SEGA®

OWNER'S MANUAL

R-TUNED
ULTIMATE STREET RACING
TM

SEGA®

SEGA AMUSEMENTS U.S.A., INC.

IMPORTANT

- Before using this product, read this manual carefully to understand the contents herein stated.
- After reading this manual, be sure to keep it near the product or in a convenient place for easy reference when necessary.

TABLE OF CONTENTS

INTRODUCTION

This manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electro-mechanicals, servicing control, spare parts, etc. for the product, "SEGA **R-TUNED SITDOWN**."

This manual is intended for the owners, personnel and managers in charge of operation of the product. Operate the product after carefully reading and sufficiently understanding the instructions.

In the unlikely event that the product does not function correctly, DO NOT allow anyone other than a technician to touch the internal system. Turn off the power to the machine, making sure to unplug the electrical cord from the outlet, and contact the office listed below or the point of purchase for this product.

Use of this product is unlikely to cause physical injuries or damage to property. However, points that require special attention are indicated by bold text, the word "IMPORTANT" and the symbol below.

(STOP) IMPORTANT

> **Indicates important information that, if ignored, may result in the mishandling of the product and cause faulty operation or damage to the product.**

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SPECIFICATIONS	
Dimensions:	Unit : 36.5" [Width] x 69.1" [Depth] x 74.5" [Height]
Weight:	Unit : 562.2 lbs.
Power, maximum current:	540 W, 4.5 A (AC 120 V, 60 Hz)
Monitor:	29 Type Color Monitor

NOTE: The contents herein described are subject to change without notice.

Definition of 'Site Maintenance Personnel or Other Qualified Individuals'

⚠ **WARNING**

Procedures not described in this manual or marked as 'to be carried out by site maintenance personnel or other qualified professionals' should not be carried out by personnel without the necessary skill or technology. Work carried out by unqualified persons may cause serious accidents, including electrocution.

Parts replacement, maintenance inspections and troubleshooting should be carried out by site maintenance personnel or other qualified professionals. This manual includes directions for potentially dangerous procedures which should only be carried out by professionals with the appropriate specialized knowledge.

The site maintenance personnel or other qualified professionals mentioned in this manual are defined as follows:

Site maintenance personnel:
Individuals with experience in maintaining amusement equipment, vending machines, etc., working under the supervision of the owner/operator of this product to maintain machines within amusement facilities or similar premises by carrying out everyday procedures such as assembly, maintenance inspections, and replacement of units/expendable parts.

Activities to be carried out by site maintenance personnel:
Amusement equipment/vending machine assembly, maintenance inspection and replacement of units/expendable parts.

Other qualified professionals:
Persons employed by amusement equipment manufacturers, or involved in design, production, testing or maintenance of amusement equipment. The individual should have either graduated from technical school or hold similar qualifications in electrical/electronics/mechanical engineering.

Activities to be carried out by other qualified professionals:
Amusement equipment/vending machine assembly, repair/adjustment of electrical/electronic/mechanical parts.

1 HANDLING PRECAUTIONS

When installing or inspecting the machine, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.
Non-compliance with the following points or inappropriate handling running counter to the cautionary matters herein stated can cause personal injury or damage to the machine.

⚠ WARNING

- **Before performing work, be sure to turn the power off. Performing the work without turning the power off can cause an electric shock or short circuit. In the case work should be performed in the status of power on, this manual always states to that effect.**

- **To avoid an electric shock or short circuit, do not plug in or unplug quickly.**

- **To avoid an electric shock, do not plug in or unplug with a wet hand.**

- **Do not expose power cords or earth wires on the surface, (floor, passage, etc.). If exposed, the power cords and earth wires are susceptible to damage. Damaged cords and wires can cause an electric shock or short circuit.**

- **To avoid causing a fire or an electric shock, do not put things on or damage the power cords.**

- **When or after installing the product, do not unnecessarily pull the power cord. If damaged, the power cord can cause a fire or an electric shock.**

- **In case the power cord is damaged, ask for a replacement through where the product was purchased from or the office herein stated. Using the cord as is damaged can cause fire, an electric shock or leakage.**

- **Be sure to perform grounding appropriately. Inappropriate grounding can cause an electric shock.**

- **Be sure to use fuses meeting the specified rating. Using fuses other than the specified rating can cause a fire or an electric shock.**

- **Be sure that connections such as IC BD are made properly. Insufficient insertion can cause an electric shock.**

- **Specification changes, removal of equipment, conversion and/or addition, not designated by SEGA are not permitted.**
  - **Failure to observe this may cause a fire or an electric shock. Non-compliance with this instruction can have a bad influence upon physical conditions of the players or the onlookers, or result in injury during play.**
  - **SEGA shall not be held responsible for damage, compensation for damage to a third party, caused by specification changes not designated by SEGA.**

- **Do not perform any work or change parts not listed in this manual. Doing so may lead to an accident.**
  If you need to perform any work not listed in this manual, request work from the office indicated in this manual or the point of purchase, or inquires for details.

- **Be sure to perform periodic maintenance inspections herein stated.**

🛑 IMPORTANT

- **For the IC board circuit inspections, only the logic tester is allowed. The use of a multiple-purpose tester is not permitted, so be careful in this regard.**

- **When cleaning the CRT surfaces, use a soft and dry cloth. Do not apply chemicals such as thinner, benzene, etc.**

- **Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.**

- **Some parts are not designed and manufactured specifically for this game machine. The manufacturers may discontinue, or change the specifications of such general-purpose parts. If this is the case, SEGA cannot repair or replace a failed game machine whether or not a warranty period has expired.**

CONCERNING THE STICKER DISPLAY

This SEGA product has stickers attached describing the product manufacture No. (Serial No.) and Electrical Specifications. It also has a Sticker describing where to contact for repair and for purchasing parts.
When inquiring about or asking for repairs, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial Number indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this manual. In order to ensure you order the correct parts, mention the Serial No. when contacting the applicable places.

CONCERNING WARNING DISPLAYS

This SEGA product has warning displays on stickers, labels and/or printed instructions adhered/attached to or incorporated in the places where a potentially hazardous situation could arise. The warning displays are intended for accident prevention for customers and for avoiding hazardous situations relating to maintenance and servicing work. Some portions of the cabinet contain high voltage and may cause accidents if touched. When performing maintenance, be very careful of the warning displays. It is especially important that any complex repair and replacement work not mentioned herein should be performed by those technical personnel who have knowledge of electricity and technical expertise. In order to prevent accidents, caution any customer ignoring the warnings to cease and desist immediately.

SEE A

SEE A
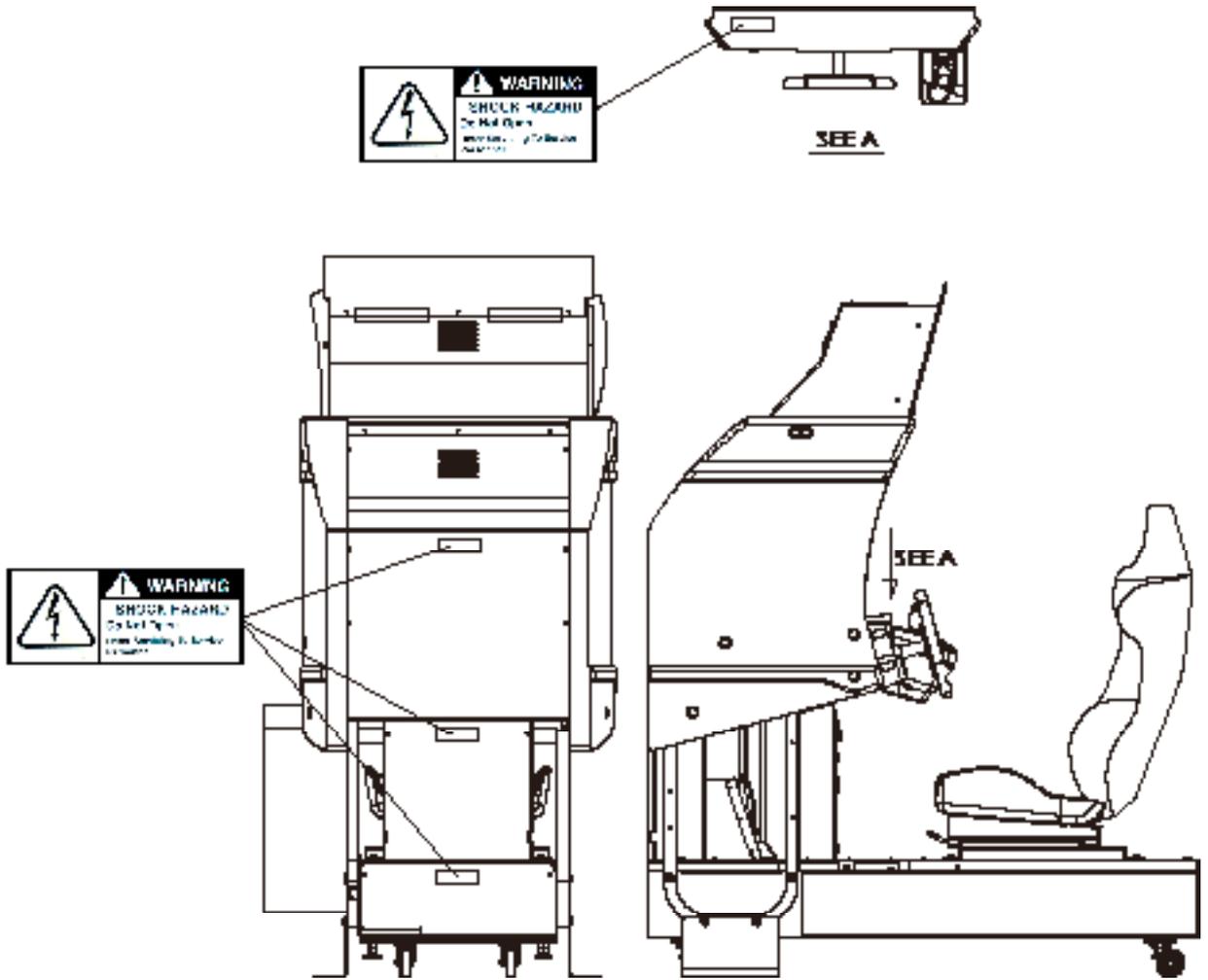
2 PRECAUTIONS REGARDING INSTALLATION LOCATION

⚠ WARNING

This product is an indoor game machine. Do not install it outside. Even indoors, avoid installing in places mentioned below so as not to cause a fire, electric shock, injury and/or malfunction.

- Places subject to rain or water leakage, or places subject to high humidity in the proximity of an indoor swimming pool and/or shower, etc.
- Places subject to direct sunlight, or places subject to high temperatures in the proximity of heating units, etc.
- Places filled with inflammable gas or vicinity of highly inflammable/volatile chemicals or hazardous matter.
- Dusty places.
- Sloped surfaces.
- Places subject to any type of violent impact.
- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.
- Areas where the temperature exceeds the applicable temperature (ambient temperature) range of 5 to 30 degrees centigrade.

2-1 LIMITATIONS OF USAGE

⚠ WARNING

- Be sure to check the Electrical Specifications. Ensure that this product is compatible with the location's power supply, voltage, and frequency requirements. A plate describing Electrical Specifications is attached to the product. Non-compliance with the Electrical Specifications can cause a fire and electric shock.

- This product requires a breaker and earth mechanism as part of the location facilities. Using the product without these can cause a fire and electric shock.

- Ensure that the indoor wiring for the power supply is rated at 15 A or higher (AC single phase 100 V ~ 120 V area). Non-compliance with the Electrical Specifications can cause a fire and electric shock.

- Be sure to use an independent power supply equipped with an earth leakage breaker. Using a power supply without an earth leakage breaker can cause an outbreak of fire if a power surge occurs.

- Putting many loads on one electrical outlet can cause generation of heat and a fire resulting from overload.

- When using an extension cord, ensure that the cord is rated at 15 A or higher (AC 100 V ~ 120 V area). Using a cord rated lower than the specified rating can cause a fire and electric shock.

2-2 OPERATION AREA

⚠ WARNING

- For safe operation, use and operate this product in an area measuring at least 1.67 m (65.7 in) in width and 2.3 m (90.6 in) in depth. The area prescribed in this manual is absolutely necessary, for if one should fall over and hit their head against something, there could be a serious accident.

- Be sure to provide sufficient space specified in this manual. Do not allow objects to block the ventilation ports. It can cause generation of heat and a fire.

- SEGA shall not be held responsible for damage or compensation for damage to a third party, resulting from the failure to observe this instruction.

- If the machine does not fit through the entryway to the installation location, do not disassemble it without first consulting the instructions. The machine should only be disassembled in accordance with the instructions listed in this manual; do not attempt to disassemble it in any other way. This may cause electric shock or short circuits.

ⓈⓉⓄⓅ IMPORTANT

To install this product, the entrance must be at least 1 m in width and 1.8 m in height.

3 PRECAUTIONS REGARDING PRODUCT OPERATION

To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

BEFORE OPERATION

⚠ WARNING

In order to avoid accidents, check the following before starting the operation:

- **To ensure maximum safety for the players and the customers, ensure that where the product is operated has sufficient lighting to allow any warnings to be read. Operation under insufficient lighting can cause bodily contact with each other, hitting accident, and/or trouble between customers.**

- **Be sure to perform appropriate adjustment of the monitor (projector). For operation of this machine, do not leave monitor's flickering or deviation as is. Failure to observe this can have a bad influence upon the players' or the customers' physical conditions.**

- **It is suggested to ensure a space allowing the players who feel sick while playing the game to take a rest.**

- **Check if all of the adjusters are in contact with the surface. If they are not, the Cabinet can move and cause an accident.**

Ensure that all of the anti tip brackets are in contact with the floor.
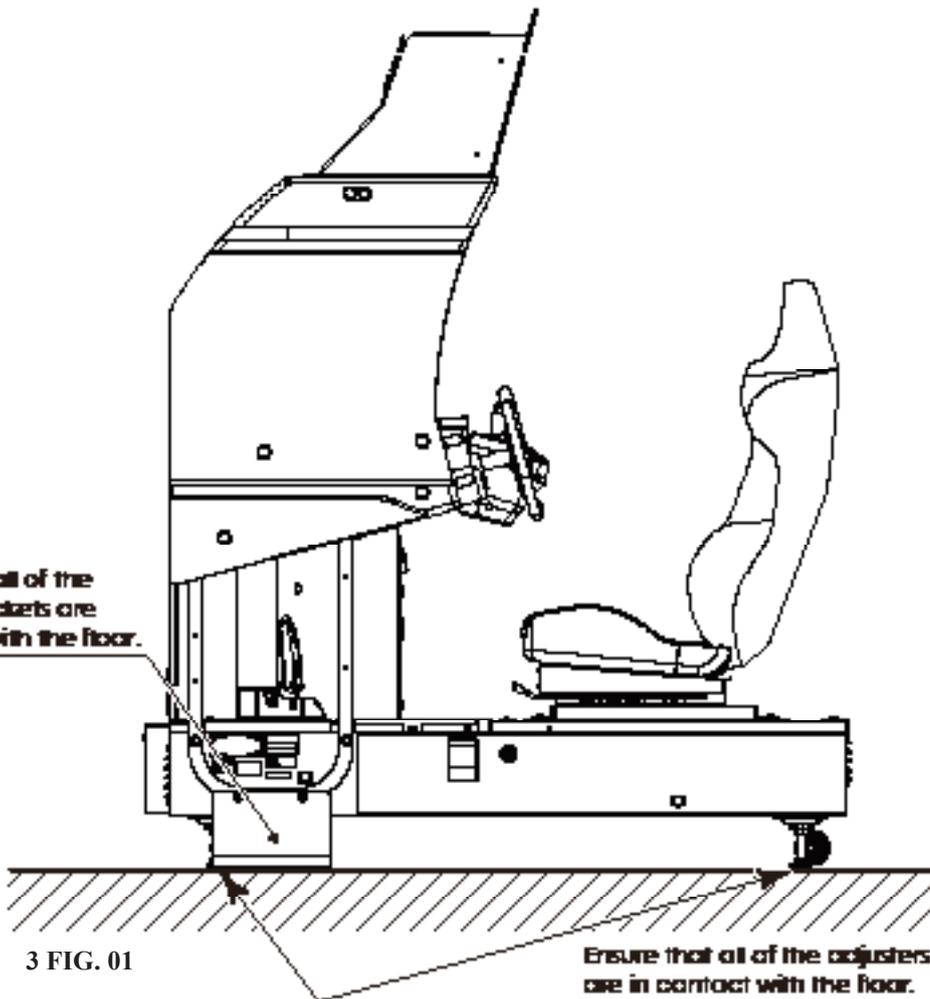
3 FIG. 01

Ensure that all of the adjusters are in contact with the floor.

<div style="border:2px solid black">

⚠WARNING

- **Do not put any heavy item on this product. Placing any heavy item on the product can cause a falling down accident or parts damage.**

- **Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step ladder.**

- **To avoid electric shock, check to see if door & cover parts are damaged or omitted.**

- **To avoid electric shock, short circuit and/or parts damage, do not put the following items on or in the periphery of the product. Flower vases, flowerpots, cups, water tanks, cosmetics, and receptacles/containers/vessels containing chemicals and water.**

</div>

<div style="border:2px solid black">

⚠CAUTION

- **During daily cleaning, be sure to check the surface of the steering wheel, gear shifter, and other parts that the player touches with his hands for damage, cracks, or loose screws. If a player uses the machine while it is damaged, cracked, or has a loose screw, the player may become injured.**

- **During daily cleaning, be sure to check the seat for any abnormality, wetness, etc. Failure to do this may result in deliberate tampering or negligence being left undetected.**

- **To avoid injury, be sure to provide sufficient space by considering the potentially crowded situation at the installation location. Insufficient installation space can cause making bodily contact with each other, hitting accidents, and/or trouble between customers.**

</div>

DURING OPERATION (PAYING ATTENTION TO CUSTOMERS)

⚠️ WARNING

- For safety reasons, do not allow any of the following people to play the game.
  - Those who need assistance such as the use of an apparatus when walking.
  - Those who have high blood pressure or a heart problem.
  - Those who have experienced muscle convulsion or loss of consciousness when playing video games, etc.
  - Those who have neck or spinal cord problems.
  - Those who are intoxicated or under the influence of drugs.
  - Pregnant women.
  - Persons susceptible to motion sickness.
  - Persons who disregard the product's warning displays.

- Even players who have never been adversely affected by light stimulus might experience dizziness or headache depending on their physical condition when playing the game. Small children are especially likely to experience these symptoms. Caution guardians of small children to keep watch on their children during play.

- Instruct those who feel sick during play to have a medical examination.

- To avoid injury from falls and electric shocks due to spilled drinks, instruct the player not to place heavy items or drinks on the product.

- To avoid electric shocks and short circuits, do not allow customers to put hands and fingers or extraneous matter in the openings of the product or small openings in or around the doors.

- To avoid falls and resulting injury, immediately stop the customer from leaning against or climbing on the product, etc.

- To avoid electric shock and short circuit, do not allow customers to unplug the power plug without a justifiable reason.

- This game is for one player only. If two or more customers attempt to sit in the seat and play at the same time, it may results in players falling over, falling off, or catching body parts in the ride.

- Persons other than the player should not be allowed to touch the controls during play. They may brush against or collide with the controls or the player, possibly resulting in accidents.
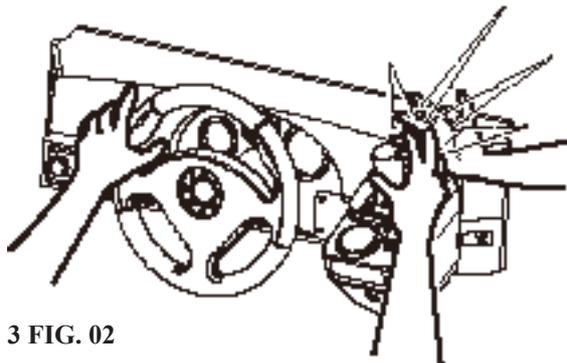
3 FIG. 02

⚠WARNING

• **Customers should be warned not to place children on their laps while they play the game. Doing so may cause the child to become trapped between the player and** ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ **)ver.**
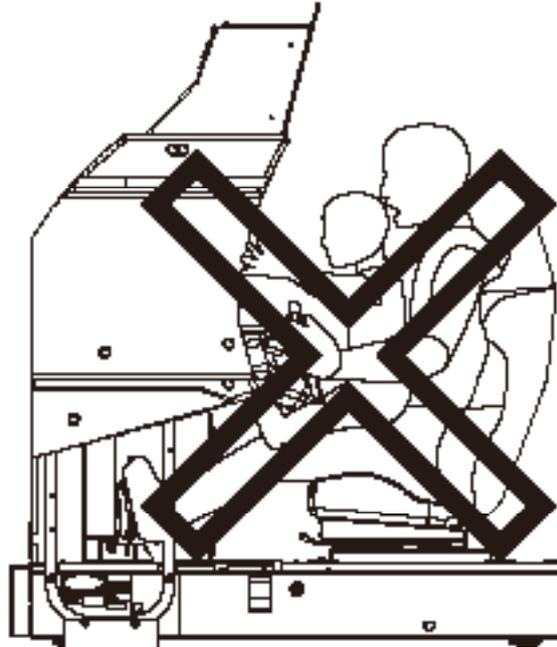
3 FIG. 03

⚠CAUTION

Immediately stop such violent acts as hitting and kicking the product. Such violent acts can cause parts damage or falling down, resulting in injury due to fragments and falling down.

4 PART DESCRIPTIONS

BILLBOARD

29" MONITOR

CONTROL PANEL

SHIFTER LEVER

BOOST BUTTON

COINDOOR

ACCELRATOR & BRAKE

COINDOOR

AC UNIT

ANTI TIP BPACKET
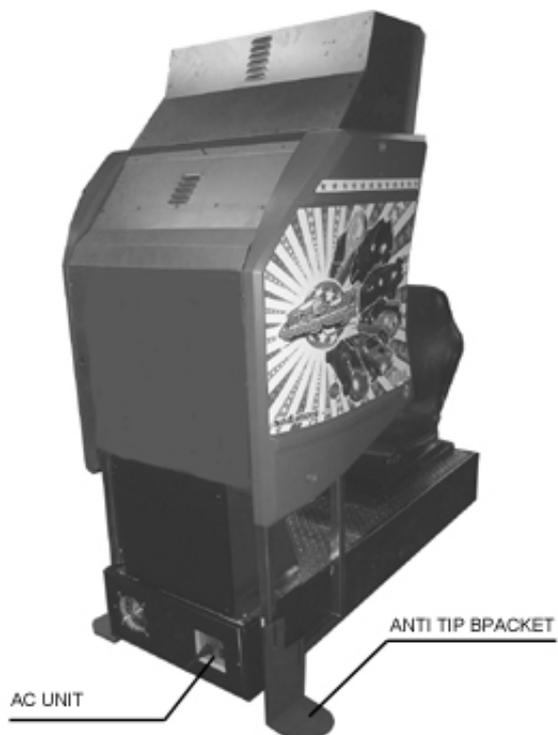
5 ACCESSORIES

Confirm that the accessories listed in the table below are present when setting up the product. Accessories marked "Spare" in the note column are consumable items but included as spares.

5 TABLE 01

OWNER'S MANUAL 553-30-300 (1) This manual	AC CABLE (Power Code) 99-00-017 (1)	COMMUNICATION CABLE 5m
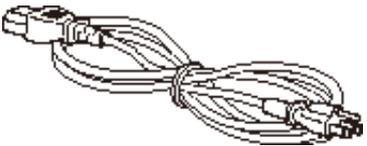
5 TABLE 02 SOFTWARE KIT 610-0727-0060<USA>

DVD SOFTWARE KIT (1)

KEY CHIP (1)

CUSION SPONGE
601-11137 (1)
Disc Protector

DVD-ROM DISC (1)

DISC CASE (1)

When you order the DVD-ROM disc only, specify the part number 610-0726-0044 (DVD SOFT RTV).

NOTE; The game software has been pre-installed in the main PCB and the key chip has been pre-set to the main PCB.
Please use the DVD software, only when necessary for some reason such as replacing the main PCB.
However to install the software, the DVD DRIVE and USB(mini type) cabele need to be prepared separately.
Those are not included in the unit and available separately at SEGA.

6 ASSEMBLY AND INSTALLATION

⚠ WARNING

- Perform assembly work by following the procedure herein stated. Failure to comply with the instructions can cause electric shock.

- Perform assembling as per this manual. Since this is a complex machine, incorrect assembling can cause an electric shock, machine damage and/or improper functioning as per specified performance.

- When assembling, more than one person is required. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.

- Ensure that connectors are properly connected. Improper connections can cause electric shock.

- This work should be carried out by the site maintenance personnel or other qualified professionals. Work performed by non-technical personnel can cause a severe accident such as electric shock. Failing to comply with this instruction can cause a severe accident such as electric shock to the player during operation. If no one with proper technological expertise is available, request service from the office indicated in this document or the point of purchase so as to ensure safety.

- Provide sufficient space so that assembling can be performed. Performing work in places with narrow space or low ceiling may cause an accident and assembly work to be difficult.

- To perform work safely and avoid serious accident such as the cabinet falling down, do not perform work in places where step-like grade differences, a ditch, or slope exist.

- Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a risk of fire.

- Do not leave power cords, ground wires, or network cables exposed in areas of heavy foot traffic. Doing so may cause them to become damaged, possibly resulting in electric shock and/or short circuits. When laying wiring across the floor, always use safety covers to protect the wires.

- The power cord for this product has a ground terminal. Make sure to use this ground terminal when plugging it in to an indoor outlet. Failure to properly ground the product could lead to electrocution. It can also lead to malfunction.

⚠CAUTION

- **When opening/closing, attaching/removing doors or lids, be careful that your hand or finger does not get caught in anything.**

- **To perform the operation safely and accurately you must use a safe, steady footstool or stepladder. Working without this may lead to a fall and possible injury.**

- **Wear appropriate work clothing so that work can be performed safely. Use gloves and safety shoes to prevent accidents or injuries.**

- **When installing a wire protection cover over a floor, use a material shaped so that no one passing by will stumble over it. Using a material that could be stumbled over might lead to an accidental fall.**

- **Handle plastic parts with care. Excessive weight or pressure may cause them to break and the broken pieces may cause injury.**

When carrying out the assembling and installation, follow the following 6-item sequence.

6-1 Fixation to installation site

6-2 Turning on the power (Software Installation)

6-3 Checking assembly (Setup)

Tools necessary for work
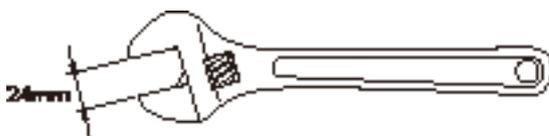
Spanner with measuring distance of 24 mm to opposite side (for M16 hexagon bolts)

6-1 FIXATION TO INSTALLATION SITE

> ⚠ **WARNING**
>
> **Make sure that all the adjusters contact the floor. Otherwise the cabinet could move, causing an accident.**

This product has 4 casters and 4 adjusters.

Up to 4 machines can be connected for multi-player games. If several machines are to be installed, refer to Chapter 19.

1 Move the product to the installation site. See Chapter 19 for an example of installation. Make sure to leave enough passage space for the player to get into the seat. Also leave some space on the back lid side for performing maintenance work later.

2 Have all the adjusters make contact with the floor. Adjust the adjuster's height by using a wrench so that the machine position is kept level.

3 After making adjustment, fasten the adjuster nut upward and secure the height of adjuster.
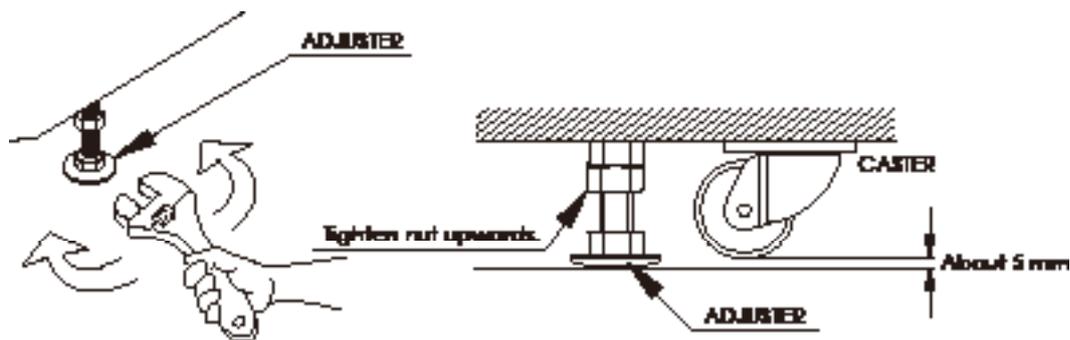
6-2 FIG. 02

4 Attach the anti tip brackets to the left and right sides. Remove the 2 hexagon bolts from each side. These will be used to fasten the anti tip brackets.

2 HEXAGON BOLTS

ANTI TIP BRACKET

6-2 FIG. 03

2 HEXAGON BOLTS

ANTI TIP BRACKET
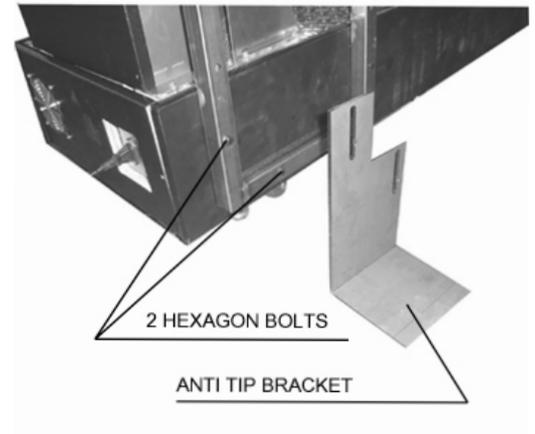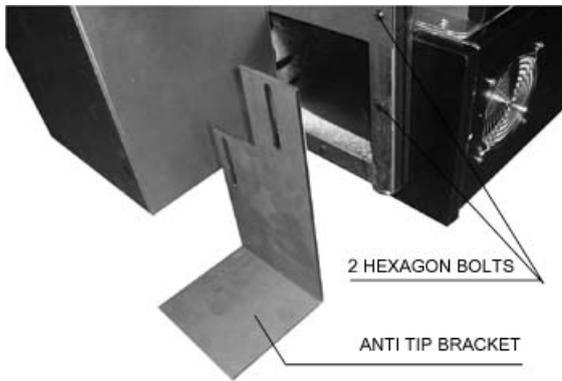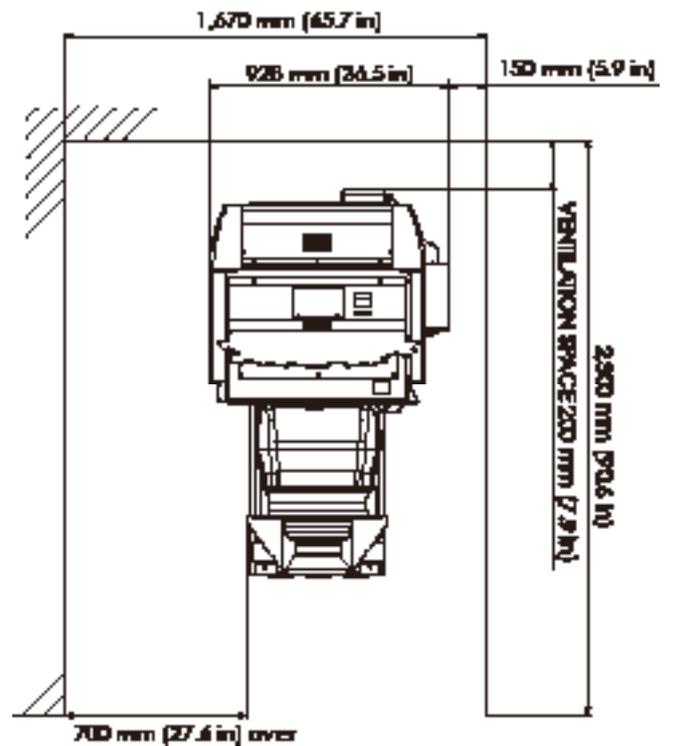
Provide ventilation space for the ventilation opening. Allow more than 70 cm (approx. 28 in) of space for customer traffic.

6-2 FIG. 05

6-2 TURNING ON THE POWER (SOFTWARE INSTALLATION)

The software installation is not necessary for this game, as it is pre-installed into the main PCB. Please refer to the following section, only when necessary.

⚠ WARNING

- Be careful not to damage the DVD wire by getting it caught between objects, etc. Doing so may cause a short circuit or fire.

- The following explanation assumes that the product has been assembled properly as explained above. If there is an error or if the product operates in a manner other than as indicated below, cut off the power supply immediately. Failure to do so may result in a fire or electrical shock.

- If you look directly at the laser beam in the DVD DRIVE, you could suffer vision impairment. Do not look inside the DVD DRIVE.

🛑 IMPORTANT

- Do not use or store the DVD DRIVE or DVD wire in any of the following locations, as this may result in serious damage.

  [Do not use or store in these locations]
  - Anywhere which may vibrate or shock the equipment
  - In direct sunlight
  - In damp or dusty places
  - In places with a sharp change in temperature
  - Close to anything that gives off heat (a heater, etc.)
  - Close to anything with a strong magnetic field (magnets, monitor, speakers, radio, etc.)
  - Anywhere that is likely to get wet (kitchen, etc.)
  - Anywhere with a slope or incline
  - Anywhere with corrosive gas in the air (chlorine, hydrogen sulfide, ammonia, sulfur dioxide, etc.)
  - Anywhere with strong static electricity

  [Do not use in these locations]
  - Close to anything that is highly retentive of heat (carpet, sponge, cardboard, etc.)
  - Anywhere that blocks the DVD DRIVE air vent.

- The DVD DRIVE is a delicate piece of equipment. Avoid the following.
  - Dropping or shaking it violently.
  - Getting water or other liquids on it, or placing small items on top of it.
  - Placing large or heavy items on top of it.
  - Drinking or smoking close to the DVD DRIVE.

- Do not turn off the power to the DVD DRIVE when its access lamp is on or flashing, as this could cause damage to the device.

🛑 IMPORTANT

- **Do not allow any foreign materials, such as liquids, metals or smoke inside the DVD DRIVE.**

- **Use a soft, dry cloth to wipe off any dirt or marks on the DVD DRIVE.**
  - **If you need to use a cleaning agent, always use a "neutral" agent diluted in water.**
  - **Never use products or cleaning agents containing benzene, alcohol, thinners, etc.**

- **Do not touch the lens inside the DVD DRIVE. Doing so may prevent it from reading accurately.**

- **The chip components on IC boards can be damaged by electrostatic discharge from the human body. Before handling an IC board, always neutralize any static charge in the body by touching a grounded metal surface.**

- **Some parts are not designed and manufactured specifically for the kit. The manufacturers may discontinue, or change the specifications of such general purpose parts. If this is the case, SEGA cannot repair or replace a failed kit whether or not a warranty period has expired.**

Handling the DVD-ROM Disc

⊘ IMPORTANT

- **Do not use a DVD-ROM with a damaged front. This may cause a malfunction.**

- **Insert the DVD-ROM into the DVD DRIVE with the label facing upwards.**

- **Do not get fingerprints or dust particles on the disc. Contaminated discs may lower audio and video quality, and may result in read malfunctions.**

- **When cleaning the disc, do not use volatile chemicals (benzene, thinner, etc.), cleaning sprays, or antistatic agents.**

Wipe the disc with a soft cloth, working from the center outwards.

6-5 FIG. 01

- **Do not use a cracked, warped, or damaged disc. Do not attach papers or seals onto the disc to avoid scratching it. Do not use a disc with signs of peeled seals, tape, etc. If such a disc is placed in the DVD-ROM DRIVE, malfunctions, such as the inability to remove the disc from the drive, may result.**

- **When cleaning a heavily contaminated disc, use a clean cloth that has been soaked in water and squeezed. After wiping, remove any remaining moisture with a clean, dry cloth.**

- **How to Hold a Disc**
  When handling a disc, be careful not to contaminate it with your fingerprints.

With both hands:
Put your thumbs and forefingers on 4 opposite sides of the disc.
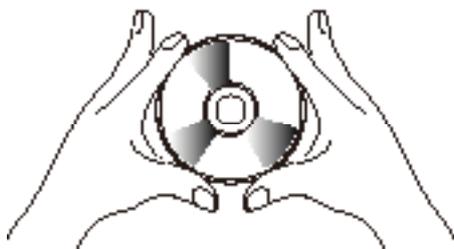
With one hand:
Insert your forefinger into the center hole, while placing your thumb and middle finger on opposite sides of the disc.

6-5 FIG. 02

6-5 FIG. 03

- **The software is not installed on the game board (LINDBERGH) when the power supply is engaged, so the "Error 22" message is not a malfunction. However, if there is another error display, or if there is no video output at all, there might have been an error in product assembly, wiring connections might be faulty, or the LINDBERGH might not be functioning properly.**

- **After the power supply is engaged, wait for "Error 22" message to be displayed. If the product is indiscriminately operated in any way beforehand, there could be unexpected problems or malfunctions, as well as damage to parts.**

- **Once "Error 22" is displayed, set the DVD-ROM in the DVD DRIVE and re-engage the power supply. Installation takes place.**

(STOP) IMPORTANT

- **After the power supply is engaged, the DVD DRIVE tray will not come out for about 30 seconds even if you press the switch. This is due to DVD DRIVE initialization.**

- **The DVD DRIVE tray can come out or return only while the power supply is engaged. The tray cannot be opened or closed while the power is off.**

- **Even after the software has been installed, store the DVD software kit, DVD DRIVE and DVD wire in a secure location.**

- **If for any reason installation cannot be completed, an error is displayed. Refer to the LINDBERGH service manual and take corrective action.**

Take out the DVD software kit provided.

1 Turn on the MAIN POWER switch on the AC unit.

2 The LINDBERGH startup image appears on the screen. However, it does take several minutes for the projector image to become visible. Wait for at least one minute. An error will occur. Check to see if it is "Error 22." If it is "Error 22," proceed to the next operation. If it is not "Error 22," take corrective measures as indicated in the LINDBERGH service manual.

3 Remove 1 urea (resin-head) screw, and then remove DVD DRIVE case lid.
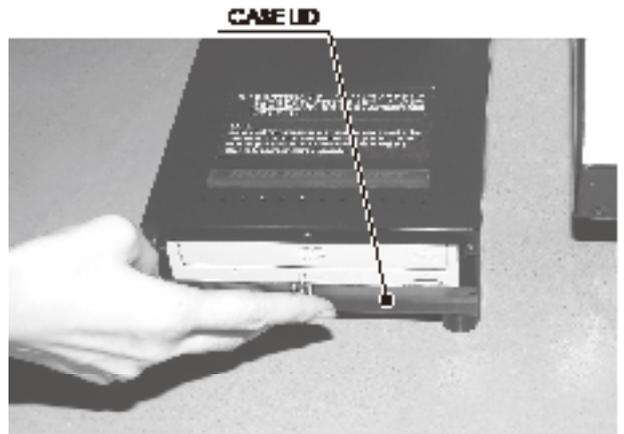
6-5 FIG. 04

4 Press the DVD DRIVE switch. The DVD DRIVE tray comes out. Set the DVD from the DVD software kit into the tray. Always have the DVD label side facing upward.

6-5 FIG. 05

5 Press the DVD DRIVE switch and the tray returns to its original position.

6 Reset power. Turn the MAIN POWER switch to OFF, wait for at least 10 minutes, and then turn the switch to ON. Wait until the projector lamp cools.

7 Software installs automatically from the DVD to the LINDBERGH. In some cases, it may take as long as 30 minutes for the software to install to the LINDBERGH.

8 After the software installation, the game image appears automatically.

9 Press the DVD DRIVE switch to have the tray come out, and then remove the DVD.

10 Press the DVD DRIVE switch to have the tray return. When the power is cut off the tray will not move.

11 Set the MAIN POWER switch to OFF.

12 Remove 2 DVD wires from the DVD DRIVE.

13 Refer to steps 1-13 in "6-3 ATTACHING DVD DRIVE AND KEY CHIP" and follow the steps in reverse order to detach the DVD wire (2 m) from the cabinet.

14 Attach DVD DRIVE case lid and fasten it with 1 urea (resin-head) screw.
Store DVD DRIVE and DVD software kit at a location where there is no dust or cigarette smoke.

15 Turn on the MAIN POWER switch on the AC unit. When the game image appears, installation is complete.

6-3 CHECKING ASSEMBLY (SETUP)

Checking Assembly

In the TEST MODE, ensure that the assembly has been made correctly and IC BD. is satisfactory (refer to Chapter 9). Refer to the LINDBERGH Service Manual for details on SYSTEM TEST MODE and "9-3 GAME TEST MODE" for details on GAME TEST MODE.

(1) C.R.T. TEST

In the TEST mode menu, selecting C.R.T. TEST allows the screen (on which the monitor is tested) to be displayed. Although the monitor adjustments have been made at the time of shipment from the factory, make needed by watching the test mode screen. If it is necessary, adjust the monitor by referring to Chapter 14.
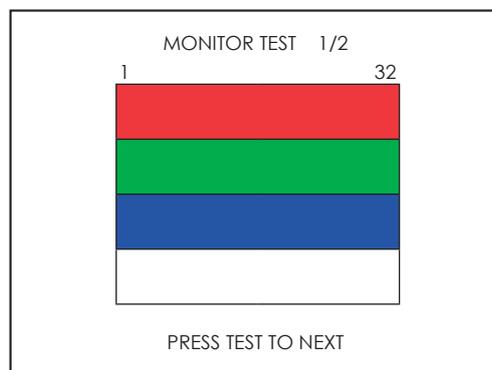
6-6 FIG. 01
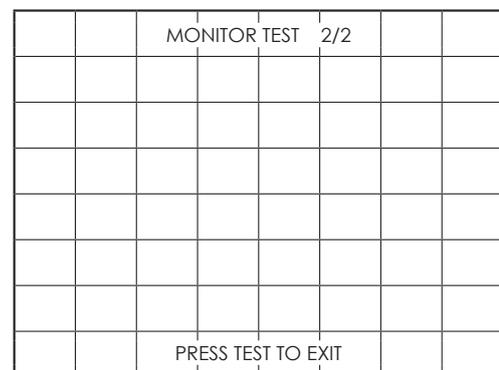
6-6 FIG. 02

(2) INPUT TEST

Selecting the INPUT TEST on the game test mode menu screen (on which each switch is tested) to be displayed. Press each switch. If the display beside each switch indicates "ON", the switch and wiring connections are satisfactory.

```
                    INPUT TEST


        STEERING              00H
        GAS                   00H
        BRAKE                 00H
        GEAR POSITION         N
        START                 OFF
        VIEW CHANGE           OFF
        BOOST                 OFF
        SERVICE               OFF
        TEST                  OFF


        PRESS TEST AND SERVICE BUTTON TO EXIT
```
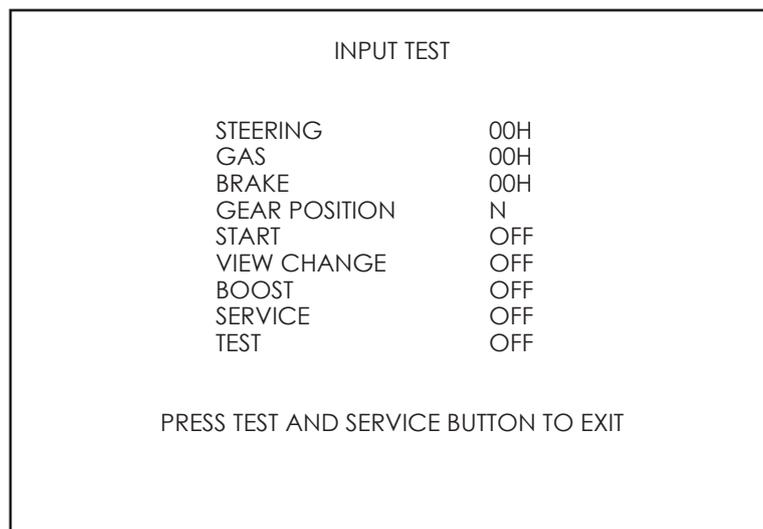
6-6 FIG. 03

(3) OUTPUT TEST

Select OUTPUT TEST from the menu in the test mode to cause the screen (on which each lamp is tested) to appear. Ensure that lamp light up satisfactorily.

```
┌─────────────────────────────────────────────┐
│                                               │
│               OUTPUT TEST                     │
│                                               │
│                                               │
│        START BUTTON           OFF             │
│        VIEW CHANGE BUTTON     OFF             │
│        BOOST BUTTON           OFF             │
│        RED LAMP 1             OFF             │
│        RED LAMP 2             OFF             │
│        BLUE LAMP 1            OFF             │
│        BLUE LAMP 2            OFF             │
│     -> EXIT                                   │
│                                               │
│                                               │
│        SELECT WITH SERVICE BUTTON             │
│          AND PRESS TEST BUTTON                │
│                                               │
│                                               │
│                                               │
└─────────────────────────────────────────────┘
```
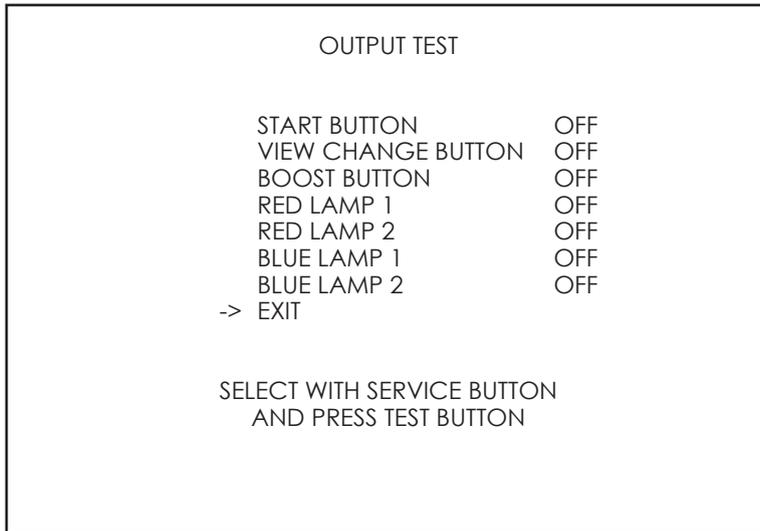
6-6 FIG. 04

(4) SPEAKER TEST

Check to make sure the speakers are functioning properly using the SPEAKER TEST in SYSTEM TEST MODE. This product makes use of the speakers as shown below. Set the RIGHT SPEAKER and LEFT SPEAKER to "ON" and check to make sure that there is sound output.

6-6 TABLE 01

SPEAKER	SETTING
RIGHT SPEAKER	ON
LEFT SPEAKER	ON
REAR RIGHT SPEAKER	OFF
REAR LEFT SPEAKER	OFF
CENTER SPEAKER	OFF
WOOFER SPEAKER	OFF

Perform the above inspections also at the time of monthly inspection.

STOP IMPORTANT

When 2 or more game machines are to be installed, use the GAME TEST MODE to set the seat number for the cabinet and perform the settings for in-house match-ups.

Using TEST MODE, set, adjust and confirm the settings shown below. Refer to the LINDBERGH Service Manual for details on SYSTEM TEST MODE and "9-3 GAME TEST MODE" for details on GAME TEST MODE.

● Perform the following settings in SYSTEM TEST MODE:

    COIN ASSIGNMENTS
        Set up the coin settings under COIN ASSIGNMENTS.

        COIN CHUTE TYPE   COMMON
        SERVICE TYPE   COMMON

    NETWORK SETTING
        Select the MAIN NETWORK and set up in the following manner:

        DHCP   DISABLE

        There is no need to set a specific value for the IP address. Leave the displayed IP address as is and exit the settings.

7 PRECAUTIONS WHEN MOVING THE MACHINE

⚠**WARNING**

- Always disconnect the power cable before moving the product. If it is moved with the power cable connected, the cable could be damaged, causing fire or electric shock.

- Do not push the cabinet from the left/right when attempting to move the unit. Pushing from the sides may cause the unit to tip and result in injury and damage to parts.

⚠**CAUTION**

Do not push on any parts made of glass (e. g. CRT screen) or plastic, as these parts may break and result in bodily injury.

7 FIG. 01

Remove the anti tip brackets from both sides.

Ground the casters.

8 GAME DESCRIPTION

8-1 GAME OVERVIEW

This product is a racing game set in real places.
Vehicles are equipped with an unlimited booster and drifts can be achieved by simply turning the steering wheel, enabling anyone to enjoy street racing.

Choose from either one-player Single Player Mode or Versus Mode where 2 to 4 players can race at the same time.
Record personal data such as the cars you have earned, player name and best times using the R-Tuned Garage Card.

8-1-1 BASIC CONTROLS

- GAS
  The car accelerates.

- BRAKE
  The car decelerates and will stop if you continue to press the brake.

- STEERING
  Changes the direction the car is going.

- BOOST BUTTON
  Press down while moving to make the car accelerate rapidly.
  There are 2 BOOST buttons on the left and the right of the steering wheel, each with the same function. The resulting boost effect will be the same whether you press either button or both at the same time.

- SHIFT LEVER
  Change gears when using manual transmission.
  If you accelerate without using the shift lever for a certain period of time, the car will automatically switch to automatic transmission.

- VIEW CHANGE BUTTON
  Switch between 3 different views.

BOOST and Steering Wheel Vibration

Hold one of the BOOST buttons on the steering wheel to accelerate rapidly.
While boosting, the steering wheel will vibrate vigorously for an intense racing experience.
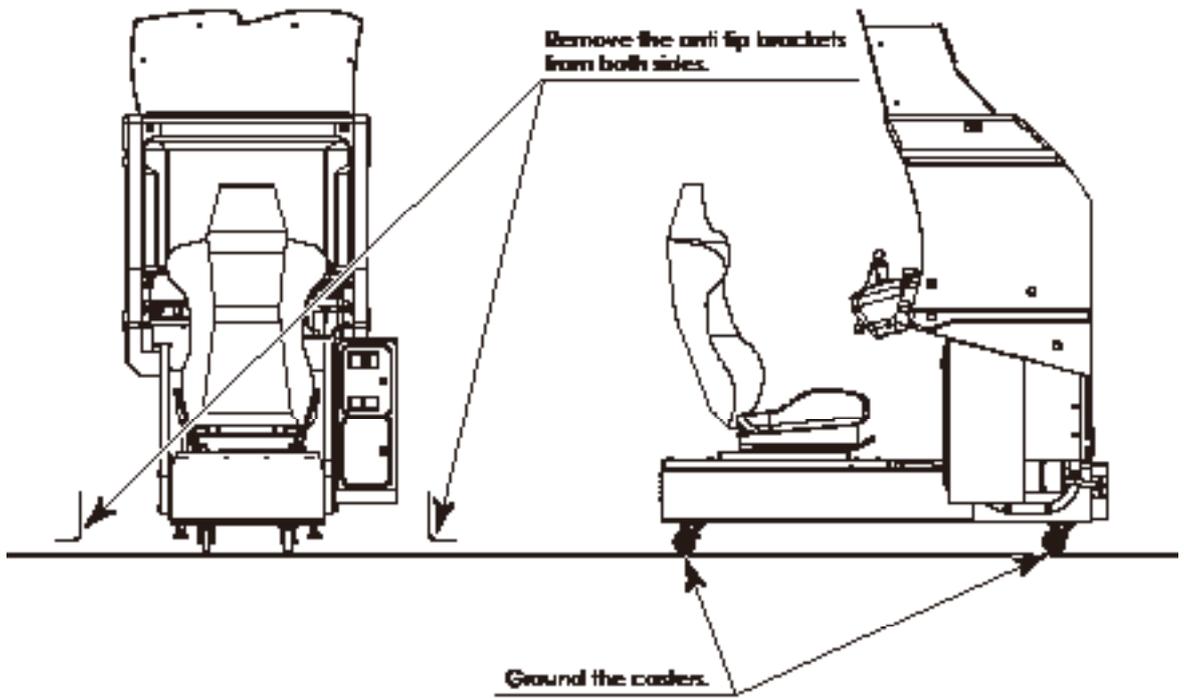The level of steering wheel vibration can be set to NORMAL or LIGHT in Test Mode. See "8-3-8 FORCE FEEDBACK" for more information about settings.
When starting the game, the player can voluntarily select either AGGRESSIVE (BOOST vibration ON) or MILD (BOOST vibration OFF).

NOTE: BOOST can only be changed in Single Player Mode. The steering wheel response cannot be changed in Versus Mode. It is automatically set to AGGRESSIVE. However, the MILD setting will be activated if you insert a card with which you have previously played using the MILD setting in Single Player Mode.
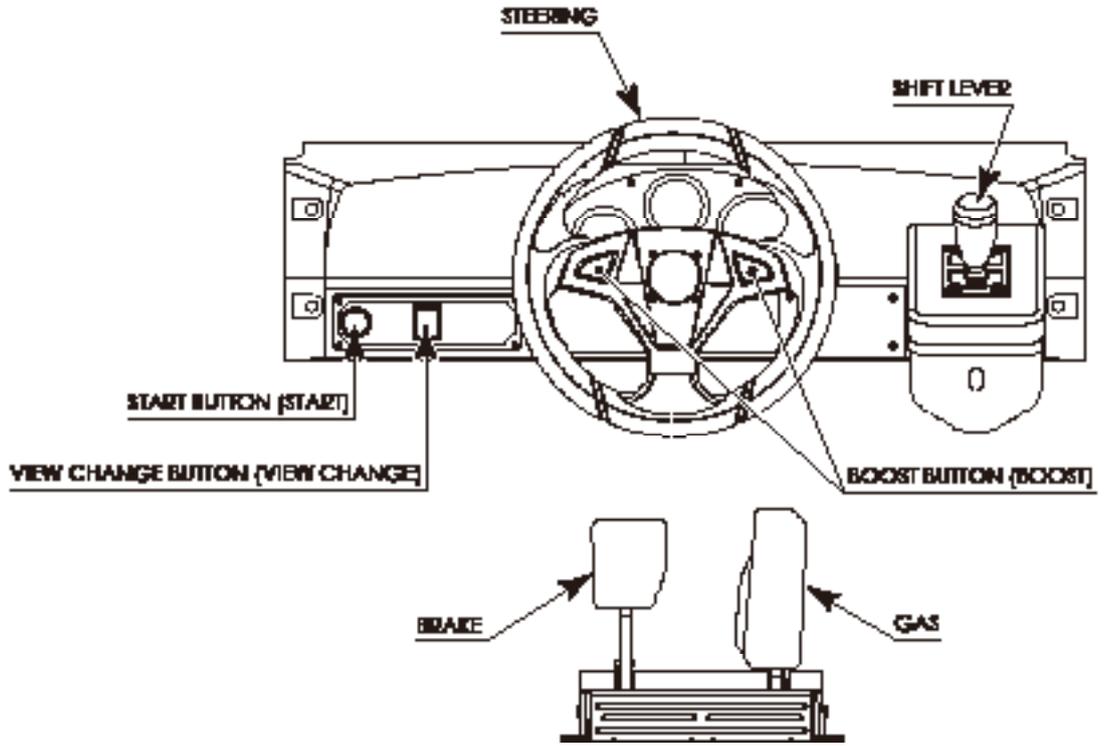
1-1-1 FIG. 01

8-1-2 CAR SELECTION

Choose from 20 models of popular Japanese and American cars.

1-1-2 TABLE 01

MAKE	MODEL
TOYOTA	SUPRA (JZA80), CELICA (ZZT231), CELICA (ST205)
NISSAN	SKYLINE (BNR34), SKYLINE (BNR32), FAIRLADY Z (Z33), FAIRLADY Z (Z32)
HONDA	NSX (NA1), S2000 (AP1), INTEGRA (DC2)
MAZDA	RX-7 (FD3S), RX-7 (FC3S), RX-8 (SE3P)
MITSUBISHI MOTORS	LANCER EVOLUTION IX (CT9A), ECLIPSE (D32A)
SUBARU	IMPREZA WRX (GC8), LEGACY B4 (BL5)
FORD	MUSTANG (2006)
CHEVROLET	CORVETTE (2005)
PONTIAC	GTO (2004)

8-1-3 RACE COURSE

There are 4 areas with 4courses each, for a total of 16 courses. All courses are circuit tracks.
The more stars (★) a course has, the higher its level of difficulty.

1-1-3 TABLE 01

Course Name	Difficulty (1-5)	Laps
Shinjuku A	★★☆☆☆	5
Shinjuku B	★★★★★	3
Shinjuku C	★★★★★	3
Shinjuku D	★★★★☆	3
Shibuya A	★★★★★	3
Shibuya B	★★★★☆	3
Shibuya C	★★★★☆	2
Shibuya D	★★★★★	5
Hong Kong A	★★★★★	4
Hong Kong B	★★★★☆	2
Hong Kong C	★★★★★	2
Hong Kong D	★★★★★	2
New York A	★★★★☆	5
New York B	★★★★★	3
New York C	★★★★☆	2
New York D	★★★☆☆	4

8-2 MODE OVERVIEW

8-2-1 SINGLE PLAYER MODE

Race against 3 computer-controlled rivals in this mode. You can win prize money depending on your results.

● **Battle**
Four players race simultaneously competing for the top position.
Scores are calculated based on your performance in the race, and the goal is to finish in first place with the highest score possible.

● **Time Attack**
Race alone and attempt to beat the times set by your 3 rivals.

The game will end if the time reaches zero.
Time is added when you pass a checkpoint or complete a lap.

Record the password displayed on the Result Screen and register it on the Internet to participate in the Internet Ranking.

■ Rivals
Within each area there is one rare rival with more prize money than normal rivals.
In addition, there is a boss that will sometimes appear in any of the areas. You can receive even more prize money against the boss.

■ Course Skill
Course Skill is a value that indicates your proficiency at each course. It increases based on the results of battles against your rivals.
As this value increases, your rivals also become stronger, but the prize money and score you can get will also increase. One of the game's objectives is to increase your Course Skill to MAX for every course.

8-2-2 VERSUS MODE

This mode allows players to compete against other machines in the same location.
Players win money based on results. Prize money varies depending on the of players competing.

When one player passes a checkpoint, time is added for all player.
When a player crosses the finish line, the remaining time for all other players will change to 10 seconds, and if they cannot finish within 10 seconds, time will be up and the race will end.
When this happens, a player's finishing place will be determined by their position when time runs out.

■ Versus Win Total Display
You will receive a star (⭐) each time you finish 1st in Versus Mode.
This will be displayed beneath your name during races to show your opponents how many times you have won.
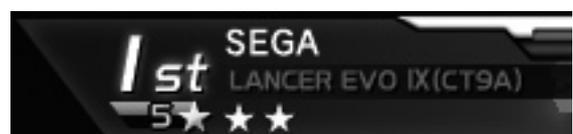
1-2-2 FIG. 01

8-3 HOW TO PLAY

1 Insert coins. The game will start automatically when you have met the required amount of credits.

NOTE: *If QUICK START is set to OFF in Test Mode, the game will not begin until the START button is pressed. See 2-3-4 GAME ASSIGNMENTS for more information about QUICK START settings.*

1-3 FIG. 01

2 The game will wait for opponents from possible opponent machines not being played. Versus Mode will begin if sufficient coins are inserted into another machine while you are waiting for opponents. The wait for opponents will end when the countdown reaches zero or when the number of players reaches the set amount, and the game will begin with the current number of waiting players. (Single Player Mode will begin if there is one player.)

NOTE: *You will not be taken to the waiting for opponents screen if there is only a single machine or the machine has not been set up for Versus Mode.*

■ How to Stop Waiting for Opponents
To go straight to Single Player Mode without connecting with opponents, press the VIEW CHANGE button and the Brake Pedal simultaneously.
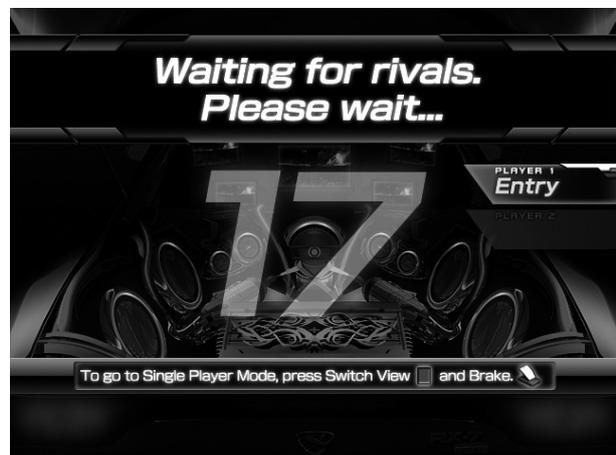
1-3 FIG. 02
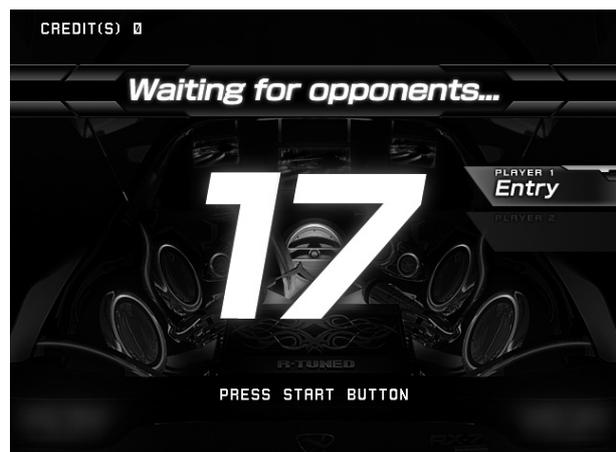
1-3 FIG. 03

3 Select the car you will use. Use the steering wheel to select the car and the shift lever to choose the car level. Confirm your selection with the Accelerator.

NOTE: The BOOST button can also be used to select left and right, and the START button can be used to confirm.

1-3 FIG. 04

Inserting Card

If you want to use a "R-Tuned Garage Card/IC Card", insert it while on the Car Selection Screen.
The card information will be shown with a confirmation window displaying "Use this card?." Choose YES to use the card.

Level Selection

When using a card, you can select the car level if you have earned cars.
The higher a car's level, the greater the horsepower it will have and the flashier it will look.

4 Select the car body color and neon color (undercarriage lights).
Choose the neon color using the steering wheel or BOOST button and the body color using the shift lever, then confirm your selection with the Accelerator or the START button.

Colors crossed out by an "X" cannot be selected. These can be used after meeting certain conditions when using a card.

1-3 FIG. 05

5 Select the course. Use the steering wheel to select the course and confirm your selection with the Accelerator.

NOTE: The BOOST buttons can also be used to select left and right, and the START button can be used to confirm.

In Versus Mode, course confirmation is decided by the most votes. If 2 courses have the same number of votes, then the course with the lowest difficulty rating will be chosen.

1-3 FIG. 06

6 Select the game mode. Use the steering wheel to select the mode and confirm your selection with the Accelerator. (Only in Single Player Mode.)

NOTE: *The BOOST button can also be used to select left and right, and the START button can be used to confirm.*

1-3 FIG. 07

Push the shift lever up (forward) while on the Game Mode Selection Screen to change how the steering wheel reacts when you press the BOOST button. (The steering wheel response cannot be changed in Versus Mode. It is automatically set to AGGRESSIVE. However, the MILD setting will be activated if you insert a card with which you have previously played using the MILD setting in Single Player Mode.)

NOTE: *Releasing the lever will cause it to return to its original position. Confirm your selection while holding the lever in place.*

AGGRESSIVE: The steering wheel moves from left to right, giving you a dynamic controls experience.
MILD: Vibrations during boosting is set to OFF.

1-3 FIG. 08

7 Various tutorials related to the game are displayed while the game is loading.
When the game starts, first demo is shown, and then play begins.

Game Screens

The content of the on-screen display is different for Single Player Mode (Battle), Single Player Mode (Time Attack) and Versus Mode.

■ Single

Position

Battle information such as lap number and score

Course Stil

Distance from the car behind you
(displayed only when opponents are behind you)

1-3 FIG. 09

■ Single Play

Position, time, etc.

Time Attack information such as Lap Time

1-3 FIG. 10

■ Vers

Name, position, etc.

Distance from the car behind you
(displayed only when opponents are behind you)

1-3 FIG. 11
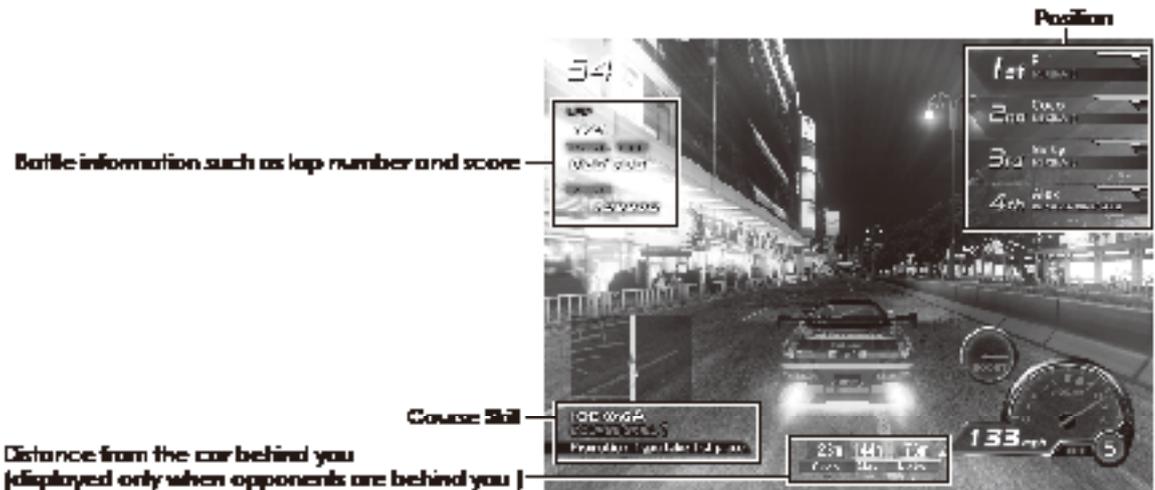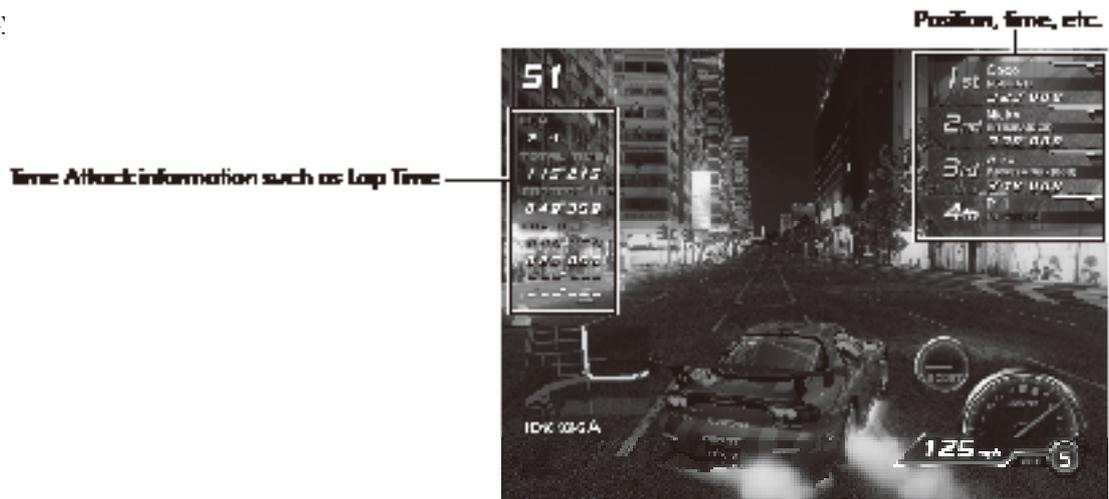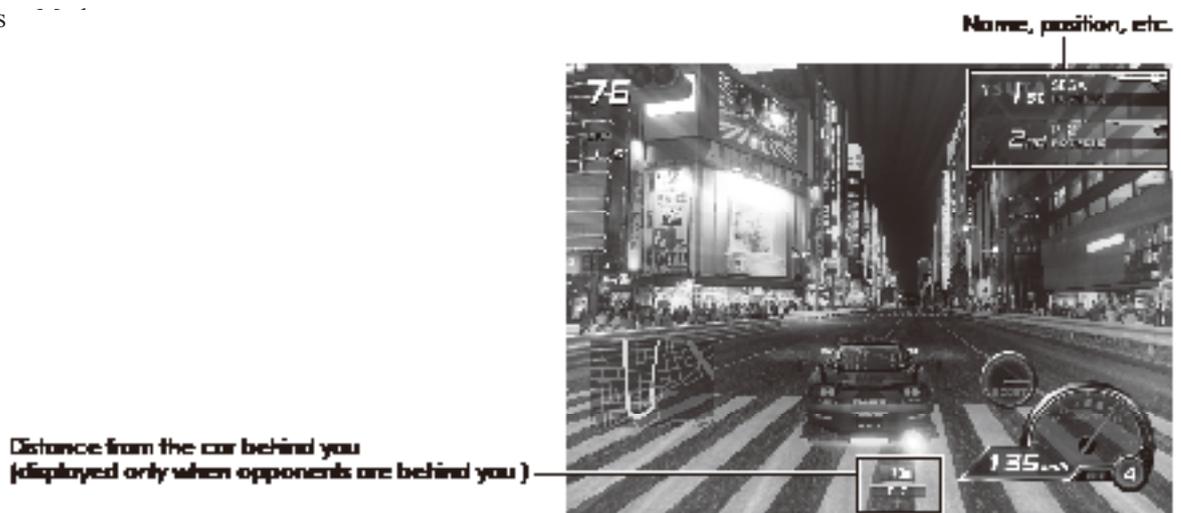
Changing Between Automatic and Manual Transmission

This game employs a semi-automatic transmission system. Transmission is normally set to automatic (AT) but the shift lever may be used to change gear during gameplay to change to manual transmission (MT). Additionally, transmission can be set to MT from the outset by moving the shift lever during the pre-race countdown. If you accelerate without using the shift lever for a certain period of time when using MT, the car will automatically switch to automatic transmission.

8 When the race is over, results will be displayed (Result Screen). The information displayed on-screen will vary depending on the mode.

1-3 FIG. 12

Internet Ranking

Follow the instructions on the Result Screen and press the VIEW CHANGE button. The "Best score for that course saved on the card" will be displayed by a password. (A password will only be displayed when playing using a card.) Register this password on the official R-Tuned website (http://r-tuned.sega.jp) to participant in the Internet Ranking.

1-3 FIG. 13

9 In Single Player Mode only, after a race is over you can use the prize money to buy new cars.
Use the steering wheel to select the car that you want to buy and step on the Accelerator to confirm your choice. Stepping on the brake, will end the Shop Screen without purchasing anything.

NOTE: The BOOST button can also be used to select left and right, and the START button can be used to confirm.

Car Levels

The higher a car's level, the greater the horsepower it will have and the flashier it will look.
In the Car Shop you can buy cars one level up from your current car. However, you will be unable to buy cars of some levels unless certain conditions have been met.

1-3 FIG. 14

10 Your current car collection is displayed only in Single Player Mode. Use the accelerator to move to the next car.

1-3 FIG. 15

11 Your current quest completion status is displayed only in Single Player Mode. View the details of each quest by selecting it with the steering wheel or shift lever. Use the accelerator to move to the next quest.
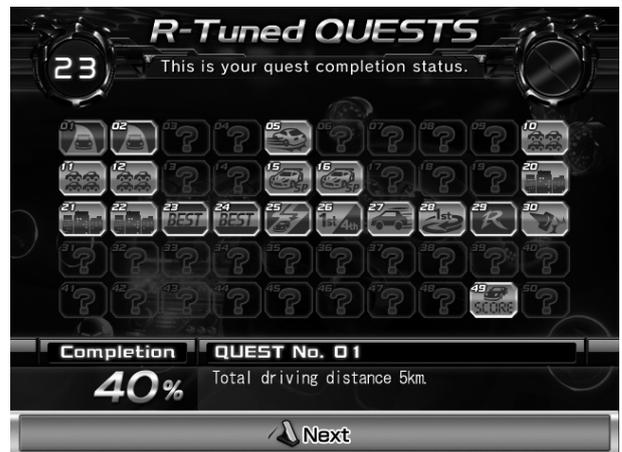
1-3 FIG. 16

Quests

Quests are missions with conditions that must be met, such as "Take 1st Place on Shinjuku Course A." There are 50 quests in total. If you meet the hidden clear conditions, the quest will be marked as "Complete."
The completion of all quests is one of the objectives of the game.

Unlocking Limited Colors

When you complete specific quests, you will then be able to use previously unavailable body and neon colors.

12 If you achieve a Ranking in Single Player Mode, you can enter your name. This name (5 English letters) will be displayed on the advertising screen.

Additionally, when creating a new card, you can enter your name and save it to the card regardless of your result. Enter up to 5 English letters or symbols.
If you achieve a Ranking when using a card, the name saved on the card will be the name displayed in the Rankings.

NOTE: If LANGUAGE is set to JAPANESE in Test Mode, you can enter your name up to 5 hiragana characters, katakana characters, symbols or English letters. See 9-3-4 GAME ASSIGNMENTS for more information about LANGUAGE settings.

Use the steering wheel to move the cursor left and right and the shift bar to move the cursor up and down. Confirm with the Accelerator or START button.

1-3 FIG. 17

13 In Single Player Mode only, the Continue Screen will display "CONTINUE?" when the game is over. Insert the required coins and press the START button to re-enter the Car Selection Screen and continue playing.

1-3 FIG. 18

14 Even after a game ends, if you insert a new card, data from the game just played can be saved to the card. To save your data to a card, follow the on-screen instructions and insert your new card.

1-3 FIG. 19

1-3 FIG. 20

15 When either Single Player Mode or Versus Mode finish, the game is over. If you were using a card, it will be ejected.

1-3 FIG. 21

8-4 HINTS FOR PLAYING THE GAME

● **BOOST**

Hold the BOOST buttons to accelerate rapidly.

While pressed, the steering wheel will vibrate vigorously.

The BOOST buttons can be pressed an unlimited number of times, but you will lose a lot of time if you collide with an opponent or a wall while using it.

● **Drift**

Turn the steering wheel dramatically before going into a turn to skid sideways (drift) through the turn. This eliminates the need for braking.

The trick is to turn the steering wheel long before the corner, even when driving in a straight line.

If you use BOOST while drifting, you will lose control of the car and be unable to corner properly.

● **High-Speed Drift**

Pressing the accelerator just before or while drifting will carry out a "high-speed drift" from which it is very difficult to decelerate. The sound of a high-speed drift is different from that of a standard drift.

● **SLIP STREAM**

It is possible to achieve a speed faster than the top speed of your car by following close behind an opponent. When doing this, the word "SLIP STREAM" will be displayed above your speedometer.

9 TEST MODE

⚠WARNING

Do not touch any parts that are not specified in these directions. Touching unspecified locations may lead to electric shock or cause short circuits.

⚠CAUTION

Be careful that a finger or hand does not get caught when opening/closing the coin chute door.

(STOP) IMPORTANT

- When you enter the Test Mode, fractional coin and bonus adder data is erased.
- Adjust the sound to the optimum volume, taking into consideration the environmental requirements of the installation location.

Caution when Initiating Test Mode

(STOP) IMPORTANT

- When a game is finished (game over or game cleared), this product produces IC cards so that they can be used normally. For this reason, if Test Mode is entered during a game, the IC card will become unable to finish normally, and the results of the previous game cannot be saved. It is therefore important to ensure that no customers are playing when entering Test Mode. Also note that there is a possibility that an IC card may become damaged if Test Mode is entered while the card is being read or written to.
- When multiple cabinets are linked, entering Test Mode on one unit and disconnecting the LAN cable will cause the other cabinets to wait for all current games and then stop. Note that the steering wheel will move at this time and return to its default.

9-1 SWICH UNIT

In Test Mode, the switch unit in the coin chute door is operated.
Unlock and open the coin chute door. Inside is a switch unit.
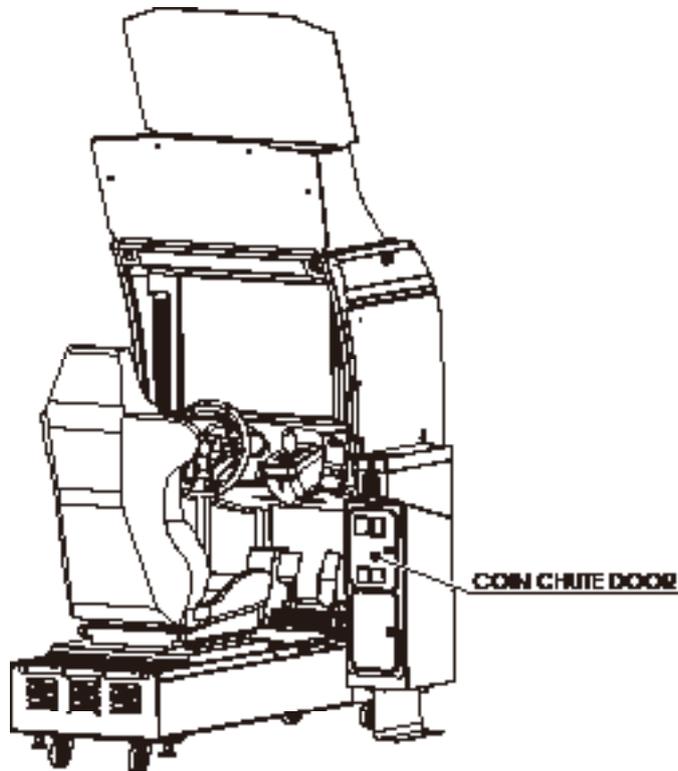
2-1 FIG. 01
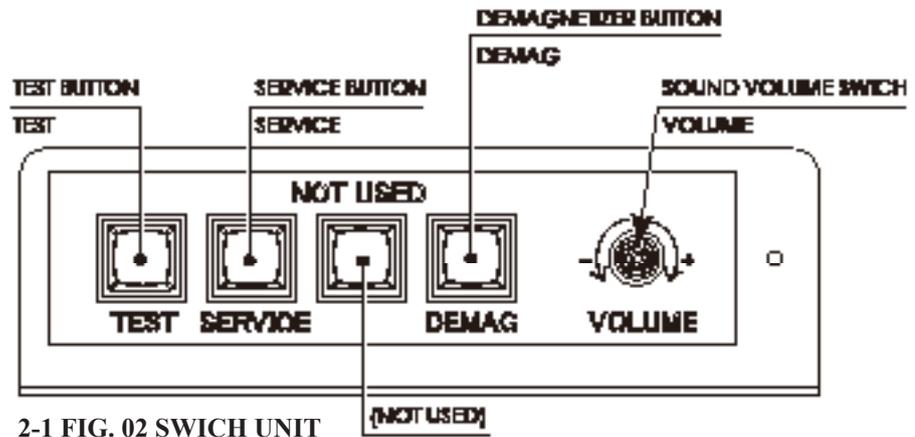
2-1 FIG. 02 SWICH UNIT

TEST Button (TEST)	Establishes Test Mode. Becomes the button to confirm selections in Test Mode.
SERVICE Button (SERVICE)	Makes it possible to enter credits for service without increasing the coin meter. Becomes the button to select items in Test Mode.
DEMAGNETIZER Button (DEMAG)	Eliminates the on-screen color unevenness due to magnetization of CRT. First use this SW before performing the monitor's color adjustment.
Sound Volume Switch (VOLUME)	This is the volume knob for speakers at the left and right of the control panel. Turn the knob to the right to increase speaker volume.

9-2 SYSTEM TEST MODE

🛑 IMPORTANT

- **Refer to BOOKKEEPING in GAME TEST MODE for this product's data.**

- **Adjust for an appropriate sound volume in consideration of the installation site.**

- **Removing the Coin Meter circuitry renders the game inoperable.**

- **Read the LINDBERGH Service Manual included with the product for details about System Test Mode. However, the settings for this product should follow the specifications in this manual.**

System Test Mode can be used to check that the main circuit operations are correct, adjust Monitor and perform coin/credit settings etc. Read the LINDBERGH Service Manual for details.
However, this product can only be used with the settings shown below.

COIN ASSIGNMENTS

COIN CHUTE TYPE	COMMON
SERVICE TYPE	COMMON

NOTE: When installing this title, the default setting of GAME COST SETTING is 1CREDIT TO START and 1CREDIT TO CONTINUE.

NETWORK SETTING

DHCP	DISABLE

1 When the TEST Button is pressed, the System Test Menu Screen appears.

```
              SYSTEM TEST MENU

              SYSTEM INFORMATION
              STORAGE INFORMATION
              JVS TEST
              MONITOR TEST
              SPEAKER TEST
              COIN ASSIGNMENTS
              CLOCK SETTING
              NETWORK SETTING
              GAME TEST MODE
         ->   EXIT

          SELECT WITH SERVICE AND PRESS TEST
```
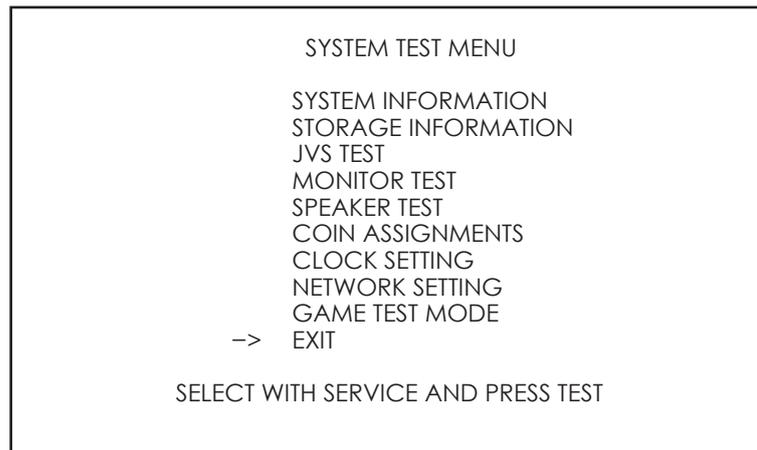
2-2 FIG. 01

2 Use the SERVICE Button to move the cursor to the desired test item.

3 Press the TEST Button to confirm selection of the item.

4 When testing and checking are completed, select EXIT and press the TEST Button. The System Test Menu Screen reappears.

5 When all tests are completed, select EXIT and press the TEST Button. The Game Screen reappears.

9-3 GAME TEST MODE

🛑 **IMPORTANT**

- **To change settings in the Game Test Mode, simply making changes on the setting screen will not be effective. Complete the Test Mode in normal fashion.**

- **Use with the specified settings. If settings other than those specified are used, inappropriate operations or malfunction may occur.**

9-3-1 GAME TEST MODE

1 Select GAME TEST MODE from the System Test Menu Screen to display the Game Test Mode Screen as follows.

NOTE: This game's Screen Display Safe Areas (areas that deal with crucial game menus and text, PL displays etc.) are denoted by white lines. Adjust the monitor so that the top, bottom, left and right white lines are displayed within the screen. Refer to the Owner's Manual included with the cabinet for further information on how to adjust the monitor.

```
R-Tuned
GAME TEST MODE
        INPUT TEST
        OUTPUT TEST
        GAME ASSIGNMENTS
        LINK SETTING
        GAME SYSTEM INFORMATION
        CARD R/W TEST
        FORCE FEEDBACK
        STEER ADJUSTMENT
        CLOSE SETTING

        IC CARD CHECK


        BOOKKEEPING
        BACKUP DATA CLEAR

   ->   EXIT

    SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```
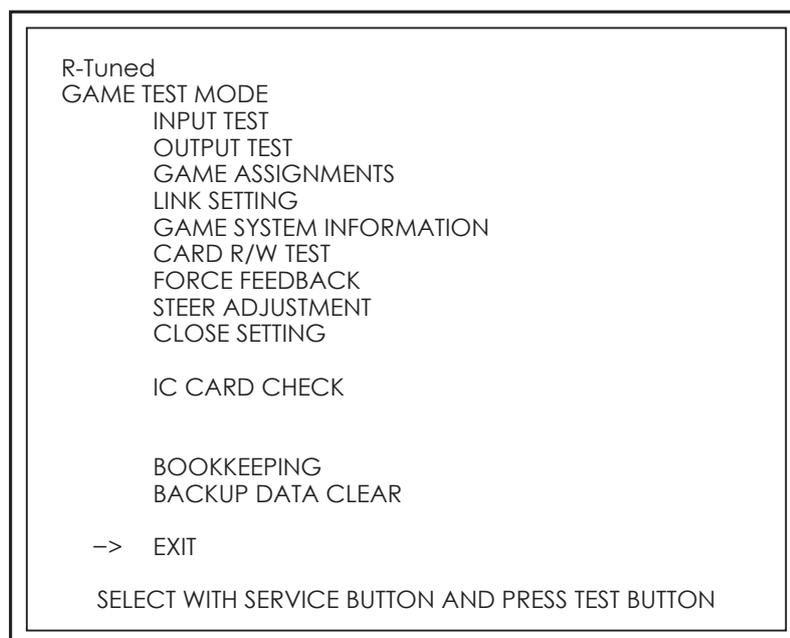
2-3-1 FIG. 01

2 For each following item, a test or setting is implemented, or data is displayed.

INPUT TEST	Tests each input device used for game.
OUTPUT TEST	Tests each output device used for game.
GAME ASSIGNMENTS	Adjusts all game settings.
LINK SETTING	Adjusts settings used when multiple cabinets are connected.
GAME SYSTEM INFORMATION	View information about the game.
CARD R/W TEST	Tests the card reader/writer. Not displayed when the CARD SYSTEM is OFF. See "2-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.
FORCE FEEDBACK	Set the STEERING resistance.
STEER ADJUSTMENT	Adjusts the STEERING.
CLOSE SETTING	Premises closing setting. Only displayed on the cabinet for which the LINK ID is set to 1. These settings are applied to all other connected cabinets. See "2-3-5 LINK SETTING" for more information about LINK ID settings. Not displayed when the CARD SYSTEM is OFF. See "2-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.
IC CARD CHECK	View the contents of an IC card. Not displayed when the CARD SYSTEM is OFF. See "2-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.
BOOKKEEPING	Displays all recorded game data.
BACKUP DATA CLEAR	Erases all types of game records.

3 Use the SERVICE Button to move the cursor to the desired test item. Press the TEST Button to select the test item.

4 After changing the settings, select EXIT and press the TEST Button to return to the Game Test Menu Screen.

5 On the GAME TEST MODE screen, select EXIT and press the TEST Button. The SYSTEM TEST MENU screen reappears.

6 On the SYSTEM TEST MENU screen, select EXIT and press the TEST Button. The game screen reappears.

9-3-2 INPUT TEST

Select INPUT TEST to display the following screen and check the status of input devices.
This test should be used periodically to check that each input device is functioning correctly.

1 On the GAME TEST MODE screen, select INPUT TEST and press the TEST Button. The INPUT TEST screen appears.

```
INPUT TEST

        STEERING                **H
        GAS                     **H
        BRAKE                   **H
        BOOST BUTTON LEFT       OFF
        BOOST BUTTON RIGHT      OFF
        GEAR POSITION           N
        START                   OFF
        VIEW CHANGE             OFF
        CARD IN                 OFF
        SERVICE                 OFF
        TEST                    OFF




        SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```
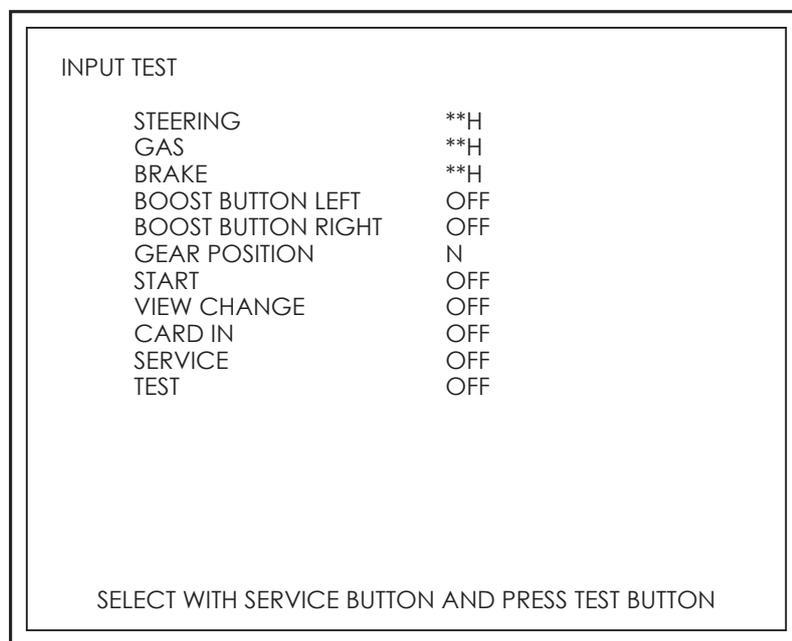
2-3-2 FIG. 01

2 Manipulate each switch, etc., to check screen display.

Test the STEERING, GAS and BRAKE controls to ensure that they are functioning properly and that the parameters change smoothly as each input device is operated. The STEERING value will decrease when the steering wheel is turned to the left and increase when turned to the right.

Display N, UP and DOWN using the GEAR POSITION. N should display there is no control input. Verify that both UP and DOWN display in sync with the position of the gear shifter.

CARD IN will change to ON when a card is inserted.
Not displayed when the CARD SYSTEM is OFF. See "9-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.

Other controls are working properly if the OFF display changes to ON when operating the corresponding input device.

STEERING

BOOST BUTTON LEFT

GEAR POSITION

CARD IN

VIEW CHANGE

BOOST BUTTON RIGHT

START

TEST

SERVICE

BRAKE

GAS
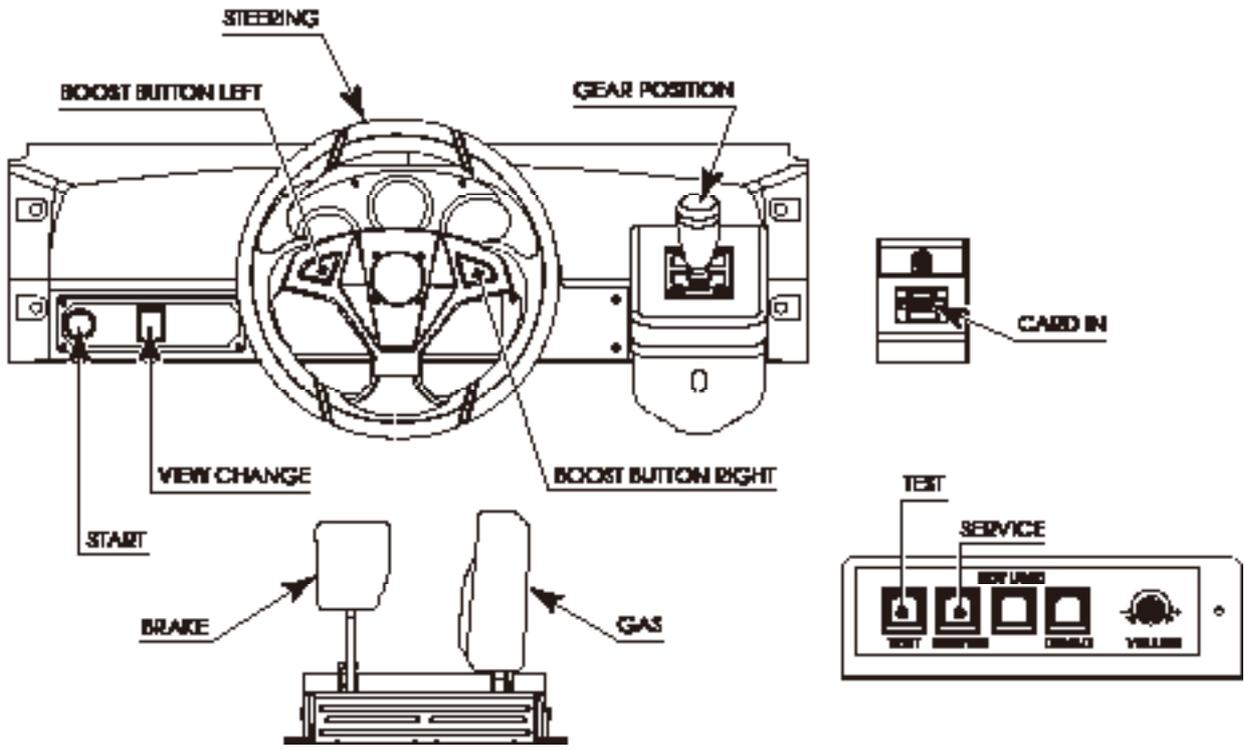
2-3-2 FIG. 02

---

3 When all checks are completed, press the TEST Button and the SERVICE Button simultaneously. The GAME TEST MODE screen reappears.

9-3-3 OUTPUT TEST

This screen is for confirming the proper operation of each output device used by the game.
Periodically use this screen to check the status of each output device.
The items that can be tested vary depending on the CABINET TYPE. See "9-3-4 GAME ASSIGNMENTS" for more information about CABINET TYPE settings.

1 On the GAME TEST MODE screen, select OUTPUT TEST and press the TEST Button. The OUTPUT TEST screen appears.

```
OUTPUT TEST

        START BUTTON LAMP        OFF
        VIEW BUTTON LAMP         OFF

        RED LAMP LEFT            OFF
        RED LAMP RIGHT          OFF
        BLUE LAMP LEFT          OFF
        BLUE LAMP RIGHT         OFF

        BOOST LAMP RED          OFF
        BOOST LAMP GREEN        OFF
        BOOST LAMP BLUE         OFF

        CARD LOCK               OFF
  ->    EXIT


     SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```
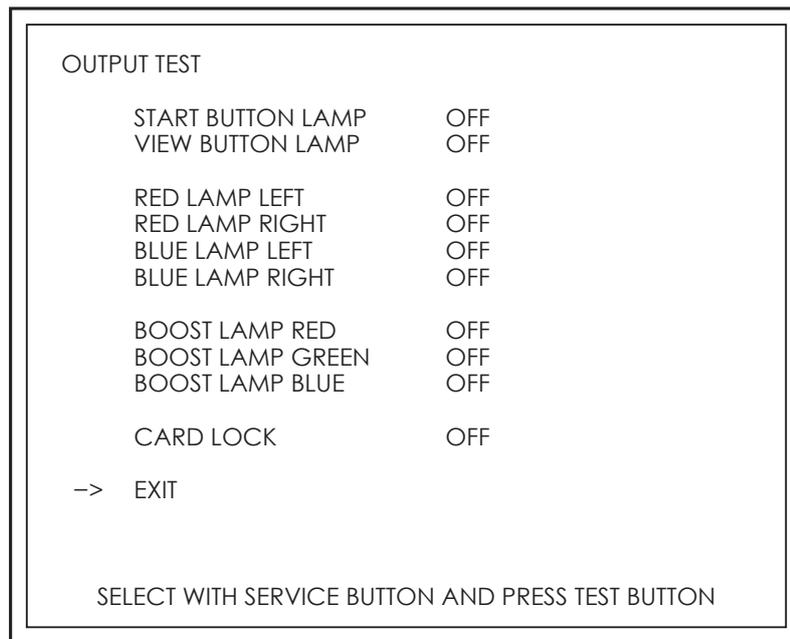
2-3-3 FIG. 01 CONVERT

The BLUE LAMPS and RED LAMPS are located within the billboard box.
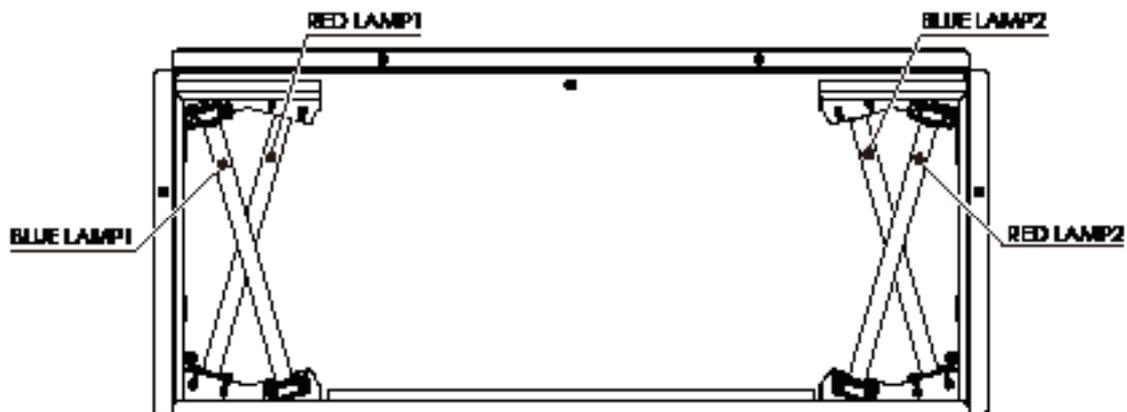
2-3-3 FIG. 02

```
┌─────────────────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────────────────┐ │
│ │                                                     │ │
│ │   OUTPUT TEST                                       │ │
│ │                                                     │ │
│ │         START BUTTON LAMP          OFF             │ │
│ │         VIEW BUTTON LAMP           OFF             │ │
│ │                                                     │ │
│ │         SIDE LAMP        RED       OFF             │ │
│ │         SIDE LAMP        GREEN     OFF             │ │
│ │         SIDE LAMP        BLUE      OFF             │ │
│ │         BOOST LAMP       RED       OFF             │ │
│ │         BOOST LAMP       GREEN     OFF             │ │
│ │         BOOST LAMP       BLUE      OFF             │ │
│ │         SPEAKER LAMP     RED       OFF             │ │
│ │         SPEAKER LAMP     GREEN     OFF             │ │
│ │         SPEAKER LAMP     BLUE      OFF             │ │
│ │                                                     │ │
│ │         CARD LOCK                  OFF             │ │
│ │                                                     │ │
│ │   ─>    EXIT                                        │ │
│ │                                                     │ │
│ │                                                     │ │
│ │     SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON│ │
│ └─────────────────────────────────────────────────────┘ │
└─────────────────────────────────────────────────────────┘
```

2-3-3 FIG. 03 ORIGINAL

2 Each item is explained below.

Select CARD LOCK and press the TEST Button to turn it ON. The card reader/writer locking mechanism will activate. Press the TEST Button again to release the locking mechanism and turn it OFF.
Not displayed when the CARD SYSTEM is OFF. See "9-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.

As for all other options, press the TEST Button on an item to change the condition to ON, turning on its indicator light. Press the TEST Button again to change the condition to OFF, turning off the light.

3 Press the SERVICE Button and move the cursor to select the item (output device).

4 When all checks are completed, select EXIT and press the TEST Button. The GAME TEST MODE screen reappears.
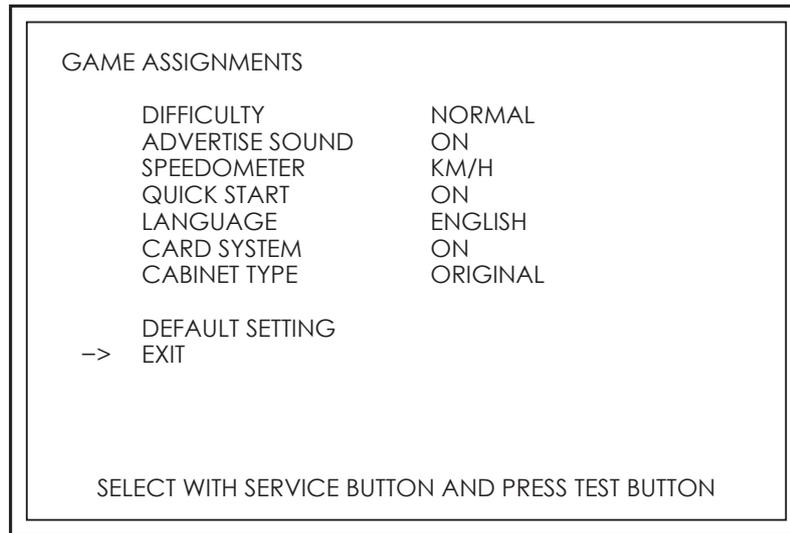
9-3-4 GAME ASSIGNMENTS

All settings such as level of game difficulty are adjusted.
Setting changes do not become effective until EXIT has been selected on the GAME TEST MODE screen. After a setting has been changed, be sure to always exit the GAME TEST MODE.
Only displayed on the cabinet for which the LINK ID is set to 1. These settings are applied to all other connected cabinets. See "9-3-5 LINK SETTING" for more information about LINK ID settings.

1 On the GAME TEST MODE screen, select GAME ASSIGNMENTS and press the TEST Button. The GAME ASSIGNMENTS screen appears.

```
GAME ASSIGNMENTS

        DIFFICULTY              NORMAL
        ADVERTISE SOUND         ON
        SPEEDOMETER             KM/H
        QUICK START             ON
        LANGUAGE                ENGLISH
        CARD SYSTEM             ON
        CABINET TYPE            ORIGINAL

        DEFAULT SETTING
   −>   EXIT




    SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```

2-3-4 FIG. 01

2 Each item is explained below.

DIFFICULTY	Set level of difficulty to one of five levels; VERY EASY → EASY → NORMAL → HARD → VERY HARD. VERY EASY is the easiest, and VERY HARD is the most difficult. (Default setting: NORMAL) *NOTE: Only displayed on the cabinet for which the LINK ID is set to 1.*
ADVERTISE SOUND	Set sound on the advertising screen. (Default setting: ON)
SPEEDOMETER	Set the speedometer to display speed in kilometers per hour (KM/H) or miles per hour (MPH). (Default setting: KM/H)
QUICK START	Set game to start automatically when the required number of credits is inserted. (Default setting: ON) *NOTE: Only displayed on the cabinet for which the LINK ID is set to 1.* *The game will only begin automatically when sufficient credits are inserted During the advertising screen.*
LANGUAGE	Set either Japanese (JAPANESE) or English (ENGLISH) as the display language. (Default setting: ENGLISH)
CARD SYSTEM	Set whether or not to use the card reader/writer. (Default setting: ON).
CABINET TYPE	Set whether you are using an R-Tuned original cabinet (ORIGINAL) or a converted cabinet (CONVERT). (Default setting: ORIGINAL)
DEFAULT SETTING	Restore all GAME ASSIGNMENTS settings to default.

3 Use the SERVICE Button to move the cursor to the desired test item. Press the TEST Button to select the test item.

4 When all setting adjustments are completed, select EXIT and press the TEST Button. The GAME TEST MODE screen reappears.
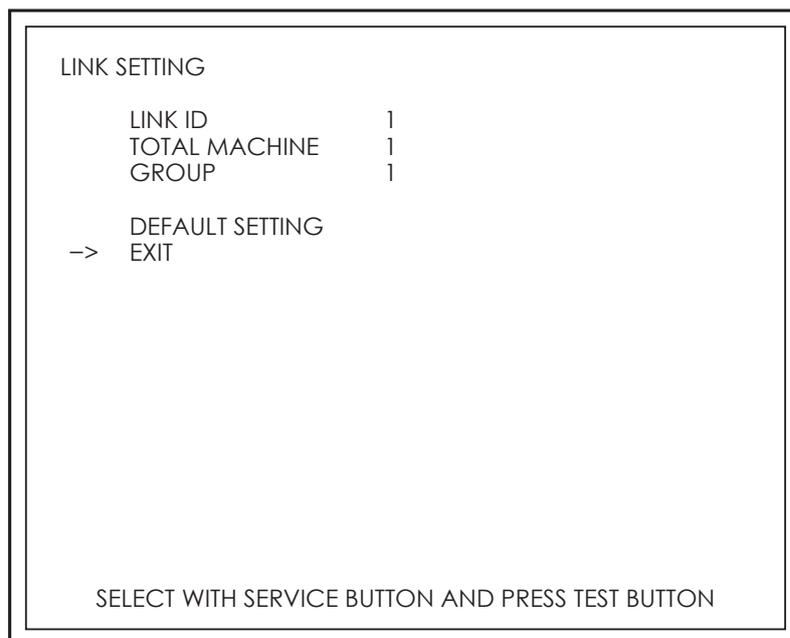
9-3-5 LINK SETTING

🛑 **IMPORTANT**

- **Ensure that you set up each cabinet correctly. Incorrect settings can lead to malfunctions.**

- **Players using cabinets with lower LINK ID numbers start further to the left in "Versus Mode." When positioning cabinets, ensure that you arrange them so that the LINK ID numbers increase from left to right.**

- **When multiple cabinets are linked, entering Test Mode on one unit and disconnecting the LAN cable will cause the other cabinets to wait for all current games and then stop. Note that the steering wheel will move at this time and return to its default.**

Set which cabinets to link when multiple cabinets are operating.

1 On the GAME TEST MODE screen, select LINK SETTING and press the TEST Button. The LINK SETTING screen appears.

```
  LINK SETTING

        LINK ID              1
        TOTAL MACHINE        1
        GROUP                1

        DEFAULT SETTING
  ->    EXIT









        SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```

2-3-5 FIG. 01

2 Each item is explained below.

LINK ID	Assign an ID to the cabinet. Choose from 1, 2, 3 or 4. (Default setting: 1).
TOTAL MACHINE	Set how many cabinets can play. Set a number 1, 2, 3 or 4 depending on the total number of units connected. (Default setting: 1) Set the cabinet to 1 if it is not for Versus Mode.
GROUP	Select 1, 2, 3 or 4 when it is necessary to divide cabinets into groups. Cabinets set in the same group are linked and can play in Versus Mode. (Default setting: 1)
DEFAULT SETTING	Restore all LINK SETTING settings to default.

Example Settings

Below are the settings that would be used when 4 cabinets are connected where cabinet A is for exclusively for Single Player Mode and cabinets B, C and D can be used for Versus Mode.

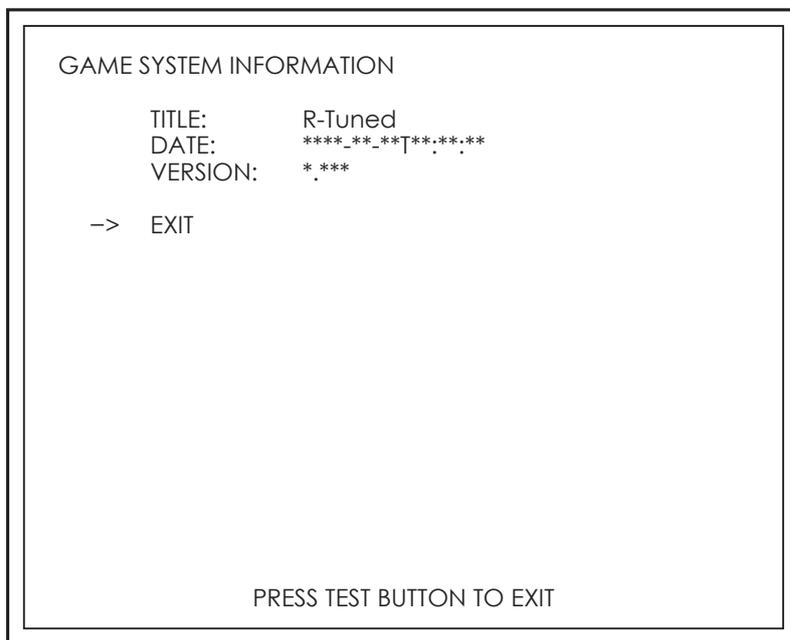|	Cabinet A	Cabinet B	Cabinet C	Cabinet D
LINK ID Setting	1	1	2	3
TOTAL MACHINE Setting	1	3	3	3
GROUP Setting	1	2	2	2

When the race starts in Versus Mode, cabinet B will be on the left, cabinet C in the middle and cabinet D on the right.

3   Use the SERVICE Button to move the cursor to the desired test item. Press the TEST Button to select the test item.

4   When all setting adjustments are completed, select EXIT and press the TEST Button. The GAME TEST MODE screen reappears.

9-3-6 GAME SYSTEM INFORMATION

View information about the game.

1 On the GAME TEST MODE screen, select GAME SYSTEM INFORMATION and press the TEST Button. The GAME SYSTEM INFORMATION screen appears.

```
GAME SYSTEM INFORMATION

            TITLE:        R-Tuned
            DATE:         ****-**-**T**:**:**
            VERSION:      *.***

    ->      EXIT




                   PRESS TEST BUTTON TO EXIT
```

2-3-6 FIG. 01

*2* Press the TEST Button again to return to the GAME TEST MODE screen.

9-3-7 FORCE FEEDBACK

> ### ⚠ CAUTION
>
> **When FORCE FEEDBACK is selected, "Initialize kickback..." will be displayed and the steering wheel will rotate. Make sure that no one is touching the STEERING before running these tests as contact may cause injury.**
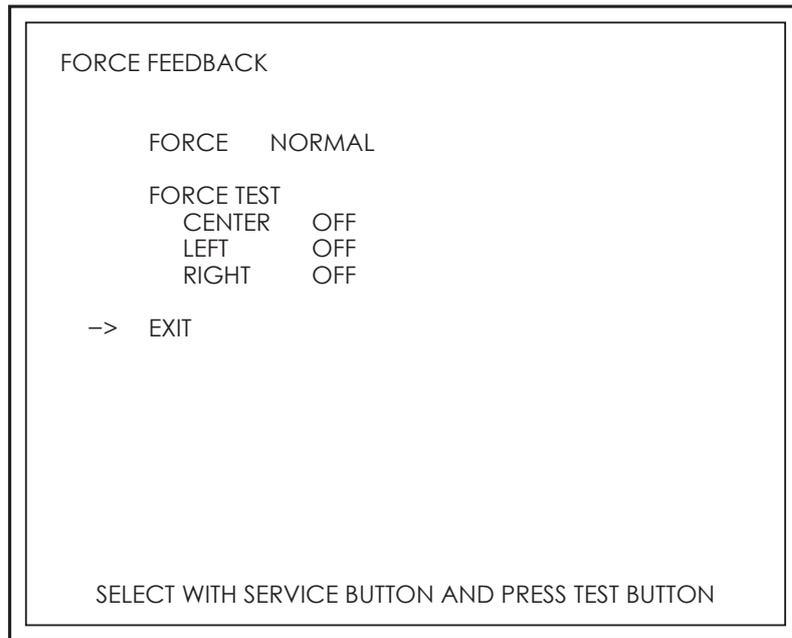
Sets the strength of vibration, reaction, and resistance of the steering wheel.

1 Select FORCE FEEDBACK on the GAME TEST MODE screen and press the TEST Button.
The next screen is displayed and initialization of the drive board is carried out. Do not touch the steering wheel during this time.

```
FORCE FEEDBACK




                    Initialize kickback ...
              Please DO NOT touch the steering wheel.




```
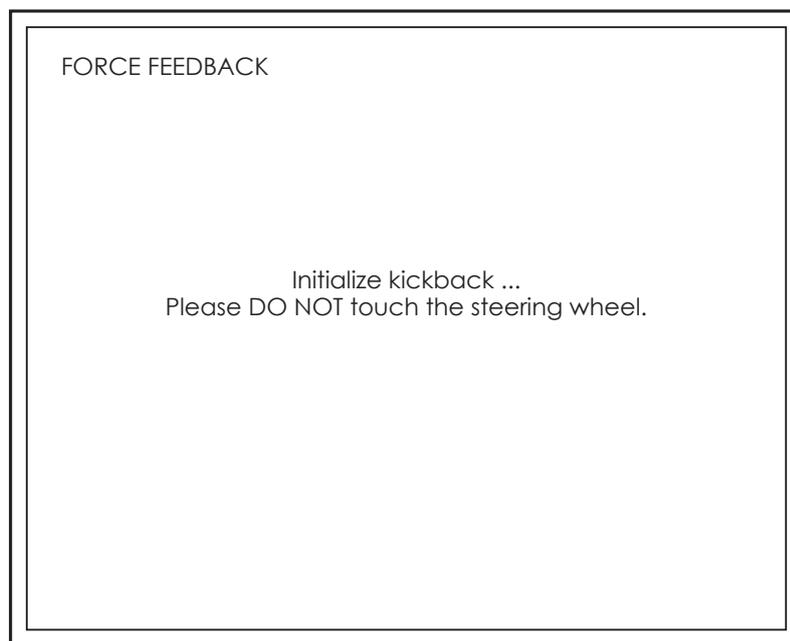
2-3-8 FIG. 01

2 The FORCE FEEDBACK screen is displayed when the drive board initialization is complete.

```
┌──────────────────────────────────────────────────────┐
│  ┌────────────────────────────────────────────────┐  │
│  │                                                │  │
│  │   FORCE FEEDBACK                               │  │
│  │                                                │  │
│  │        FORCE     NORMAL                        │  │
│  │                                                │  │
│  │        FORCE TEST                              │  │
│  │           CENTER    OFF                        │  │
│  │           LEFT      OFF                        │  │
│  │           RIGHT     OFF                        │  │
│  │                                                │  │
│  │    ->  EXIT                                    │  │
│  │                                                │  │
│  │                                                │  │
│  │                                                │  │
│  │                                                │  │
│  │                                                │  │
│  │                                                │  │
│  │   SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON │
│  └────────────────────────────────────────────────┘  │
└──────────────────────────────────────────────────────┘
```

2-3-8 FIG. 02

3 Each item is explained below.

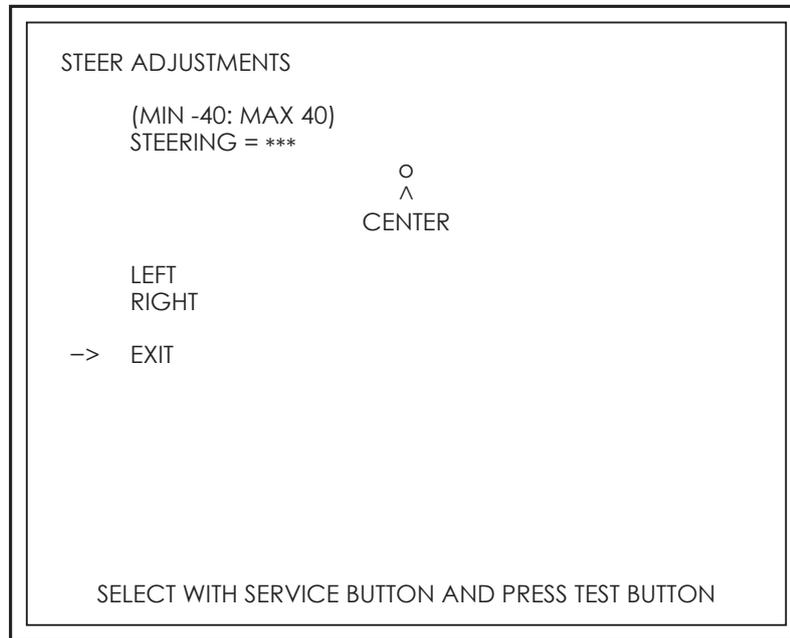| FORCE	Set the strength required to turn the steering wheel to NORMAL or LIGHT. (Default setting: NORMAL)
FORCE TEST	Apply force to the steering wheel to check its movement. Turn the steering wheel left and right when the screen indicates LEFT and RIGHT. When CENTER is displayed, the steering wheel will return to the center.

4 Use the SERVICE Button to move the cursor to the desired test item. Press the TEST Button to select the test item.

5 When all setting adjustments are completed, select EXIT and press the TEST Button. The GAME TEST MODE screen reappears.

9-3-8 STEER ADJUSTMENTS

Calibrate the standard steering settings to be used in the game.

---

1 On the GAME TEST MODE screen, select STEER ADJUSTMENTS and press the TEST Button. The STEER ADJUSTMENTS screen appears.

```
┌─────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────┐ │
│ │                                         │ │
│ │  STEER ADJUSTMENTS                      │ │
│ │                                         │ │
│ │      (MIN -40: MAX 40)                  │ │
│ │      STEERING = ***                     │ │
│ │                          O              │ │
│ │                          ^              │ │
│ │                        CENTER           │ │
│ │                                         │ │
│ │      LEFT                               │ │
│ │      RIGHT                              │ │
│ │  ->  EXIT                               │ │
│ │                                         │ │
│ │                                         │ │
│ │                                         │ │
│ │                                         │ │
│ │   SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON │ │
│ └─────────────────────────────────────────┘ │
└─────────────────────────────────────────────┘
```

2-3-9 FIG. 01

---

2 Center the steering wheel.
If the "o" is not in line with the middle of the "^" above the word CENTER, press the SERVICE Button and align the cursor with either LEFT or RIGHT and press the TEST Button to move the "^" until it is directly below the "o."

Aligning the cursor with RIGHT and pressing the TEST Button will cause the "^" to slide to the right.
Aligning the cursor with LEFT and pressing the TEST Button will cause the "^" to slide to the left.

---

3 When you have finished calibrating the steering wheel, select EXIT and press the TEST Button to return to the GAME TEST MODE screen.

9-3-9 CLOSE SETTING

STOP IMPORTANT

Ensure that you have previously adjusted the time settings in System Test Mode. Close settings will not function correctly if the cabinet's time settings are incorrect. Check the time settings of each individual cabinet if multiple units are connected. Refer to the LINDBERGH Service Manual for details regarding time settings.
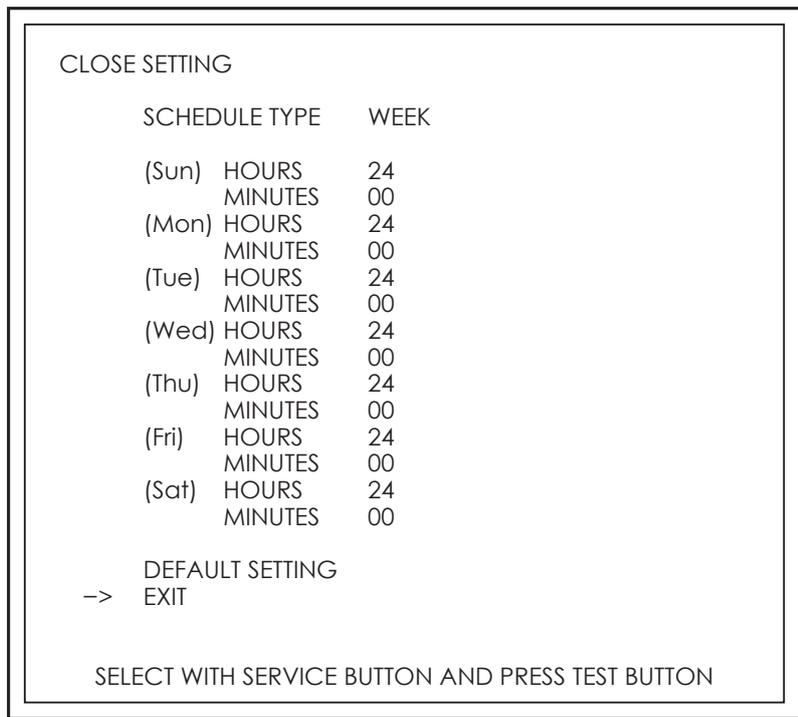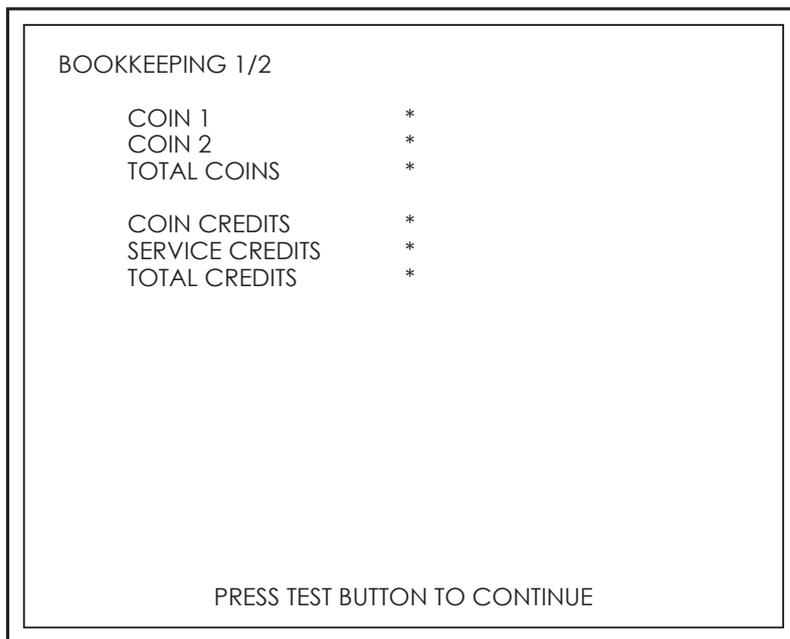
Set closing time settings.
A notification that the service is coming to an end is displayed 15 minutes before the set closing time, and cards will stop being accepted from 10 minutes before the time. The option to continue is not offered if playing with a card.

1 On the GAME TEST MODE screen, select CLOSE SETTING and press the TEST Button. The CLOSE SETTING screen appears.

```
CLOSE SETTING

        SCHEDULE TYPE      DAY

        HOURS              24
        MINUTES            00

        DEFAULT SETTING
  ->    EXIT




        SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```

2-3-10 FIG. 01

```
┌──────────────────────────────────────────────────┐
│  ┌────────────────────────────────────────────┐  │
│  │                                            │  │
│  │  CLOSE SETTING                             │  │
│  │                                            │  │
│  │        SCHEDULE TYPE      WEEK             │  │
│  │                                            │  │
│  │     (Sun)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │     (Mon)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │     (Tue)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │     (Wed)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │     (Thu)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │     (Fri)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │     (Sat)  HOURS          24              │  │
│  │            MINUTES        00              │  │
│  │                                            │  │
│  │        DEFAULT SETTING                     │  │
│  │  −>    EXIT                                │  │
│  │                                            │  │
│  │                                            │  │
│  │   SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON │
│  └────────────────────────────────────────────┘  │
└──────────────────────────────────────────────────┘
```

2-3-10 FIG. 02

2 Each item is explained below.

SCHEDULE TYPE	Can be set by the day (DAY) or by the week (WEEK). (Default setting: DAY) When DAY is selected, the closing time will be set at the same time every day. When WEEK is selected, the closing time can be set differently for each day.
HOURS	Set the "HOURS" for the closing time. (Default setting: 24) Either set a time from 18:00 to 30:00 (6am) or select ALL TIME. 24 → 25 → 26 → 27 → 28 → 29 → 30 → ALL TIME → 18 → 19 → 20 → 21 → 22 → 23 → 24... Setting ALL TIME will mean a Card can be used 24 hours a day.
MINUTES	Set the "MINUTES" for the closing time. (Default setting: 00) Adjust in 5 minute increments. 00 → 05 → 10 → 15 → ... → 50 → 55 → 00... This option will not be displayed if the HOURS item has been set to ALL TIME.
DEFAULT SETTING	Restore all CLOSE SETTING settings to their default.

3 Use the SERVICE Button to move the cursor to the desired test item. Press the TEST Button to select the test item.

4 When all setting adjustments are completed, select EXIT and press the TEST Button. The GAME TEST MODE screen reappears.

9-3-10 BOOKKEEPING

Each game record can be viewed.

---

1 On the GAME TEST MODE screen, select BOOKKEEPING and press the TEST Button. The BOOKKEEPING 1/2 screen appears.

```
BOOKKEEPING 1/2

        COIN 1              *
        COIN 2              *
        TOTAL COINS         *

        COIN CREDITS        *
        SERVICE CREDITS     *
        TOTAL CREDITS       *














            PRESS TEST BUTTON TO CONTINUE
```

2-3-12 FIG. 01

---

2 Each item is explained below.

COIN 1	Number of coins inserted in coin chute 1.
COIN 2	Number of coins inserted in coin chute 2.
TOTAL COINS	Total number of coins inserted in all coin chutes.
COIN CREDITS	Number of credits for coins inserted.
SERVICE CREDITS	Number of credits entered with the SERVICE Button.
TOTAL CREDITS	Total number of all credits.

3 Press the TEST Button on BOOKKEEPING 1/2 to move to BOOKKEEPING 2/2.

```
BOOKKEEPING 2/2

        NUMBER OF GAMES                          *
        ├ START COUNT      (WITH CARD)           *
        ┌ CONTINUE COUNT   (WITH CARD)           *
        ├ START COUNT      (NO CARD)             *
        └ CONTINUE COUNT   (NO CARD)             *

        SINGLE PLAY COUNT                        *
        VERSUS PLAY COUNT                        *

        TOTAL TIME                         **.**.**
        PLAY TIME                          **.**.**
        AVERAGE TIME                       **.**.**




                PRESS TEST BUTTON TO EXIT
```
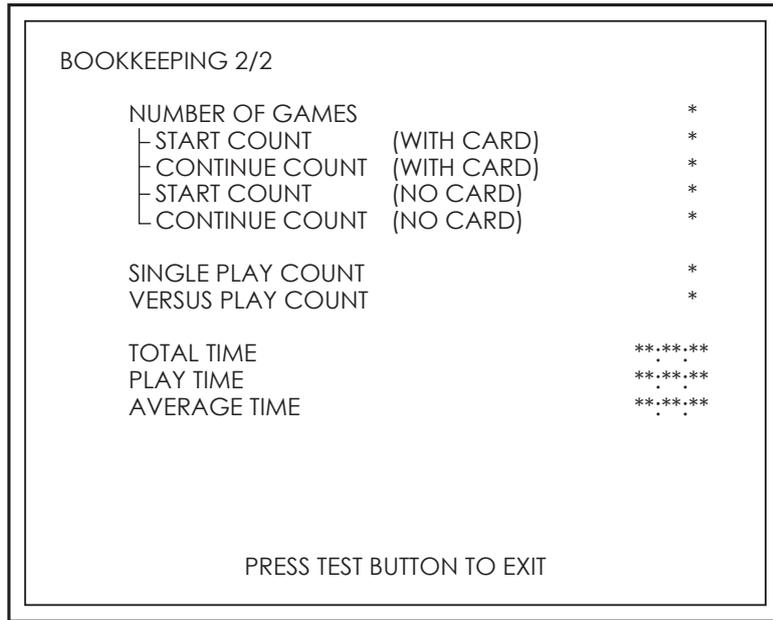
2-3-12 FIG. 02

4 Each item is explained below.

NUMBER OF GAMES	Total number of games played.
START COUNT (WITH CARD)	Total number of games started using an IC card. Not displayed when CARD SYSTEM is OFF. (Displayed as START COUNT with no differentiation between WITH CARD and NO CARD.) See "2-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.
CONTINUE COUNT (WITH CARD)	Total number of games continued using a card. Not displayed when CARD SYSTEM is turned off. (Displayed as START COUNT with no differentiation between WITH CARD and NO CARD.) See "2-3-4 GAME ASSIGNMENTS" for more information about CARD SYSTEM settings.
START COUNT (NO CARD)	Total number of games started without using a card.
CONTINUE COUNT (NO CARD)	Total number of games continued without using a card.
SINGLE PLAY COUNT	Number of times played in Single Player Mode.
VERSUS PLAY COUNT	Number of times played in Versus Mode.
TOTAL TIME	Amount of time the cabinet has been in operation.
PLAY TIME	Amount of time game has been played.
AVERAGE TIME	Average play time for one game.

5 Press the TEST Button to return to the GAME TEST MODE Screen.

9-3-11 BACKUP DATA CLEAR

Delete all game records (game scores and GAME TEST MODE BOOKEEPING data).

1 On the GAME TEST MODE screen, select BACKUP DATA CLEAR and press the TEST Button. The BACKUP DATA CLEAR screen appears.

```
BACKUP DATA CLEAR

            YES  (CLEAR)
     ->   NO  (CANCEL)












     SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```
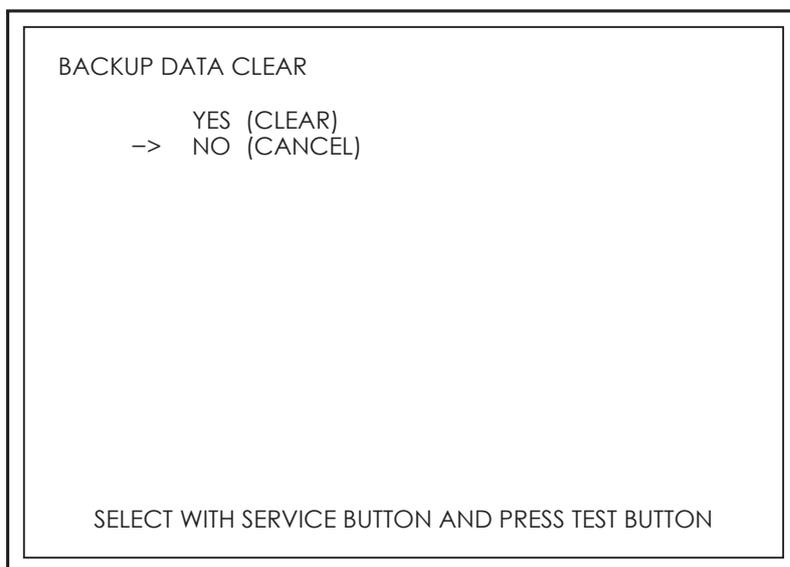
2-3-13 FIG. 01

2 Select item to either clear data or to cancel the function, and then confirm with the TEST Button.

YES (CLEAR)	All game records are cleared. After clearing, "COMPLETED" is displayed.
NO (CANCEL)	All game records are not cleared.

3 When YES (CLEAR) has been selected and the TEST Button pressed, all data is cleared. Then "COMPLETED" is displayed and press the TEST Button to return to the GAME TEST MODE screen. Move the cursor to NO (CANCEL) and press the TEST Button to return to the GAME TEST MODE screen without clearing the data.

```
BACKUP DATA CLEAR






               COMPLETED






          PRESS TEST BUTTON TO EXIT
```
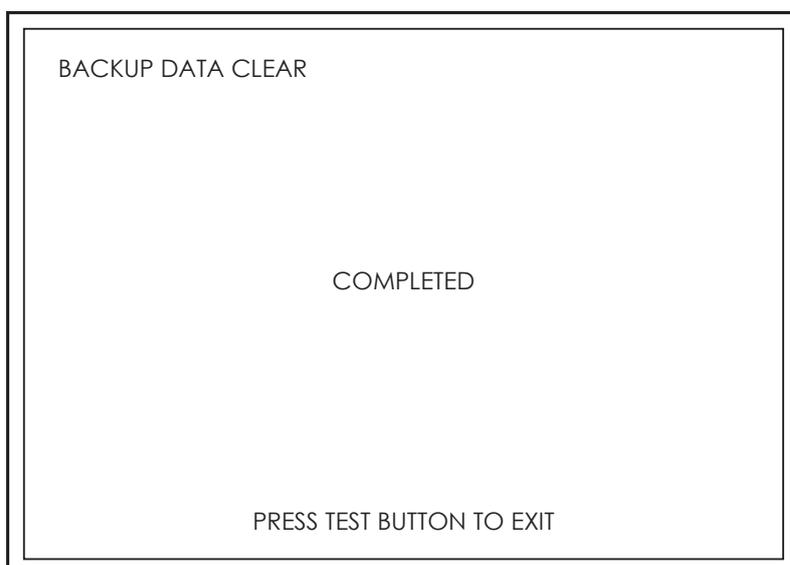
2-3-13 FIG. 02

9-3-12 DEFAULT SETTING

The DEFAULT SETTING option for each item allows you to restore all values and settings to their default.

1 For example, select DEFAULT SETTING on the GAME ASSIGNMENTS screen and press the TEST Button to display the DEFAULT SETTING screen.

```
GAME ASSIGNMENTS DEFAULT SETTING

        YES (DEFAULT SETTING)

  ->   NO (CANCEL)




        SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON
```
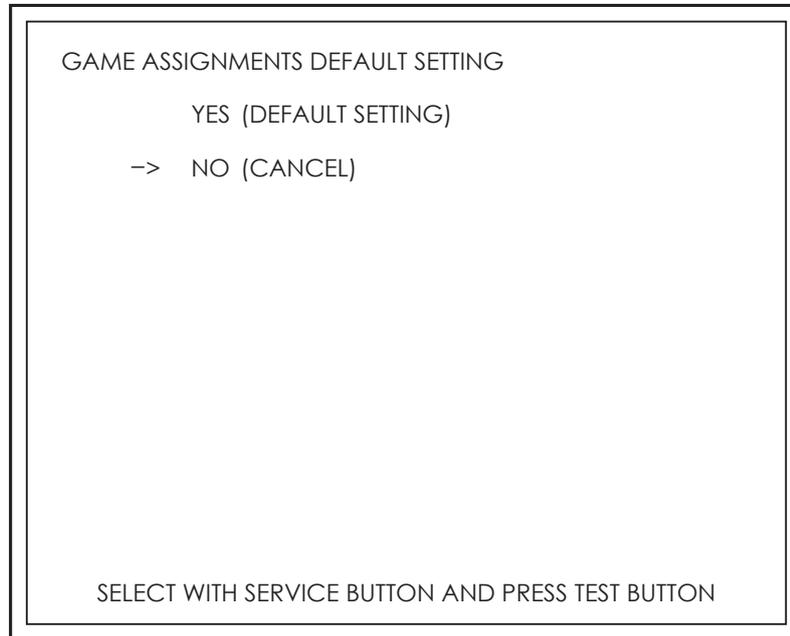
2-3-14 FIG. 01

2 Each item is explained below.

YES (DEFAULT SETTING)	Restore all game settings to their default.
NO (CANCEL)	Do not restore all game setting to their default.

3 Select YES (DEFAULT SETTING) and press the TEST Button to restore all settings to their default, and select NO (CANCEL) and press the TEST Button to return to the GAME ASSIGNMENTS screen.

10 CONTROL PANEL (HANDLE MECHA)

⚠ WARNING

- In order to prevent an electric shock and short circuit, be sure to turn power off before performing work by touching the interior parts of the product.

- Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a fire risk.

- Do not touch undesignated places. Touching places not designated can cause electric shock or short circuit.

- This work should be performed by the site maintenance individual or other skilled professional. Performing work by non-technical personnel can cause electric shock hazard.

- Do not perform work other than those specified in this Manual in order to prevent accidents during performing work and operation after performing work. Performing work not specified in this Manual may require special training for this product. If performing work other than those stated in this manual is required for repair, contact the offices herein stated in this manual or where you purchased the product from and ask for repair or inquire how to repair.

- Be very careful when soldering. Handling a soldering iron carelessly may result in a fire or a burn.

- Be extremely careful when heating the heat-shrinkable tube. Failure to do so may result in a fire or burns.

- Immediately after the game is finished, the motor may still be very hot. When performing the removal work, wait until the motor cools off.

- This unit is a heavy item weighing approximately 20kg (44.1 lb). Therefore, be very careful when performing the work. Use plural workers.

⚠ CAUTION

- Exercise extreme caution when handling the internal parts of the Control Panel. Watch out for damage, warping and loss. The loss of just one piece may result in damage to or lead to faulty operation of the entire unit.

- Be careful that your fingers do not get caught when opening and closing the control panel, adjusting the VR bracket, or performing other maintenance tasks.

- When securing the plastic-made parts, do not excessively fasten screws and nuts. Failure to observe this may damage the parts and cause injury due to fragments resulting from damage.

- Do not touch the steering wheel when switching on the unit. The steering wheel undergoes automatic initialization after the unit is switched on.

⛔ IMPORTANT

> **Be sure to perform volume's move value setting in the INPUT ASSIGNMENTS in the Game Test Mode after replacing or adjusting the Volume.**

In cases the Steering operability is poor and the adjustment of VOLUME SETTING in the TEST mode has no effect, the causes may be the volume gear's mesh failure and or volume malfunctioning.

Adjust volume gear mesh or replace the volume as per the following procedure.

In this product, when the steering wheel is moved fully left/right, if the volume shaft is rotating within the movable range, the volume is not feared to be damaged.

Secure the volume in the manner the volume shaft is oriented as shown and the gears are appropriately engaged when the steering wheel is in the centering position allowing the car to go straight forward.

10-1 REMOVING THE CONTROL PANEL

A 5 mm hexagonal wrench is required for the following procedure.

1 Turn off the power.

2 Remove 4 screws from both sides of the Control Panel's front part.

3 Remove 2 screws from underside of the Control Panel.

4 Wiring connectors are connected inside the Control Panel. Be careful not to damage any of the wiring, and carefully pull out the Control Panel.

5 Unplug the wiring connectors.
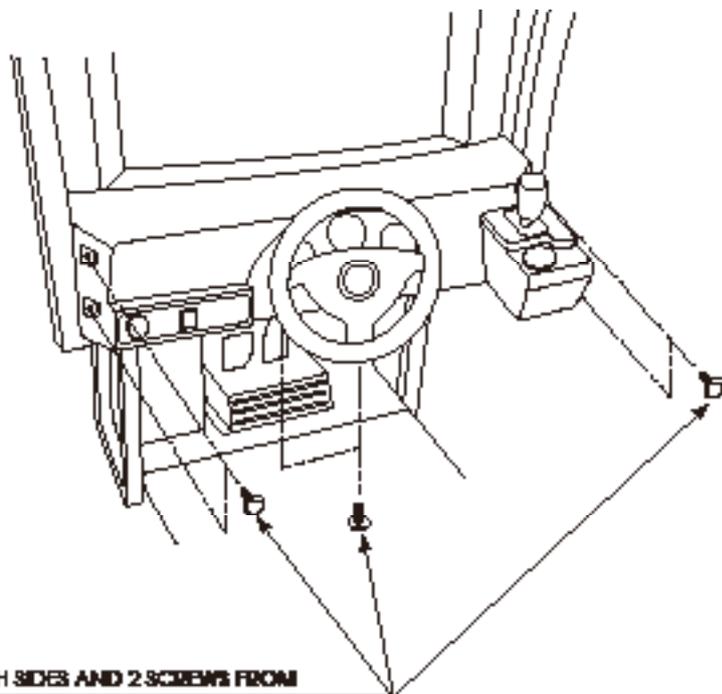
4 SCREWS FROM BOTH SIDES AND 2 SCREWS FROM
UNDERSIDE [TOTAL 6 SCREWS]

10-1 FIG. 01

10-2 ADJUSTING/REPLACING THE VOLUME

ADJUSTMENT PROCEDURE

1 Loosen the 2 screws that secure the VR Bracket and move the VR Bracket to adjust the angle and condition of the gear alignment.

2 Keeping the handle straight, align the gears so that the direction of the D Cut side of the V.R. Shaft matches that shown in the diagram.

3 Tighten the 2 screws and secure the VR Bracket.

4 Check to make sure the value on the Input Test screen is within the range 80H ± 8H when the steering unit is in the straight position.
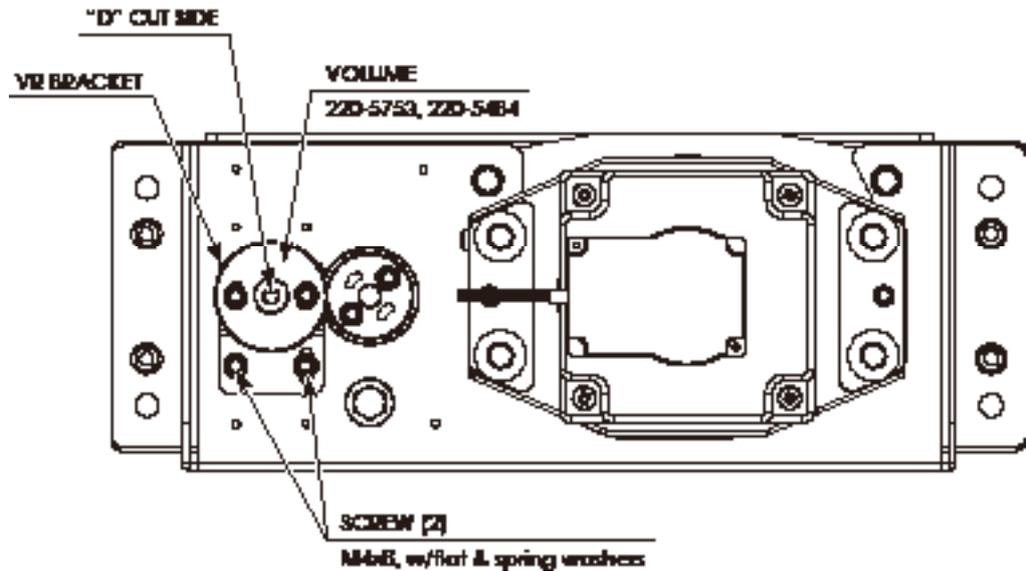
10-2 FIG. 01

REPLACEMENT PROCEDURE

This procedure requires the following tools: Phillips screwdriver for the M4 screws, 1.5 mm hexagonal wrench, 11-12 mm monkey wrench, nipper, cutter, wire stripper, soldering iron, industrial dryer and heat-shrinkable tube.

1 Remove the connectors.

2 Remove the 2 screws securing the VR Bracket and remove the entire Bracket and V.R.

3 Loosen the 2 hexagon socket screws on the Gear Holder and remove the Gear Holder.

4 Remove the nut securing the VR Bracket, then separate the Volume from the VR Bracket and replace it.

5 Check to make sure the value on the Input Test screen is within the range 80H ± 8H when the steering unit is in the straight position.
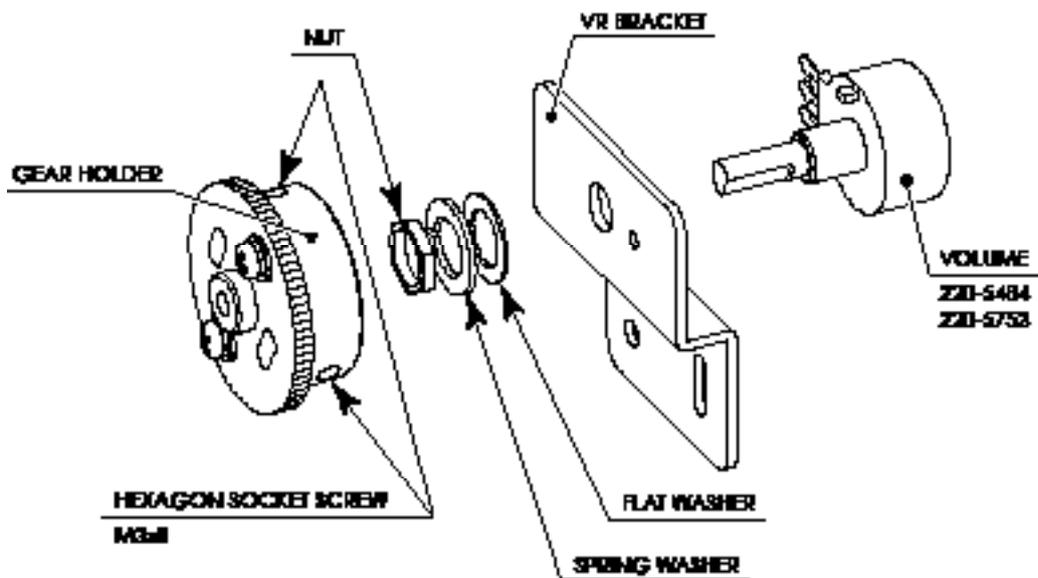
10-2 FIG. 02

🛑 **IMPORTANT**

- **Be sure to use the designated grease. Using undesignated grease can cause parts damage.**

- **Do not apply grease to locations other than as specified. Doing so may create a risk of operational problems and deterioration of parts.**

- **The designated periods for greasing serve only as a guide. Whenever there are squeaks or other anomalies, apply grease at designated locations.**

Use spray grease once every three months to grease up the gear mesh portion of the constituent parts.
Use "Grease Mate" (part number 090-0066) for the spray grease.

V.R. GEAR MESH PORTION
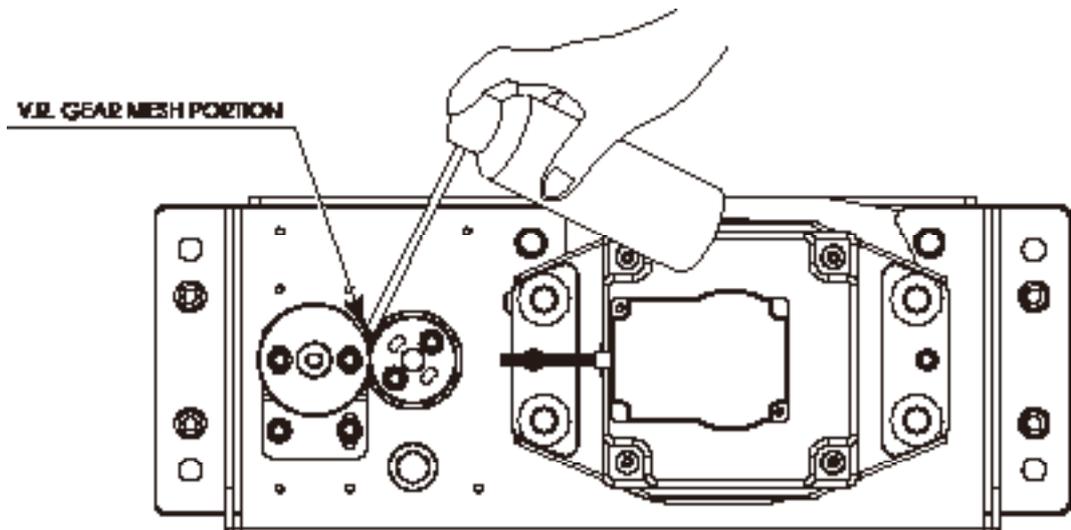
10-3 FIG. 01

11 SHIFT LEVER

In the Test Mode, if the SHIFT LEVER's SW can not be inputted satisfactorily, replace the Switch.
When performing the work, remove the Shift Lever Unit.

⚠ WARNING

- **When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.**

- **Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.**

11-1 REMOVING THE SHIFT LEVER

1 Turn the power off.

2 Remove 4 screws to lift the Shift Lever Unit.

3 Disconnect the connector to remove the Shift Lever Unit.

4 When reinstalling, follow the procedure opposite as when removing. At this time, ensure that "DOWN" display appears on the upper part as shown.

5 After reinstalling, be sure to check INPUT TEST in the Game Test mode.
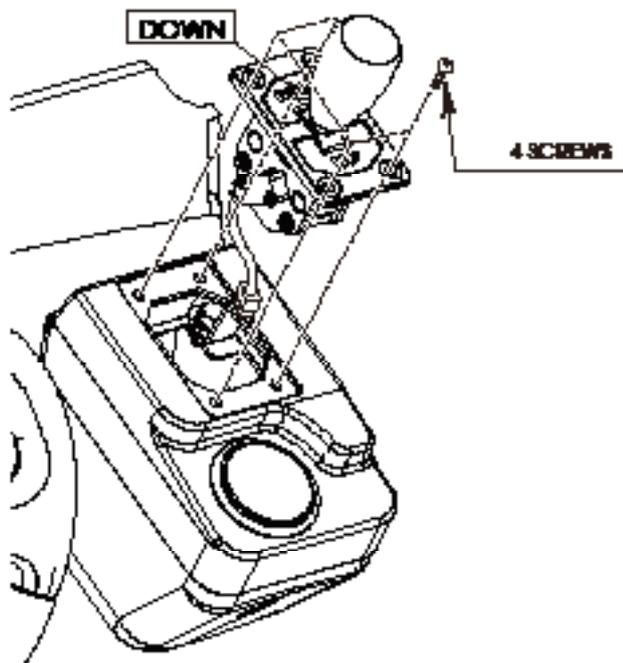
11-1 FIG. 01

11-2 SWITCH REPLACEMENT

1 Disconnect the wiring connector of the switch to be replaced.

2 Remove the 2 tapping screws to replace the Microswitch.

TAPPING SCREW [2]
M3x1 8

MICROSWITCH
SD9-5704
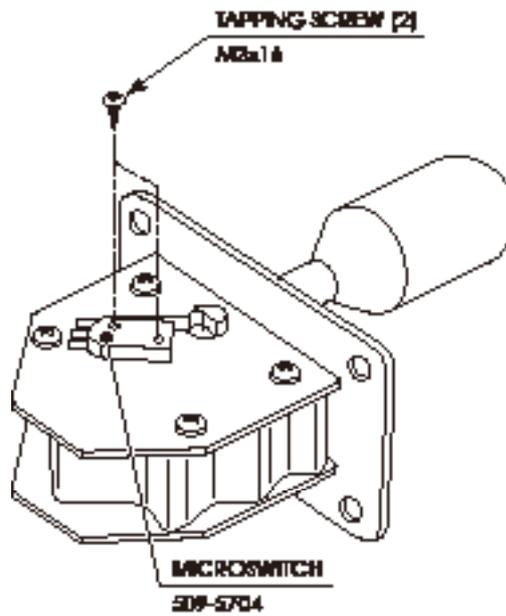
11-2 FIG. 01

🄸🄲 ACCELERATOR & BRAKE

⚠ WARNING

- **Always disengage the power before beginning work. Otherwise there could be an electric shock or short circuit. Note that when using TEST mode there will be electricity running through the machine. Do not touch any parts that are not specified in these directions.**

- **Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a risk of fire.**

- **Do not touch undesignated places. Touching places not designated can cause electric shock or short circuit.**

- **This work should be performed by site maintenance personnel or other skilled professionals. Work performed by non-technical personnel can cause a severe accident such as an electric shock.**

- **To prevent accidents while working or while operating the product after it has been installed, be sure not to conduct any procedures other than those given in this manual. If a procedure not given in this manual is required, request service from the office given in this manual or from the point of purchase.**

⚠ CAUTION

Do not touch the steering wheel when switching on the unit. The steering wheel undergoes automatic initialization after the unit is switched on.

🛑 IMPORTANT

Be sure to perform volume's move value setting in the INPUT ASSIGNMENTS in the Game Test Mode after replacing or adjusting the Volume.

When the accelerator and brake pedal do not operate properly, either the volume attachment position must be adjusted, or the volume must be replaced. Also, the gear alignment position and spring should be greased once every three months.

12-1 VOLUME ADJUSTMENT AND REPLACEMENT

The appropriate value for acceleration volume is under 30H when released and over C0H when stepped on.
The appropriate value for brake volume is under 30H when released and over C0H when stepped on.
Check Volume values in the TEST mode.
Since work is performed inside the energized cabinet, be very careful so as not to touch undesignated places.
Touching places not specified can cause electric shock or short circuit.
The following tools are required for the operations below: Phillips screwdrivers for M4 and M5, hexagon wrench with measuring distance of 1.5 mm, and thread sealant.

ADJUSTING PROCEDURE

1 Turn off the power.

2 Remove two truss screws, and remo the accelerator and brake.
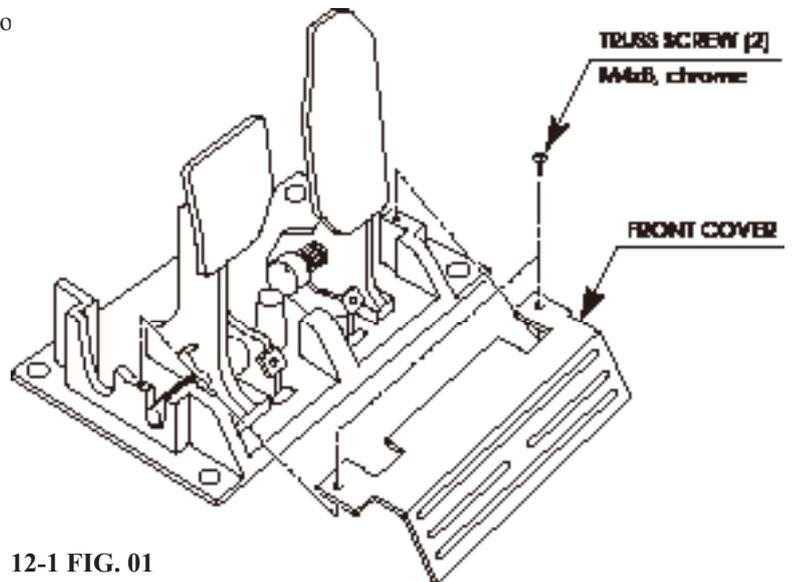
12-1 FIG. 01

3 Loosen the screw that secu and adjust the volume valu
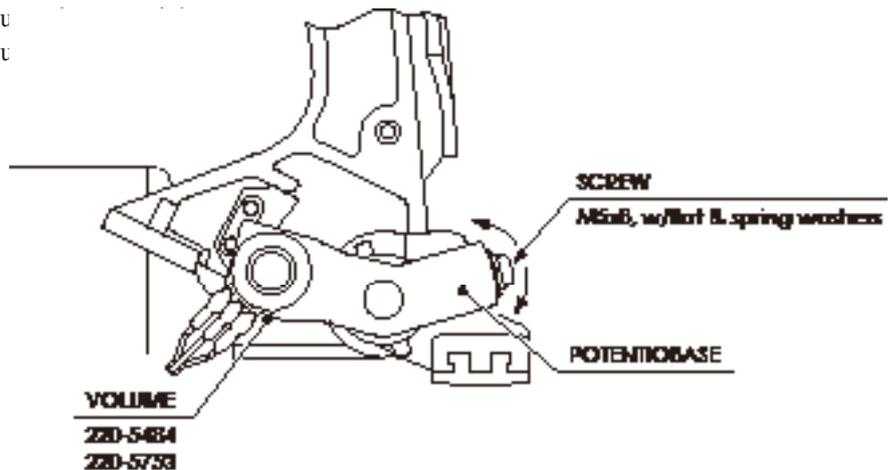
12-1 FIG. 02

4 Fasten the potentiobase.

5 On the INPUT ASSIGNMENTS Screen in the Game Test Mode, set the volume values.

6 Confirm that the values change smoothly by operating the pedal.

REPLACING THE VOLUME

1 Turn off the power.

2 Remove two screws, and remove the pote ...
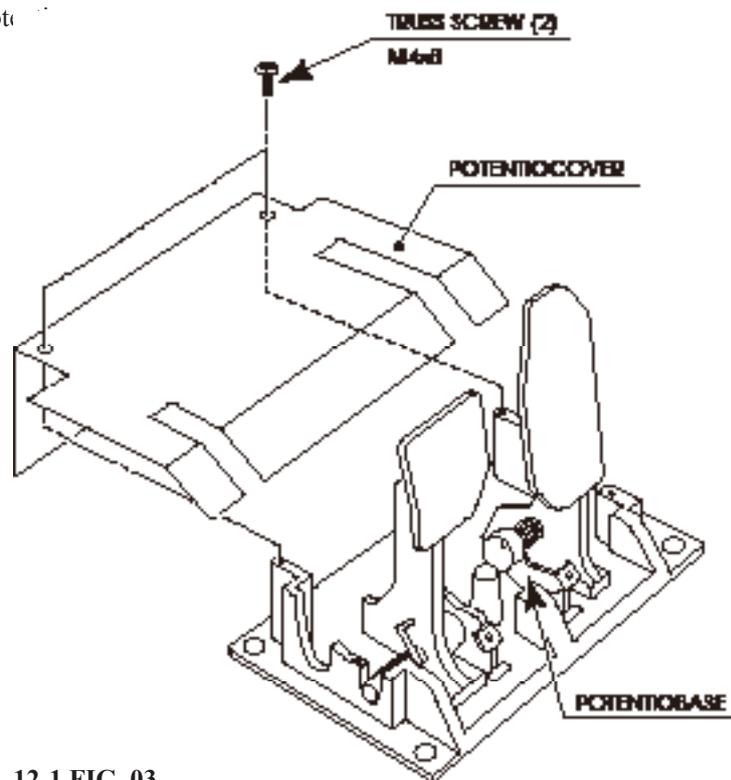
12-1 FIG. 03

3 Undo the connector of the volume to be replaced.

4 Remove the screw that fastens the potentiobase.

5 With the volume still attached, remove the potentiobase.

6 Remove the base and the gears, and replace the volume. When attaching the volume, use the thread locker.

7 After replacement, set the volume as described in the "Adjusting Procedure" section above.

8 After adjusting the setting, confirm that the values change smoothly by operating the pedal.

⊘ IMPORTANT

> Be sure to use the designated grease. Using undesignated grease can cause parts damage.

Grease the spring and gear alignment area once every three months.
Use GREASE MATE (PART No. 090-0066) as spray grease.
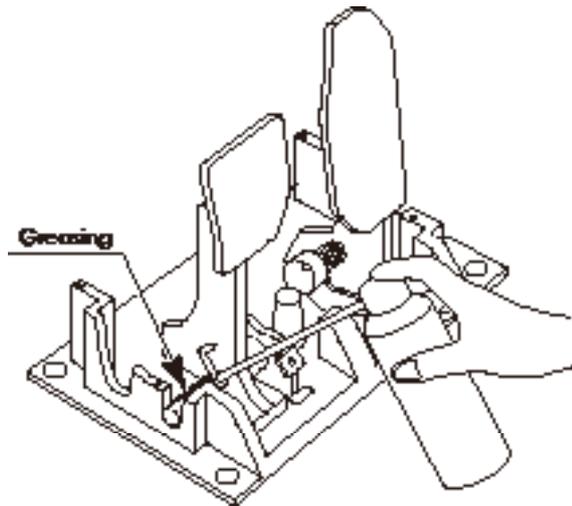
12-2 FIG. 01

13 MONITOR

13-1 CAUTIONS AND WARNINGS CONCERNING THE SAFETY FOR HANDLING THE MONITORS

Before handling the monitors, be sure to read the following explanations and comply with the caution/warning instructions given below. Note that the caution/warning symbol marks and letters are used in the instructions.

⚠WARNING   Indicates that handling the monitors erroneously by disregarding this warning may cause a potentially hazardous situation, which could result in death or serious injury.

⚠CAUTION   Indicates that handling the monitors by disregarding this caution may cause a potentially hazardous situation, which could result in personal injury and or material damage.

🚫   Indicates that access to a specific part of the equipment is forbidden.

🔌   Indicates the instruction to disconnect a power connector or to unplug.

⚠WARNING

- **When performing such work as installing and removing the monitor, inserting and disconnecting the external connectors to and from monitor interior and the monitor, be sure to disconnect the power connector (plug) before starting the work. Proceeding the work without following this instruction can cause electric shock or malfunctioning.**

- **Using the monitor by converting it without obtaining a prior permission is not allowed. SEGA shall not be liable for any malfunctioning and accident caused by said conversion.**

⚠WARNING

- **Primary side and Secondary side**

   The monitor's circuit which is divided into the Primary side and Secondary side, is electrically isolated. Do not touch the primary side, or do not touch both the primary side and the secondary side simultaneously. Failing to observe the instruction can cause electric shock and this is very dangerous. When making monitor adjustments, use a nonconductive driver and make adjustment without touching any part other than the Adjustment V. R. and knob. Also, be sure not to cause a short-circuit to the Primary side and Secondary side. If short-circuited, it can cause electric shock or malfunctioning, which is very dangerous.
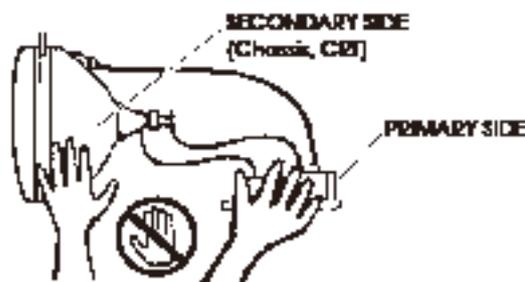
14-1 FIG. 01

<div style="border:box">

⚠WARNING

- **High-tension Voltage**
  Some of the parts inside monitor are subject to high-tension voltage in excess of 20,000 volts and very dangerous. Therefore, do not touch the monitor interior. Should soldering & paper wastes, etc. be mixed in the monitor interior, turn the power off so as not to cause malfunctioning or fire hazard.
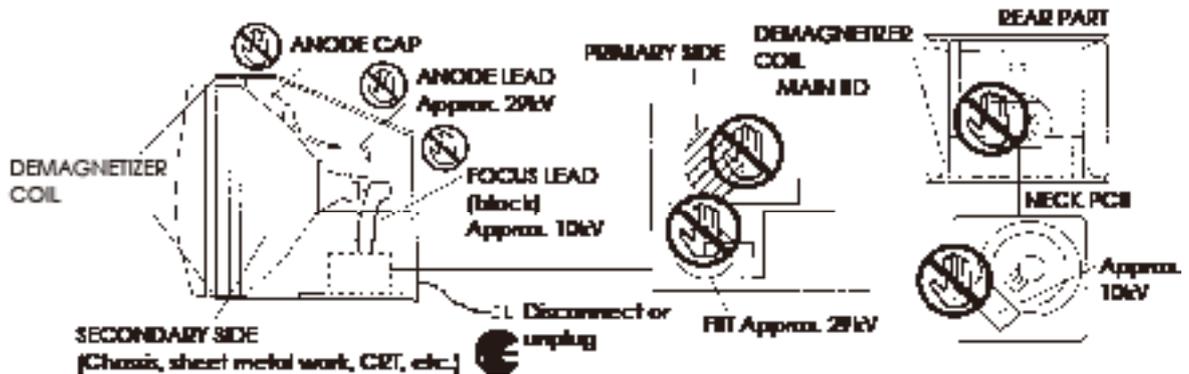
14-1 FIG. 02

- **Connecting the CRT and PCB**
  For combining the CRT and PCB, use the specified part No. to maintain the status of adjustments made at the factory. The anode of the CRT itself will be accumulatively charged as time elapses, generating high-tension voltage which is very dangerous. The monitor should be used with the Chassis, CRT and PCB assembled. When repair, etc. is required at the time of malfunctioning, be sure to send it in an "as is assembled" condition. If these are disassembled, what's charged to said high tension voltage can be discharged, causing a very hazardous situation. Therefore, under no circumstances should it be disassembled.

</div>

⚠CAUTION

- **Static Electricity**
  Touching the CRT surface sometimes causes you to slightly feel electricity. This is because the CRT surfaces are subject to static and will not adversely affect the human body.

- **Installation and removal**
  Ensure that the Demagnetizer Coil, FBT (Fly-Back Transformer), Anode Lead and Focus Lead are not positioned close to the sheet metal work's sharp edges, etc. and avoid damaging the insulated portions so as not to cause electric shock and malfunctioning. (For the name of parts, refer to the above Figures).

⚠ CAUTION

For the purpose of static prevention, special coating is applied to the CRT face of this product. To protect the coating, pay attention to the following points. Damaging the coating film can cause electric shock to the customers.

- **Do not apply or rub with a hard item (a rod with pointed edge, pen, etc.) to or on the CRT surfaces.**

- **Avoid applying stickers, seals, etc. on the CRT face.**

- **Do not remove aluminum foils from the CRT corners. Removing the aluminum foils can cause static prevention effects to be lowered.**

ALUMINUM FOIL
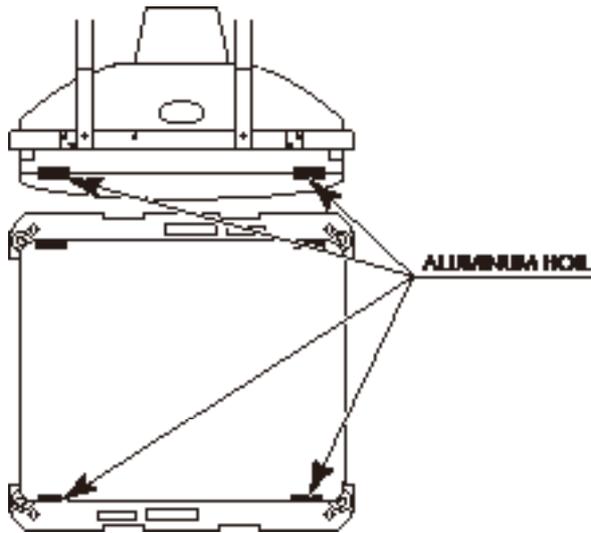
14-1 FIG. 03

13-2 CLEANING THE CRT SURFACES

> ### ⚠ CAUTION
>
> **Static preventive coating is applied to the CRT surfaces. When cleaning, pay attention to the following points. Peeling off of static preventive coat can cause electric shock.**
>
> - **Remove smears by using a dry, soft cloth (flannels, etc.). Do not use a coarse gauze, etc.**
>
> - **For smear removing solvent, alcohol (ethanol) is recommended. When using chemical detergent, be sure to follow instructions below:**
>   - **Dilute chemical detergent with water and dip a soft cloth in and then thoroughly wring it to wipe smears off.**
>   - **Do not use a chemical detergent containing an abradant, powder or bleaching agent.**
>   - **Do not use alkaline chemical detergents such as "glass cleaner" available on the market or solvents such as thinner, etc.**
>
> - **Do not rub or scratch the CRT face with hard items such as brushes, scrub brush, etc.**

Clean the CRT surfaces once a week. When cleaning, pay attention to the above caution so that the antistatic coating will not come off.

13-3 ADJUSTMENT PROCEDURE

> ### ⚠WARNING
>
> - **Monitor adjustments have been made at the time of shipment. Therefore, do not make further adjustment without a justifiable reason. Adjusting the monitor which contains high tension parts is dangerous work. Also, an erroneous adjustment can cause deviated synchronization and image fault, resulting in malfunctioning.**
>
> - **Be sure to perform appropriate adjustment of the monitor (projector). For operation of this machine, do not leave monitor's flickering or deviation as is. Failure to observe this can cause to worsen the players' or the customers' physical conditions.**
>
> - **Do not touch undesignated places. Touching places not designated can cause electric shock or short circuit.**

To make monitor adjustment, take off back cover removing 11 screws.
The adjustment board appears when the back cover is open.

11 SCREWS

CRT ADJUSTMENT PANEL
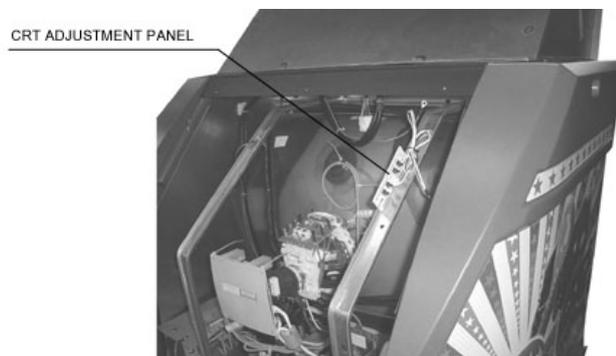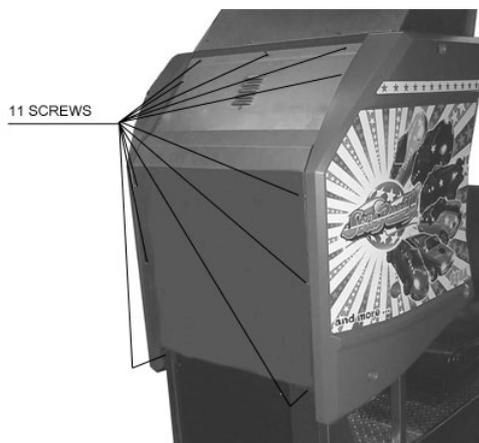
This product's monitor is SANWA 29PFX (Sega part#: 99-60-718). For adjustment method, carefully read and carry out the following. With this product, the hue of each color cannot be adjusted.

There are 4 buttons to operate the adjustment.
Pressing FUNCTION button displays the menu screen.

CONT   : adjusts image contrast.
             With the UP button, it becomes deep and becomes light with the DOWN button.

BRIT   : adjusts the on-screen image brightness.
             With the UP button, it becomes bright and becomes dark with the DOWN button.

HSIZ   : adjusts the horizontal image size.
             With the UP button, it becomes large and becomes small with the DOWN button.

HPOS   : adjusts the horizontal image's position.
             With the UP button, it moves to the left and moves to the right with the DOWN button.

VSIZ   : adjusts the vertical image size.
             With the UP button, it becomes large and becomes small with the DOWN button.

VPOS   : adjusts the vertical image's position.
             With the UP button, it moves upwards and moves downwards with the DOWN button.

- When pressing the DEGAUSS button, degaussing is performed.
  Once degaussed, it takes 30 minutes or longer to have degaussing function agai.

14 FLUORESCENT LIGHT/OTHER LAMPS REPLACEMENT

⚠ WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.

- You may get burned by a hot fluorescent lamp or other lamps. Pay full attention to the lamps when performing the work.

- Be sure to use lamps of the designated rating. Using lamps of undesignated rating can cause a fire or malfunctioning.

- There is the danger of short circuits or smoke generation due to deterioration of insulation in lighting fixtures resulting from age deterioration. Check for anomalies such as the following: Does it smell like something is burning? Is there socket discoloration? Are any lamps being replaced frequently? Do lamps not go on properly?

⚠ CAUTION

- Be careful when handling the plastic parts. Failure to observe this may cause injury or damage due to fragments, etc.

- Do not attempt to replace billboard fluorescent lamps while standing on the base. If you should misstep while working, you could stumble or fall down.

Billboard Fluorescent Light

1 Turn off the power.

2 Remove the 4 screws then remove the front billboard plate.

4 SCREWS

3 Remove a clamp taking a screw out and remove a red CCFL from each left and right side.

REMOVE A CLAMP TAKING 1 SCREW OFF FROM EACH LEFT AND RIGHT SIDE
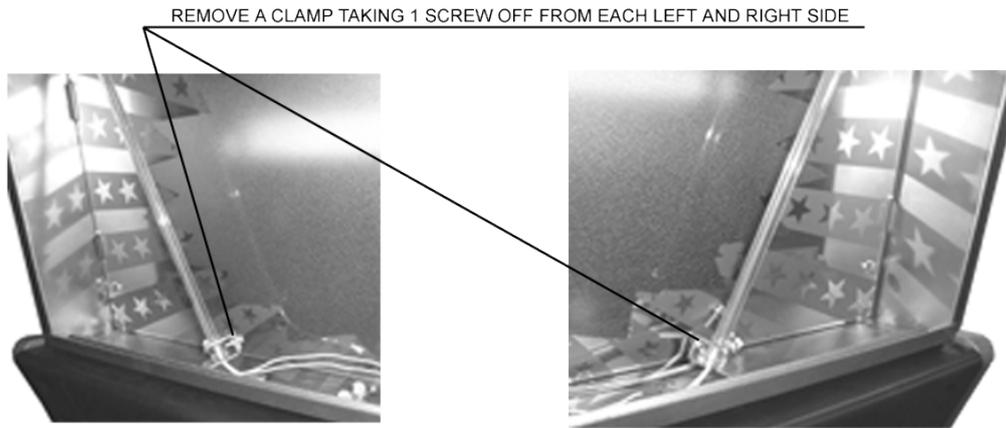
4 Remove the back marquee plate and replace the fluorescent light and glow lamp.
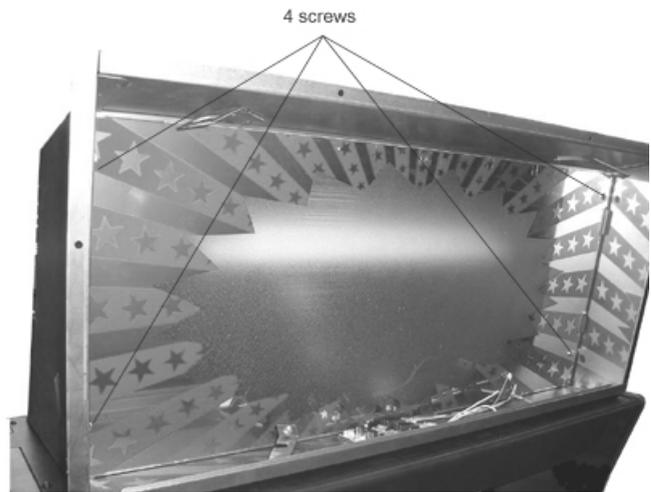
4 screws

Start Button Lamp, View Change Button Lamp

1 Turn off the power.

2 **Remove 4 screws.**
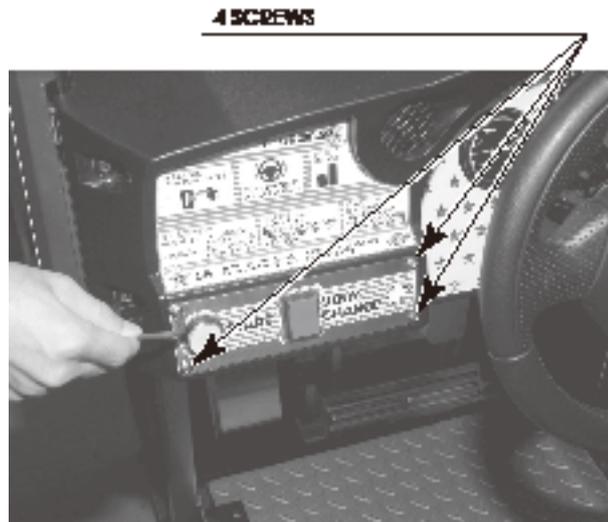
3 Remove the Switch Plate. The Switch Plate contains wiring connections. Disconnect the connector, taking care not to damage the wiring.
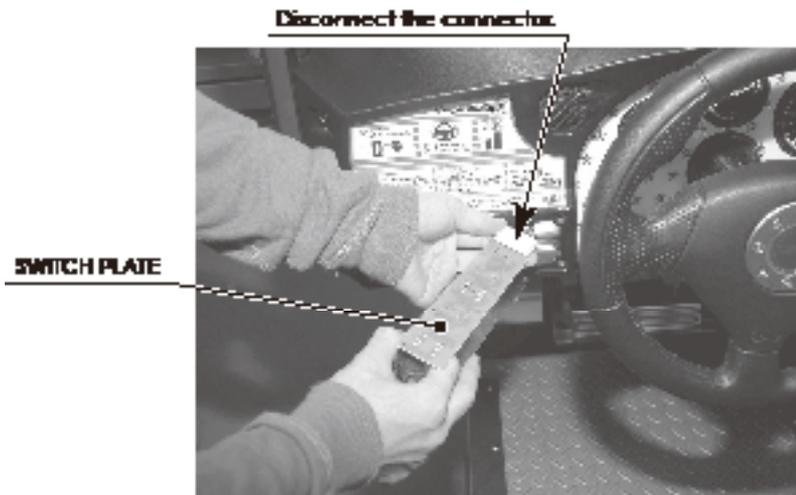
4 There is a metal fitting at the base of the buttons on the Button Plate. Rotate this metal fitting to unlock it, then remove the printed circuit board from the Button Plate.

BUTTON PLATE

Unlock.

PRINTED CIRCUIT BOARD
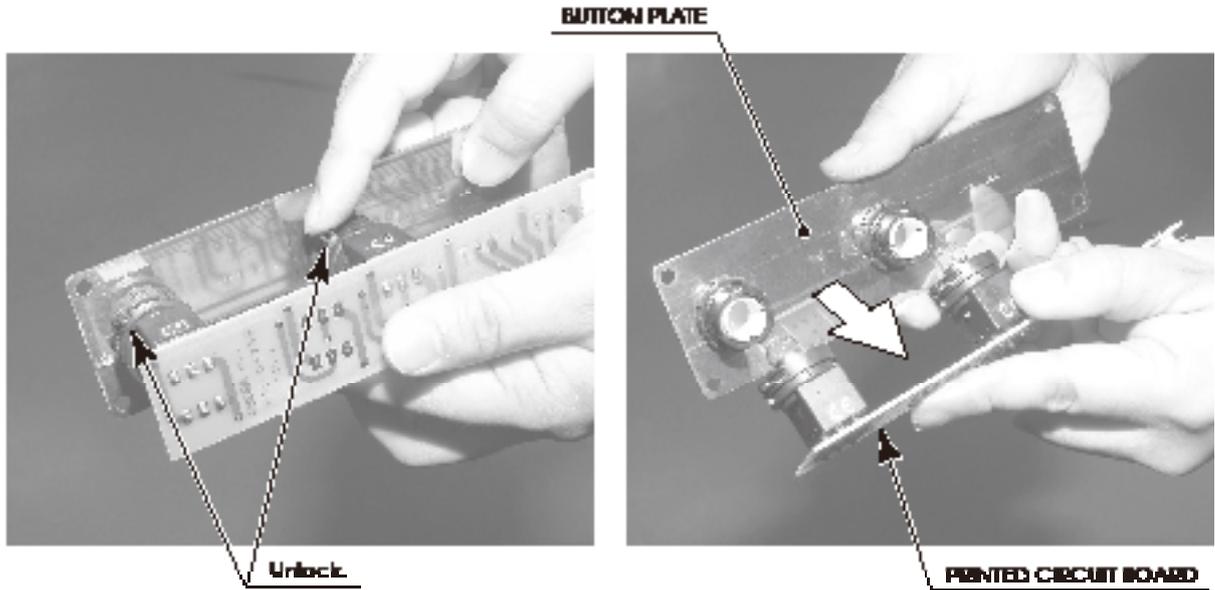
5 **Press and turn the lamp counter-clockwise to remove it.**

LAMP 6.3V 1W
3N0-5445-01
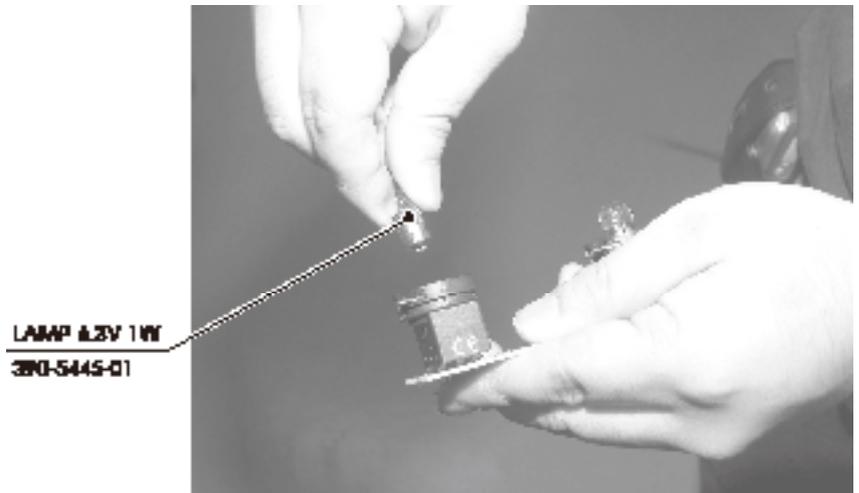
15 PERIODIC INSPECTION

The items listed below require periodic check and maintenance to retain the performance of this machine and to ensure safe business operation.
When handling the controller, the player will be in direct contact with it. In order to always allow the player to enjoy the game, be sure to clean it regularly. Also, it is advisable to provide wet tissue, etc. available for player use.

⚠ WARNING

- Once a year, check to see if power cords are damaged, the plug is securely inserted, dust is accumulated between the socket outlet and the power plug, etc. Using the product with accumulated dust in the interior may cause fire or electric shock.

- Never use a water jet, etc. to clean the inside and outside of the cabinet. If wetness occurs for any reason, do not use the product until it has completely dried.

- Once a year, request the office shown on this manual or the dealer from whom the product was originally purchased to perform the internal cleaning. Using the product with accumulated dust in the interior may cause fire or other accidents. Note that you are liable for the cost of cleaning the interior parts.

- There is the danger of accidents involving electrical shorts circuits or fire caused by factors such as the deterioration of insulation in electrical and electronic equipment over time. Check that there are no abnormalities such as odors from burning.

---

16 TABLE 01 PERIODIC INSPECTION TABLE

ITEMS	DESCRIPTION	PERIOD
CABINET	Confirm that adjusters contact floor	Daily
CONTROL PANEL	Volume inspection	Monthly
	Gear alignment inspection	Every 3 months
	Greasing	Every 3 months
SHIFT LEVER	Switch inspection	Monthly
	Greasing	Every 3 months
ACCELERATOR & BRAKE	Volume inspection	Monthly
	Gear and spring potion greasing	Every 3 months
MONITOR	Screen cleaning	Weekly
	Confirm settings	Monthly or when moving
COIN CHUTE DOOR	Coin switch inspection	Monthly
	Coin insertion test	Monthly
	Selector cleaning	Every 3 months
SEAT	Greasing to the seat rail	Every 3 months
GAME BD	Memory Test	Monthly
	Confirm settings	Monthly
POWER CABLES	Inspection, Cleaning	1 year
INTERIOR	Cleaning	1 year
CABINET SURFACES	Cleaning	As appropriate

Cleaning the Cabinet Surfaces

When the cabinet surfaces are badly soiled, remove stains with a soft cloth dipped in water or diluted (with water) chemical detergent and squeezed dry. To avoid damaging surface finish, do not use such solvents as thinner, benzine, etc. other than ethyl alcohol, or abrasives, bleaching agent and chemical dustcloth.
Some general-purpose household, kitchen and furniture cleaning products may contain strong solvents that degrade plastic components, coatings, and print. Before using any cleaning product, read the product's cautionary notes carefully and test the product first on a small area that is not highly visible.

Seat (Greasing to Seat Rail Portion)

Move the Seat to the rearmost position and apply spray greasing to the portion shown at the right once every 3 months by using NOK KLUBER L60 or GREASE MATE SEGA PART No. 090-0066.
After greasing, move the Seat a few times forward and backward so as to allow the grease to be applied all over uniformly.
Be sure to wipe grease which attaches to the surfaces of the PROTECT RUBBER on the Seat Rail, or any excess grease.

16 TROUBLESHOOTING

16-1 TROUBLESHOOTING (WHEN NO ERROR MESSAGE IS SHOWN)

⚠ WARNING

- In order to prevent electric shock and short circuit, be sure to turn power off before performing work.

- Be careful so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.

- After removing the cause of the functioning of the Circuit Protector, reinstate the Circuit Protector. Depending on the cause of the functioning, using the Circuit Protector as is without removing the cause can cause generation of heat and fire hazard.

- In the event that a problem cannot be resolved by employing the procedures listed in this Manual, be sure to request service from the office shown on this Manual or the dealer from whom the product was originally purchased. Attempts to employ procedures other than those specified in this Manual can cause electrical shock, shorting, or fire.

- In the event of a problem that is not described here, be sure to contact the office shown on this Manual or the dealer from whom the product was originally purchased. Careless attempts at repair can result in electrical shock, shorting, or fire.

If a problem occurs, first check to make sure that the wiring connectors are properly connected.

17 TABLE 01

PROBLEM	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine is not activated.	The power is not ON.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	The Circuit Protector functioned due to momentary overcurrent.	After eliminating the cause of overload, have the Circuit Protector of the AC Unit restored.
	The fuse of the connect board was blown out due to momentary overcurrent.	After eliminating the cause of overload, replace the specified rating fuse.
Fluorescent lamp inside FL box doesn't light up.	Connector connection fault.	Check connector connections between the Cabinet and the FL box.
	Fluorescent lamp and glow lamp need replacement.	Replace the fluorescent lamp and the glow lamp.
Sound is not emitted.	Sound volume adjustment is not correct.	Adjust the Switch Unit's sound adjustment volume.
	Faulty connections for various connectors.	Check the connections for the game board, amp, speakers and Volume connectors.
	Malfunctioning BD, amp and speaker.	Perform Sound Test. <See System Test Mode in LINDBERGH Service Manual.>

| Sounds are emitted and the lamps are lit, but the screen is black.	Faulty connections for the visual signal connector or the monitor power connector.	Check the connections for the monitor and game board connectors.
	Broken monitor.	Contact the company from whom the unit was purchased.
Irregular/uneven colors on the monitor screen.	Magnetization to the CRT.	Press the Demagnetization switch on the switch unit.
Colors on the monitor screen are strange.	Faulty connection for the visual signal connector.	Check the visual signal connector connection and make sure it is secured properly.
	Screen adjustment is not appropriate.	Make adjustment appropriately.
The on-screen image sways and/or shrinks.	The power source and voltage are no correct.	Make sure that the power supply and voltage are correct.
Does not accept input from any switch or volume.	Faulty connector connections.	Check the connection for the I/O Board and Cabinet connector.
		Check the power for the I/O Board.
Does not accept input from the Shift Lever.	Faulty connector connections.	Check the connections for the connectors in the Control Panel and between the Control Panel and the Cabinet.
	Broken Microswitch.	Replace the Microswitch. <Microswitch 509-5704>
Steering (Servomotor) response is incorrect.	Incomplete power on check.	Power on and verify that the power on check completes properly.
	Deviation of the volume value.	Adjust the volume value in the Test Mode.
	Volume gear engagement fault.	Adjust the engagement of the gear.
	Volume malfunctioning.	Replace the volume.
	Detached wires.	Check for faulty wire connections around moving parts. When replacing wires, secure them so that they do not touch any moving parts.
No response from Steering (Servomotor).	Failure of power-on checking procedure.	Reconnect the power and complete a power-on checking procedure.
	Faulty connector connections.	Check the connections for the connectors between the Game Board and Servodriver and between the Servodriver and the Servomotor.
	Thermal element in the Servodriver is operating.	Occurs when the internal temperature reaches 70°C (158°F) and corrects automatically when the unit cools.
	Momentary overload caused a fuse on the Servodriver to blow.	Contact the company from whom the unit was purchased.
Steering (Servomotor) is weak in its force feedback.	Aging of the force feedback mechanism.	Reset in the Test Mode. <See Chapter 9.>

The accelerator or brake does not perform appropriately.	Incorrect volume setting.	Adjust the volume value in the Test Mode.
	Faulty Volume attachment or adjust gear alignment.	Adjust the volume attachment and verify in Test Mode.
	Faulty connector connection.	Check the connections for the accelerator and brake connectors and the connectors between the accelerator, brake and cabinet.
	Failure of the volume.	Replace the volume.
Start button and View Change button input does not work and they do not flash.	Faulty connector connections.	Check the connections for the connectors between the I/O Board, the cabinet and the control panel and those inside the control panel.
Start button and View Change button input works, but they do not flash.	Unverified settings or operation.	The Start button only flashes when Free Play is set. Check the operation in Test Mode.
	The lamp is burnt out.	Replace the lamp.
Failure of the network play.	Network play is wrongly set.	Reset correctly.
	Communication cables are disconnected. Communication cables are wrongly connected.	Reconnect the cables.
	Damage of communication cables.	Reconnect the cables correctly. Replace the cables. Contact the company from whom the unit was purchased.

Replacing Fuses

⚠WARNING

- In case fuse replacements other than those stated in this manual are necessary, contact where you purchased the product from for inquiries regarding this matter.

- In order to prevent an electric shock, be sure to turn power off and unplug from the socket outlet before performing work by touching the internal parts of the product.

- Be careful so as not to damage wirings. Damaged wiring can cause electric shock and short circuit accidents.

- Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause fire and electric shock accidents.

- After eliminating the cause of the blowing of fuse, replace the fuse. Depending on the cause of fuse blowing, continued use with the fuse as is blown can cause generation of heat and fire hazard.

Fuses are located on the AC power plate on the back of the cabinet and on the transformer inside upper back lid..

FUSE 125V 8A

FUSE 250V 8A
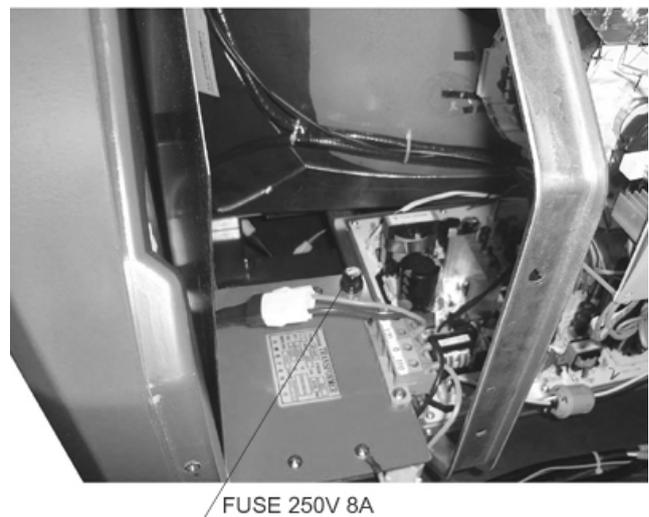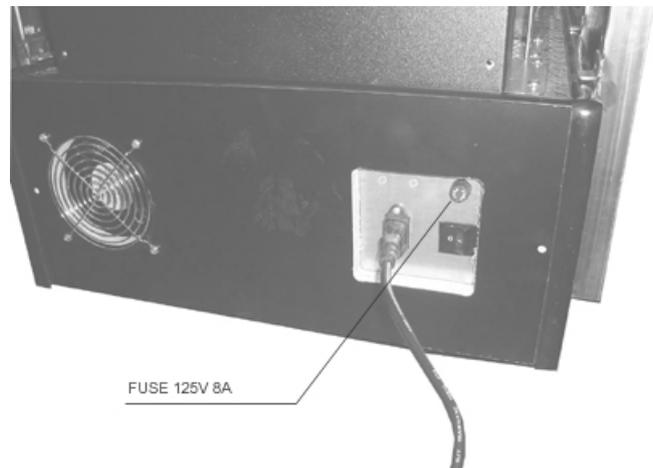
16-2 ERROR MESSAGES

This product displays the following messages when it detects an error. Read the error description and follow the steps indicated. Refer to the LINDBERGH Service Manual for details on error messages displayed with the LINDBERGH logo.

Error 11
JVS I/O board is not connected to main board.

> The I/O board and the LINDBERGH have been disconnected.
> Check to make sure the I/O board and the LINDBERGH are properly connected.

Error 12
JVS I/O board does not fulfill the game spec.

> The number of I/O boards are not sufficient to run the application.
> Check to make sure the I/O board and the LINDBERGH are properly connected.

Error 15
Game Program Not Found.

> The key chip intended for the application is not connected or is loose.
> Check to make sure the key chip and the LINDBERGH are properly connected.

Error 1000
Network is Disconnected.

> Communication has been broken.
> This occurs when the packet does not arrive in a specific amount of time.
> Check to make sure the network devices of all the cabinets are properly connected.
> See the NOTE below.

Error 1001
MAIN-Cabinet Not Found.

> The main cabinet (CABINET ID 1) was not found when the application was started or a timeout occurred while waiting for communication. Communication will time out after approximately 2 minutes.
> - In GAME TEST mode, check to make sure the main cabinet (CABINET ID 1) is properly set up.
> - In the case of a time out, turn the power to all the connected cabinets off and then on again.

Error 1002
SUB-Cabinet Not Found.

> The sub cabinets (CABINET ID 2-4) were not found when the application was started or a timeout occurred while waiting for communication. Communication will time out after approximately 2 minutes.
> - In GAME TEST mode, check to make sure the sub cabinets (CABINET ID 2-4) are properly set up.
> - In the case of a time out, turn the power to all the connected cabinets off and then on again.

Error 1003
Same CabinetID Found.

> The connected cabinets have the same CABINET ID.
> In GAME TEST mode, set the CABINET IDs making sure that they are all different.

Error 1004
Network has not been initialized.

> The network has not been initialized.
> Check to make sure the network device on the LINDBERGH is functioning properly.

Error 1005
Network cannot use.

> The network cannot be used.
> Check to make sure the network device on the LINDBERGH is functioning properly.

NOTE: This game is set up so that if one cabinet comes up with the message, "Error 1000 Network is Disconnected," the same message will appear on all the other cabinets as well. To recover the connection, check the network devices connecting the cabinets, and then turn the power off to all the cabinets showing the error and then on again.

17 GAME BOARD

> ## ⚠WARNING
>
> - **In order to prevent electric shock and short circuit hazards, be sure to turn power off before performing work.**
>
> - **Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a fire risk.**
>
> - **When replacing or repairing the game board and then returning it to the cabinet, be sure to reconnect all the connectors correctly. Improper connection may cause electric shock, short circuit or fire.**
>
> - **When connecting the connector, check the orientation carefully and connect securely. The connector must be connected in the proper direction. If it is connected in the wrong direction or indiscriminately at an incline so that a load is applied, the connector or its terminal pins could break, causing a short circuit or fire.**
>
> - **No connectors other than those connected on the game board when first delivered can be used b this product. Do not connect any other wires to any of the unused connections. This may lead to the generation of heat, smoke or burn outs.**

> ## ⚠CAUTION
>
> **In this product, setting changes are made during the test mode. The game board need not be operated. Use the game board, etc. as is with the same setting made at the time of shipment so as not to cause electric shock and malfunctioning.**

17-1 REMOVING THE LINDBERGH

1 Turn off the power.

2 Remove 2 truss screws and pull out the PCB base..
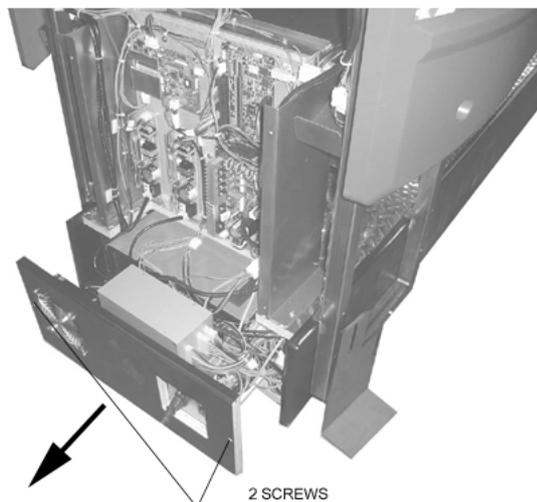
2 SCREWS

3   Remove all connectors connecting to the game board.

REMOVE ALL CONNECTORS

4   Remove 4 screws and remove the game board.

17-2 COMPOSITION OF THE GAME BOARD

(STOP) IMPORTANT

- **The game board becomes the game board for this product once the key chip is inserted.**

- **The DIP SW (dip switches on the board must be set as specified below. If set incorrectly for this product, an error will be displayed and the game will not run.**
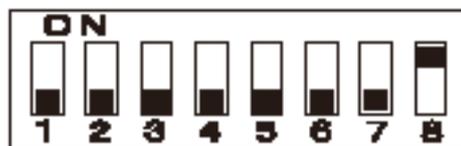
ASSY CASE LBG L 1GB RTV (844-0019D-01) <USA>

BOARD NUMBER STICKER

DIP SW

KEY CHIP
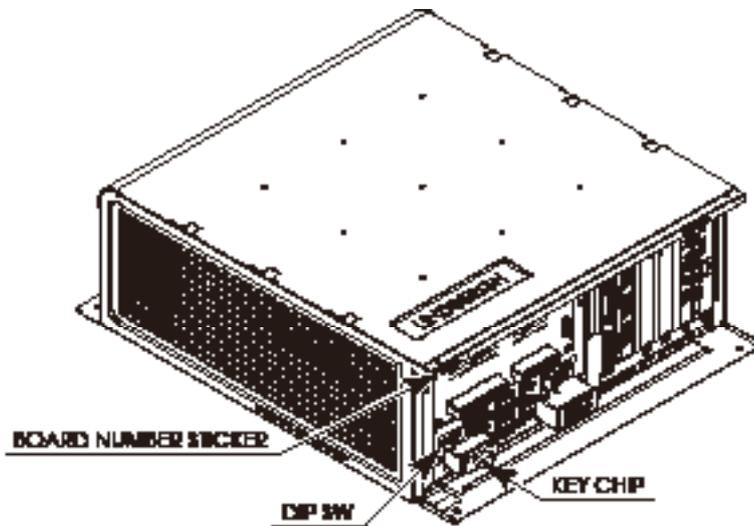
18-2 FIG. 01

DIP SW Setting

Use this product with the DIP SW settings shown in the figure below.

ON
1 2 3 4 5 6 7 8

18-2 FIG. 02

18 COMMUNICATION PLAY

For this game, up to 4 machines can be connected to allow up to 4 players to play simultaneously. In this instance, connecting the communication cable and setting for the communication play are required.

18-1 INSTALLATION PRECAUTIONS

<table>
<tr><td align="center">⚠ WARNING</td></tr>
<tr><td>

- **Before starting to work, ensure that the Power SW is OFF. Failure to observe this can cause electric shock or short circuit.**
- **Use care so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.**
- **Do not touch undesignated places. Touching places not designated can cause electric shock or short circuit.**
- **The work described below should be carried out by the site maintenance personnel or other qualified professional. Work carried out by personnel without the necessary skill or technology can cause accident.**
- **To perform work safely and avoid serious accident such as the cabinet falling down, do not perform work in places where step-like grade differences, a ditch, or slope exist.**
- **To prevent accidents while working or while operating the product after it has been installed, be sure not to conduct any procedures other than those given in this manual. There are cases in which procedures not covered in this manual require special tools and skills. If a procedure not given in this manual is required, request service from the office given in this manual or from the point of purchase.**

</td></tr>
</table>

<table>
<tr><td align="center">⚠ CAUTION</td></tr>
<tr><td>

- **To perform work safely, be sure to secure the space corresponding to number of machines to be linked. Failure to observe this can cause accident.**
- **To avoid accidents, use a cable cover that will not cause patrons to trip when laying network cables in areas of heavy foot traffic.**
- **To prevent accidents and acts of vandalism, cover the network cables with the strongest cover possible.**

</td></tr>
</table>

Since 2 or more machines are to be linked, sufficient power corresponding to the number of machines used need to be supplied. Note that as a standard, the per machine capacity should be 7 A for the 100-120 V area.

Distance between Machines

The maximum distance between the game machines depends on the length of the cables connecting them, but make sure the units are separated from each other by at least 70 cm (27.6 in) so that players can pass between them. Do not install more than the designated number shown in the layout diagram.
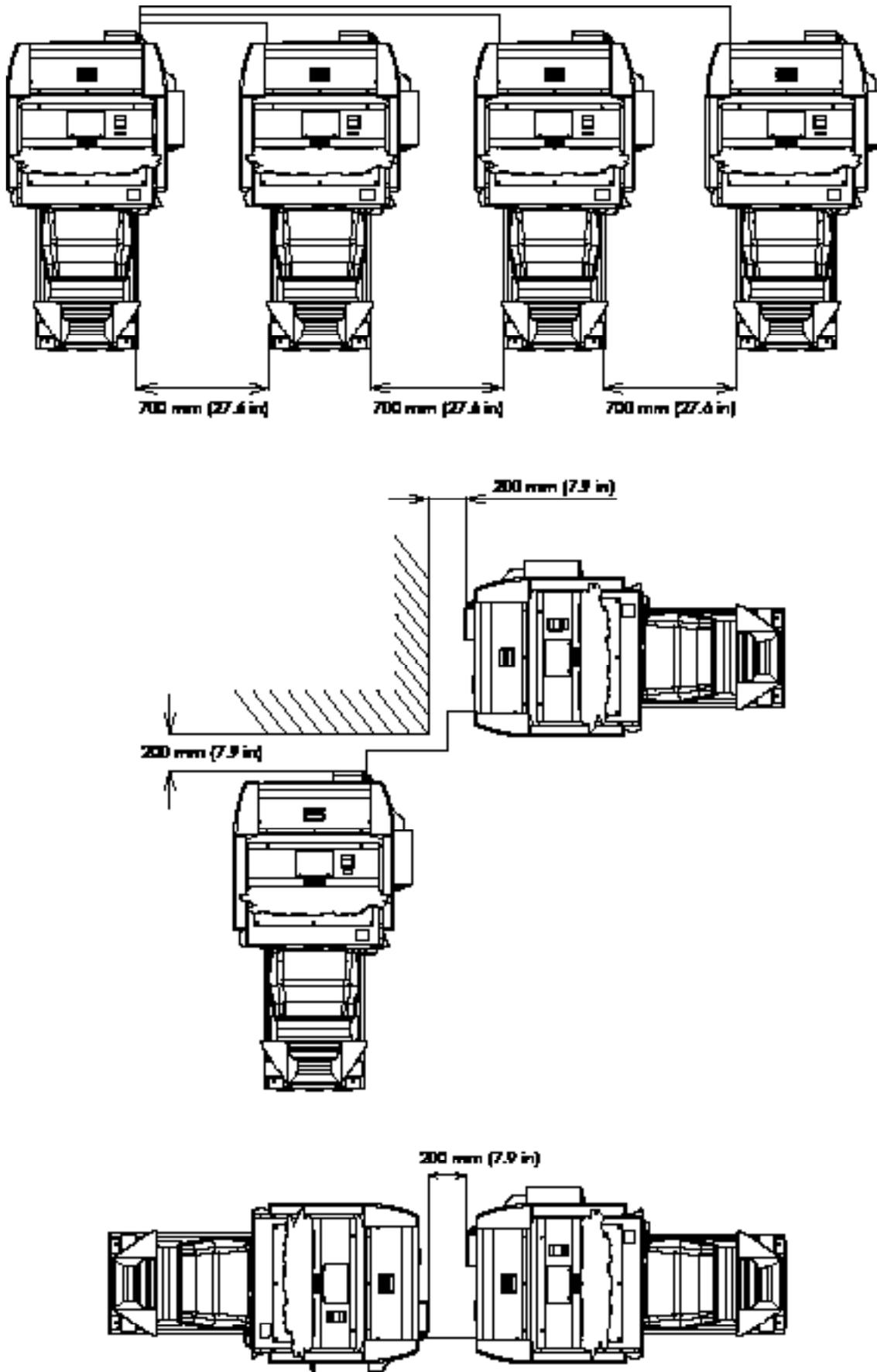
19-1 FIG. 01

18-2 CONNECTING THE COMMUNICATION CABLE

This game can be linked up to 4 units.

(For 2 units link play)
The LAN ports on the game boards in both unit must be connected with network (LAN) cable.

(For 3 or more units link play)
The hub is necessary to enable 3 or more units link play, but it is not included in the unit.
It must be prepared separately. (It is available at SEGA as an optional part (part#: 601-11351), if necessary)

Then the LAN port on the game board in each unit must be connected to the hub with network (LAN) cable.

18-3 NETWORK PLAY SETTINGS

Each of the linked machines must be set up for network play. If the machines are not set up correctly, network play will not be possible.
For this game, up to 4 machines can be connected to allow up to 4 players to play simultaneously.

1 Turn on the power on each machine to be used in network play.

2 Cause all of the machines to enter the Test Mode.

3 Select the GAME TEST MODE and press the Test button to display the GAME TEST MENU screen.

4 Select the GAME ASSIGNMENTS in the GAME TEST MENU screen and press the Test button.

```
                    GAME ASSIGNMENTS

        CABINET ID                  XXX
        GAME DIFFICULTY             NORMAL
        CONTINUE                    ON
        ADVERTISE SOUND             ON
        COMMENTARY VOLUME           HIGH
        NUM OF LAPS                 3
        HEAT                        1
        DRESS CODE                  LOW
        SPEEDOMETER                 KM/H
        CASUAL USER MODE            OFF

        DEFAULT SETTING
    ->  EXIT
```

19-3 FIG01 GAME ASSIGNMENTS Screen

5 Perform the CABINET ID setting. Set the different ID number to each machine. Be sure to assign one of them with the ID number of "1."

6 Cause all of the machines to exit from the TEST MODE. Always select EXIT in the SYSTEM TEST MENU screen.

18-4 NETWORK PLAY PRECAUTIONS

(STOP) IMPORTANT

- **In network play, difficulty level and other settings are made from CABINET ID Number 1. Changing the settings at CABINET ID Number 1 also changes the settings for other units.**
- **If one of the units attached for network play enters Test Mode, the other unit will display the Error screen.**
- **Even when units are connected for network play, each seat, each game may be given different cost settings. Incorrect cost settings may cause budget balancing problems.**

The operation of a unit when connected to other units for network play is different than that of a stand-alone unit. Administration of network units should be handled carefully.
Entering Test Mode will cause any other machines set up for network play to display the Error screen. When customers are playing the game, do not enter Test Mode on any network play-enabled machine.

19 DESIGN-RELATED PARTS

For the warning display stickers, refer to Chapter 1.

RNE-0502
BILLBOARD PLATE

553-30-101
DECAL MARQUEE
BOX LEFT SIDE

553-30-200
SIDE DECAL LEFT
R-TUNED

553-30-204
INSTR DECAL
DASH BOARD

553-30-205
DECAL
START/VIEW
R-TUNED

553-30-206
SEAT BACK
DECAL R-TUNED

553-30-207
BASE CABINET
DECAL LEFT SIDE

553-30-101
DECAL MARQUEE
BOX RIGHT SIDE

553-30-203
INSTR DECAL
UNDER MARQUEE

553-30-202
DECAL SMALL SIDE
STRIP 2 PER
(X2 BOTH SIDES)

553-30-201
SIDE DECAL RIGHT
R-TUNED

553-30-208
BASE CABINET DECAL
RIGHT SIDE

553-30-209
REAR BASE CABINET
DECAL R-TUNED

20 PARTS LIST

(CABINET PARTS)

MONITOR MASK PF EXP
TOF-1010-01

29" FULL FLAT MONITOR
99-60-718

MONITOR STAND METAL
542-50-101

SEAT BUCKET BLUE
999-2109

FOOT REST METAL
542-50-111

SEAT SLIDE ASSY
78-50-561

SEAT MOUNTING PLATE
542-50-116

COVER PANEL R
RTV-1561 + 553-30-208
(OPPOSITE)
COVER PANEL L
RTV-1551 + 553-30-207

ASSY CONTROL PANEL
RNE-2000

CASH BOX VAULT
542-50-110

COIN DOOR 1 COIN/DOLLAR PLATE
99-70-165

ASSY ACCEL & BRAKE
SPG-2200-01

TOP COVER METAL ROOF LID
542-50-106

BACK COVER METAL
542-50-105

MARQUEE BOX RACE TV
542-50-114

WIRE COVER BOX LID
542-50-108

FAN GRILL
523-50-106

ANTI TIP BRACKET R
542-50-119

ANTI TIP BRACKET L
542-50-120

(INSIDE ELECTRIC COMPONENTS)

MARQUEE BOX

RED CCFL 50-4233-00
99-60-156

CCFL ELEVAM S-12707CF-8M / CCFL INV SHEET
838-14795 / RZM-0705

LAMP FLUORESCENT 15W 18"
99-60-258

COIN BOX

SW BD 4 BUTTONS & C VOL
838-14801

COIN METER 5 VDC
99-70-160
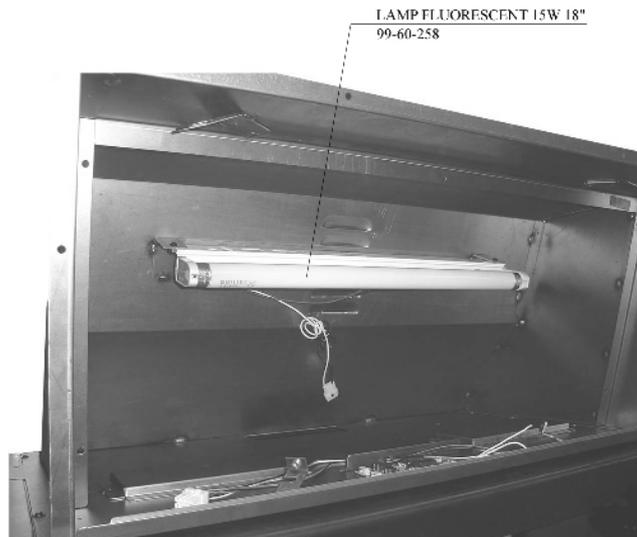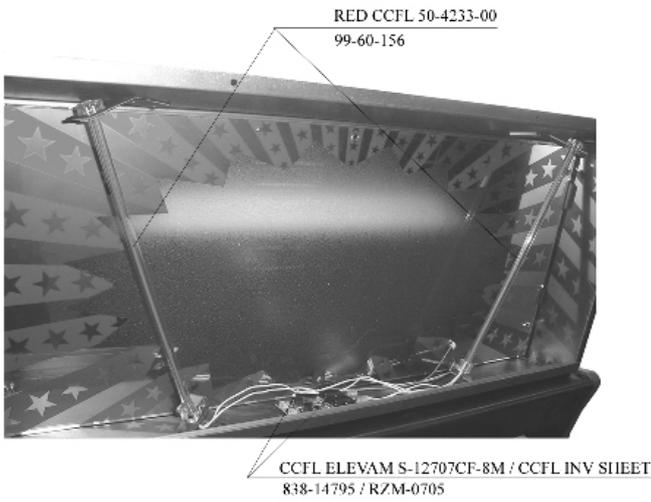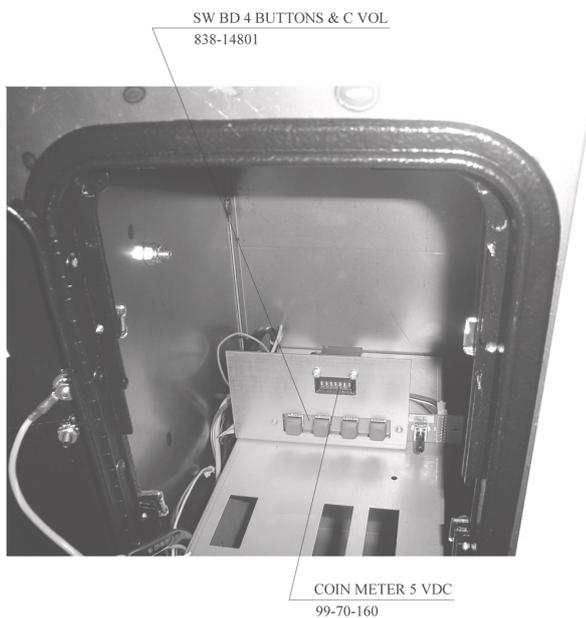
INSIDE THE CABINET BACK LOWER PORTION

SOUND AMP ANALOG IN
838-14515-A0191

I/O CONTROL BD 3 FOR JVS COM
837-14572

24V POWER SUPPLY LCA50S-24
400-5421-05027

12V POWER SUPPLY LCA50S-12 SSF
400-5421-05012

ASSY CASE LBG L 1GB 7800 US
844-0001D-92-11

FAN 110 VAC 50/60HZ COOLING
99-60-900

POWER SUPPLY FOR LBG
99-60-719

LINEFILTER QUAL TEK 874-06/003
99-00-014

POWER SWITCH #8-252
99-00-001

SERVO MOTOR DRIVE BD SER EMI
838-14592-01

CONVERT BD RS232C/RS422
838-14578
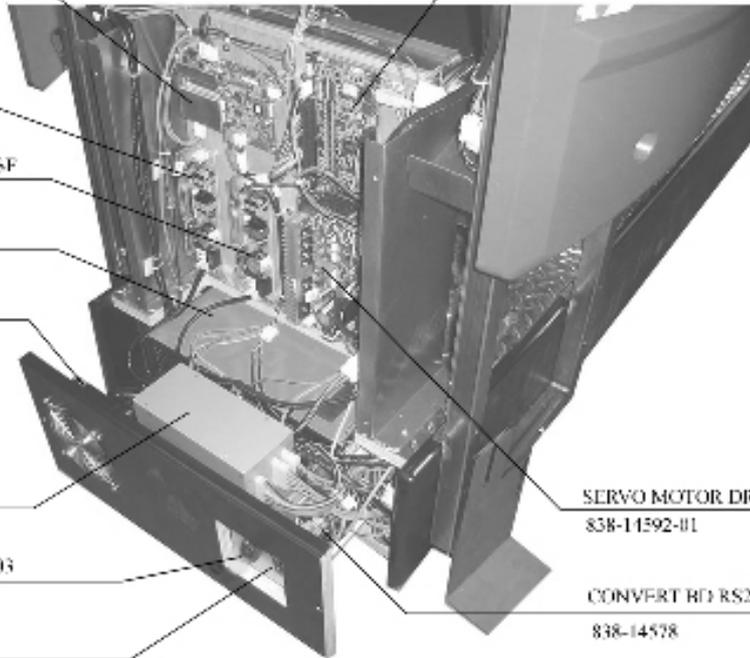
INSIDE THE CABINET BACK UPPER PORTION

TRANSFORMER 120VTO100V 8A
99-60-221

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	SPG-2201	BASE	
2	SPG-2202	ACCEL PEDAL	
3	SPG-2203	BRAKE PEDAL	
4	SPG-2204	ACCEL SPRING	
5	SPG-2205	BRAKE SPRING	
6	SPG-2206	SHAFT	
7	SPG-2207	ACCEL GEAR	
8	SPG-2208	BRAKE GEAR	
9	SPG-2209	NEUTRAL STOPPER	
10	SPG-2210	VR PLATE ACCEL	
11	SPG-2211	VR PLATE BRAKE	
12	SPG-2212	AMPL GEAR	
13	SPG-2213X	GEAR SHAFT	
14	SPG-2214	STOPPER	
15	SPG-2215	RUBBER CUSHION	
16	SPG-2216	COVER	
17	SPG-2217	VR COVER	
19	SPG-2219	GEAR STAY	
20	SPG-2220	WSHR	
21	SPG-2221	NEUTRAL STOPPER D	
101	100-5263	BEARING 12(OILES 80F-1212)	
102	220-5484	VOL CONT B-5K OHM	
102	220-5753	VOL CONT B-5K OHM (TOCOS)	
104	601-7944	GEAR 15	
105	310-5029-F15	SUMITUBE F F15MM	
106	280-0419	HARNESS LUG	
201	028-A00304-P	SET SCR HEX SKT CUP P M3x4	
202	020-000520-0Z	HEX SKT H CAP SCR BLK M5x20	
203	000-P00420	M SCR PH M4x20	
204	000-P00512-W	M SCR PH W/FS M5x12	
205	000-T00408-0C	M SCR TH CRM M4x8	
206	FAS-450005	SPR PIN BLK OZ 6x10	
207	000-P00405	M SCR PH M4x5	
208	FAS-000001	M SCR TH CRM M3x6	
209	050-H00500	HEX NUT M5	
210	060-F00400	FLT WSHR M4	
301	600-6840-01	WIRE HARN ACCEL&BRAKE YL	

ASSY SPEAKER L
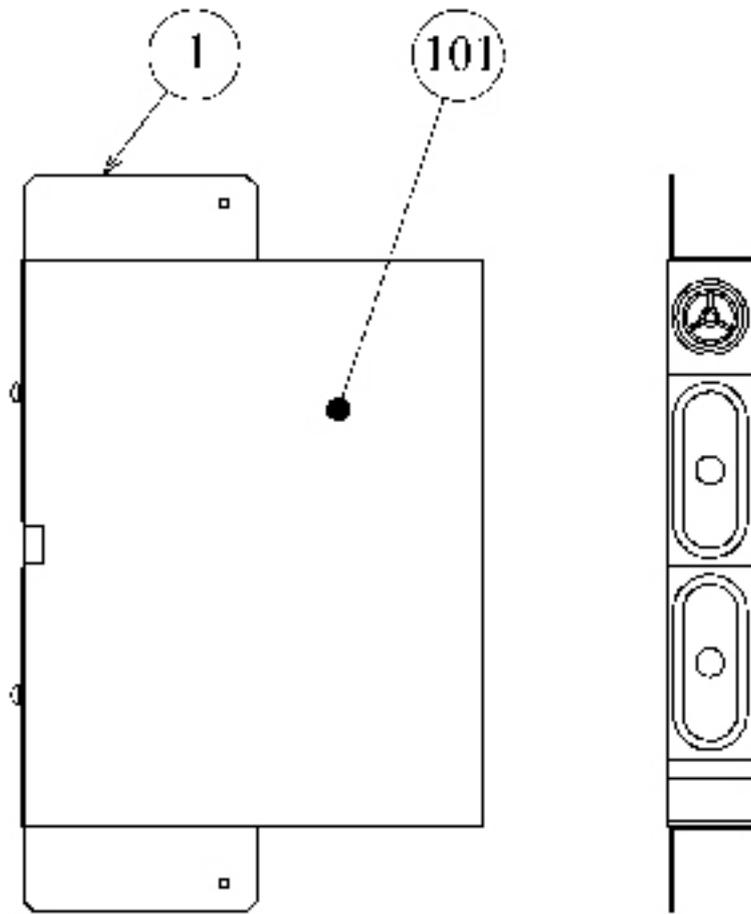
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	542-50-104	SPEAKER HOLD DOWN METAL	
101	130-5156-02	SPEAKER BOX 8OHM 20W VA1 YL	

ASSY SPEAKER R
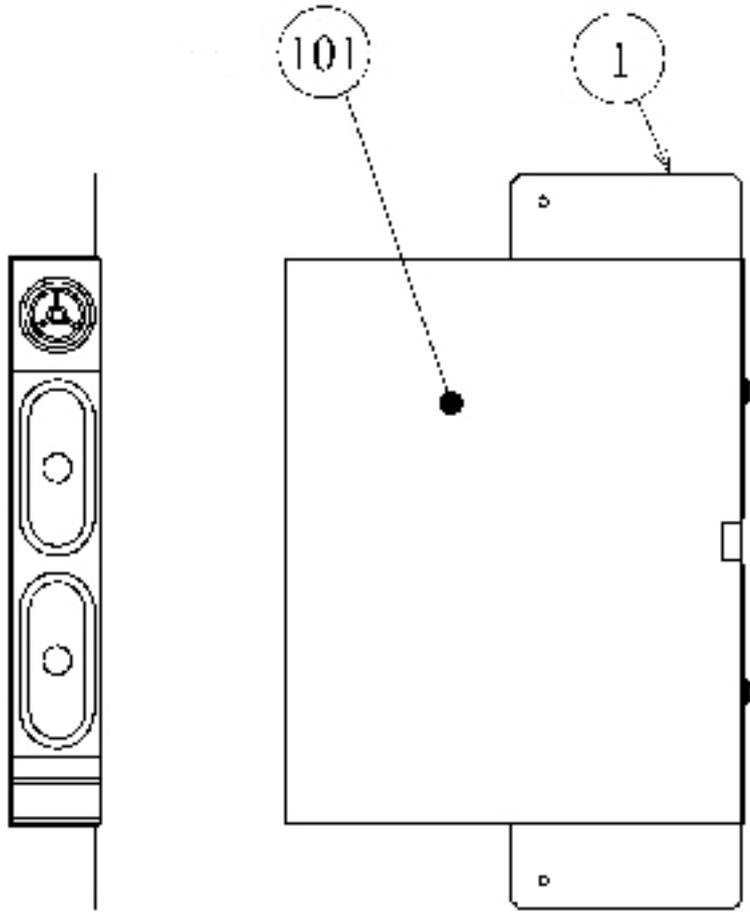
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	542-50-104	SPEAKER HOLD DOWN METAL	
101	130-5156-02	SPEAKER BOX 8OHM 20W VA1 YL	

ASSY SW PLATE
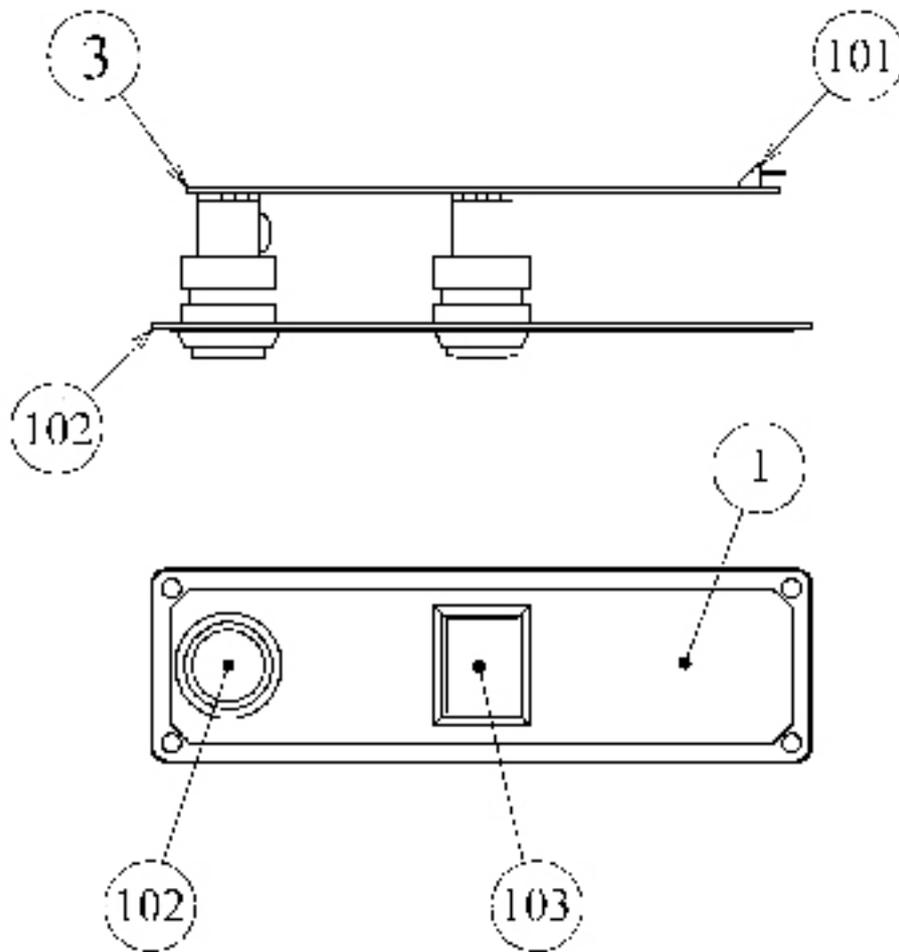
NOTE: When attaching the STICKER, line it up with the hole.

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	RTV-2101	STICKER START/VIEW	
2	ORT-2101	BUTTON PLATE	
3	171-6478B	PC BD LIGHTING SWX5	
101	212-5205-12	CONN JST M 12P RTA	
102	509-5560-Y-91	PB SW W/L 6V 1L Y ROHS	
103	509-5561-R-91	PB SW W/L 6V 5L R ROHS	

ASSY HANDLE MECHA (RTV-2500) (D-1/2)

GREASING

SEE A
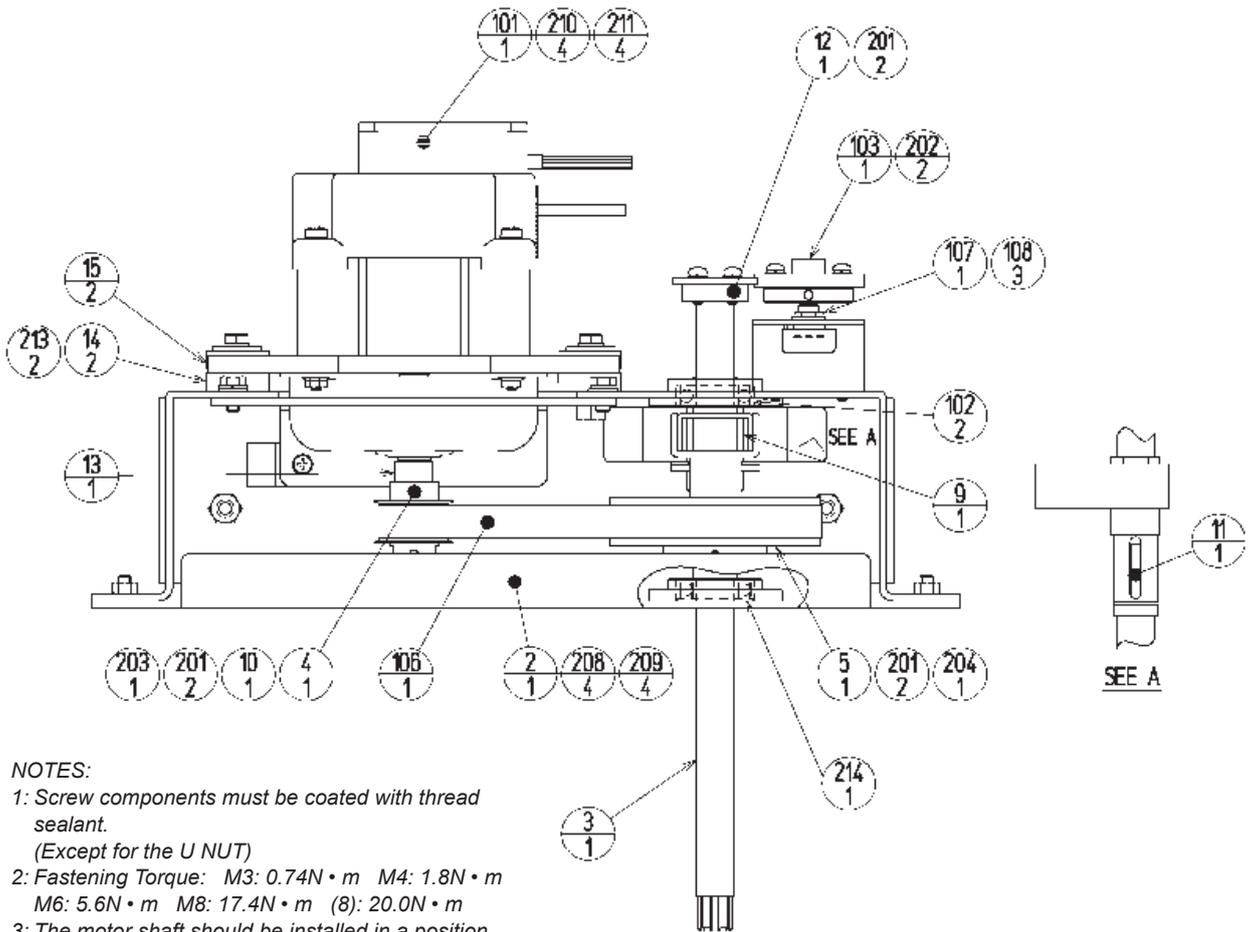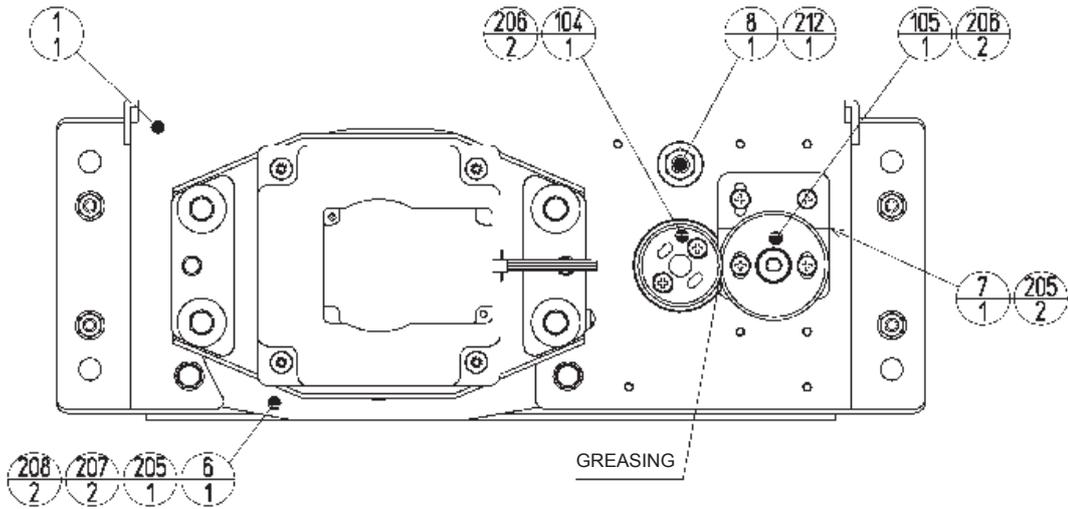
NOTES:
1: Screw components must be coated with thread sealant.
   (Except for the U NUT)
2: Fastening Torque: M3: 0.74N • m   M4: 1.8N • m   M6: 5.6N • m   M8: 17.4N • m   (8): 20.0N • m
3: The motor shaft should be installed in a position such that, when the steering wheel shaft is centered, the key structure surface comes to ±45 degrees from the top.
4: Timing Belt S5M   Initial Tension 95~165[N]   Span=130[mm]   Belt width=15[mm]
   Unit weight=0.034[kg/(10mm width x 1m length)]   (Mitsuboshi Belting Ltd.)
   Unit weight=0.039[kg/(10mm width x 1m length)]   (Bando Chemical Industries, Ltd.)

PINK
GREEN
BROWN

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ORA-2501	HANDLE BASE	
2	SPG-2502	BASE LID	
3	ORA-2502	HANDLE SHAFT	
4	SPG-2504	PULLEY 20 S5M	
5	SPG-2505	PULLEY 60 S5M	
6	ORA-2503	MOTOR BRKT	
7	ORA-2504	VR BRKT	
8	ORA-2505	STOPPER BOLT	
9	ORA-2506	STOPPER RUBBER	
10	SPG-2453	KEY 4x4x40	
11	DYN-1270	STOPPER KEY	
12	SLC-1130	ADJUST RING	
13	ORA-2507	MOTOR SHAFT COLLAR	
14	253-5592	MOTOR INSULATOR A	
15	253-5593	MOTOR INSULATOR B	
101	350-5805-02	SERVO MOTOR W/FG SIDE TYPE	
102	100-5112	BEARING 17 (NSK 6003ZZ)	
103	601-8966	GEAR HOLDER	
104	601-6172	GEAR 48	
105	601-6959	GEAR 64	
106	601-9173	TIMING BELT (150 S5M 475)	
107	220-5484	VOL CONT B-5K OHM	
107	220-5753	VOL CONT B-5K OHM (TOCOS)	
108	310-5029-F20	SUMITUBE F F 20MM	
201	028-A00408-P	SET SCR HEX SKT CUP P M4x8	
202	028-A00308-P	SET SCR HEX SKT CUP P M3x8	
203	065-S012S0-Z	STP RING BLK OZ S12	
204	065-S020S0-Z	STP RING BLK OZ S20	
205	000-P00408-W	M SCR PH W/FS M4x8	
206	000-P00412-W	M SCR PH W/FS M4x12	
207	030-000612-S	HEX BLT W/S M6x12	
208	060-F00600	FLT WSHR M6	
209	050-U00600	U NUT M6	
210	030-000840-S	HEX BLT W/S M8x40	
211	068-852216	FLT WSHR 8.5-22x1.6	
212	060-S01200	SPR WSHR M12	
213	012-P00412	TAP SCR #2 PH 4x12	
214	FAS-650023	WAVE WSHR 26.4-34.2x0.3	
301	600-6866-01	WIRE HARN ASSY HANDLE MECHA VR	

21 WIRE COLOR CODE TABLE

⚠ WARNING

The DC power wire color for this product is different from previous SEGA titles.
Working from the previous wire colors will create a high risk of fire.

The color codes for the wires used in the diagrams in the following chapter are as follows.

A	PINK
B	SKY BLUE
C	BROWN
D	PURPLE
E	LIGHT GREEN

Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

1	RED
2	BLUE
3	YELLOW
4	GREEN
5	WHITE
7	ORANGE
8	BLACK
9	GRAY

If the right-hand side numeral of the code is 0, then the wire will be of a single color shown by the left-hand side numeral (see the above).

Note 1: If the right-hand side numeral is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.

<Example> 51………WHITE/RED

RED   WHITE
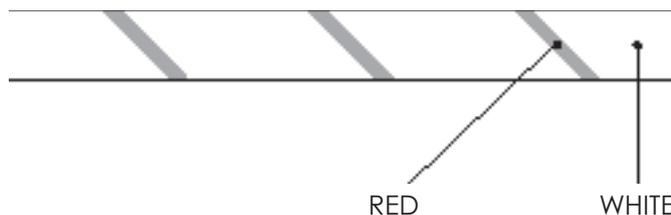
Note 2: The character following the wire color code indicates the size of the wire.

U:	AWG16
K:	AWG18
L:	AWG20
None:	AWG22
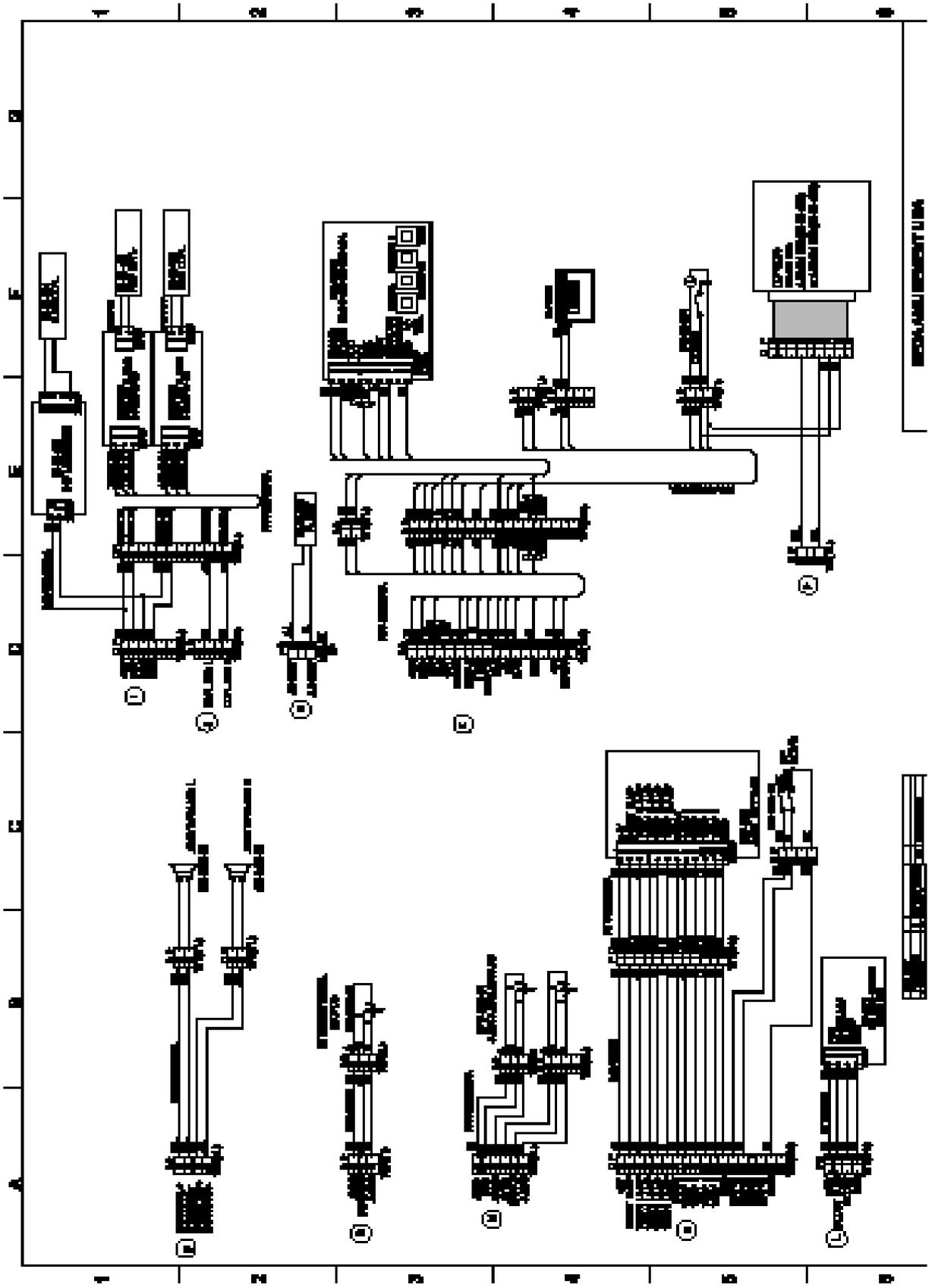
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