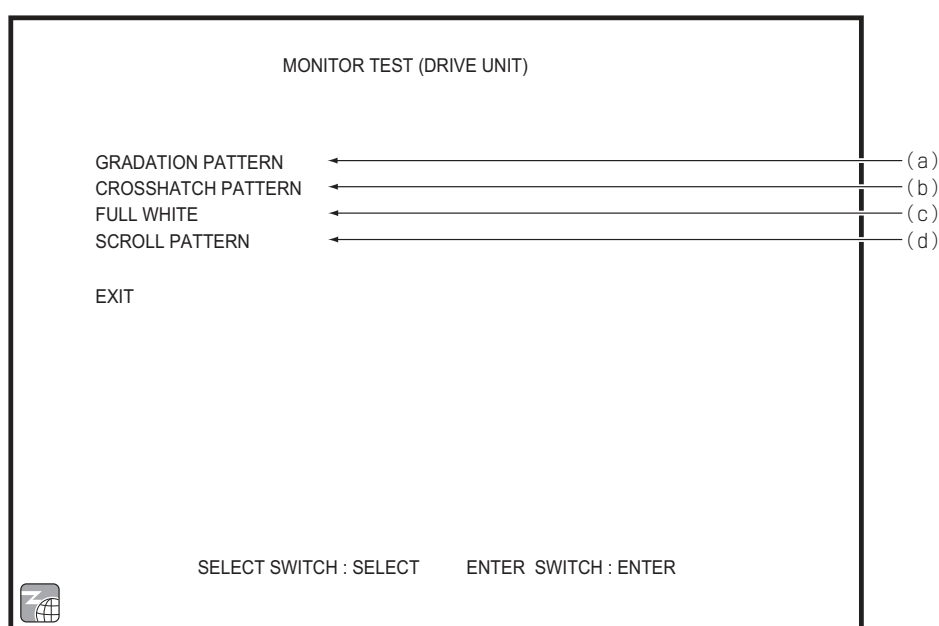
- Adjust the cabinet installation position to enable facial recognition during game play.
 - Adjust the ambient lighting environment so that two or more frames appear around the player's face (Facial Recognition Level 2 or 3) when sitting in the seat and facing the camera.
 - At minimum adjust so that at least one frame appears around the player's face (Facial Recognition Level 1).
- When a Facial Recognition Level of 2 or more cannot be achieved, check the following points and adjust the environment.
 - Facial recognition may be difficult if there are bright lights around the seat or if bright light directly enters the camera lens.
 - Facial recognition may be difficult if it is too dark around the seat.
 - Facial recognition may be difficult if a bright light such as a spotlight directly shines on the player's face.
 - When making the adjustment, do not wear sunglasses, a mask, or a cap, etc.

Item (Facial recognition range)	Setting value variable range	Default
Right/left adjustment	-15 to +15	0

7-6-5 Screen Adjustment (MONITOR TEST)

This screen is used to make various monitor adjustments.

- 1** In the MENU screen, select MONITOR TEST. The following screen appears.
- 2** Flip the Select switch up and down to select the item. The selected item blinks.
- 3** Press the Enter switch to display the adjustment screen for the selected item.
- 4** Press the Enter switch again to return to the MONITOR TEST screen.
- 5** After finishing all the adjustments, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.



MONITOR TEST screen

Item	Description
(a) GRADATION PATTERN	Displays a gradation pattern.
(b) CROSSHATCH PATTERN	Displays a crosshatch pattern.
(c) 0Y@@@WHITE	Displays a white screen.
(d) SCROLL PATTERN	Displays a screen scrolling test pattern.

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

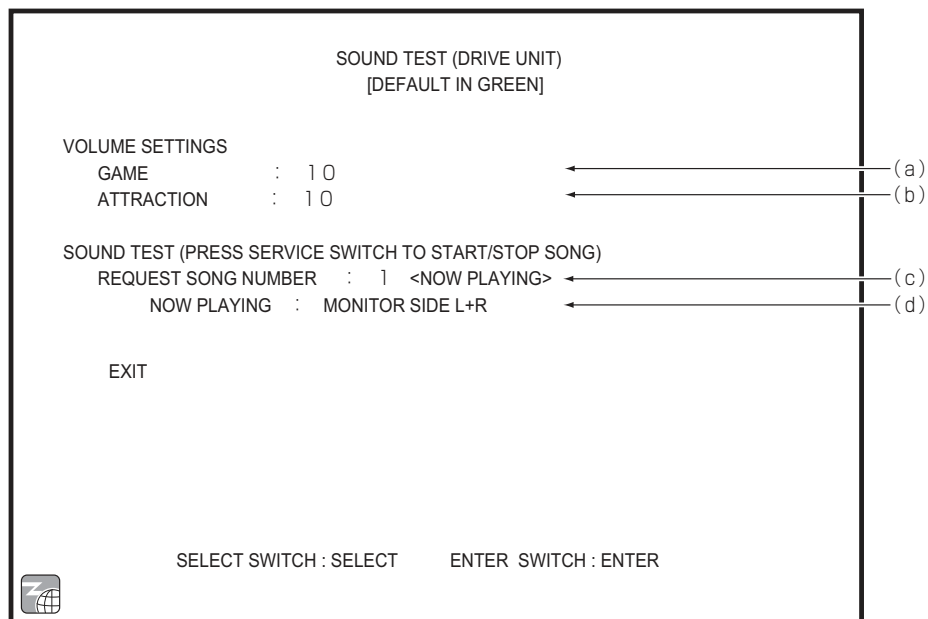
Test Mode

Troubleshooting

7-6-6 Volume Adjustment (SOUND TEST)

This screen is used to adjust the sound volume.

- 1** In the MENU screen, select SOUND TEST. The following screen appears.
- 2** Flip the Select switch up and down to select the item. The selected item blinks.
- 3** Press the Enter switch to enter the selected item. When the selection is entered, the setting for that item can be changed.
- 4** Flip the Select switch up or down to set the desired setting.
When the desired value is set, press the Enter switch to save the setting value.
- 5** Press the Service switch to play back the song selected by REQUEST SONG NUMBER.
Press the Service switch again to stop playback.
Change the REQUEST SONG NUMBER setting to switch the test sound and song.
- 6** After finishing all the adjustments, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.



SOUND TEST screen

Default settings (factory settings) are indicated in green, and other settings are in yellow.

Item	Description	Default
(a) GAME	Sets the volume during game play/ Setting range: 0 (min.) to 15 (max.) Flip the Select switch up or down to increase or decrease the numerical value.	10
(b) ATTRACTION	Sets the volume in Attract mode. Setting range: 0 (min.) to 15 (max.) Flip the Select switch up or down to increase or decrease the numerical value.	10
(c) REQUEST SONG NUMBER	0 No sound 1 Stereo test (monitor side) 2 Sample music (game) 3 Sample music (Attract)	0
(d) NOW PLAYING	Displays the name of the music selected by REQUEST SONG NO. 0 NO SOUND 1 MONITOR SIDE L MONITOR SIDE R MONITOR SIDE L+R * The test sound is produced from the speakers in order. 2 SAMPLE (GAME) 3 SAMPLE (ATTRACT)	

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

Test Mode

Troubleshooting

7-6-8 Displaying Game Data (BOOKKEEPING)

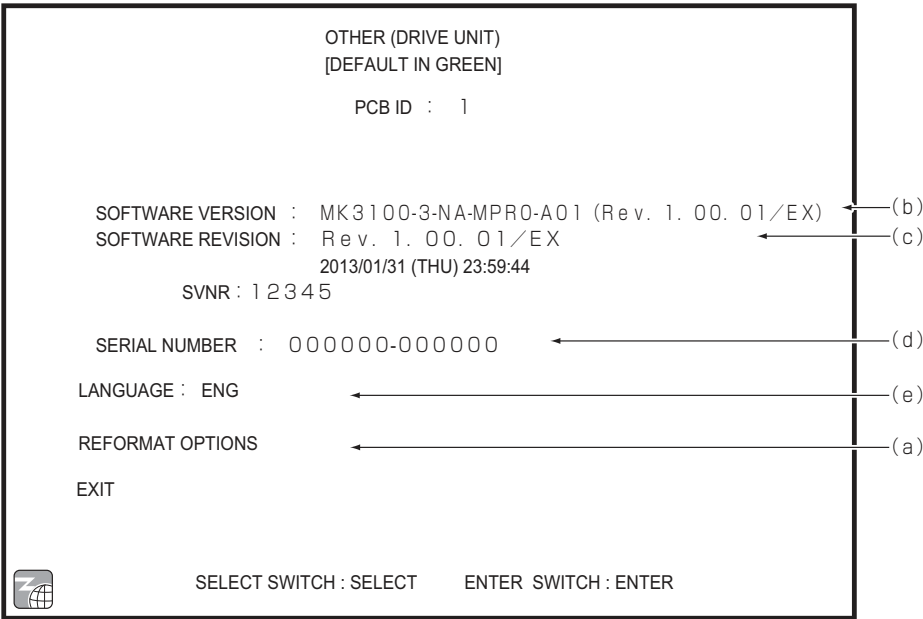
This screen displays various game related data.

- 1** In the MENU screen, select BOOKKEEPING to display the BOOKKEEPING screen.
- 2** Flip the Select switch up and down to select the item. The selected item blinks.
- 3** Press the Enter switch to enter the selected item. The screen for the selected item appears.
- 4** After checking all the items, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.

7-6-9 OTHER OPTIONS

This screen displays various information such as the current time and software version, and is used to access the REFORMAT OPTIONS screen.

- 1 In the MENU screen, select OTHERS. The following screen appears.
- 2 Flip the Select switch up and down to select the item. The selected item blinks.
- 3 Press the Enter switch to enter the selected item. The screen for the selected item appears.
- 4 After checking all the items, flip the Select switch up or down to select EXIT and press the Enter switch to return to the MENU screen.



OTHER screen

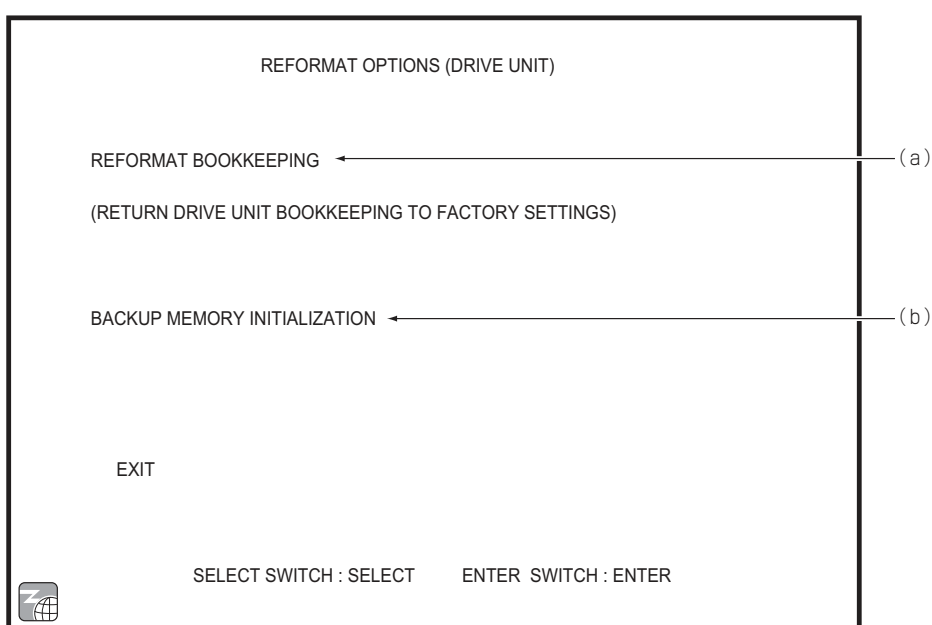
Default settings (factory settings) are indicated in green, and other settings are in yellow.

Item	Description
(a) REFORMAT OPTIONS	Used to initialize settings.
(b) SOFTWARE VERSION	Displays the software version.
(c) SOFTWARE REVISION	Displays the software revision and the update date and time.
(d) SERIAL NUMBER	Displays the serial number of the USB dongle.
(e) LANGUAGE	Displays the language setting.

(a) REFORMAT OPTIONS

This screen can be used to initialize individual Test mode settings.

- 1** In the OTHERS screen, select REFORMAT OPTIONS. The following screen appears.
- 2** Flip the Select switch up and down to select the item. The selected item blinks.
- 3** Press the Enter switch to enter the selected item. The screen for the selected item appears.
- 4** When initialization is finished, flip the Select switch up or down to select EXIT and press the Enter switch to return to the OTHERS screen.



INITIALIZE SETTINGS screen

Item	Description
(a) REFORMAT BOOKKEEPING	Initialized contents (only within bookkeeping) • All bookkeeping data • All error log entries
(b) BACKUP MEMORY INITIALIZATION	Initialized contents • Game options • Analog potentiometer initialize settings • Sound level settings • Remaining credits, remaining service credits • Play under the previous conditions displays • All bookkeeping data • All error log entries



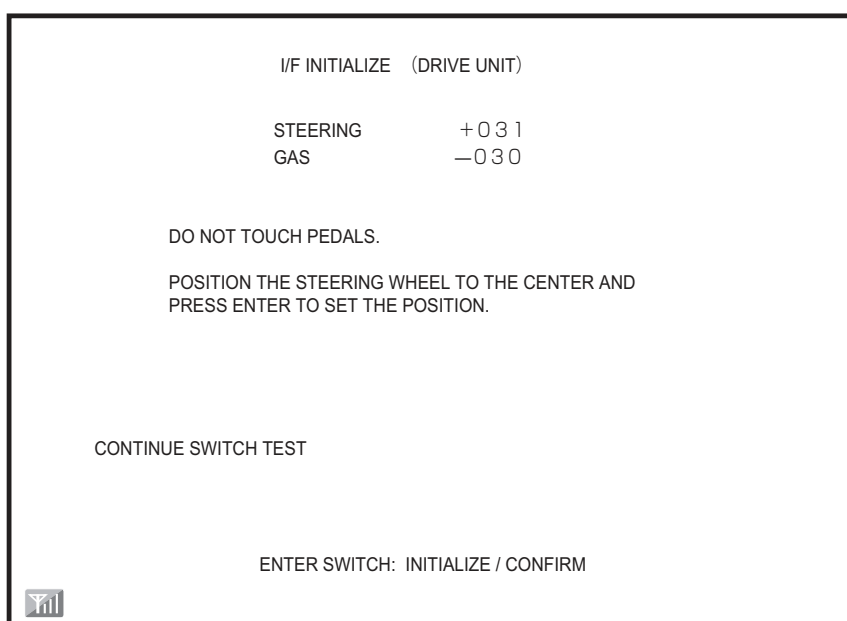
- After BACKUP MEMORY INITIALIZATION is executed, be sure to refer to “7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)” on page 53 and initialize the analog potentiometers.

7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)



- Be sure to perform the following initialization process after replacing the game PC board, steering assembly interface or pedal assembly interface, or after initializing the backup data. The game will not play properly without performing this initialization.
- After initializing the analog interfaces, the SWITCH TEST screen (see “7-6-4 (a) SWITCH TEST” on page 37) appears. Make sure that OK is displayed on the screen when the steering wheel, accelerator pedal and brake pedal are operated.

- 1** Set the Kest switch to ON and select I/O TEST in the MENU screen. (See “7-6-4 Input/Output Kest of Switches (I/O TEST)” on page 36.)
- 2** In the I/O TEST screen, select GO KO I/F INITIALIZE. The following screen appears.
- 3** Set the steering wheel to the center position, release your hands from the steering wheel, and also release your feet from the accelerator and brake pedals.
(* Initialization will not be completed successfully if the steering wheel or the accelerator or brake pedals are operated.)
- 4** In this condition, press the Enter switch.
The analog interfaces will be initialized.
- 5** After the initialization is complete, the SWITCH TEST screen (see “7-6-4 (a) SWITCH TEST” on page 37) appears. Kurn the steering wheel fully to the right and then fully to the left, and make sure that RIGHT OK and LEFT OK are displayed on the screen.
- 6** Fully depress the accelerator pedal, and make sure that OK is displayed on the screen for each.
- 7** Flip the Select switch up and press the Enter switch to return to the I/O TEST screen.



I/F INITIALIZE screen

1

2

3

4

5

6

7

8A

8B

9

10

11

Operation

Test Mode

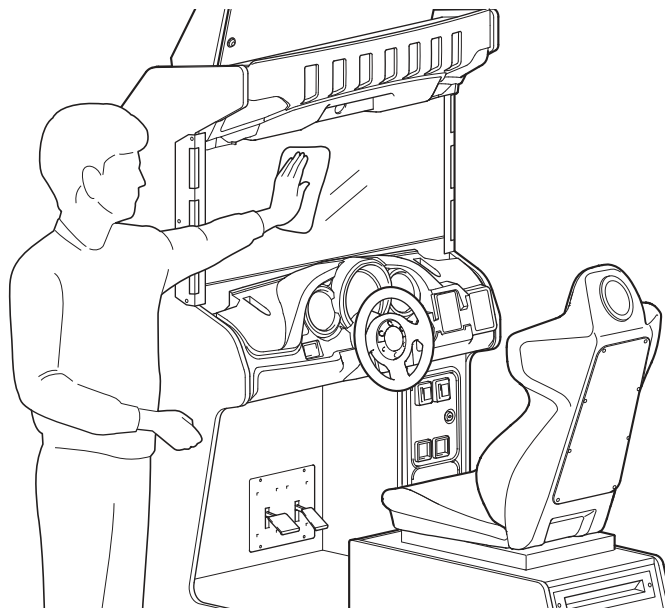
Troubleshooting

7-7 Daily Cleaning



- Do not use alcohol or other organic solvents. This may degrade the materials.

- 1** Wipe away any dirt with a dry soft cloth. When the machine becomes 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.



8A. Installation and Assembly

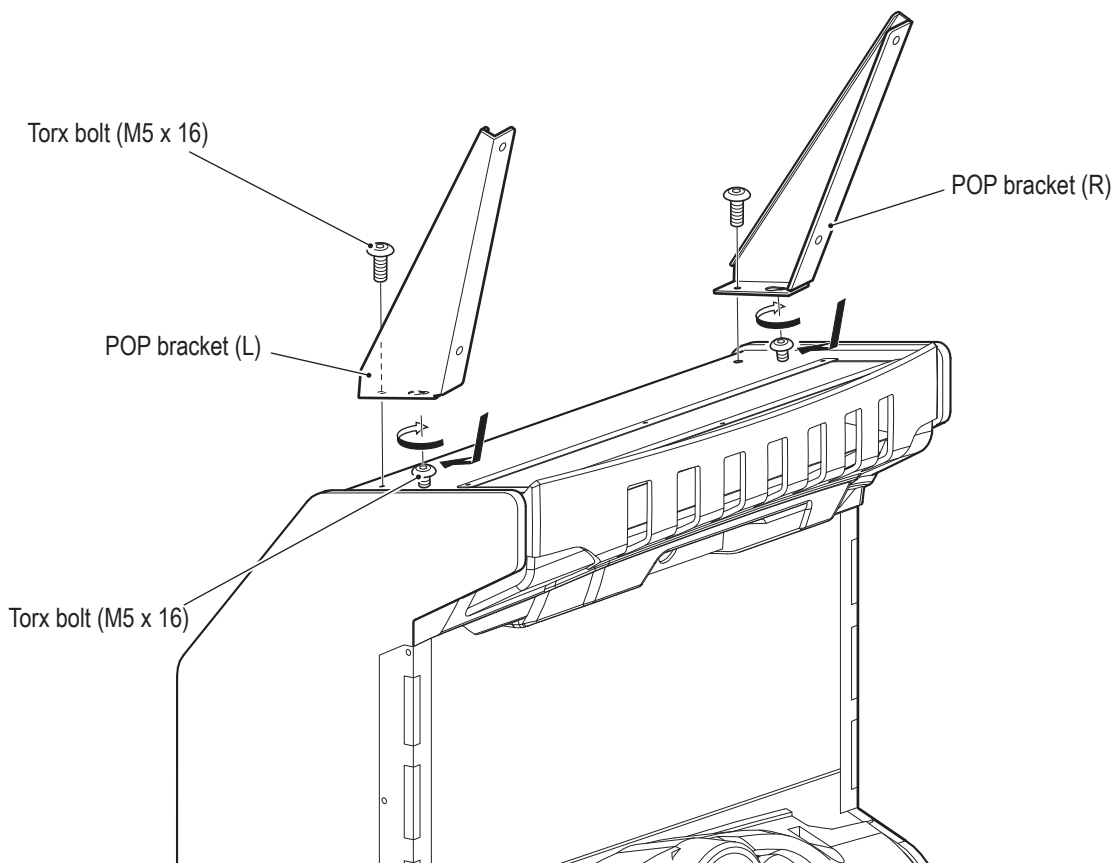
8A-1. Assembly

8A-1-1 Installing the Signboard Assembly

⚠ WARNING

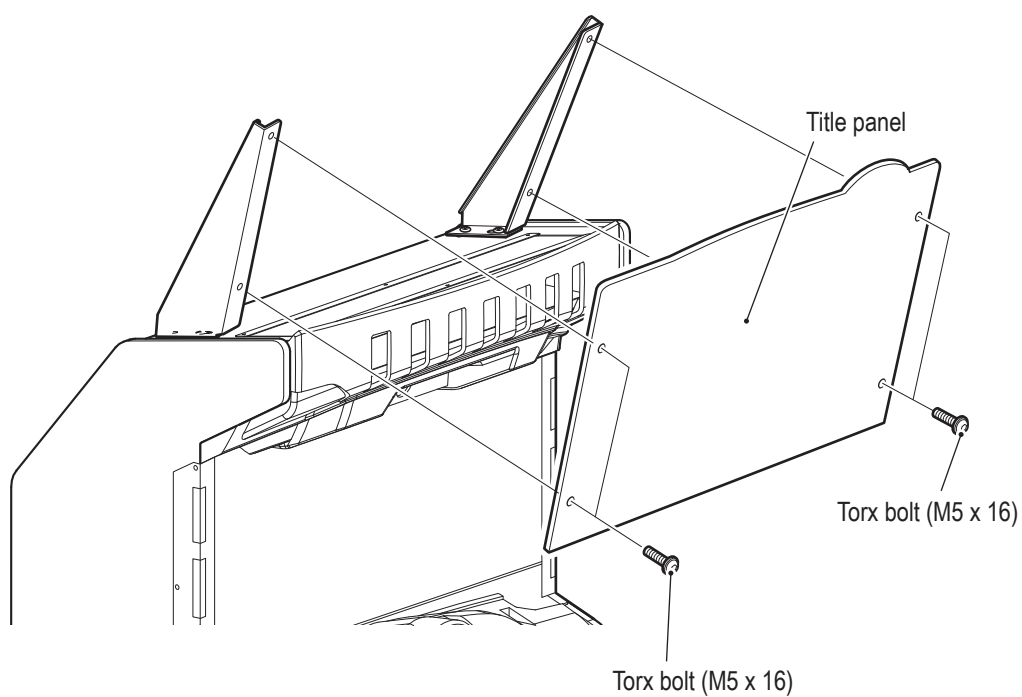
- The signboard assembly is installed while standing in a high location. Use a stool or similar platform. Working in an unnatural body posture may cause injury or machine damage.

- 1** On the top of the front assembly, install two torx bolts (M5 x 16) until the bolt heads protrude by approx. 0.1".
- 2** Temporarily attach POP bracket (R) and POP bracket (L) to the torx bolts installed in step **1**, and then fully tighten the POP brackets with the torx bolts installed in step **1** and two more torx bolts (M5 x 16).



— Must be performed by a technician —

- 3** Fasten the title panel with four torx bolts (M5 x 16).

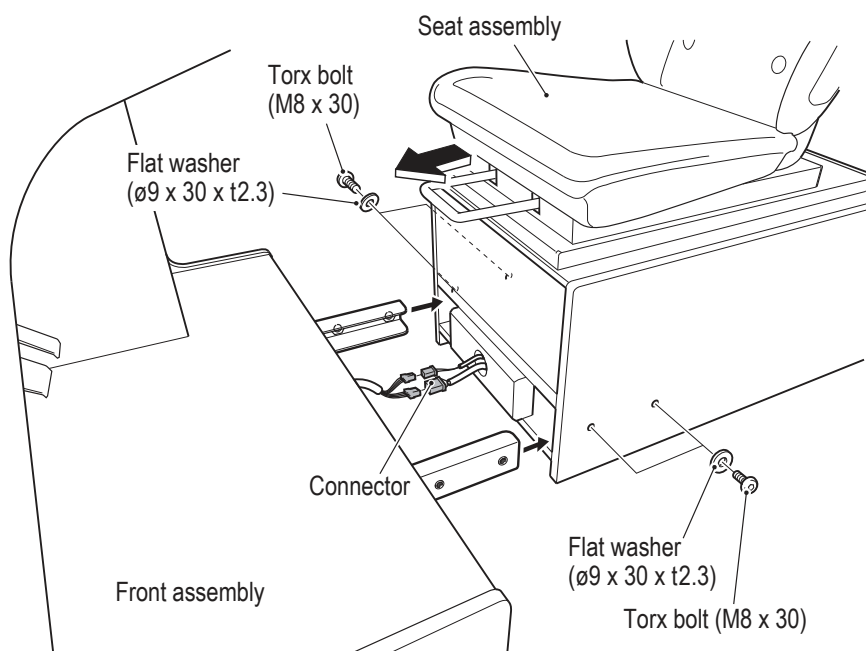
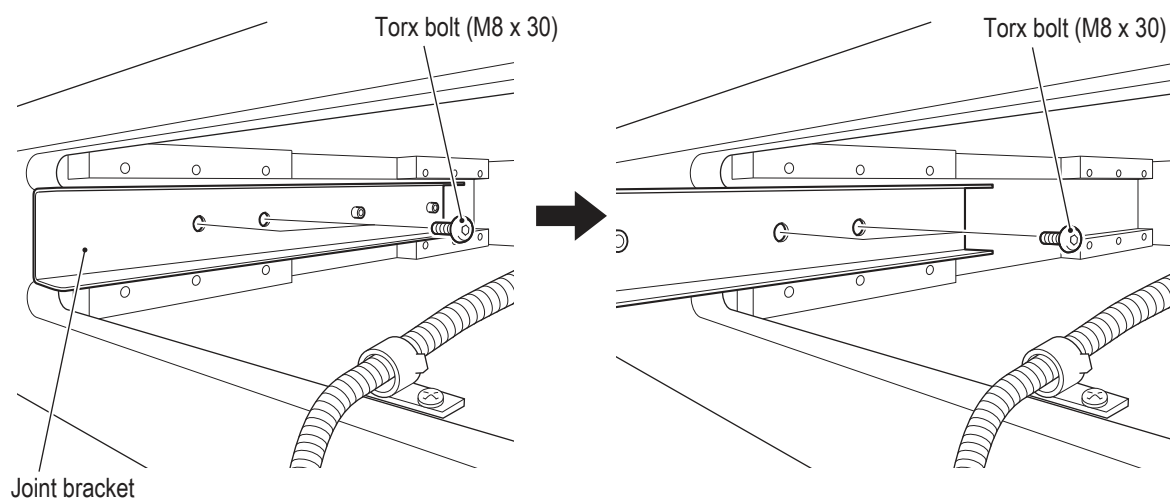


- 4** To remove, perform the procedure in reverse.

— Must be performed by a technician —

8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment

- 1** The joint brackets for the seat are shipped inside the front assembly as shown in the figure on the left. Loosen the bolt retaining the bracket, remove the bracket and rotate it so the narrow slot is facing forward (away from the seat) as shown in the figure on the right. Then tighten the bolt and add a second bolt from the spare parts kit as shown. For ease of installation, the bolts (M8 x 30 torx bolt) may be installed by hand leaving a gap slightly larger than thickness of the bracket and then the bracket can be installed by placing the large holes of the bracket over the bolts and then sliding the bracket as shown toward the player. Once in place tighten using a ratchet wrench.



- 2** Place the seat assembly near the front assembly, and pull out two connectors from inside the front assembly.
- 3** Pull out two connectors from inside the seat assembly, and connect them to the connector from step **2**.

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

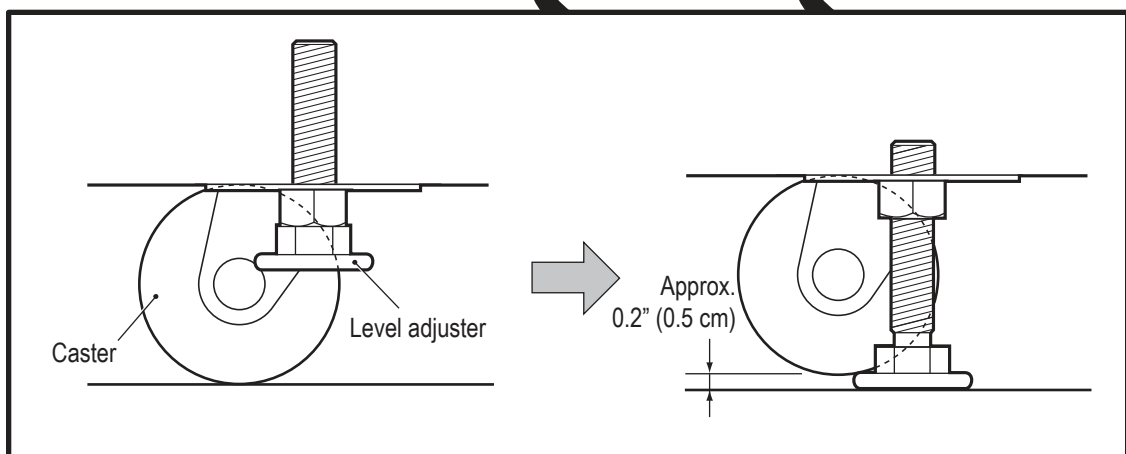
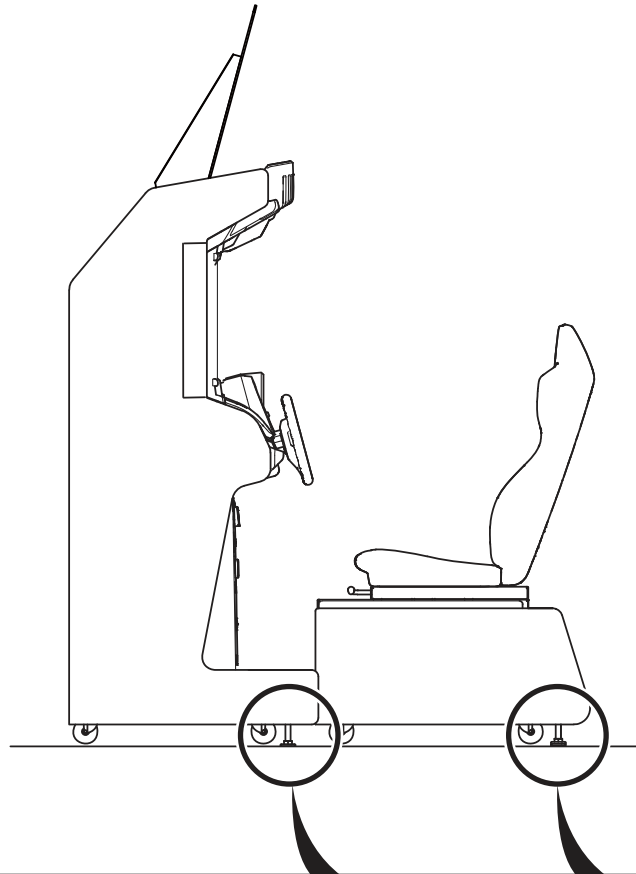
Installation and Assembly • Technician's Manual

Test Mode

Troubleshooting

— Must be performed by a technician —

- 4** Insert the joint bracket into the seat assembly. While connecting these parts, be careful not to pinch the connectors or harness.
- 5** From the side surfaces of the seat assembly, fasten the seat assembly to the front assembly with two flat washers ($\varnothing 9 \times 30 \times t2.3$) on each side (four in total) and two torx bolts (M8 X 30) on each side (four in total).
- 6** Lower the level adjusters until the casters are at a height of approx. 0.2" (0.5 cm) from the floor. (Two on the front assembly and two on the seat assembly; four in total.)



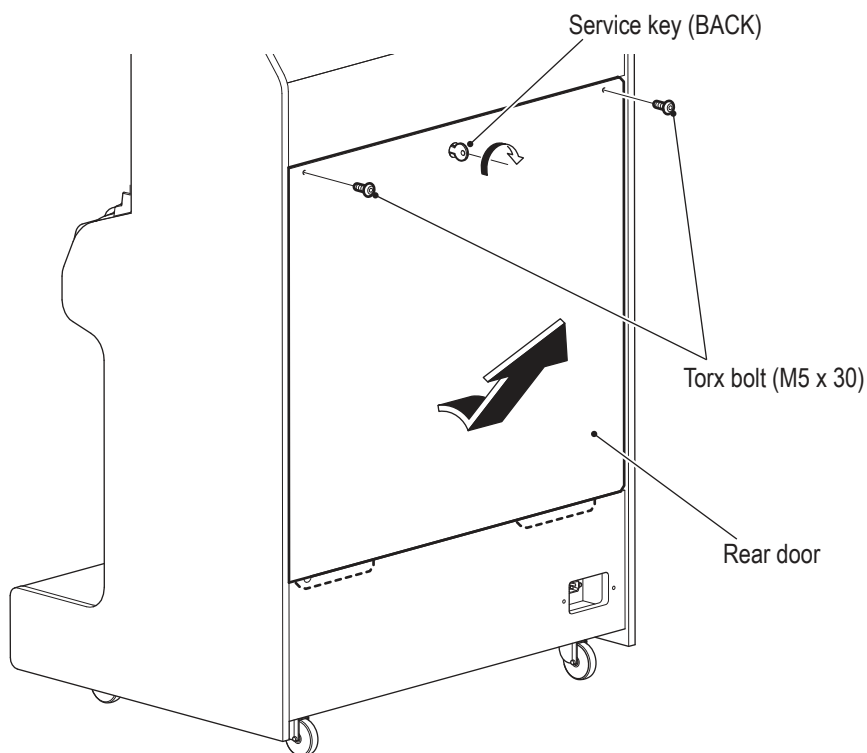
— Must be performed by a technician —

8A-1-3 Inserting the USB Dongle

⚠ WARNING

- To avoid electric shock accident or injury to yourself or others as well as damage to the electronic circuitry, be sure to turn off the power switch before starting this task.
- The USB dongle is for use exclusively with this machine. Do not use it with other equipment. Do not insert other USB dongles into this machine. Doing so may cause the machine to malfunction.
- Be sure to turn off the power switch before inserting the USB dongle.

1 Remove the rear door. (See in “8B-4-1 (4) Replacing the LCD Monitor” on page 79.)



1

2

3

4

5

6

7

8A

8B

9

10

11

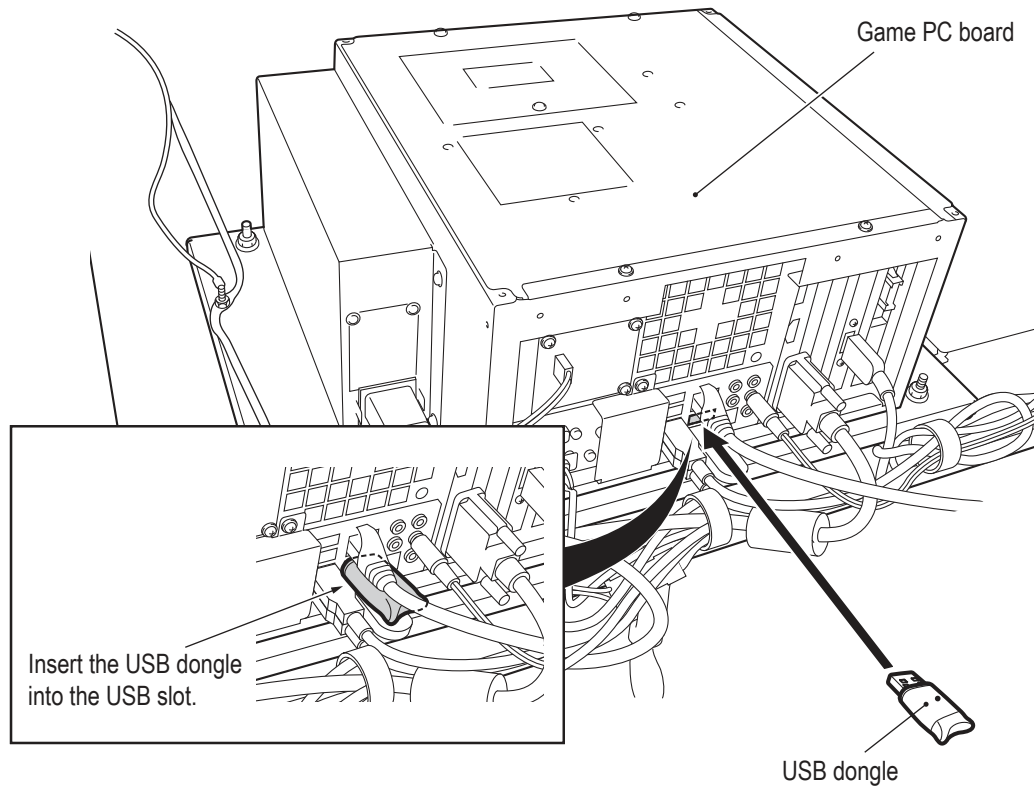
Installation and Assembly • Technician's Manual

Test Mode

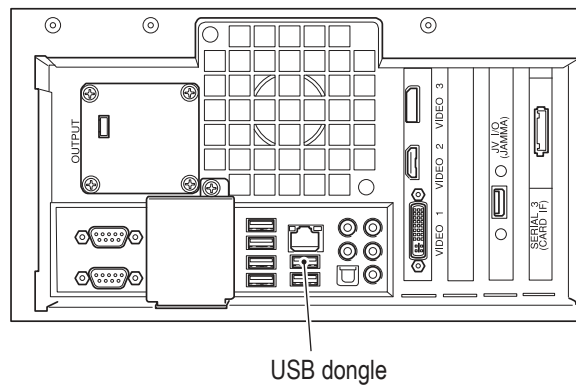
Troubleshooting

— Must be performed by a technician —

- 2 Insert the USB dongle into the USB slot of the game PC board (see the figure below).



[USB dongle connection location diagram]



— Must be performed by a technician —

8A-2. Connecting the Communication Cables

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 game cabinet power switch before starting work.
- Be careful not to let the cabinet sheet metal or other objects damage the cables extending from the bottom of the cabinet. It may result in fire or electric shock.

CAUTION

- Lay out the communication cables safely so that they will not cause players, bystanders or passersby to trip over them.

NOTICE

- Careless network system installation or other work makes networks susceptible to hacking, and can result in communication errors, lost data, and other trouble. In consideration of recovery when trouble occurs and hacking countermeasures, it is recommended to commission installation and other work to professionals.
- When laying communication cables on the floor, it is recommended to use commercially available cable molding to protect the cables.
- Failure to observe the following items may result in communication trouble and prevent proper game play. Be sure to connect the communication cables correctly according to the instructions.
 - Disconnected communication cables may result in communication trouble. When laying communication cables on the floor, be sure to arrange the cables so that passersby do not trip over them.
 - Do not bundle communication cables with power cords or pass them through the same cable moldings as power cords.
 - Install the communication cables with sufficient leeway so that they are not forcibly bent or stretched and there is no excessive load applied.

— Must be performed by a technician —

8A-2-1 Connection Diagrams

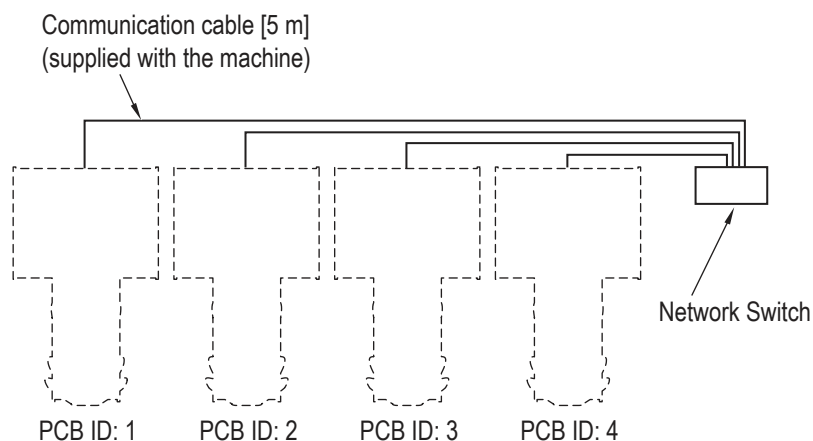
WARNING

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

1 Refer to the figure below, and connect the network switch and communication cables to connect 4 cabinets.

- Be sure to connect the communication cables from the Game PC Board to the Network switch to maintain a stable communication environment.
- Up to four machines can be connected to a single Network switch
- The connection work required for network communication differs according to the conditions of the installation location. Therefore, this Operation Manual describes an outline of the connections.
- For inquiries regarding individual support at each installation location, contact your distributor.

(1) Example of connection.



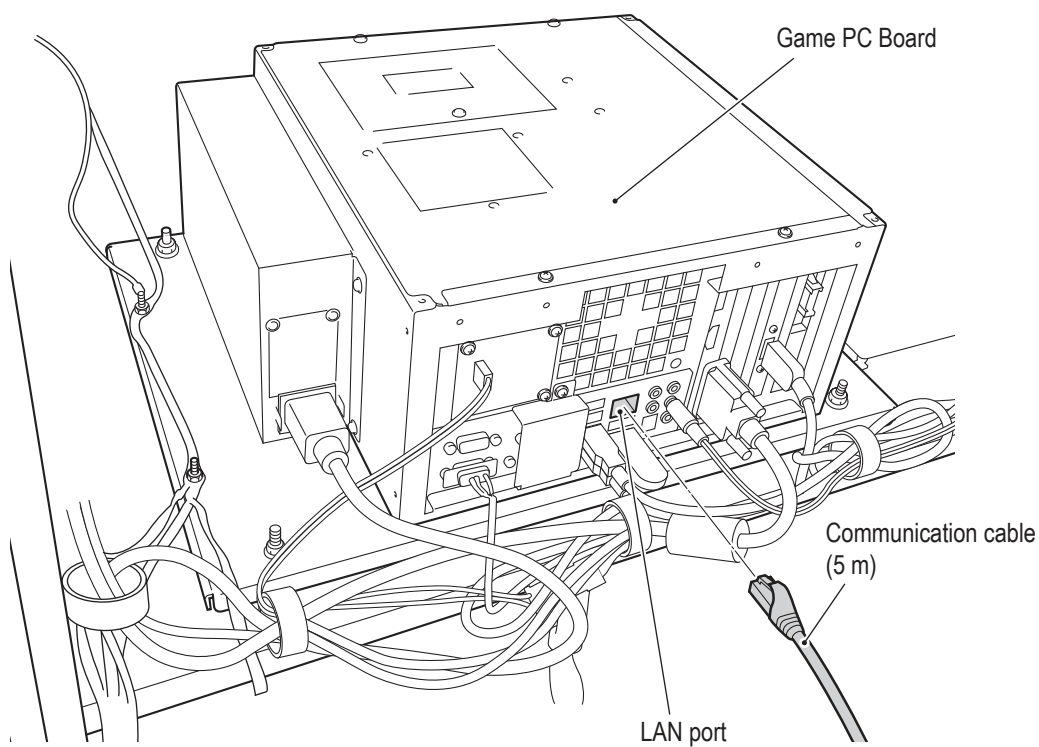
NOTICE

- Set the PCB ID of each machine before performing communication-linked VS Race game play. The setting method is described in “8A-3 Setting the PCB ID” on page 68.

— Must be performed by a technician —

8A-2-2 Connection Method

- 1** Turn off the power switch. (See “8A-2-4 Power Switch Position and Turning the Power Switch On” on page 67.)
- 2** Remove the rear door. (See “8B-4-1 (4) Replacing the LCD Monitor” on page 79.)
- 3** Connect the communication cable (5 m) to the LAN port of the Game PC Board.



1

2

3

4

5

6

7

8A

8B

9

10

11

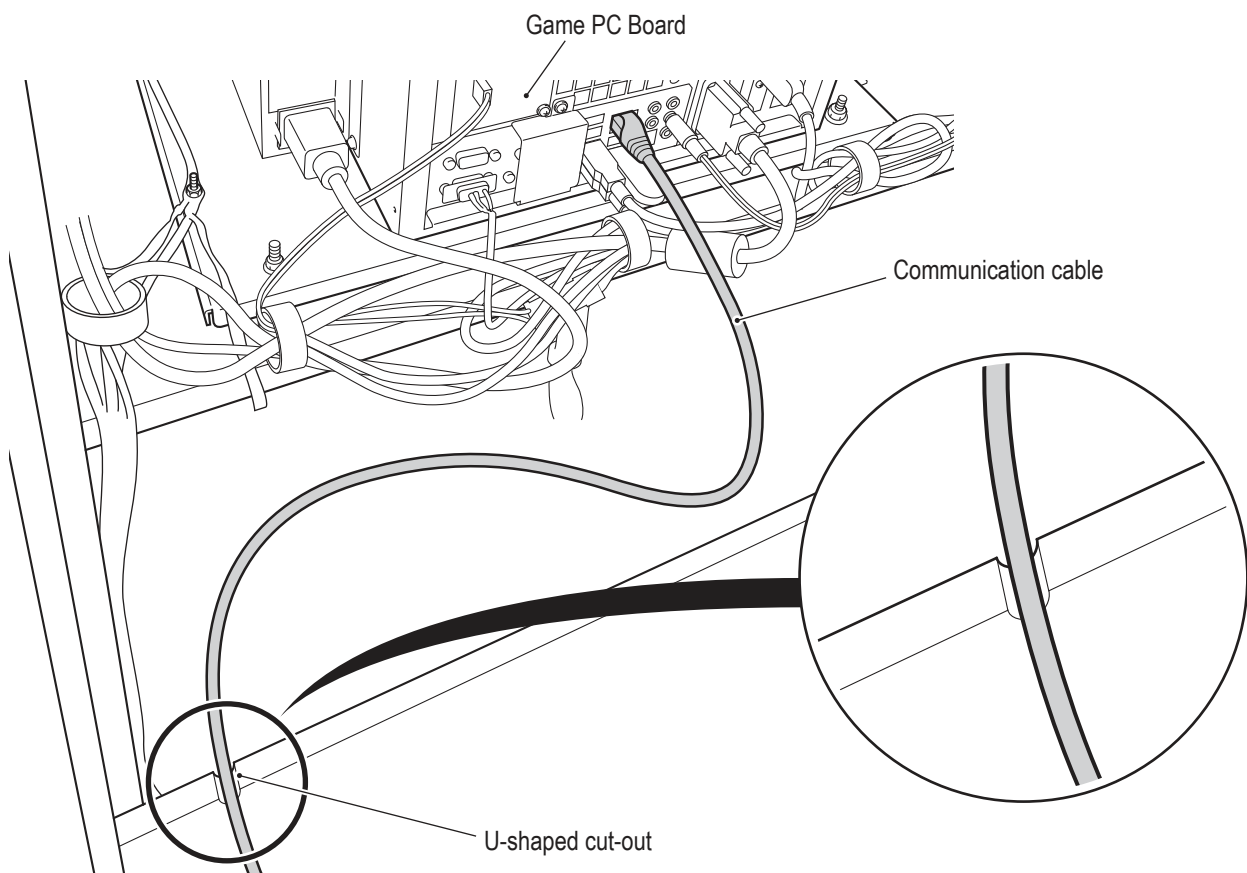
Installation and Assembly • Technician's Manual

Test Mode

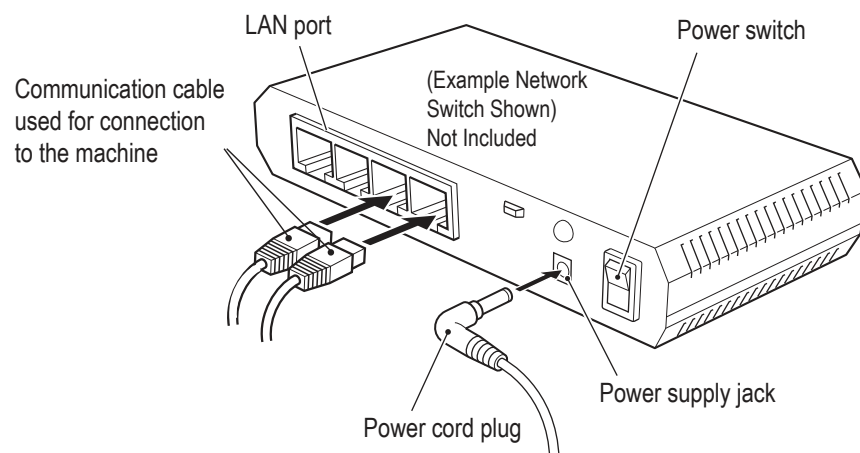
Troubleshooting

— Must be performed by a technician —

- 4 Position the communication cable (5 m) in the U-shaped cut-out on the lower panel, and return the rear door to its original position.



- 5 Attach the rear door(
- 6 Connect the power cord plug to the power supply jack and the communication cables (5 m) to the LAN ports of the network switch (Not included)



— Must be performed by a technician —



- Check the shape of the communication cable connectors and insert them with the proper alignment.
- Insert the communication cable connectors firmly. If a connector becomes loose, communication will not operate properly.
- Clamp the harnesses and communication cables with sufficient leeway so that they are not stretched and there is no excessive force applied.

1

2

3

4

5

6

7

8A

8B

9

10

11

Installation and Assembly • Technician's Manual

Test Mode

Troubleshooting

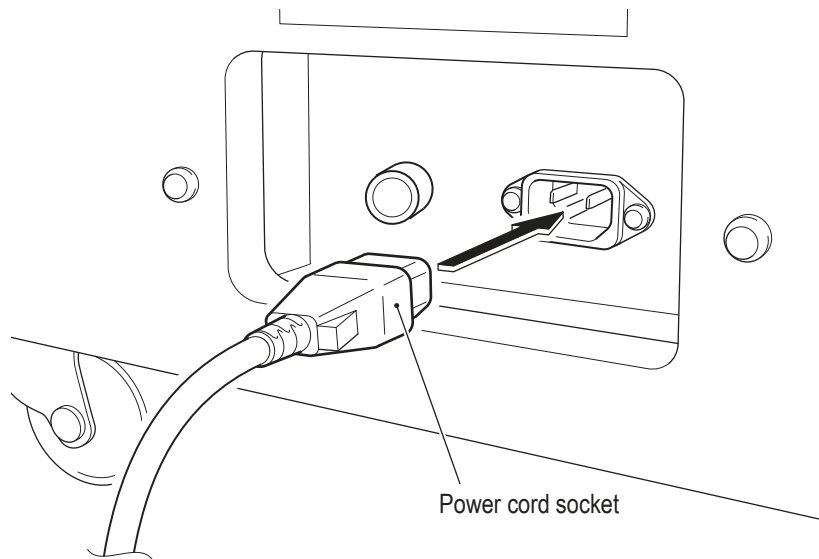
— Must be performed by a technician —

8A-2-3 Connecting the Power Cord and Ground

WARNING

- Be sure to install the ground wire using one of the methods below. Failure to install the ground wire may result in electric shock. Connect the ground using a 3P plug.

- 1** Insert the socket side of the power cord into the power input of the cord box assembly on the bottom of the front assembly rear panel.

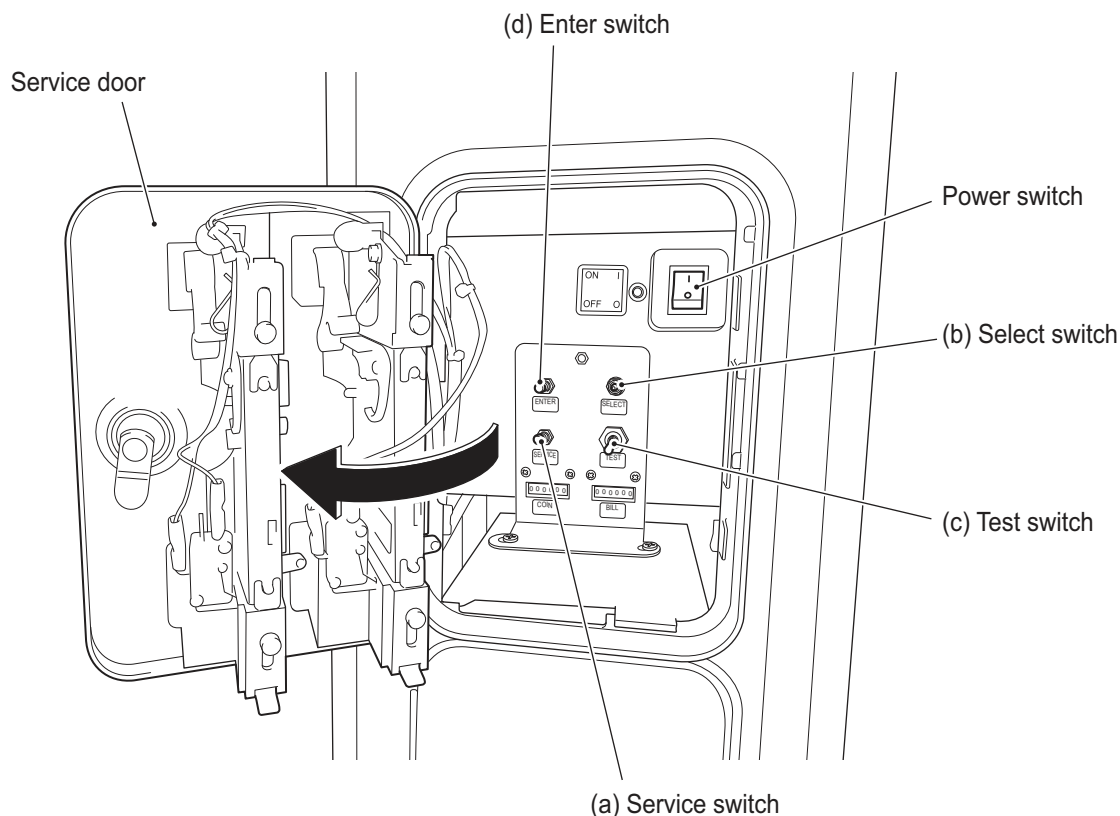


- 2** Insert the power plug of the power cord into the outlet.

— Must be performed by a technician —

8A-2-4 Power Switch Position and Turning the Power Switch On

- 1** Turn on the power switch of the machine.



- Be sure to turn the power switches on in the following order.

1. Contents router
2. This machine

If the power is not turned on in this order, communication will not be performed correctly between the game server and the machine, and the game may not operate properly.

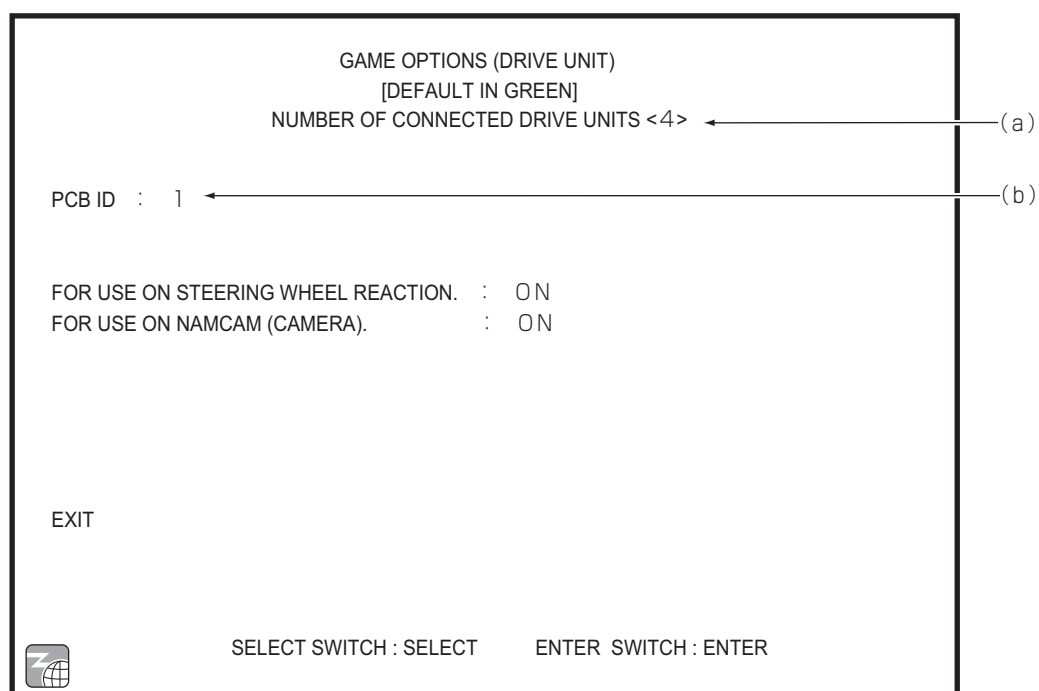
- Do not turn the power switch on and off repeatedly, because it may cause a machine malfunction.
- When turning the power switch off and on, wait 30 seconds or more between operations.

— Must be performed by a technician —

8A-3. Setting the PCB ID

When connecting two to four machines for communication-linked VS Race game play, make the following setting.

- 1** Use the supplied service key (FRONT) to open the service door.
- 2** When the Kest switch is set to ON, the MENU screen appears on the monitor. (See “7-4-2 Adjustment Switches” on page 25.)
- 3** Flip the Select switch up or down to select GAME OPTIONS and press the Enter switch to display the GAME OPTIONS screen.



GAME OPTIONS screen

- 4** Check that (a) NUMBER OF CONNECTED DRIVE UNITS matches the number of actually connected Driver Cabinets with the power turned on.
- 5** Set (b) PCB ID to “1,” “2,” “3” and “4” in order from the leftmost Cabinet.
* When more than one Driver Cabinet has the same PCB ID, an error message appears.
- 6** Set the Kest switch to OFF and close the service door.

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 Inspections 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 “7-2 Pre-operation Inspection” on page 20.)

8B-1-1 Inspection Items

After performing “7-2 Pre-operation Inspection” on page 20, check the following items periodically for any abnormalities.

(1) Level Adjuster Inspection

1. Check that the level adjusters are fixed securely. (See “8A-1-2 Connecting the Front Assembly to the Seat Assembly and Level Adjuster Adjustment” on page 57.)

(2) Power Cord Plug Inspection

1. Check that the power cord is firmly inserted into the machine’s cord box and the power outlet.
2. Clean any dust or other 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 looseness. Fully retighten any loose parts.

1. Cap bolts (M6 x 30) for fastening the steering assembly
(See “8B-4-1 (5) Replacing the Steering Assembly” on page 83.)
2. Korx bolts (M5 x 25) for fastening the pedal assembly
(See “8B-4-3 (1) Removing and Installing the Pedal Assembly” on page 96.)

1

2

3

4

5

6

7

8A

8B

9

10

11

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 the PC boards will be performed by your distributor, so never perform a continuity check of a board with a tester or any other tool. The IC may be damaged by the internal voltage of the tester.
- To order repairs or parts, contact your distributor.
- When sending parts for repair, be sure to pack them properly. Particularly when sending the Game PC Board, wrap the part in sponge or air bubble wrapping before packing it in a cardboard box. Make sure that the box is not exposed to outside pressure.

8B-2-1 General

Symptom	Cause	Action	Reference
• The machine does not start.	• A connector is disconnected.	• Insert the connector securely(	Page 88
	• A Game PC Board malfunction.	• Replace the Game PC Board. Contact your distributor(	
• Operation is not stable or the machine operates incorrectly(	• The power supply voltage is not in the range of AC 110 V to 130 V(	• Disconnect a high-capacity device (such as an air conditioner or large machine) from the same line to reduce the voltage to 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.	• Kurn on the power switch again. If the circuit protector operates frequently, there is a mechanical abnormality. Contact your distributor(	Page 67
• Resetting is performed during startup.	• The internal battery of the Game PC Board has run out.	• Replace the Game PC Board. Contact your distributor(	
	• A Game PC Board malfunction.		

— Must be performed by a technician —

8B-2-2 Front Assembly

Symptom	Cause	Action	Reference
• Sound is not output from the speakers.	• The volume setting is low(	• Reset the volume.	Page 42
	• A connector or Faston terminal is disconnected.	• Insert the connector or Faston terminal securely.	Page 93
	• An amp PC board malfunction.	• Replace the amp PC board.	Page 93
• The monitor screen does not operate.	• A connector is disconnected.	• Insert the connector securely(	Page 79
	• A monitor malfunction.	• Replace the monitor(	Page 79
• The title panel LEDs do not turn on.	• A connector is disconnected.	• Insert the connector securely(	Page 87
	• A LED bar (L) malfunction.	• Replace the LED bar (L).	Page 87
• The Mario button or Item button does not function.	• A connector is disconnected.	• Insert the connector securely(	Page 78
	• A switch malfunction.	• Replace the switch.	Page 78
	• A disconnection in the harness.	• Connect the location of the disconnection.	
• The lamp of the Mario button or Item button does not turn on.	• A connector is disconnected.	• Insert the connector securely(	Page 78
	• The lamp has burned out.	• Replace the lamp.	Page 78
	• A disconnection in the harness.	• Connect the location of the disconnection.	
• The top cover LEDs do not turn on.	• A connector is disconnected.	• Insert the connector securely(	Page 76
	• A Rainbow PC Board malfunction.	• Replace the Rainbow PC Board.	Page 76
• The monitor side LEDs do not light up.	• A connector is disconnected.	• Insert the connector securely(	Page 85
	• A Rainbow PC Board malfunction.	• Replace the Rainbow PC Board.	Page 85

8B-2-3 Steering Assembly

Symptom	Cause	Action	Reference
• The steering does not function.	• The volume has not been initialized.	• Perform initialization.	Page 53
	• A connector is disconnected.	• Insert the connector securely(	Page 83
	• A steering assembly malfunction.	• Replace the steering. Contact your distributor(	Page 83
	• The fuse (5A) has burned out. * The fuse blows when an abnormal current occurs.	• Replace the fuse. If the fuse blows frequently, there is a mechanical abnormality. Contact your distributor(	Page 95

1

2

3

4

5

6

7

8A

8B

9

10

11

Service • Technician's Manual

Test Mode

Troubleshooting

— Must be performed by a technician —

8B-2-4 Pedal Assembly

Symptom	Cause	Action	Reference
• The accelerator or brake does not function.	• The volume has not been initialized.	• Perform initialization.	Page 53
	• A connector is disconnected.	• Insert the connector securely(	Page 96
	• A pedal assembly malfunction.	• Replace the pedal assembly. Contact your distributor(	Page 96

8B-2-5 Seat Assembly

Symptom	Cause	Action	Reference
• The LEDs on the back of the seat do not turn on.	• A connector is disconnected.	• Replace the connector(	Page 98
	• A LED bar (s) malfunction.	• Replace the LED bar (s).	Page 98
• The LEDs on the back of the seat base do not turn on.	• A connector is disconnected.	• Insert the connector securely(	Page 101
	• A Rainbow PC Board malfunction.	• Replace the Rainbow PC Board.	Page 101

— Must be performed by a technician —

8B-3 Error Displays

When an error is detected at startup or during game play, an error screen appears and machine operation stops.

Refer to the error code tables below to identify and resolve the cause of the error(When a screen not described in the error code tables appears or the error occurs again despite taking the appropriate action, something else may be causing the error. In these cases contact your distributor(

(1) Network Errors

Error code	Error message	Cause	Action	Reference page
05-01	CONTENT ROUTER DISCONNECTED	• An abnormality in the connections or settings of the contents router(	• Contact your Distributor	
05-02	CONTENT ROUTER MISMATCH			
05-03	NOT GET IP ADDRESS			
05-04	IP ADDRESS ERROR			
05-05	LOCAL NETWORK ERROR			
05-20	ERROR DEVICE	• An abnormality in the connection or certification to the game server		
05-21	ERROR AUTH NG			
05-22	ERROR DNS TIMEOUT			
05-23	ERROR DNS HOST NOT FOUND			
05-24	ERROR SERVER NG			
05-30	ERROR TIP TIMEOUT	• An abnormality in the connection or certification to the Game PC Board certification server		
05-31	ERROR TIP HOST NOT FOUND			
05-32	ERROR DNS TIMEOUT			
05-33	ERROR DNS HOST NOT FOUND			
05-34	ERROR AUTH NG			
05-35	ERROR AUTH TIMEOUT			
05-38	NBLINE POINT BALANCE ERROR			
05-50	REVISION ERROR	• The software revision differs from that of the game server(		
05-51	GAME SERVER CONNECTION ERROR	• The game server is shut down for servicing or some trouble.		
05-52	GAME SERVER UNDER MAINTENANCE			
05-53	INCONSISTENT SERVER ERROR	• An abnormality in communication with the game server(		
05-54	NETWORK AUTHENTICATION ERROR	• The specified time passed (timeout) with no network connection, so machine operation stopped.		

1

2

3

4

5

6

7

8A

8B

9

10

11

Service • Technician's Manual

Test Mode

Troubleshooting

— Must be performed by a technician —

Error code	Error message	Cause	Action	Reference page
05-55	NETWORK CONNECTION UNSTABLE	• An update required for operation has not been performed.	• Contact your Distributor	
05-56	INITIAL NETWORK AUTHENTICATION ERROR	• An abnormality in communication with the game server the first time the machine was started up after installation.		

(2) Steering Assembly Errors

Error code	Error message	Cause	Action	Reference page
22-01	STR PCB OVERRUN ERROR	• An abnormality in the STR4 (M) PC board communication data.	• Replace the STR4 (M) PC board.	Page 91
22-02	STR PCB FRAMING ERROR			
22-03	STR PCB PARITY ERROR			
22-04	STR PCB RAM ERROR	• An abnormality in the STR4 (M) PC board memory(	• Replace the analog potentiometer. Contact your distributor(	
22-05	STEERING VOLUME DAMAGE ERROR	• The steering assembly analog potentiometer is damaged.		
22-06	STR PCB OVER CURRENT ERROR	• An overcurrent flowed to the STR4 (M) PC board.	• Replace the STR4 (M) PC board.	Page 91
22-07	STEERING VOLUME CONNECTION ERROR	• The steering assembly analog potentiometer is not connected.	• Check the analog potentiometer connection.	Page 83
22-08	STEERING VOLUME OVER SPEED ERROR	• The steering assembly analog potentiometer is not damaged.	• Replace the analog potentiometer. Contact your distributor(	
22-09	MOTOR CURRENT ERROR	• An abnormality in the motor current.	• Replace the motor. Contact your distributor(	
22-10	MOTOR CURRENT SENSOR ERROR			
22-11	MOTOR POWER ON ERROR	• An abnormality in the motor or the power supply(	• Check the STR4 (M) PC board connection.	Page 91
22-12	STR PCB LINK ERROR	• Communication with the STR4 (M) PC board is not possible.		



- When an error related to the steering assembly occurs, first turn the power off and then on again.
If the error persists, check the connections and operation of each part.
- When turning the power switch off and then on again, wait 30 seconds or more between operations to protect the electronic circuits.

— Must be performed by a technician —

(3) Other Hardware Errors

Error code	Error message	Cause	Action	Reference page
01-11	COIN ERROR1 (COIN UNIT1)	• A coin micro switch malfunction.	• Replace the coin micro switch. Contact your distributor(	Page 92
		• A NA-JV (M) PC board malfunction.	• Replace the NA-JV (M) PC board.	
01-12	COIN ERROR2	• An abnormality in the Service switch.	• Contact your distributor(	Page 92
		• A NA-JV (M) PC board malfunction.	• Replace the NA-JV (M) PC board.	
01-21	COIN ERROR1 (COIN UNIT2)	• A bill validator malfunction.	• Contact your distributor(	Page 92
		• A NA-JV (M) PC board malfunction.	• Replace the NA-JV (M) PC board.	
02-06	CLOCK ERROR1	• The time setting is incorrect.	• Contact your distributor(	
02-07	CLOCK ERROR2	• A Game PC Board malfunction.		
03-01	I/O ERROR1	• A connector is disconnected. • A NA-JV (M) PC board malfunction.	• Check the NA-JV (M) PC board connection. • Replace the NA-JV (M) PC board.	Page 92
03-02	I/O ERROR2			
03-03	I/O ERROR3			
08-01	NAMCAM (CAMERA) ERROR	• A connector is disconnected.	• Check the NamCam (camera) connection.	Page 86
		• A NamCam (camera) malfunction.	• Replace the NamCam (camera).	Page 86
19-10	USB DONGLE ERROR 1	• The USB dongle is not inserted.	• Insert the USB dongle for the machine. Then, turn the power off and then on again. If the same error repeats, contact your distributor.	Page 59
19-11	USB DONGLE ERROR 2	• The USB dongle for a different machine type is inserted.		
19-13	USB DONGLE ERROR4	• A different USB dongle than the USB dongle inserted at startup is inserted.	• Insert the USB dongle that was inserted at startup.	Page 59
20-01	VERSION UP ERROR 1	• Version update failed.	• Contact Distributor	
24-03	DUPLICATE PCB ID ERROR	• The set PCB ID is already in use by another driver cabinet.	• Set the PCB ID so that there is no duplication.	Page 68

1

2

3

4

5

6

7

8A

8B

9

10

11

Service • Technician's Manual

Test Mode

Troubleshooting

— Must be performed by a technician —

8B-4 Removing and Installing Assemblies and Parts

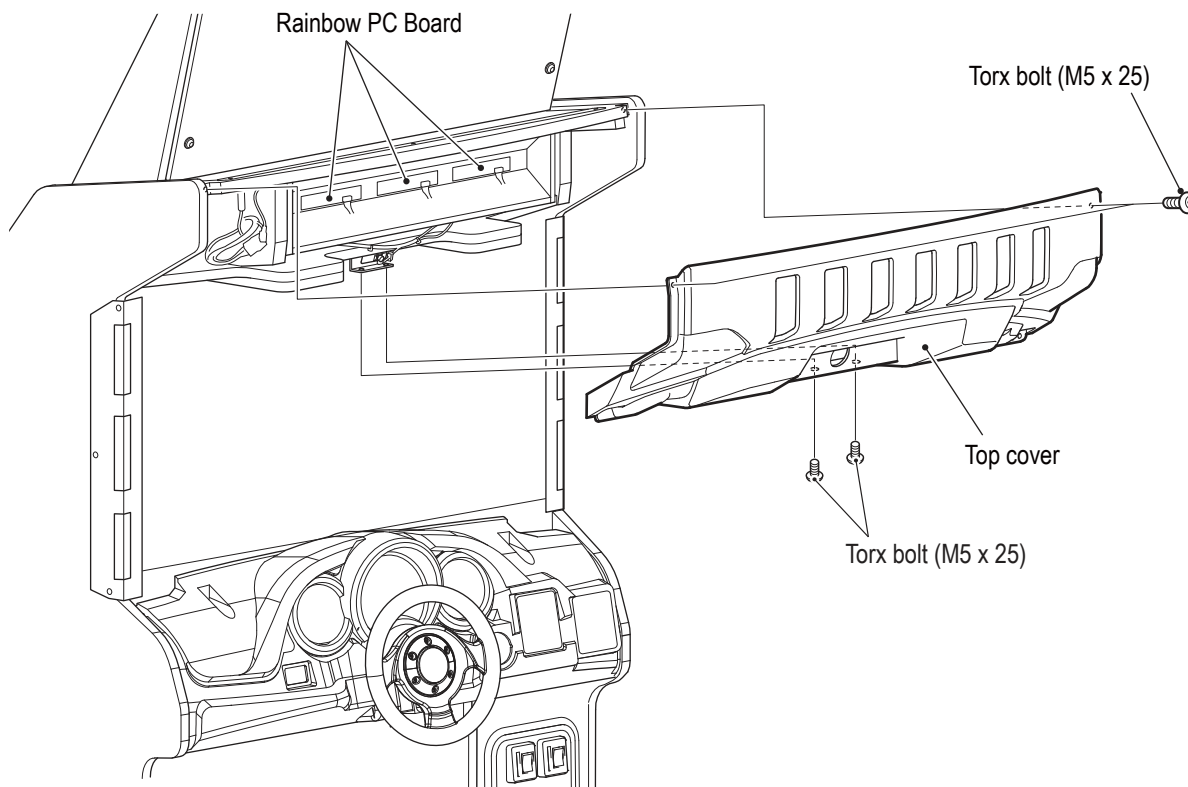
8B-4-1 Front Assembly

(1) Replacing the Rainbow PC Board (top 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** Remove the four torx bolts (M5 x 25) from the front of the front assembly, and then remove the top cover
- 2** Replace the Rainbow PC Board.



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

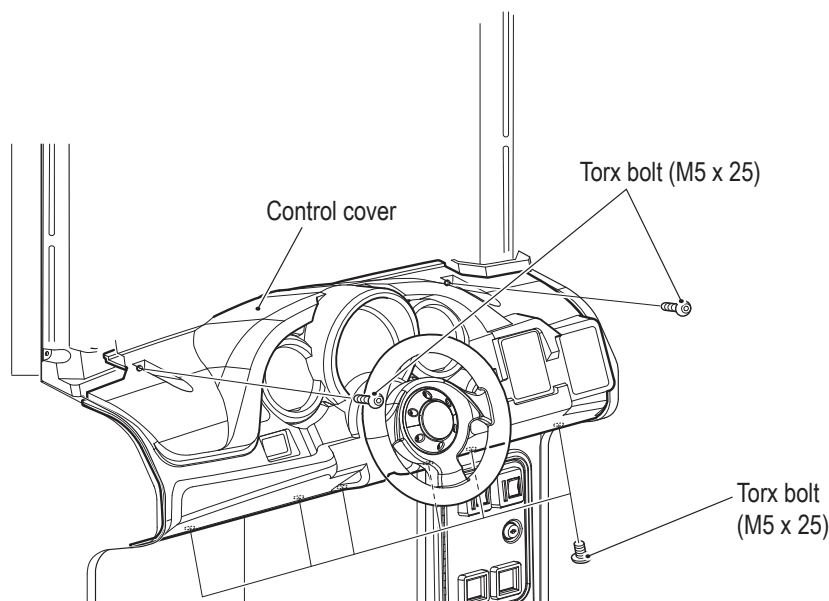
— Must be performed by a technician —

(2) Removing and Installing the Control Cover

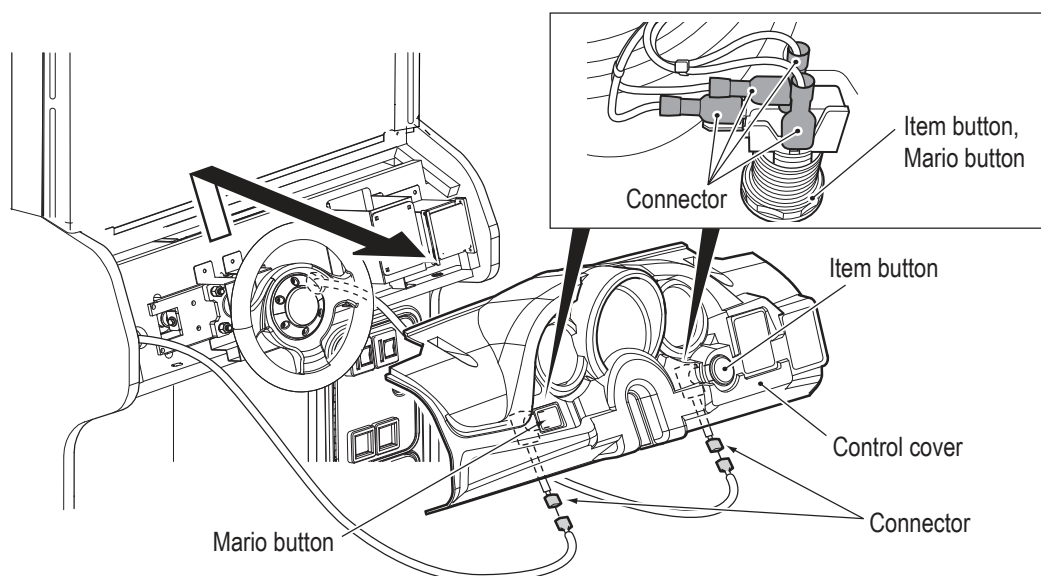
! WARNING

- 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 Remove the two torx bolts (M5 x 25) from the front of the front assembly, and the six torx bolts (M5 x 25) from under the control cover



- 2 While lifting up the control cover, remove it towards you. On the rear, disconnect and remove the two connectors of the Item button and Mario button.



- 3 To install, perform the procedure in reverse.



- When installing the control cover, be careful not to trap the harness.

1

2

3

4

5

6

7

8A

8B

9

10

11

Service • Technician's Manual

Test Mode

Troubleshooting

— Must be performed by a technician —

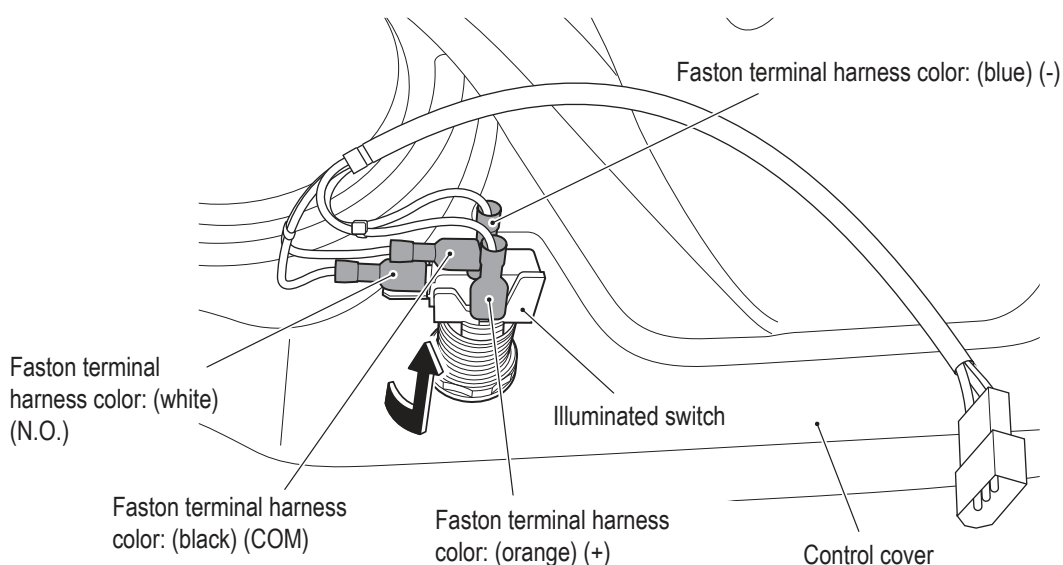
(3) Replacing the Item Button, Mario Button and Lamps

The Item button is used as an example in the following procedure. Use the same procedure to replace the Mario button.

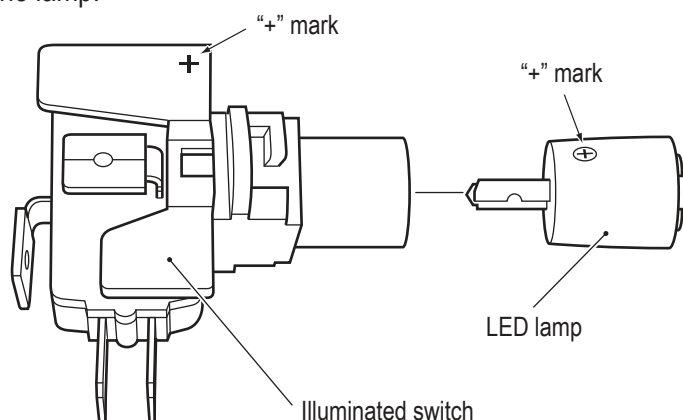
⚠ WARNING

- 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** Remove the control cover. (See “8B-4-1 (2) Removing and Installing the Control Cover” on page 77.)
- 2** Turn the illuminated switch to the left to unlock it, and then remove it.



- 3** Pull out the lamp.



- 4** Replace the Item button and the lamp.
- 5** To install, perform the procedure in reverse.
Use the same procedure to replace the Mario button.

* The LED lamp has positive and negative polarity. Take care to position the lamp correctly during replacement.



- After completing the replacement, be sure to check the operation.
(See “7-6-4 (a) SWITCH TEST” on page 37.)

— Must be performed by a technician —

(4) Replacing the LCD Monitor

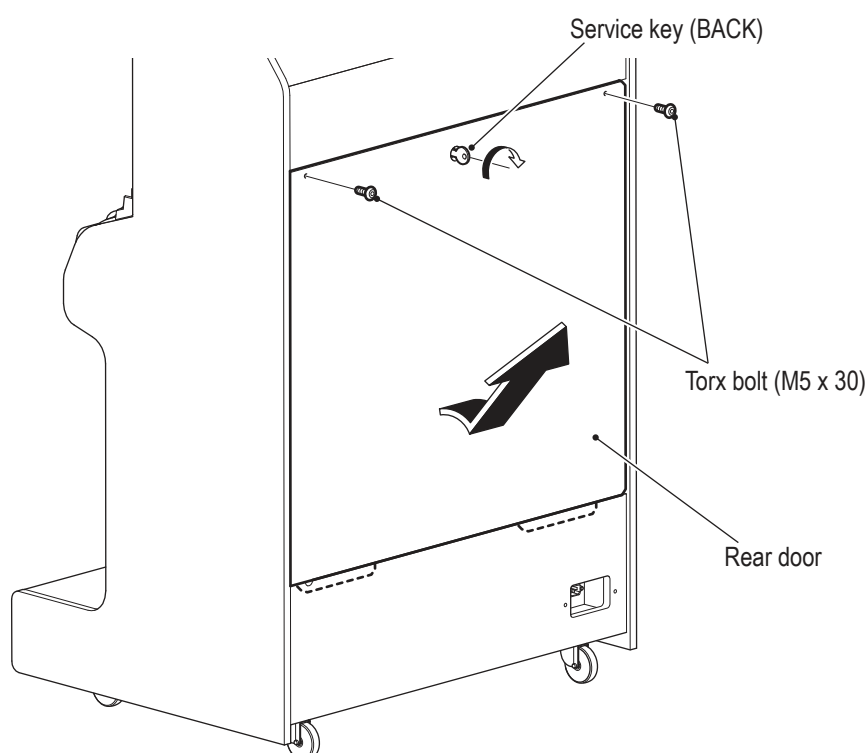
! WARNING

- 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.

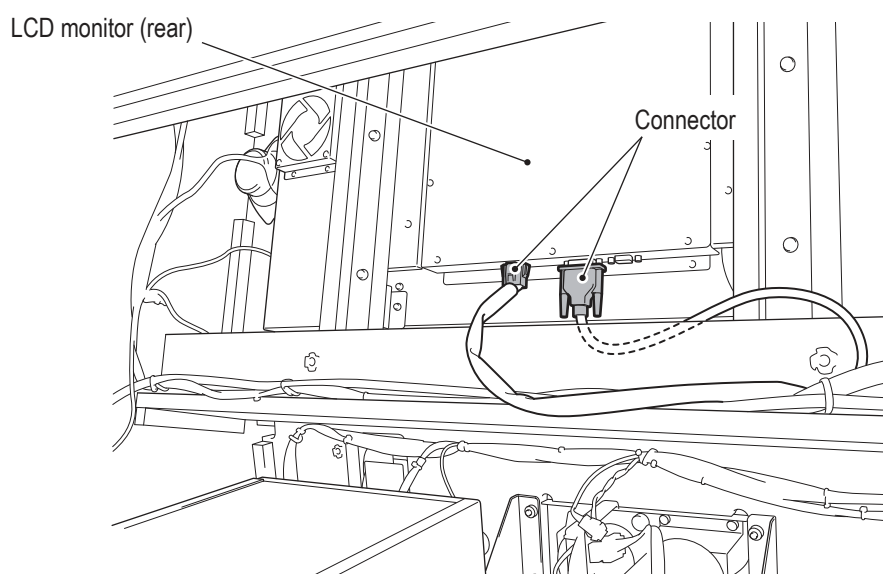
! CAUTION

- The LCD monitor weighs approx. 22 lb (10 kg). Be very careful while working, because dropping it may cause injury!

- 1** Remove the two torx bolts (M5 x 30) from the rear of the front assembly, and then unlock the rear door with the service key (BACK) and remove it.



- 2** Remove the two connectors of the LCD monitor(



1

2

3

4

5

6

7

8A

8B

9

10

11

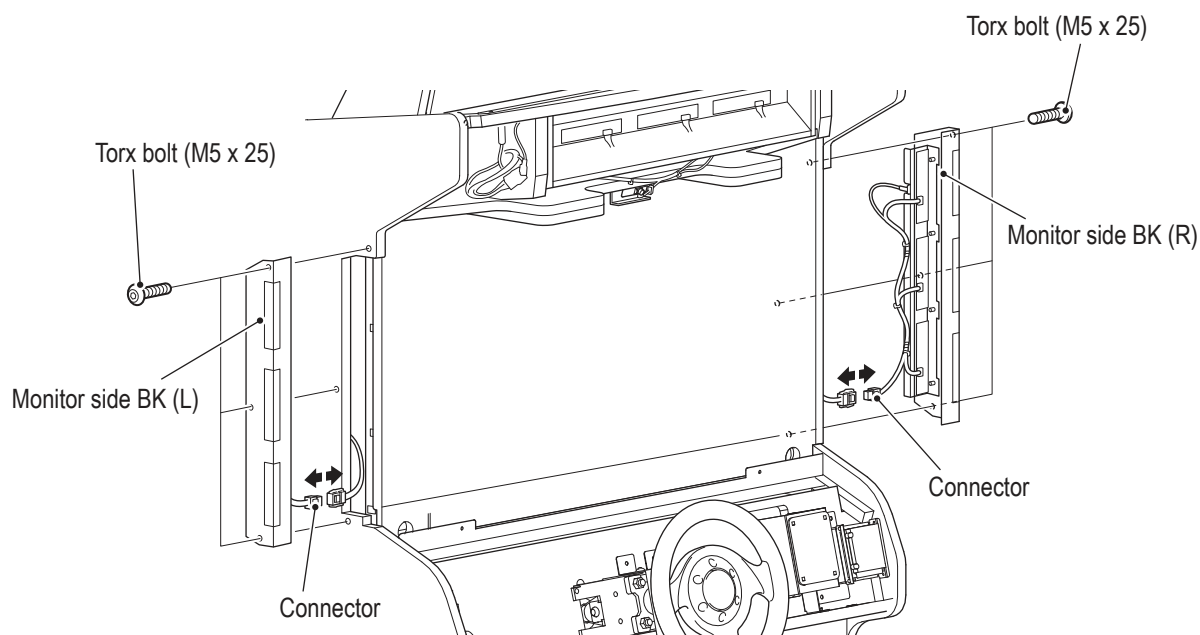
Service • Technician's Manual

Test Mode

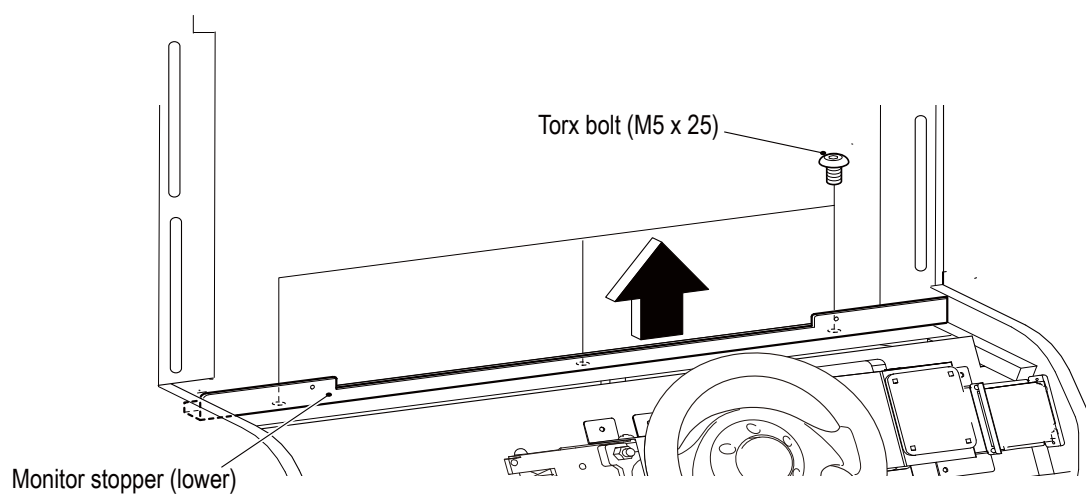
Troubleshooting

— Must be performed by a technician —

- 3** Remove the control cover. (See “8B-4-1 (2) Removing and Installing the Control Cover” on page 77.)
- 4** Remove the top cover. (See “8B-4-1 (1) Replacing the Rainbow PC Board !Kop cover” on page 76.)
- 5** Remove the three torx bolts (M5 x 25), disconnect the connector and then remove the monitor side BK (L). Remove the monitor side BK (R) in the same way(

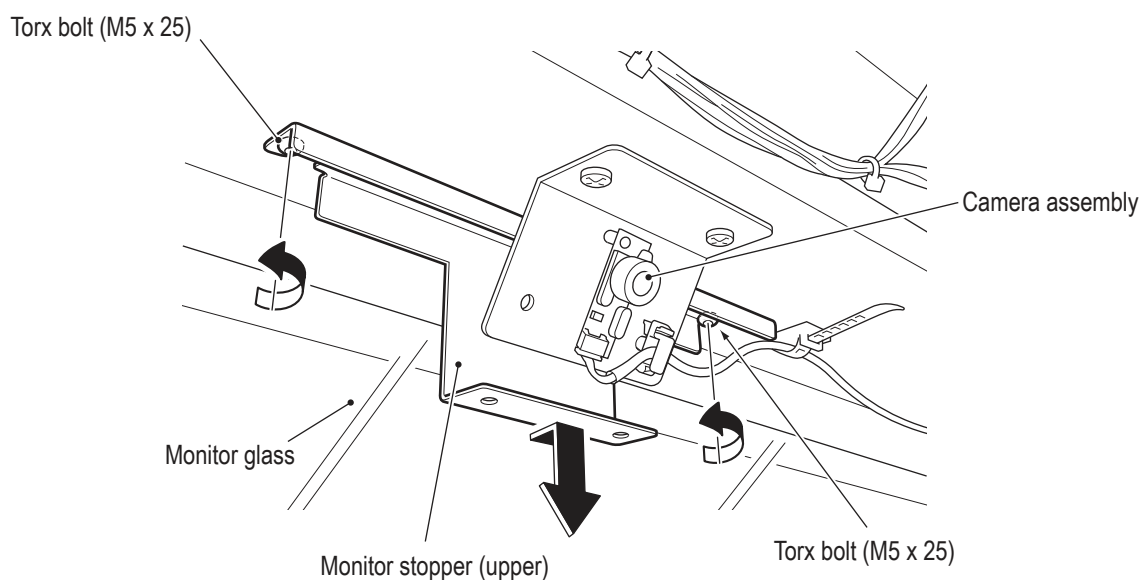


- 6** Remove the three torx bolts (M5 x 25), and then remove the monitor stopper (lower).

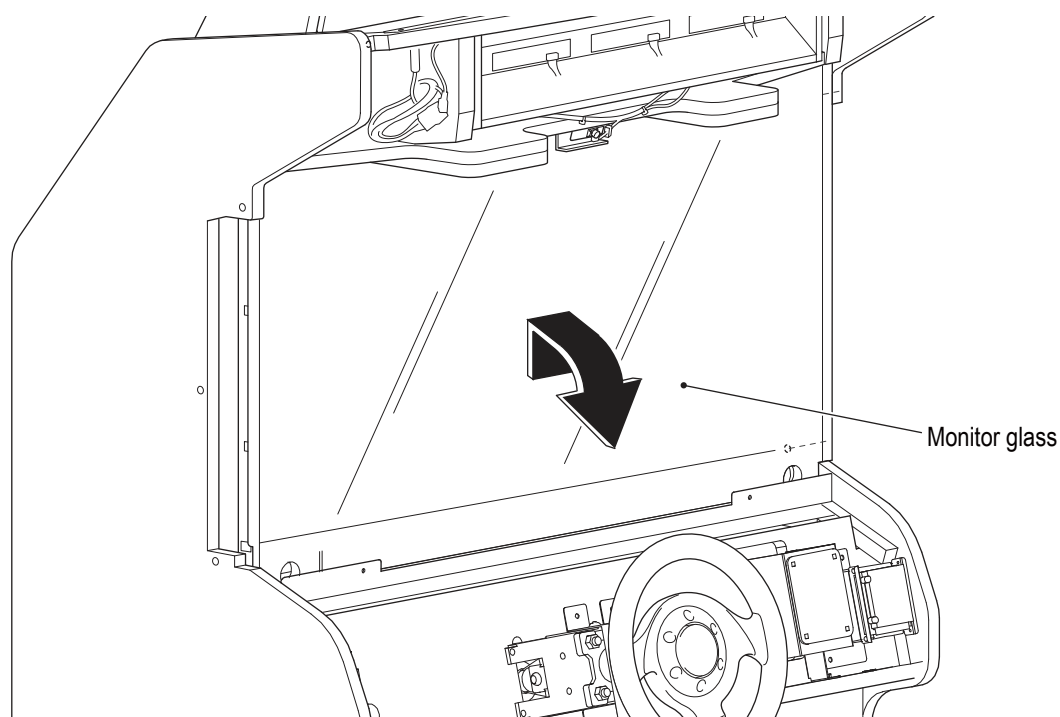


— Must be performed by a technician —

- 7** Loosen the two torx bolts (M5 x 25) on the rear of the camera assembly, and then remove the monitor stopper (upper).



- 8** Lift up the monitor glass slightly, pull out the bottom side towards you and remove it.



1

2

3

4

5

6

7

8A

8B

9

10

11

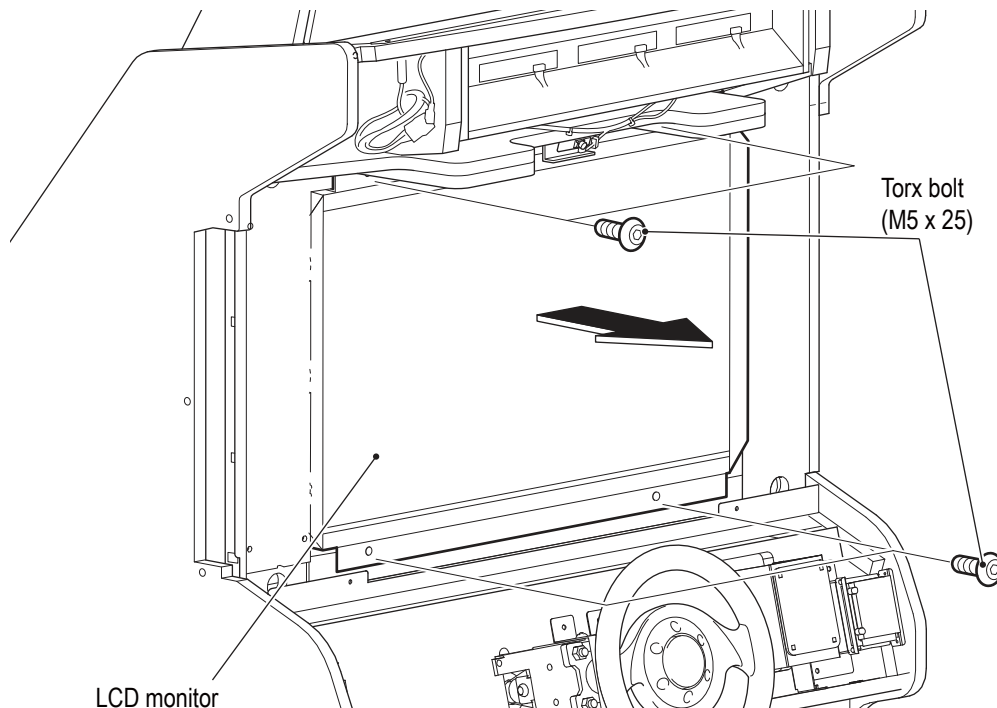
Service • Technician's Manual

Test Mode

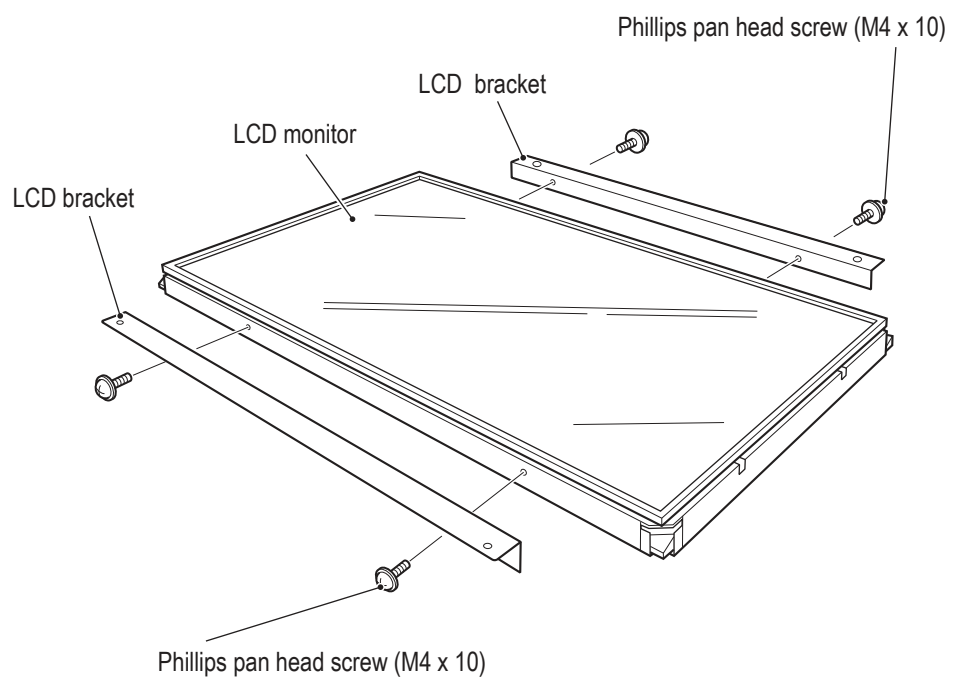
Troubleshooting

— Must be performed by a technician —

- 9** Remove the four torx bolts (M5 x 25), and then remove the LCD monitor(



- 10** Remove the four Phillips pan head screws (M4 x 10), remove the LCD brackets and replace the LCD monitor(



- 11** Ko install, perform the procedure in reverse.

— Must be performed by a technician —

(5) Replacing the Steering Assembly

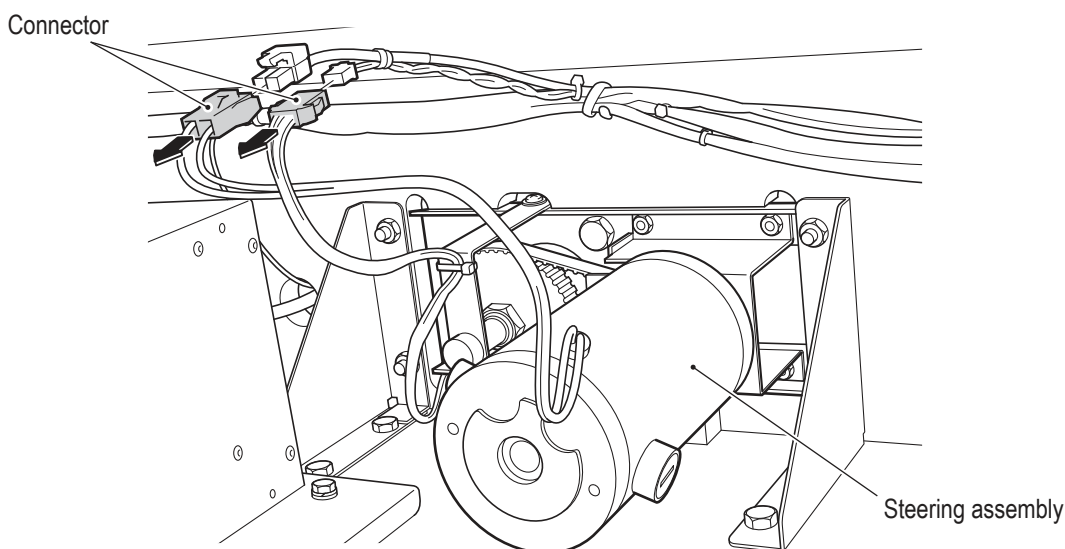
! WARNING

- 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.

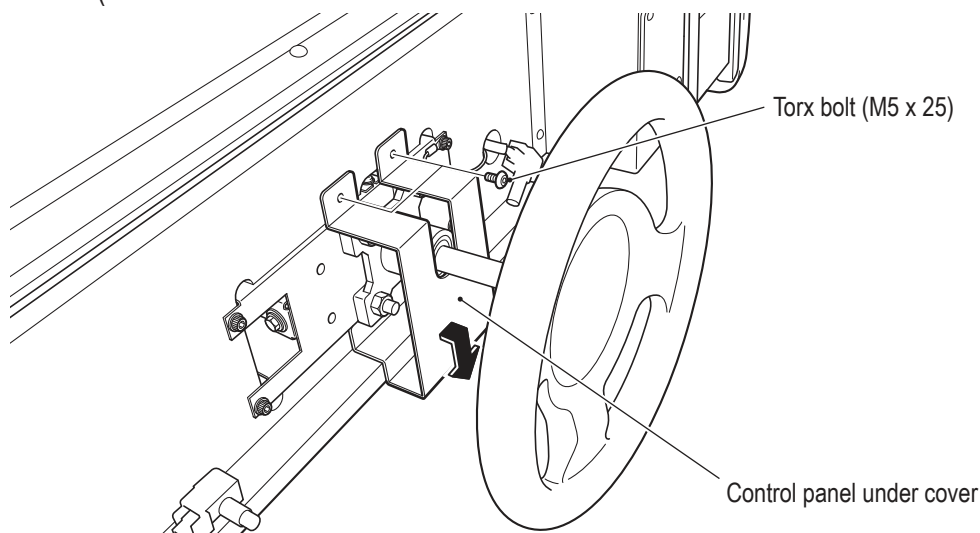
! CAUTION

- The steering assembly weighs approx. 26.5 lb (12 kg). Be very careful while working, because dropping it may cause injury!

- 1** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R1.)
- 2** Remove the two connectors of the steering assembly(

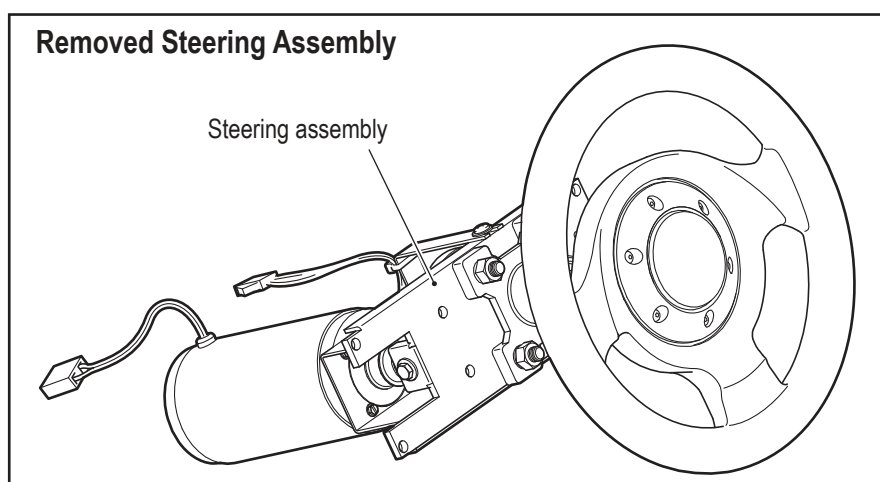
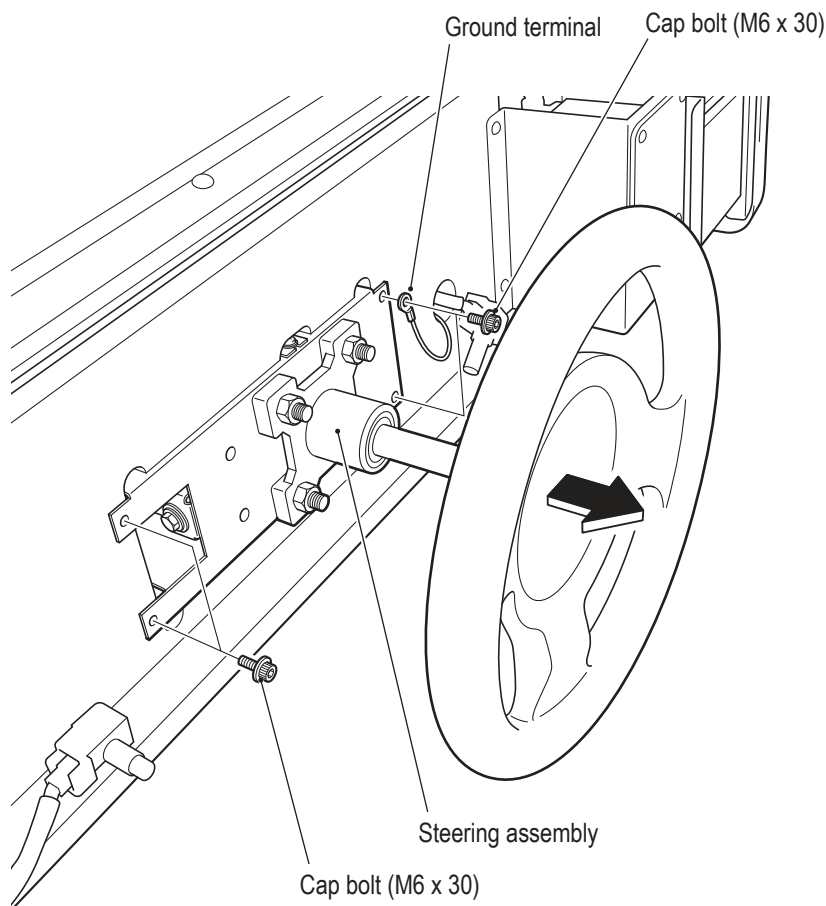


- 3** Remove the control cover. (See “8B-4-1 (2) Removing and Installing the Control Cover” on page 77.)
- 4** Remove the two torx bolts (M5 x 25), and then remove the control panel under cover(



— Must be performed by a technician —

- 5** Remove the four cap bolts (M6 x 30) and the ground terminal, then slowly pull out the steering assembly and replace it.



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



- After completing the replacement, be sure to initialize and check the operation. (See “7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)” on page 53 and “7-6-4 (a) SWITCH TEST” on page 37.)

— Must be performed by a technician —

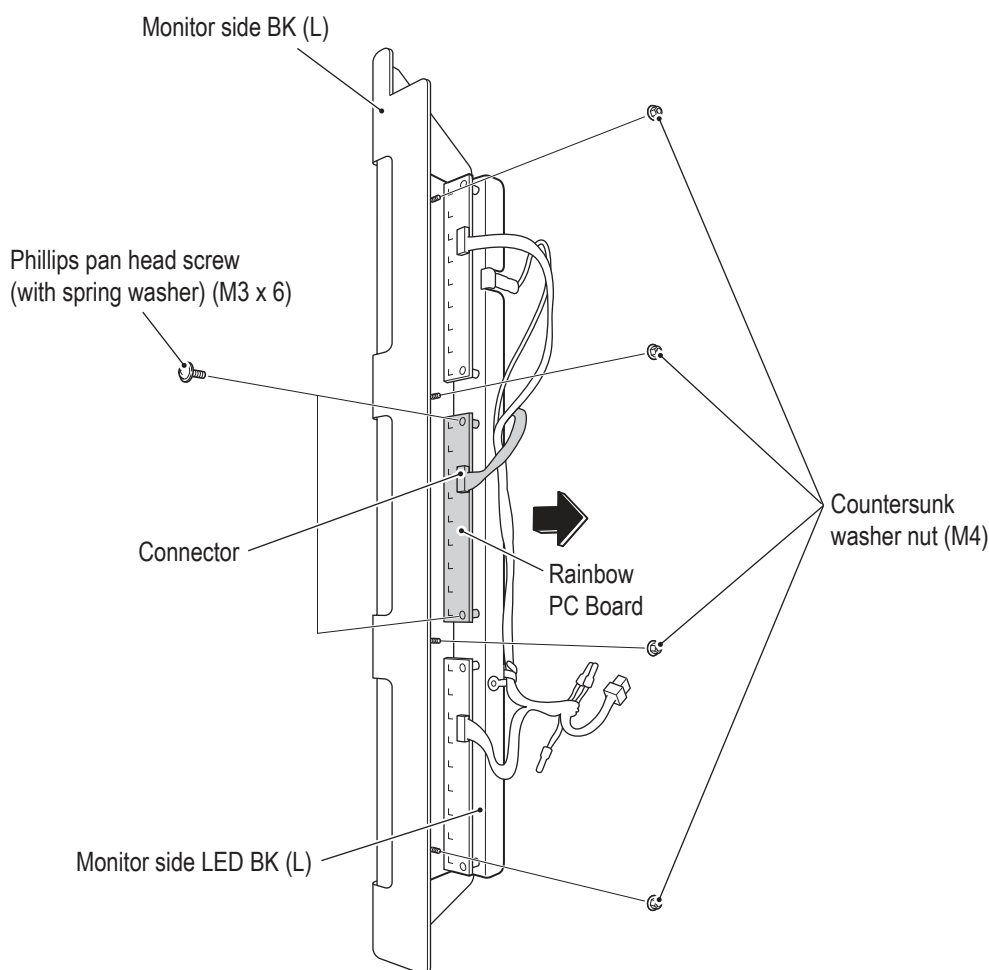
(6) Replacing the Rainbow PC Board (monitor side)

There are six LEDs. The replacement of the top left LED is described below(

⚠ 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 Remove the monitor side BK (L). (See **5** in “8B-4-1 (4) Replacing the LCD Monitor” on page 79.)
- 2 Remove the four countersunk washer nuts (M4), and remove the monitor side LED BK (L).
- 3 Disconnect the connector, remove the two Phillips pan head screws (with spring washer) (M3 x 6), and remove the Rainbow PC Board.



- 4 To install, perform the procedure in reverse.



- After completing the replacement, be sure to check the operation. (See “7-6-4 (b) LAMP TEST” on page 39.)

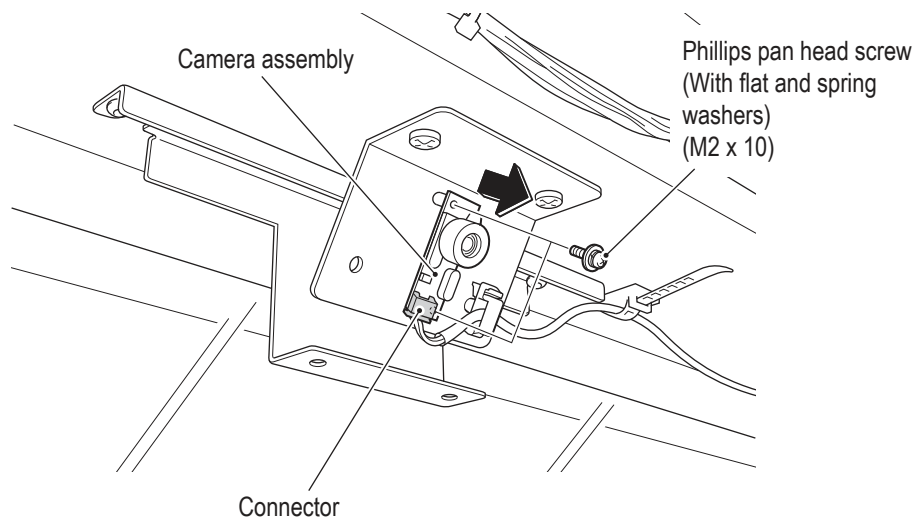
— Must be performed by a technician —

(7) Replacing the Camera

! 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** Remove the top cover, monitor side cover (L) and monitor side cover (R).
(See **1** in “8B-4-1 (1) Replacing the Rainbow PC Board (top cover)” on page 76.)
- 2** Disconnect the connector, remove the two Phillips pan head screws (with flat and spring washers) (M2 x 10), and remove the camera assembly(



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



- After completing the replacement, be sure to check the operation.
(See “7-4-6 (c) NAMCAM (CAMERA) TEST” on page 40.)

— Must be performed by a technician —

(8) Replacing the LED Bar (L)

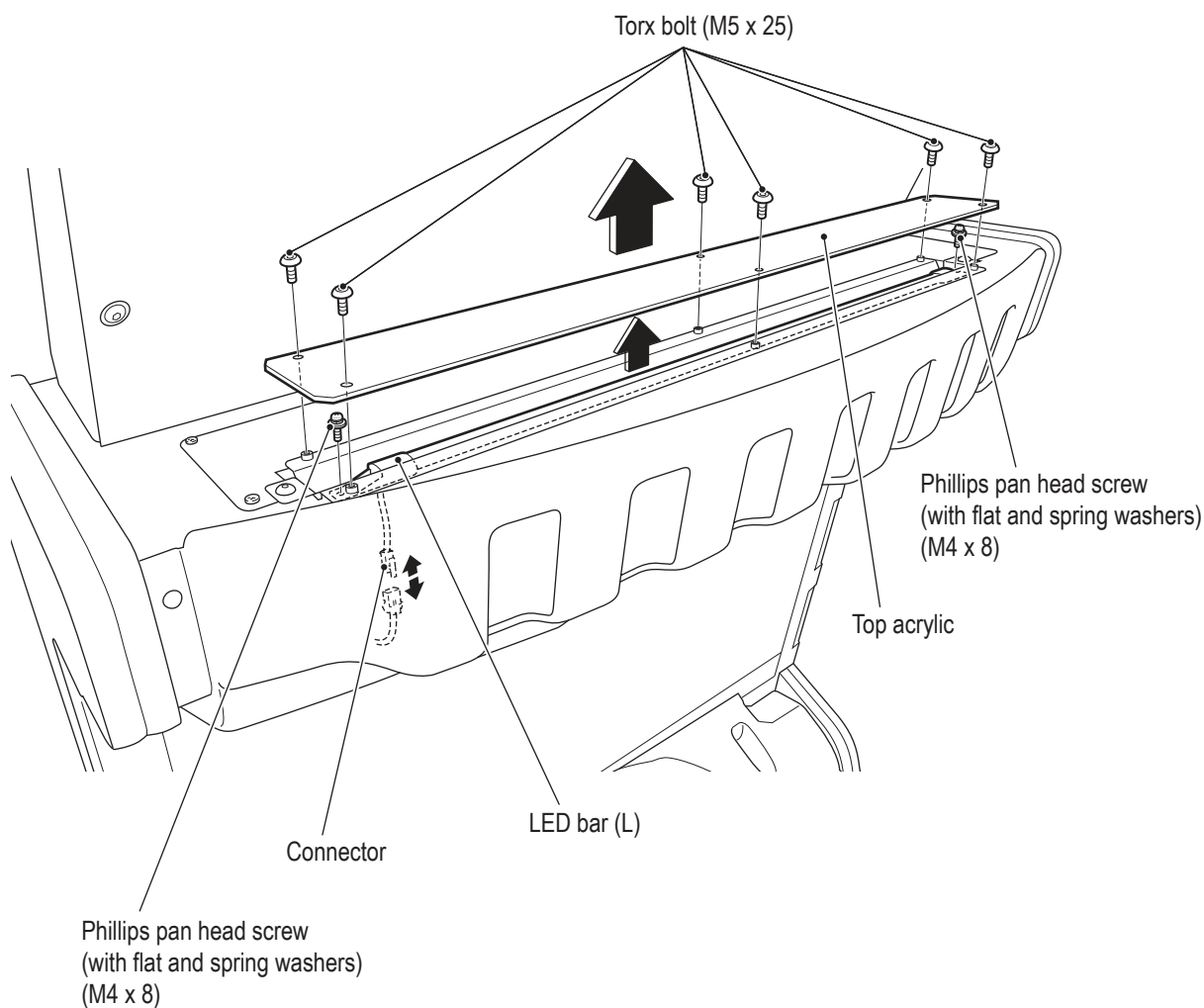
⚠ WARNING

- 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 PC board is 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 the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch. (See “8A-2-4 Power Switch Position and Turning the Power Switch On” on page 67.)
- 2** Remove the six torx bolts (M5 x 25), and remove the top acrylic.



- 3** Remove the two Phillips pan head screws (with flat and spring washers) (M4 x 8), disconnect the connector and replace the LED bar (L).
- 4** To install, perform the procedure in reverse.

— Must be performed by a technician —

8B-4-2 Front Assembly Rear Side

(1) Replacing the Game PC Board

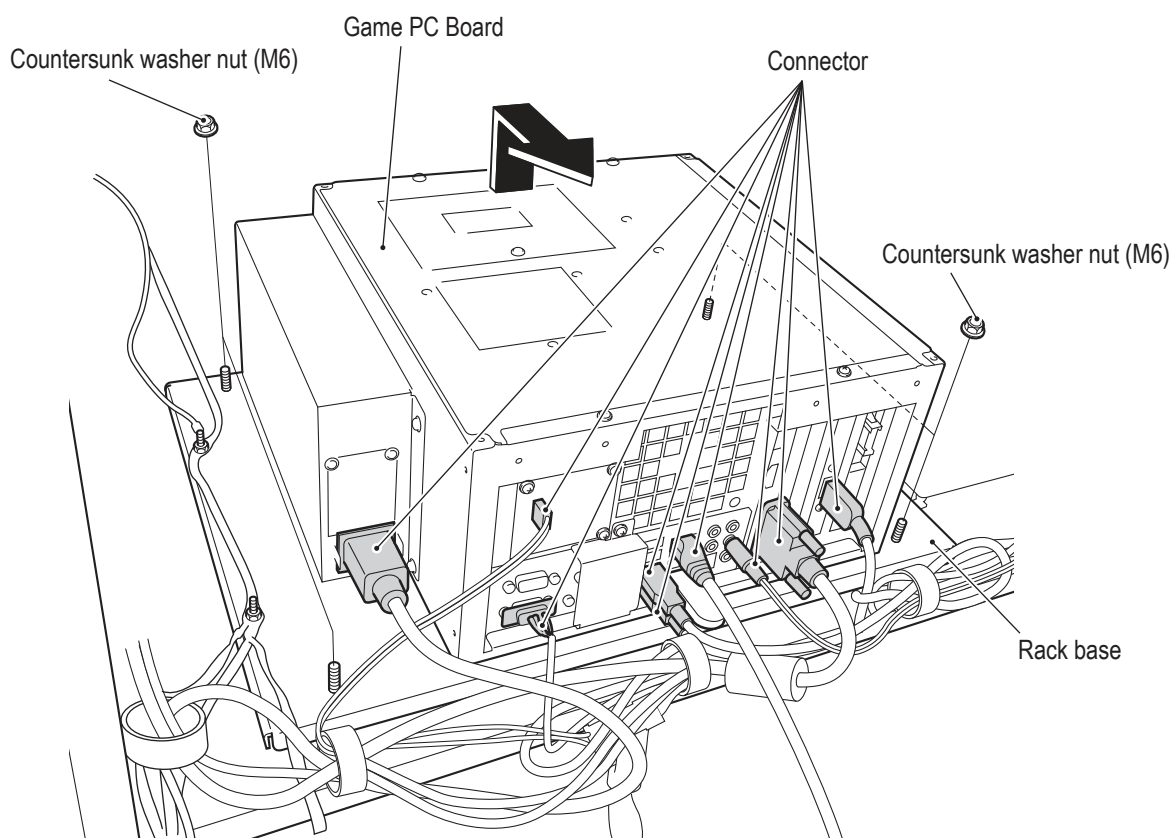
⚠ WARNING

- 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.

⚠ CAUTION

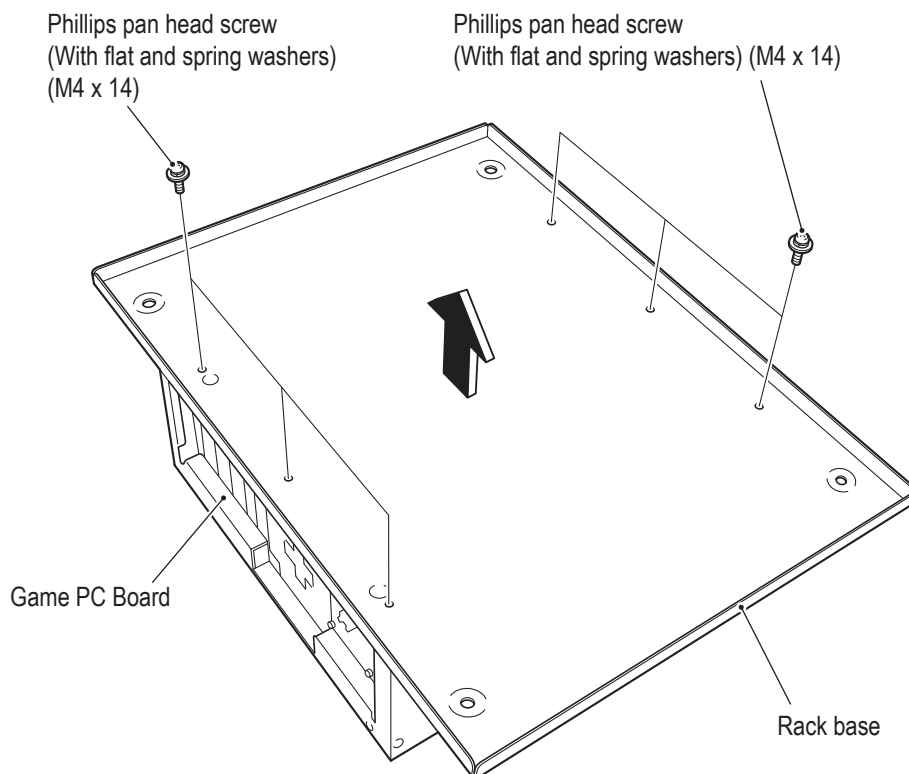
- The Game PC Board weighs approx. 17.6 lb (8 kg). Be very careful while working, because dropping it may cause injury!

- 1** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R11)
- 2** Disconnect the nine connectors, remove the four countersunk washer nuts (M6), and remove the Game PC Board together with the rack base.



— Must be performed by a technician —

- 3** Turn over the Game PC Board. Remove the six Phillips pan head screws (with flat and spring washers) (M4 x 14), remove the rack base and replace the Game PC Board.



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



- When sending a part for repair (Game PC Board), wrap it in sponge or bubble wrap before packing it in a cardboard box. Make sure that the box is not exposed to outside pressure.
- After completing the replacement, be sure to check the operation and initialize. (See “7-6 Test Mode” on page 31.)

1

2

3

4

5

6

7

8A

8B

9

10

11

Service • Technician's Manual

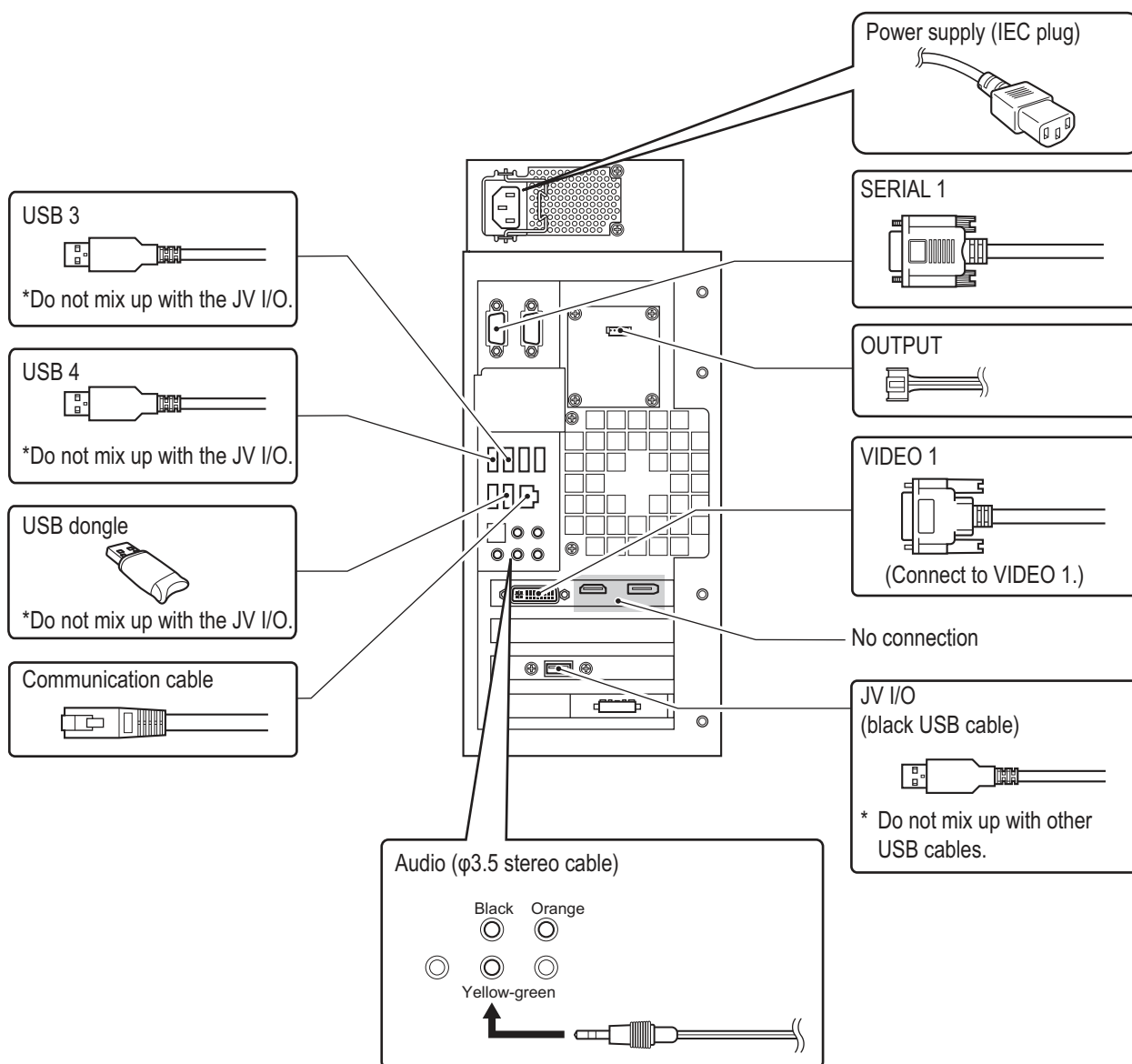
Test Mode

Troubleshooting

— Must be performed by a technician —



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



— Must be performed by a technician —

(2) Replacing the STR4 (M) PC Board

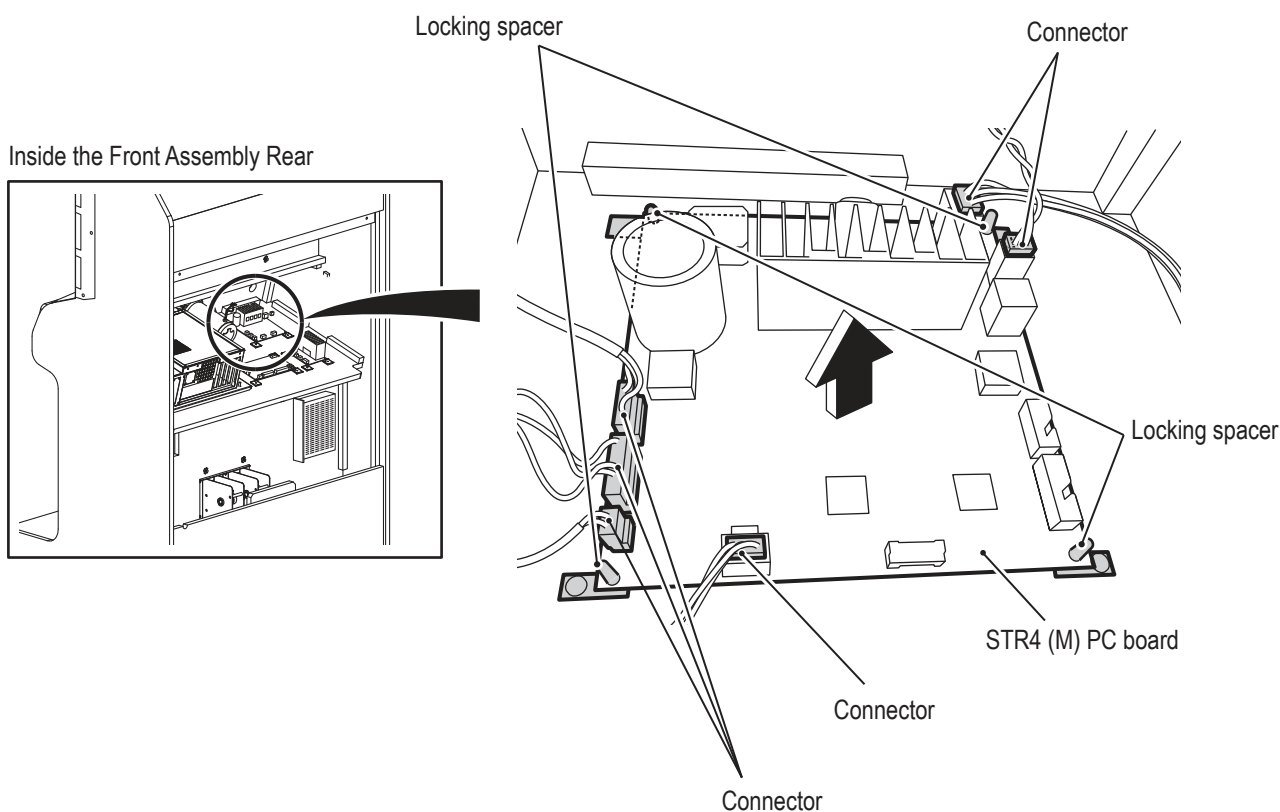
⚠ WARNING

- 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

- To avoid damaging the electronic circuits, make sure that the connector direction is correct when connecting the connectors.
- The PC board is 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 the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R10.)
- 2** Disconnect the six connectors, remove the STR4 (M) PC board from the locking spacers, and replace it.



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

NOTICE

- After completing the replacement, be sure to check the operation and initialize. (See “7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)” on page 53 and “7-6-4 (a) SWITCH TEST” on page 37.)

— Must be performed by a technician —

(3) Replacing the NA-JV (M) PC Board

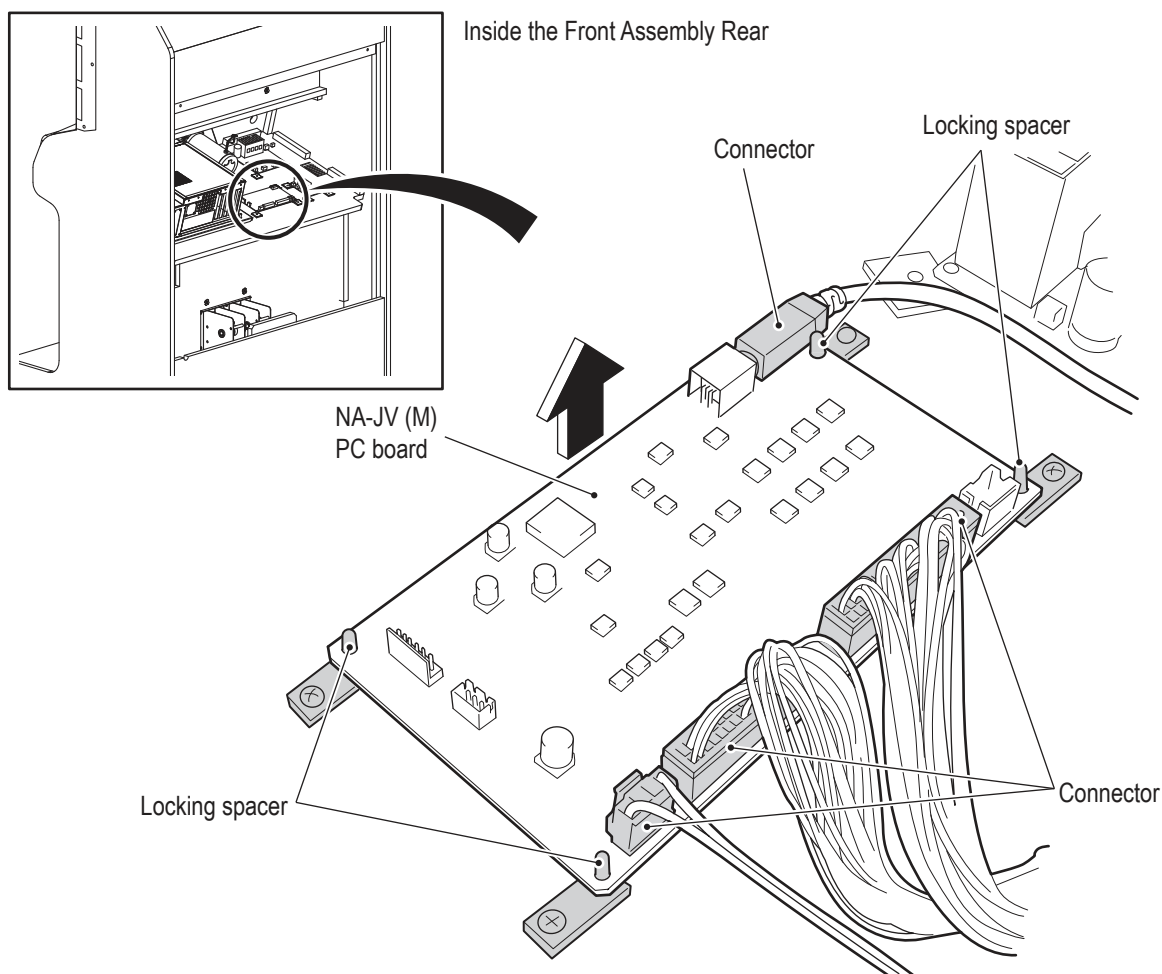
⚠ WARNING

- 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

- To avoid damaging the electronic circuits, make sure that the connector direction is correct when connecting the connectors.
- The PC board is 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 the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R1)
- 2** Disconnect the four connectors, remove the NA-JV (M) PC board from the locking spacers, and replace it.



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

— Must be performed by a technician —

(4) Replacing the Amp PC Board

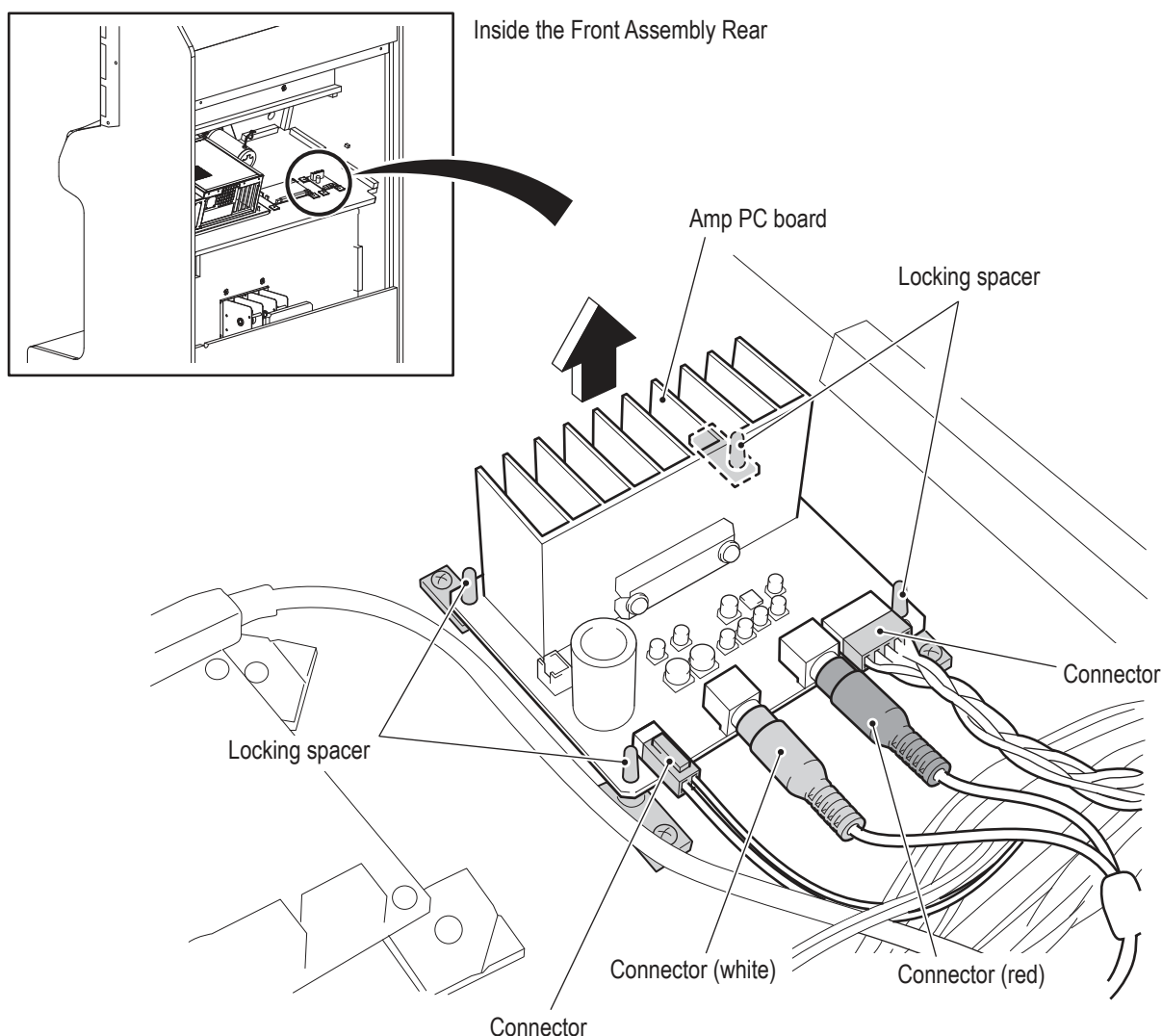
⚠ WARNING

- 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

- To avoid damaging the electronic circuits, make sure that the connector direction is correct when connecting the connectors.
- The PC board is 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 the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R1)
- 2** Disconnect the four connectors, remove the amp PC board from the locking spacers, and replace it.



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

1

2

3

4

5

6

7

8A

8B

9

10

11

Service • Technician's Manual

Test Mode

Troubleshooting

— Must be performed by a technician —

(5) Replacing the Switching Regulator (12 V)

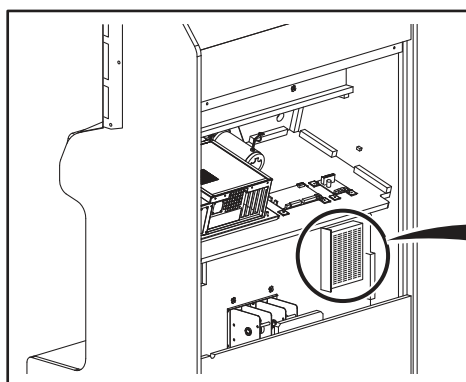
! WARNING

- 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.

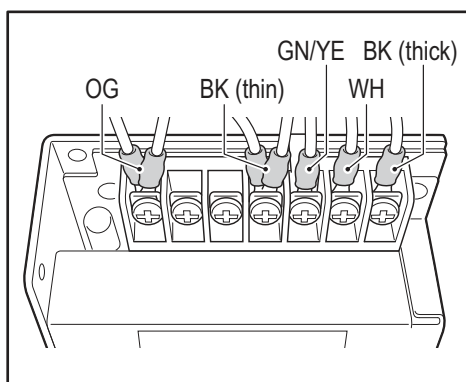
NOTICE

- To avoid damaging the electronic circuits, make sure that the connector direction is correct when connecting the connectors.
- The PC board is vulnerable to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch. (See “8A-2-4 Power Switch Position and Turning the Power Switch On” on page 67)
- 2** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R)('
- 3** Remove the eight screws, disconnect the ring terminals from the regulator, remove the two Phillips pan head screws (with flat and spring washers M4 x 12), and replace the switching regulator (12 V).

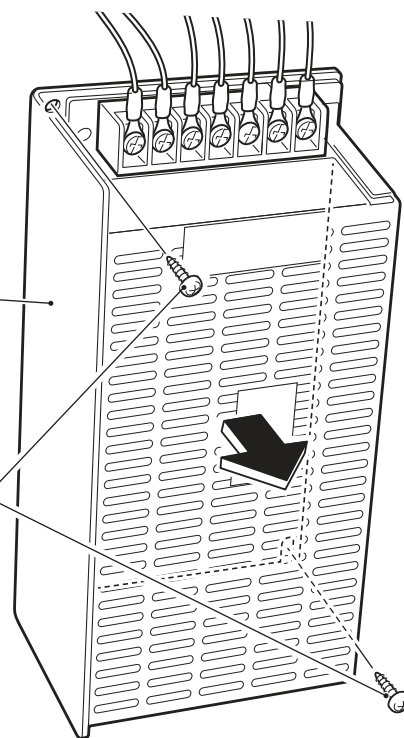


Inside the Front Assembly Rear



Switching regulator (12 V)

Tap-in pan head screw
($\phi 4 \times 10$)



- 4** To install, perform the procedure in reverse. Refer to the figure above for the ring terminal connection locations.

NOTICE

- When connecting the ring terminals, check the harness colors and contact conditions carefully to avoid damaging the electronic circuits.

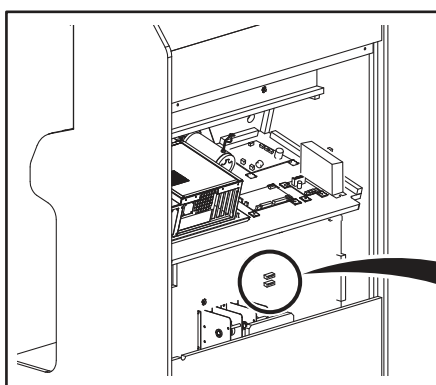
— Must be performed by a technician —

(6) Replacing the Fuse

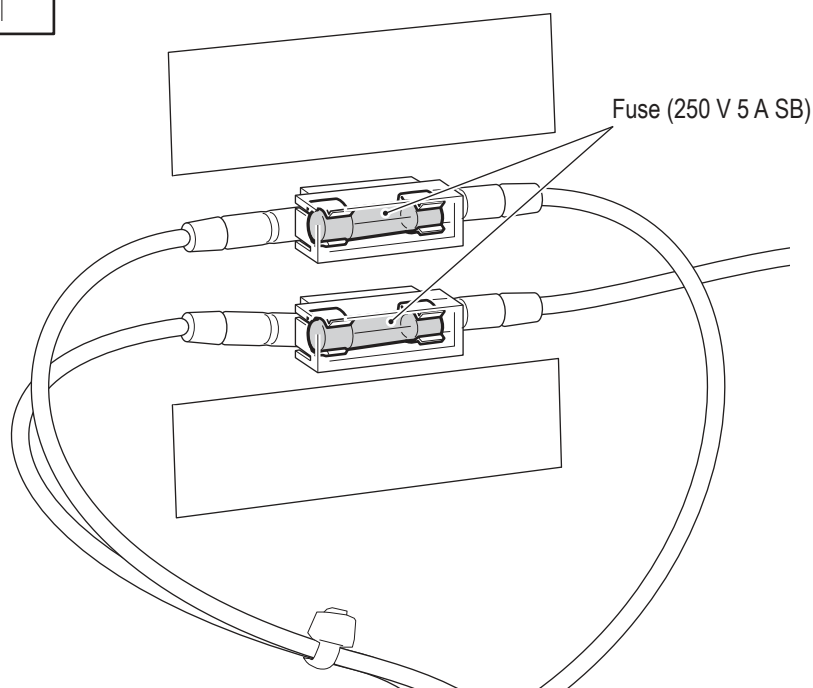
⚠ WARNING

- 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.
- Never use a fuse other than the specified fuse (250 V 5 A), because it may cause a fire. A fuse is required to prevent a fire or accident. To order a fuse, contact your distributor.

- 1** Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page 79.)
- 2** Replace the fuse (5 A SB).



Inside the Front Assembly Rear



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

— Must be performed by a technician —

8B-4-3 Pedal Assembly

(1) Removing and Installing the Pedal Assembly

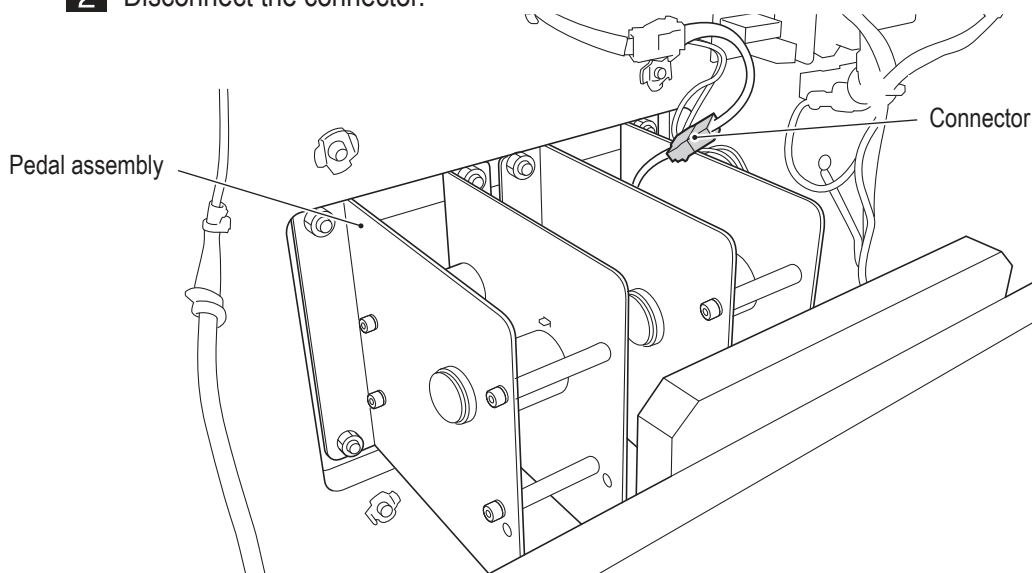
⚠ WARNING

- 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.

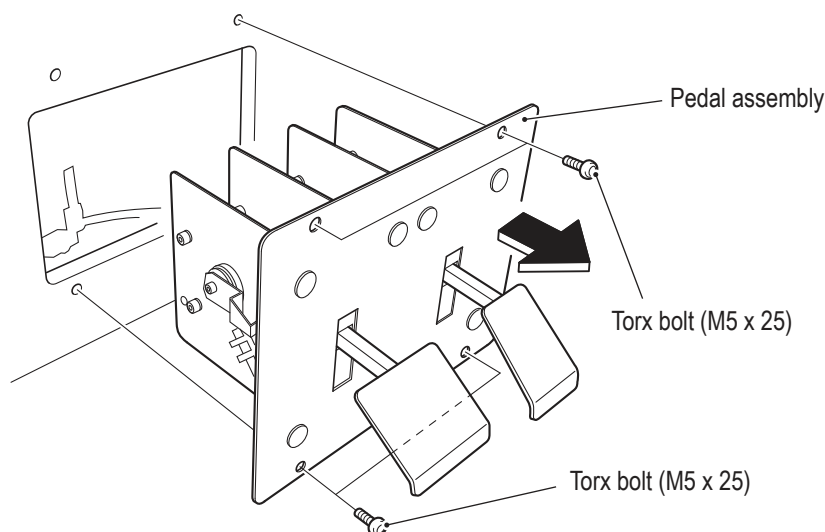
⚠ CAUTION

- The pedal assembly weighs approx. 8.8 lb. Be very careful while working, because dropping it may cause an injury!

- 1 Remove the rear door. (See **1** in “8B-4-1 (4) Replacing the LCD Monitor” on page R)(
- 2 Disconnect the connector.



- 3 Remove the four torx bolts (M5 x 25), and then slowly remove the pedal assembly(



- 4 To install, perform the procedure in reverse.



- After completing the replacement, be sure to check the operation and initialize. (See “7-6-11 Adjustments after Parts Replacement (GO TO I/F INITIALIZE)” on page 53 and “7-6-4 (a) SWITCH TEST” on page 37.)

— Must be performed by a technician —

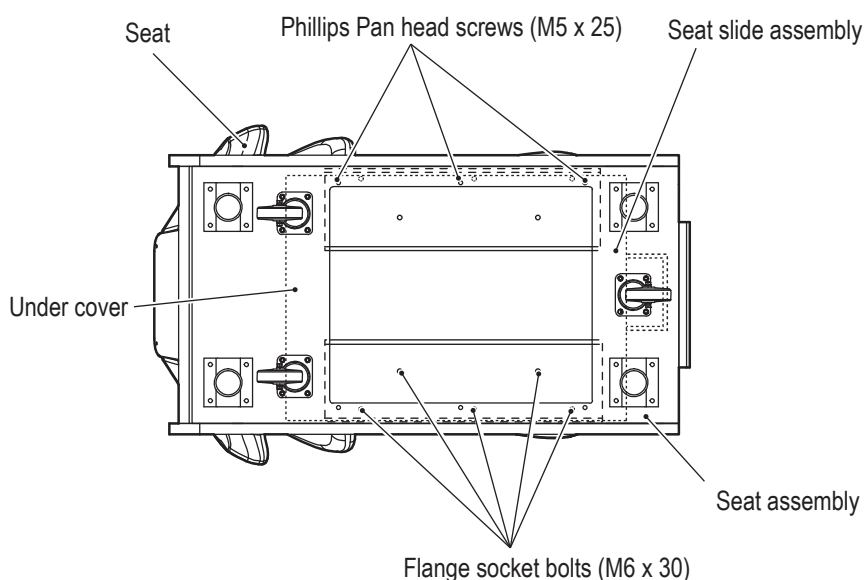
8B-4-4 Seat Assembly

(1) Replacing the Slide Unit

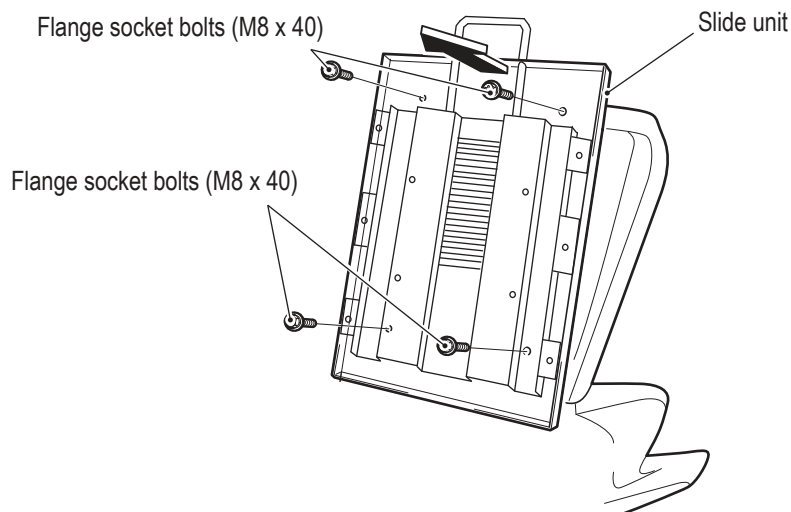
⚠ WARNING

- 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.
- The slide unit and seat weigh approx. 33.1 lb. When laying down and removing the slide unit and seat, there is a danger of trapping your hands or an object. Make sure there is no one in the surrounding area.

- 1** Remove the six Phillips pan head screws (M5 x 25), remove the under cover. Then remove the 10 flange socket bolts (M6 x 30) to remove the seat slide assembly.



- 2** Remove the four flange socket bolts (M8 x 40), and replace the slide unit.



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

— Must be performed by a technician —

(2) Replacing the LED Bar (S)

This machine uses two LED bars (S).

Refer to the procedure below, and replace the LED bar (S) that corresponds to the malfunction location.

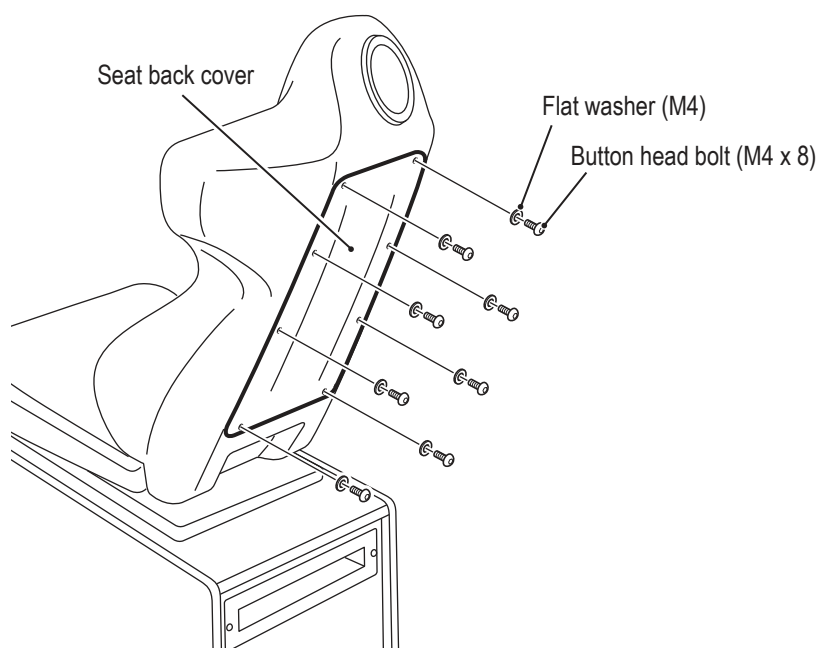
⚠ WARNING

- 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.



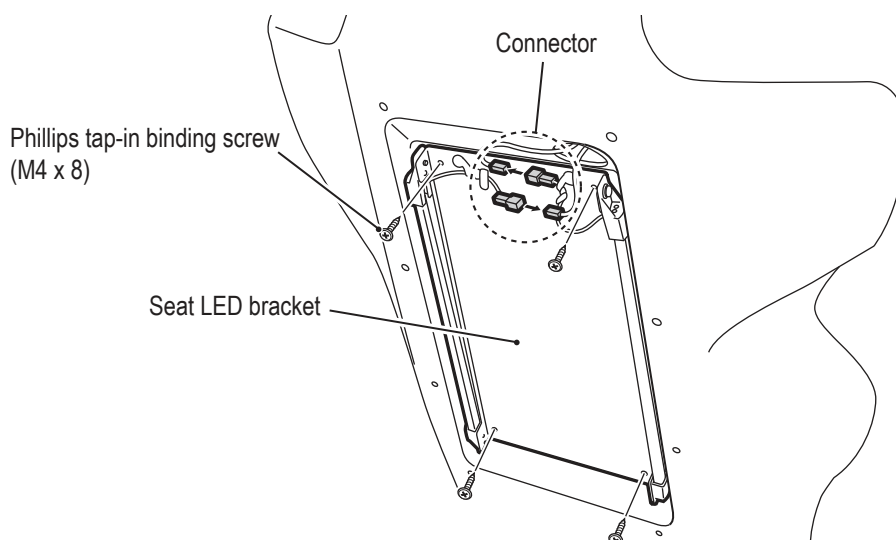
- The PC board is sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch. (See “8A-2-4 Power Switch Position and Turning the Power Switch On” on page 67.)
- 2** Remove the eight button head bolts (M4 x 8) and eight flat washers (M4), and remove the seat back cover(

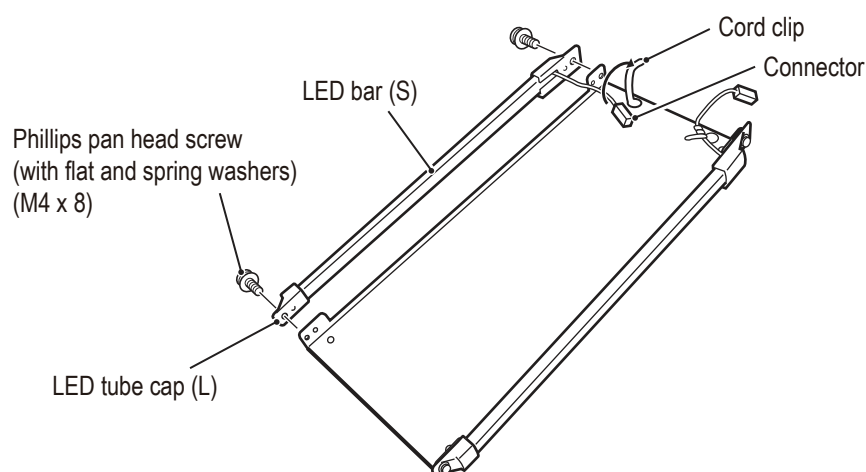


— Must be performed by a technician —

- 3** Disconnect the two connectors, remove the four Phillips tap-in binding screws (M4 x 8), and remove the seat LED bracket.



- 4** Remove the cord clip and the two Phillips pan head screws (with flat and spring washers) (M4 x 8), and remove the LED bar (S).



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

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

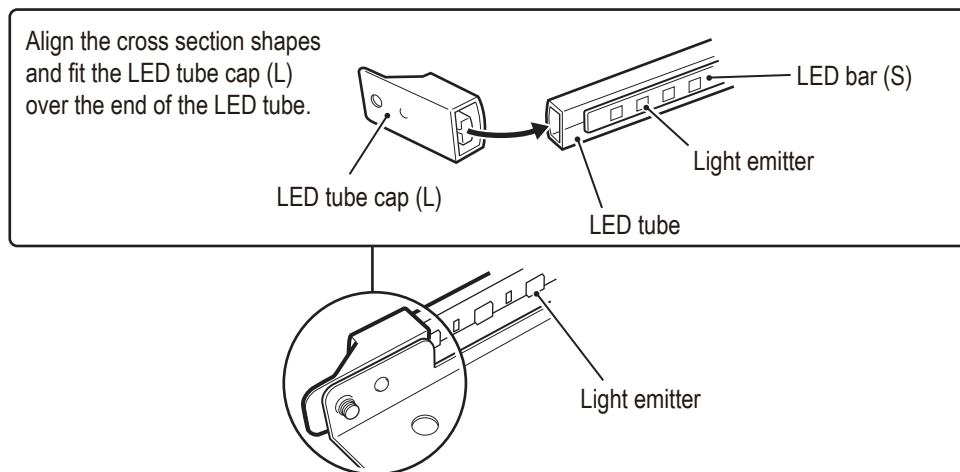
Service • Technician's Manual

Test Mode

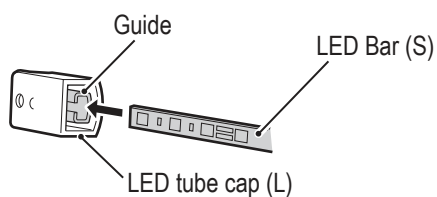
Troubleshooting

— Must be performed by a technician —

- Install the LED bar (S) so that the light emitters face the direction shown in the figure below. (When installing, the light emitters face toward the inside.)



- When installing, take care to press the LED Bar (S) all the way into the guide in the center of the LED tube cap (L) so that it will not come loose.



— Must be performed by a technician —

(3) Replacing the Rainbow PC Board (seat)

This machine uses two Rainbow PC Board (seat).

Refer to the procedure below, and replace the Rainbow PC Board (seat) that corresponds to the malfunction location.

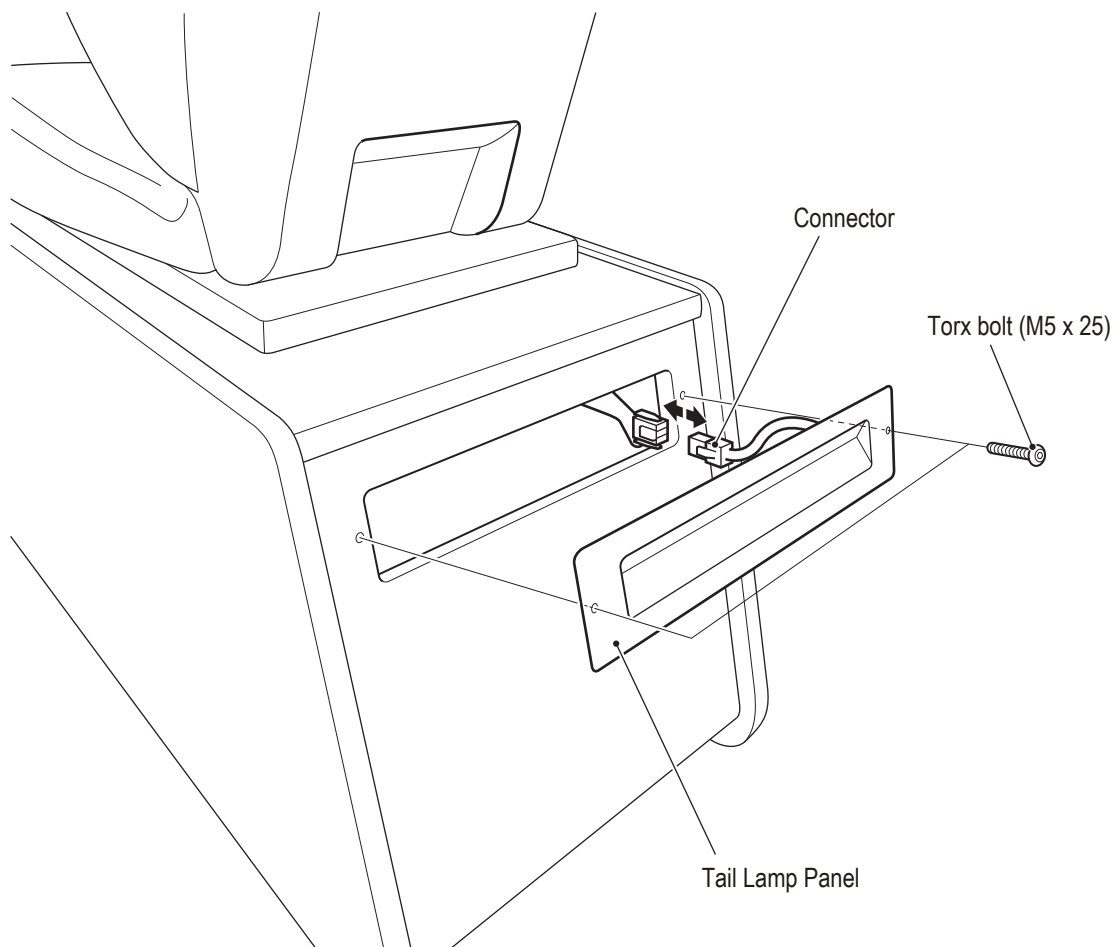
⚠ WARNING

- 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

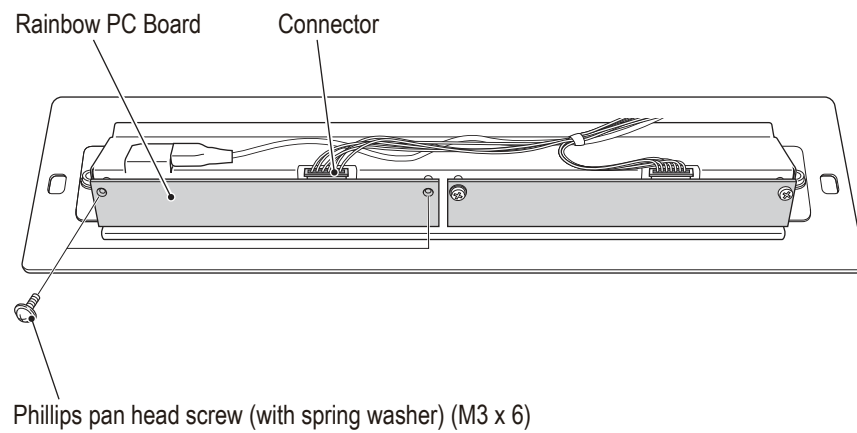
- The PC board is sensitive to static electricity. If a person handles a PC board while charged with static electricity, the parts on the PC board may be damaged. Before handling the PC board, discharge the static electricity from your body; for example, by touching the surface of grounded metal.

- 1** Turn off the power switch. (See "8A-2-4 Power Switch Position and Turning the Power Switch On" on page 67.)
- 2** Remove the two torx bolts (M5 x 25), and remove the Tail Lamp Panel.
- 3** Remove the connector(



— Must be performed by a technician —

- 4** Disconnect the connector, remove the two Phillips pan head screws (with spring washer) (M3 x 6), and remove the Rainbow PC Board.



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

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.

1

2

3

4

5

6

7

8A

8B

9

10

11

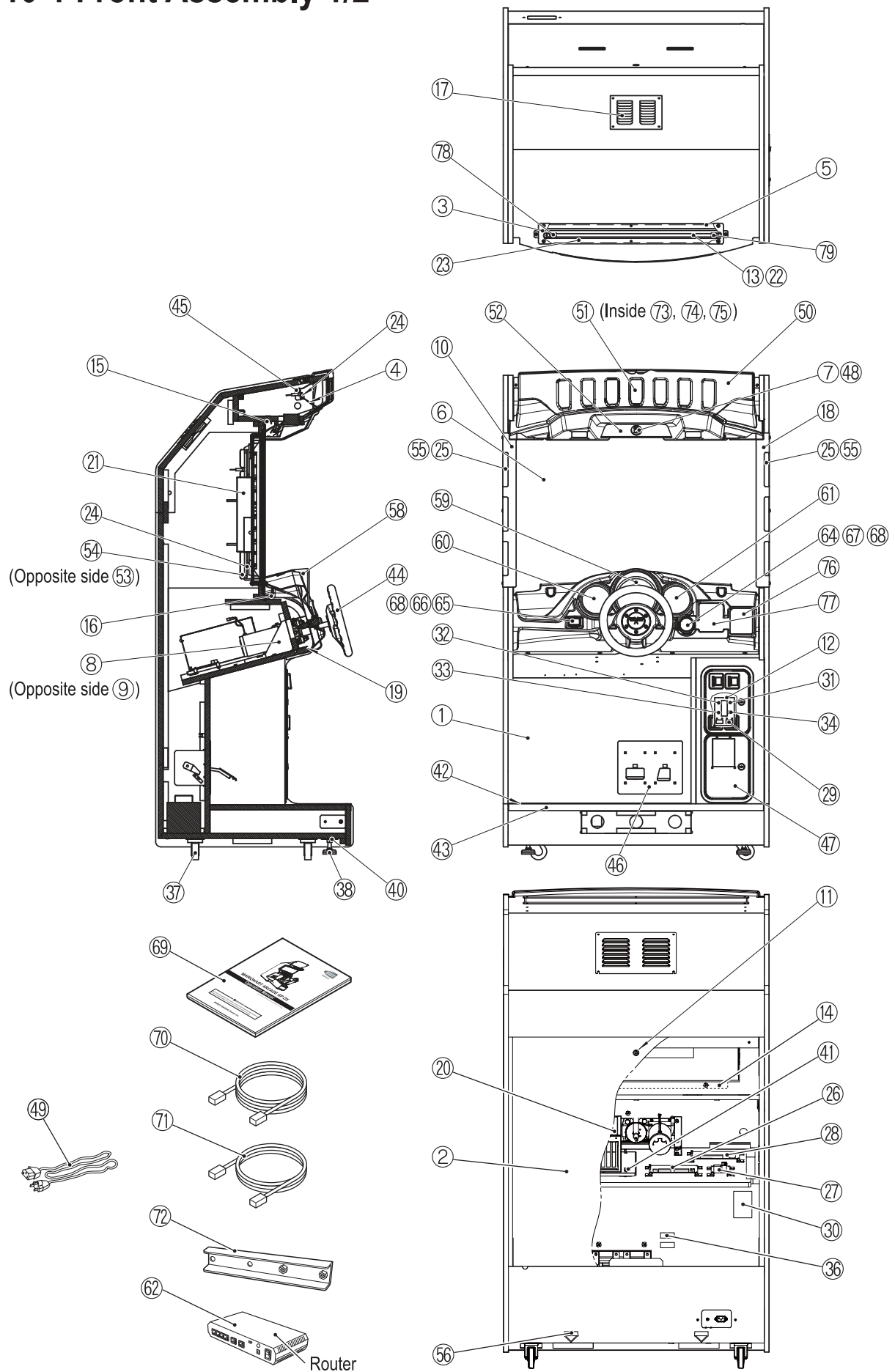
Disposal

Test Mode

Troubleshooting

10. Parts List

10-1 Front Assembly 1/2



No.	Name	Qty.	Type or Rating	Part No.
1	Main cabinet	1		
2	Rear door	1		
3	Top acrylic	1		M390-16349-00
4	Signboard reflector	1		
5	Cushion	2		
6	Monitor glass	1		M399-16370-00
7	Camera bracket	1		M319-18361-00
8	Steering stay (L)	1		HD10-13684-01
9	Steering stay (R)	1		HD10-13684-00
10	Monitor side bracket (L)	1		M310-735-022-00
11	Door key	1		VG26-13198-00
12	Service plate	1		VG10-06881-00
13	Led tube 600	1		VG15-16322-00
14	LCD bracket	1		
15	Monitor stopper (upper)	1		
16	Monitor stopper (lower)	1		
17	Ventilation panel	1		VG10-00066-08
18	Monitor side bracket (R)	1		M310-735-023-00
19	Control panel under cover	1		HD10-13694-00
20	Game PC Board	1	SYS ES3 (A) ASSY	
21	LCD monitor	1		
22	Led bar 600	1		M379-16357-00
23	POP LED bracket	1		
24	Rainbow PC Board	9	SCU02-A	M379-16357-00
25	Corner cover (M)	2		M390-16351-00
26	NA-JV (M) PC board	1	NA-JV (M) PCB (ROM) Assy	HD15-13661-00
27	Amp PC board	1	V389 C2-IS AMP PCB Assy	HD15-13663-00
28	Steering PC board	1	STR4 (M) PCB (ROM) Assy	M303-14160-00
29	Coin counter	2		
30	Switching regulator (12 V)	1	RS-150-12	VG88-14591-00
31	Switch (toggle)	1		
32	Switch (push)	1	PBS-10B	
33	Switch (push)	1	PBS-10B	
34	Switch (toggle)	1		
36	Current fuse (5A SB)	2		
37	Caster (adjustable)	4		VG24-00783-00
38	Adjustment bolt	4		VG20-04938-01

1

2

3

4

5

6

7

8A

8B

9

10

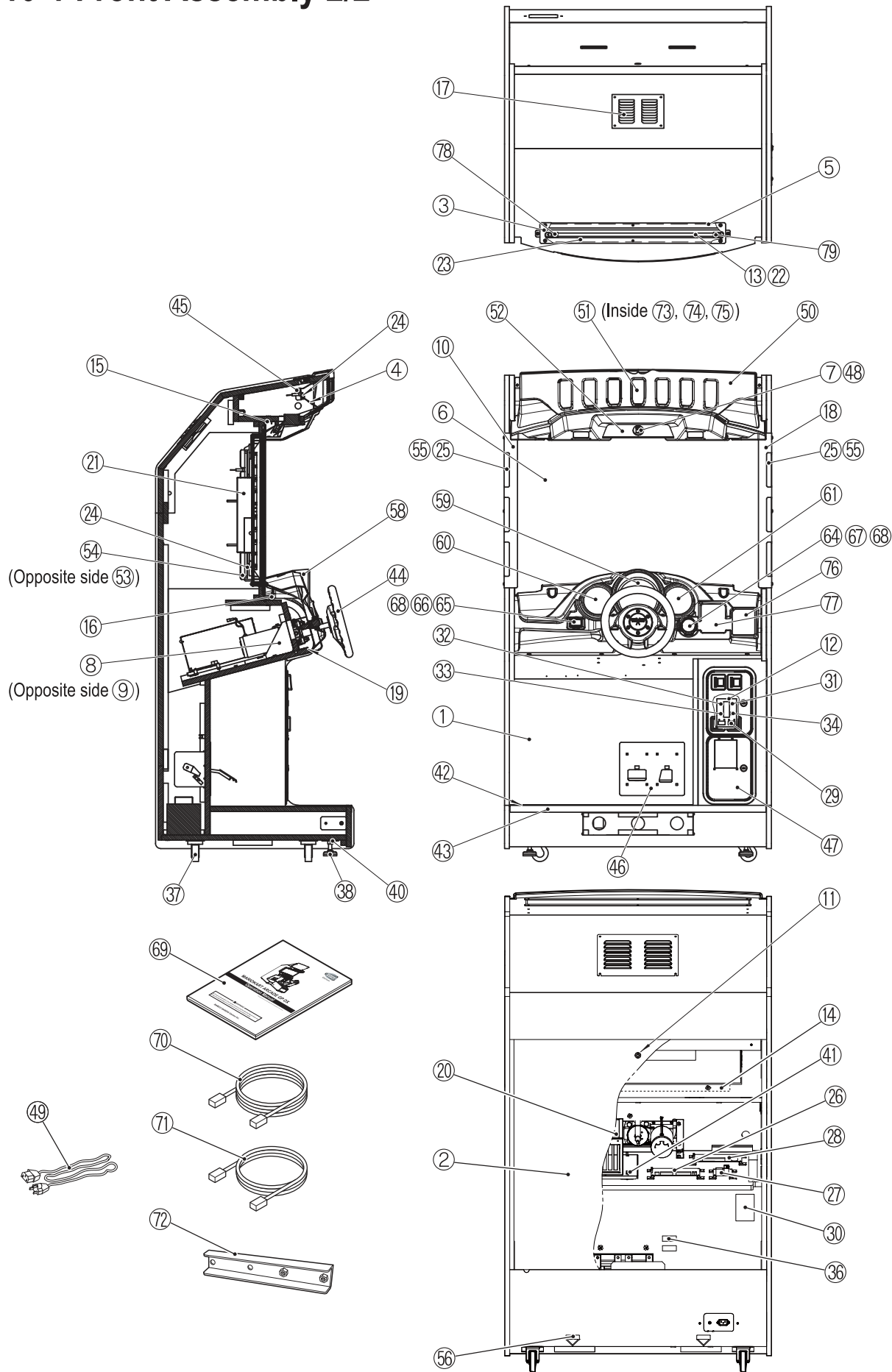
11

Parts List

Test Mode

Troubleshooting

10-1 Front Assembly 2/2



No.	Name	Qty.	Type or Rating	Part No.
40	Adjuster bracket	4		VG10-13164-00
41	Anti-vibration rubber	4	BG0MA25270	
42	Floor mat	1		HD96-14086-00
43	Floor mat retainer	1		HD10-13691-00
44	270 active steering wheel assembly	1	50-0102-50EX	R580-09704-01
45	Support bracket	2		
46	Dual pedal assembly paintloc std w/ms & 5k pot on gas	1		VG05-13755-00
47	Over/under door with cashbox	1	BNWCD-L2SB (US - 2 Slots) BNWCD-L10H (UK - 1 Slot)	VG83-13188-00
48	USB camera	1	KBCR-M05VU-HPB2010-C0	M315-16365-00
49	Power cord	1		VG51-01232-06
50	Top cover (M)	1		MT90-18787-01
51	Top filter (M)	6		MT90-18789-00
52	Camera cover (M)	1		HD40-14097-00
53	LED bracket (L)	1		
54	LED bracket (R)	1		
55	Side sheet	2		MT90-18787-01
56	Fork sticker	2		VG40-06882-00
58	Control cover (M)	1		HD90-13750-03
59	Meter sticker (A) (M)	1		M340-16332-00
60	Meter sticker (B) (M)	1		M340-16333-00
61	Meter sticker (C) (M)	1		M340-16334-00
62				
64	Item sticker	1		M340-16335-00
65	Mario button sticker	1		M340-16336-00
66	Illuminated switch (SQUARE)	1	BLC-DP-BK-G-CW	VG53-13753-03
67	Illuminated switch (ROUND)	1	BLC-DP-BK-D-CB	VG53-13754-02
68	LED LAMP	2	14 V	
69	Operation manual (this manual)	1		M345-16367-00
70	Communication cable (5 m)	1	5 m	VG50-11136-10
71	Communication cable (1 m)	1*1	1 m	
72	Connection bracket	2		HD10-13701-00
73	Filter sheet (A)	1		
74	Filter sheet (B)	1		
75	Filter sheet (C)	1		
76	Manual sticker (A)	1		M340-16359-00
77	Manual sticker (B)	1		M340-16359-01
78	LED tube cap U	1		DE479-15891-00
79	LED tube cap L	1		DE479-15892-00

*1 The quantity noted in the table above is the quantity per 2 ~ 4 machines.

1

2

3

4

5

6

7

8A

8B

9

10

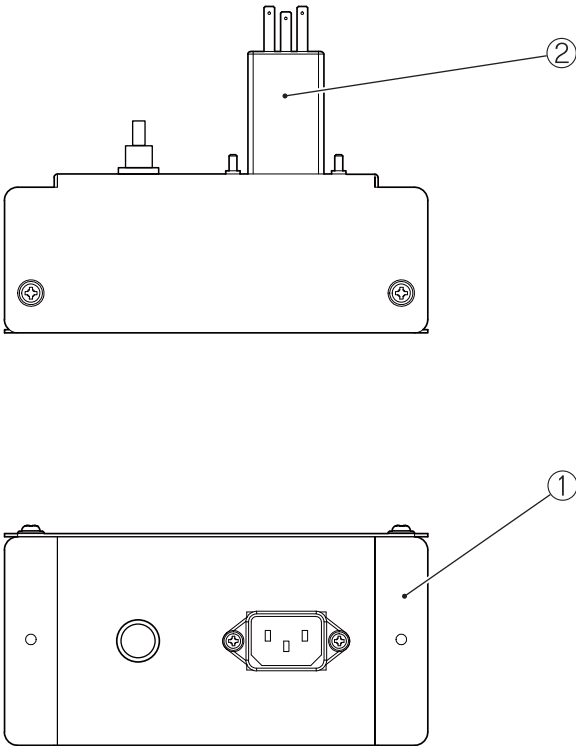
11

Parts List

Test Mode

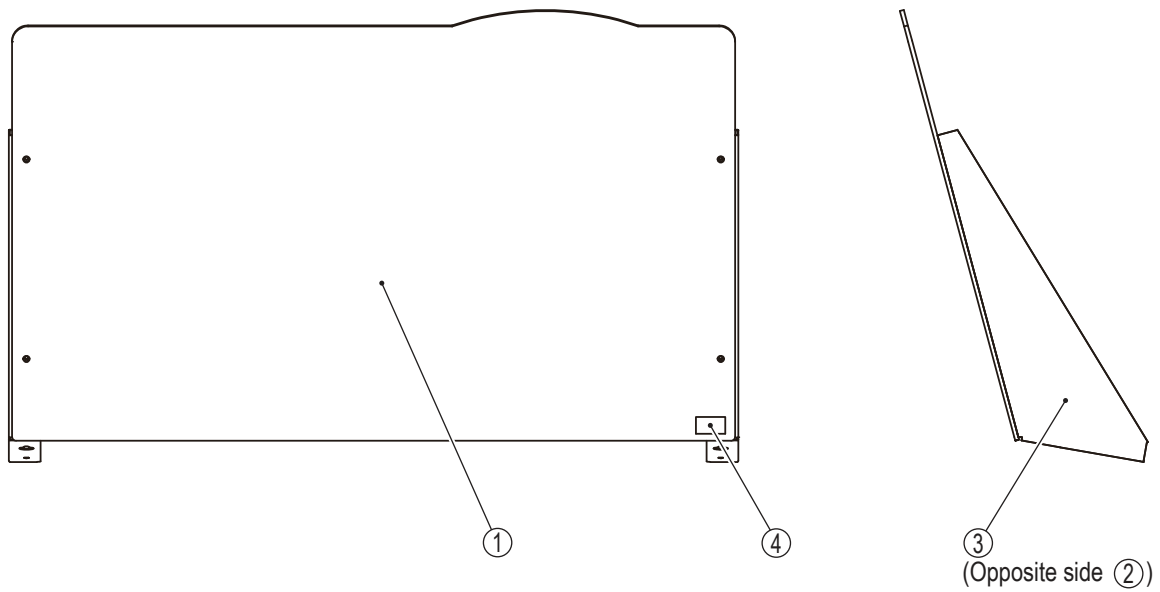
Troubleshooting

10-2 Cord Box Assembly



No.	Name	Qty.	Type or Rating	Part No.
1	Cord box	1		VG10-13674-00
2	Noise filter	1		VG78-12947-00

10-3 Signboard Assembly



No.	Name	Qty.	Type or Rating	Part No.
1	Title panel	1		M340-16360-00
2	POP bracket (L)	1		M310-735-031-00
3	POP bracket (R)	1		M310-735-032-00
4	Security seal	1		VG44-13051-00

1

2

3

4

5

6

7

8A

8B

9

10

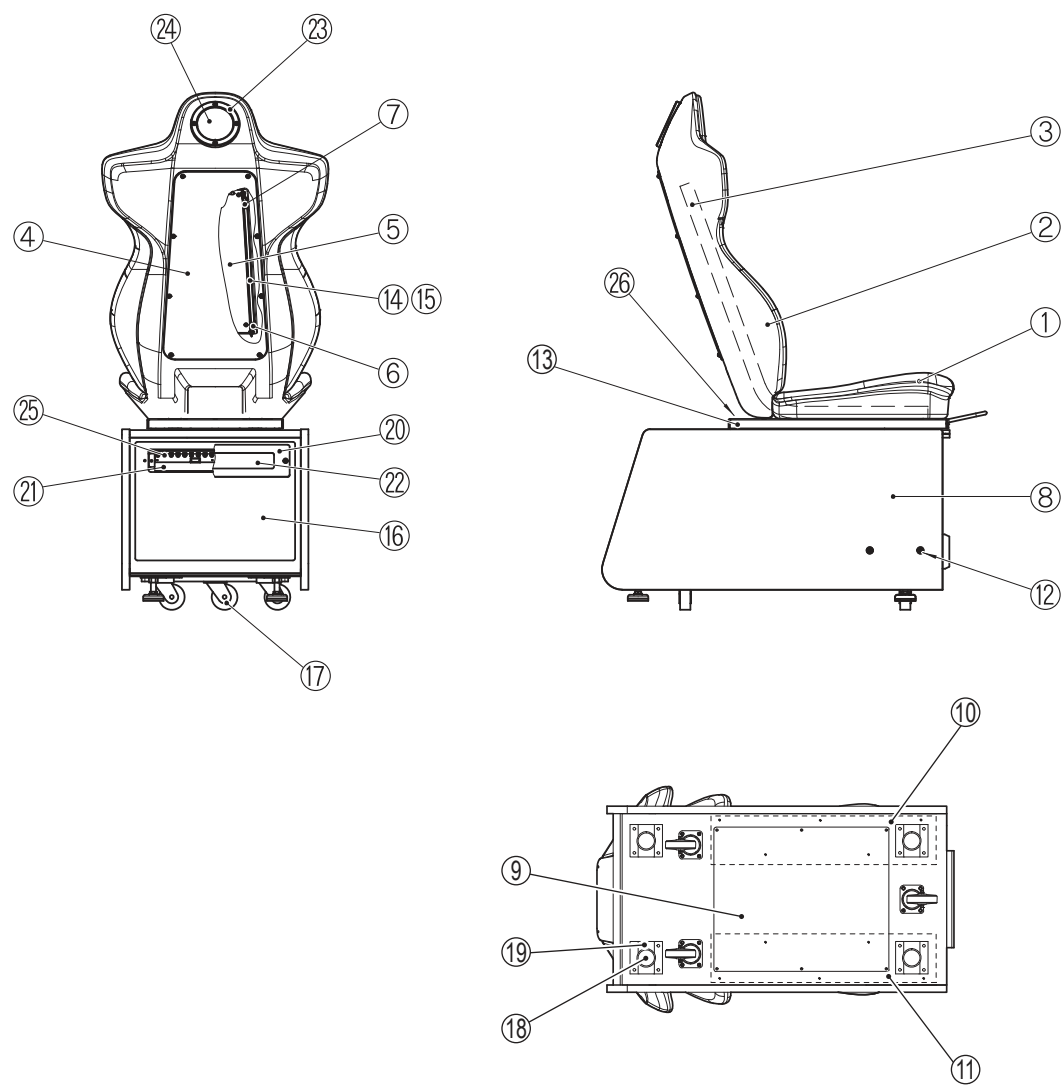
11

Parts List

Test Mode

Troubleshooting

10-4 Seat Assembly



1

2

3

4

5

6

7

8A

8B

9

10

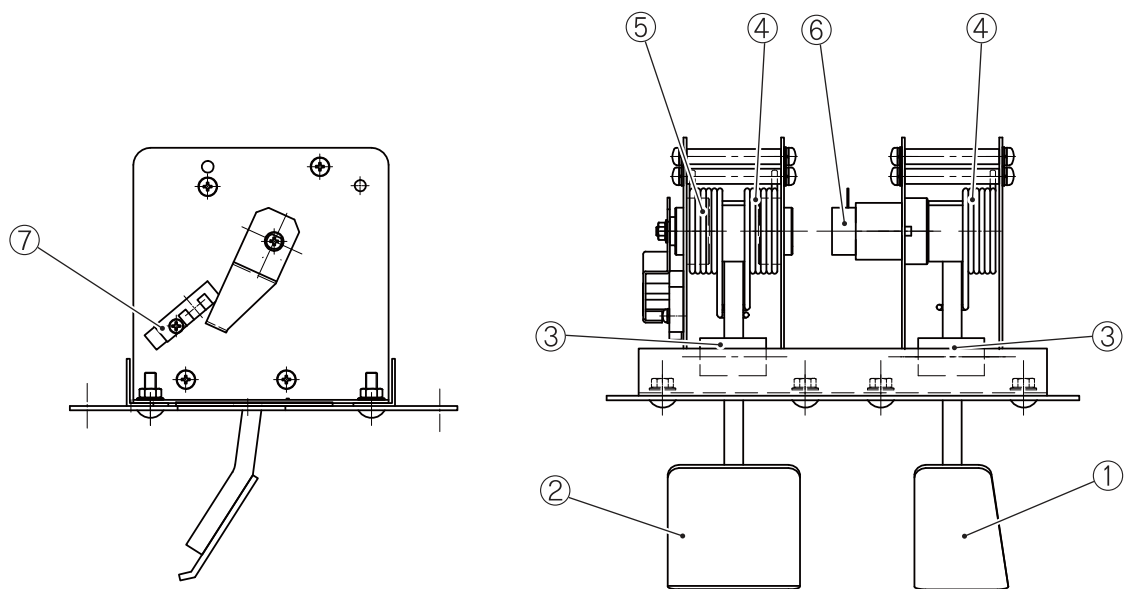
11

Parts List

Test Mode

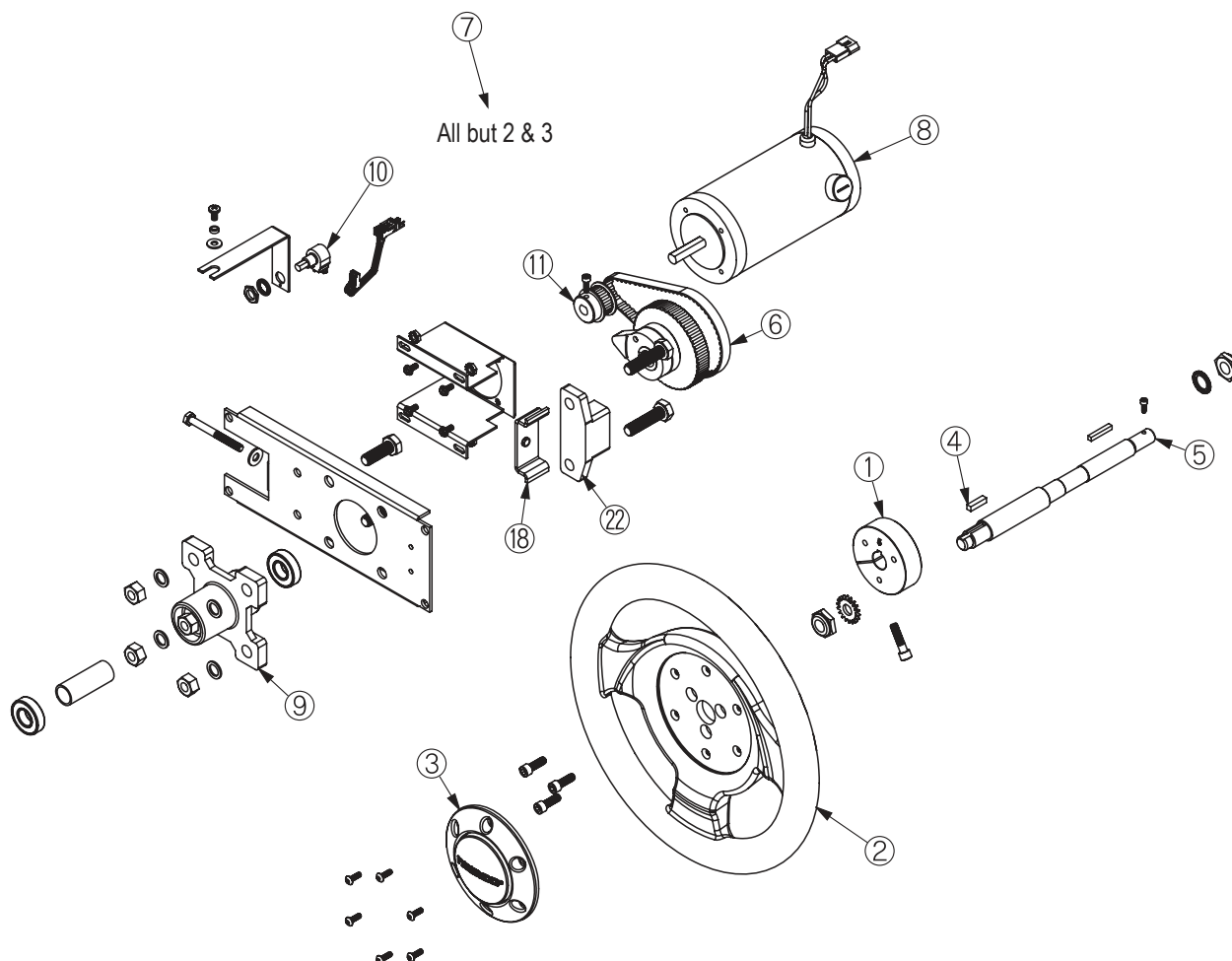
Troubleshooting

10-5 Pedal Assembly



No.	Name	Qty.	Type or Rating	Part No.
1	Pedal A	1		VG05-13755-99
2	Pedal B	1		VG05-13755-98
3	Cushion	4		VG05-13755-97
4	Spring A	2		VG05-13755-96
5	Spring B	1		VG05-13755-95
6	POTENTIOMETOR	1	F24KN5-20 B1Kb7-B0 L20FC*8.5 (0)	VG75-05464-00
7	SENSOR	1	KI1300	VG05-13755-91
*	PEDAL ASSEMBLY FULL	1		VG05-13755-02

10-6 Steering Assembly



No.	Name	Qty.	Type or Rating	Part No.
1	Hub, Steering	1		DD11-04923-00
2	Steering Wheel	1		VG80-137744-00
3	Cap	1		VG90-13757-00
4	Key	1		VG80-02975-06
5	Shaft	1		VG80-02975-05
6	Timing Belt	1		VG80-02975-16
7	Feedback Steering Assembly, all but 2 & 3	1		R580-09704-01
8	Feedback Motor	1		VG59-13775-00
9	Bearing Holder	1		TW11-06148-00
10	5K Potentiometer	1		VG75-06089-11
11	Motor Gear Shaft	1		VG80-02975-17
*	STEERING HARDWARE KIT	1		HD21-13756-00

1

2

3

4

5

6

7

8A

8B

9

10

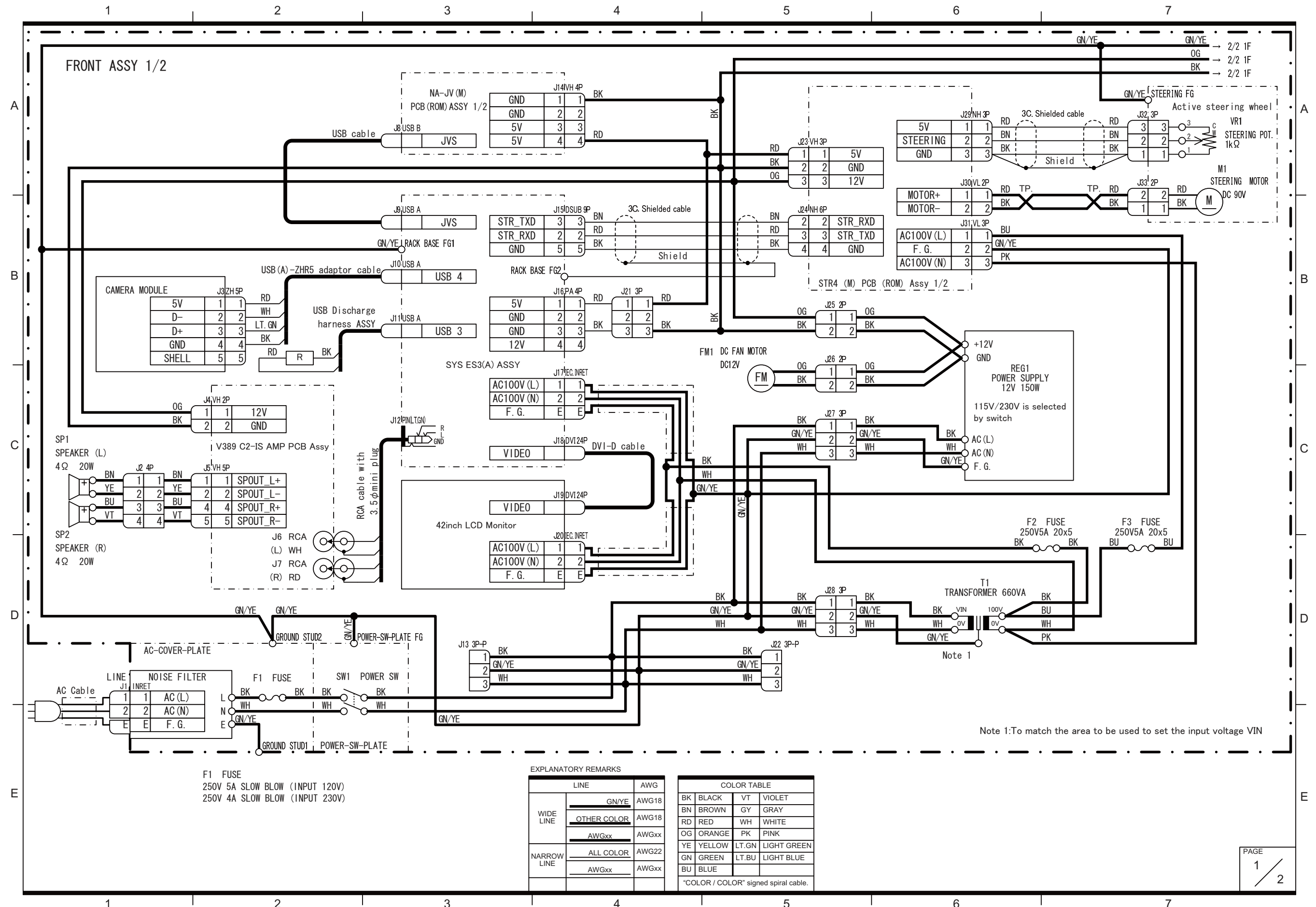
11

Parts List

Test Mode

Troubleshooting

11. Wiring Diagram



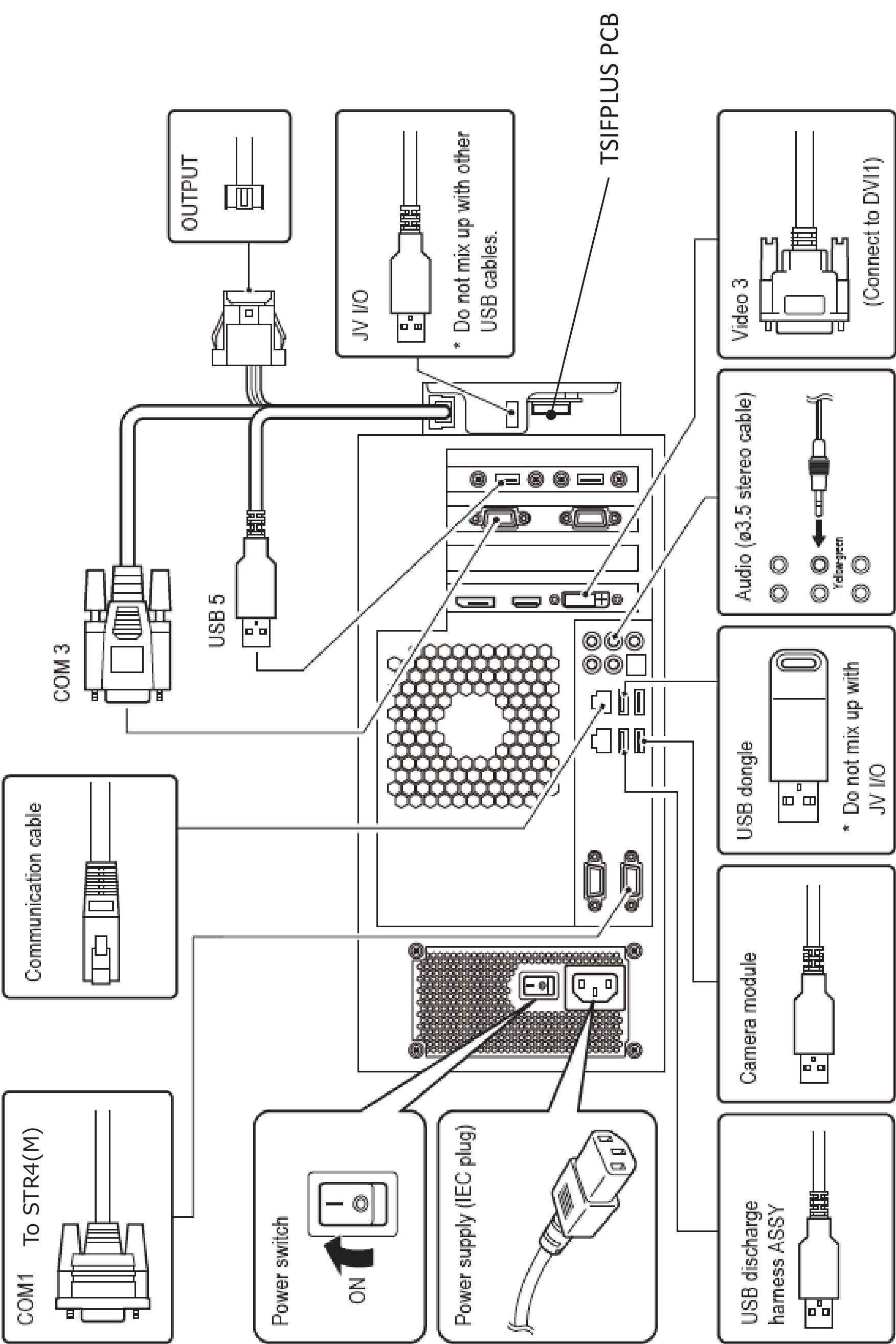


12. Mario Kart BNA1 Lite Version

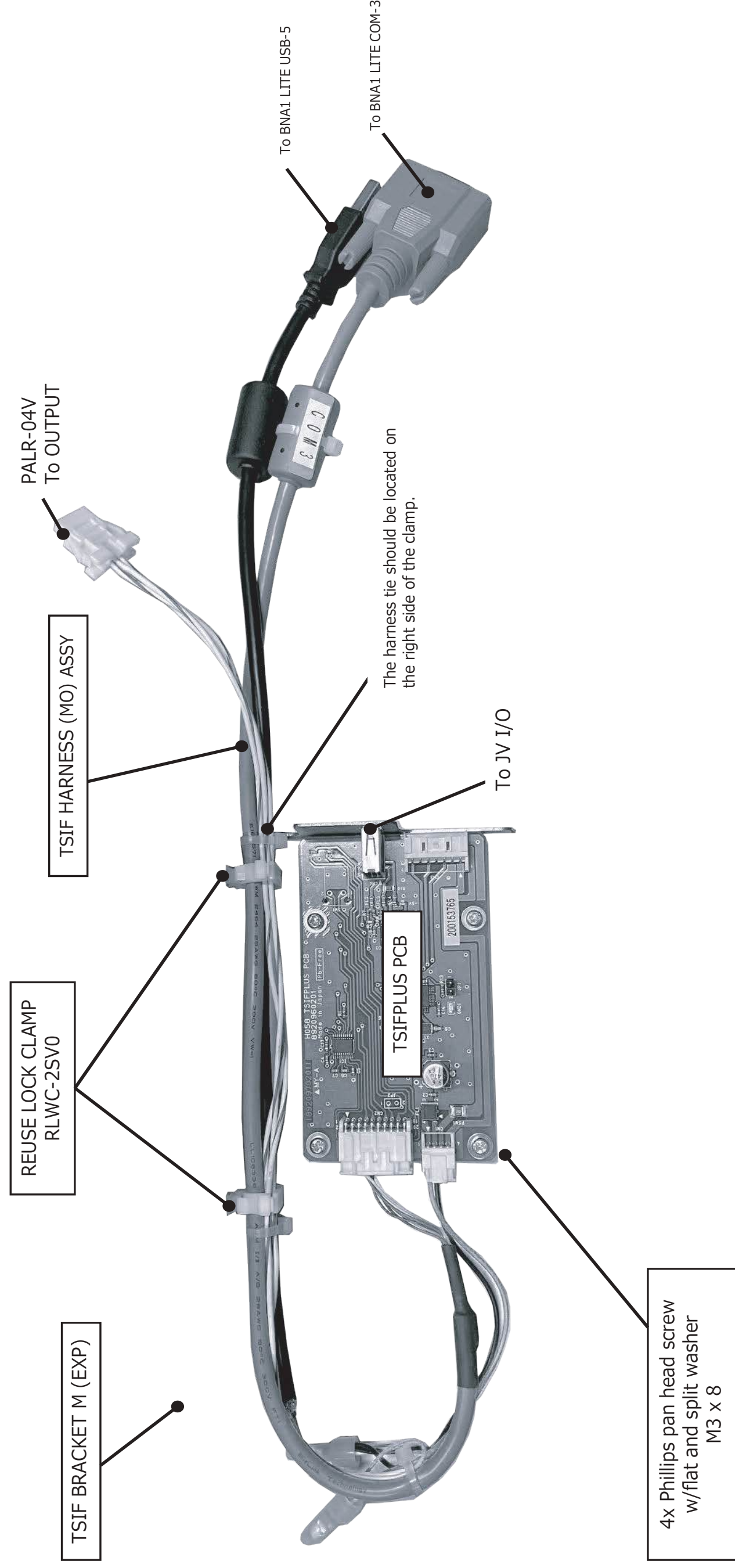
**Mario Kart Arcade GPDx made with
Serial Numbers that begin with
MKFC 2* through MKFC306336
will be made with the BNA1 Lite
version board.**

**Use the following wiring diagrams if
you have an applicable machine.**

BNA1 Lite Assembly changes.

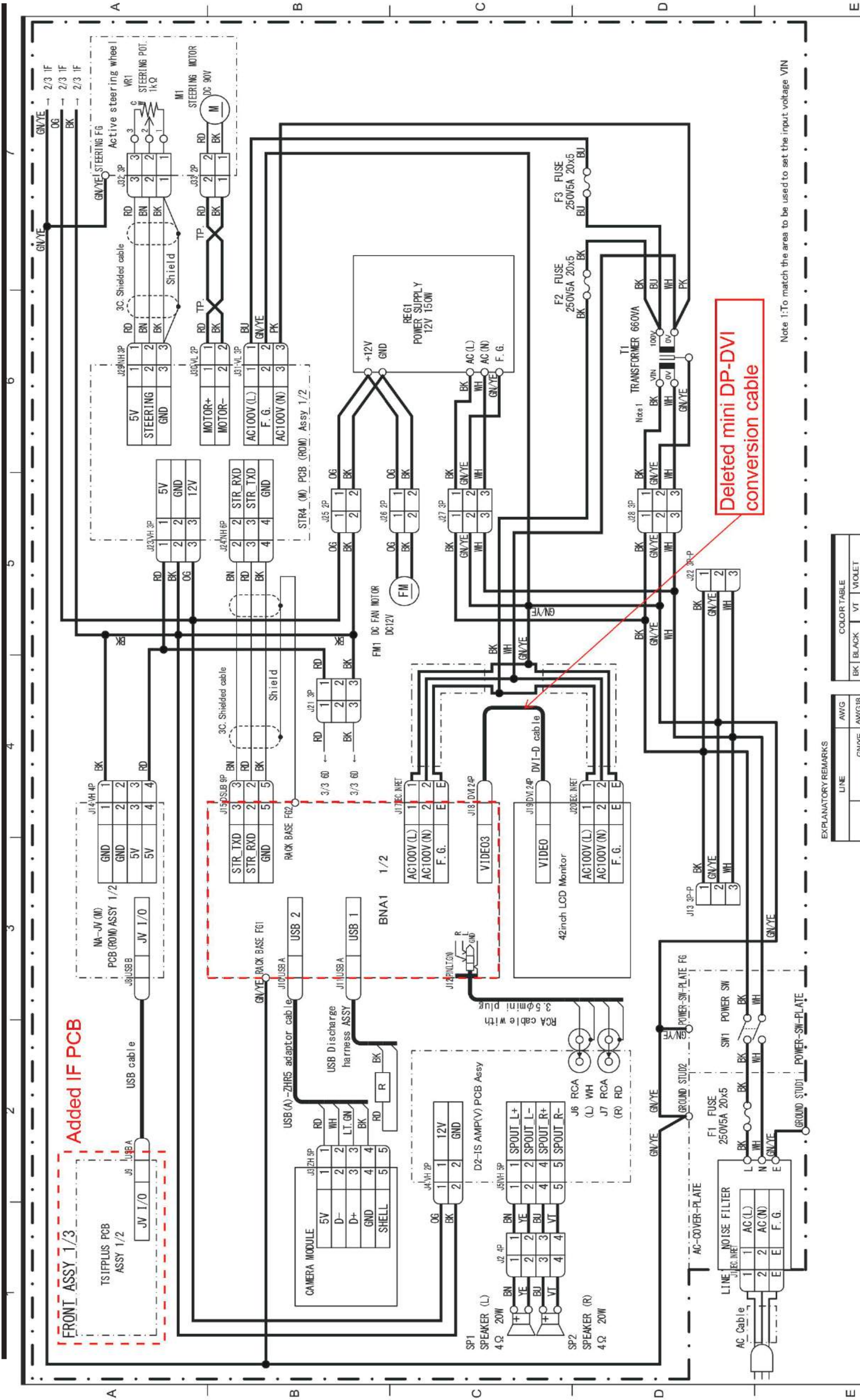


Assembly of TSIFPLUS PCB and TSIF HARNESS (MO) ASSY



12. Wiring Diagram

MK3 BNA1Lite ver.



Note 1: To match the area to be used to set the input voltage VIN

EXPLANATORY REMARKS

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

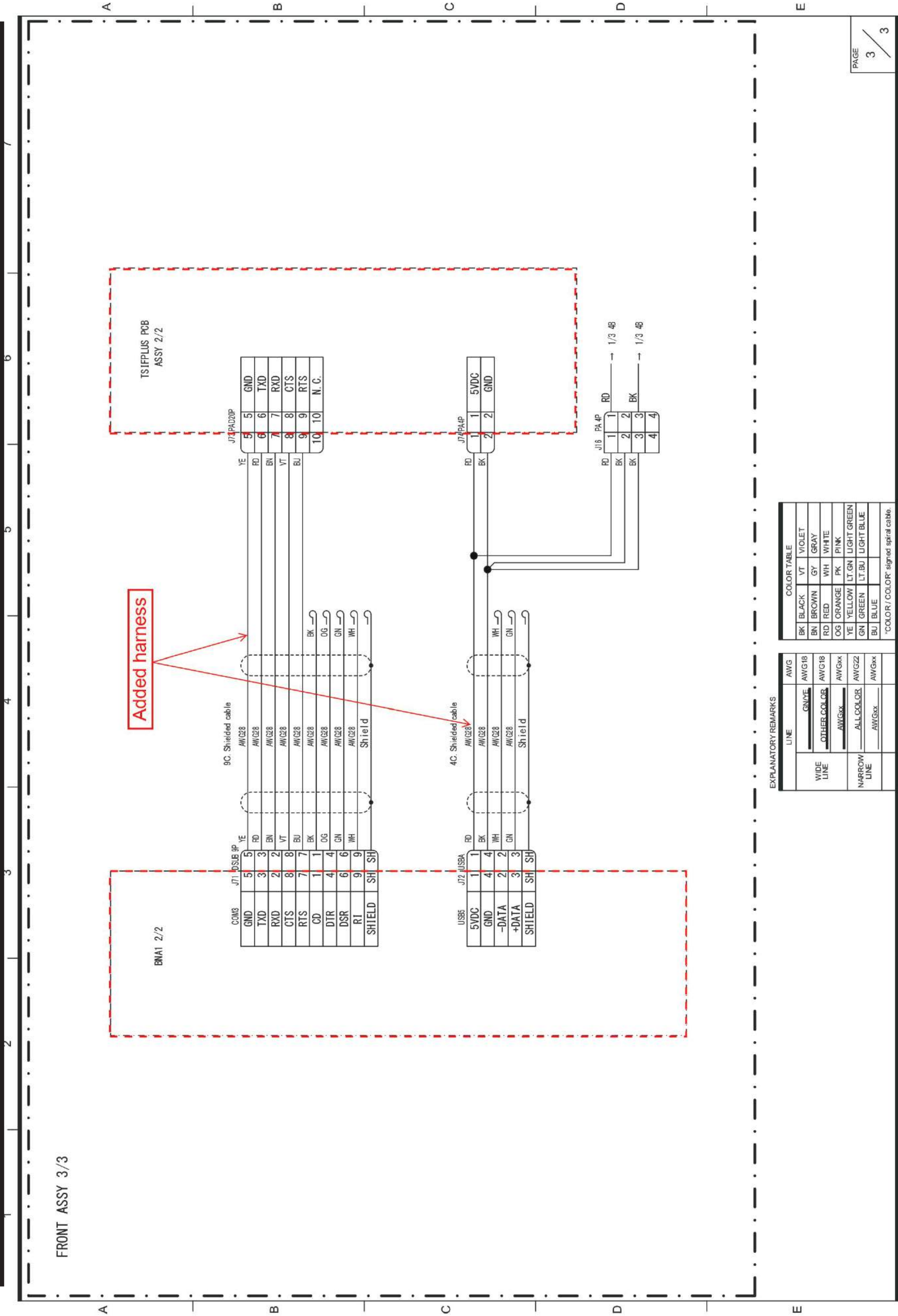
LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE	AWG
WIDE LINE	AWG18
OTHER COLOR	AWG18
NARROW LINE	AWG22
	AWG22
	AWG22

LINE</

12. Wiring Diagram

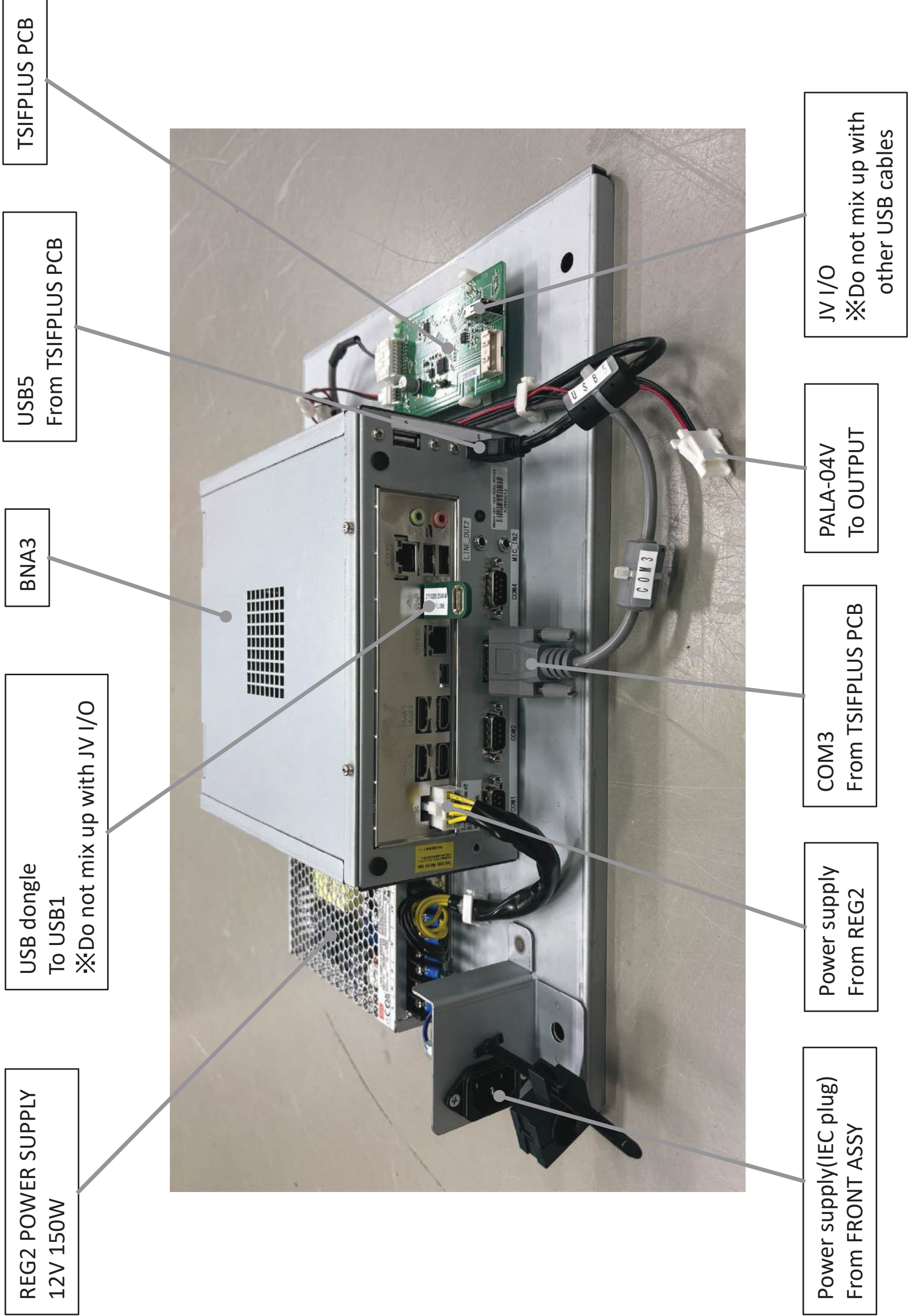


12. Mario Kart BNA3 Lite Version

**Mario Kart Arcade GPDx made with
Serial Numbers
beginning with MKFC306337
will be made with the BNA3 Lite
version board.**

**Use the following wiring diagrams if
you have an applicable machine.**

Assembly of BNA3 PCB and TSIFPLUS PCB and POWER SUPPLY ASSY



BNA3 Assembly changes.

HDMI 1



(Connect to HDMI 1)

Communication cable



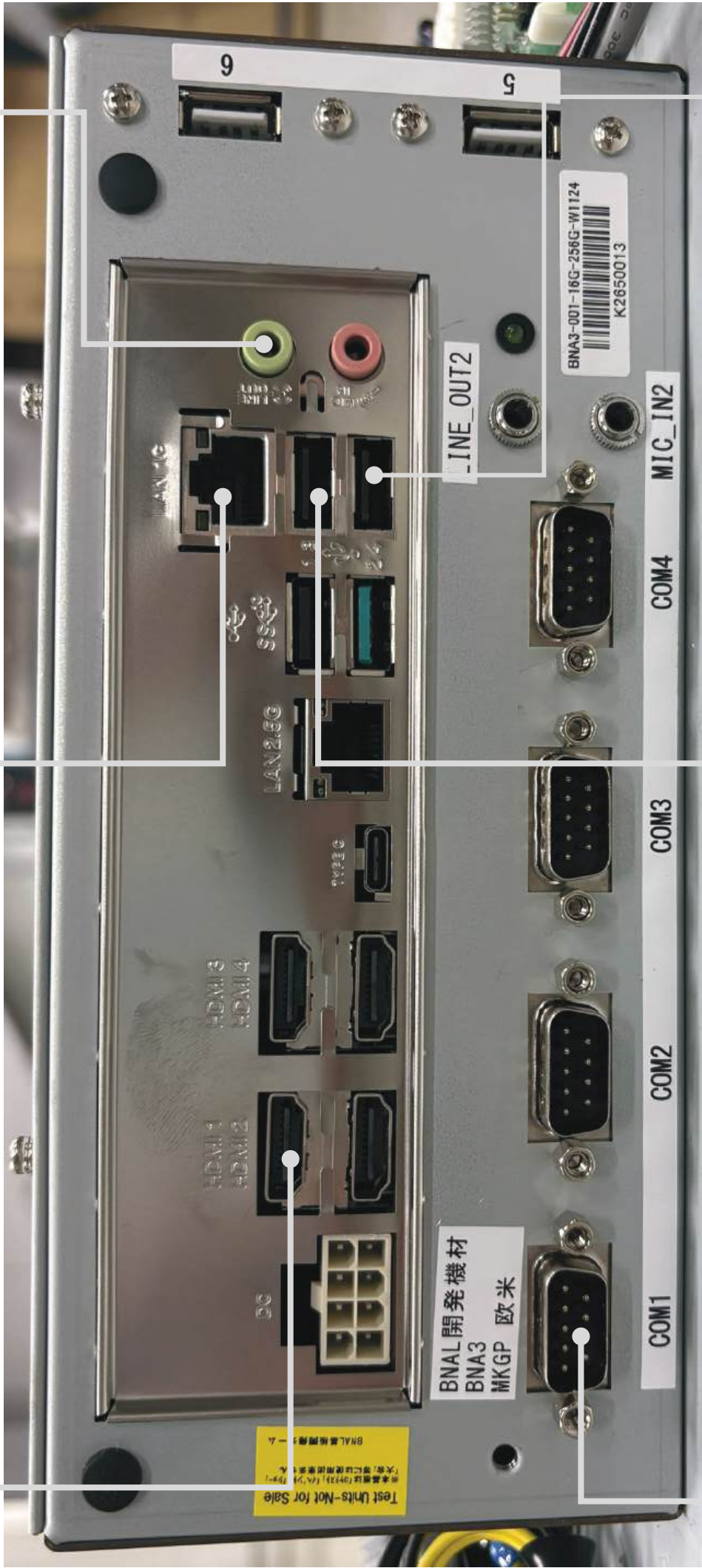
(Connect to LAN)

Audio(ϕ 3.5 stereo cable)

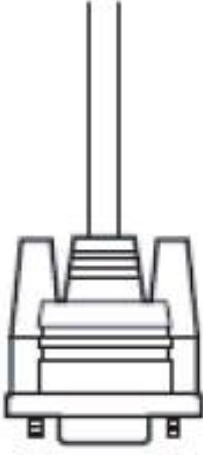


Yellow-green

(Connect to Yellow-green)



COM1
From STR4(M)



(Connect to COM1)

USB discharge
harness ASSY



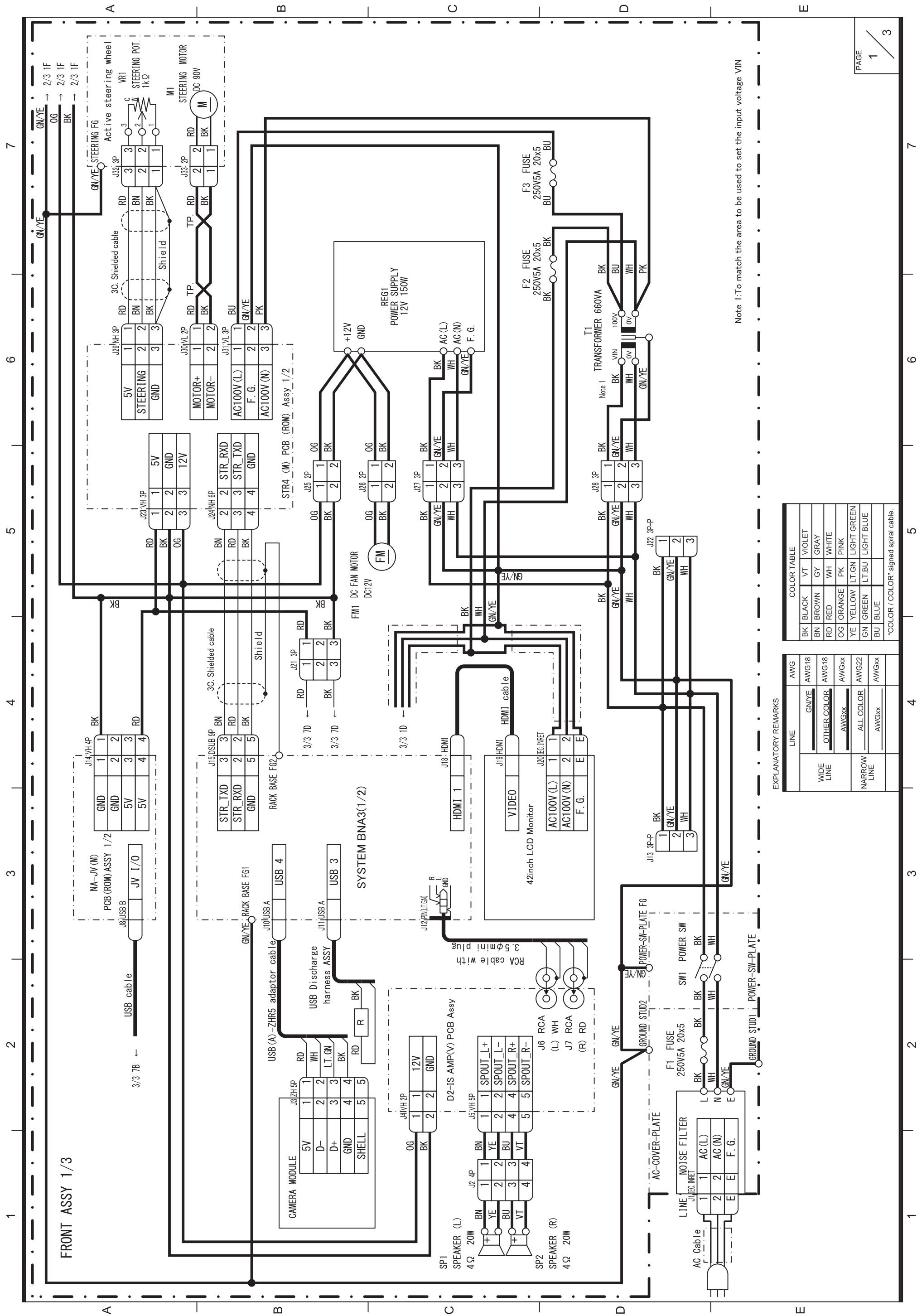
(Connect to USB3)

Camera module

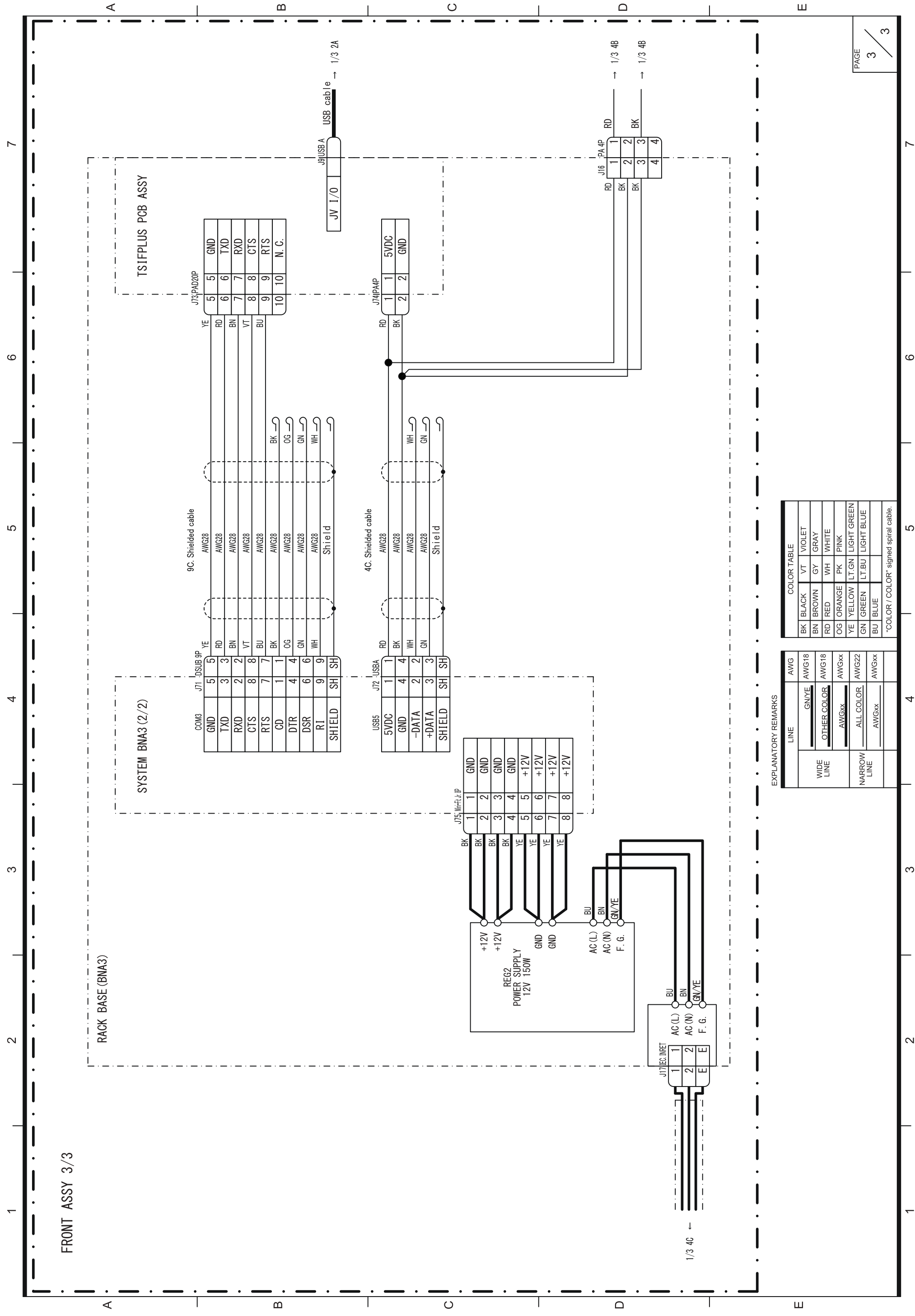


(Connect to USB4)

12. Wiring Diagram (MK3 BNA3 ver.)



12. Wiring Diagram (MK3 BNA3 ver.)



Copyrights and Trademarks

The software used in this machine is protected by copyright laws.

It is prohibited to copy, adapt, distribute publicly, or use the software for purposes other than the operation of this machine.

Infringement of copyright laws may subject persons to criminal penalties.

Do not use the recording media containing the software in a machine other than the specified game machine. Doing so may result in mechanical malfunction.

This software uses fonts by Fontworks Inc. The Fontworks company name and Fontworks font names are trademarks or registered trademarks of Fontworks Inc.

This product uses fonts by Morisawa Inc.

BISHAMON

Silicon Studio Corporation

Matchlock Corporation. (3D VFX Kool BISHAMON)

This product includes the following software used under third party license. See below for the license conditions and other information.

cURL 7.22.0

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2012, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS &

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN

NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,

DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE

OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

=====

Camellia C-language Version Crypto Search Engine 1.2.0
Copyright (c) 2006,2007
'KK (Nippon Kelegraph and Kelephone 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 %'6 EXPRESS OR IMPLIED
BARRANTIES, INCLUDING, BUT NOT LIMITED KO, THE IMPLIED WARRANTIES OF
!80(\$%'K ABILITY AND FITNESS FOR %P%0TICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL NTT BE LIABLE FOR %'6 DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLAR6, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED KO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DAKA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
%'6 K\$8&0 6 OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR K&0 K
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN %'6 W%6 OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

OpenSSL 1.0.1c

This product includes software developed by the OpenSSL Project for use in the OpenSSL
Koolkit (<http://www.openssl.org/>)

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL
License and the original SSLeay license apply to the toolkit. See below for the actual license
texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues
related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

/* =====

* Copyright (c) 1998-2011 The OpenSSL Project. 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.
*
* 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.
*
* 3. All advertising materials mentioning features or use of this
* software must display the following acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
*
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
* endorse or promote products derived from this software without
* prior written permission. For written permission, please contact
* openssl-core@openssl.org.
*
* 5. Products derived from this software may not be called "OpenSSL"
* nor may "OpenSSL" appear in their names without prior written
* permission of the OpenSSL Project.
*
* 6. Redistributions of any form whatsoever must retain the following
* acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND %'6
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, %'6
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR %'6 PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR %'6 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 %'6 NO THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN %'6 WHATEVER OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* =====
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Kim
* Hudson (tjh@cryptsoft.com).
*
*/

```

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

* All rights reserved.

*

* This package is an SSL implementation written

* by Eric 6oung (eay@cryptsoft.com).

* The implementation was written so as to conform with Netscapes SSL.

*

* This library is free for commercial and non-commercial use as long as

* the following conditions are aheared to. The following conditions

* apply to all code found in this distribution, be it the RC4, RSA,

* lhash, DES, etc., code; not just the SSL code. The SSL documentation

* included with this distribution is covered by the same copyright terms

* except that the holder is Kim Hudson (tjh@cryptsoft.com).

*

* Copyright remains Eric 6oung's, and as such any Copyright notices in

* the code are not to be removed.

* If this package is used in a product, Eric 6oung should be given attribution

* as the author of the parts of the library used.

* This can be in the form of a textual message at program startup or

* in documentation (online or textual) provided with the package.

*

* 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 copyright

* notice, this list of conditions and the following disclaimer.

*

* 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.

*

* 3. All advertising materials mentioning features or use of this software

* must display the following acknowledgement:

* "This product includes cryptographic software written by

* Eric 6oung (eay@cryptsoft.com)"

* The word 'cryptographic' can be left out if the rouines from the library

* being used are not cryptographic related :-).

*

* 4. If you include any Windows specific code (or a derivative thereof) from

* the apps directory (application code) you must include an acknowledgement:

* "This product includes software written by Kim Hudson (tjh@cryptsoft.com)"

*

* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG "AS IS" AND

* %'6 EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED KO, K\$8

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR %P%0TICULAR

* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS

* BE LIABLE FOR %'6 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLAR6, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED KO, PROCUREMENT OF

* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DAKA, OR PROFITS; OR

* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON %'6 K\$8&0 6 OF LIABILITY,

* WHETHER IN CONTRACT, STRICT LIABILITY, OR K&O K (INCLUDING NEGLIGENCE OR
* OTHERWISE) ARISING IN %'6 W%6 OUT OF THE USE OF THIS SOFTWARE, EVEN IF
* ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*
* The licence and distribution terms for any publically available version or
* derivative of this code cannot be changed. i.e. this code cannot simply be
* copied and put under another distribution licence
* [including the GNU Public Licence.]
*/

Updated April 2024

MICROSOFT SOFTWARE LICENSE TERMS

WINDOWS IOT ENTERPRISE (ALL EDITIONS)

IF YOU LIVE IN (OR IF YOUR PRINCIPAL PLACE OF BUSINESS IS IN) THE UNITED STATES, PLEASE READ THE BINDING ARBITRATION CLAUSE AND CLASS ACTION WAIVER IN SECTION 8. IT AFFECTS HOW DISPUTES ARE RESOLVED.

Thank you for choosing Microsoft!

Depending on how you obtained the Windows software, this is a license agreement between (i) you and the device manufacturer or software installer that distributes the software with your device; or (ii) you and Microsoft Corporation (or, based on where you live or, if a business, where your principal place of business is located, one of its affiliates) if you acquired the software from a retailer. Microsoft is the device manufacturer for devices produced by Microsoft or one of its affiliates, and Microsoft is the retailer if you acquired the software directly from Microsoft. If you are a volume license customer, use of this software is subject to your volume license agreement rather than this agreement.

This agreement describes your rights, obligations, and the conditions upon which you may use the Windows software. You should review the entire agreement, including any supplemental license terms that accompany the software and any linked terms, because all of the terms are important and together create this agreement that applies to you. You can review linked terms by pasting the (aka.ms/) link into a browser window.

By accepting this agreement or using the software, you agree to all of these terms, and consent to the transmission of certain information during activation and during your use of the software as per the privacy statement described in Section 3. If you do not accept and comply with these terms, you may not use the software or its features. You may contact the device manufacturer or installer, or your retailer if you purchased the software directly, to determine its return policy and return the software or device for a refund or credit under that policy. You must comply with that policy, which might require you to return the software with the entire device on which the software is installed for a refund or credit, if any.

1. Overview.

- a. Applicability.** This agreement applies to the Windows software that is preinstalled on your device, or acquired from a retailer and installed by you, the media on which you received the software (if any), any fonts, icons, images or sound files included with the software, and also any Microsoft updates, upgrades, supplements or services for the software, unless other terms come with them. It also applies to Windows apps developed by Microsoft that provide functionality such as mail, calendar, contacts, music and news that are included with Windows, unless other terms apply. If this agreement contains terms regarding a feature or service not available on your device, those terms do not apply.
- b. Additional terms.** Additional Microsoft and third-party terms may apply to your use of certain features, services and apps, depending on your device's capabilities, how it is configured, and how you use it. Please read them.
 - (i) Some Windows apps provide an access point to, or rely on, online services, and the use of those services is sometimes governed by separate terms and privacy policies, such as the Microsoft Services Agreement at <https://aka.ms/msa>. You can view these terms and policies by looking at the service terms of use or the app's settings, as applicable; please read them. The services may not be available in all regions.
 - (ii) Microsoft, or the device manufacturer or installer may include additional apps, which will be subject to separate license terms and privacy policies.
 - (iii) The software may include third-party programs that are licensed to you under this agreement, or under their own terms. License terms, notices and acknowledgements, if any, for the third-party programs can be viewed at C:\Windows\Help\en-US\credits.rtf.

2. Installation and Use Rights.

- a. License.** The software is licensed, not sold. The software license is permanently assigned to the device with which you acquired the software. Under this agreement, we grant you the right to install and run one instance of the software on your device (the licensed device), so long as you comply with the terms and restrictions contained in this agreement. Updating or upgrading from non-genuine software with software from Microsoft

or authorized sources does not make your original version or the updated/upgraded version genuine, and in that situation, you do not have a license to use the software.

- b. Device.** In this agreement, “device” means a physical hardware system with an internal storage device capable of running the software, or a virtual machine. A hardware partition or blade is considered to be a device.
- c. Restrictions.** The device manufacturer or installer and Microsoft reserve all rights (such as rights under intellectual property laws) not expressly granted in this agreement, and no other rights are licensed to you. For the avoidance of doubt, this license does not give you any right to, and you may not (and you may not permit any other person or entity to):

 - (i) use or virtualize features of the software separately;
 - (ii) publish, copy (other than the permitted backup copy), rent, lease, or lend the software;
 - (iii) transfer the software (except as permitted by this agreement);
 - (iv) work around any technical restrictions or limitations in the software;
 - (v) use the software as server software or to operate the device as a server, except as permitted under Section 2(d)(iii) below; use the software to offer commercial hosting services; make the software available for simultaneous use by more than one user over a network, except as permitted under Section 2(d)(vi) below; install the software on a server for remote access or use over a network; or install the software on a device for use only by remote users; a single device may be locally and simultaneously interacted with by up-to two end user operators;
 - (vi) reverse engineer, decompile, or disassemble the software, or attempt to do so, except and only to the extent that the foregoing restriction is (a) permitted by applicable law; (b) permitted by licensing terms governing the use of open-source components that may be included with the software; or (c) required to debug changes to any libraries licensed under the GNU Lesser General Public License that are included with and linked to by the software; and
 - (vii) when using Internet-based features you may not use those features in any way that could interfere with anyone else’s use of them, or to try to gain access to or use any service, data, account, or network, in an unauthorized manner.
- d. Multi-Use scenarios.**

 - (i) **Multiple versions.** If when acquiring the software, you were provided with multiple versions (such as 32-bit and 64-bit versions), you may install and activate only one of those versions at a time.
 - (ii) **Multiple or pooled connections.** Hardware or software you use to multiplex or pool connections, or reduce the number of devices or users that access or use the software, does not reduce the number of licenses you need. You may only use such hardware or software if you have a license for each instance of the software you are using.
 - (iii) **Device connections.** You may allow up to 20 other devices to access the software installed on the licensed device solely to use the following software features for personal or internal purposes: file services, print services, Internet information services, and Internet connection sharing and telephony services on the licensed device. The 20 connection limit applies to devices that access the software indirectly through “multiplexing” or other software or hardware that pools connections. You may allow any number of devices to access the software on the licensed device to synchronize data between devices. This subsection does not mean, however, that you have the right to install the software, or use the primary function of the software (other than the features listed in this subsection), on any of these other devices.
 - (iv) **Remote access.** Users may access the licensed device from another device using remote access technologies, but only on devices separately licensed to run the same or higher edition of this software.
 - (v) **Remote assistance.** You may use remote assistance technologies to share an active session without obtaining any additional licenses for the software. Remote assistance allows one user to connect directly to another user’s computer, usually to correct problems.
 - (vi) **POS application.** If the software is installed on a retail point of service device, you may use the software with a point of service application (“POS Application”). A POS Application is a software application which provides only the following functions: (i) process sales and service transactions, scan and track inventory, record and/or transmit customer information, and perform related management functions, and/or (ii) provide information directly and indirectly to customers about available products and services. You may use other programs with the software as long as the other programs: (i) directly support the manufacturer’s specific use for the device, or (ii) provide system utilities, resource

management, or anti-virus or similar protection. For clarification purposes, an automated teller machine ("ATM") is not a retail point of service device.

(vii) **Cloud Computing Devices.** If your device uses Internet browsing functionality to connect to and access cloud hosted applications: (i) no desktop functions may run locally on the device, and (ii) any files that result from the use of the desktop functions may not be permanently stored on the system. "Desktop functions," as used in this agreement, means a consumer or business task or process performed by a computer or computing device. This includes but is not limited to email, word processing, spreadsheets, database, scheduling, network or internet browsing and personal finance.

(viii) **Desktop Functions.** If your system performs desktop functions, then you must ensure that they: (i) are only used to support the application, and (ii) operate only when used with the application.

e. **Specific Use.** The manufacturer designed the licensed device for a specific use. You may only use the software for that use.

f. **High Risk Use.**

(i) **WARNING: THE SOFTWARE IS NOT DESIGNED OR INTENDED FOR USE WHERE FAILURE OR FAULT OF ANY KIND OF THE SOFTWARE COULD RESULT IN DEATH OR SERIOUS BODILY INJURY, OR IN PHYSICAL OR ENVIRONMENTAL DAMAGE (collectively "High Risk Use").** Accordingly, You must design and implement Your hardware and software such that, in the event of any interruption, defect, error, or other failure of the software, the safety of people, property, and the environment are not reduced below a level that is reasonable, appropriate, and legal, whether in general or for a specific industry. Your High Risk Use of the software is at Your own risk.

(ii) **Indemnification.** You agree to indemnify, defend and hold harmless Microsoft from any claims, including claims arising from any High Risk Uses, and inclusive of attorneys' fees, related to the distribution or use of Your devices, except to the extent that any intellectual property claim is based solely on the unmodified software.

3. **Privacy; Consent to Use of Data.** Your privacy is important to us. Some of the software features send or receive information when using those features. Many of these features can be switched off in the user interface, or you can choose not to use them. By accepting this agreement and using the software you agree that Microsoft may collect, use, and disclose the information as described in the Microsoft Privacy Statement available at <https://aka.ms/privacy>, and as may be described in the user interface associated with the software features.

4. **Authorized Software and Activation.** You are authorized to use this software only if you are properly licensed and the software has been properly activated with a genuine product key or by other authorized method. When you connect to the Internet while using the software, the software will automatically contact Microsoft or its affiliate to confirm the software is genuine and the license is associated with the licensed device. You can also activate the software manually by Internet or telephone. In either case, transmission of certain information will occur, and Internet, telephone and SMS service charges may apply. During activation (or reactivation that may be triggered by changes to your device's components), the software may determine that the installed instance of the software is counterfeit, improperly licensed or includes unauthorized changes. If activation fails the software will attempt to repair itself by replacing any tampered Microsoft software with genuine Microsoft software. You may also receive reminders to obtain a proper license for the software. Successful activation does not confirm that the software is genuine or properly licensed. You may not bypass or circumvent activation. To help determine if your software is genuine and whether you are properly licensed, see <https://aka.ms/genuine>. Certain updates, support, and other services might be offered only to users of genuine Microsoft software.

5. **Updates.** The software periodically checks for system and app updates, and may download and install them for you. You may obtain updates only from Microsoft or authorized sources, and Microsoft may need to update your system to provide you with those updates. To the extent automatic updates are enabled on your device, by accepting this agreement, or using the software, you agree to receive these types of automatic updates without any additional notice.

6. **Geographic and Export Restrictions.** If your software is restricted for use in a particular geographic region, then you may activate the software only in that region. You must also comply with all domestic and international export laws and regulations that apply to the software, which include restrictions on destinations, end users, and end use. For further information on geographic and export restrictions, visit <https://aka.ms/exporting>.

7. **Device Manufacturer and Installer Support and Refund Procedures.** For the software generally, contact the device manufacturer or installer for support options. Refer to the support number provided with the software. For updates and supplements obtained directly from Microsoft, Microsoft may provide limited support services for

properly licensed software as described at <https://aka.ms/mssupport>. If you are seeking a refund, contact the device manufacturer or installer to determine its refund policies. You must comply with those policies, which might require you to return the software with the entire device on which the software is installed for a refund.

8. Binding Arbitration and Class Action Waiver if You Live in (or, if a Business, Your Principal Place of Business is in) the United States.

We hope we never have a dispute, but if we do, you and we agree to try for 60 days, upon receipt of a Notice of Dispute, to resolve it informally. If we can't, you and we agree to **binding individual arbitration before the American Arbitration Association ("AAA") under the Federal Arbitration Act ("FAA"), and not to sue in court in front of a judge or jury**. Instead, a neutral arbitrator will decide and the arbitrator's decision will be final except for a limited right of appeal under the FAA. **Class action lawsuits, class-wide arbitrations, private attorney-general actions, request for public injunctions, and any other proceeding or request for relief where someone acts in a representative capacity aren't allowed. Nor is combining individual proceedings without the consent of all parties.** "We," "our," and "us" includes Microsoft, the device manufacturer, software installer, and our affiliates.

- a. **Disputes covered—everything except IP.** The term "dispute" is as broad as it can be. It includes any claim or controversy between you and the device manufacturer or installer, or you and Microsoft, concerning the software (or software to which this agreement applies including other Windows apps), its price, marketing, communications, your purchase transaction, billing, or this agreement, under any legal theory including contract, warranty, tort, statute, or regulation, **except disputes relating to the enforcement or validity of your, your licensors', our, or our licensors' intellectual property rights.**
- b. **Send a Notice of Dispute before arbitration.** If you have a dispute that our customer service representatives can't resolve and you wish to pursue arbitration, you must first send an individualized Notice of Dispute by U.S. Mail to the device manufacturer or installer, ATTN: LEGAL DEPARTMENT. If your dispute is with Microsoft, you must first mail it to Microsoft Corporation, ATTN: CELA ARBITRATION, One Microsoft Way, Redmond, WA 98052-6399, or submit the form electronically. The Notice of Dispute form is available at <https://go.microsoft.com/fwlink/?LinkId=245499>. Complete that form in full, with all the information it requires. We'll do the same if we have a dispute with you. Any applicable statute of limitations will be tolled from the date of a properly submitted individualized Notice of Dispute through the first date on which an arbitration may properly be filed under this Section 8.
- c. **Small claims court option.** Instead of sending a Notice of Dispute, either you or we may sue the other party in small claims court seeking only individualized relief, so long as the action meets the small claims court's requirements and remains an individual action seeking individualized relief. The small claims court must be in your county of residence (or, if a business, your principal place of business).
- d. **Arbitration procedure.** The AAA will conduct any arbitration under its Commercial Arbitration Rules (or if you are an individual and use the software for personal or household use, or if the value of the dispute is less than \$75,000 USD whether or not you are an individual or how you use the software, its Consumer Arbitration Rules). For more information, see <https://aka.ms/adr>. **This agreement governs to the extent it conflicts with any applicable AAA rules.** To initiate an arbitration, submit the Demand for Arbitration form available at <https://go.microsoft.com/fwlink/?LinkId=245497> to the AAA and mail a copy to the device manufacturer or installer (or to Microsoft if your dispute is with Microsoft). The form must contain information that is specific to you and your claim. In a dispute involving \$25,000 USD or less, any hearing will be telephonic or by videoconference unless the arbitrator finds good cause to hold an in-person hearing instead. Any in-person hearing will take place in your county of residence (or, if a business, your principal place of business). The arbitrator may award the same damages to you individually as a court could. **The arbitrator may award declaratory or injunctive relief only to you individually to satisfy your individual claim, but not relief that would affect non-parties.**

The arbitrator rules on all issues except that a court has exclusive authority: (i) to decide arbitrability, as well as formation, existence, scope, validity, and enforceability of this arbitration agreement; (ii) to decide whether the parties have complied with the pre-arbitration requirements (including the individualized Notice of Dispute and Demand for Arbitration forms); (iii) to enforce the prohibition on class, representative, private attorney-general, or combined actions or proceedings, or public injunctive relief; and (iv) to enjoin an arbitration from proceeding if it does not comply with this agreement.

If your Notice of Dispute involves claims similar to those of at least 24 other customers, and if you and those other customers are represented by the same lawyers, or by lawyers who are coordinating with each other, you and we agree that these claims will be "Related Cases." Related Cases may only be filed in batches of up to 50 individual arbitrations at a time, and those individual arbitrations will be resolved in the following manner: (i) for the first batch, each side may select up to 25 of these Related Cases to be filed and resolved in individual arbitrations under this Section 8; (ii) none of the other Related Cases may be filed or prosecuted in arbitration until the first batch of up to 50 individual arbitrations is resolved; and (iii) if, after that first batch, the parties are unable to informally resolve the remaining Related Cases, a second batch of Related Cases may be filed, where each side may select up to 25 of the Related Cases to be resolved in individual arbitrations under this Section 8. This process of batched individual arbitrations will continue until the parties resolve all Related Cases informally or through individual arbitrations. A court has exclusive authority to enforce this paragraph, including whether it applies to a given set of claims, and to enjoin the filing or prosecution of arbitrations that do not comply with this paragraph.

e. Arbitration fees and payments.

- (i) **Disputes involving less than \$75,000 USD.** The device manufacturer or installer (or Microsoft if your dispute is with Microsoft) will promptly reimburse your filing fees and pay the AAA's and arbitrator's fees and expenses. If (i) the dispute involves less than \$75,000 USD; and before initiating arbitration (ii) you complied with all pre-arbitration requirements in this Section 8, including, if applicable, the Related Cases paragraph. Otherwise, the AAA rules will govern payment of filing fees and the AAA's and arbitrator's fees and expenses. If, at the conclusion of the arbitration, the arbitrator awards you more than our last written offer made before the arbitrator was appointed, the device manufacturer or installer (or Microsoft if your dispute is with Microsoft) will pay you: (i) the amount of the award or \$1,000 USD (whichever is more); (ii) any reasonable attorney's fees you incurred; and (iii) any reasonable expenses (including expert witness fees and costs) that your attorney accrued in connection with your individual arbitration.
- (ii) **Disputes involving \$75,000 USD or more.** The AAA rules will govern payment of filing fees and the AAA's and arbitrator's fees and expenses.

f. Severability. If, after exhaustion of all appeals, a court finds any part of this Section 8 unenforceable as to any claim or request for a remedy, then the parties agree to arbitrate all claims and remedies subject to arbitration before litigating in court any remaining claims or remedies (such as a request for a public injunction remedy, in which case the arbitrator issues an award on liability and individual relief before a court considers that request). Otherwise, if any other part of Section 8 is found to be unenforceable, the remainder will remain in effect (with an arbitration award issued before any court proceeding begins).

g. Microsoft as party or third-party beneficiary. If Microsoft is the device manufacturer or if you acquired the software from a retailer, Microsoft is a party to this agreement. Otherwise, Microsoft is not a party but is a third-party beneficiary of your agreement with the device manufacturer or installer to resolve disputes through informal negotiation and arbitration.

9. Governing Law. The laws of the state or country where you live (or, if a business, where your principal place of business is located) govern all claims and disputes concerning the software, its price, or this agreement, including breach of contract claims and claims under state consumer protection laws, unfair competition laws, implied warranty laws, for unjust enrichment, and in tort, regardless of conflict of law principles. In the United States, the FAA governs all provisions relating to arbitration.

10. Consumer Rights, Regional Variations. This agreement describes certain legal rights. You may have other rights, including consumer rights, under the laws of your state or country. You may also have rights with respect to the party from which you acquired the software. This agreement does not change those other rights if the laws of your state or country do not permit it to do so. For example, if you acquired the software in one of the below regions, or mandatory country law applies, then the following provisions apply to you:

- a. Australia.** References to "Limited Warranty" are references to the express warranty provided by Microsoft or the device manufacturer or installer. This warranty is given in addition to other rights and remedies you may have under law, including your rights and remedies under the Australian Consumer Law consumer guarantees. Nothing in this agreement limits or changes those rights and remedies. In particular:
 - (i) support and refund policies referred to in Section 7 are subject to the Australian Consumer Law;
 - (ii) the Australian Consumer Law consumer guarantees apply to the evaluation software described in

Section 11(d)(i); and

- (iii) our goods come with guarantees that cannot be excluded under the Australian Consumer Law. In this subsection, "goods" refers to the software for which Microsoft, or the device manufacturer or installer provides the express warranty. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

To learn more about your rights under the Australian Consumer Law, please review the information at <https://aka.ms/acl>.

- b. **Canada.** You may stop receiving updates on your device by turning off Internet access. If and when you re-connect to the Internet, the software will resume checking for and installing updates.

c. **Germany and Austria.**

- (i) **Warranty.** The properly licensed software will perform substantially as described in any Microsoft materials that accompany the software. However, the device manufacturer or installer, and Microsoft, give no contractual guarantee in relation to the licensed software.
- (ii) **Limitation of Liability.** In case of intentional conduct, gross negligence, claims based on the Product Liability Act, as well as, in case of death or personal or physical injury, the device manufacturer or installer, or Microsoft is liable according to the statutory law.

Subject to the preceding sentence, the device manufacturer or installer, or Microsoft will only be liable for slight negligence if the device manufacturer or installer or Microsoft is in breach of such material contractual obligations, the fulfillment of which facilitate the due performance of this agreement, the breach of which would endanger the purpose of this agreement and the compliance with which a party may constantly trust in (so-called "cardinal obligations"). In other cases of slight negligence, the device manufacturer or installer or Microsoft will not be liable for slight negligence.

- d. **Other regions.** See <https://go.microsoft.com/fwlink/?LinkId=534978> for a current list of regional variations

11. **Additional Notices.**

- a. **Networks, data and Internet usage.** Some features of the software and services accessed through the software may require your device to access the Internet. Your access and usage (including charges) may be subject to the terms of your cellular or internet provider agreement. Certain features of the software may help you access the Internet more efficiently, but the software's usage calculations may be different from your service provider's measurements. You are always responsible for (i) understanding and complying with the terms of your own plans and agreements, and (ii) any issues arising from using or accessing networks, including public/open networks. You may use the software to connect to networks, and to share access information about those networks, only if you have permission to do so.

b. **Codec Notices:**

- i. **H.264/AVC Video Standard.** This product includes AVC coding technology. MPEG LA LLC requires this notice:

This product is licensed under the AVC patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC standard ("AVC VIDEO") and/or (ii) decode AVC video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA LLC. See <http://www.MPEGLA.COM>.

For clarification purposes, this notice does not limit or inhibit the use of the product for normal business uses that are personal to that business which do not include (i) redistribution of the product to third parties, or (ii) creation of content with AVC Standard compliant technologies for distribution to third parties.

- ii. **VC-1 Video Standard.** This product includes VC-1 coding technology. MPEG LA LLC requires this notice:

This product is licensed under the VC-1 Patent Portfolio license for the personal and non-

commercial use of a consumer to (i) encode video in compliance with the VC-1 standard ("VC-1 Video") and/or (ii) decode vc-1 video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide VC-1 video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA LLC. See <http://www.MPEGLA.COM>.

For clarification purposes, this notice does not limit or inhibit the use of the product for normal business uses that are personal to that business which do not include (i) redistribution of the product to third parties, or (ii) creation of content with VC-1 Standard compliant technologies for distribution to third parties.

- c. **Malware protection.** Microsoft cares about protecting your device from malware. The software will turn on malware protection if other protection is not installed or has expired. To do so, other antimalware software will be disabled or may have to be removed.
- d. **Limited rights versions.** If the software version you acquired is marked or otherwise intended for a specific or limited use, then you may only use it as specified. You may not use such versions of the software for commercial, non-profit, or revenue-generating activities.
 - (i) **Evaluation.** For evaluation (or test or demonstration) use, you may not sell the software, use it in a live operating environment, or use it after the evaluation period. Notwithstanding anything to the contrary in this Agreement, **evaluation software is provided "AS IS" and no warranty, implied or express (including the Limited Warranty), applies to these versions.**

12. **Entire Agreement.** This agreement (together with the printed paper license terms or other terms accompanying any software supplements, updates, and services that are provided by the device manufacturer or installer, or Microsoft, and that you use), and the terms contained in web links listed in this agreement, are the entire agreement for the software and any such supplements, updates, and services (unless the device manufacturer or installer, or Microsoft, provides other terms with such supplements, updates, or services). You can review this agreement after your software is running by going to <https://aka.ms/useterms> or going to Settings - System - About within the software. You can also review the terms at any of the links in this agreement by typing the URLs into a browser address bar, and you agree to do so. You agree that you will read the terms before using the software or services, including any linked terms. You understand that by using the software and services, you ratify this agreement and the linked terms. There are also informational links in this agreement. The links containing notices and binding terms are:

- Windows Privacy Statement <https://aka.ms/privacy>
- Microsoft Services Agreement <https://aka.ms/msa>

NO WARRANTY

THE SOFTWARE ON YOUR DEVICE (INCLUDING THE APPS) IS LICENSED "AS IS." TO THE MAXIMUM EXTENT PERMITTED BY YOUR LOCAL LAWS, YOU BEAR THE ENTIRE RISK AS TO THE SOFTWARE'S QUALITY AND PERFORMANCE. SHOULD IT PROVE DEFECTIVE, YOU ASSUME THE ENTIRE COST OF ALL SERVICING OR REPAIR. NEITHER THE DEVICE MANUFACTURER NOR MICROSOFT GIVES ANY EXPRESS WARRANTIES, GUARANTEES, OR CONDITIONS FOR THE SOFTWARE. TO THE EXTENT PERMITTED UNDER YOUR LOCAL LAWS, THE MANUFACTURER AND MICROSOFT EXCLUDE ALL IMPLIED WARRANTIES AND CONDITIONS, INCLUDING THOSE OF MERCHANTABILITY, QUALITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. YOU MAY HAVE ADDITIONAL CONSUMER RIGHTS OR STATUTORY GUARANTEES UNDER LOCAL LAWS THAT THESE TERMS CANNOT CHANGE.

IF YOUR LOCAL LAWS IMPOSE A WARRANTY, GUARANTEE, OR CONDITION EVEN THOUGH THIS AGREEMENT DOES NOT, ITS TERM IS LIMITED TO 90 DAYS FROM WHEN THE FIRST USER ACQUIRES THE SOFTWARE. IF THE MANUFACTURER OR MICROSOFT BREACHES SUCH A WARRANTY, GUARANTEE, OR CONDITION, YOUR SOLE REMEDY, AT THE MANUFACTURER'S OR MICROSOFT'S ELECTION, IS (I) REPAIR OR REPLACEMENT OF THE SOFTWARE AT NO CHARGE, OR (II) RETURN OF THE SOFTWARE (OR AT ITS ELECTION THE DEVICE ON WHICH THE SOFTWARE WAS INSTALLED) FOR A REFUND OF THE AMOUNT PAID, IF ANY. THESE ARE YOUR ONLY REMEDIES FOR BREACH OF A WARRANTY, GUARANTEE, OR CONDITION YOUR LOCAL LAWS IMPOSE.

TO THE EXTENT NOT PROHIBITED BY YOUR LOCAL LAWS, IF YOU HAVE ANY BASIS FOR RECOVERING DAMAGES, YOU CAN RECOVER FROM THE MANUFACTURER OR MICROSOFT ONLY DIRECT DAMAGES UP TO THE AMOUNT YOU PAID FOR THE SOFTWARE (OR UP TO \$50 USD IF YOU ACQUIRED THE SOFTWARE FOR NO CHARGE). YOU WILL NOT, AND WAIVE ANY RIGHT TO, SEEK TO RECOVER ANY OTHER DAMAGES OR REMEDY, INCLUDING LOST PROFITS AND DIRECT, CONSEQUENTIAL, SPECIAL, INDIRECT, OR INCIDENTAL DAMAGES, UNDER ANY PART OF THIS AGREEMENT OR UNDER ANY THEORY. THIS LIMITATION APPLIES TO (I) ANYTHING RELATED TO THIS AGREEMENT, THE SOFTWARE (INCLUDING THE APPS), THE DEVICE, SERVICES, CORRUPTION OR LOSS OF DATA, FAILURE TO TRANSMIT OR RECEIVE DATA, CONTENT (INCLUDING CODE) ON THIRD PARTY INTERNET SITES OR THIRD PARTY PROGRAMS, AND (II) CLAIMS FOR BREACH OF CONTRACT, WARRANTY, GUARANTEE, OR CONDITION; STRICT LIABILITY, NEGLIGENCE, OR OTHER TORT; VIOLATION OF A STATUTE OR REGULATION; UNJUST ENRICHMENT; OR UNDER ANY OTHER THEORY.

THE DAMAGE EXCLUSIONS AND REMEDY LIMITATIONS IN THIS AGREEMENT APPLY EVEN IF YOU HAVE NO REMEDY (THE SOFTWARE IS LICENSED "AS IS"), IF REPAIR, REPLACEMENT, OR A REFUND (IF REQUIRED BY YOUR LOCAL LAW) DOES NOT FULLY COMPENSATE YOU FOR ANY LOSSES, IF THE MANUFACTURER OR MICROSOFT KNEW OR SHOULD HAVE KNOWN ABOUT THE POSSIBILITY OF THE DAMAGES, OR IF THE REMEDY FAILS OF ITS ESSENTIAL PURPOSE.

Check with your device manufacturer to determine if your device is covered by a warranty.

Bandai Namco Amusement America Inc.

1550 Glenlake Ave
Itasca, IL 60143

www.bandainamco-am.com

Technical Support (USA)

Technical Service:
+1 (847) 264-5614

Parts:
+1 (847) 264-5612
www.namcoparts.com

Fax:
+1 (847) 264-5613

Copies of the manual can be downloaded
from our website:
www.bandainamco-am.com

Bandai Namco Amusement Europe Ltd.

37-39 Kew Foot Road
Richmond, England
TW9-2SS

+44 (0) 20 8324 6101

www.bandainamco-am.co.uk

Technical Support (Europe)

Technical Service:
+44 (0) 20 8324 6120

Consumable Parts:
+44 (0) 20 8324 6102

Fax:
+44 (0) 20 8324 6126

Copies of the manual can be downloaded
from our website:
www.bandainamco-am.co.uk/support

Revised: 04-10-2025

First Edition Published in December
2013 Part No: M345-16387-00