ABS-MNL-0031E
1st PRINTING

SEGA

SEGA

OWNER'S MANUAL

AFTER BURNER CLIMAX™

SEGA CORPORATION

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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 convinient place for easy reference when necessary.

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BEFORE USING THE PRODUCT, BE SURE TO READ THE FOLLOWING:

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INTRODUCTION

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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, "**AFTER BURNER CLIMAX. SUPER DELUXE**"

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

Installation space:	1,330 mm (52.4 in.) [Width] x 2,580 mm (101.6 in.) [Depth]
Height:	1,990 mm (78.3 in.)
Weight:	700 kg (1,543.2 lbs.)
Power, maximum current:	1,100 W, 5.10 A

(AC 220 V, 60 Hz Area)
(AC 220 V, 50 Hz Area)
(AC 230 V, 50 Hz Area)
(AC 208 V, 60 Hz Area)

Monitor:	40 Wide Type LCD 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.

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled wastes disposal, please separate this from other types of wastes and recycle it responsibly to promote the substainable reuse of meterial resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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.

- Do not expose power cords or ground wires on the surface, (floor, passage, etc.). If exposed, the power cords and ground 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 exceeding 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.

- Be sure to perform periodic maintenance inspections herein stated.

- **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.**

- **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.

ABS-EN-016S
FASTEN SEAT BELT

ABS-EN-015S
OVER 140cm
Those who with height 140cm may not use this machine

ABS-EN-014S
SINGLE PASSENGER

ABS-EN-018S

⚠ CAUTION
Adults and children that are prone to seizures, loss of consciousness, etc. due to flashing lights or television games,should exercise caution when playing this game stop immediately and take break.
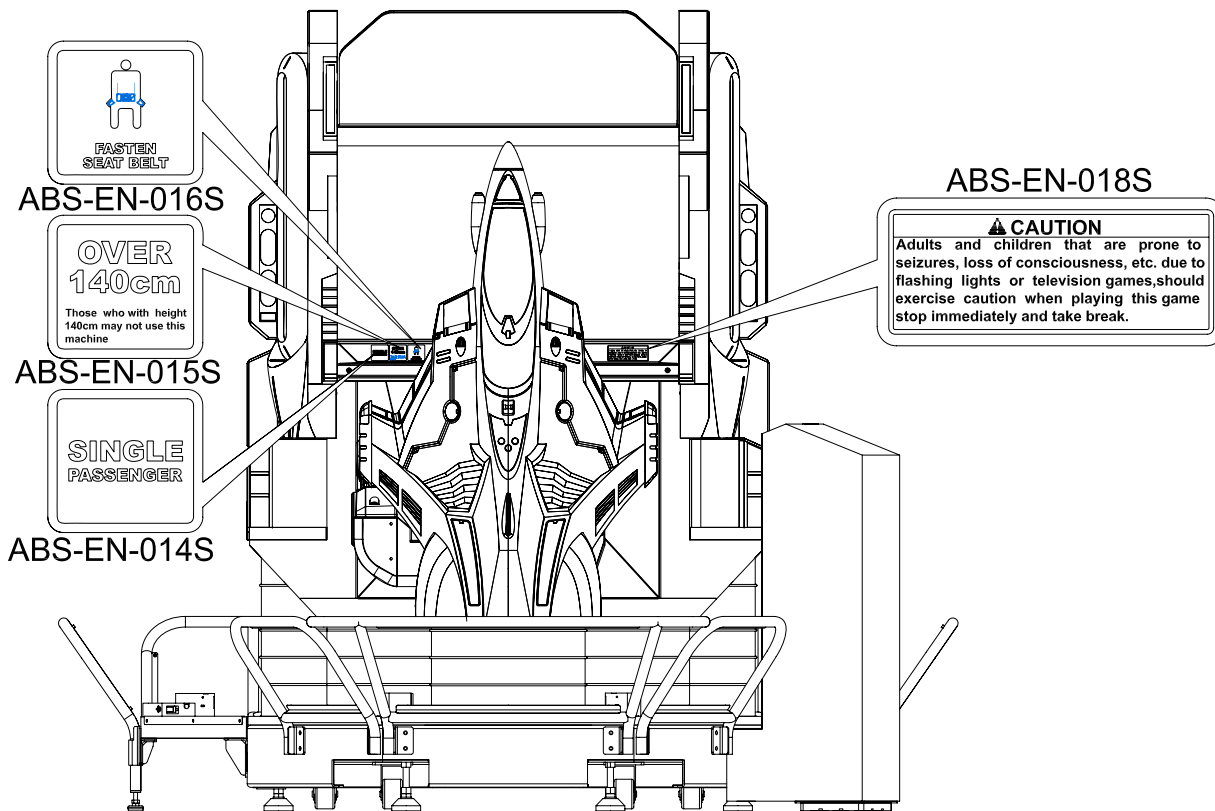
ABS-EN-020S

⚠ CAUTION | Do not lean on or pass over a fence. It may cause an accident or injurise.

ABS-EN-017S

⚠ CAUTION
Do not enter or go near the machine while another person is playing the game. Doing so may cause injury. Do not place any personal belongings on the floor of the machine while playing Doing so may result damage to the personal belongings.

ABS-EN-017S

⚠ CAUTION
Do not enter or go near the machine while another person is playing the game. Doing so may cause injury. Do not place any personal belongings on the of the machine while playing Doing so may result damage to the personal belongings.

ABS-EN-013S

⚠ WARNING
High voltage can cause an electric shock. Turn off power before servicing.

⚠ CAUTION | Do not lean on or pass over a fence. It may cause an accident or injurise.

ABS-EN-020S

ABS-EN-019S

⚠ CAUTION
For safety reasons, fasten seat belt and place your foot on the foot-rest.
For safety reasons, pregnant persons, intoxicated persons or those who with height 100cm may not use this machine.
For safety reasons, only single passenger is allowed per game. Riding of more than one passenger at a time is not permitted.
Do not play this game with children in your lap. They may fall and receive an injury.

ABS-EN-013S

⚠ WARNING
High voltage can cause an electric shock. Turn off power before servicing.

⚠ WARNING
High voltage can cause an electric shock. Turn off power before servicing.

ABS-EN-013S

The opposition part is equal to do
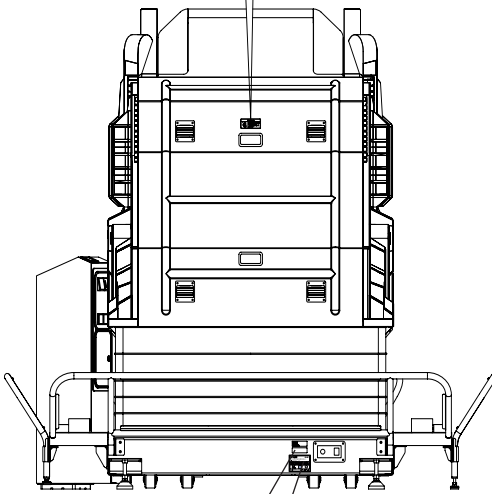
Electrical Specifications Display

Serial No. Display

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.
- The operating (ambient) temperature range is from 5 to 30 degrees.

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 5.1A or higher (AC 200~208V, 220V, 230V, 240V 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 5.1A or higher (AC 200~208V, 220V, 230V, 240V area). Using a cord rated lower than the specified rating can cause a fire and electric shock.

⚠WARNING

- **Check your electric specifications.**
  Check whether the product conforms to the voltage, current and frequancy provided at the installation location. For the electric specifications, see the plate (label) attaches on the product.

- **Inside the installaton locations, a breaker and an earth connections for the product are required. An independent electric source for the product should be provided to prevent fire or electric shock.**

- **Make sure to use the power cable in accordance with power consumption as described below. Using power cable of other electric specifications can cause a fire or electric shock.**

- **Make sure to use the power with independent circuit breaker. Using any power source without circuit breaker can cause a fire.**

- **Do net have many electrical cords connected to a single socket. Overload can cause the generation of heat or a fire.**

- **If an extention cord is used, it should be rated the max current or higheras described below. Using a cord of different specifications can cause a fire or electric shock.**

Electricity Consumption:
MAX. 5.1 A
(AC 200~208V, 220V, 230V, 240V, 50/60 Hz)

2-2 OPERATION AREA

⚠WARNING

- For the operation of this machine, secure a minimum area of 2.88 m (W) x 3.13 m (D). The dimensions of the base periphery are established in consideration of ventilation, maintenance and customer passage. With this product there is the danger that someone could fall down while getting onto the base or the seat. And if they fall and hit their head, there could be a very serious injury. Be sure to always secure enough space as prescribed in this manual.

- 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. Specific tools and adjustment procedures are required to assemble and disassemble the mechanical parts. Attempting to assemble or disassemble the machine without consulting the instructions may result in accidents during assembly/disassembly and electric shock, short circuits, and/or personal injury during operation.

- If the machine is still too large to fit through the entryway after following the procedures listed in this manual, do not tip the machine on its side. Attempting to transport the machine while it is tipped on its side may cause accidents. It may also damage or warp parts of the machine, resulting in accidents during operation.

- To install this product, the entrance must be at least 1.4 m in width and 2 m in height. If the entrance is too narrow, do not tilt the product carelessly. If all the product weight is put on the casters at one side only, there could be damages or deformations, causing serious accidents such as workers getting caught underneath.
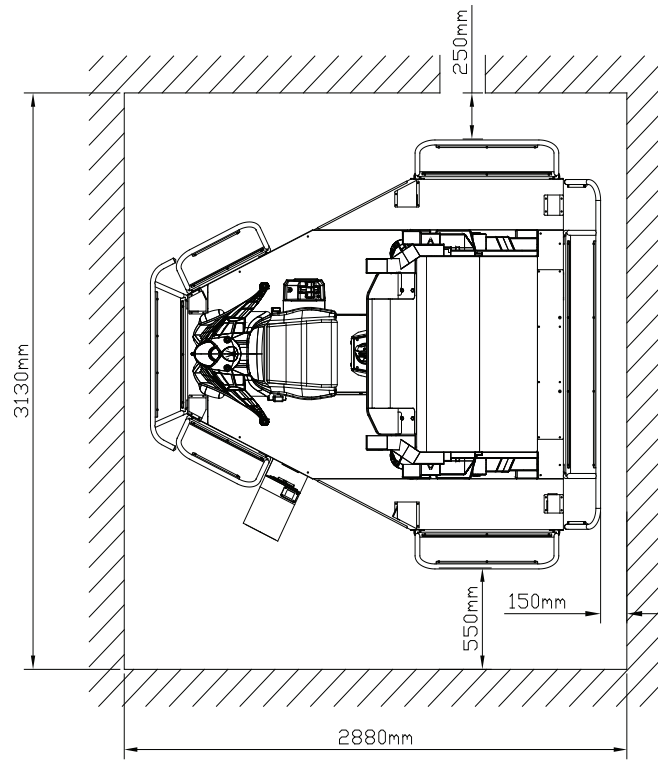
FIG. 2 Installation and operation area

3 PRECAUTIONS REGARDING PRODUCT OPERATION

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

3-1 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.**
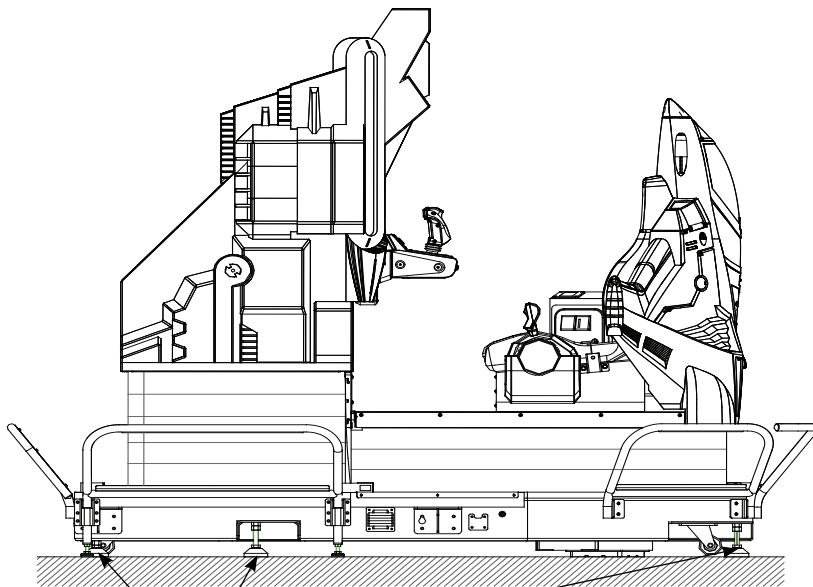
Ensure that all of the Adjusters are in contact with the floor.

- **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.**

⚠WARNING

- **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.

- **Make sure the surrounding area is secure before turning the power on. The machine will automatically go through an initialization process after being turned on. The seat will move left and right, and persons standing in the vicinity of the machine may be struck or knocked down.**

- **Be sure to perform a test run of the machine and inspect its safety devices before putting it into operation. Because the machine's seat swerves to the left and right, it is equipped with safety devices. In order to ensure that these safety devices are functioning properly, it is imperative that the following checks be performed on a regular basis:**
  - Does the seatbelt hold the player's body firmly in place?
  - Are there any damaged or frayed spots on the seatbelt?
  - When the seatbelt is released, does the seat stop moving?
  - Are any of the seat parts loose or wobbly?
  - When the "Motion Stop" button is pressed, does the seat stop moving?
  - When the safety sensor detects a foreign object, does the seat stop moving?

- **When performing the above safety checks, verify also that the seat is moving properly. Accidents may occur if the seat is moving abnormally. For this reason, do not operate the machine in such cases until the problem is resolved.**
  - Does the seat move in the direction that the controls are pressed?
  - Does the seat move smoothly?
  - Does the seat shake or rattle?
  - Are any unusual sounds produced during seat motion?
  - Does the seat experience unusual vibration while moving?
  - When the game is over, does the seat come to rest in a level position?

- **If the seat motion mechanism begins to malfunction, immediately cease operation, turn off the power, unplug the power cord, and contact the office listed in this manual or your retailer. Continuing to operate the machine without resolving the problem may result in serious accidents such as electric shock, short circuits, or fire, and/or cause the machine to tip over.**

- **Requests for maintenance of the seat motion mechanism should be directed to the office listed in this manual or your retailer. Attempts to perform maintenance by persons other than specially trained technicians may result in injury to the party performing the maintenance and/or to players during product operation.**

- **The seat will continue to move even if it comes into contact with persons other than the player. In order to ensure a safe operating environment, place the machine so that one side is adjacent to the back of another game machine or to the wall.**

⚠CAUTION

- 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.

- Check the control devices to make sure that there are no scratches or cracks on parts touched by players, as such defects can cause injury to hands and fingers.

## 3-2 DURING OPERATION (PAYING ATTENTION TO CUSTOMERS)

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

⚠WARNING

- **For safety reasons, do not allow any of the following people to play the game.**
  - **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.**
  - **Those who are not in good health.**
  - **Those who do not follow the attendant's instructions.**
  - **Those who cannot grasp the Control Unit securely because of immobility in fingers, hands or arms.**
  - **Persons who disregard the product's warning displays.**

  The game cannot be played while sitting in a wheelchair.

- **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.**

- **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.**

- **For safety reasons, this game must not be played by persons less than 140 cm in height. Customers should be told that this is because the seatbelt cannot secure such persons in place.**

206.0cm

140.0cm
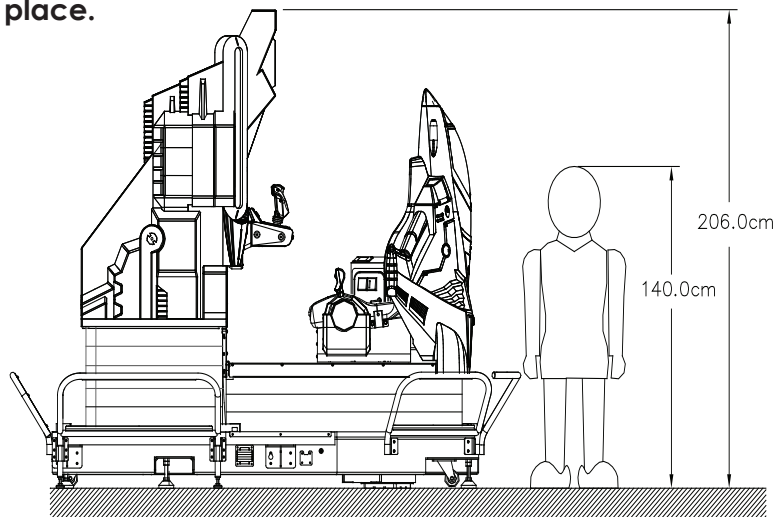
⚠WARNING

- **Playing the game without first securing the seatbelt may cause customers to fall out. Customers should be instructed always to secure themselves with the seatbelt before playing the game.**
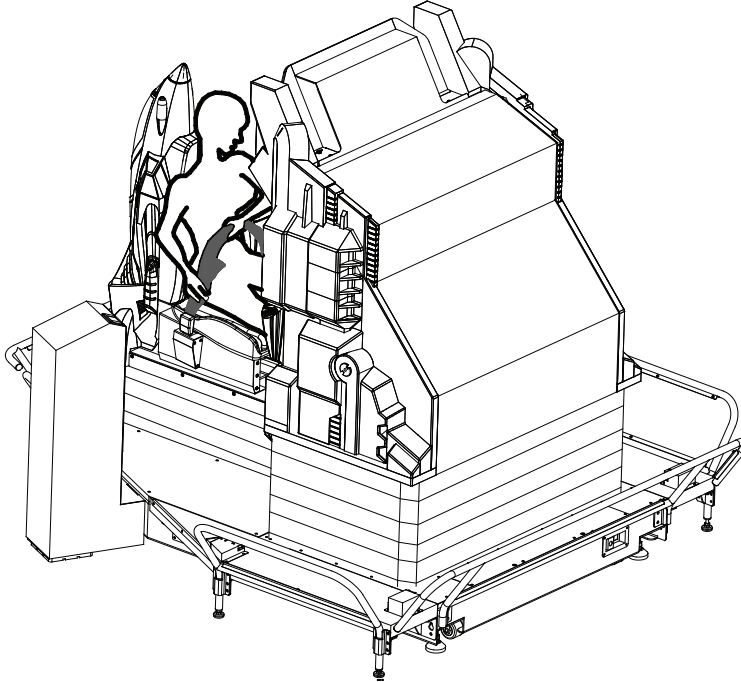
- **Prevent customers from sitting two at a time in the seat. This game is for one player only. If two or more customers attempt to sit in the seat and play at the same time, they may hit their heads, hands, or elbows, possibly resulting in serious injury.**
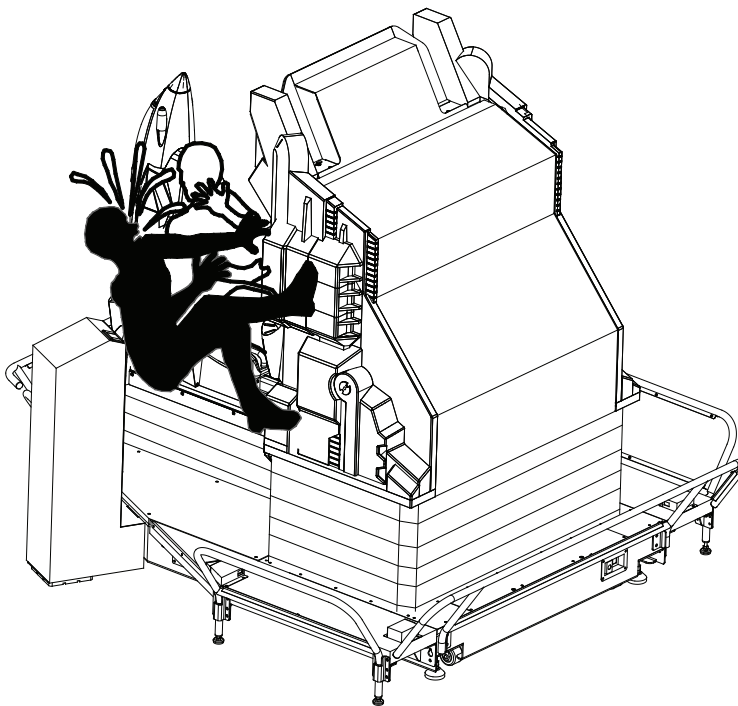
⚠WARNING

- **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 the control panel and/or cause the machine to tip over.**
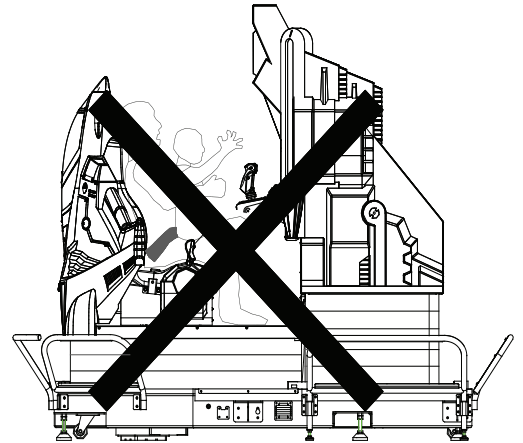
- **Persons other than the player should not be allowed to approach the machine while the seat is in motion. Such actions may result in sideswiping and/or collision accidents. The safety sensor is only able to detect foreign objects on top of the base. Young children are especially susceptible to this danger; for this reason, customers should be instructed to watch their children closely.**
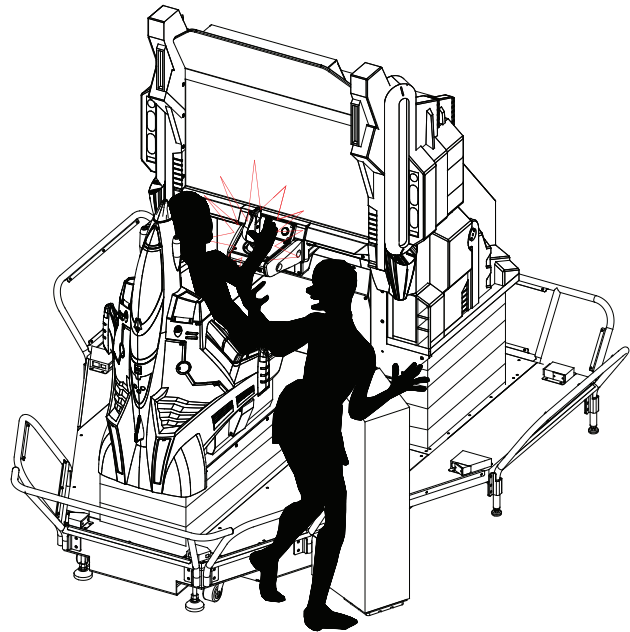
- **Be careful not to remove your foot from the footrest during play. If you remove your foot carelessly, it could be caught up in something, or someone could trip over it, resulting in a fracture, sprain, or other injury.**

- **Prevent customers from playing the game with bag straps or scarves wrapped around their necks or while holding on to drinks, as this can lead to accidents.**

- **If a player appears to be in distress, stop the seat motion immediately by pressing the "Motion Stop" button.**

- **If it becomes crowded within the store and it appears that motion by the product would be dangerous to customers nearby, set the product so it will not move while being operated.**

⚠WARNING

- **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.**

- **When entering or exiting the machine, players may trip over the base. Be sure to warn players who do not appear to be exercising proper caution.**

- **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.**
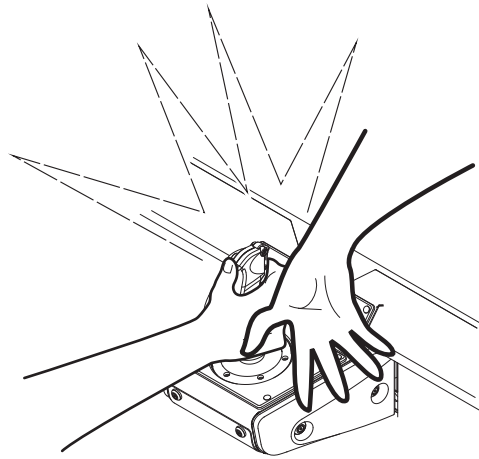
- **Players should be warned not to place personal effects or other objects on the base of the machine. If the safety sensor fails to detect these items, the motion of the machine may cause them to fly out and strike other customers.**

- **This product has a player weight restriction of 150 kg. This restriction is in place, because, if weight exceeds 150 kg, there could be an accident as a result of faulty operations or parts damage.**

4 PART DESCRIPTIONS

Monitor(40"LCD)

Control Stick

Front Speaker

Switch Unit

Coinchute Tower

Maintenance Cover R

Side Step

Floor Sensor

Throttle Lever

Maintenance Cover L

Rear Speaker

Billboard

Seat

Seatbelt

Main SW Panel

Bellows

AC Unit Cover
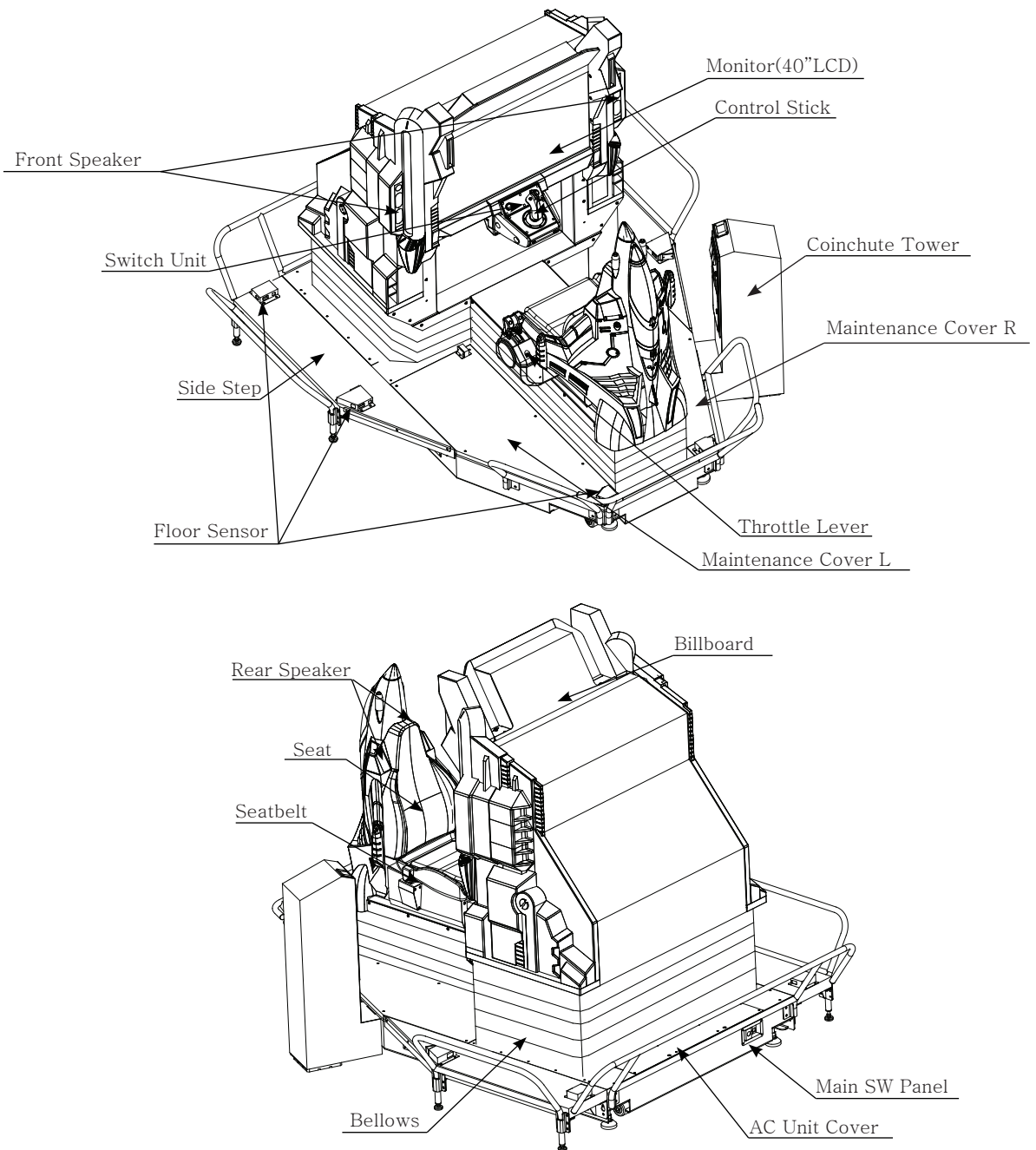
FIG. 4 Overall View
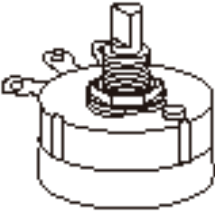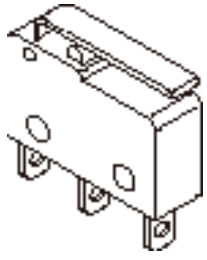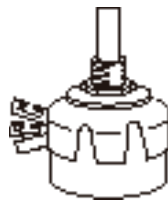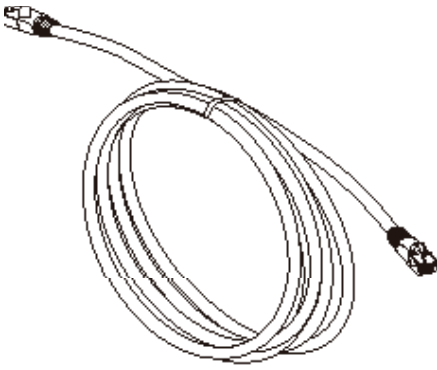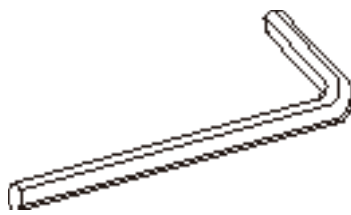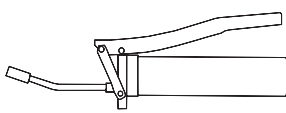
Dimensions Required for Installing Each Unit

	(Width x Length x Height)	(Weight)
Cabinet	1,370 mm x 2,160 mm x 1,990 mm	625 kg
Side Step (A pair in the unit)	275 mm x 1,430 mm x 215 mm	25 kg
Coinchute Tower	220 mm x 390 mm x 1,000 mm	14 kg
Front Fence	410 mm x 1,900 mm x 70 mm	8 kg
Rear Fence	410 mm x 1,045 mm x 120 mm	5 kg
Side Fence (A pair in the unit)	410 mm x 535 mm x 70 mm	6 kg
Side Step Fence (A pair in the unit)	520 mm x 875 mm x 280 mm	11 kg
Finished cabinet	2,330 mm x 2,580 mm x 1,990 mm	700 kg

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.

TABLE 5a

OWNER'S MANUAL
ABS-MNL-0031E
This manual

LINDBERGH SERVICE MANUAL
420-6921-01 (1)
Description of mounted game board

MASTER KEY
220-5793-2-A001 (2)
For operating/closing the doors

VOLUME
220-5737 (1)
Spare, see chapter 11.

MICROSWITCH
509-5975 (1)
Spare, see chapter 11.

VOLUME
220-5753 (1)
Spare, see chapters 12, 13.

NETWORK (LAN) CABLE
600-7269-0300 (1)
For network play, see chapter 20.

ALLEN WRENCH
540-0068 (1)
Tool, see chapter 11.

GREASE
See chapter 15.

The DVD software kit, DVD DRIVE and DVD wire are sold separately but they are required for installing the product's software. If they were not provided when the product was delivered, consult with the point of purchase, or arrange to obtain the following kit numbers. The DVD DRIVE and DVD wire that are accessories to "The House of the Dead 4" can also be used with this product.

TABLE 5b
XKT-1579-D: DVD-ROM KIT ABX USA

DVD KIT (1)
Software media, see 6-6.

KEY CHIP (1)

CUSHION SPONGE
601-11137 (1)
protective material

DVD-ROM (1)

DISC CASE
253-5507-01 (1)

To order the DVD-ROM by itself, use the following part number: 610-0726-0018: DVD SOFT ABX.

844-0013D
443-40013D (1)

844-0013D

Board number stickers, see 6-3.

TABLE 5c XKT-1515-01: DVD DRIVE KIT FOR LBG ENG

SERVICE MANUAL
420-6923-01 (1)

DVD DRIVE
610-0719-01-91 (1)
For software installation, see chapter 6-6 .

DVD WIRE
605-0094 (1)
For software installation, see chapter 6-6 .
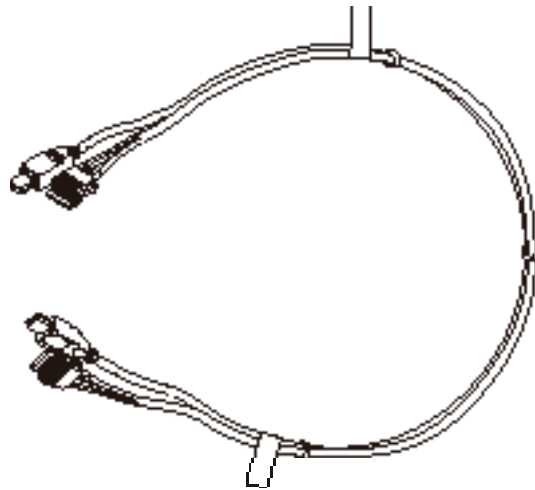
⚠WARNING

- 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.

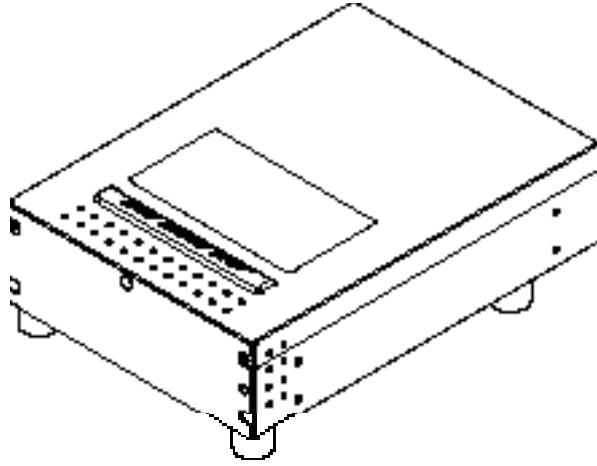- Ensure that connectors are properly connected. Improper connections can cause electric shock.

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

- This work should be carried out by 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.

- The seat will continue to move even if it comes into contact with persons other than the player. In order to ensure a safe operating environment, place the machine so that one side is adjacent to the back of another game machine or to the wall.

- If the machine is placed so that people will be passing through the vicinity, leave at least 70 cm of space around the machine. If this space is too narrow, persons other than the player may brush against or collide with the machine, possibly resulting in accidents.

- 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. (Wiring diameter: power cable - approx. Ø 6~12; network cable - approx. Ø 6)

- The cabinet has ventilation ports. Be sure not to block them. If they are blocked, heat can build up, leading to fire. This can also accelerate wearing of parts and malfunctions.

⚠ **CAUTION**

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

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

(STOP) **IMPORTANT**

Be careful not to damage parts surfaces. In some cases, if such surfaces are damaged, the part must be replaced; it cannot be reinforced or repaired.

Installation and assembly of this product should take place in the following sequence.

1	**FIXATION TO INSTALLATION SITE**
2	**SIDE STEP INSTALLATION**
3	**FENCE INSTALLATION**
4	**COINCHUTE TOWER INSTALLATION**
5	**ATTACHMENT OF MOTION STOP BUTTON GUIDE**
6	**PREPARATION FOR INSTALLATION**
7	**CONNECTION OF POWER AND GROUND**
8	**SOFTWARE INSTALLATION**
9	**ENGAGEMENT OF POWER SUPPLY AFTER INSTALLING SOFTWARE**
10	**CORNFIRMATION OF ASSEMBLY**

Essential tools

- Philips screwdriver (for M4 screws)

- 24 mm spanner

13,17,24 mm
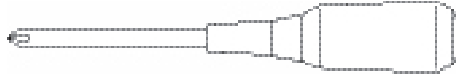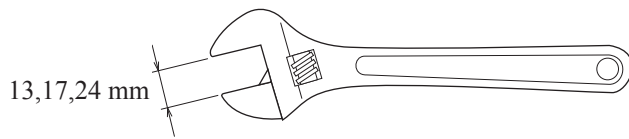
- 13 & 17 mm socket wrenches
  (for M8, M10 hexagonal bolts, nuts)
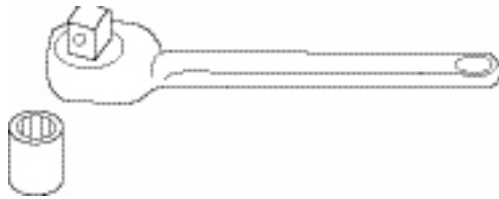
- 5/16(7.95mm) mini socket wrenche
  (to install the coinchute tower)
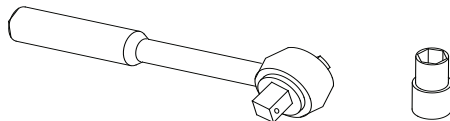
- 2.5 & 3 mm allen wrenches

- Master key (accessory)
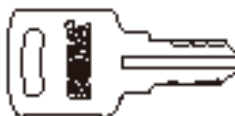
1 | FIXATION TO INSTALLATION SITE

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

The product comes with casters attached at 4 locations and adjusters at 6 locations (Fig. 6-1a). When the installation site has been determined, have the adjusters come in direct contact with the floor. Establish a gap of about 5 mm between the floor and the casters and adjust the unit so that it will remain level.

Caster 4EA
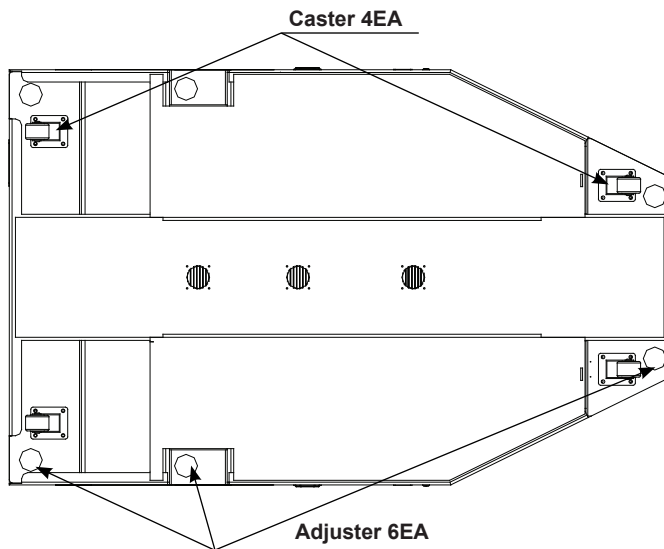
Adjuster 6EA

FIG. 6-1a Bottom View

1 Move the product to the installation site. If the product is to be installed near a wall, secure enough passageway space for players to access the seat.

2 Use a wrench to set adjuster heights so that the unit will stay level.

3 After setting, turn adjuster nuts upwards to tighten them and secure adjuster heights.

Adjuster

Caster

Fix Nut

5mm
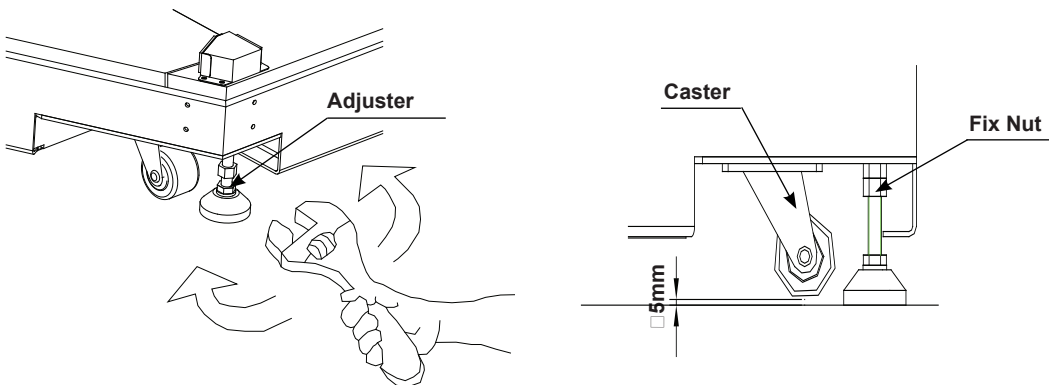
FIG. 6-1b Illustration of Adjuster Setting

1 Assemble Side step and Side step fence before attaching the Side step to the Base. Attach the Side step fence to the under side of the Side step as shown below using 4 M8 X 25 hex bolts.

Side Step

Side Step Fence

Adjuster

Hex Bolt(4), Black
M8 X 25, W/Spring & Flat Washers
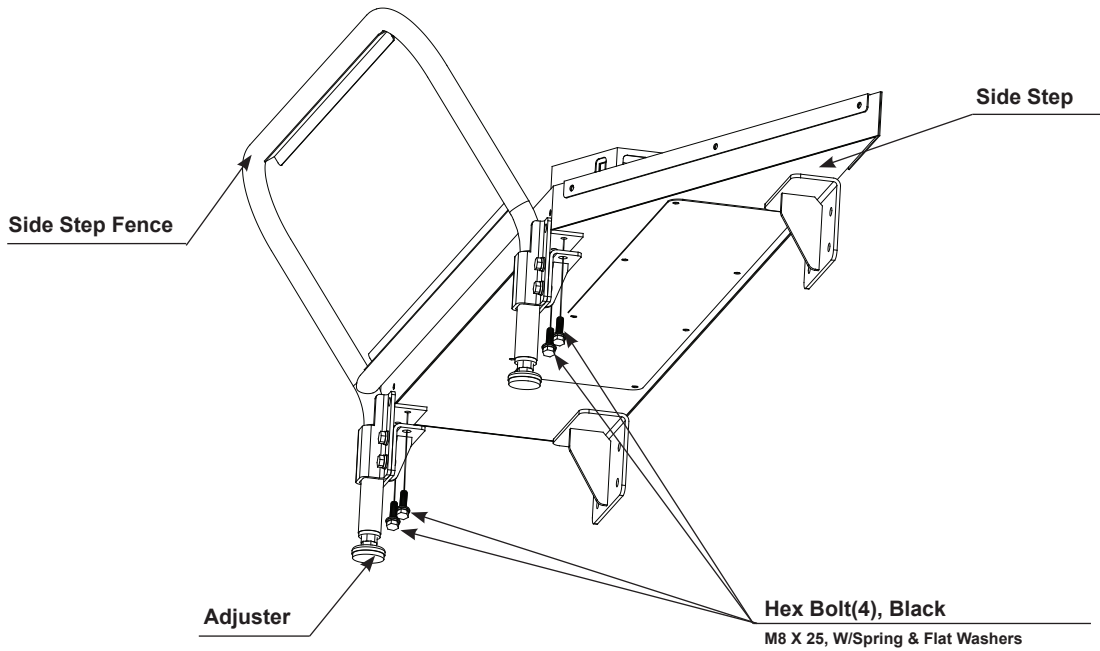
FIG.6-2a

2 Fasten the Side step fence to the side of the Side step as shown below using 4 M8 X 1 hex bolts. The adjusters on the Side step fence must screwed up all the way as you do this.

Hex Bolt(4), Black
M8 X 15, W/Spring & Flat Washers

Pipe Holder
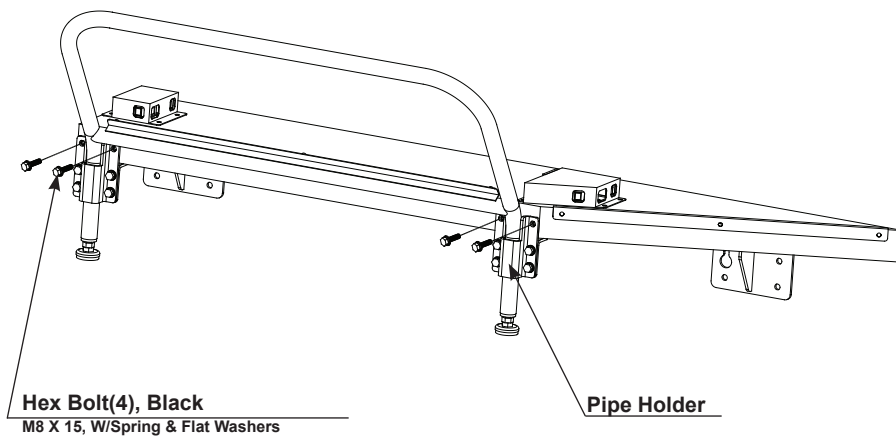
FIG.6-2b

3 Remove 6 M5 X 35 round head wrench screws that holds the Maintenance cover L in place and turn the key.

Maintenance Cover L

Round Head Wrench Screw(6)
M5 X 35, Flat Washer Used

Key Lock
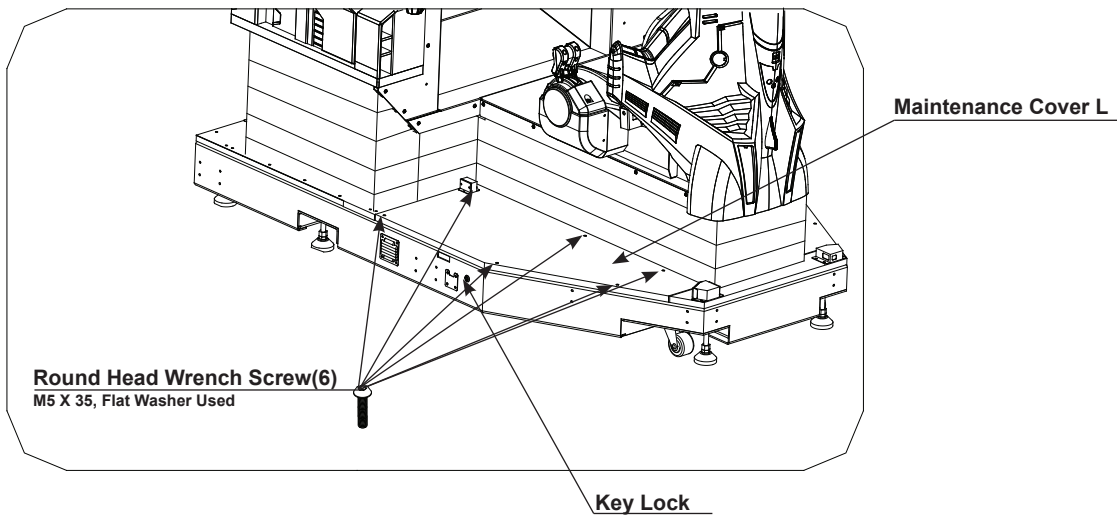
FIG. 6-2c

4 Remove the Maintenance cover L as shown below and pull out the sensor connector inside through the rectangle opening on the side of the base.

Maintenance Cover L

Sensor Connector(6P)
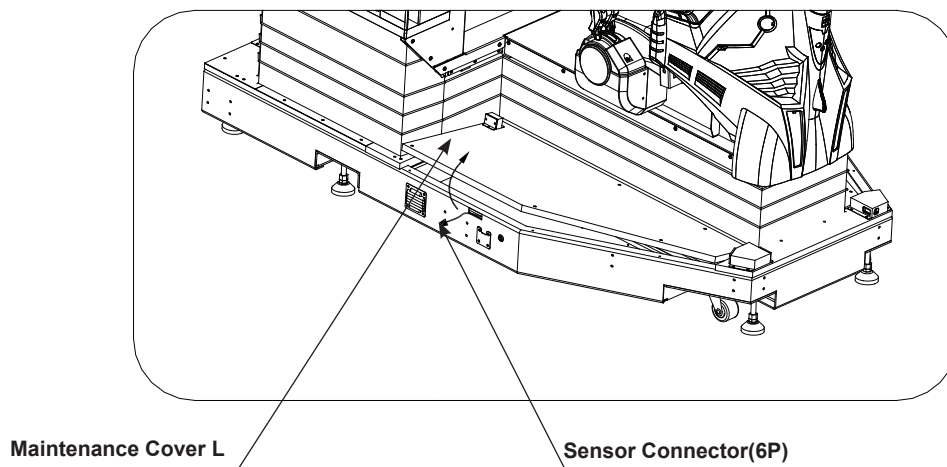
FIG. 6-2d

5 Keep the maintenance cover L closed for safety(to keep objects falling into the machine.) Do not fasten the screws at this time(for software installation.)

6 To install the guides, temporarily assemble two M8 X 25L on the each sides as shown in pic5-2b. Do not tighten the bolt all the way. Leave about 10mm out each sides.

Hex Bolt(2), Black
M8 X 25, W/Spring & Flat Washers

10mm
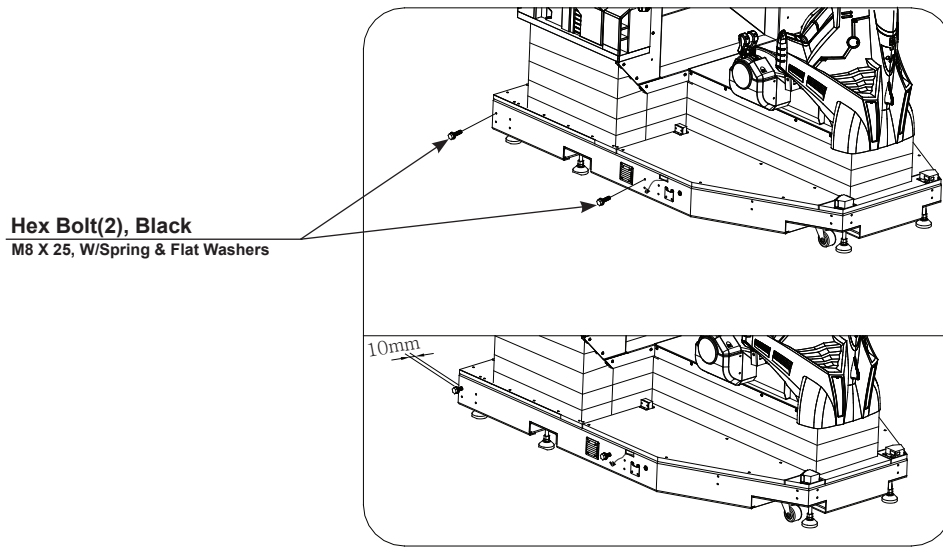
FIG. 6-2e

7 Connect sonsor connector on the side step and the sensor connector(6P) on the base frame.

Side Step

Connector(6P)
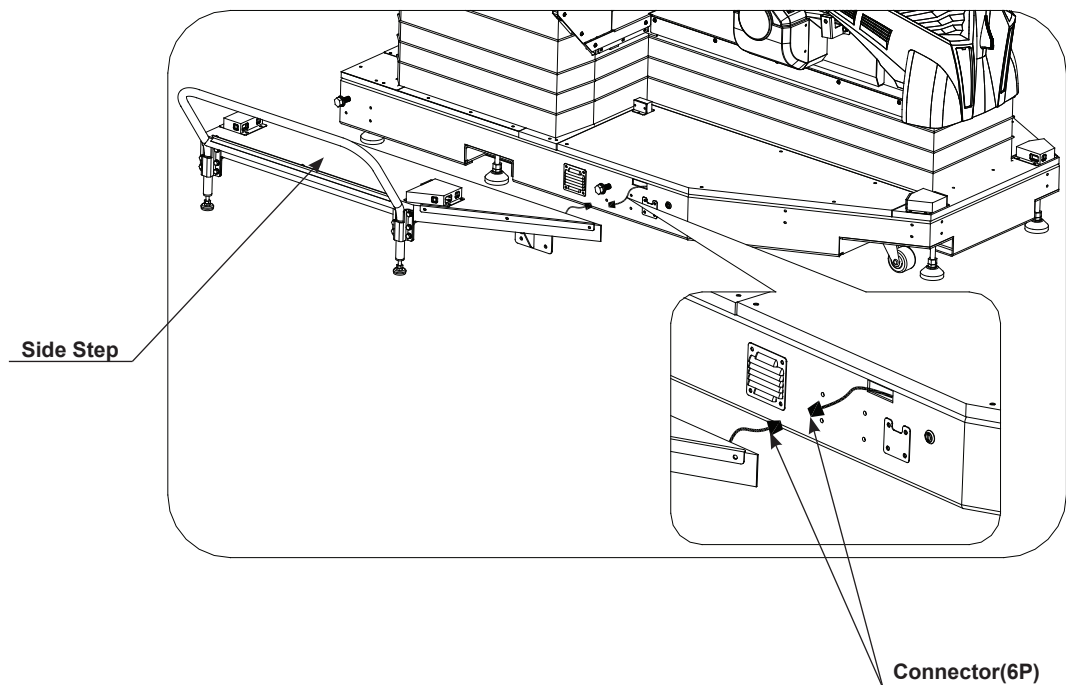
FIG. 6-2f

8 Hang the side step on the temporarily assembled guides. Make sure the sensor lines are pushed in to the base so the lines are not jammed under the steps.

Hex Bolt(6), Black
M8 X 25, W/Spring & Flat Washers
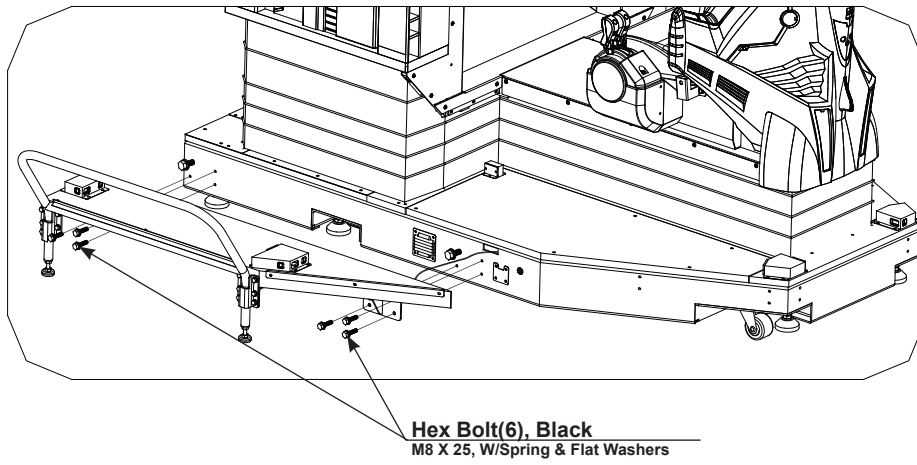
FIG. 6-2g

9 Place the adjusters of the Side step fence on the floor, and fasten the adjusters using the fix nut. Be careful not to lift the adjusters too far up. Do the same for the other side. Picture below shows the completed side step.

Fix Nut

Adjuster
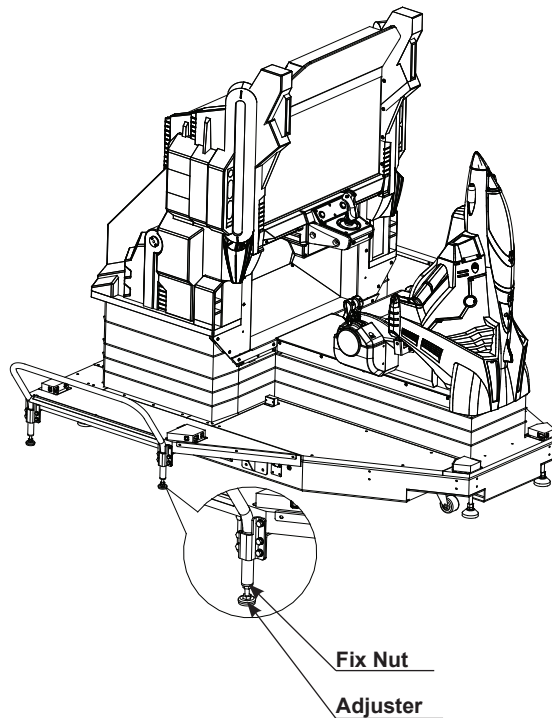
FIG. 6-2h

3 **FENCE INSTALLATION**

⚠️WARNING

When assembling fence, use caution so the Acrylic panel is kept from scratches..

1 FIG. 6-3a shows the locations of the fences. Fences can be installed in the order of : front, rear, side(2).

Front Fence

Rear Fence
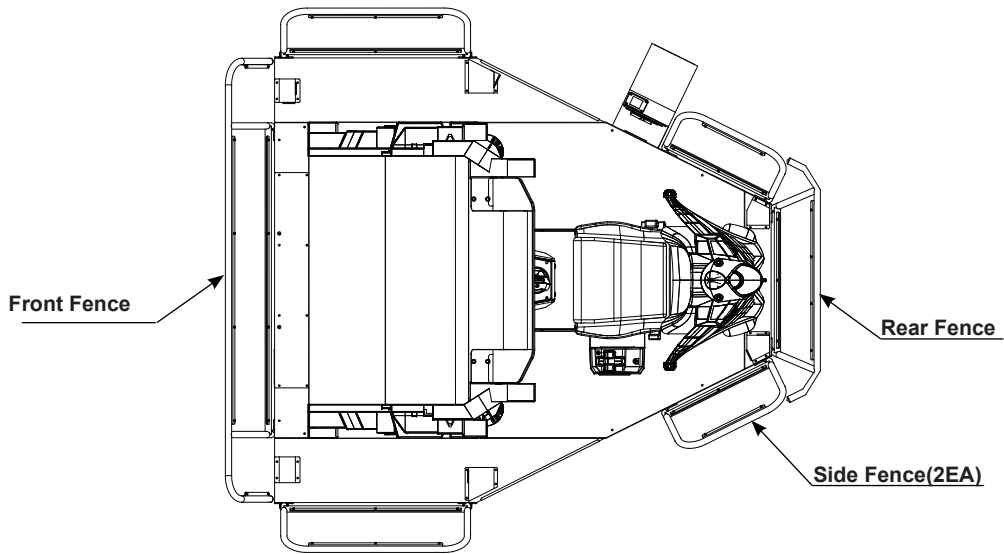
Side Fence(2EA)

FIG. 6-3a

2 Using 4 M8 x 25 hex bolts and spring/flat washers assemble the ffront fence as shown in Fig. 6-3b.

Front Fence

Front Fence

Hex Bolt(4), Black
M8 X 25, W/Spring & Flat Washers
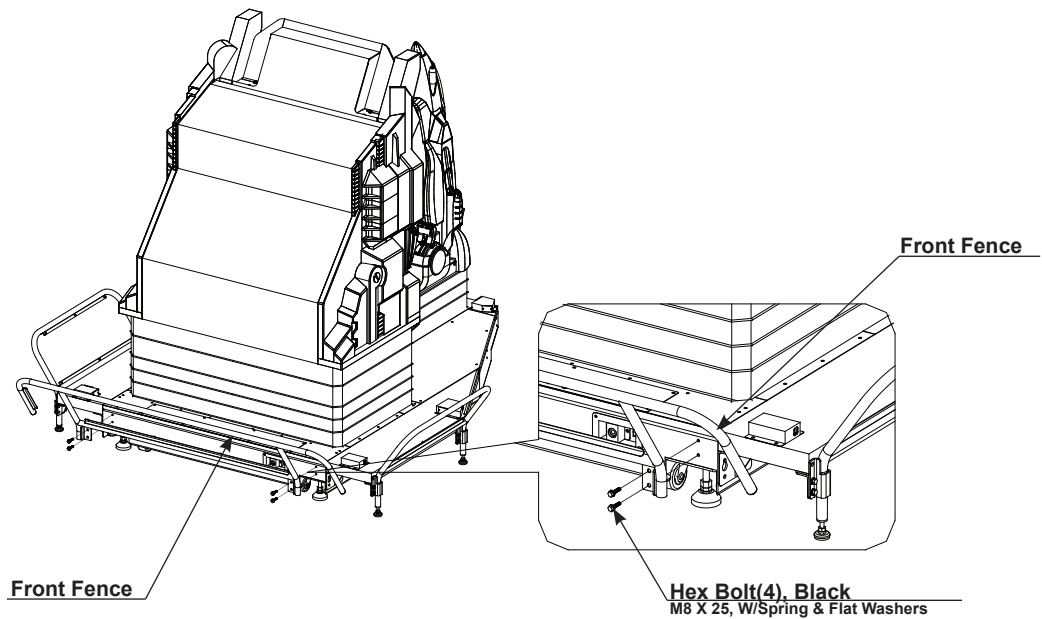
FIG. 6-3b

3   Rear and side fences assemble the same way as front fence was assembled.
12 M5 x 25 hex bolts w/spring & flat washers are used. (FIG. 6-3c)

Rear Fence

Side Fence

Hex Bolt(12), Black
M8 X 25, W/Spring & Flat Washers
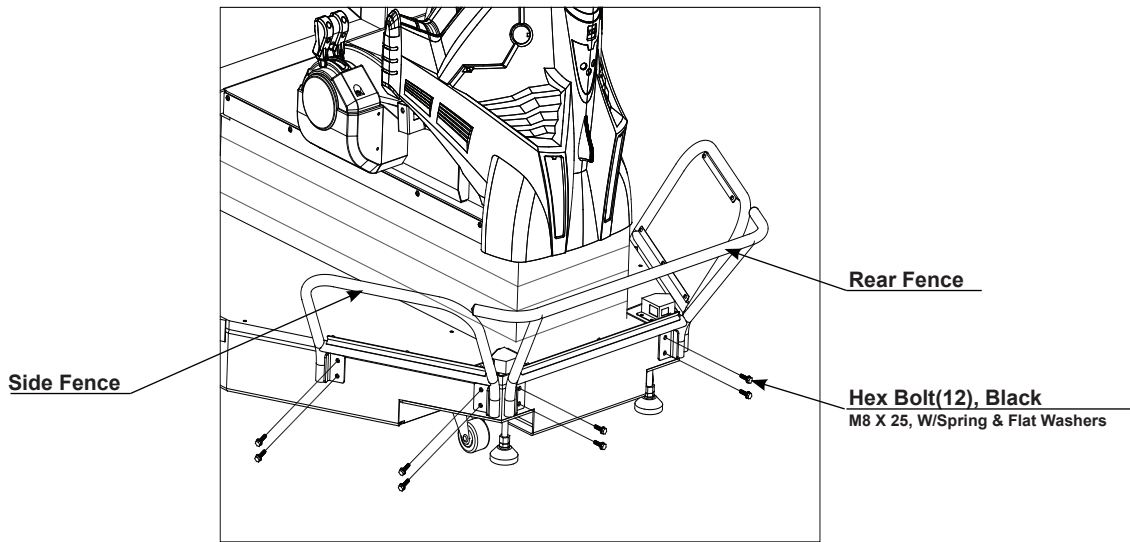
FIG. 6-3c

4 | **COINCHUTE TOWER INSTALLATION**

Various types of coinchute tower can be attach to this product. For japanese customers, we recommend Asahi Seiko, for the customers outside of Japan, we recommend Happ's frame(No. 42-3272-00) and accessories.

4-1 ASSEMBLING THE COIN MECHANICS

⚠WARNING

Coin mechanics such as coinchute doors, cash box doors and etc. must be mechanically compatible with Asahi Seiko and Happ's frames.

Coin mechanics must be completely assembled to finish coinchute tower assembly. Below is the assembly instruction for Happ's coin mechanics.

Assembling the Coin Frame (Asahi Seiko)

---

1 Clips noted as (A)(out of 10 clips) are not used when using Asahi Seiko's coin frame.

---

2 Attach the coin frame to the coin vault using 4 M4 X 8 round head screws(disassemble the 5 clips on the lower side and 1 clip on the upper side if the clips are already attached to the coin frame. Coin vault cannot be attached if the clips are attached.)

---

3 Assemble the clips facing down as shown below when the coin vault is assembled.
Fasten the clips just enough so the clips can be moved freely.
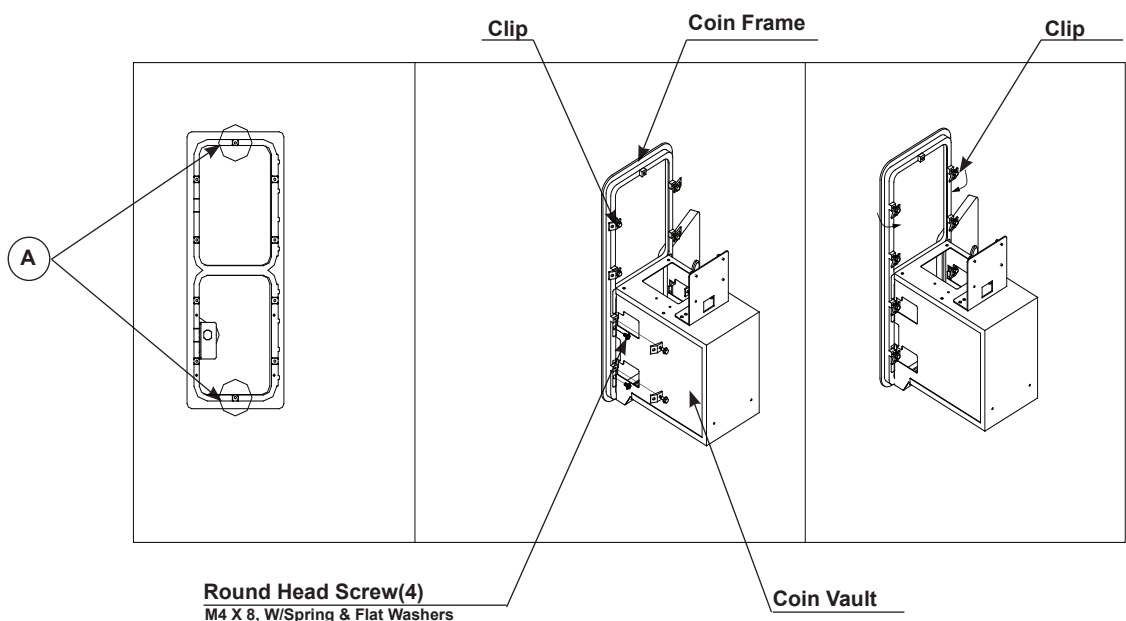
FIG. 6-4-1a

4 First, pull out the coin harness through the opening of the lower side of the Coinchute tower.

5 Connect the coin meter harness as the coin frame ass'y is pushed into the coin chute tower. Connect 4P connector for coin 1, and connect 6P connector for coin 2(1 coin meter is provided by the factory.)

6 Push the coin frame into the coinchute tower with the coin selector harness pulled out through the upper coin door to protect the harness. Re-adjust the clips on the coin frame if the clips are interfering with the coin tower.

Code Clamp

Coin Selector

Coin Selector Harness

Coin Meter Harness(4P, 6P)

Coin Harness(2P,4P(2),6P,Earth)
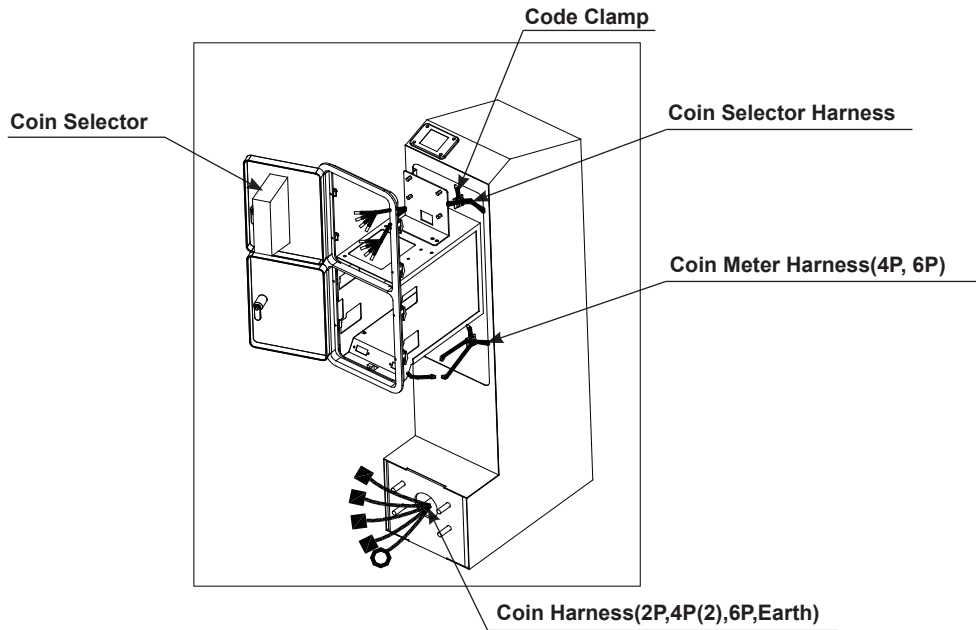
FIG. 6-4-1b

7 With the coin frame in place and the clips folded outward, secured the coin frame using mini socket wrench.

Coin Selector Harness

Clip

Mini-Socket Wrench

Coin Harness(2P,4P(2),6P,Earth)
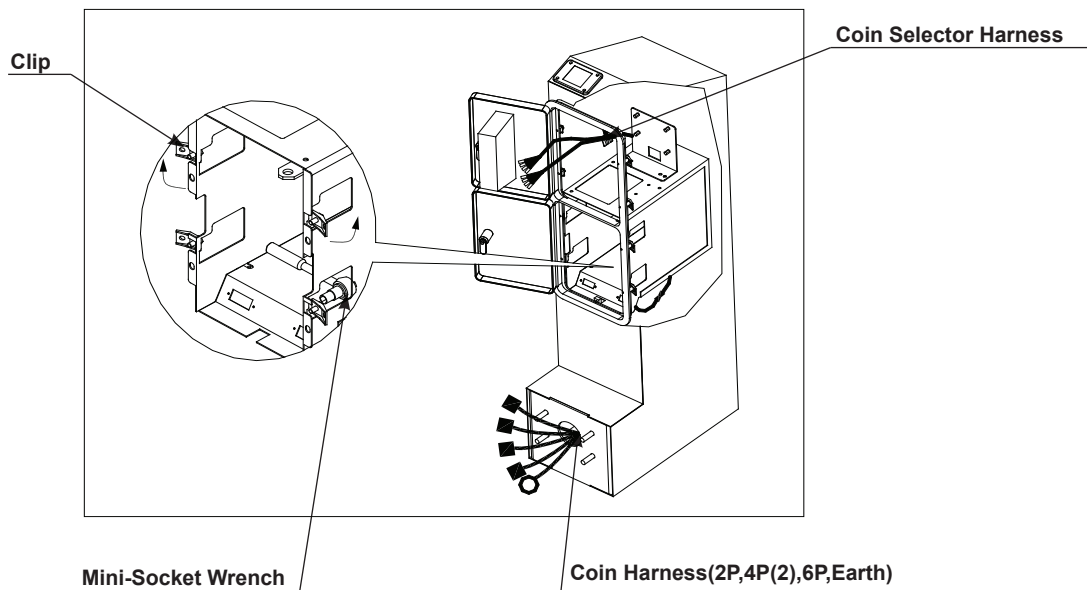
FIG. 6-4-1c

8 After placing the coin frame in the coinchute tower correctly, install the proper coin select bracket. 4 M4 nuts are used.

Coin Select Harness

**Coin Select Bracket
(1 Entry or 2 Entry)**

FIG. 6-4-1d

Nut(4), Black
M4, Spring & Flat Washer Used

9 Assemble the coin selector harness. The wire with the 'Coin 1' tag connects to the coin selector, the wire with the 'Lamp 1' tag connects to the lamp as shown below. (When using a different coin door, the installer may cut the existing connector and use a proper connector.)

LAMP

LAMP1

LAMP2

Sleeve 110
Sleeve 110
Sleeve 110
Sleeve 110

LAMP

5559-4P [MOLEX]

Power Specification by Line Color

Tag Name	Line Color	Power
Lamp 1	Red	+ 5V
	Black	GND
Lamp 2	Red	+ 5V
	Black	GND

COIN

COIN1

COIN2

Sleeve 187
Sleeve 187
Sleeve 187
Sleeve 187

Coin Selector

5559-6P [MOLEX]

Power Specification by Line Color

Tag Name	Line Color	Power
Coin 1	Blue	Coin SW 1
	Black	GND
Coin 2	Orange	Coin SW 2
	Black	GND

FIG. 6-4-1e

10 Insert the cash box into the lower part of the coin frame. Look for any interferences or tightness.

Assembling the Coin Frame (Happ Controls)

1 Wh*en* using a coin frame from Happ Copntrols (model# 42-3272-00), a clip noted as (A)(1 of 9 clips) is not used.

2 Attach the coin vault to the coin frame using 8 clips(disassemble the 5 clips on the lower side and 1 clip on the upper side if the clips are already attached to the coin frame. Coin vault cannot be attached if the clips are attached.)

3 Assemble the clips pushed in-ward as shown below when the coin vault is assembled. Fasten the clips just enough so the clips can be moved freely.

Clip   **Coin Frame**   **Clip**

A

Coin Vault
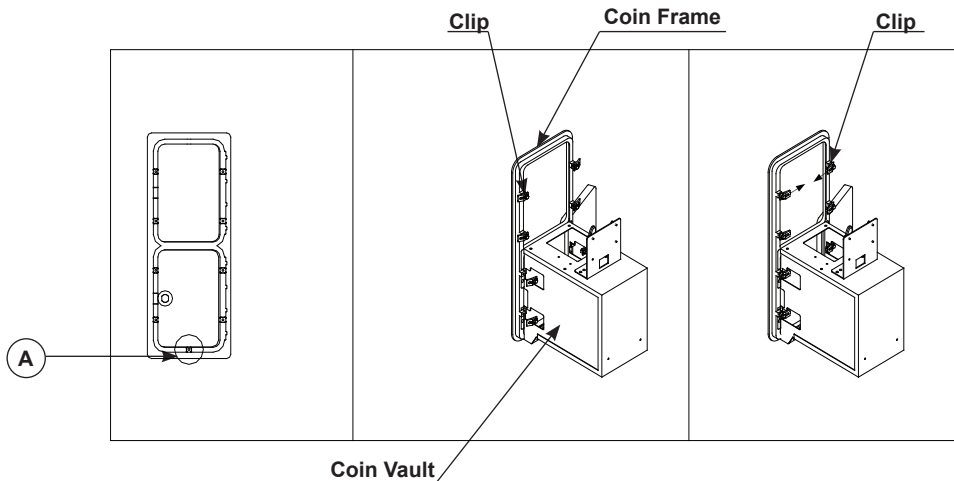
FIG. 6-4-1f

4 First, pull out the coin harness through the opening of the lower side of the Coinchute tower.

5 Connect the coin meter harness as the coin frame ass'y is pushed into the coin chute tower. Connect 4P connector for coin 1, and connect 6P connector for coin 2(1 coin meter is provided by the factory.)

6 Push the coin frame into the coinchute tower with the coin selector harness pulled out through the upper coin door to protect the harness. Re-adjust the clips on the coin frame if the clips are interfering with the coin tower.

Code Clamp

Coin Selector

Coin Selector Harness

Coin Meter Harness(4P, 6P)

Coin Harness(2P,4P(2),6P,Earth)
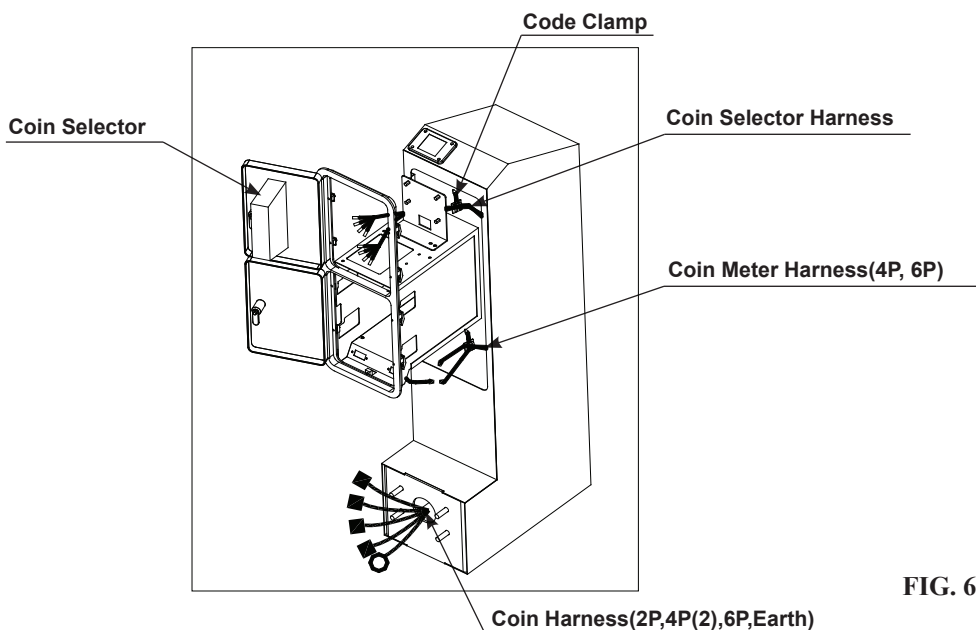
FIG. 6-4-1g

7 With the coin frame in place and the clips folded outward, secured the coin frame using mini socket wrench(make sure the hook of the lower clip is holding the inside of the coin vault so it may fasten the coin vault.)

Coin Select Harness

Clip

Mini-Socket Wrench

Coin Harness(2P,4P(2),6P,Earth)
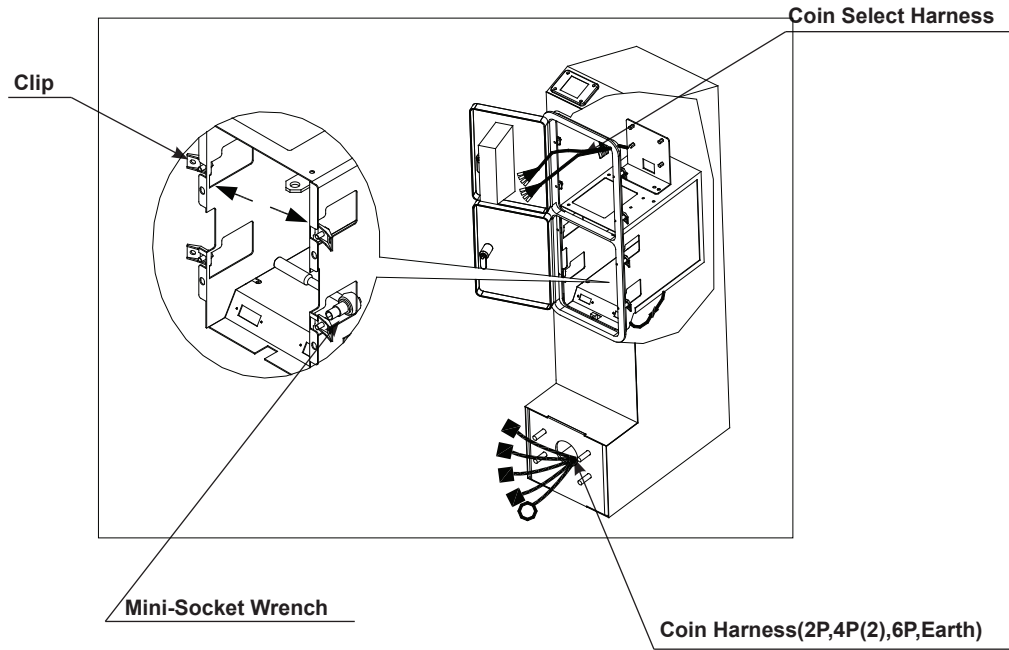
FIG. 6-4-1e

8 After placing the coin frame in the coinchute tower correctly, install the proper coin select bracket. 4 M4 nuts are used.

Coin Select Harness

Coin Select Bracket
(1 Entry or 2 Entry)

Nut(4), Black
M4, Spring & Flat Washer Used
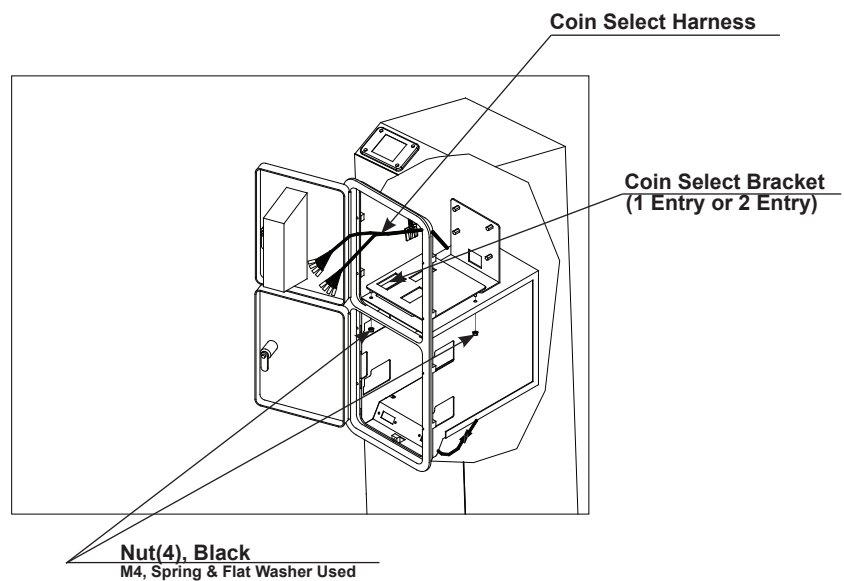
FIG. 6-4-1f

9 Assemble the coin selector harness. The wire with the 'Coin 1' tag connects to the coin selector, the wire with the 'Lamp 1' tag connects to the lamp as shown below. (When using a different coin door, the installer may cut the existing connector and use a proper connector.)

FIG. 6-4-1g
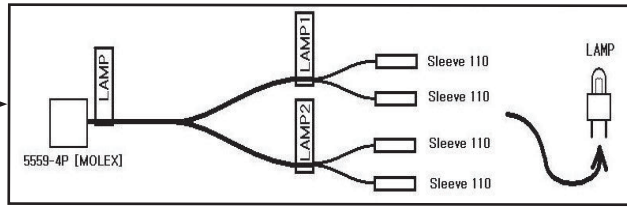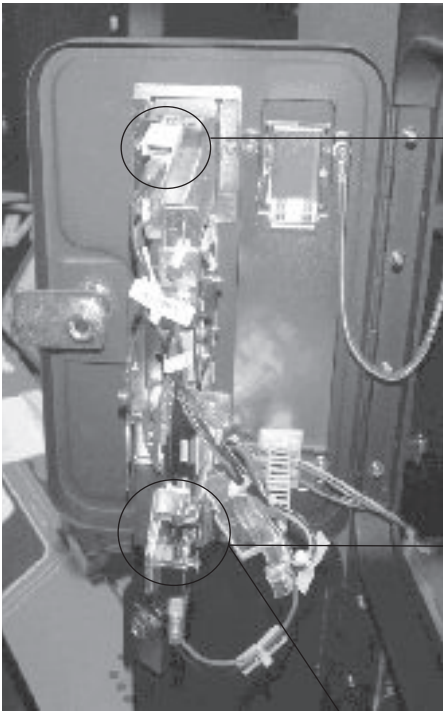
Power Specification by Line Color

Tag Name	Line Color	Power
Lamp 1	Red	+5V
	Black	GND
Lamp 2	Red	+5V
	Black	GND

In North America(SLEEVE TYPE)
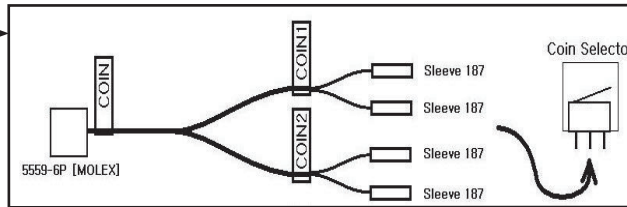
Power Specification by Line Color

Tag Name	Line Color	Power
Coin 1	Blue	Coin SW 1
	Black	GND
Coin 2	Orange	Coin SW 2
	Black	GND

In Europe (SR3 MODE1 TYPE)
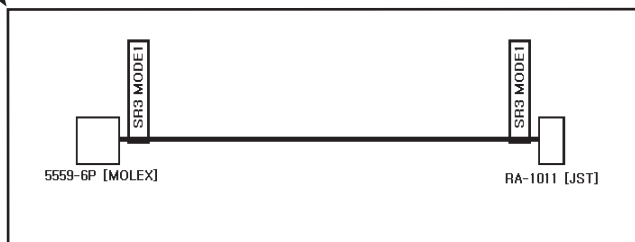
Power Specification by Line Color

Tag Name	Connector	Pin No(Color)	Power
SR3 MODE1	RA-1011(10P) [JST]	1(Black)	GND
		2(Yellow)	+12V
		7(Blue)	Coin SW 1
		8(Orange)	Coin SW 2

10 Insert the cash box into the lower part of the coin frame. Look for any interferences or tightness.

4-2 ASSEMBLING COINCHUTE TOWER

Coinchute tower assembly instruction

1 Remove 6 M5 X 35 round head wrench bolt from the Maintenance cover R before installing the coinchute tower.

Maintenance Cover R

Round Head Wrench Screw(6)
M5 X 35, Flat Washer Used
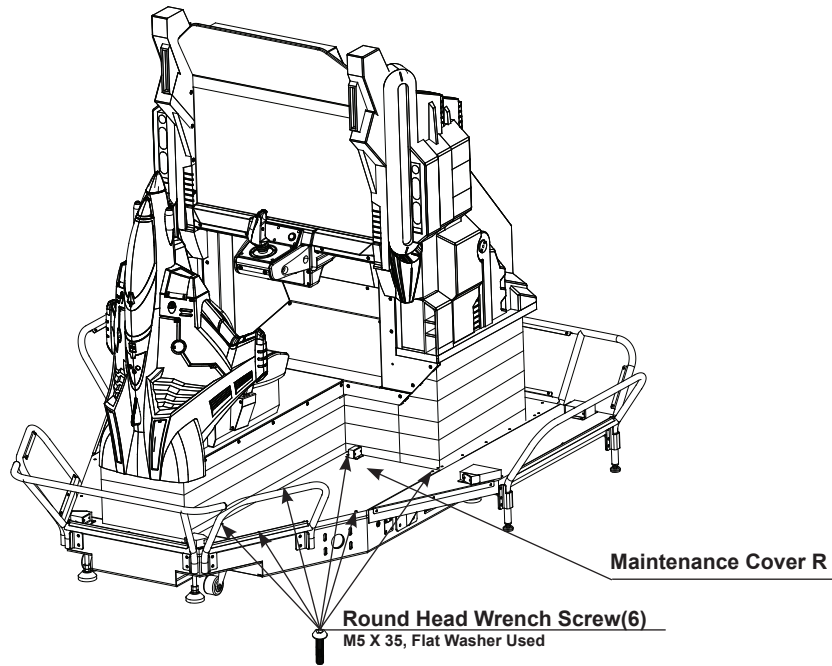
FIG. 6-4-2a

2 Unlock and carefully lift Maintenance Cover R in the direction as shown in FIG. 6-4-2b and separate it.

Maintenance Cover R

Key Lock
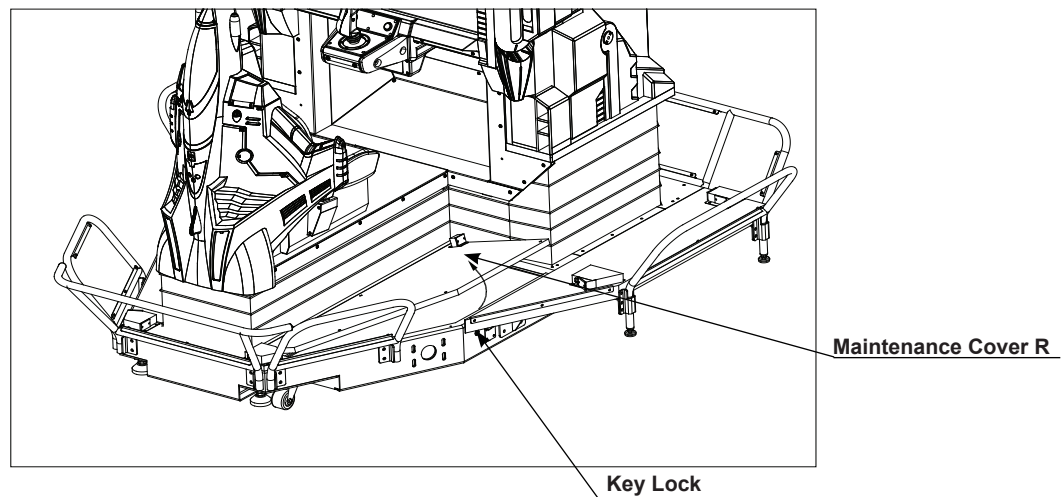
FIG. 6-4-2b

3 Fix the position of the Coin chute Tower as displayed in FIG. 6-4-2c, push the Coin Harness into the unit, and fasten it in place with 4 HEX Nut ,M10 ,Spring & Flat Washers.

4 Connect all the connectors of the coin harness. Remove the M4 X 8 round head screw which was installed at the factory and place the earth probe as shown below.

Earth

Hex Nut(4),Black
M10, Spring & Flat Washer Used

Coin Harness(2,4,6p)
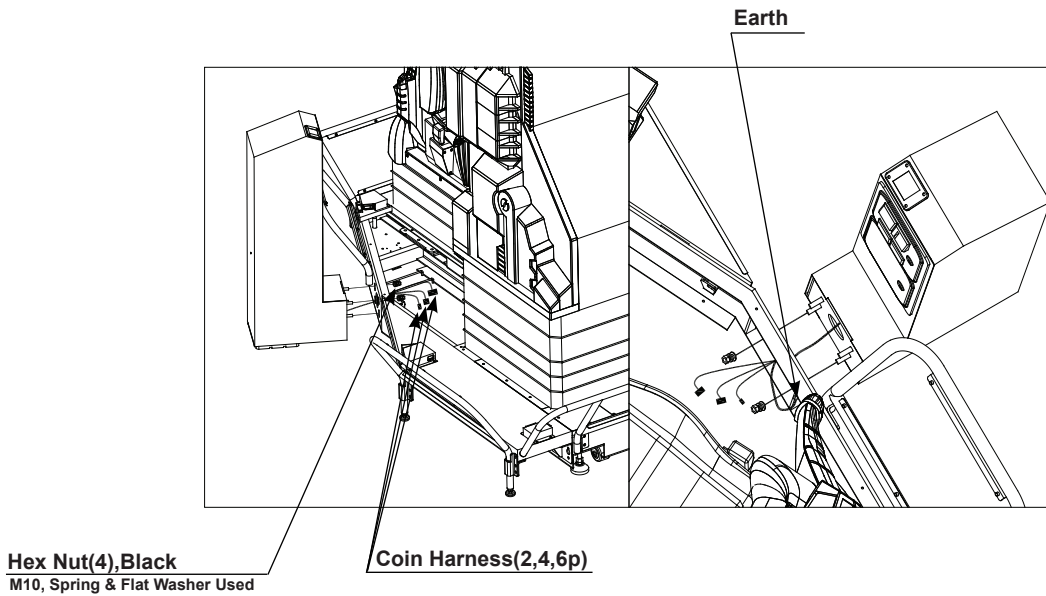
FIG. 6-4-2c

5 After completing the assembly of the coinchute tower, close the maintenance cover L following the reverse order of the installation.

5 | ATTACHMENT OF MOTION STOP BUTTON GUIDE

The MOTION STOP BUTTON guide that will be attached to the SW PLATE of the CONTROL PANEL must be attached in the following order.

1 Remove 4 ROUND HEAD WRENCH BOLTS (M4 X 12) that hold down the
SW PLATE to the CONTROL PANEL and separate the SW PLATE.

Round Head Wrench Screw(6)
M4 X 12
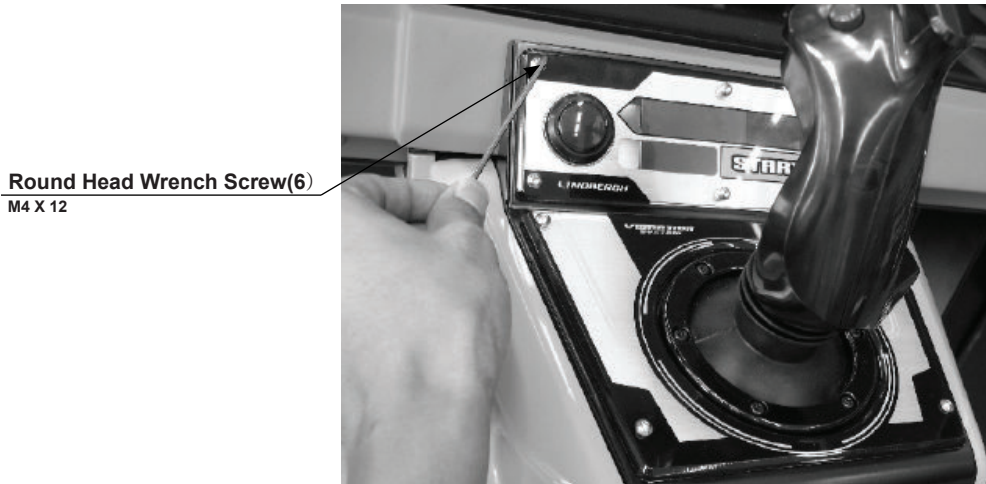
FIG. 6-5a

2 Disconnect the CONNECTORS connected to the MICRO SW as shown in figure 6-5b. Look
at figure 6-6c and turn the MICRO SW in the counter clockwise direction to remove it.
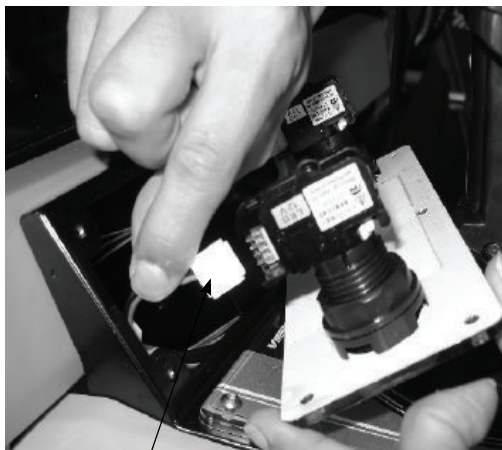
Connector (4P)

FIG. 6-5b
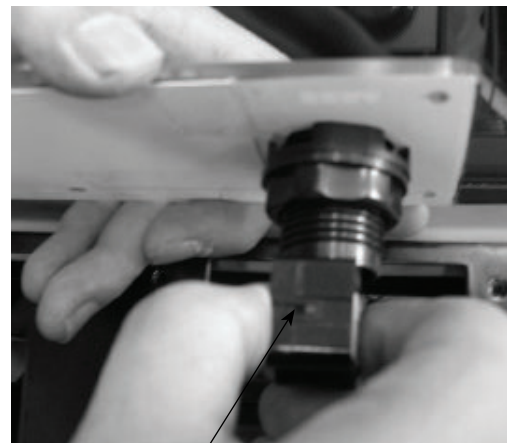
MICRO SW

FIG. 6-5c

3 Flip the SW PLATE over, match the hole at the bottom of the SW PLATE with the hole in the bottom of the MOTION STOP BUTTON guide, and attach it with cellophane tape.

Cellophane
Tape

matching the hole of the SW
PLATE and MOTION STOP
BUTTON
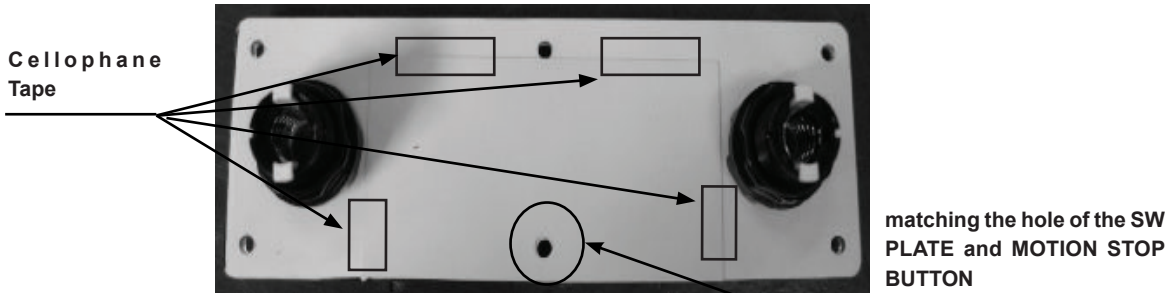
FIG. 6-5d Backside of Plate

FIG. 6-5e MOTION STOP BUTTON guide attached to the SW PLATE.

4 Insert the MICRO SW in the SW PLATE and turn it in the clockwise direction to fasten it. (Refer to FIG 6-5c)

5 Insert the SW PLATE in the CONTROL PANEL and fasten it with 6 ROUND HEAD WRENCH BOLTS (M4 X 12) (Refer to FIG. 6-5a)

FIG. 6-5f

<div style="border: 2px solid black; padding: 10px;">

⚠WARNING

- **When connecting the DVD wire 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.**

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

- **Connect the DVD DRIVE to the LINDBERGH before connecting the power. Adhere strictly to the proper sequence in performing work. Failing to do so may cause electrical shock or short circuit.**

</div>

Have on hand the DVD software kit, DVD DRIVE and DVD wire, all of which are sold separately. In preparation for software installation, connect the LINDBERGH in the base to the DVD DRIVE with DVD wire.

1 Remove 6 Round Head Wrench Bolts that hold down the Maintenance Cover L on the base.

Maintenance Cover L

Round Head Wrench Screw(6)
M5 X 35, Flat Washer Used
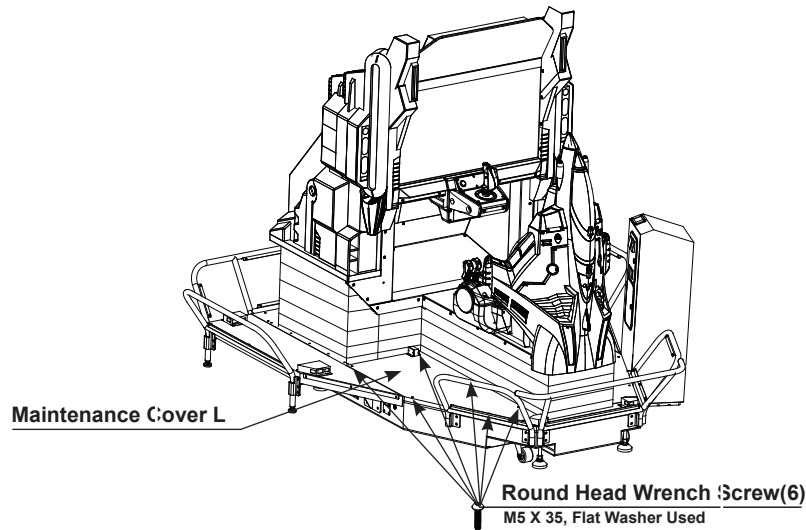
FIG. 6-6a

2 Unlock and carefully lift Maintenance Cover in the direction the cursor is pointing, and separate it.

Maintenance Cover L

Key Lock
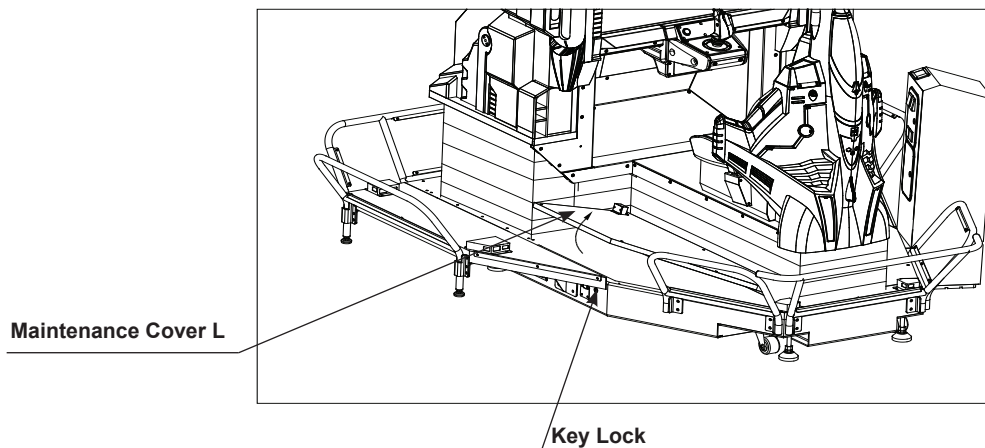
FIG. 6-6b

3 As shown in figure 6-5c below, open the Hole Lid on the base and connect 2 Connectors, which are positioned on the side with the 'LINDBERGH' Tag, through the hole to the Game Board in the Base. During this process, be sure to close the Hold Lid as shown in the figure below, so as to prevent any injuries to the maintenance personnel. There are 4 USB Connectors on the Game Board. Any of the connectors can be used. Figure 6-5d shows 2 connectors disconnected from the Game Board. This is a figure just to clearly show the connecting slot for the DVD wires. Actually, they should not be disconnected.

Hole Lid

Truss Bolt(4), Black
M5 X 12

DVD Wire

FIG. 6-6c

NH 6Pin

USB MINI A
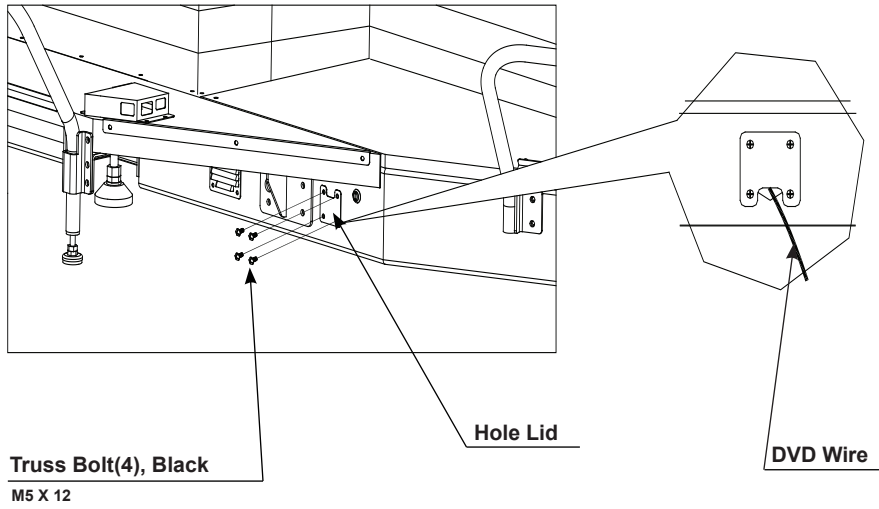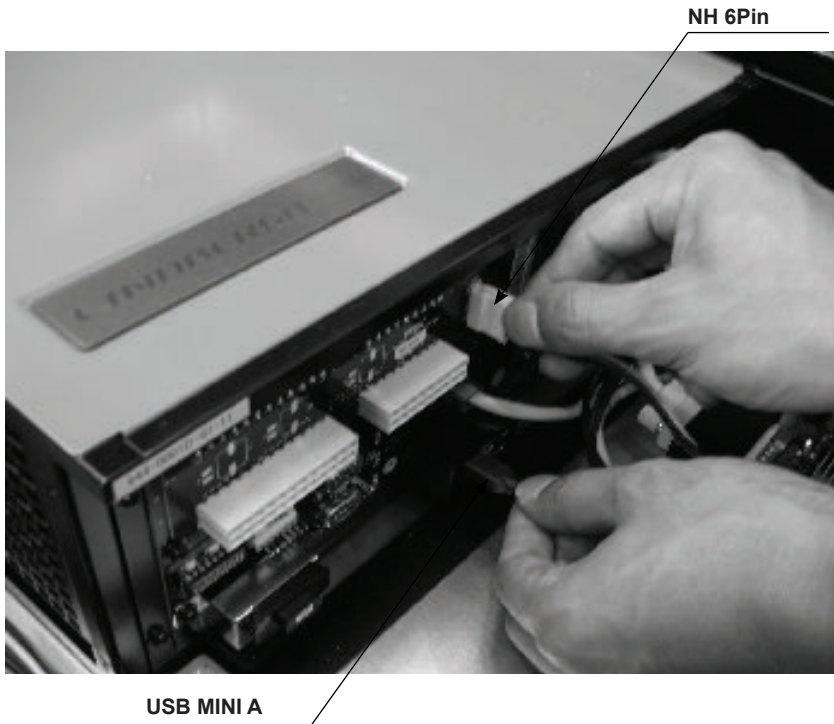
FIG. 6-6d

4 Stick the Board Number Sticker on the sticker in the upper left hand side of the Game Board.

5 Take out the Key Chip from the DVD Kit Case and insert the key into the Game Board. Check the direction in which the key is inserted. The figure shows 2 connectors disconnected from the Game Board This is a figure just to clearly show the Key Chip. Actually, they should not be disconnected.

LINDBERGH Number

Key Chip
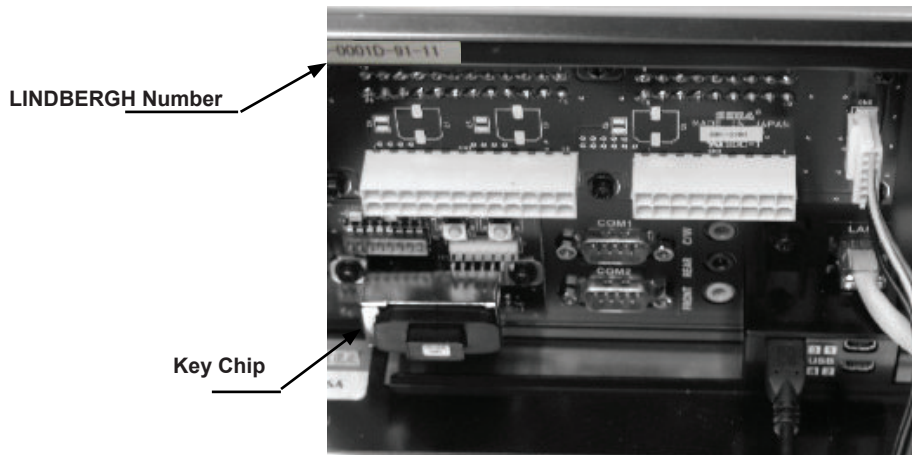
FIG. 6-6e

6 Connect 2 connectors which are positioned on the side with the 'DVD' tag on the DVD Drive.

NH 6Pin

USB MINI A

FIG. 6-6f

7 Close Maintenance Cover L and start installation.
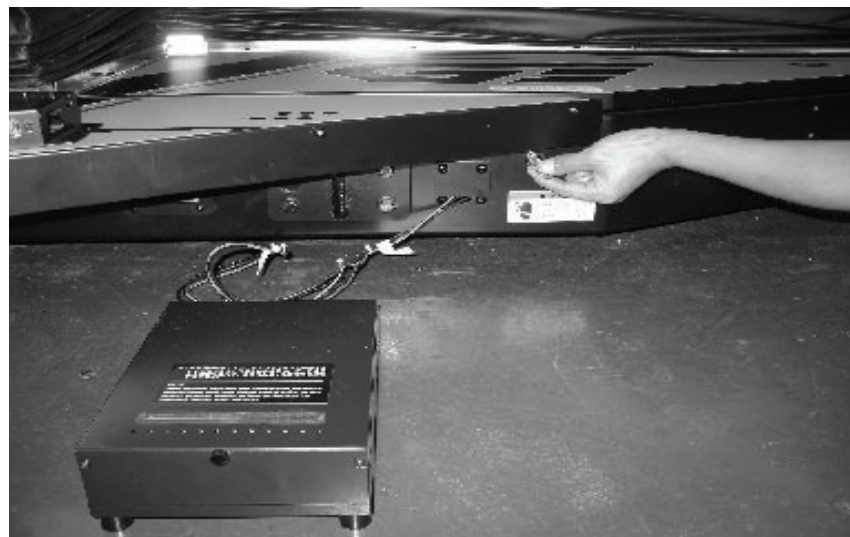
FIG. 6-6g

⚠WARNING

- Use the power supply equipped with an earth leakage breaker. Use of power supply without such a breaker could result in fire if there is a current leakage.

- Have available a securely grounded indoor ground terminal. Without proper grounding, customers could be electrocuted and product operations might not always be stable.

- Use a Cable with an external diameter between 6~12. This MUST be followed so that the Power Cable can be fixed into place with the Cable Gland. If the power cable is not completely fixed into place with the Cable Gland, it may lead to electric shocks to the customers, or cause the game unit to malfunction.

- Do not expose the power cord or ground wire. If these are exposed, customers could stumble over them, for instance, and easily damage them. Additionally, if these lines are damaged, there could be a risk of electrical shock or short circuit. Set these lines at locations where they will not interfere with customer traffic, or attach covers to them.

- After laying out the power cord on the floor, be sure to always protect it. If the power cord is left exposed, it can easily be damaged, resulting in electrical shock.

- For safety, connect the Power Cable to the game unit first.

- Use a 3-way power cable with an external diameter between 6~12 that has both the power cable and the ground wire.

- When using the product's AC unit ground terminal, use ground wire with a circular terminal as shown in the illustration, and establish ground securely. Avoid indiscriminant grounding operations such as use of wire with only its sheath peeled off.

Terminal width 12 mm

Hole diameter 6.4 mm

- Connectionf the power cable to the indoor power source should be executed by a qualified electrician. Unqualified people should not perform the operation.
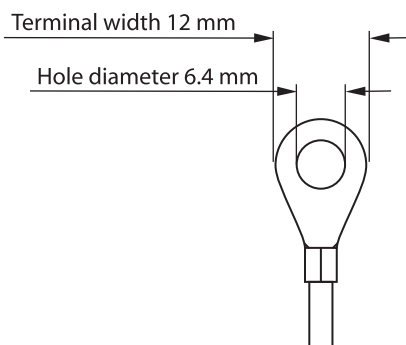
STOP IMPORTANT

The power cable is not included with the product. The power cable which confirms to the facility electrical specifications must be prepared by the owner.

There is an AC unit on the base side opposite the monitor. This AC unit contains the following..

1 Confirm that the main switch is at OFF

Main Power SW
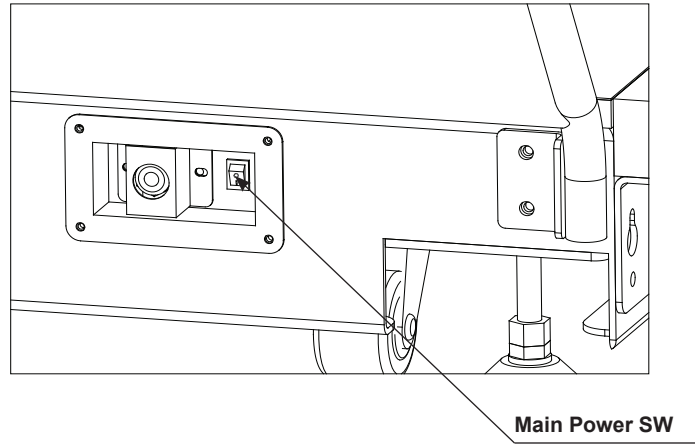
FIG. 6-7a Main SW Panel

2 Remove 8 Truss screw M5 X 12 and open the AC Unit Cove*r*

AC Unit Cover

Truss Screw(8), Black
M5 X 12, Flat Washer Used
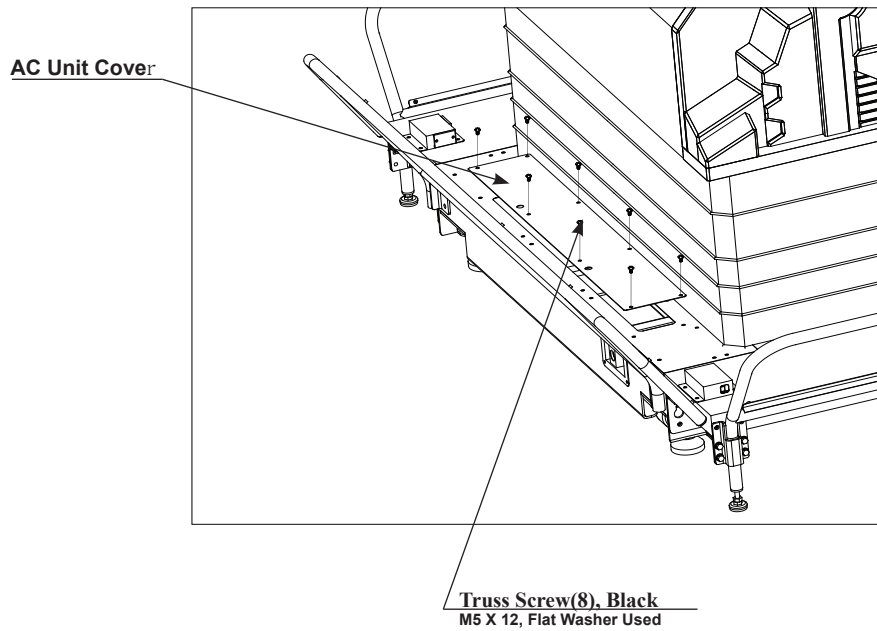
FIG. 6-7b

3 Remove 2 truss screw M4 X 8 on the Main SW Panel and separate them.

Cable Gland Cover

Truss Screw(2), Black
M4 X 8
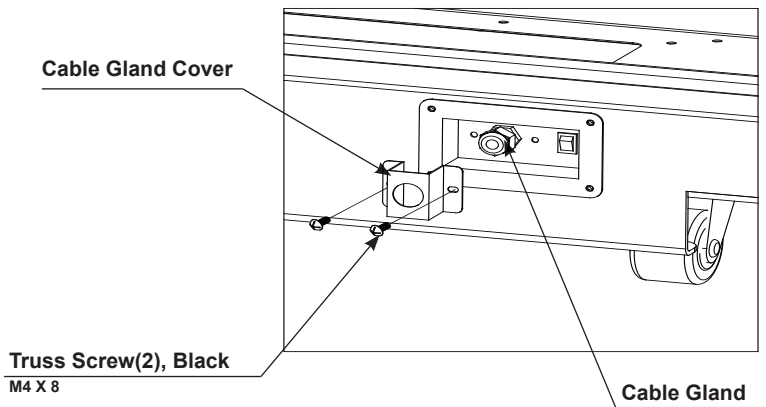
Cable Gland

FIG. 6-7c

4 Remove Cap Nut of the Cable Gland.

5 Push the Power Cable through the Cable Gland Cover, Cable Gland Cap Nut and Cable Gland in the Main SW Panel and connect it to the Main SW Panel of the AC Unit, . Connect 2 lines of Main Power Cable as shown in the figure below and connect the ground wire where it is marked with a ground wire sign. Turn the Cap Nuts of the Cable Gland clockwise and completely fasten the Power Cable in place. (Unscrew the factory installed earth fastening screw and secure the earth wire.)

Power Cable

Cable Gland Cap Nut

Power Cable

Earth
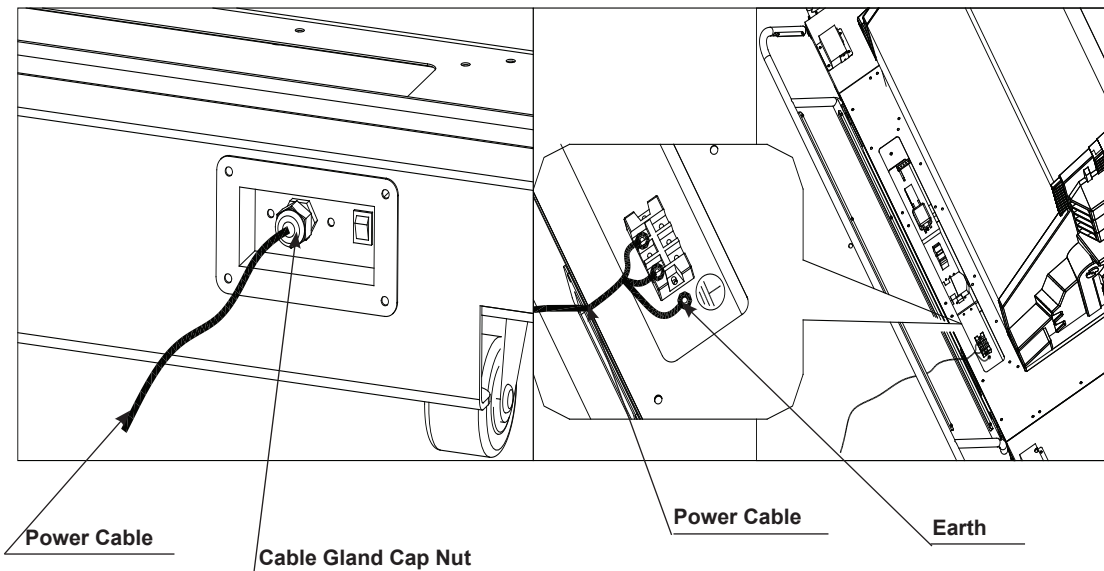
FIG. 6-7d

6 Close the AC Unit Cover. and Cable Gland Cover.

7 Start the wiring work for the Power Cable. Install a wiring cover to protect the Power Cable.

⚠WARNING

- When the software is installed, the seat moves left and right automatically. First make sure no one is near the product, then engage the power. If someone is near the product, they could come in contact with it or collide with it, get their hand or finger caught somewhere, or accidentally fall down.

- 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.

(STOP) IMPORTANT

- 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.

- 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 service manual and take corrective action.

Have available a DVD kit, which is sold separately. (See Table 5c.)

1 Before engaging the power supply, be sure that no one is on the base and that there are no tools, etc., on the seat. When the product is shipped from the factory, the software has not yet been installed. But when the software is installed and the power supply is engaged, the seat will move left and right.

2 Turn the main switch of the AC unit to ON and engage the power supply.

3 The LINDBERGH start-up screen appears. Wait for at least one minute. The error state is established. Check to be sure it is "Error 22." If it is "Error 22," proceed to the next operation. If it is not "Error 22," refer to the LINDBERGH service manual and take corrective action.

4 Take out 1 urea (plastic head) screw and remove the DVD DRIVE case lid.

CASE LID
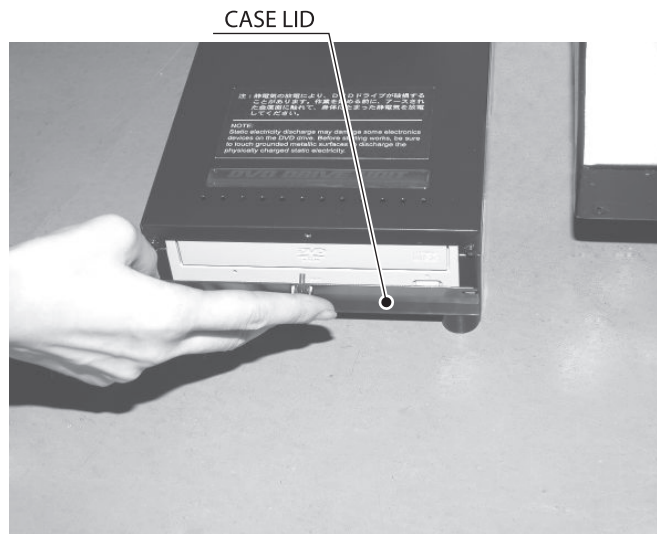
FIG. 6-8a

5 Press the DVD DRIVE switch and the DVD DRIVE tray will come out. Set the DVD from the DVD kit into the tray. Always have the labeled side facing upward.
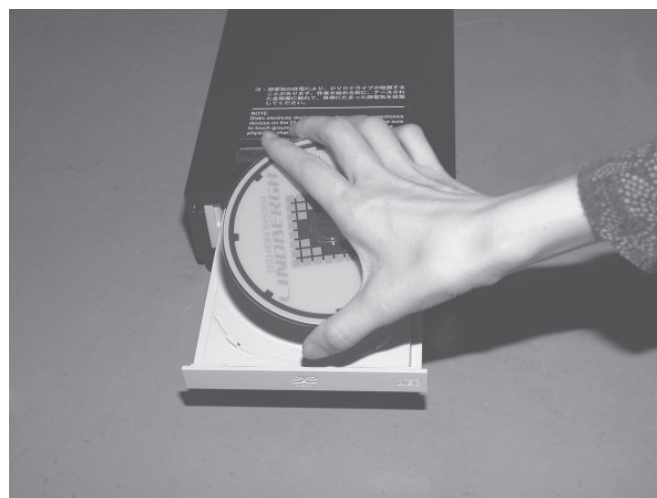
FIG. 6-8b

6 Press the DVD DRIVE switch. The tray goes back into the drive.

7 Make sure no one is near the product, and then re-engage the power. Turn the main switch to OFF once, wait for at least one minute, then turn the switch back to ON.

8 Software is installed automatically from the DVD to the LINDBERGH. In some cases, it may take about 5 minutes to install software to the LINDBERGH.

9 Upon completion of installation, initialization takes place automatically. The seat moves. Wait for the seat to stop at a level position. Otherwise there could be accidents, errors or problems.

10 Initialization is completed when the Attract Mode screen appears.

11 Press the DVD DRIVE switch so that the tray comes out. Remove the DVD.

12 Press the DVD DRIVE switch so that the tray goes back into the unit. If the power is cut off, the tray will not move.

13 Set the main switch to OFF.

14 Remove the DVD wire from the DVD DRIVE.

15 Attach the DVD DRIVE case lid and fasten it with 1 urea screw.

16 Unlock and remove rear door R.

17 Remove the DVD wire from the LINDBERGH and withdraw it from the bottom surface of the base. Leave the key chip inserted.

18 Attach the cable lid to the base bottom plate. Fasten with 2 flange nuts.

19 Attach and lock Maintenance Cover L. And then fasten screws.

20 Store the DVD DRIVE, DVD wire and DVD kit in a location free of dust and cigarette smoke.

9 ENGAGEMENT OF POWER SUPPLY AFTER INSTALLING SOFTWARE

⚠WARNING

Only engage the power supply after checking the surroundings. Initialization takes place automatically when engaging the power supply after software installation. At this time the seat will move, and if anyone is near the product, they may collide with the product, fall down, or get their hand or finger caught somewhere.

🛑 IMPORTANT

It takes about 1 minutes and 50 seconds for initialization to complete after the power has been engaged. Do not touch the product or press any buttons until after initialization is completed. If an anomaly is detected during initialization, there is an error display. Unless the cause of the error is removed and initialization is allowed to complete normally, the product will not operate properly.

Set the main switch of the Main SW Panel to ON and engage the power. When the power is engaged, 1 LED lamp in the billboard will light up.

Display monitor will first display LINDBERGH initialization screen and then show a message that indicates the machine is in the Initialization motion. At this time the initialization motion will start. Display will show up with the order listed below.

---

1 System Startup .

---

2 Network Checking

Upon completion of initialization, the Attract (waiting for customers) Mode screen is displayed. The Attract Mode demo appears on the monitor and sound is output from the speakers to the left and right of the monitor and to the left and right of the seat backrest. The LEDs at the upper right and left of the monitor also light up.

If the unit is set for no sound during Attract Mode, there is no sound output.

If there are enough credits to enable play, the start button on the control panel flashes. It goes out if there are no credits during Attract Mode.

If the setting is for network play, the screen for "checking network" message appears on the monitor after completion of initialization.

If there are no problems with the connections or settings for network play, the Attract Mode screen appears.

If there are any anomalies or faults in the connections or settings for network play, the confirmation screen or error message is displayed. Inspect the connections and settings of the cable for network play.

Even when the power source has been cut off, credit count and ranking data are kept stored in the product. However, fractional coin counts (inserted coins that do not amount to one credit) and bonus counts are not kept.

Fluorescent lamp in billboard lights up.

LEFT/RIGHT SPEAKERS (monitor)

LED

MONITOR

LEFT/RIGHT SPEAKERS (seat backrest)

Fluorescent lamps at seat rear light up.

Seat motion
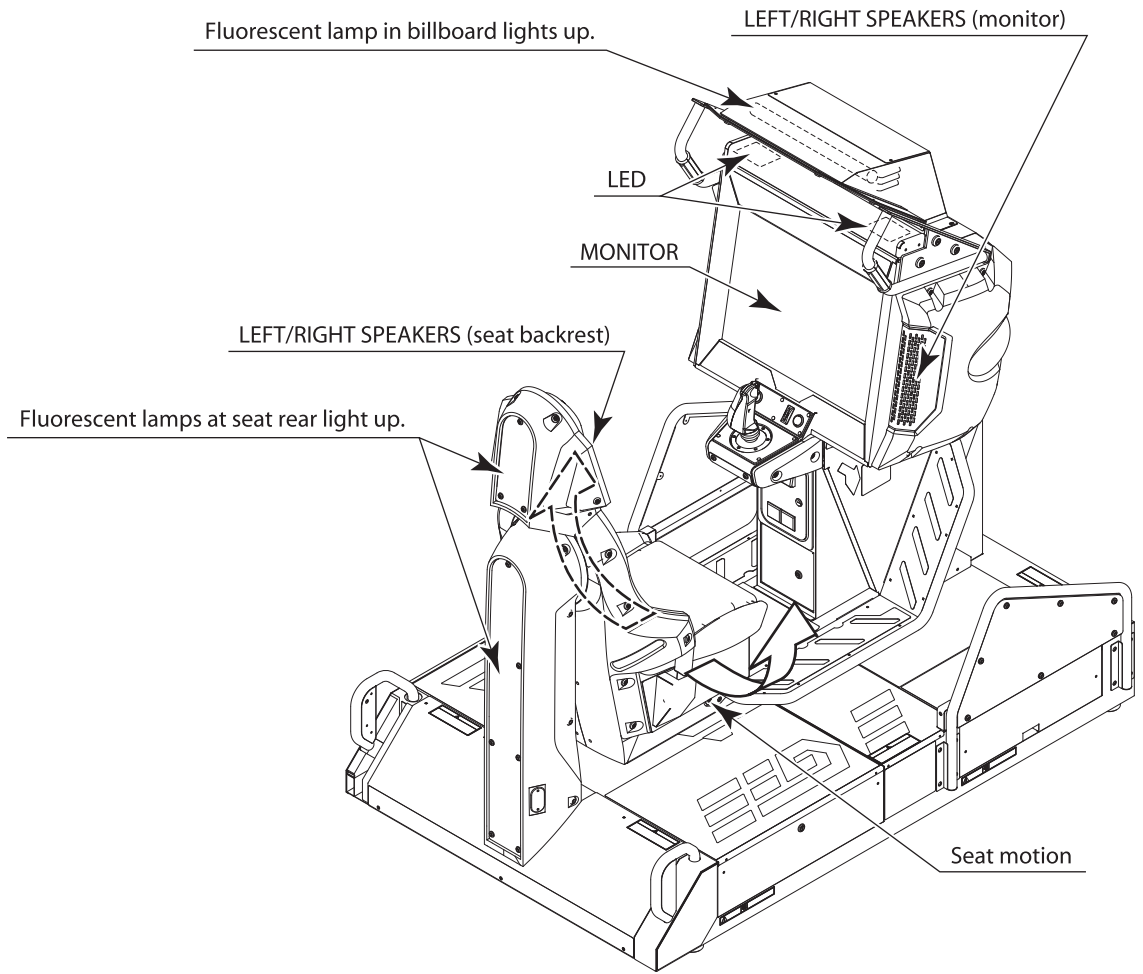
FIG. 6-9 Operation When Power is Engaged

10 CONFIRMATION OF ASSEMBLY

Use test mode to confirm that assembly is proper, and that the LINDBERGH, connecting boards, and input/output devices are normal.

Perform the following tests in test mode.

For tests (1) to (4), refer to the LINDBERGH service manual. For tests (5) to (7), see [9-3 Game Test Mode].

(1) Information Display Screen

When "SYSTEM INFORMATION," "STORAGE INFORMATION," or "JVS TEST" has been selected on the system test mode menu, system information, game information and information on JVS I/O board connected to LINDBERGH are displayed.

(2) JVS Input Test Screen

When "INPUT TEST" has been selected on the JVS test screen, data input to the JVS I/O board is displayed. On the product, this is the screen for the testing coin switch.

Insert a coin. If the display to the side of the switch changes the switch and wiring connections are normal.

(3) Monitor Test Screen

When "MONITOR TEST" has been selected on the system test mode menu, the screen for checking monitor adjustment status appears.

Monitor adjustment is completed when the product is shipped from the factory, but you should observe the test screen to determine whether further adjustment is necessary. Refer to Chapter 10 and adjust the monitor if necessary.

(4) Speaker Test Screen

When "SPEAKER TEST" has been selected on the system test mode menu, the screen for checking speaker sound output appears.

To confirm that audio output is normal, have test sound output from the game unit's speaker.

(5) Input Test

When "INPUT TEST" has been selected on the game test mode menu, the screen for testing input device appears. Test operate the input device by pressing each switch. If the display on the side of each input device changes to "ON" and numerical values change smoothly in accordance with each operation, the input device and its wiring connections are normal.

```
                    INPUT TEST

        CONTROL STICK X        80H
        CONTROL STICK Y        80H
        THROTTLE LEVER         80H
        GUN TRIGGER            OFF
        MISSILE TRIGGER        OFF
        CLIMAX SWITCH          OFF
        START BUTTON           OFF
        MOTION STOP            OFF
        SEATBELT               OFF
        FLOOR SENSOR           OFF
        SERVICE                OFF
        TEST                   OFF




        PRESS TEST AND SERVICE BUTTON TO EXIT
```

FIG. 6-10a Input Test Screen

(6) Output Test

When "OUTPUT TEST" has been selected on the game test mode menu, the screen for testing lamps and other output devices appears.

If each output device operates properly, the output device and its wiring connections are normal.

```
                    OUTPUT  TEST

        START  BUTTON                  OFF
        CONTROL  STICK  VIBRATION      OFF
        CABINET  LAMP  R               OFF
        CABINET  LAMP  G               OFF
        CABINET  LAMP  B               OFF
        SPEAKER  FL                    OFF
        SPEAKER  FR                    OFF
        SPEAKER  BL                    OFF
        SPEAKER  BR                    OFF
      ->EXIT




               SELECT  WITH  SERVICE  BUTTON
                 AND  PRESS  TEST  BUTTON
```
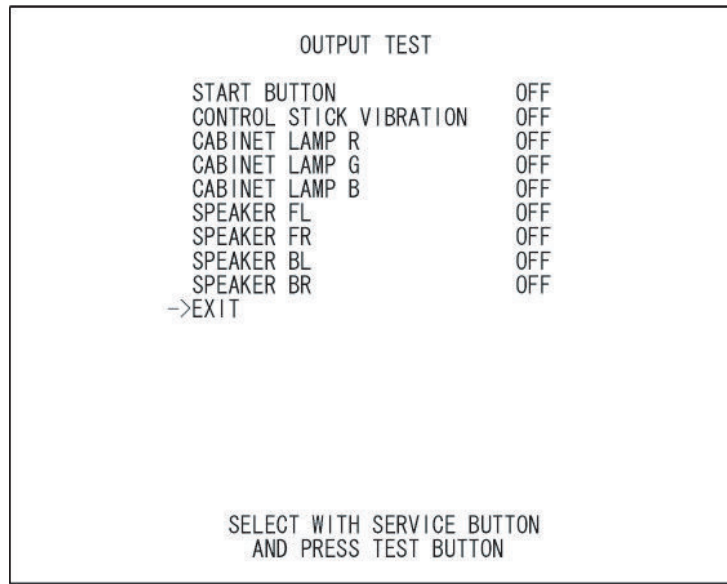
FIG. 6-10b Output Test Screen

(7) Calibration

Confirm that the operability of input devices and seat motions during game play do not present any hindrances to play. Calibration is adjusted when the product is shipped from the factory but it might need to be adjusted again because of vibrations during transport, etc.

If such things as operability are not satisfactory, select "CALIBRATION" on the game test mode menu and check and adjust settings.

```
                    CALIBRATION

              CHECK
              SETTING
            ->EXIT







               SELECT  WITH  SERVICE  BUTTON
                 AND  PRESS  TEST  BUTTON
```
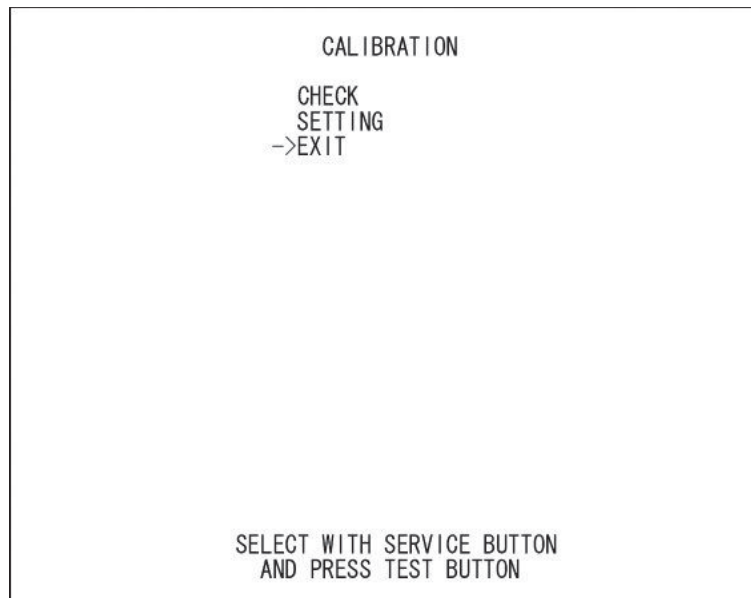
FIG. 6-7c Calibration Menu

Conduct the aforesaid tests when performing routine tests each month.

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.

- To move the unit over the floor, pull in the adjustors and have the casters contact the floor. While moving the unit, be careful that the casters do not roll over the power cord or the ground wire. If cord or wire is damaged, there could be electrical shocks and/or short circuits.

- To install this product, the entrance must be at least 1.4 m in width and 2 m in height. If the entrance is too narrow, do not tilt the product carelessly. If all the product weight is put on the casters at one side only, there could be damages or deformations, causing serious accidents such as workers getting caught underneath.

- If the unit cannot be taken through the entrance, do not disassemble it indiscriminately. Do not disassemble the unit in any way other than as instructed in this manual. Disassembly and assembly of mechanical components require special tools and adjustment procedures. Indiscriminate disassembly could result in electrical shocks, short circuits, or accidents while working on or operating the unit, leading to injuries.

⚠CAUTION

- Do not hold or press the plastic parts as indicated by the figure. Failure to observe this instruction may break the parts, and eventually the broken pieces may cause a personal injury.
- For safety, pull in the adjustors completely.

Do not push on parts shown in the illustration.

Moving the machine.

Monitor

Front Cover

LED

Cabin Side FRP

Throttle Lever

Bellows

Control Stick

Monitor Mask

Seat FRP

Casters Contact the Floor
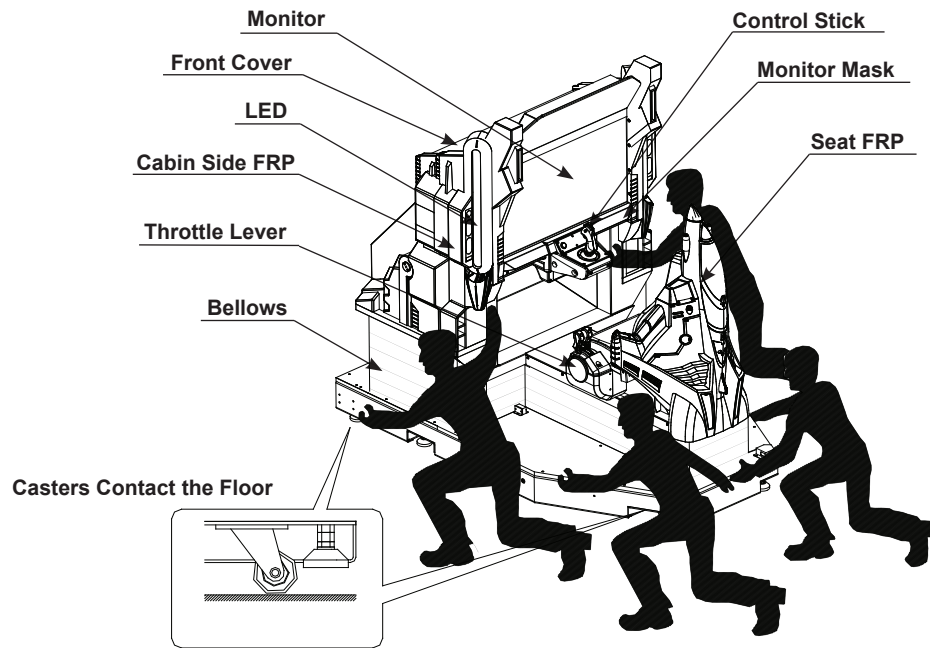
FIG. 7-1a

(STOP) **IMPORTANT**

- Observe the following precautions when moving the machine. Failure to observe these precautions may result in damage to the casters and/or the flooring.
  - The machine should be moved along a level floor.
  - Ramps should be used to climb/descend steps 1 cm or greater in height.
  - The machine should not be moved any faster than walking speed (about 2 km/h).
  - The machine should not be tilted too far to one side or loaded excessively on one side only.

Do not push on the parts denoted by slanted lines.

Slope

Casters contact the floor.
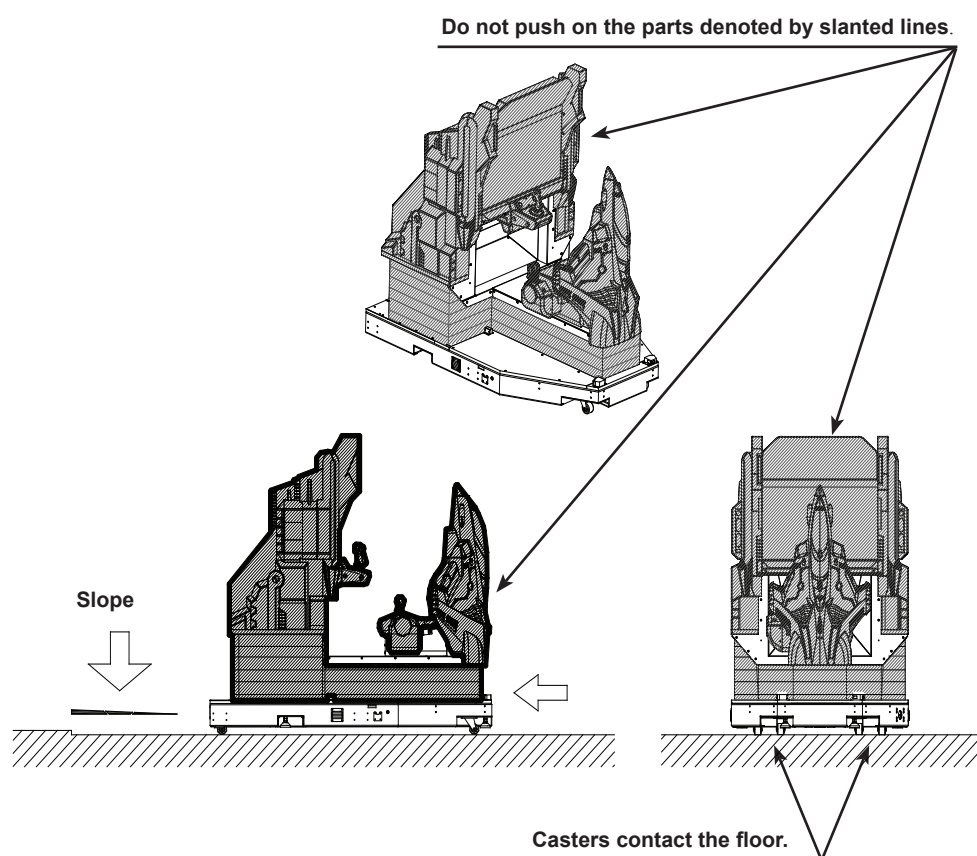
FIG. 7-1b

⚠️WARNING

- This product weighs over 625 kg. It cannot be lifted by human strength alone. Trying to do so could cause accidents. Use a crane or other powered hauling unit to move the product.

- When moving a load, insert buffer material between the base and the platform wall and attach the product securely to the platform with rope or other means. If exterior parts are damaged or deformed, there could be electrical shocks and/or short circuits.

⚠️CAUTION

- A minimum of 8 persons is needed to load this machine onto a forklift truck. The procedure cannot be carried out safely with fewer than this number.

- The forklift should have a platform of at least 1,500 mm in length. The procedure cannot be carried out safely with a platform shorter than this.

- Do not push or support the monitor, control stick, throttle lever or plastic components while moving or loading the product. Otherwise these components could be damaged, resulting in injuries from fragments, cracks, etc.

- When transporting the unit by truck, etc., do not secure it with rope, etc., in any position other than as illustrated. Otherwise components could be damaged, resulting in injuries from fragments, cracks, etc. Also protect amply with cloth, etc., those areas contacted by rope, etc.

(STOP) IMPORTANT

- When placing the machine onto a platform or onto the ground, lower it slowly in an upright, level position. If the machine is lowered at an angle, the weight may be distributed unevenly and damage to casters/adjusters may result.

- Do not have adjustors contact the floor on the platform. Otherwise they could be damaged or deformed by tilts or vibrations during transport.

- Make sure that the product will not undergo violent oscillations. Lay out a vibration-proof mat, for instance, and place the product on top of it.

Do not apply rope to illustratde parts
or parts denoted by slanted lines

Monitor

Throttle Lever

Buffer Material
(styrofoam,etc)

Do not have adjusters contact
the floor on the platform.
Otherwise they could be damaged
or deformed by tilts or vibrations
during transport

Padding(Blanket, etc)
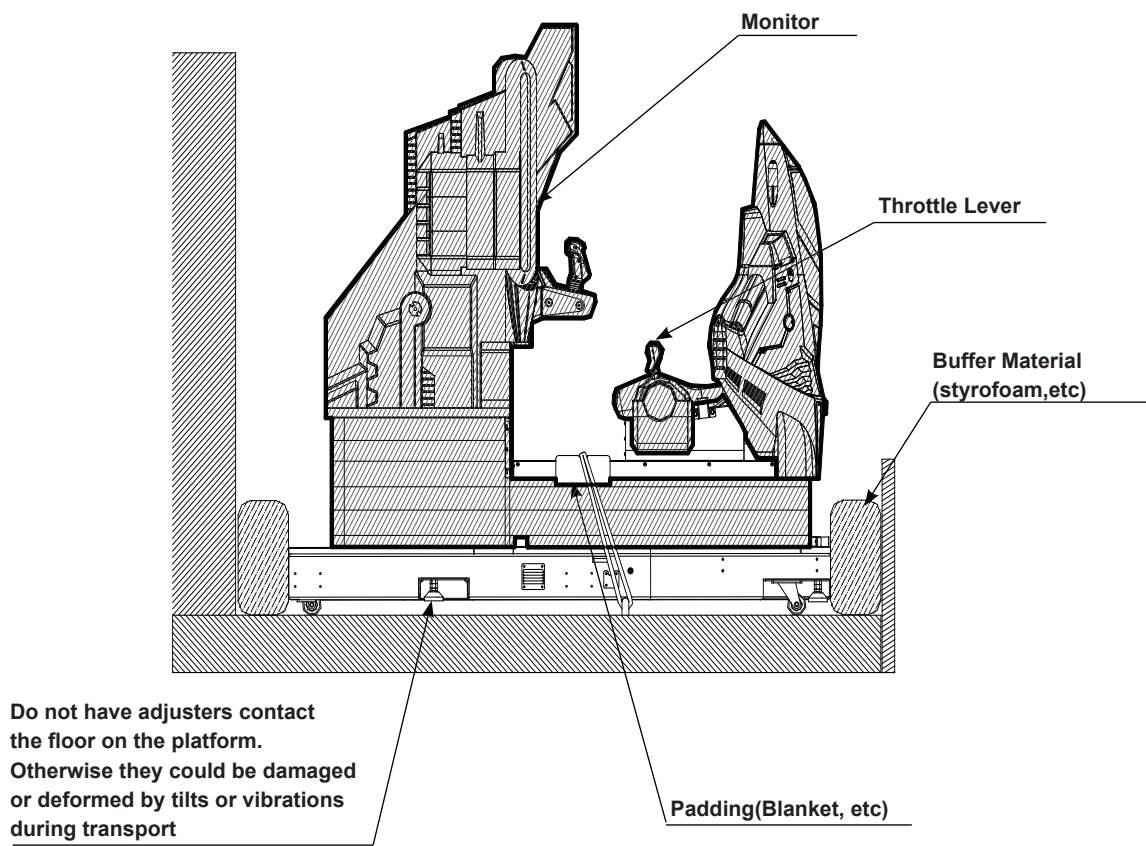
FIG. 7-1c Precautions when securing with rope

8 GAME DESCRIPTION

The following explanations apply when the product is functioning satisfactorily. Should there be any actions different from the following contents, some sort of faults may have occurred. Immediately look into the cause of the fault and eliminate the cause thereof to ensure satisfactory operation.

Normally, when the power is on, LED lamp in the billboard on the monitor is lit up. In Attract Mode, such things as game content and rankings are shown on the Attract Mode Demonstration screen on the monitor.
The colors emitted by the ccabin lamp vary depending on the screen content.
Audio output comes from the speakers at the left and right of the monitor and the left and right of the seat backrest.
Presence or absence of audio output in the Attract Mode can be selected by means of the settings in the test mode.

The START button on the control panel is an illuminated button. In Attract Mode, this button is not lit up.
If there are enough credits to enable play, the START button flashes. When it is pressed and the game is started, the START button light goes out.
After the game is over, if there are enough credits to enable play, the START button flashes.

During game play, the player's seat moves in tandem with player manipulations. If the player takes damage during game play, the control stick vibrates.
The colors emitted by the cabin lamp vary depending on conditions.

FIG. 8a

Seatbelt

Rear Speaker

Seat

Throttle Lever

FIG. 8b

Gun Trigger

Motion Stop Button

Start Button

Missile Trigger
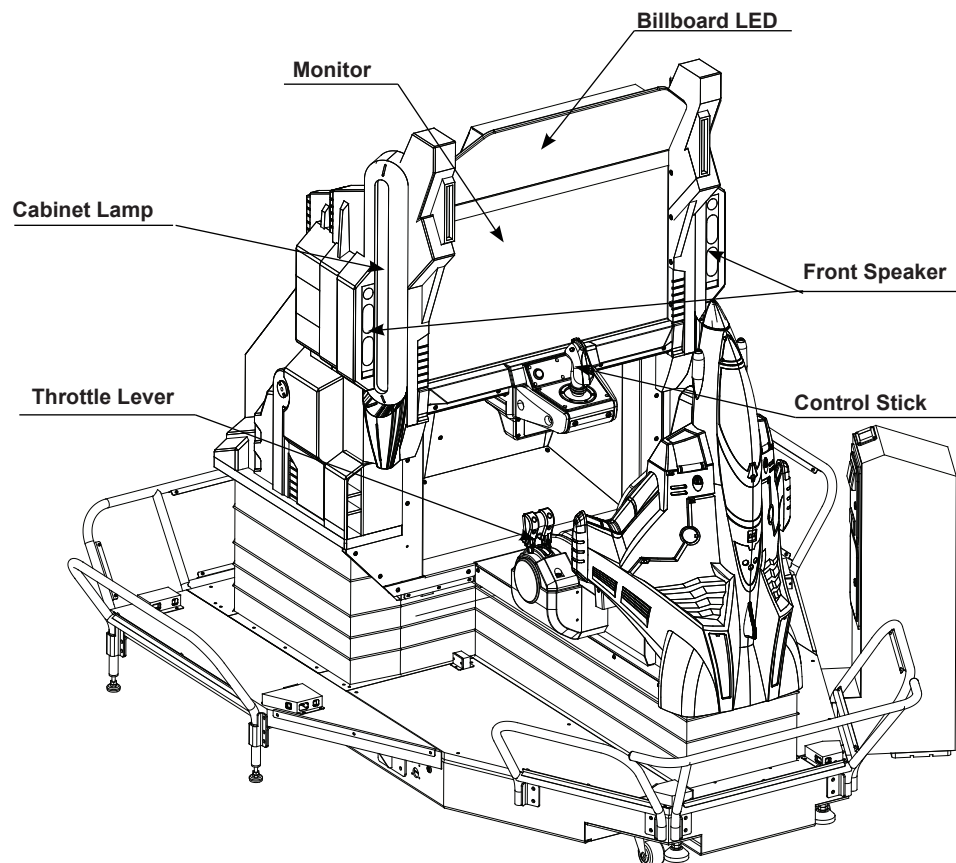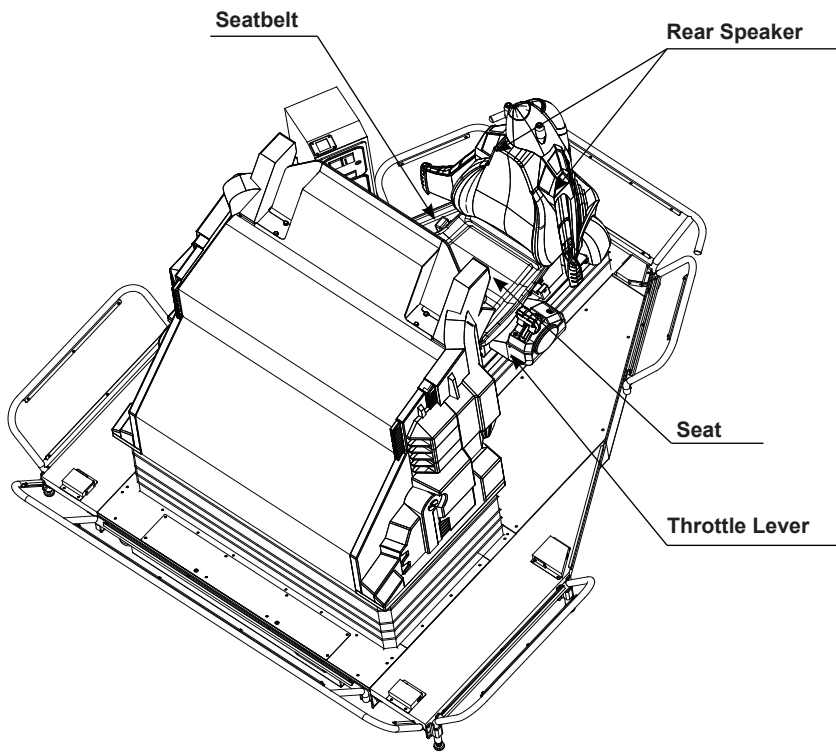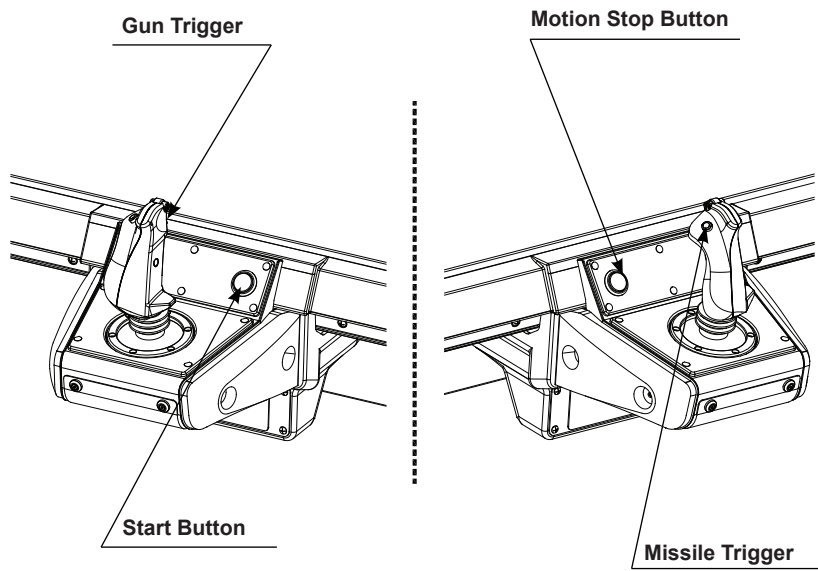
FIG. 8c

Game Outline

- AFTER BURNER CLIMAX is a flight shooting game that features exhilarating gameplay.
- The player takes on the role of the leader of the "Brave Fangs", a special air-force unit whose mission is to prevent the outbreak of all-out nuclear war.
- Fighting the enemy, you proceed through the game's stages. Attack targets include jet fighters, bombers, helicopters, missile launch sites and facilities.
- Using CLIMAX Mode, a special form of attack style, it is possible to take down large groups of enemies at once.

Attract Mode

The Attract Mode cycles through the following screens.

1. Logo Display
2. Title Screen
3. Movie
4. Title Screen
5. Ranking
6. Title Screen
7. Controls
8. Title Screen
9. Demonstration
10. Return to 1

Insert a coin and press the START button during the Attract Mode and the game will start.
However, during FREE PLAY no coins need to be inserted.
Pull the trigger during the Attract Mode and it will skip to the next screen. (The Logo Display cannot be skipped).

Safety Device Explanation

The following safety device explanation will be displayed as soon as the game is started.
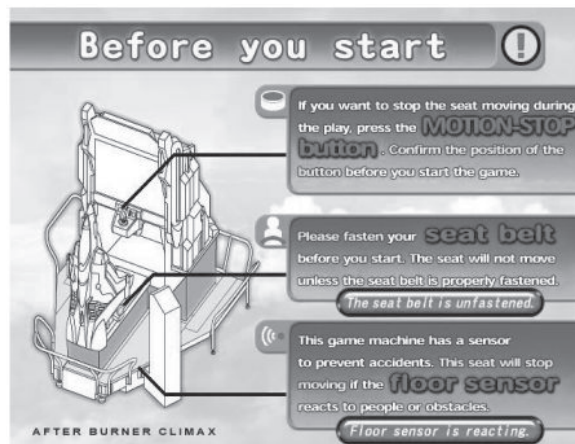
(If there are any problems, these messages are displayed. There is no message display if there are no problems.)

FIG. 8d SAFETY DEVICE EXPLANATION Screen

The following warning messages may be displayed.
If there are no problems then no warning messages will be displayed.

State	Message
The seatbelt is not fastened.	Seatbelt not fastened
The sensor is reacting.	Floor sensor is reacting

Game Mode Select (Network Play only)

1 Move the control stick left/right to select a game mode.

2 Pull the trigger or press the START button to confirm selection.

ONE-PLAYER Mode:

Play for one player.

TWO-PLAYER Mode:

Two players play at the same time. Co-operate or compete to clear all stages. At each stage, scores are compared and the winner/loser is displayed.

FIG. 8e MODE SELECT Screen

Aircraft Select

1 Move the control stick left/right to select an aircraft.

2 Push the throttle lever forward or back to change the aircraft paint pattern.

3 Pull the trigger or press the START button to confirm selection.

The three following aircraft can be selected.
- F-14D Super Tomcat
- F-15E Strike Eagle
- F/A-18E Super Hornet

The four following paint patterns can also be selected.
- Standard Paint
- Camouflage
- Special Paint
- Low Visibility
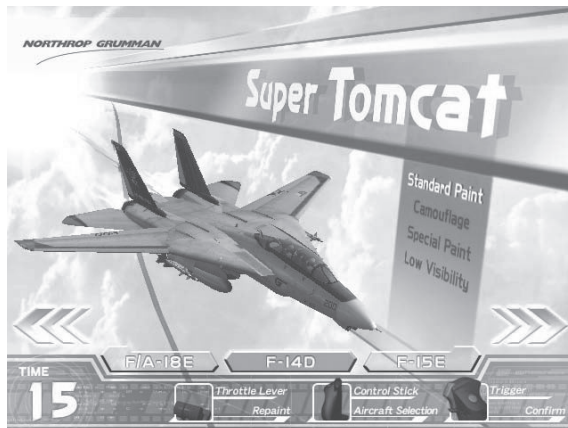
FIG. 8f AIRCRAFT SELECT Screen

Stage Composition
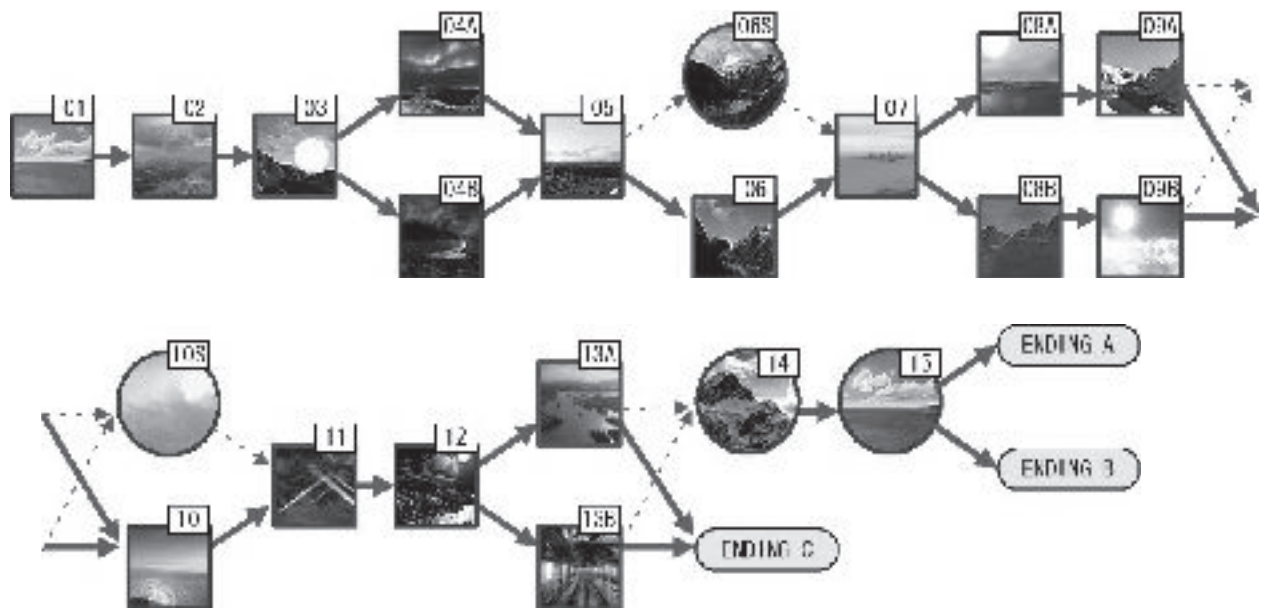
FIG. 8g Stage Composition

There are a total of 21 stages.
- There are 17 basic stages (shown in squares on the above diagram)
- There are 2 secret stages (stages 06S and 10S on the above diagram)
- There are 2 extra stages (stages 14 and 15 on the above diagram)

Some stages simply have a number, like "01", and some also have a letter included, like "04A".
- The numbers on the above diagram denote stage number.
- Where the route splits, an "A" or "B" follows the stage number.
- Secret stages have an "S" following the number.

There are a number of routes that can be taken to the end of the game.
- In some cases the player can choose their route, and in some cases their play will automatically decide which route is taken.
- The dotted lines on the above diagram denote a route that is automatically determined by play.
- The "No. of Stars earned" effects progress to secret stages.
- The "No. of Critical Commands completed" effects progress to the extra stages.

There are 3 endings.
- There is ENDING A, ENDING B and ENDING C, with ENDING A being the best.
- There are 15 stages to reach ENDING A and ENDING B.
- There are 13 stages to reach ENDING C.

Controls

FIG. 8h Throttle Lever
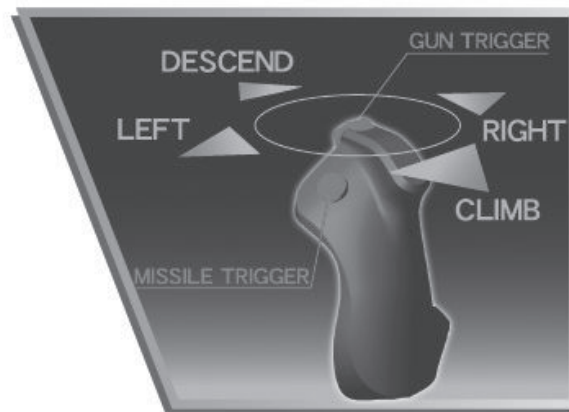
FIG. 8i Control Stick

The player aircraft is controlled by the "Throttle Lever" and "Control Stick".

<Throttle Lever>

Used to change the speed of the player aircraft.
Pull the lever towards you to decrease speed. Push the lever away from you to increase speed.
Push the lever all the way away from you to activate CLIMAX Mode. CLIMAX Mode requires a full Climax Gauge to activate.

<Control Stick>

Alters the movement direction of the player aircraft.
Move right to move to the right. Move left to move to the left.
Pull towards you to ascend. Push away from you to descend.

The gun trigger fires guns, and the missile trigger fires missiles.

Game Explanation

▶ SCORE
▶ COMBO
▶ MISSILE
▶ CLIMAX GAUGE
▶ SPEED GAUGE
▶ STAGE
▶ STAR
▶ LOCK-ON CURSOR
▶ PLAYER'S AIRCRAFT
▶ CRITICAL COMMAND
▶ ARMOR
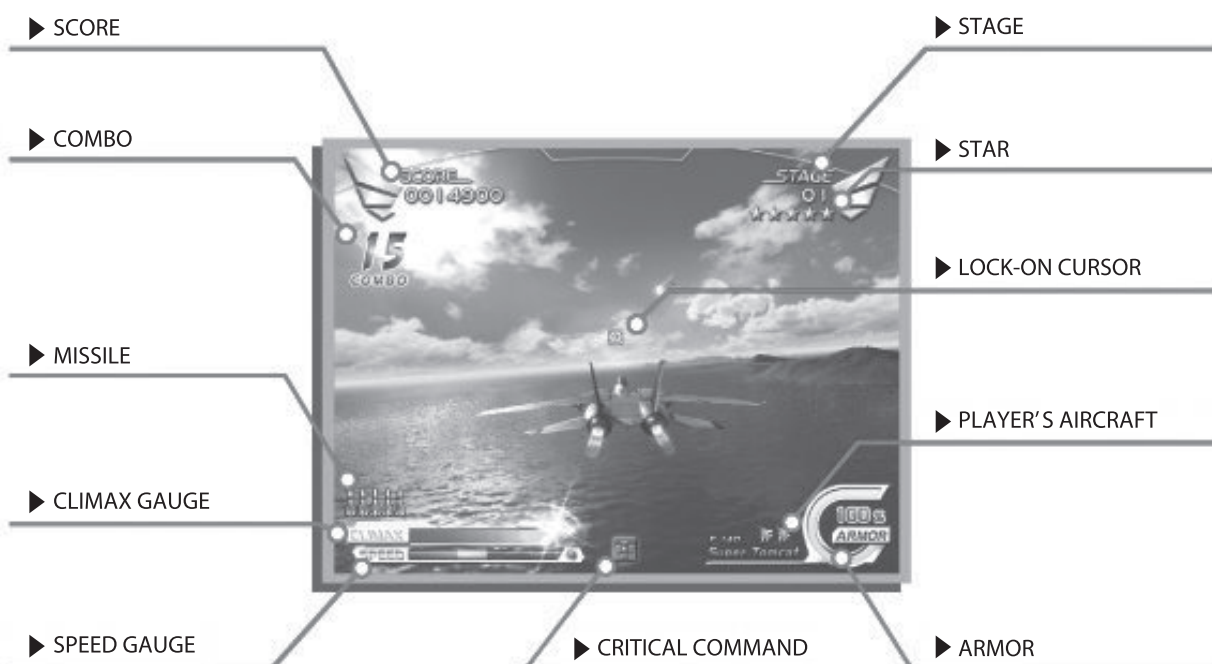
FIG. 8j GAME SCREEN Explanation

<Game Rules>

Either clearing all the stages, or all the player aircraft being lost results in Game Over.
All the player aircraft have been lost when there are no remaining player aircraft and the armor gauge falls to 0%.
When an aircraft's armor gauge falls to 0%, that aircraft is lost, and the remaining player aircraft are reduced by one.
During game play, there are no increases in the number of aircraft and no restoration of the armor gauge.
The number of aircraft at the start of the game is set in test mode.

<Screen Explanation>

- SCORE:	Current score.
- COMBO:	Current combo. Defeating enemies in quick succession results in a combo.
- MISSILE:	Remaining number of missiles. Required to fire missiles. They are gradually replenished.
- CLIMAX GAUGE:	Once this gauge is filled, CLIMAX Mode can be activated.
- SPEED GAUGE:	The speed of the player aircraft.
- STAGE:	Current stage number.
- STAR:	Current number of stars. Defeating many enemies without taking any damage earns stars.
- LOCK-ON CURSOR:	Align this cursor with an enemy to lock-on.
- PLAYER'S AIRCRAFT:	When there are no remaining aircraft and the armor gauge falls to 0% it is Game Over.
- ARMOR:	When the gauge falls to 0% a player aircraft is lost.
- CRITICAL COMMAND:	Displays a Critical Command in progress.

<Lock-On>
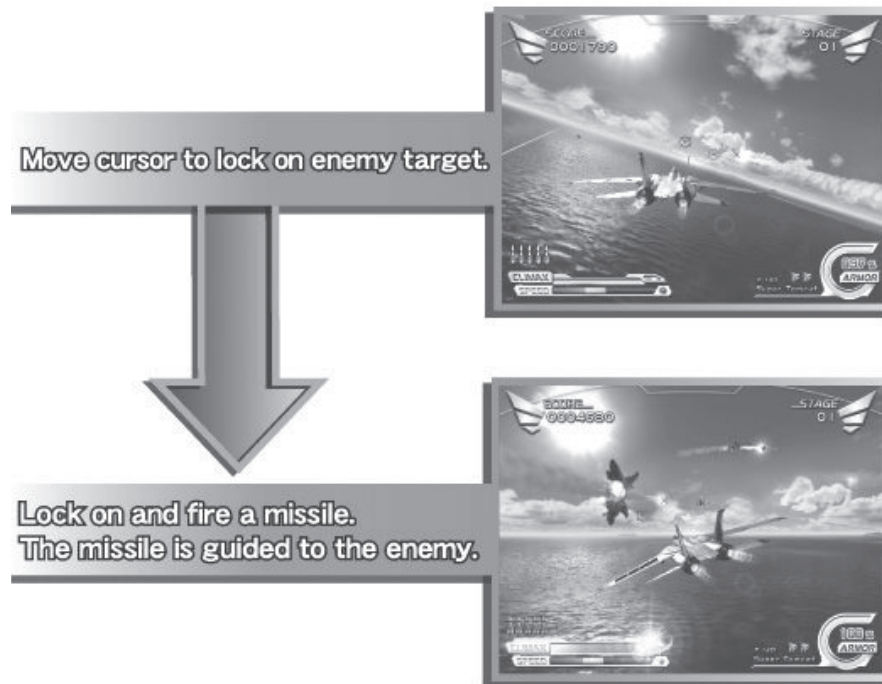
FIG. 8k Locking On

Using missiles is the most basic method of attack. A missile may still miss a locked on enemy if your timing is off.

1   Align the lock-on cursor with an enemy to lock-on to them.

2   Fire a missile while locked on and it will home in on the enemy.

\<After Burners\>

When the throttle lever is moved to FAST (far away from you), the after burners ignite and maximum acceleration can be realized.
The after burners can only be used for a limited period of time.

You must then return your speed to normal for a while before the after burners can be fired again.
Moving the throttle from SLOW to FAST will allow the after burners to be fired again more quickly than normal.

\<Rolling\>

Rolling is a technique for avoiding missiles. Normally, missiles can be avoided by other actions. Rolling is performed as follows.

1   Move the control stick left or right for a short time.

2   Move it momentarily all the way to the other side and the aircraft will roll.

\<CLIMAX Mode\>

When the climax gauge is full···

Push throttle lever further down!!
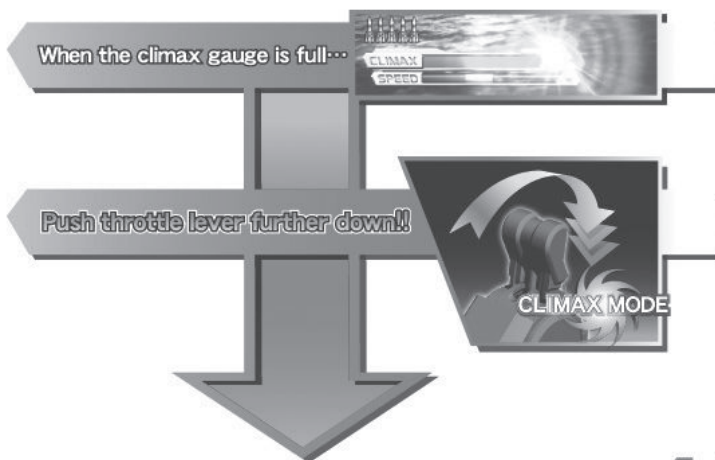
CLIMAX MODE

FIG. 8l Activating CLIMAX Mode

FIG. 8m CLIMAX MODE ACTIVATION Screen

Using CLIMAX Mode allows a larger number of enemies to be locked on to and taken out at once.

During CLIMAX Mode the lock-on cursor expands, providing more opportunities to attack. You can now quickly lock onto multiple enemies. During CLIMAX Mode, the number of remaining missile shots is unlimited.

In CLIMAX Mode, motion can begin by pushing the throttle lever all the way to CLIMAX position, the farthest point away from you.
The Climax Gauge must also be full before CLIMAX Mode will activate. Keeping the throttle lever pushed all the way from you will keep CLIMAX Mode active.

CLIMAX Mode ends under the following circumstances.
- If the throttle lever is moved out of the CLIMAX position.
- If the Climax Gauge becomes totally empty.
- If damage can be taken during CLIMAX Mode.

[CLIMAX Mode Hints]
 * Defeating enemies quickly is vital. The less you use the gauge up, the more often CLIMAX Mode can be used.
 * An infinite number of missiles can be used during CLIMAX Mode, presenting an opportunity to attack even if the number of remaining missiles are low.
 * A Combo increases simply by locking on and firing a missile.

<TWO-PLAYER Mode>

▶ DOWNED

▶ RIVAL'S STATUS

CLIMAX MODE

DOWN

GAME OVER

▶ RIVAL

▶ PLAYER NUMBER
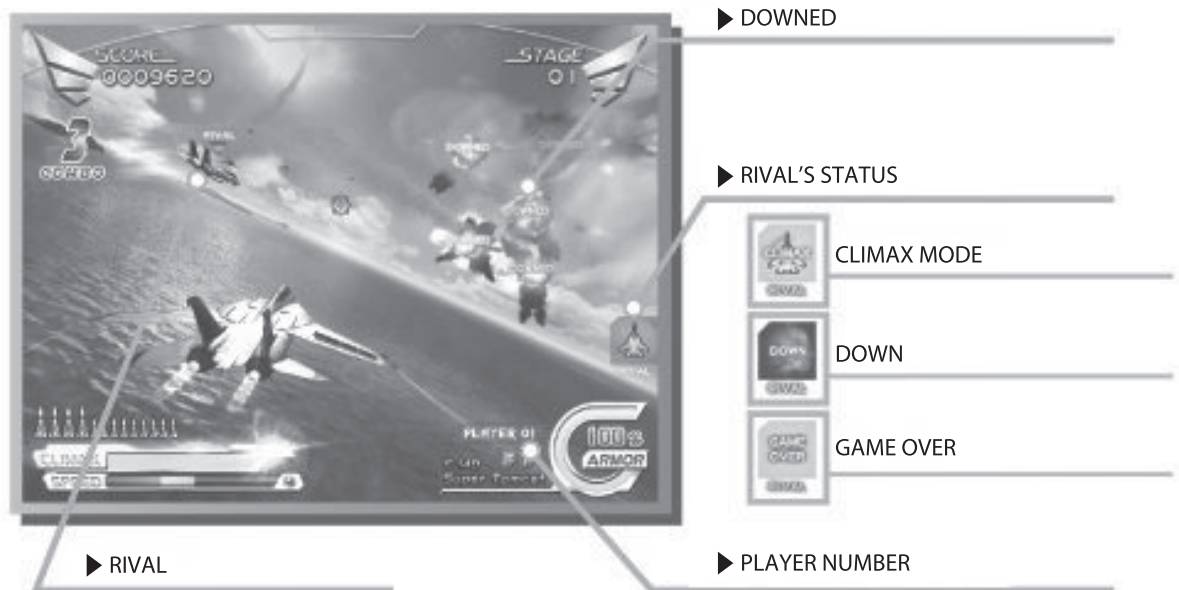
FIG. 8n TWO-PLAYER Mode GAME Screen

<Game Rules>

Two players compete at the same time to get the higher score. It is also possible to co-operate to clear the stages.
The conditions for Game Over are the same as for the one-player game.

<Evaluation>

Results (WIN/LOSE/DRAW) are determined by comparing the score earned in each stage.
MID-GAME RESULT and TOTAL RESULT display the total score comparison up until that point.

<Screen Explanation>

- RIVAL:	Position and direction of your rival.
- RIVAL'S STATUS:	An icon that displays your rival's current status.
	Displayed on the right on the Player 01 screen and the left on the Player 02 screen.
	(Icons are: CLIMAX Mode, Down, Game Over)
- DOWNED:	Displayed when either player is shot down.
	(In red: Player 01 downed; In blue: Player 02 downed)
- PLAYER NUMBER:	Player number.

Route Select

FIG. 8o ROUTE SELECT Screen

1 Move the control stick left/right to move the cursor.

2 Pull the gun trigger to select the route.

Select the route you wish to take on the ROUTE SELECT screen. The countdown appears in the middle of the screen. If the time runs out then the route that the cursor is currently highlighting shall be selected.

CONTINUE Screen
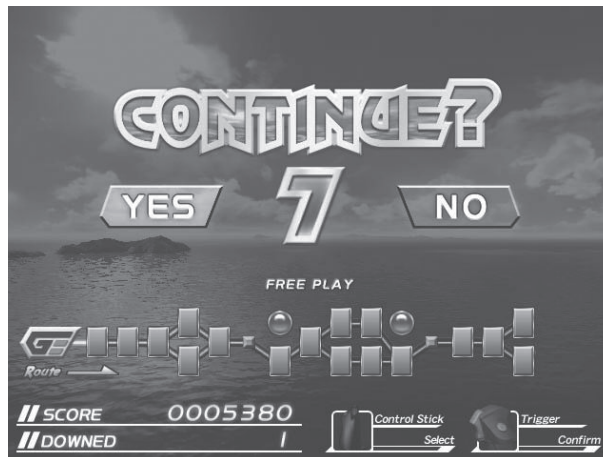
FIG. 8p CONTINUE Screen

On the CONTINUE screen, select whether to continue the game or quit. The countdown appears in the middle of the screen. If the time runs out, NO will be automatically selected.

To continue the game, perform the following before the countdown reaches 0.

\<Credit Remains\>

If enough credits remain to continue the game, the CONTINUE screen appears and the START button flashes. The START button is used to select YES when there are enough credits to continue. It is also used to select YES when FREE PLAY has been set. At any other time the START button has no effect.

1 Move the control stick left/right to move the cursor.

2 Pull the gun trigger or press the START button to select.

\<No Credit\>

1 Insert coins. When a coin is inserted the count down resets to 9. When enough coins have been inserted to continue, the START button flashes.

2 Tilt the control stick left/right and move the cursor to YES.

3 Pull the gun trigger or press the START button to select.

Name Entry

If stage 13A, 13B or stage 15 are cleared, and the score is in the top 20 then you can enter your name.
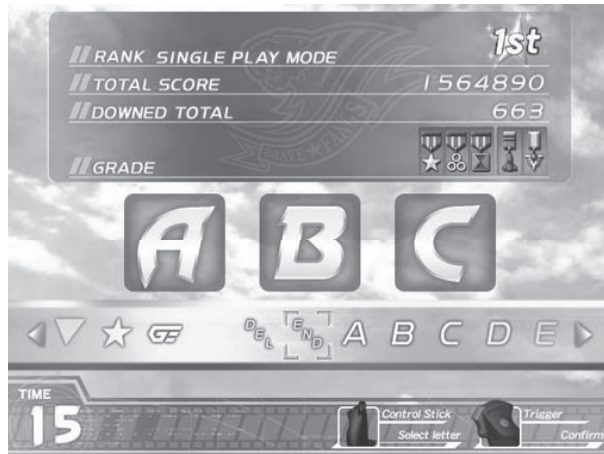
FIG. 8q NAME ENTRY Screen

A maximum of three characters can be entered.
Name entry ends when END is selected or when time runs out.

---

1   Move the control stick left/right to move the cursor.

---

2   Pull the trigger to select the letter the cursor is aligned to.

---

3   Pull the throttle lever towards you to move the cursor to the DEL position.

---

4   Press the START button to confirm the entered name.

If name entry ends without anything being input, the name will appear as "???"
If prohibited characters are included in the name, it will automatically be changed to "- - -"

Seat Movements Limitations During Play

The following messages may be displayed during the game and the movement of the cabinet restricted.

FIG. 8r SEAT MOVEMENT MESSAGE WINDOW Screen

<Floor Sensor>

If the sensor reacts during the game, the seat will stop moving immediately.
The seat will not move so long as the sensor is reacting.

State	Message
The sensor is reacting. (On the PLAY Mode and PLAYER AIRCRAFT SELECT screens)	Sensor is reacting. The seat will not move until the obstacles are removed.
The sensor reacted. (During game)	The sensor reacted. Locking seat.
The sensor is still reacting. (During game)	Sensor is reacting. The seat is locked.

<Seatbelt Messages>

If the game is started without the seat belt fastened, or if it is unfastened during the game, the seat will immediately return to the central position and stop moving. The seat will not move again until the seatbelt is fastened.

State	Message
The seatbelt is not fastened. (On the PLAY Mode and PLAYER AIRCRAFT SELECT screens)	Please fasten your seatbelt. The seat will not move until the seatbelt is fastened.
The seatbelt is unfastened. (During game)	Please fasten your seatbelt. Moving seat to mid-position.
Locking the seat after returning to the central-position. (During game)	Please fasten your seatbelt. Locking seat.
The seatbelt is still not fastened. (During game)	Please fasten your seatbelt. The seat is locked.
The seatbelt is unfastened. (Between Continue and Game Over)	The seatbelt is unfastened. Locking seat.

<MOTION STOP Button Messages>

If the MOTION STOP button is pressed during the game, the seat will return to the central position and stop moving. It will not move again until the next game is started.

State	Message
The MOTION STOP button has been pressed. (During game)	MOTION STOP button was pressed. Moving seat to mid-position.
Locking the seat after returning to the central-position. (During game)	MOTION STOP button was pressed. Locking seat.
After locking the seat. (During game)	MOTION STOP button was pressed. The seat will not move.

\<Other Messages\>

The following messages are also used when movement begins and at the end of a game.

State	Message
Seat starting to move. (During game)	Unlocking seat.
Seatbelt can now be unfastened. (On GAME OVER screen)	Please unfasten your seatbelt.

Other Notes

\<Change BGM\>

On the "PLEASE WAIT" screen displayed after selecting an aircraft, leave the throttle in SLOW and pull the missile trigger to change the music to the After Burner II BGM.

\<Aircraft licenses\>

The rights to use all of the aircraft that appear in the game have been obtained from the appropriate licensers.

⚠️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.

- In Motion Control BD test mode, the seat moves in response to operations. While operating in test mode, make sure that no one other than the operator is near the cabinet. Otherwise someone could contact or collide with the cabinet, or fall down.

- Be careful if you operate the game test mode while riding in the seat. Indiscriminate operation could cause you to fall. For safety, in performing tests in which the seat moves, operate the control stick and gun trigger without standing on the base.

(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.

- Removing the Coin Meter circuitry renders the game inoperable.

- Test mode cannot be accessed during play. Make sure the motion has stopped at the advertise before accessing the test mode.

Perform tests and data checks periodically by manipulating the TEST Button and SERVICE Button in the cabinet. Follow the instructions in this chapter to conduct checks when the game machine is first installed, when money is being collected, or when the game machine does not operate properly.

Shown below are the tests and screens to be used for different problems.
This product uses a LINDBERGH game board and a DVD DRIVE. In the system, a different game can be played by putting a different DVD ROM in the DVD DRIVE.

For this reason, the product's test mode consists of two modes: a system test mode for systems in which coin settings, for instance, are made for products that use the same system, and a game test mode for setting of difficulty level, etc., and for input/output test of operational units used exclusively with this product. Test mode for the Motion control BD that controls the movement of the seat is also provided.

NOTE: " S/M" in the table denotes LINDBERGH service manual, which is provided separately.

TABLE 9

ITEMS	DESCRIPTION	REFERENCE SECTIONS
Game machine installation	1. Confirm that the information display screen appears in normal fashion. 2. Investigate each input device on the input test screen. 3. Investigate each output device on the output . test screen.	"S/M" Chapter 4 "S/M" Chapter 4, 9-3a, 9-3e "S/M" Chapter 4, 9-3b
Periodic maintenance	1. Check settings. 2. Test each input device on the input test screen. 3. Test each output device on the output test screen.	"S/M" Chapter 4, 9-3c "S/M" Chapter 4, 9-3a, 9-3e "S/M" Chapter 4, 9-3b
Control problem	1. Investigate each input device on the input test screen. 2. Adjust or replace each input device. 3. If the problem persists, examine the mechanical components of each input device.	"S/M" Chapter 4, 9-3a, 9-3e Chapters 11, 12, 13 Chapters 11, 12, 13
Monitor problem	On the monitor adjustment check screen, check to be sure the monitor has been adjusted properly.	"S/M" Chapter 4, Chapter 10
IC board problem	1. Information display screen 2. Speaker test	"S/M" Chapter 4 "S/M" Chapter 4
Date Check	Check data on game play times, histograms, etc., and adjust the level of difficulty.	9-3f

Switch Unit

In test mode, the switch unit under the control stick is operated.
Unlock and open the Switch Unit Cover. Inside is a switch unit. There is a monitor adjustment panel at the top.
(See Chapter 12.)
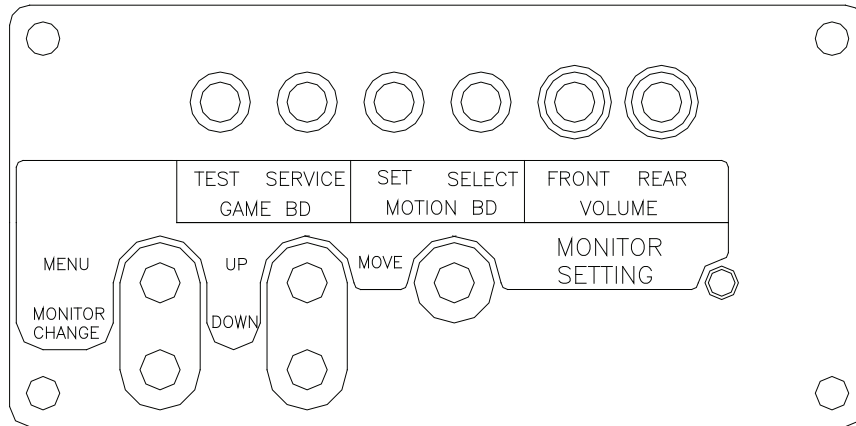
FIG. 9-1

●MONITOR CHANGE :This button changes the screen back and forth between the Game BD and the Motion Control BD. Simply pressing the button will change the screen.

[GAME BD]

Operate on the Game BD screen.
● TEST : It enters the Test Mode of the Game Board. Selections can be made in the Test Mode.
● SERVICE : Additional credits can be given without inserting more coins. Selections can be made in the Test Mode.

[MOTION BD]

Operate on the Motion Control BD screen.
● SET: Pushing down long on this button will allow you to enter the Test Mode of the Motion Control BD. Selections can be made in the Test Mode.
● SELECT : Selections can be made in the Test Mode of the Motion Control BD.

[Speaker Volime]

● Front : This is the volume knob for speakers at the left and right of the monitor. Turn the knob to the right to increase speaker volume.
● Rear : This is the volume knob for speakers at the left and right of the seat backrest. Turn the knob to the right to increase speaker volume.

9-2 COIN METER

Coin Meter

After using a special-purpose key to unlock the cashbox door, the coin meter can be found at the bottom of the cashbox.
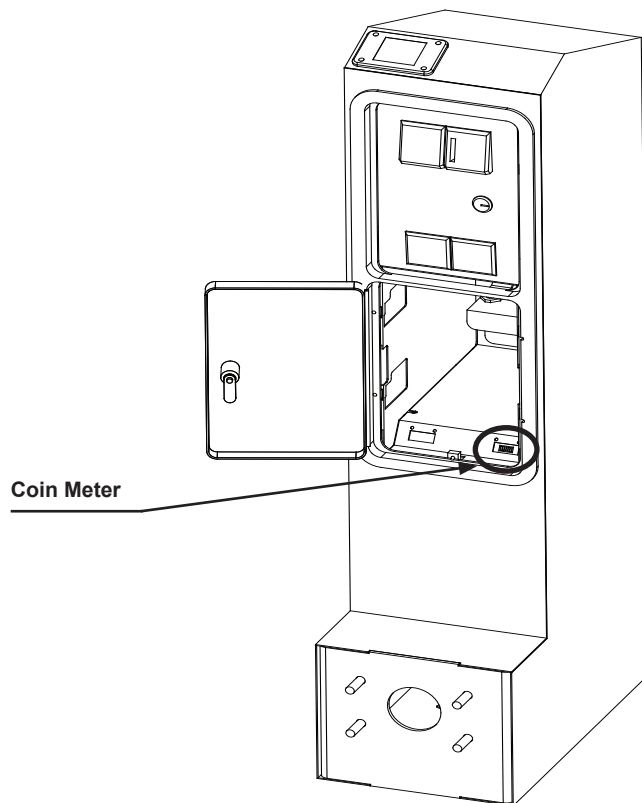
Coin Meter

FIG. 9-2 Coin Meter

(STOP) **IMPORTANT**

- **The details of changes to test mode settings are saved when you exit from test mode by selecting EXIT from the system test mode menu. Be careful because if the power is turned off before that point, changes to the settings will be lost.**

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

In the system test mode, the main activities include checking LINDBERGH information and actions and the setting of coin/credit. Also, a screen appears for checking screen adjustments. For details, see the LINDBERGH service manual, which is provided separately.

Use the following settings with this product. If the settings are not as specified, error messages might appear and operations might not be normal.

● COIN ASSIGNMENTS
    COIN CHUTE TYPE: COMMON
    SERVICE TYPE: COMMON

● NETWORK SETTING
    NETWORK TYPE: MAIN
    MAIN NETWORK: SETTING NOT REQUIRED

1 When the TEST Button is pressed, the system test mode menu screen (SYSTEM TEST MENU) appears.

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.

```
           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
```
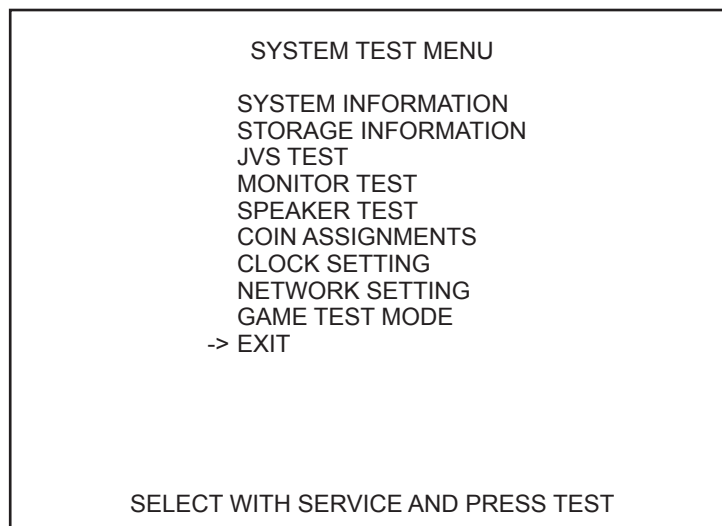
FIG. 9-3 SYSTEM TEST MENU Screen

9-4 GAME TEST MODE

(STOP) 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.

Highlight GAME TEST Mode on the system test mode menu, and press the TEST Button to enter the game test mode.

Once you enter the game test mode, the game test menu will be displayed.

The items displayed on each test screen vary depending on the setting of CABINET TYPE on the game setting screen in game test mode.

Seat movement directions are indicated below.

```
              GAME TEST MENU


              INPUT TEST
              OUTPUT TEST
              GAME ASSIGNMENTS
              NETWORK SETTING
              CALIBRATION
              BOOKKEEPING
              BACKUP DATA CLEAR
           ->EXIT




           SELECT WITH SERVICE BUTTON
             AND PRESS TEST BUTTON
```
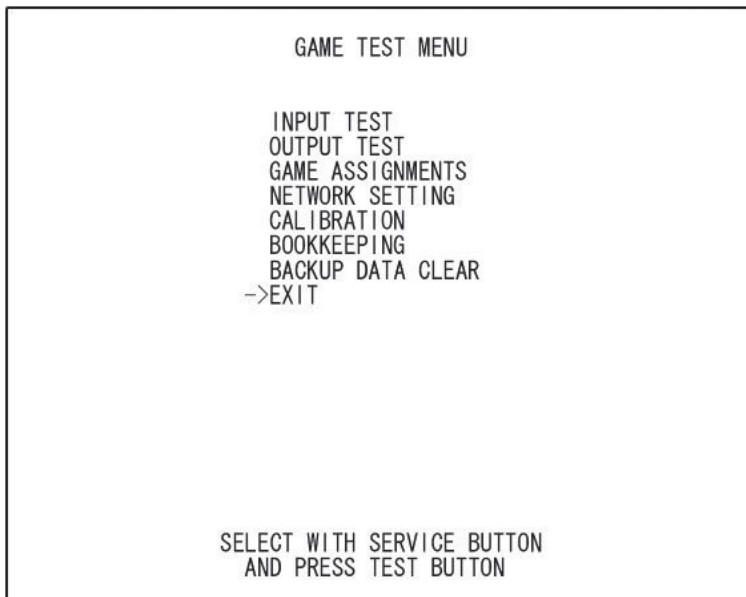
FIG. 9-4 GAME TEST MENU Screen

1 Press the SERVICE Button to highlight the desired menu item with the cursor.

2 Press the TEST Button to perform the selected item. To learn how to proceed after executing the selected item, read the item's explanation. You can also use the control stick and gun trigger to make selections in game test mode.

3 When test or setting is completed, take steps to have the game test mode menu screen reappear. The steps involved vary with the item.

4 Select EXIT and press the TEST Button. The system test mode menu screen reappears.

5 On the system test mode menu screen, select EXIT and press the TEST Button. The game screen reappears.

<Item Explanation>

a. INPUT TEST: Perform an input test.

b. OUTPUT TEST: Perform an output test.

c. GAME ASSIGNMENTS: Set up game settings.

d. NETWORK SETTING: Set up network settings.

e. CALIBRATION: Perform calibration.

f. BOOKKEEPING: View bookkeeping records.

g. BACKUP DATA CLEAR: Clear data.

h. EXIT: Return to system test mode menu.

a. INPUT TEST

```
                    INPUT TEST

        CONTROL STICK X        80H
        CONTROL STICK Y        80H
        THROTTLE LEVER         80H
        GUN TRIGGER            OFF
        MISSILE TRIGGER        OFF
        CLIMAX SWITCH          OFF
        START BUTTON           OFF
        MOTION STOP            OFF
        SEATBELT               OFF
        FLOOR SENSOR           OFF
        SERVICE                OFF
        TEST                   OFF




        PRESS TEST AND SERVICE BUTTON TO EXIT
```

FIG. 9-4a01 INPUT TEST Screen

The condition of each input device can be checked. Periodically check the condition of each input device on this screen. Motion stop, seatbelt, and floor sensor cannot be checked if the communication of the Motion control is not secured.

<Operation>

1 Manipulate the control stick or throttle lever and confirm that the input value on the right side of the item changes smoothly in response to manipulation.

2 Manipulate the triggers and buttons and check the display on the right side of the item. The display is normal if it shows ON when trigger or button is pressed and OFF when trigger or button is released.

3 Floor sensors are normal if they go ON when there is an obstacle between them and OFF when the obstacle is removed.

4 When the SERVICE Button and TEST Button are pressed simultaneously, the game test mode menu screen reappears..

<Menu Explanation>

CONTROL STICK X:	Control stick left/right input value
CONTROL STICK Y:	Control stick up/down input value
THROTTLE LEVER:	Throttle lever front/back input value
GUN TRIGGER:	Gun trigger
MISSILE TRIGGER:	Missile trigger
CLIMAX SWITCH:	ON when throttle lever is pressed to monitor side; OFF when lever is released
START BUTTON:	START button
SEAT MOTION:	Seat motion input value
MOTION STOP:	MOTION STOP button
SEATBELT:	ON when seatbelt is fastened; OFF when seatbelt is unfastened
FLOOR SENSOR :	Floor sensor
SERVICE:	SERVICE Button
TEST:	TEST Button

FIG. 9-4a02

b. OUTPUT TEST

```
              OUTPUT  TEST
    START  BUTTON                 OFF
    CONTROL  STICK  VIBRATION     OFF
    CABINET  LAMP  R              OFF
    CABINET  LAMP  G              OFF
    CABINET  LAMP  B              OFF
    SPEAKER  L                    OFF
    SPEAKER  R                    OFF
   ->EXIT




         SELECT  WITH  SERVICE  BUTTON
           AND  PRESS  TEST  BUTTON
```
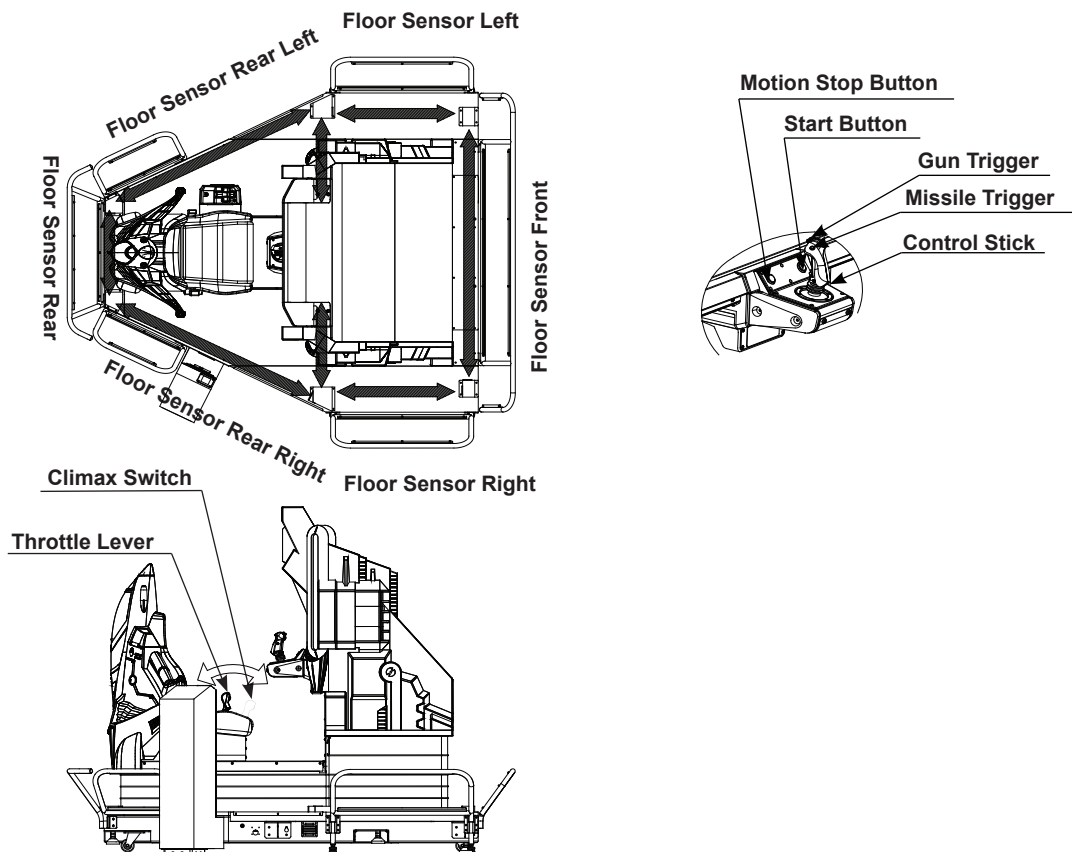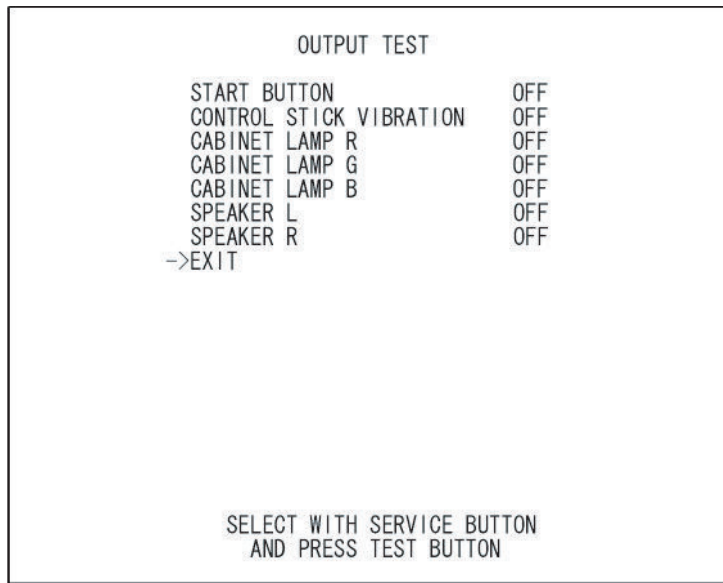
FIG. 9-4b01 OUTPUT TEST Screen (2CH)

```
              OUTPUT  TEST
    START  BUTTON                 OFF
    CONTROL  STICK  VIBRATION     OFF
    CABINET  LAMP  R              OFF
    CABINET  LAMP  G              OFF
    CABINET  LAMP  B              OFF
    SPEAKER  FL                   OFF
    SPEAKER  FR                   OFF
    SPEAKER  BL                   OFF
    SPEAKER  BR                   OFF
   ->EXIT



         SELECT  WITH  SERVICE  BUTTON
           AND  PRESS  TEST  BUTTON
```
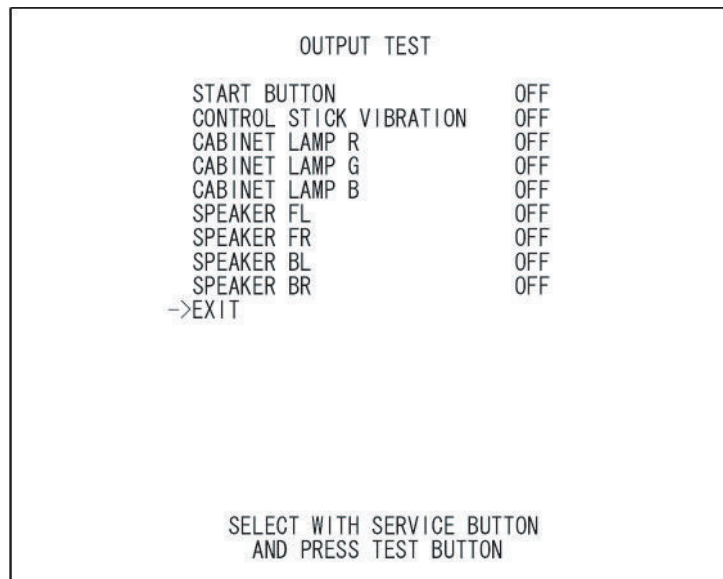
FIG. 9-4b02 OUTPUT TEST Screen (4CH)

The condition of each output device can be checked. Periodically check the condition of each output device on this screen. Conditions are normal if each device operates and yields output as indicated below.

<Operation>

1   Press the SERVICE Button and move the cursor to the item (output device) you want to test.

2   While the TEST Button is depressed, the display on the right side of the item goes from OFF to ON and the selected output device operates. Confirm that the device operates normally. If the speakers are operating, you will hear a buzz-like noise.

3   Press the SERVICE Button and move the cursor to EXIT.

4   When the TEST Button is pressed, the game test mode menu screen reappears.

<Menu Explanation>

START BUTTON:	START button lights up at ON; extinguishes at OFF.
CONTROL STICK VIBRATION:	Control stick vibrates at ON; stops at OFF.
CABINET LAMP R:	LED glows red at ON; extinguishes at OFF.
CABINET LAMP G:	LED glows green at ON; extinguishes at OFF.
CABINET LAMP B:	LED glows blue at ON; extinguishes at OFF.
SPEAKER FL:	Monitor left side speaker produces sound at ON; no sound at OFF.
SPEAKER FR:	Monitor right side speaker produces sound at ON; no sound at OFF.
SPEAKER BL:	Backrest left speaker produces sound at ON; no sound at OFF.
SPEAKER BR:	Backrest right speaker produces sound at ON; no sound at OFF.
EXIT:	GAME TEST MENU screen reappears.

When AUDIO OUTPUT on the game setting screen is set to "2CH", speaker-related items change as follows. At "2CH", sound is output only from the left and right monitor speakers.

SPEAKER FL:	Monitor left speaker produces sound at ON; no sound at OFF.
SPEAKER FR:	Monitor right speaker produces sound at ON; no sound at OFF.

Speaker FL

Control Stick

Cabinet Lamp

Speaker FR

Start Button

Speaker BR

Speaker BL
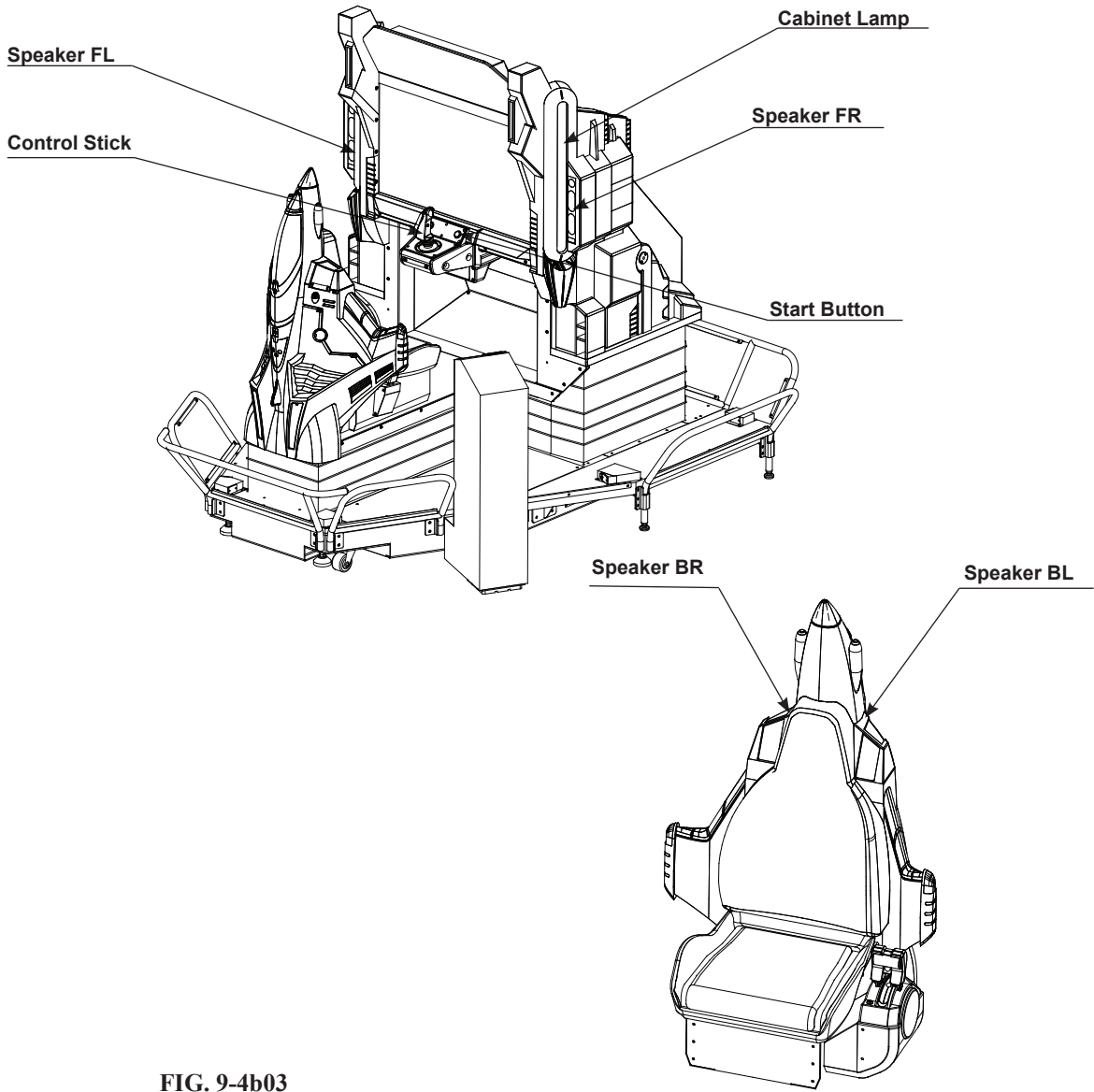
FIG. 9-4b03

c. GAME ASSIGNMENTS

⚠️WARNING

When the store is crowded inside and motions might be dangerous to customers passing near the product, set the cabinet so it will not move, then operate the product.

(STOP) IMPORTANT

Setting changes do not become effective until EXIT is selected on the setting screen. After a setting has been changed, be sure to always exit the setting screen.

```
                    GAME ASSIGNMENTS

          DIFFICULTY                NORMAL
          PLAYERS AIRCRAFT          3
          CABINET TYPE              DELUXE
          CABINET MOVEMENT          ON
          CONTROL STICK VIBRATION   ON
          ADVERTISE SOUND           ON
          AUDIO OUTPUT              4CH
          ->EXIT




               SELECT WITH SERVICE BUTTON
                AND PRESS TEST BUTTON
```
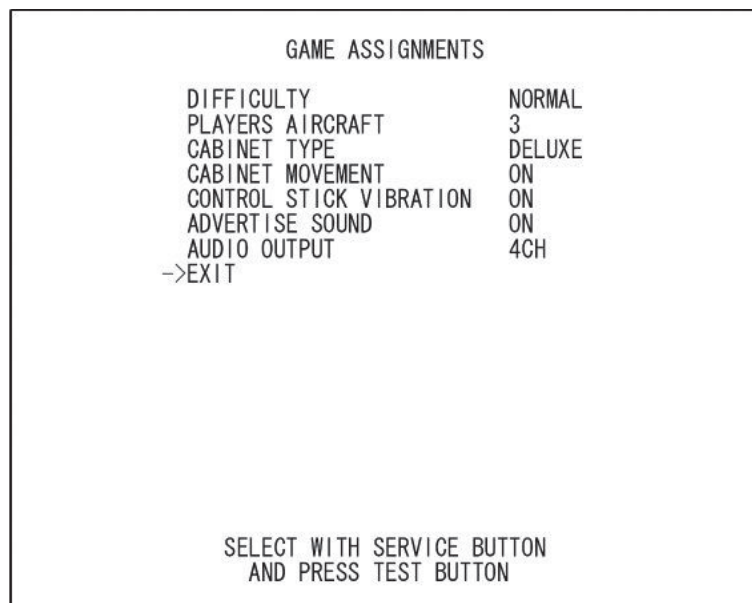
FIG. 9-4c GAME ASSIGNMENTS Screen

<Operation>

---

1 Press the SERVICE Button, move the cursor to the item whose setting is to be changed and select the item.

---

2 When the TEST Button is pressed, the preset value of the selected item changes. When AUDIO OUTPUT is set to "2CH", sound is output only from the monitor right and left speakers.

---

3 Press the SERVICE Button and move the cursor to EXIT.

---

4 When the TEST Button is pressed, the game setting screen exits and the game test mode menu screen reappears.

<Menu Explanation>

DIFFICULTY:	Set the Game Difficulty (VERY EASY/EASY/NORMAL/HARD/VERY HARD).
PLAYERS AIRCRAFT:	Set the number of player aircraft at the start of the game (1 - 9).
CABINET TYPE:	Set the cabinet type (DELUXE/STANDARD).
CABINET MOVEMENT:	Turn Cabinet Movement ON/OFF.
CONTROL STICK VIBRATION:	Turn control stick vibration ON/OFF.
ADVERTISE SOUND:	Turn sound during Attract Mode ON/OFF.
AUDIO OUTPUT:	Set the speaker output (4CH/2CH).
EXIT:	Return to the game test menu screen.

d. NETWORK SETTING

STOP IMPORTANT

- **Network play cannot be implemented without proper setting for network play. Instead, an error message may be displayed.**

- **When setting network play, be sure to match the GAME BD LINK ID to the MOTION CONTROL BD LINK ID. Do not set a LINK ID used by a different game unit. Failure to observe this may lead to problems in operation.**

- **Setting changes do not become effective until EXIT is selected on the setting screen. After a setting has been changed, be sure to always exit the setting screen.**

```
                  NETWORK SETTING

      LINK NUM                 1
    ->EXIT








              SELECT WITH SERVICE BUTTON
                AND PRESS TEST BUTTON
```
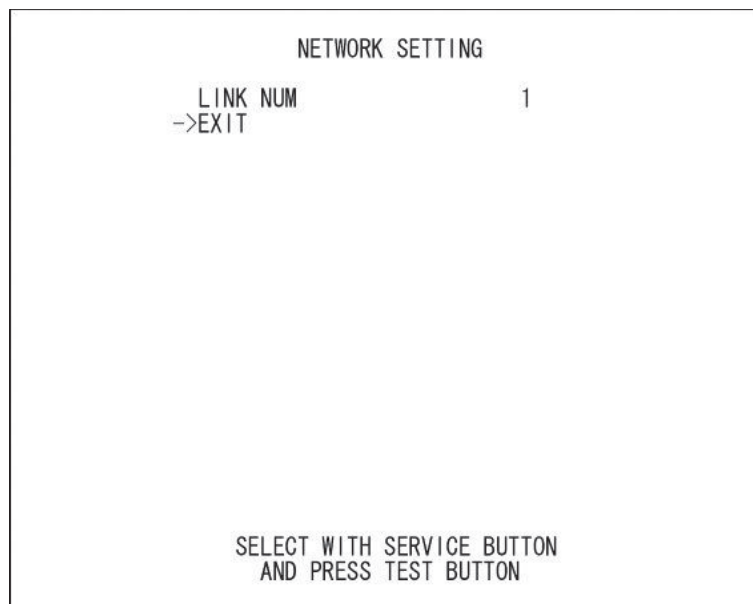
FIG. 9-4d NETWORK SETTING Screen

To setup network play with this product, connect two game machines with a network cable.
Change to the settings for network play by proceeding as follows. The number of menu items differs depending on the LINK NUM setting.

<Operation>

1 Press the SERVICE button, move the cursor to LINK NUM and select it.

2 When the TEST button is pressed, the value set for LINK NUM changes. Set each of the two game machines to "2". LINK ID is displayed.

3 Press the SERVICE button, move the cursor to LINK ID and select it.

4 When the TEST button is pressed, the value set for LINK ID changes. Set this value to "1" for one machine and to "2" for the other machine.

5 Press the SERVICE button and move the cursor to EXIT.

6 When the TEST button is pressed, the network play setting screen exits and the game test mode menu screen reappears.

7 Set LINK ID of Motion Control Board.(See 9-5)

<Menu Explanation>

LINK NUM: Set the number of cabinets to link (1 or 2).
LINK ID: Numbers for game machine network play (1/2).
  NOTES:
    - *Make sure that the two cabinets being used are both given different numbers. If the same number if used for both, then two-player play will not be possible.*
    - *It is recommended that, facing the screens, the cabinet on the left is given number 1 and the cabinet on the right is given number 2.*
EXIT: Return to the game test menu screen.

e. CALIBRATION

STOP **IMPORTANT**

- **Change will not be effective simply by making a change on the calibration screen. When a setting has been changed, be sure to always exit the test mode.**
- **Calibration is relevant to operability. Manipulate and adjust the input device with appropriate force. Do not make adjustments with excessive force.**

```
                        CALIBRATION

                     CHECK
                     SETTING
                   ->EXIT












              SELECT WITH SERVICE BUTTON
                AND PRESS TEST BUTTON
```
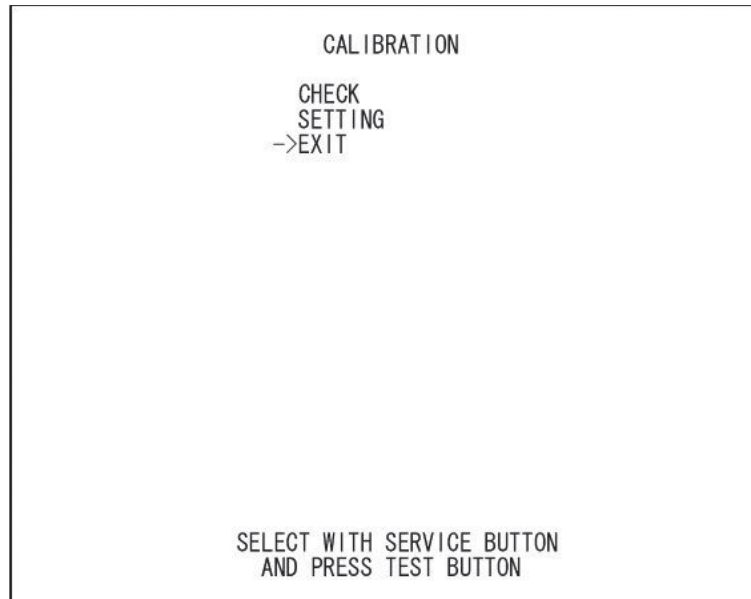
FIG. 9-4e01 CALIBRATION Screen

Adjust the volume input value of the input device. When the volume has been replaced, check and adjust it on this screen.

<Operation>

1 Press the SERVICE Button and move the cursor to the item you want to select.

2 When the TEST Button is pressed, the selected item is executed.

3 Perform checks and adjustments.

4 The calibration screen reappears.
When an adjustment has been made, select CHECK and, on the calibration check screen, make sure that the adjustment is appropriate.

5 Press the SERVICE Button and move the cursor to EXIT.

6 When the TEST Button is pressed, the calibration screen exits and the game test mode menu screen reappears.

<Menu Explanation>

CHECK: Proceed to the calibration check screen.

SETTING: Proceed to the calibration screen.

EXIT: Return to the game test menu screen.

> **Calibration Check Screen**

```
                    CALIBRATION

                       CHECK

                   MIN CENTER  MAX
    CONTROL STICK X  80H ( 36H - 77H - B4H ) <※1>
    CONTROL STICK Y  80H ( 57H - 98H - D8H ) <※2>
    THROTTLE LEVER   80H ( 52H - 80H - ACH ) <※3>




              PRESS TEST BUTTON TO EXIT
```
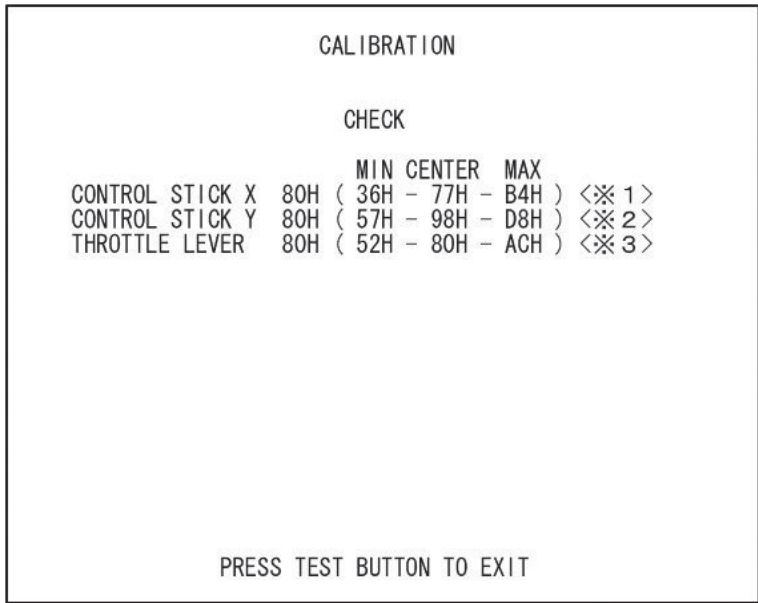
FIG. 9-4e02 CALIBRATION Check Screen

<Operation>

1 Operate the input device whose input value is to be checked.

2 When the TEST Button is pressed, the calibration screen reappears.

<Menu Explanation>

CONTROL STICK X: When minimum and maximum values have been input, MIN and MAX are displayed at the <※1> position, depending on the input. If both MIN and MAX are not displayed then the game cannot be played properly.

CONTROL STICK Y: When minimum and maximum values have been input, MIN and MAX are displayed at the <※2> position, depending on the input. If both MIN and MAX are not displayed then the game cannot be played properly.

THROTTLE LEVER: When minimum, maximum, and CLIMAX values have been input, MIN, MAX, and CLIMAX are displayed at the <※3> position, depending on the input. If MIN, MAX and CLIMAX are not displayed then the game cannot be played properly.

| Calibration Select Screen |

STOP IMPORTANT

Shown below is the recommended range in the value for the center position of each volume. Attach volume so that its value is within this range. [Throttle lever: 80H ± 4H]

```
                    CALIBRATION

                CONTROL STICK
                THROTTLE LEVER
             ->EXIT












             SELECT WITH SERVICE BUTTON
             AND PRESS TEST BUTTON
```
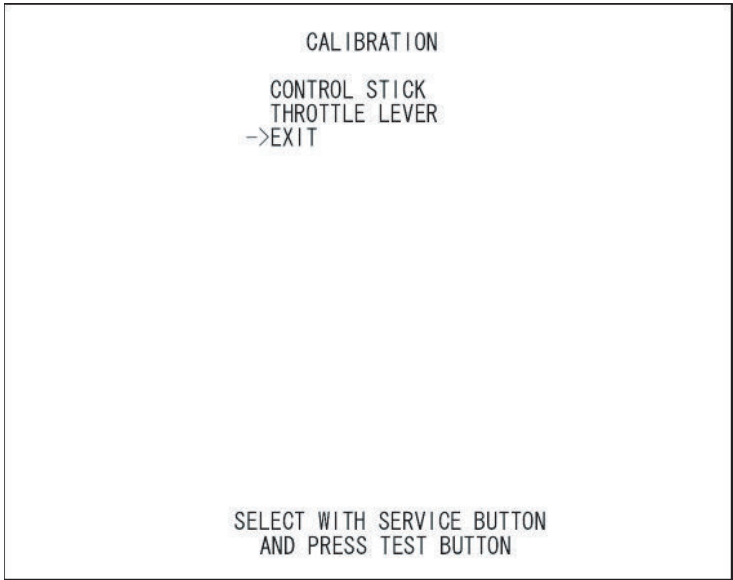
FIG. 9-4e03 CARIBRATION SELECT Screen

<Operation>

1 Press the SERVICE Button and move the cursor to the item you want to select.

2 When the TEST Button is pressed, the calibration screen for the selected item appears.

3 Adjust the input values on the calibration screen.

4 The calibration select screen reappears.

5 Press the SERVICE Button and move the cursor to EXIT.

6 When the TEST Button is pressed, the calibration screen reappears.

<Menu Explanation>

CONTROL STICK: Proceed to the control stick calibration screen.

THROTTLE LEVER: Proceed to the throttle lever calibration screen.

EXIT: Return to the calibration screen.

1 STEP 1 aligns the center position for the control stick.
Press the TEST Bbutton after releasing your hand from the control stick.
After determining the center position, proceed to STEP 2.

```
              CALIBRATION

            CONTROL STICK

            MIN CENTER  MAX
       X 80H( 36H - 77H - B4H)
       Y 80H( 57H - 98H - D8H)




            RELEASE THE CONTROL STICK
            AND PRESS THE TEST BUTTON
```
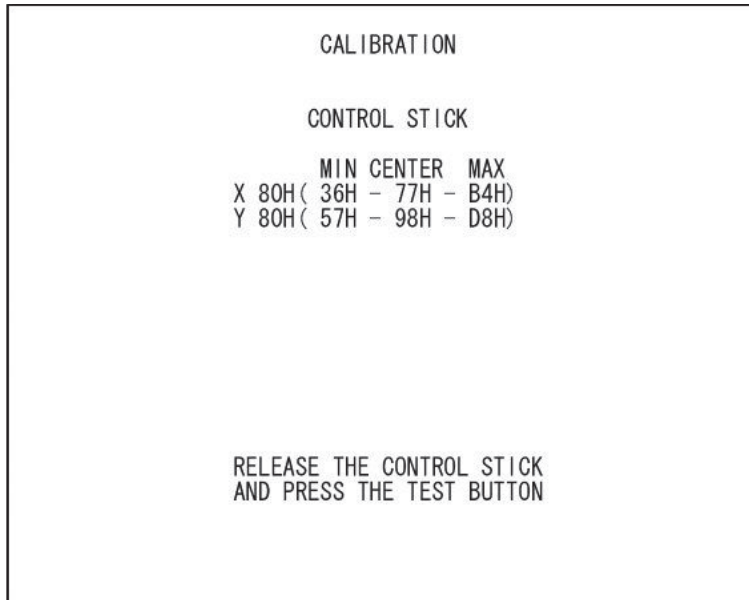
FIG. 9-4e04 CONTROL STICK (STEP1) Screen

2 STEP 2 aligns the MIN/MAX positions for the control stick.

Push the control stick as far as possible in all directions (left/right/forward/back).
(After moving it past a certain position, the message "PRESS TEST BUTTON TO EXIT" will be displayed.)

```
              CALIBRATION

            CONTROL STICK

            MIN CENTER  MAX
       X 80H( 36H - 77H - B4H)
       Y 80H( 57H - 98H - D8H)




       MOVE THE CONTROL STICK TO ITS EXTREMES
              <UP/DOWN/LEFT/RIGHT>
```
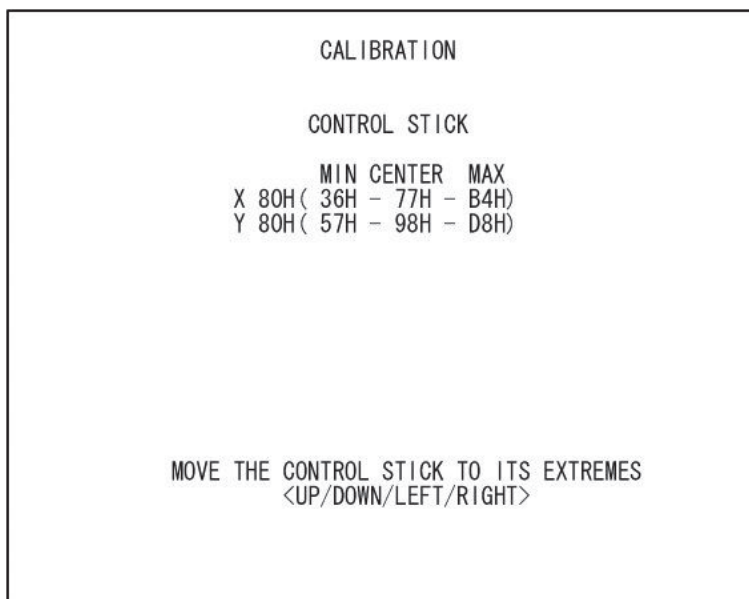
FIG. 9-4e05 CONTROL STICK (STEP2-1) Screen

9

EXPLANATION OF TEST AND DATA DISPLAY

```
                          CALIBRATION

                         CONTROL STICK

                      MIN CENTER  MAX
                  X 80H( 36H - 77H - B4H)
                  Y 80H( 57H - 98H - D8H)




              MOVE THE CONTROL STICK TO ITS EXTREMES
                     <UP/DOWN/LEFT/RIGHT>

                  PRESS TEST BUTTON TO EXIT
```
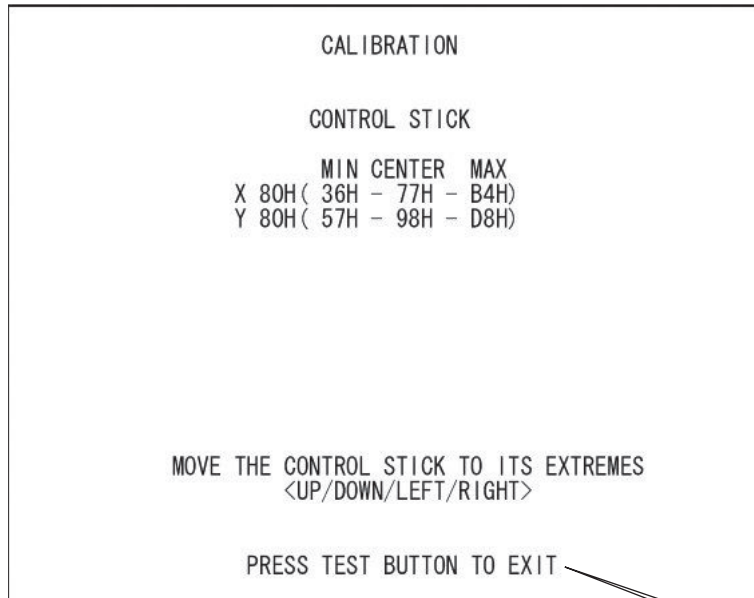
FIG. 9-4e06 CONTROL STICK (STEP2-2) Screen

"PRESS TEST BUTTON TO EXIT" is displayed.

3 Press the TEST Button to set these MIN/MAX settings (left/right/forward/back) and return to the calibration select screen.

Throttle Lever Calibration Screen

1 STEP 1 aligns the center position for the throttle lever.
Press the TEST Button after releasing your hand from the throttle lever.
After determining the center position, proceed to STEP 2.

```
                          CALIBRATION

                         THROTTLE LEVER

                      MIN CENTER  MAX
                  80H( 52H - 80H - ACH)




                  RELEASE THE THROTTLE LEVER
                  AND PRESS THE TEST BUTTON
```
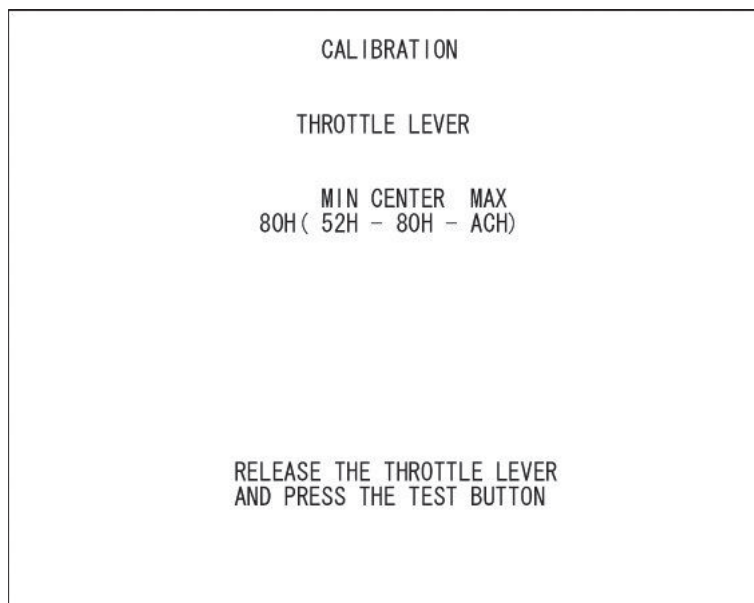
FIG. 9-4e07 THROTTLE LEVER (STEP1) Screen

2 STEP 2 aligns the MIN/MAX positions for the throttle lever.

Push the throttle lever as far as possible in both directions (forward/back). Make sure that you do not push the lever into CLIMAX Mode when inputting the MAX value. If you do so the game cannot be played properly.

If CLIMAX Mode has been entered, once the MIN/MAX position has been determined, repeat the same procedure to amend.

After moving it past a certain position, the message "PRESS TEST BUTTON TO EXIT" will be displayed.

```
              CALIBRATION

            THROTTLE LEVER

            MIN CENTER  MAX
         80H( 52H - 80H - ACH)




     MOVE THE THROTTLE LEVER TO ITS EXTREMES
                  <BACK/FRONT>

              - BE CAREFUL!! -
   DO NOT MOVE THE THROTTLE LEVER INTO "CLIMAX"
          WHEN YOU ARE IN "MAX" LEVEL
```
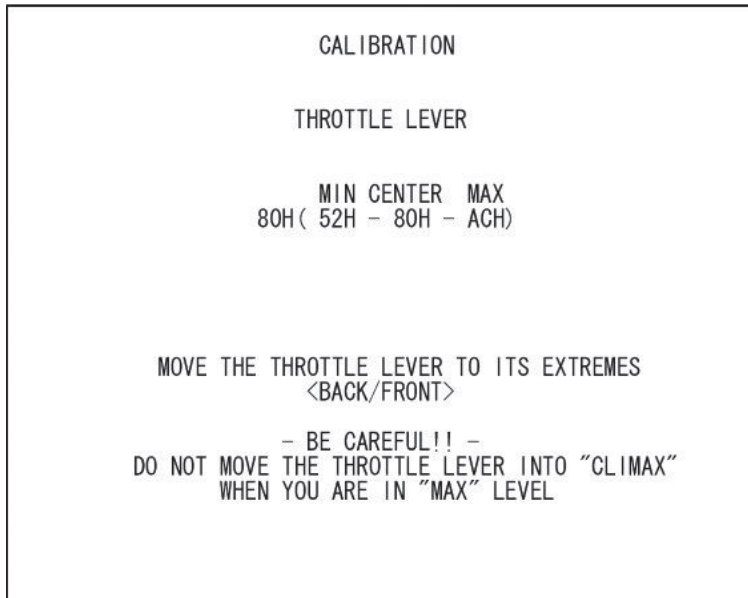
FIG. 9-4e08 THROTTLE LEVER (STEP2-1) Screen

```
              CALIBRATION

            THROTTLE LEVER

            MIN CENTER  MAX
         80H( 52H - 80H - ACH)




     MOVE THE THROTTLE LEVER TO ITS EXTREMES
                  <BACK/FRONT>

              - BE CAREFUL!! -
   DO NOT MOVE THE THROTTLE LEVER INTO "CLIMAX"
          WHEN YOU ARE IN "MAX" LEVEL


          PRESS TEST BUTTON TO EXIT
```
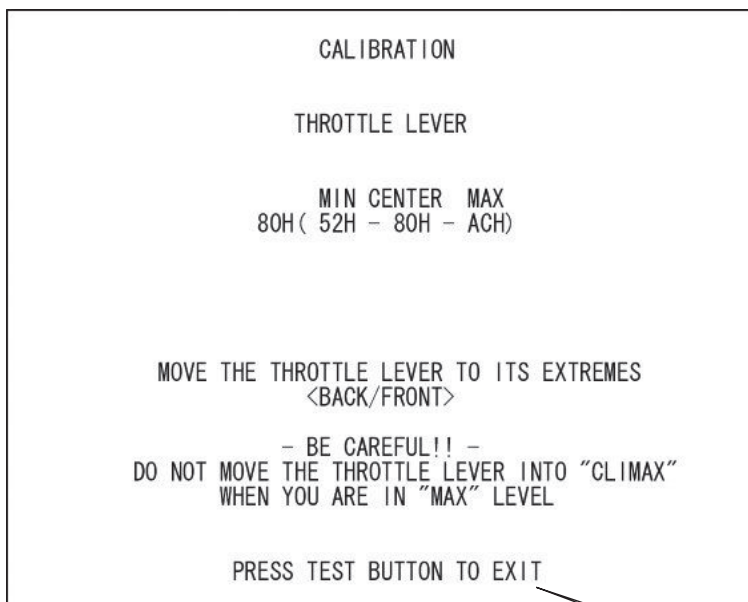
FIG. 9-4e09 THROTTLE LEVER (STEP2-2) Screen

"PRESS TEST BUTTON TO EXIT" is displayed.

3 Press the TEST Button to set these MIN/MAX settings and return to the calibration select screen.

f. BOOKKEEPING

Displays bookkeeping information across 4 screens.
When the TEST Button is pressed, proceed to the next screen. When the TEST Button is pressed while the (4/4) screen is displayed, the game test mode menu screen reappears.

```
                    BOOKKEEPING (1/4)

              COIN 1                    0
              COIN 2                    0
              TOTAL COINS              0

              COIN CREDITS             0
              SERVICE CREDITS          0
              TOTAL CREDITS            0




              PRESS TEST BUTTON TO CONTINUE
```
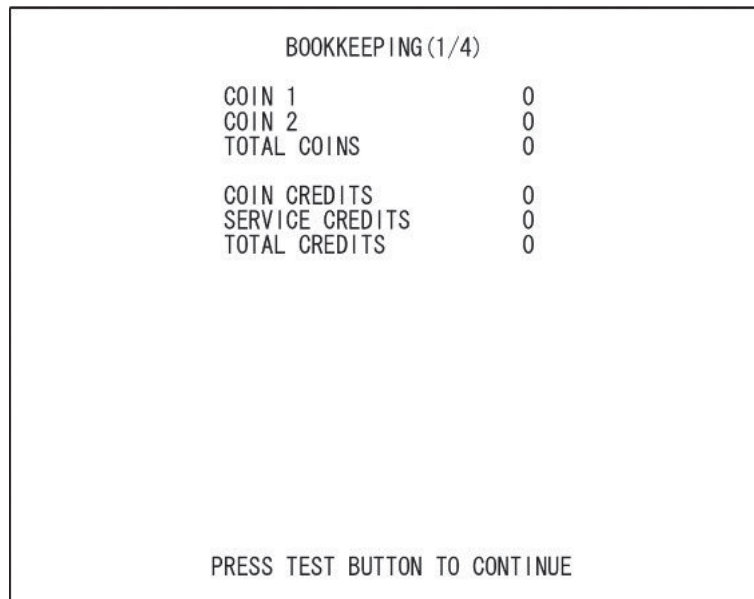
FIG. 9-4f01 BOOKKEEPING Screen (1/4)

<Menu Explanation>

COIN 1:	Number of coins inserted into coin chute 1.
COIN 2:	Number of coins inserted into coin chute 2.
TOTAL COINS:	Total of COIN 1 and COIN 2.
COIN CREDITS:	Number of credits awarded from inserting coins.
SERVICE CREDITS:	Number of credits awarded with the SERVICE Button.
TOTAL CREDITS:	Total of COIN CREDITS and SERVICE CREDITS.

```
                    BOOKKEEPING (2/4)

        NUMBER OF GAMES          0
        TOTAL TIME               0D  00H  00M  00S
        PLAY TIME                0D  00H  00M  00S
        AVERAGE PLAY TIME        0D  00H  00M  00S
        LONGEST PLAY TIME        0D  00H  00M  00S
        SHORTEST PLAY TIME       0D  00H  00M  00S




               PRESS TEST BUTTON TO CONTINUE
```

FIG. 9-4f02 BOOKKEEPING Screen (2/4)

<Menu Explanation>

NUMBER OF GAMES:	Total number of games played.
TOTAL TIME:	Total time that power has been supplied to the cabinet. (Time power is supplied, except during test mode.)
PLAY TIME:	Total play time.
AVERAGE PLAY TIME:	Average play time.
LONGEST PLAY TIME:	Longest play time.
SHORTEST PLAY TIME:	Shortest play time.

```
                    BOOKKEEPING (3/4)

                   - TIME HISTOGRAM -
        0M00S~0M29S    0      7M30S~  7M59S    0
        0M30S~0M59S    0      8M00S~  8M29S    0
        1M00S~1M29S    0      8M30S~  8M59S    0
        1M30S~1M59S    0      9M00S~  9M29S    0
        2M00S~2M29S    0      9M30S~  9M59S    0
        2M30S~2M59S    0     10M00S~10M29S     0
        3M00S~3M29S    0     10M30S~10M59S     0
        3M30S~3M59S    0     11M00S~11M29S     0
        4M00S~4M29S    0     11M30S~11M59S     0
        4M30S~4M59S    0     12M00S~12M29S     0
        5M00S~5M29S    0     12M30S~12M59S     0
        5M30S~5M59S    0     13M00S~13M29S     0
        6M00S~6M29S    0     13M30S~13M59S     0
        6M30S~6M59S    0     14M00S~14M29S     0
        7M00S~7M29S    0     14M30S~14M59S     0
                              OVER    15M00S    0

               PRESS TEST BUTTON TO CONTINUE
```

FIG. 9-4f03 BOOKKEEPING Screen (3/4)

<Menu Explanation>

TIME HISTOGRAM: Total number of plays in each time bracket.

```
                    BOOKKEEPING(4/4)

  NUMBER OF GAMES                              0
  NUMBER OF GAME START                         0
  NUMBER OF CONTINUE                           0
  NUMBER OF GAMECLEAR                          0
  NUMBER OF GAMEOVER                           0
  AVERAGE NUMBER OF CONTINUE                   0.000
  MIN NUMBER OF CONTINUE TO CLEARED            0
  AVERAGE NUMBER OF CONTINUE TO CLEARED        0.000

  NUMBER OF TEAM PLAY                          0
  NUMBER OF MID-GAME ENTRY                     0




                PRESS TEST BUTTON TO EXIT
```
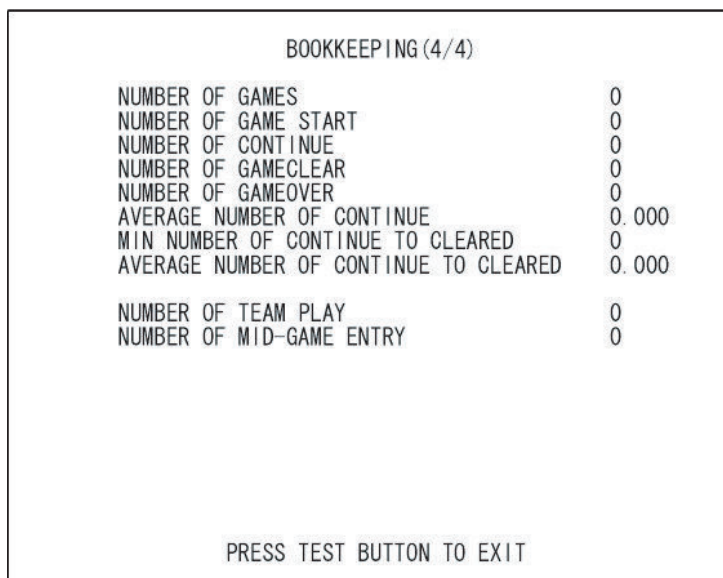
FIG. 9-4f04 BOOKKEEPING Screen (4/4)

<Menu Explanation>

NUMBER OF GAMES:	Total number of games.
NUMBER OF GAME START:	Total number of games started.
NUMBER OF CONTINUE:	Total number of continues.
NUMBER OF GAMECLEAR:	Total times the game has been cleared.
NUMBER OF GAMEOVER:	Total number of Game Overs.
AVERAGE NUMBER OF CONTINUE:	Average number of continues.
MIN NUMBER OF CONTINUE TO CLEARED:	Minimum number of continues until ENDING is reached.
AVERAGE NUMBER OF CONTINUE TO CLEARD:	Average number of continues until ENDING is reached.
NUMBER OF TEAM PLAY:	Total number of two-player games.
NUMBER OF MID-GAME ENTRY:	Total number of mid-game entries, and total number of mid-game entries plus number of continues after GAMEOVER.

g. BACKUP DATA CLEAR

```
              BACKUP DATA CLEAR

       CLEAR ALL BACKUP DATA
       CLEAR RANKING DATA(RANK01~20) ONLY
       CLEAR RANKING DATA(RANK11~20) ONLY
       CLEAR BOOKKEEP DATA ONLY
     ->EXIT











            SELECT WITH SERVICE BUTTON
              AND PRESS TEST BUTTON
```

FIG. 9-4g01 BACKUP DATA CLEAR Screen

<Menu Explanation>

CLEAR ALL BACKUP DATA:	Clear all data (both ranking and bookkeeping).
CLEAR RANKING DATA(RANK01~20) ONLY:	Clear only ranking data.
CLEAR RANKING DATA(RANK11~20) ONLY:	Clear only ranking data from (rank 11 to 20 only).
CLEAR BOOKKEEP DATA ONLY:	Clear only bookkeeping data.
EXIT:	Return to game test menu screen.

After selecting one of the above items the following confirmation screen will be displayed.
The screen below is displayed when CLEAR ALL BACKUP DATA is selected, but the screen is almost identical in other cases too.

```
              BACKUP DATA CLEAR

         CLEAR ALL BACKUP DATA

              YES (CLEAR)
            ->NO (CANCEL)










            SELECT WITH SERVICE BUTTON
              AND PRESS TEST BUTTON
```

FIG. 9-4g02 BACKUP DATA CLEAR Screen

If you wish to clear data, press the SERVICE Button to highlight YES and then press the TEST Button.
"COMPLETED" will be displayed once the data has been erased.
When the TEST Button is pressed, the game test mode menu screen reappears.

If you don't wish to clear data, press the SERVICE Button to highlight NO and then press the TEST Button.
Return to BACKUP DATA CLEAR screen.

9-5. MOTION CONTROL BOARD TEST MODE

(STOP) IMPORTANT

> If the unit enters the Motion Control Board Test Mode, the power must first be cut off and re-engaged in order to play the game. Also, if the game is being played and the seat is in motion, the unit cannot enter the Motion Control Board Test Mode.

Pressing the MONITOR CHANGE BUTTON of the SW UNIT will change the screen back and forth from the GAME BD and MOTION CONTROL BD. When entering the MOTION CONTROL BD Test Mode change the screen to MOTION CONTROL BD.
On the MOTION CONTROL BD screen the MOTION CONTROL BD STATUS screen will be displayed.
The I/O status and LINK ID of the MOTION CONTROL BD can be checked ion this screen.

```
          MOTION  CONTROL SOFRWARE VER x.xx

    LINK ID : 1
    [Game Stage} :ADVERTISE            [TIMER MODE] : NONE
    CONTROL STATUS CODE : [1}XXXXX   [2]XXXXX
    CONTROL POSITION : [1] XXXX   [2] XXXX


    [I/O Status] Port A : XXX    Port B : XXX
    SEATBELT :UNLOCK   SENSOR : OFF   MOTION STOP : OFF


    [SMCP Status Code] : XXXX


     POS BIT : NEUTRAL   NORMAL BIT : ON   DRIVING BIT : OFF
     SEATBELT BIT : ON   SENSOR BIT : ON   MOTIONSTOP BIT : OFF
     Host Command : INITIALIZATION at NORMAL
```

FIG. 9-5 MOTION CONTROL BD STATUS Screen

There are 2 ways to enter the Motion Control Test Mode.

■ Entering the Test Mode before the Initialization after power has been engaged.

When the message [PRESS 'SET' TO ENTER TEST MODE] is displayed on the screen, press down long on the SET BUTTON and enter the Test Mode.

■ Entering the Test Mode when the SEAT is not moving and the screen is in the ADVERTISE state.

Press down long on the SET BUTTON and enter the Test Mode.

a. MOTION CONTROL BOARD TEST MODE MENU

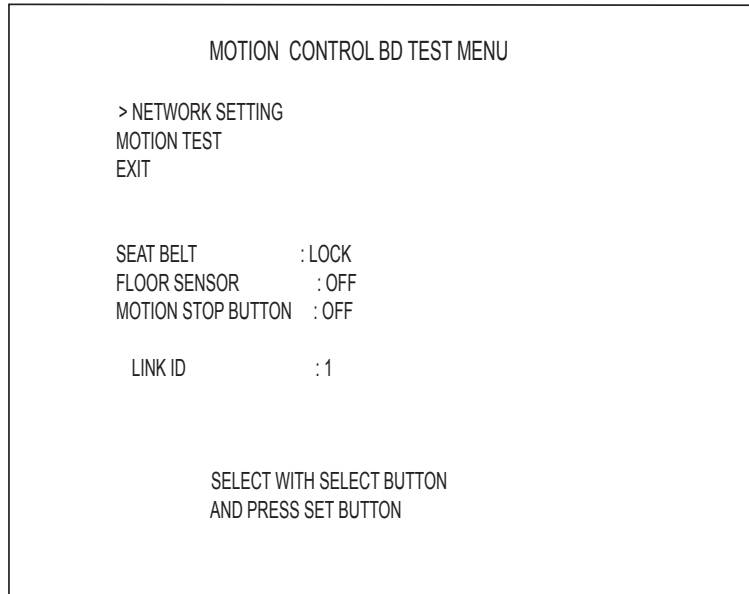The Motion Control BD Test Mode Menu screen is as follows.

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│            MOTION  CONTROL BD TEST MENU               │
│                                                       │
│        > NETWORK SETTING                              │
│          MOTION TEST                                  │
│          EXIT                                         │
│                                                       │
│                                                       │
│          SEAT BELT            : LOCK                  │
│          FLOOR SENSOR         : OFF                   │
│          MOTION STOP BUTTON   : OFF                   │
│                                                       │
│           LINK ID               : 1                  │
│                                                       │
│                                                       │
│                                                       │
│              SELECT WITH SELECT BUTTON                │
│              AND PRESS SET BUTTON                     │
│                                                       │
│                                                       │
└─────────────────────────────────────────────────────┘
```

FIG. 9-5a TEST MODE MENU Screen

<Operation>

1 Press the SELECT BUTTON and move the cursor to the menu you wish to select

2 Press the SET BUTTON and the menu is selected

3 Press the SELECT BUTTON and move the cursor to □EXIT□.

4 Select [EXIT]. When the SET BUTTON is pressed, the message [PLEASE POWER OFF AND POWER ON] is displayed. Turn the power OFF and re-engage the power.

<Menu Explanation>

NETWORK SETTING:	Network Play Setting
MOTION TEST:	Motion Test of seat.
EXIT:	ends the test mode of the motion control BD
SEATBELT	LOCK when the seat belt is fastened and UNLOCK when the belt is unfastened.
FLOOR SENSOR:	ON when the floor sensor is interrupted and OFF when cleared
MOTION STOP BUTTON	ON when the motion stop button is pressed and OFF when the button is released.
LINK ID	Currently installed LINK ID in the Motion control BD

b. NETWORK SETTING

STOP **IMPORTANT**

- **Network play cannot be implemented without proper setting for network play. Instead, and error message may be displayed**

- **When setting network play, be sure to match the GAME BD LINK ID to LINK ID of the MOTION CONTROL BD . Do not set a LINK ID used by a different game unit. Failure to observe this may lead to problems in operation.**

- **Setting changes do not become effective until EXIT is selected on the setting screen. After a setting has been changed, be sure to always exit .**
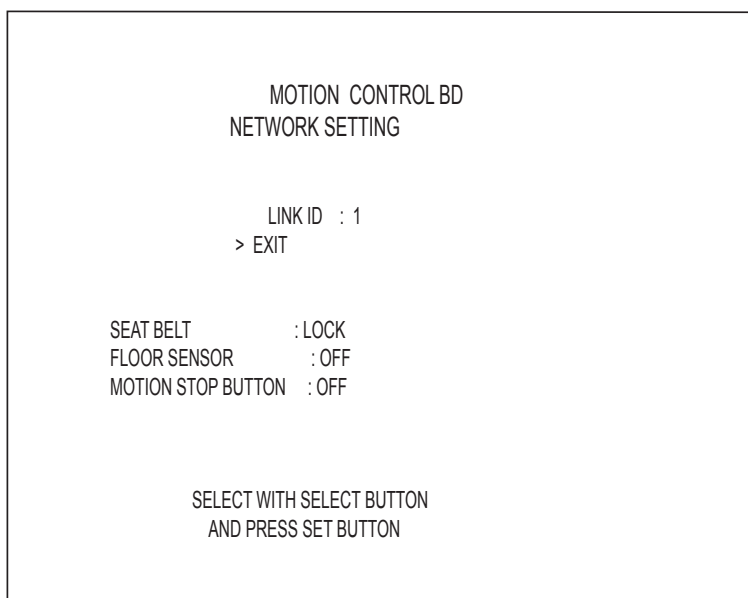
```
                    MOTION  CONTROL BD
                 NETWORK SETTING


                   LINK ID  : 1
                 > EXIT


         SEAT BELT           : LOCK
         FLOOR SENSOR        : OFF
         MOTION STOP BUTTON  : OFF


              SELECT WITH SELECT BUTTON
               AND PRESS SET BUTTON
```
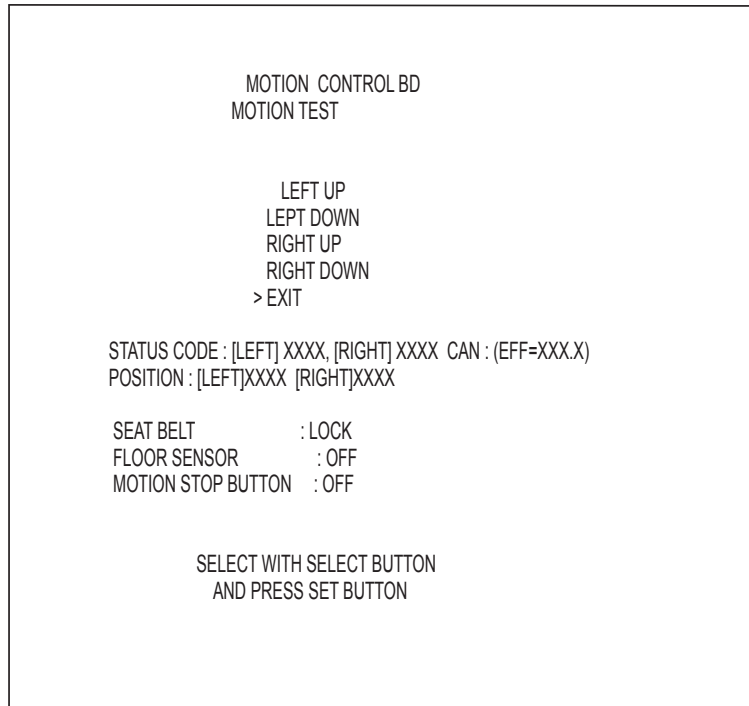
FIG. 9-4b TEST MODE Screen

<Operation>

1 Press the SELECT BUTTON, move the cursor to [LINK ID] and select it.

2 When the SET BUTTON is pressed the value set for [LINK ID] changes. Set one of the machines to [1] and the other to [2]

3 Press the SELECT BUTTON and move the cursor to [EXIT].

4 When the SET BUTTON is pressed, the NETWORK SETTING screen exits and the MOTION CONTROL BD TEST MODE MENU reappears.

c. MOTION TEST

Select the Test Mode on the main screen and move on to the MOTION TEST Menu. The following screen will appear.

```
                MOTION  CONTROL BD
                MOTION TEST


                    LEFT UP
                    LEPT DOWN
                    RIGHT UP
                    RIGHT DOWN
                  > EXIT

  STATUS CODE : [LEFT] XXXX, [RIGHT] XXXX  CAN : (EFF=XXX.X)
  POSITION : [LEFT]XXXX  [RIGHT]XXXX

   SEAT BELT            : LOCK
   FLOOR SENSOR         : OFF
   MOTION STOP BUTTON    : OFF


             SELECT WITH SELECT BUTTON
               AND PRESS SET BUTTON
```

FIG. 9-4c01 MOTION TEST Screen

<Operation>

1 Lock the SEAT BELT and check for any objects on the FLOOR SENSOR. If the SEAT BELT is unlocked or if objects are found on the FLOOR SENSOR the SEAT will not operate.

2 Press the SELECT BUTTON, move the cursor to the desired menu and select it.

3 The unit will operate while the SET BUTTON is pressed, and when it reaches a LIMIT is will stop operating. .

4 When the TEST is completed, press the SELECT BUTTON, move the cursor to [EXIT]and select it.

5 When the SET BUTTON is pressed, the message [PLEASE POWER OFF AND POWER ON] is displayed. Turn the power OFF and re-engage the power..

10 MONITOR

10-1 CAUTIONS/WARNINGS REGARDING SAFETY FOR HANDLING THE MONITOR

Before handling the monitor, be sure to read the following points and comply with the caution/warning instructions given below. Note the caution/warning symbols and letters used in the instructions.

⚠WARNING Indicates that handling the monitors improperly by disregarding this warning may potentially cause a 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 or unplug a power connector.

⚠WARNING

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

- **Use of the monitor by converting it without permission is not allowed. SEGA shall not be liable for any malfunctioning and accidents caused by such a conversion.**

- **High Voltage**
  Some of the parts inside the monitor are subject to high voltage up to several thousand volts and pose a serious threat. Therefore, do not touch the monitor interior. Should soldering and paper wastes, etc. be mixed in the monitor interior, turn the power off so as not to cause malfunctioning or a fire hazard.

10-2 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.**

There is a monitor adjustment button on the SW UNIT
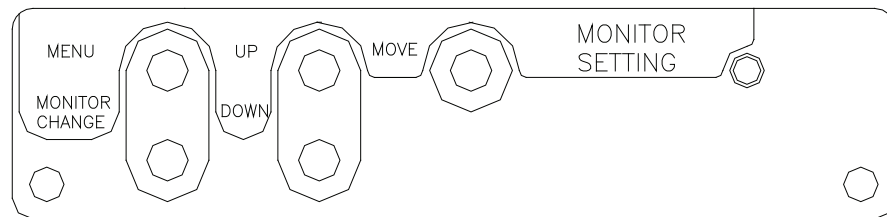
FIG. 10-2a Monitor adjusting button

<Menu Explanation>

MENU	Activate/inactivate the menu screen and progress to the sub menu within the main menu.
MONITOR CHANGE	Motion Test of seat.change the screen from GAME BD to MOTION CONTROL BD and back. Pressing the button immediately changes the screen.
UP	Moving the cursor from the Main menu to the sub menu increases the selected function value..
DOWN	The selected function value in the main/sub menu decreases.
MOVE	The cursor of the menu moves.(Brightness ↔ Mode)

The five buttons to operate the adjustment are shown in the picture above. Pressing the MENU button displays the menu in as shown in the picture. If there is no operation for several second,   the menu will disappear automatically.
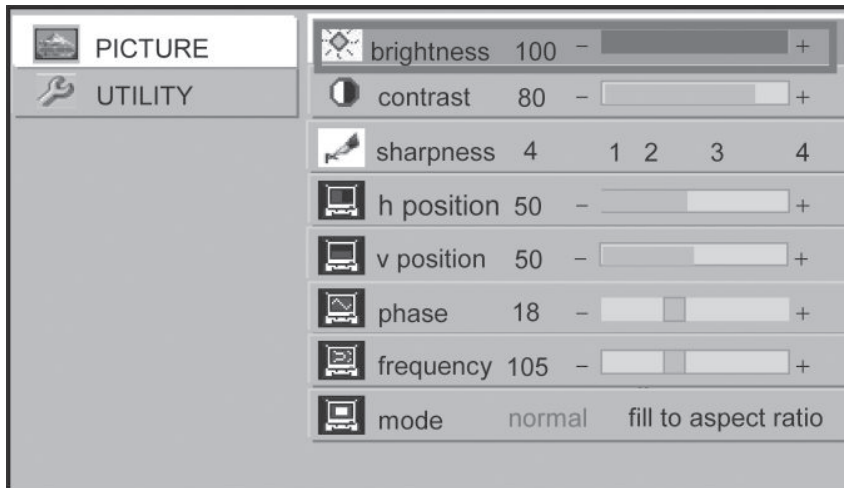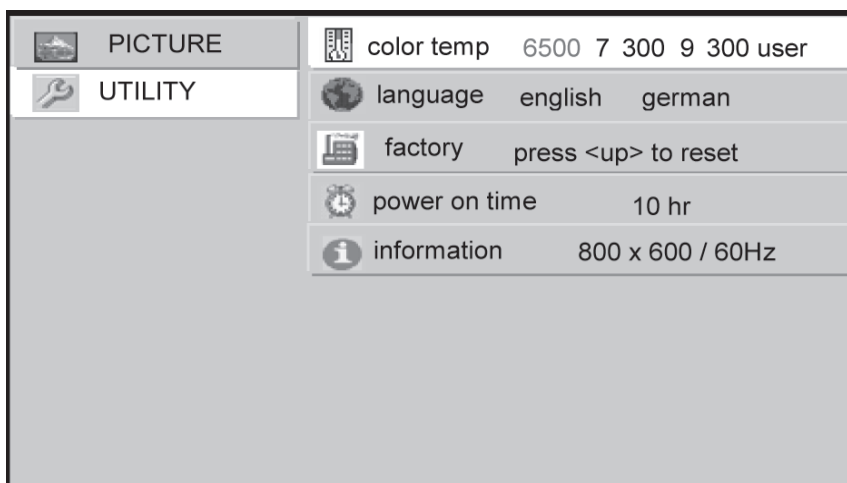
FIG.10-2b

FIG.10-2c

<Menu Explanation>

Brightness:	adjusts the on-screen image brightness.
Contrast::	adjusts image contrast.
Sharpness:	adjusts image sharpness.
H Position:	adjusts the horizontal image's position.
V Position:	adjusts the vertical image's position.
Phase:	adjusts the Clock Phase.
Frequency:	adjusts the frequency.
Mode:	adjusts the proportion of the screen's width and length. This affects formatting of the Video.
Color Temp:	sets a different pre-set color temp. or the user manually sets the parameter of a chosen color.
Language:	selects the language shown on the screen.
Factory:	resets the product to the initial values set before shipment.
Power On Time:	shows the total time with Power On.
Information:	shows the pixels of the input signals.

11 CONTROL STICK

⚠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.

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

- 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. 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.

- Exercise due caution in performing soldering procedures. If soldering iron is handled carelessly, there could be fires or burns.

- Proceed very carefully when heating thermal contraction tube. Careless operations can result in fires or burns.

- In performing adjustments or replacements, check the surroundings before powering up. The product undergoes initialization automatically after the power has been engaged. If someone is near the product and the seat moves left or right, there could be a collision or fall.

⚠CAUTION

- When fastening plastic parts, be careful not to tighten screws and nuts excessively. Otherwise parts may be damaged, resulting in injuries from fragments, etc.

- Be careful not to get hand or finger caught when opening or closing the controller lid.

- Control stick connectors are removed within a narrow cabinet. Be careful as there is the danger of abrasions.

- While holding the control stick firmly, remove the 4 flange nuts that fasten it. If the control stick falls on you, you could be injured.

STOP IMPORTANT

- **After the volume has been replaced, be sure to set the volume value on the test mode calibration screen and the input test screen and check variations in the volume value.**

- **After adjusting or replacing a microswitch, always check ON/OFF of the switch on the input test screen of the test mode.**

- **Handle parts inside the control stick very carefully. Be especially careful to avoid damage, deformation or loss of these parts. If any one of these parts is lost or defective, it can result in damages and/or faulty operations.**

If the operability of the control stick is unsatisfactory, or if settings on the test mode calibration screen are ineffective, the problem could be a defective mechanism, displacement of the position where volume or microswitch has been fastened, or malfunctioning of volume or microswitch.

Carry out the following procedure to replace control stick or microswitch. Also be sure to grease the mechanical components of the control stick once every 3 months.

11-1 HOW TO REMOVE CONTROL STICK

To replace the control stick volume or microswitch, remove the control stick. It is very difficult to work with the control stick attached and parts or wiring could be damaged.

The following tools are needed for the following procedure.
- 2.5 mm Allen wrench or screwdriver
- 8 mm spanner, Allen screwdriver or socket wrench

1 Cut off the power.

2 Remove the 2 Flush Wrench screws and Rack washers in front of the control stick.

FIG. 11-1a

Flush Wrench Screw(2), Black
M4 X 10, Rack Washer Used

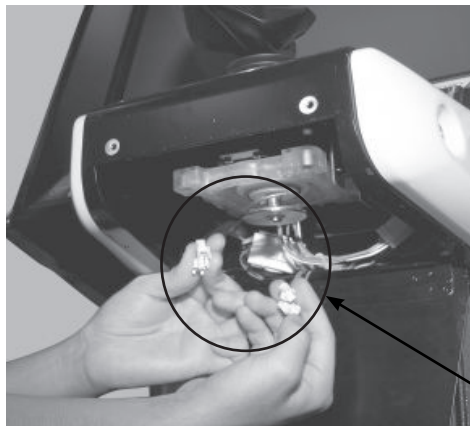*3* Open the controller lid at the bottom of the control stick.
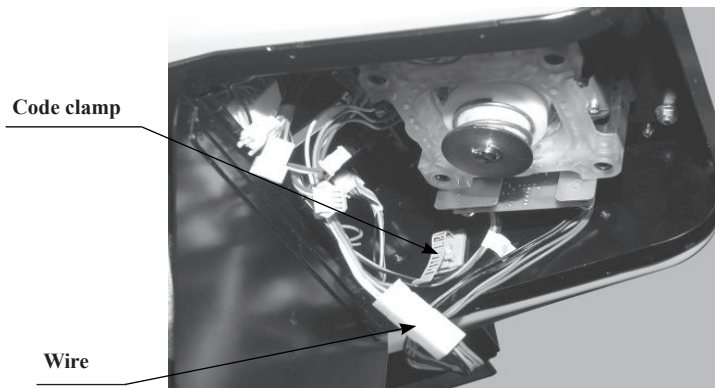

FIG. 11-1b

Controller Lid

4 Remove the 2 wire connectors on the control stick.

Connectors

FIG. 11-1c

*5* On the inside of the controller lid there is a cord clamp that holds wire to the surface on the right as you face the monitor. Undo this cord clamp and pull out the wire.


Code clamp

Wire

FIG. 11-1d

6 At the bottom of the control stick there is a board on the right side as you face the monitor. Of the connectors connected to this board, remove the connector on the monitor side.

Be careful not to remove any connectors other than the one specified. Otherwise there could be damages, malfunctions, faulty connections, etc.
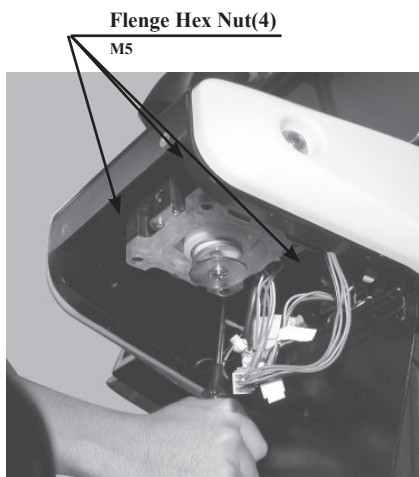
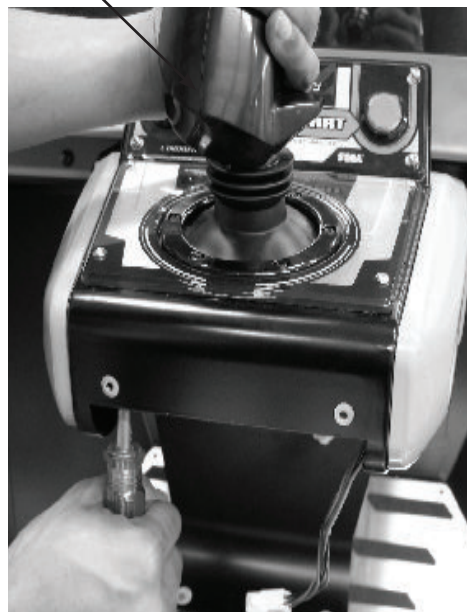Board

Remove 1 connector

FIG. 11-1e

Removed connector
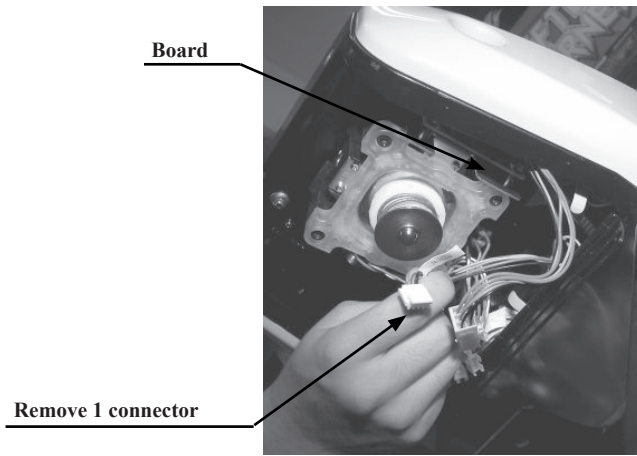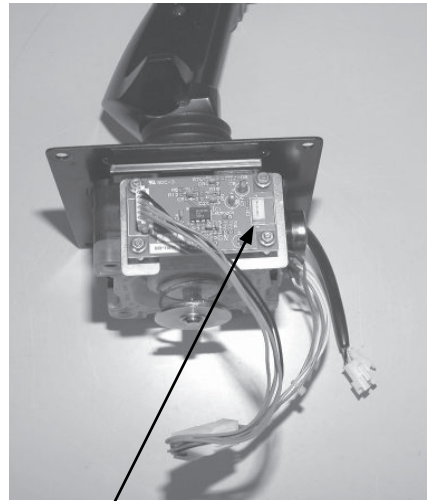
FIG. 11-1f

7 Remove the 4 flange nuts that fasten the control stick from the bottom. Hold the control stick firmly while proceeding.

Hold the control stick while proceeding

Flenge Hex Nut(4)
M5

FIG. 11-1g

FIG. 11-1h

8 Pull the control stick downward to remove it. Be careful not to damage wiring.
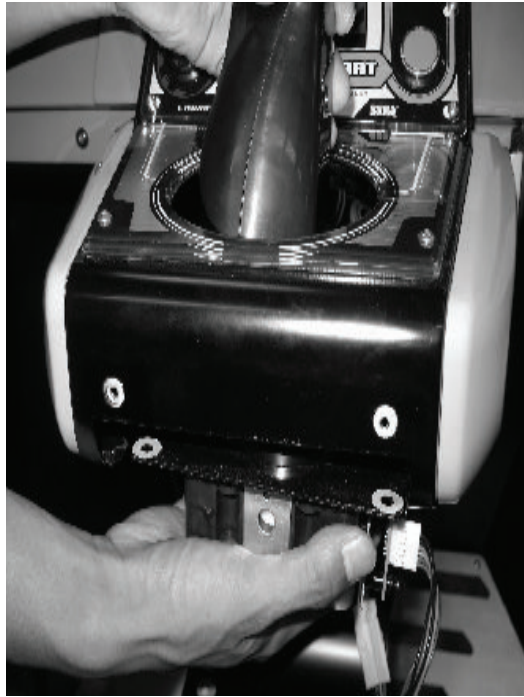

FIG. 11-1i

11-2 GREASING

(STOP) 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.**

Once every 3 months, apply grease to the spring and sliding part of the mechanical component that turns the volume shaft. Use Greasemate (PART NO. 090-0066).
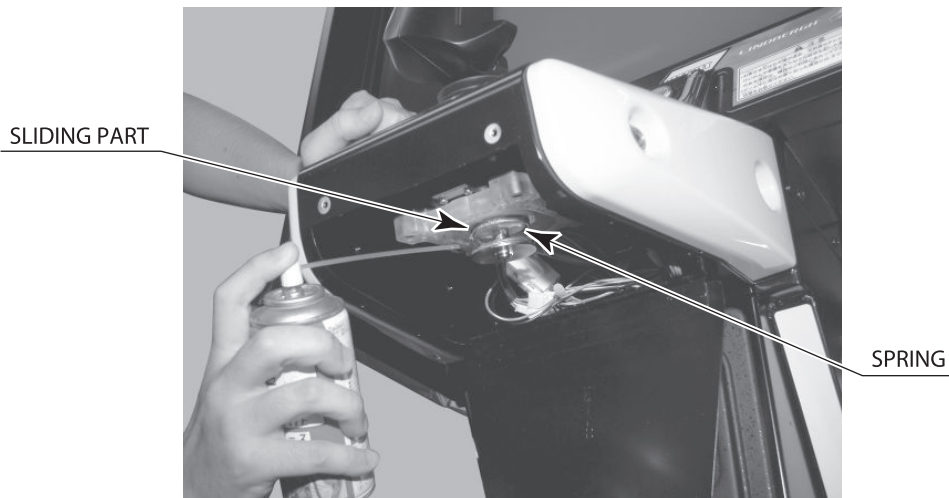

SLIDING PART

SPRING

FIG. 11-2

If control stick operability is unsatisfactory and settings on the test mode calibration screen are ineffective, the problem could be a malfunction of the control stick volume.

Remove the control stick and replace the volume.

Please note, however, that the control stick has two volumes. Make sure you are replacing the correct volume.

Have available a volume for replacement and three thermal contraction tubes (PART NO. 310-5029-D12).

Use the following tools and solder.
- 2.5 mm Allen wrench or screwdriver
- 8 mm spanner, Allen screwdriver or socket wrench
- Philips screwdriver (for M3 screw)
- 11 to 12 mm spanner
- Nippers
- Cutter
- Wire stripper
- Soldering iron
- Industrial drier

1 Cut off the power and remove the control stick. (See 11-1.)

2 Take out the 2 screws that hold down the volume bracket.

SCREW (2)
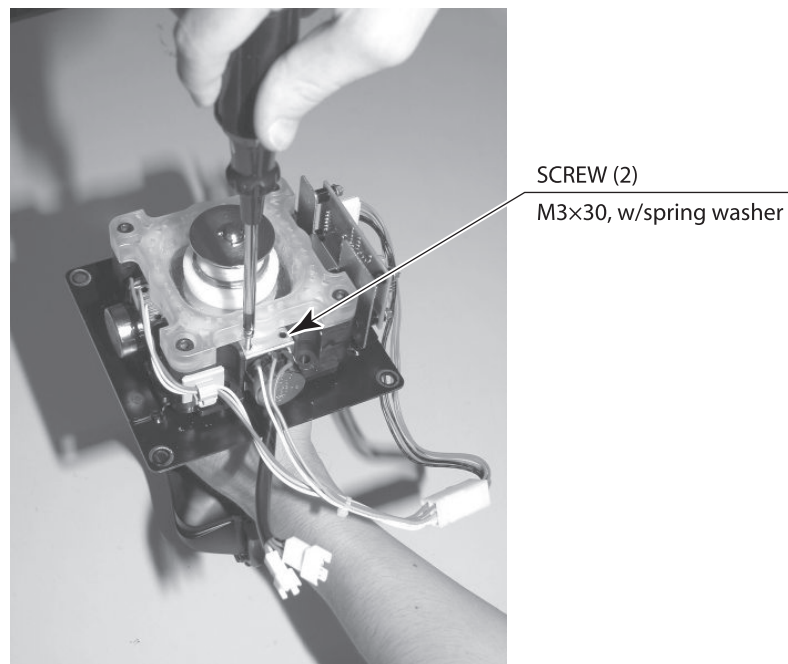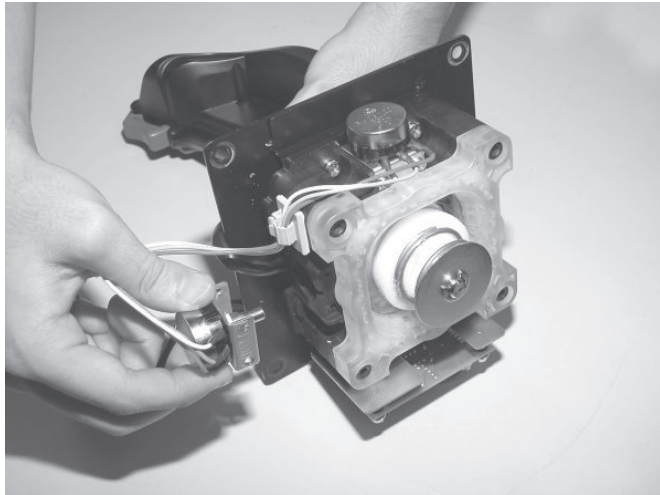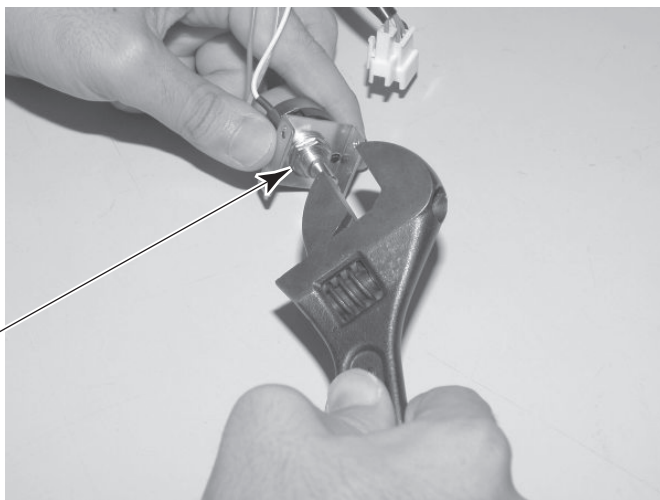M3×30, w/spring washer

FIG. 11-3a

3 Remove the volume together with volume bracket from the control stick.

FIG. 11-3b

4 Take off the hexagon nut that fastens the volume to the volume bracket, then remove the volume from the bracket.
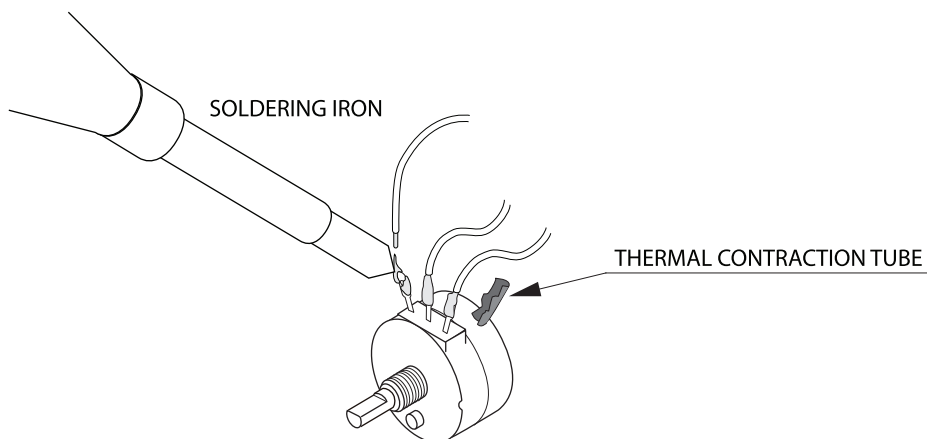
Take off hexagon nut.

FIG. 11-3c

5 Wire connected to the volume can be used as is. Use nippers or cutters to remove old thermal contraction tube from wire connection sites.

6 Use a soldering iron to melt soldered joints and remove wire from old volume. Exercise extreme caution in using the soldering iron.

SOLDERING IRON

THERMAL CONTRACTION TUBE

FIG. 11-3d

7 If the length of wire exposed at the wire tip does not reach 5 mm, use wire stripper or cutter to remove wire cover.

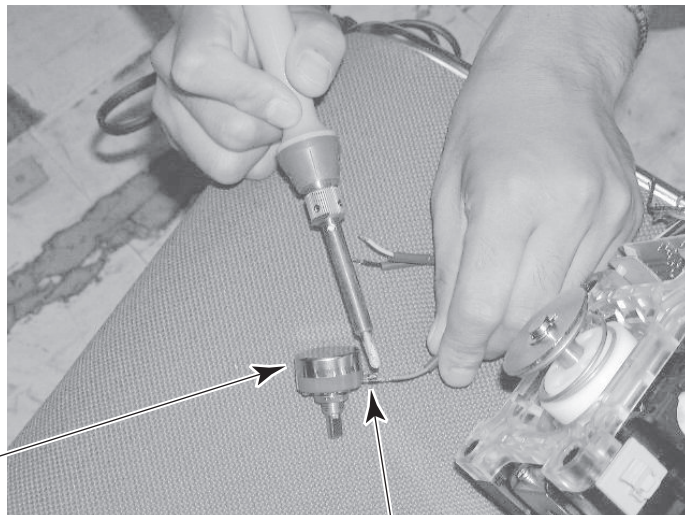Remove wire cover.
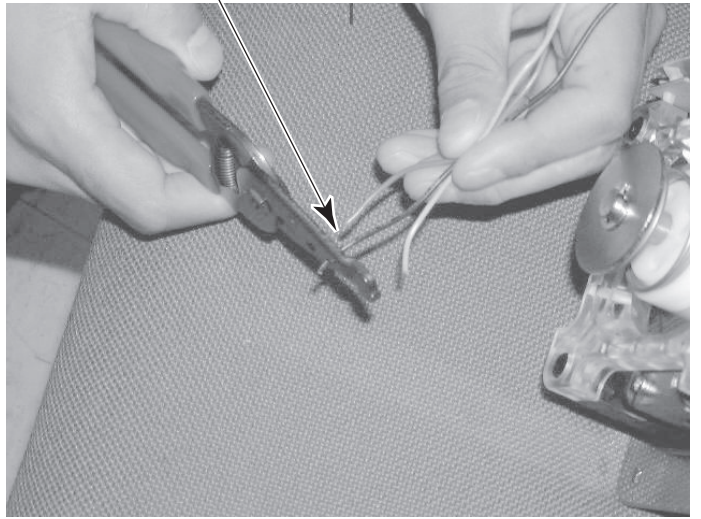
FIG. 11-3e

8 Pass one wire through each thermal contraction tube.
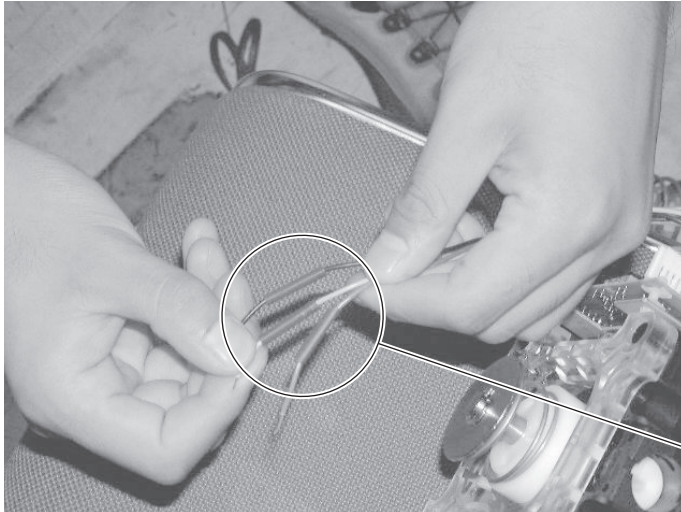
Pass through thermal contraction tube.

FIG. 11-3f

9 Solder wire to the pin of the new volume.
Refer to wiring diagram and make sure that you are using soldering wire.

VOLUME
220-5737

Soldering

FIG. 11-3g

10 Heat with industrial dryer and affix thermal contraction tube so that it covers soldered area.
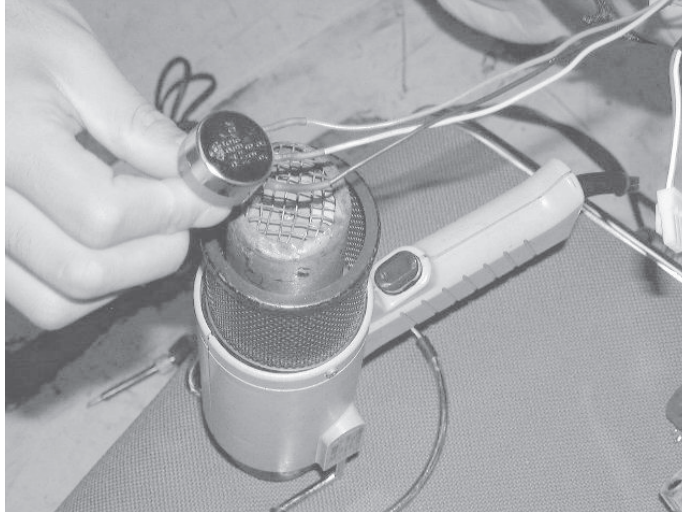
FIG. 11-3h

11 Attach the volume to the volume bracket, then attach this assembly to the control stick. Align the D-cut surface of the volume shaft with the D-cut surface of the hole on the side of the control stick, then insert the shaft.

D-CUT SURFACE

Align D-cut surfaces and insert.

D-CUT SURFACE
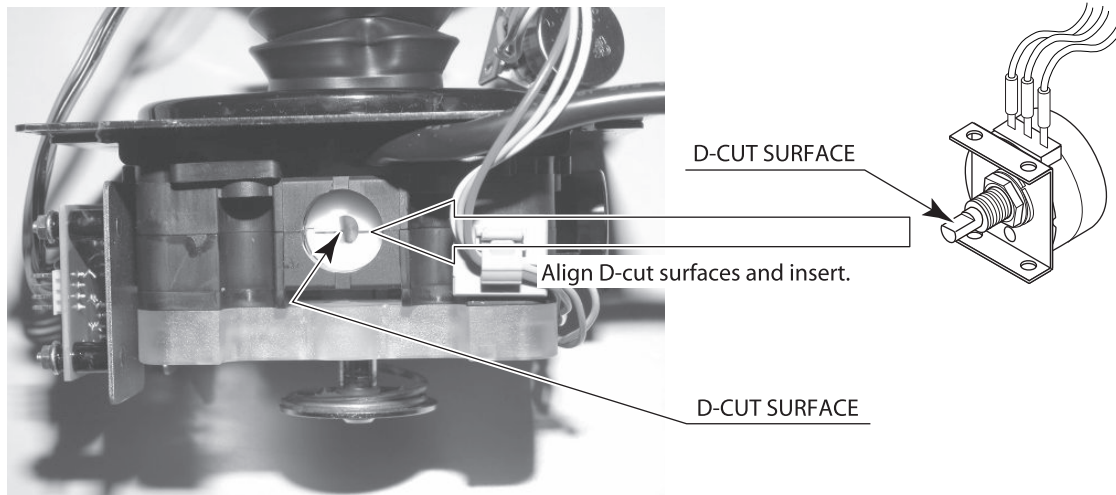
FIG. 11-3i

12 Fasten volume bracket with 2 screws.

13 Attach control stick.

14 Engage the power. Note that initialization takes place.

15 Establish volume setting on the game test mode calibration screen. (See 9-4e).

16 Simply changing settings on the calibration screen will not be effective. Terminate the test mode. Note that initialization takes place upon termination of the test mode.

11-4 MICROSWITCH REPLACEMENT

If operability of the gun trigger is unsatisfactory, the problem could be a malfunction of the microswitch inside the control stick grip.

Remove the control stick and replace the microswitch.

Use the following tools, solder and screw lock agent (PART NO. 090-0012).
- 2.5 mm Allen wrench or screwdriver
- 8 mm spanner, Allen screwdriver or socket wrench
- Philips screwdriver (for M4 screw)
- Soldering iron

1 Cut off the power and remove the control stick. (See 11-1.)

2 Press down on the rubber cover at the base of the control stick grip.
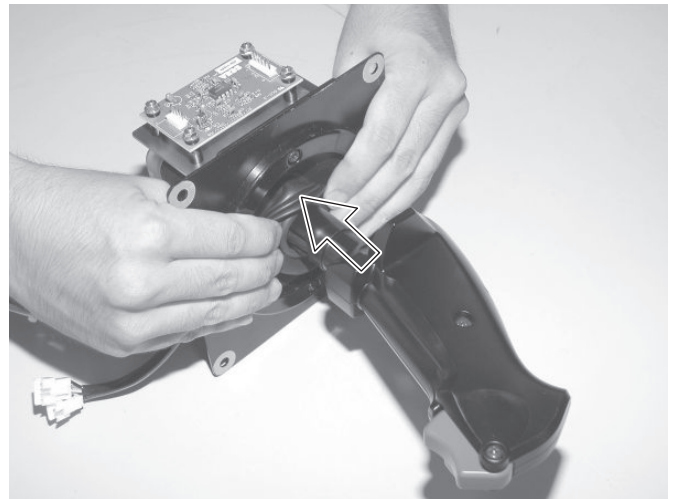
FIG. 11-4a

3 Take out 3 screws and remove grip R. Be careful when removing the grip that parts inside the grip do not come out and get lost.

SCREW (3), black
M4×8, w/spring washer

GRIP L   GRIP R
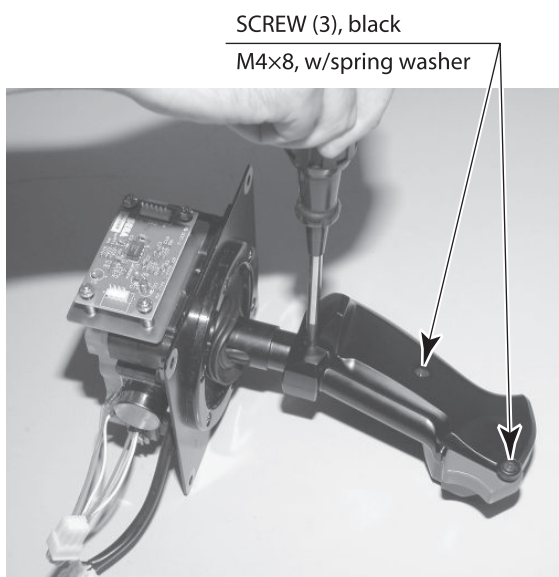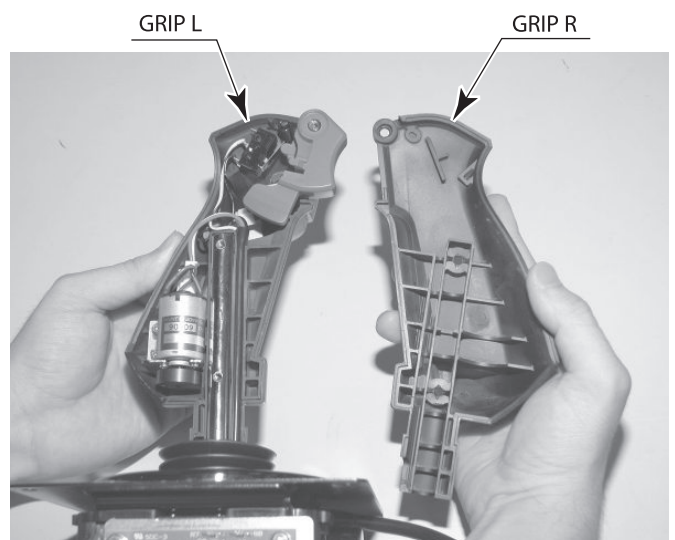
FIG. 11-4b

FIG. 11-4c

4 The grip L microswitch is inserted. Pull out the microswitch slowly so as not to damage wire.

MICROSWITCH
509-5975
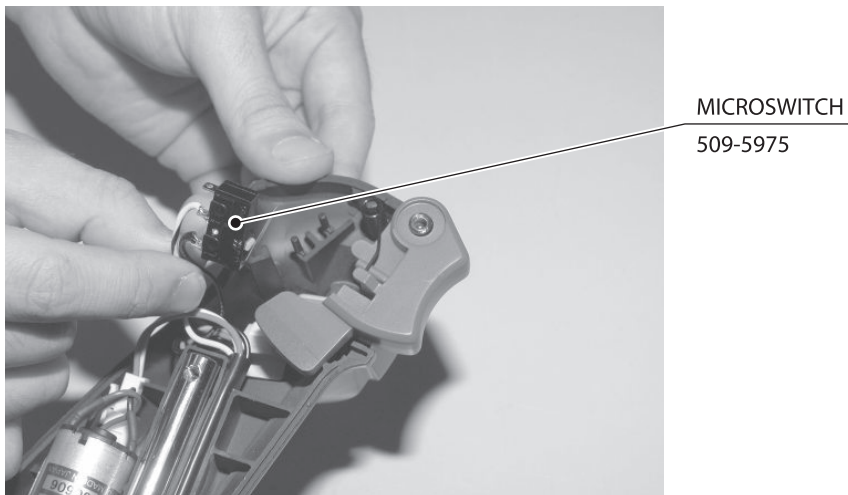
FIG. 11-4d

5 Use a soldering iron to remove wire to be connected by solder to microswitch pin.

6 Solder wire to the pin of the new microswitch.

7 Insert microswitch into grip L, then attach grip L.

8 Attach grip R and fasten it with 3 screws, being careful not to let wire get caught anywhere. Coat the screws with screw lock agent at this time. Also be careful not to tighten the screws excessively.

9 Attach control stick.

10 Engage the power. Note that initialization takes place.

11 Check gun trigger input on the game test mode input test screen.

11-5 GUIDE PLATE REPLACEMENT

Among the potential causes of abnormal control stick operability, apart from volume malfunctions, are wear and/or damage to guide plates.

Use the following tools to replace a guide plate.

- 2.5 mm Allen wrench or screwdriver
- 4 mm Allen wrench or screwdriver

1 Cut off the power and open the controller lid at the bottom of the control stick. (See 11-1.)

2 Take out 4 hexagon socket screws that hold down the guide plate, then replace the guide plate.

GUIDE PLATE
253-5496

HEXAGON SOCKET SCREW (4), black
M5×35, w/spring washer

FIG. 11-5

12 THROTTLE LEVER

⚠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.
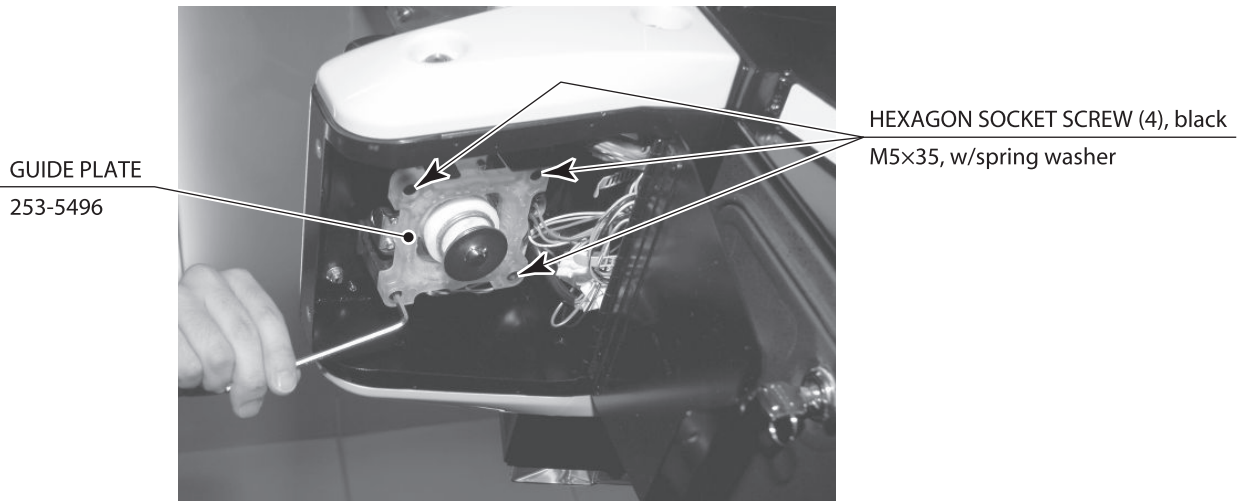- Do not touch any parts that are not specified in these directions. Touching unspecified locations may lead to electric shock or cause short circuits.
- This work should be performed by site maintenance personnel or other skilled professionals. Work performed by non-technical personnel can cause a severe accident such as an electric shock.
- Exercise due caution in performing soldering procedures. If soldering iron is handled carelessly, there could be fires or burns.
- Proceed very carefully when heating thermal contraction tube. Careless operations can result in fires or burns.
- In performing adjustments or replacements, check the surroundings before powering up. The product undergoes initialization automatically after the power has been engaged. If someone is near the product and the seat moves left or right, there could be a collision or fall.

⚠CAUTION

When fastening plastic parts, be careful not to tighten screws and nuts excessively. Otherwise parts may be damaged, resulting in injuries from fragments, etc.

(STOP) IMPORTANT

After the volume has been replaced, be sure to set the volume value on the test mode calibration screen and the input test screen and check variations in the volume value.

If the operability of the throttle lever is unsatisfactory, or if the lever is ineffective with the settings on the test mode calibration screen, the problem could be faulty gear mesh or volume malfunction.
Grease the mechanical component of the throttle lever once every 3 months.

12-1 GREASING

(STOP) **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.**

Once every 3 months apply grease to the spring and gear mesh that turn the volume shaft.
Use Greasemate (PART NO. 090-0066).

1 Cut off the power supply.

2 Remove the 4 truss screws that hold the throttle cover lower. Flat washers are used with the truss screws.
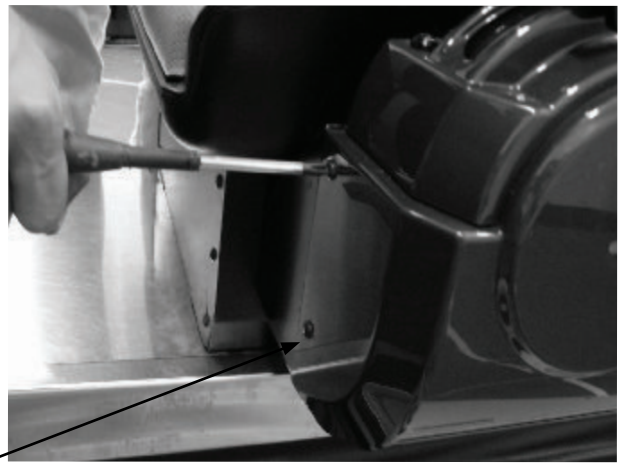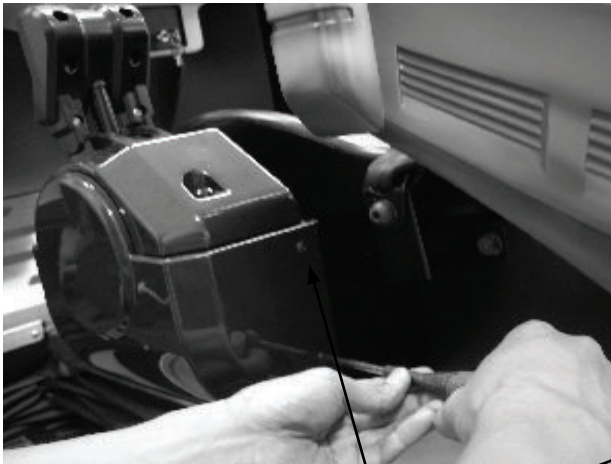
FIG. 12-1a

FIG. 12-1b

Truss Screw(4), Black
M4 X 12, Flat Washer Used

3 Remove throttle cover lower.

Throttle Cover Lawer

FIG. 12-1c

4   Apply grease only at designated locations.

GEAR MESH COMPONENT

SPRING

FIG. 12-1d

5   When attaching throttle cover lower, make sure that wires do not get caught anywhere.

12-2 VOLUME ADJUSTMENT OR REPLACEMENT

When the volume that detects throttle lever operation is unsatisfactory, either adjust the gear mesh or replace the volume by proceeding as follows.

With this product, when the lever has been operated fully to front or rear, if the volume rotary shaft turns within its movable range, there is no danger that the volume will be damaged. With your hand released from the lever, fasten the volume so that the gear fits properly with the volume shaft in the designated direction.

The following tools are required for the following procedure.

- Philips screwdriver for M4 screw
- 2 mm Allen wrench or screwdriver
- 11 to 12 mm spanner
- Nippers
- Cutter
- Soldering iron
- Industrial drier

Adjustment Method

1   Cut off the power supply.

2   Take out the 4 truss screws and remove throttle cover lower. (See 12-1.)

3   Loosen the 2 screws that hold down the VR bracket.

Loosen the 2 screws.
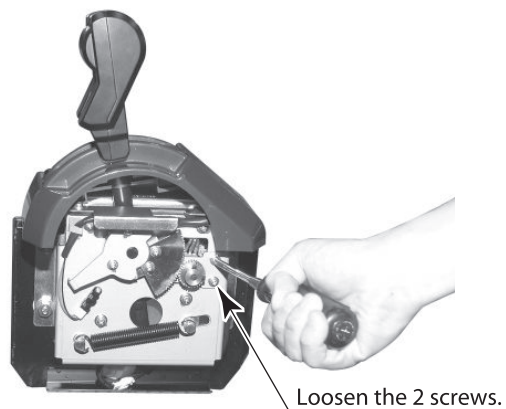
FIG. 12-2a

4 Adjust the gear mesh so that the volume shaft turns smoothly when the lever is manipulated and so that the incline of the volume shaft (D cut surface direction) when hand is removed from the lever is as shown in the illustration.
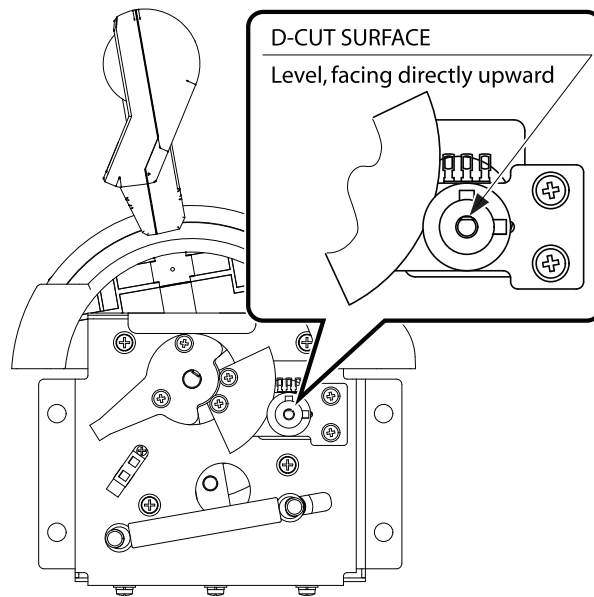
FIG. 12-2b

5 Tighten the 2 loosened screws.

6 Turn on the power. Note that initialization takes place.

7 Check the volume value on the game test mode input test screen. (See 9-3a.) Confirm that changes take place smoothly in accordance with lever operation. Also confirm that the value when hand has been removed from the lever is [80H+/-4H].

8 Align the center position of throttle lever on the calibration screen. (See 9-3e.)

9 Simply changing the setting on the calibration screen will not be effective. Terminate the test mode. Note that initialization takes place when the test mode is terminated.

Replacement Method

Make available the volume for replacement and 3 thermal contraction tubes (PART NO. 310-5029-D20).

1 Cut off the power supply.

2 Take out the 4 truss screws and remove the throttle cover lower. (See 12-1.)

3 Unfasten the 2 cord clamps that hold down wire connected to the volume.
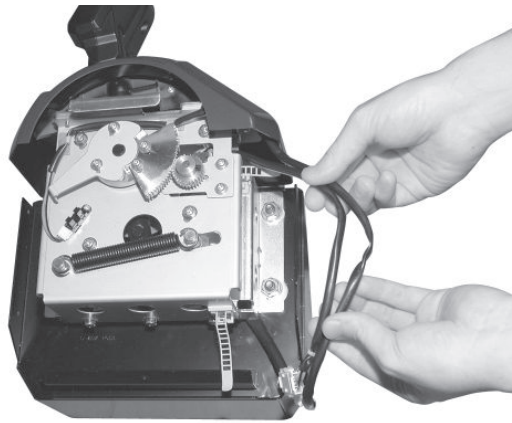
FIG. 12-2c

4 Remove the connector.

Remove the connector.
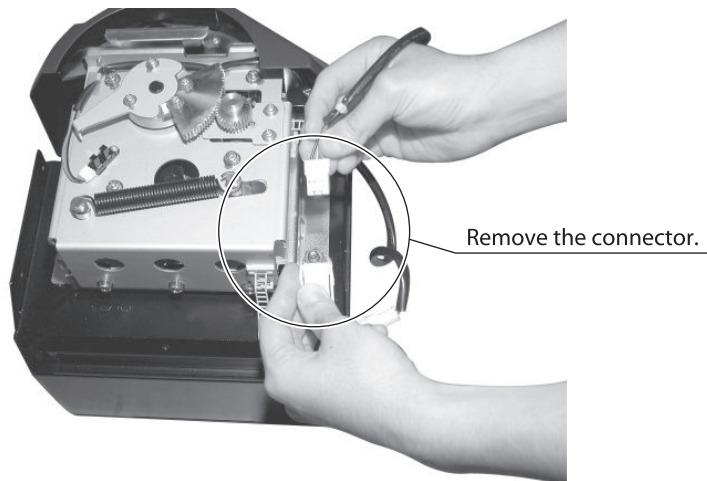
FIG. 12-2d

5 Remove the 2 screws that fasten the VR bracket. Flat and spring washers are used with these screws.

SCREW (2)
M4×12, w/flat & spring washers
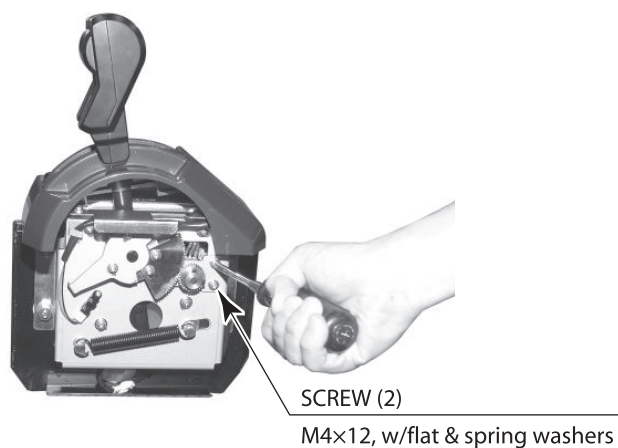
FIG. 12-2e

6 Remove the volume together with VR bracket. Be careful not to damage the wire connected to the volume.
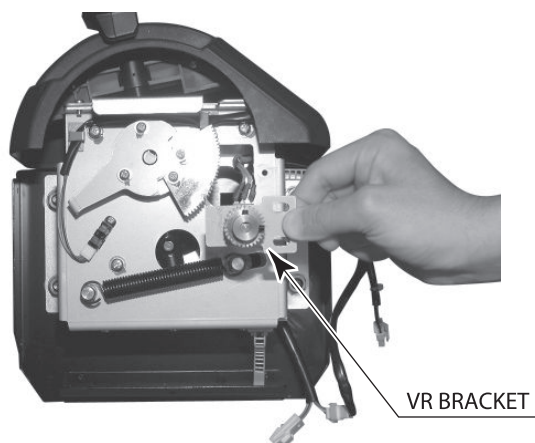
VR BRACKET

FIG. 12-2f

7 Loosen the 2 hexagon socket screws that fasten the gear. Withdraw the gear from the volume shaft.

GEAR

HEXAGON SOCKET SCREW (2)
M4×8
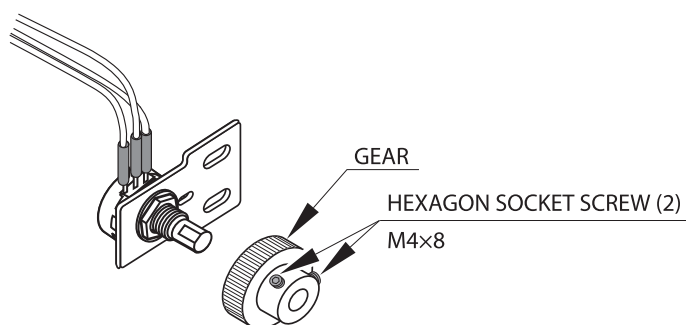
FIG. 12-2g

8 Remove the nuts that fasten the VR bracket, then remove volume from VR bracket and replace.

9 The wire connected to the volume is used as is. Take away the thermal contraction tube with nippers or cutter, melt the soldered areas with a soldering iron and remove wire from the volume.

10 Cover the soldered areas with thermal contraction tube. In place of the thermal contraction tube that was cut away, pass each wire through new thermal contraction tube.

11 Solder the wire to the new volume. Check the wiring diagram to be sure there are no errors in wiring.

12 Cover the soldered areas with thermal contraction tube. Heat the thermal contraction tube with an industrial drier so that the tube adheres to soldered areas.

THERMAL CONTRACTION TUBE

VOLUME
220-5753

VR BRACKET

VOLUME NUT AND WASHER
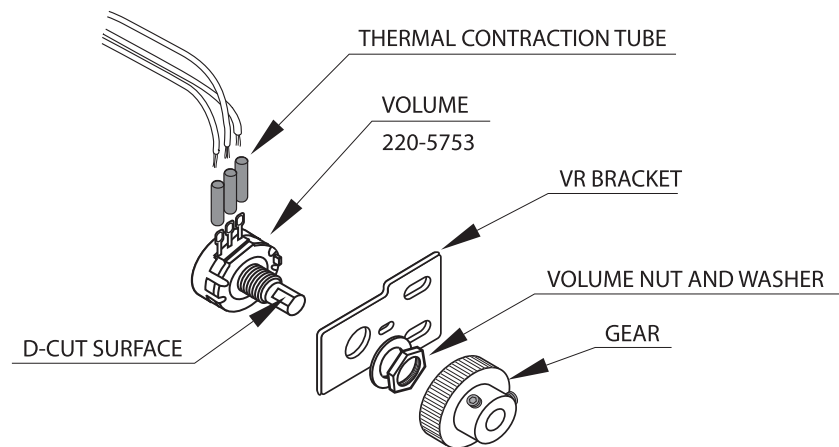
GEAR

D-CUT SURFACE

FIG. 12-2h Volume Replacement

13 Attach the gear and VR bracket to volume.

14 After passing the wire, attach the volume. While your hand is removed from the lever, align gear mesh so that the D cut surface of the volume shaft is level, facing directly upward, then fasten with 2 screws. (See FIG. 12-2b.)

15 Manipulate the lever to check that the gear rotates smoothly.

16 Connect the connector and fasten wire with 2 cord clamps.

17 Attach the throttle cover lower. Be careful that the wire does not get caught anywhere.

18 Turn on the power. Note that initialization takes place.

19 Establish volume settings on the game test mode calibration screen. (See 9-3e.)

20 Simply changing the settings on calibration screen will not be effective. Terminate the test mode. Note that initialization takes place when test mode has been terminated.

13 COIN SELECTOR

Handling the Coin Jam

If the coin is not rejected when the REJECT button is pressed, open the coin chute door and open the selector gate. After removing the jammed coin, put a normal coin in and check to see that the selector correctly functions.

Cleaning the Coin Selector

(STOP) IMPORTANT

> • **Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then squeezed dry.**
>
> • **Never apply machine oil, etc. to the Coin Selector.**
>
> • **After cleaning the Coin Selector, insert a regular coin in the normal working status and ensure that the selector correctly functions.**

The Coin Selector should be cleaned once every 3 months.
When cleaning, follow the procedure below:

1 Turn the power for the machine OFF. Open the coin chute door.

2 Remove the Coin Selector from the coin chute door.

3 Open the gate and dust off by using a soft brush (made of wool, etc.).
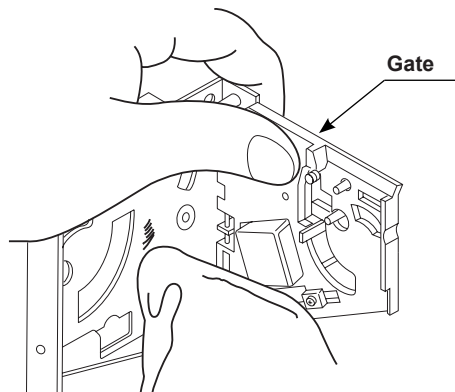
FIG. 13a

4 Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then squeezed dry.

5 Remove the CRADLE.
When removing the retaining ring (E ring), be very careful so as not to bend the rotary shaft.

CRADLE
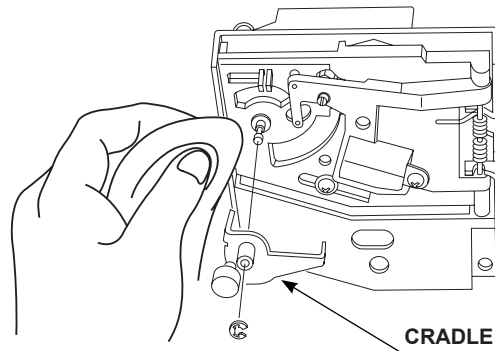
FIG. 13b

6 Remove stain from the rotary shaft and shaft receiving portions by wiping off with a soft cloth, etc.

7 After wiping off as per 6 above, further apply a dry cloth, etc. to cause the Coin Selector to dry completely.

Coin Insertion Test

Once every month, when performing the Coin SW Test, simultaneously check the following:

☐ Does the Coin Meter count satisfactorily?

☐ Does the coin drop into the cashbox correctly?

☐ Is the coin rejected when inserted while keeping the REJECT Button pressed down?

**Insert a coin while keeping
the REJECT Button pressed down
and check if it is rejected**

Coin Meter
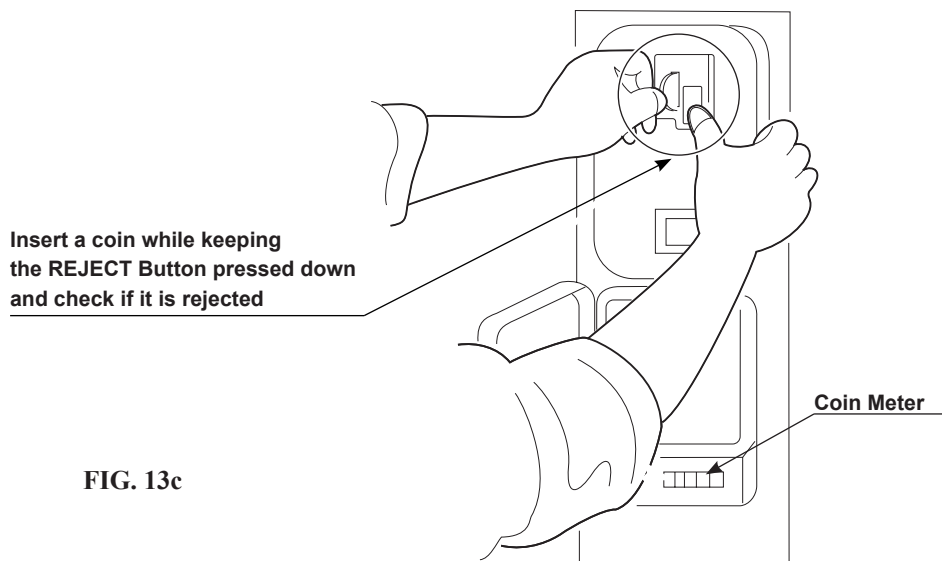
FIG. 13c

14 FLOOR SENSOR

When reinstalling Floor Sensor or if the Floor Sensor does not function properly, refer to the following adjustment method to make corrections.

Floor Sensors Green LED and Yellow LED show the operating state.

1 Floor sensor is composed of two items: Reflector, sensor
Adjust part (A) of the picture below when adjustment is needed.
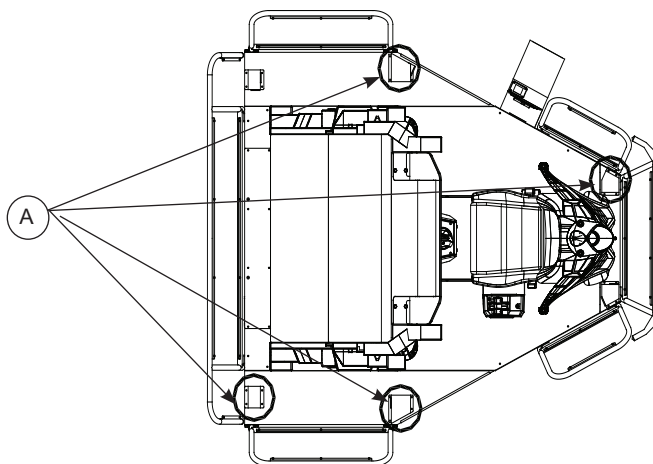
FIG. 14a

2 Remove 4 M5 X 12 truss screws from the floor sensor cover
(Floor sensors have different shapes. But adjustment and assembling are the same.)

Floor Sensor Cover

Truss Screw(4)
M5 X 12
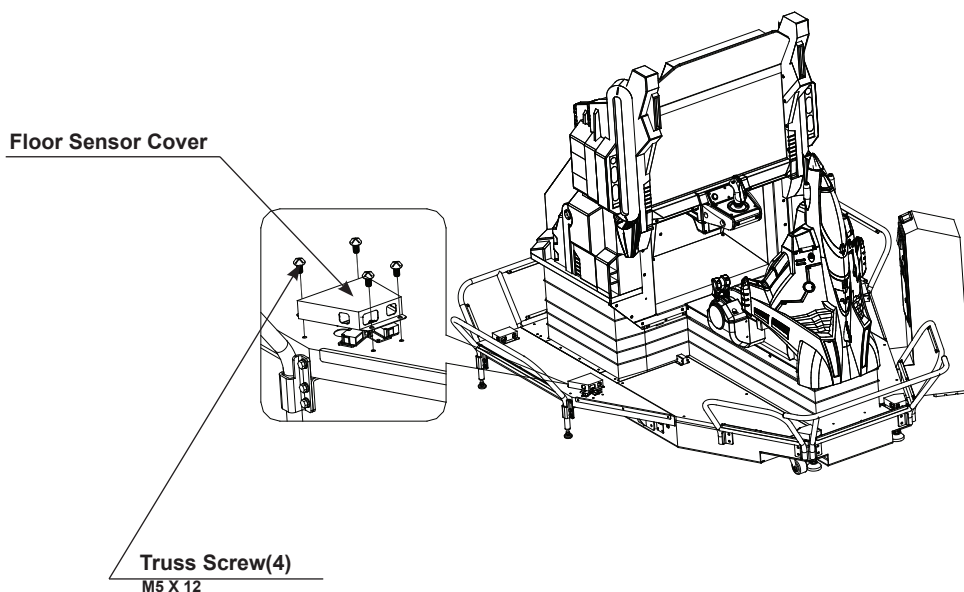
FIG. 14b

3   Loosen 2 of M3 X 20 and 2 of M3 X 10 round head screws so the floor sensor moves freely.

Round Head Screw(2)
M3 X 20, W/Spring Washer

Round Head Screw(2)
M3 X 10, W/Spring Washer
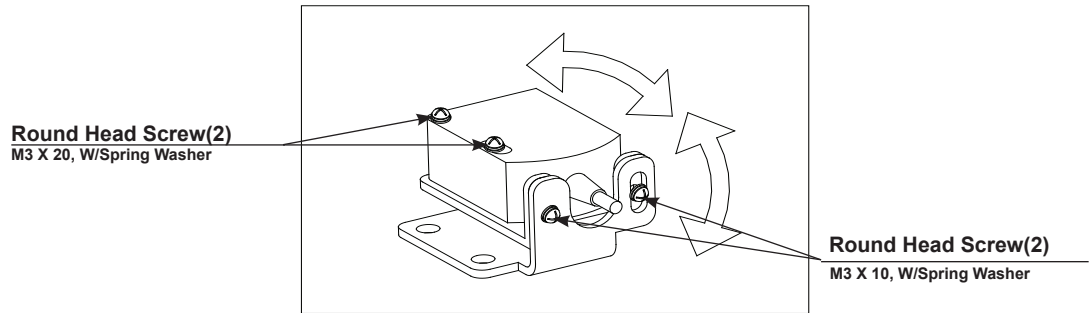
FIG. 14b

4   Adjust the sensors so the red ray from the sensor is targeted on the center of the mirror. This process may be easier if a white sheet of paper is placed between the sensor and the mirror.

5   If the yellow LED keeps flashing or is OFF, check for any obstacles between a sensor and the mirror and re-adjust.

15 GREASE UP

(STOP) IMPORTANT

- **Be sure to use the designated GREASE. If a different Grease is used it can cause part damage.**
- **Grease should not be applied to locations other than as specified. Doing so can 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.**

15-1 SUMMARY OF GREASE-UP

GREASE UP is required to maintain normal lubricative levels at high/low temperatures and to enhance the durability of the product.

Neglecting periodic GREASE UPs will shorten the life span of the product and may cause strange noises or vibrations.

The ACTUATOR, BALL JOINT, and GUIDE RAIL of this product must be greased.

The product should be greased once in every 6 months. Have available the GREASE as specified below, and a GREASE GUN which is provided in the kit.

- GREASE Type : KLUBER HIMONAX WS433

Front Cover

Seat Rear Cover

Ball Joint

Guide Rail

Actuator
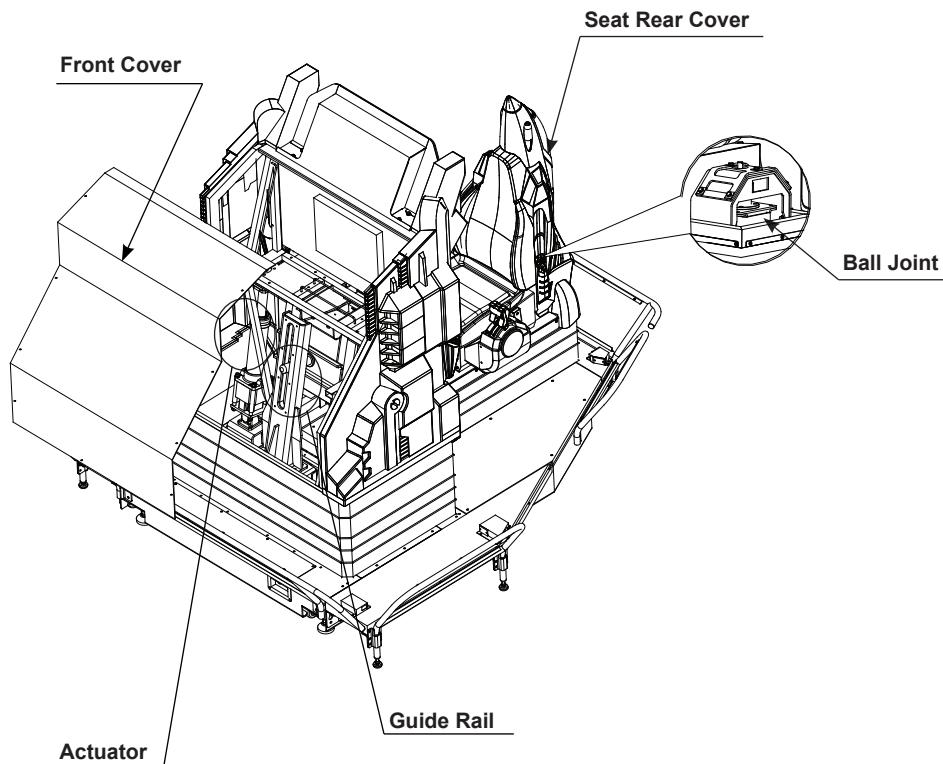
FIG 15a

15-2 HOW TO GREASE-UP

a. BALL JOINT

1 Remove 4 SEAT REAR COVER Round Head Wrench Bolts.

Round Head Wrench Bolt(4)
M4 X 15, Plastic Washer Used

Seat Rear Cover
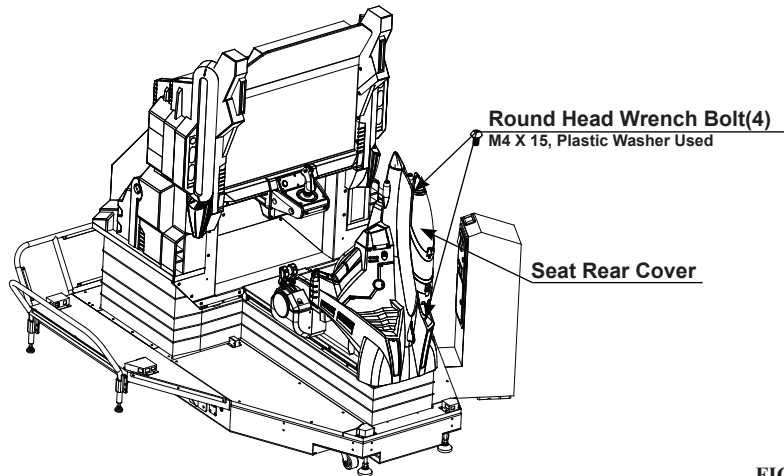
FIG 15-2a01

2 Remove the Hex Bolt on the SEAT and pull out the SEAT.

Hex Bolt(6), Black
M8 X 35, Spring & Flat Washer Used
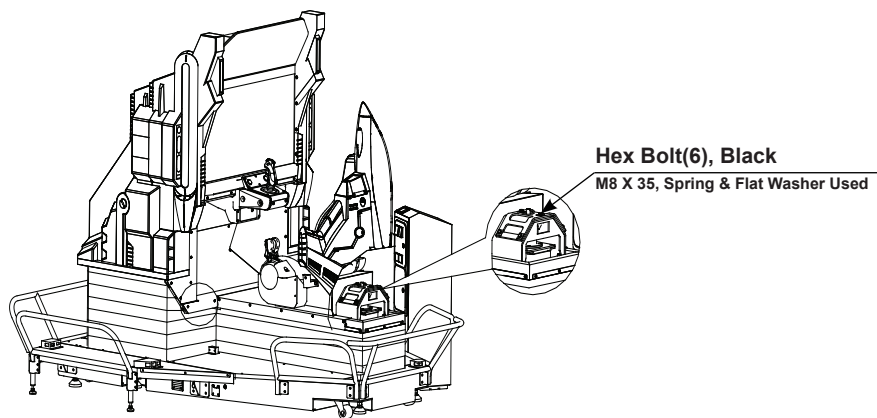
FIG 15-2a02

3 Use the GREASE GUN to apply 15g of GREASE on the BALL JOINT GREASE NIPPLE.
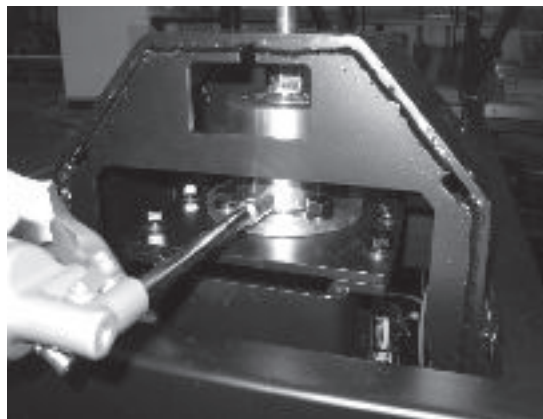
FIG 15-2a03 Ball Joint

4 Wipe off excess grease

5 Do a MOTION TEST in the MOTION CONTROL BD TEST MODE to make sure GREASE is spread out evenly.

6 Replace the SEAT REAR COVER and SEAT into its original position.

b. ACTUATOR

1 Take out 9 Truss Bolts M5×16 that hold down the front cover and separate the FRONT COVER.

Truss Bolt(9)
M5 X 12, Plastic Washer Used

Front Cover
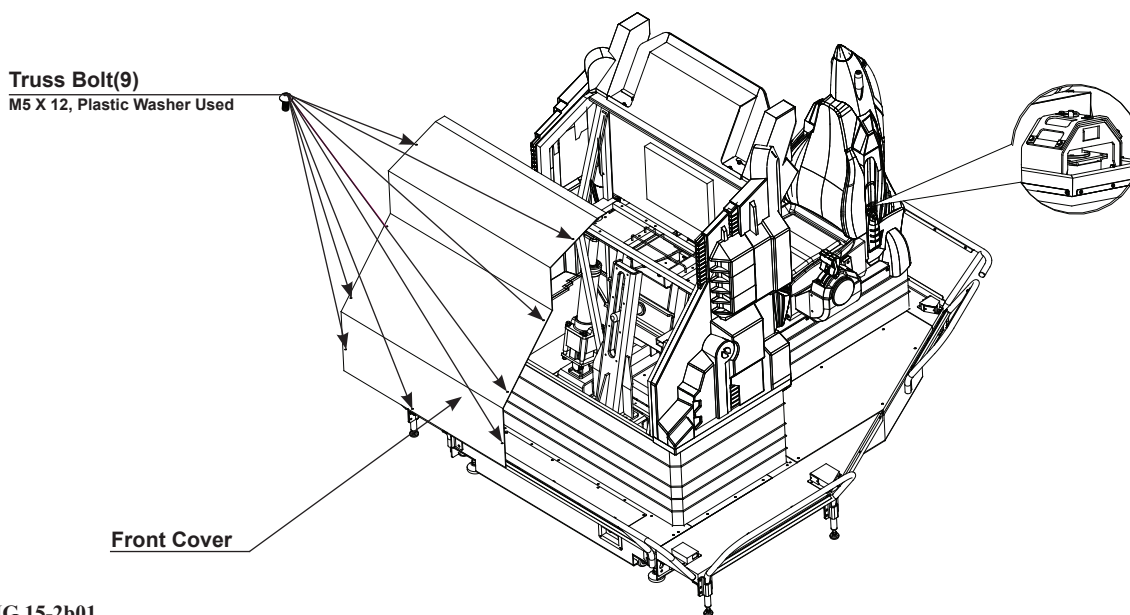
FIG 15-2b01

2 Use the GREASE GUN to apply 60g to the GREASE NIPPLE of the ACTUATOR(TOP), and 30g to the BEARING HOUSING.
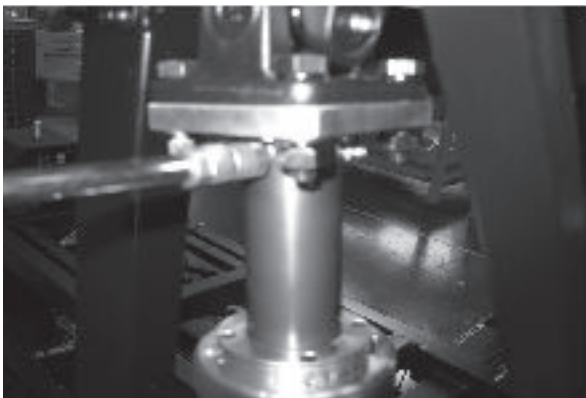
FIG 15-2b02 ACTUATOR Piston
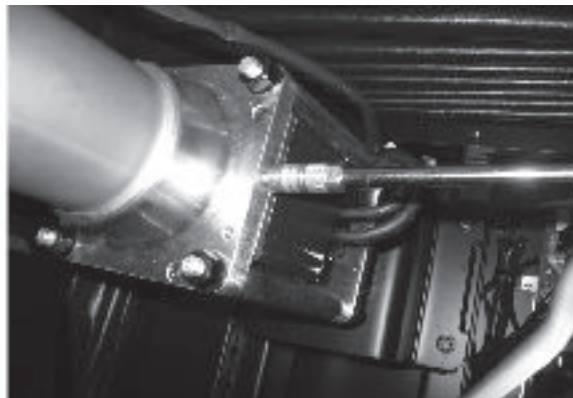
FIG 15-2b03 Bearing Housing

3 Wipe off excess grease..

4 Do a MOTION TEST in the MOTION CONTROL BD TEST MODE to make sure GREASE is spread out evenly.

5 Replace the FRONT COVER into its original position.

c. UNIVERSAL JOINT IN THE ACTUATOR

1 Follow the same procedures of number 1 of ACTUATOR GREASE UP.

2 Apply 5g to the top and bottom of the UNIVERSAL JOINT in the ACTUATOR.

FIG 15-2c01 Top of UNIVERSAL JOINT
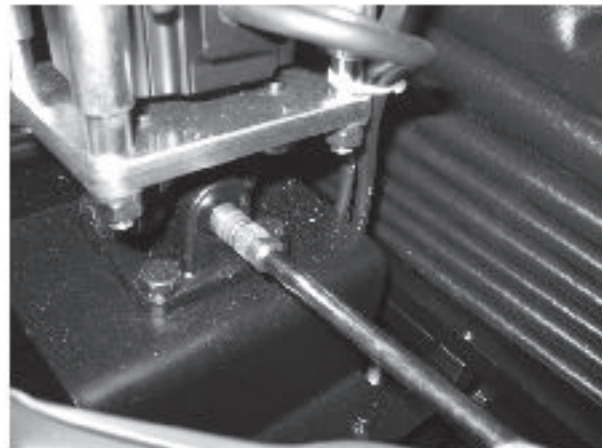
FIG 15-2c02 Bottom of UNIVERSAL JOINT

3 From hereon, follow instructions 3,4,5, of ACTUATOR GREASE UP.

d. GUIDE RAIL

1 Remove 9 Truss Bolts M5×16 that hold down the front cover and separate the front cover (refer to picture 15-2b01)

2 Use the STICK to apply 60g of GREASE to the GUIDE RAIL. Apply grease evenly on all parts of the GUIDE RAIL.

3 Use the STICK to apply 30g of GREASE evenly on all parts of the GUIDE PIN to prevent rusting.
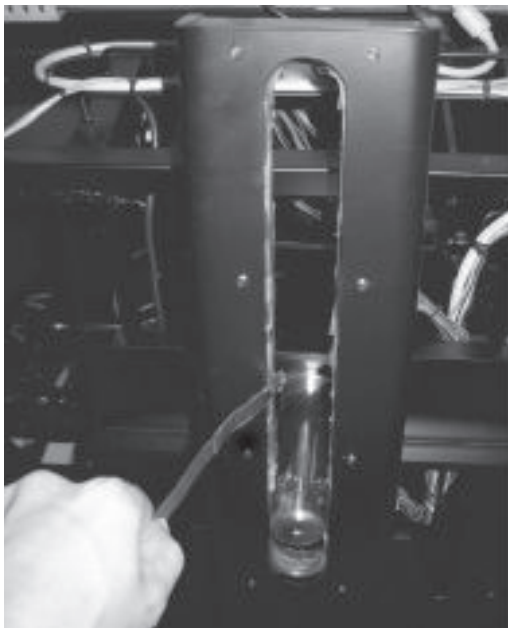
FIG 15-2d01 GUIDE RAIL
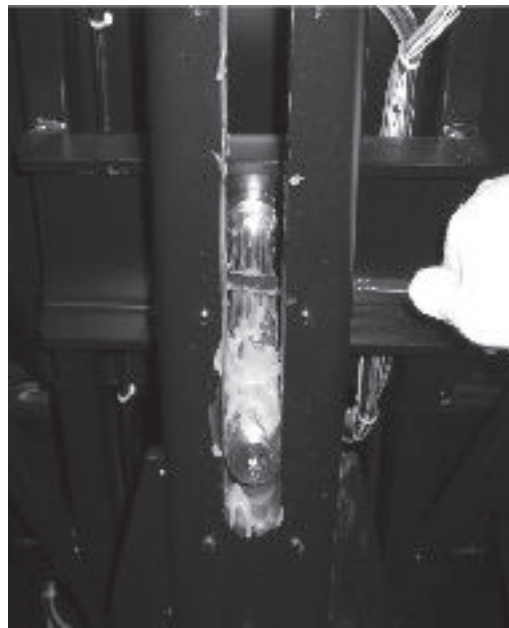
FIG 15-2d02 GUIDE PIN

4 From hereon, follow instructions 3,4,5, of ACTUATOR GREASE UP.

16 BELLOWS

> ## ⚠️WARNING
>
> **Proceed with all works only after the power is OFF. Working with the power ON can cause electric shock or short circuit**

Replacing Bellows

Below is the bellows replacement procedure.

| 1 | **REMOVAL OF FENCES** |

| 2 | **REMOVAL OF SEAT, FOOT PLATE, SIDE PLATE** |

| 3 | **REMOVAL OF BELLOWS BRACKET** |

1 | REMOVAL OF FENCES

Removal of rear fence and side fence is needed for the removal of the bellows. Refer to Fence installation for the removal. (P28, 6-3).

2 | REMOVAL OF SEAT, FOOT PLATE, SIDE PLATE

1 Remove foot plate and side plate by removing truss screws.
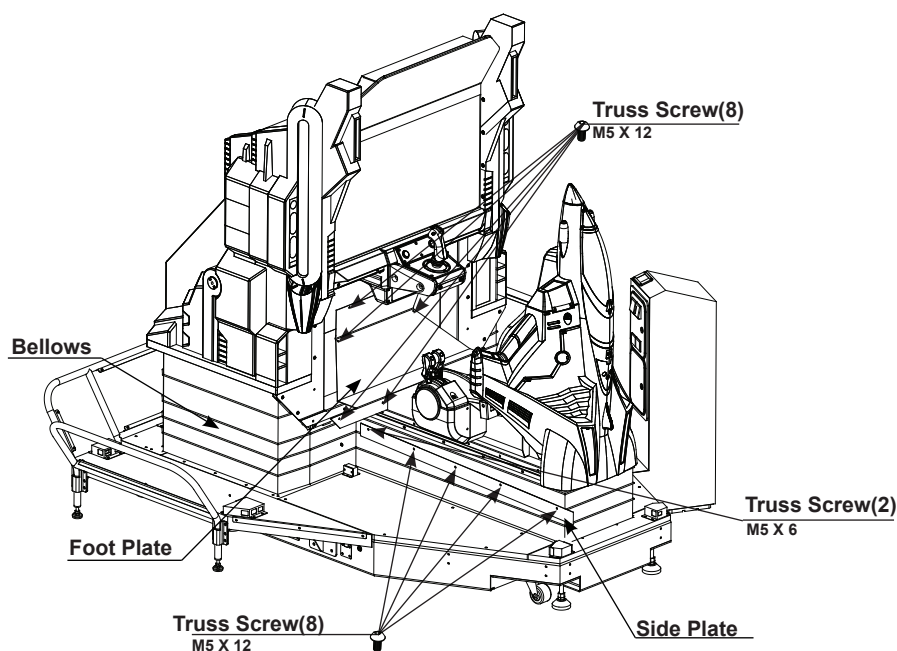
FIG 16a

2 Remove the seat rear cover by removing round head wrench screws.

Round Head Wrench Screw(4)
M4 X 15, Plastic Washer Used

Seat Rear Cover
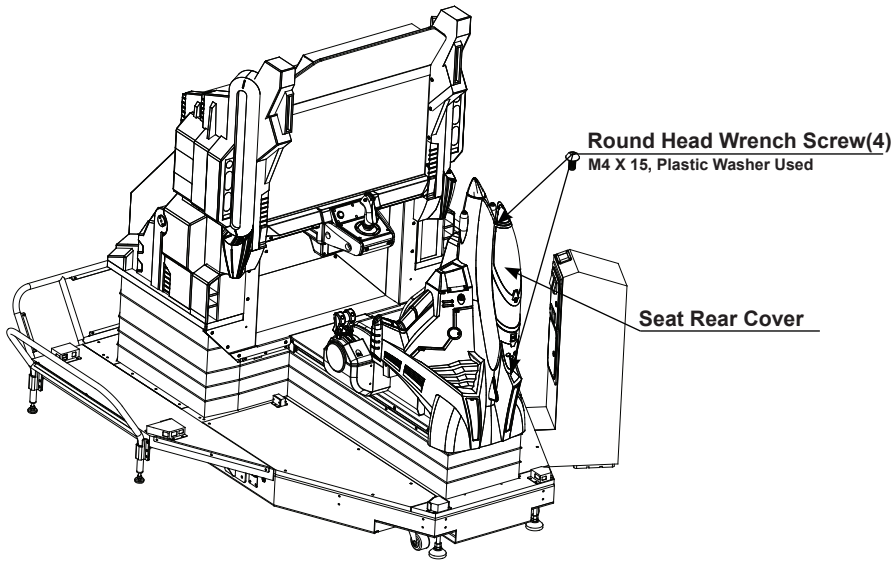
FIG 16b

3 Remove the hex bolt inside the seat and remove the seat.

Hex Bolt(6), Black
M8 X 35, Spring & Flat Washer Used
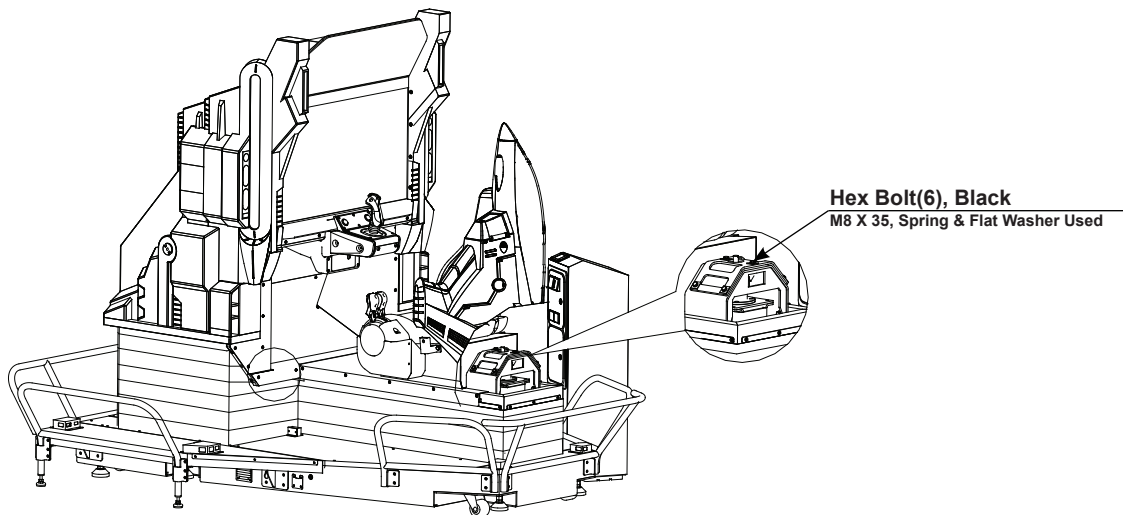
FIG 16c

3 | REMOVAL OF BELLOWS BRACKET

1 Un-zip the zipper below the back side of the monitor. Detach the pin bush from the wire connection pin.

Zipper
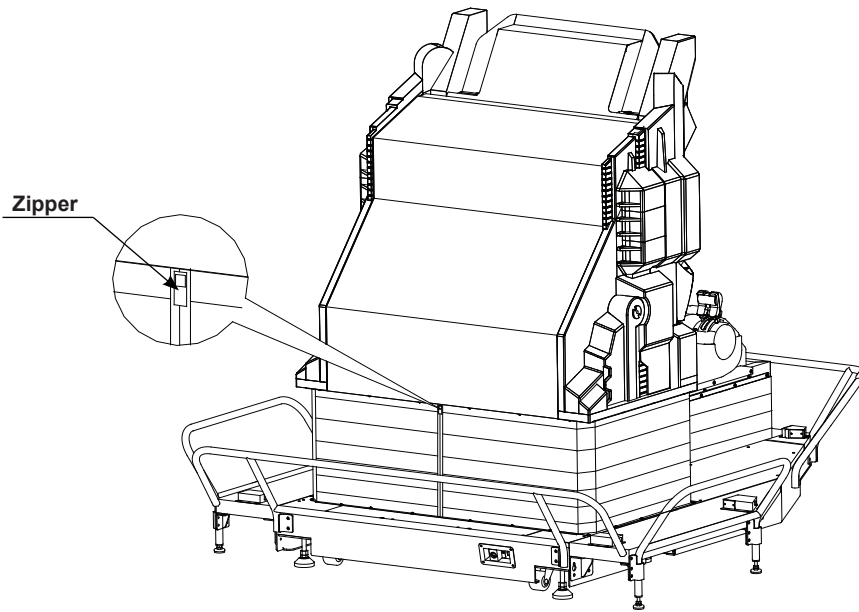
FIG 16d

2 Remove truss screws and flush screws from the base and cabin.
 Remove the bellows

Truss Screw(4), Black
M5 X 20

Base: Truss Screw(34), Black
M5 X 12

Flush Screw(5)
M5 X 12

Cabin : Truss Screw(30), Black
M5 X 12
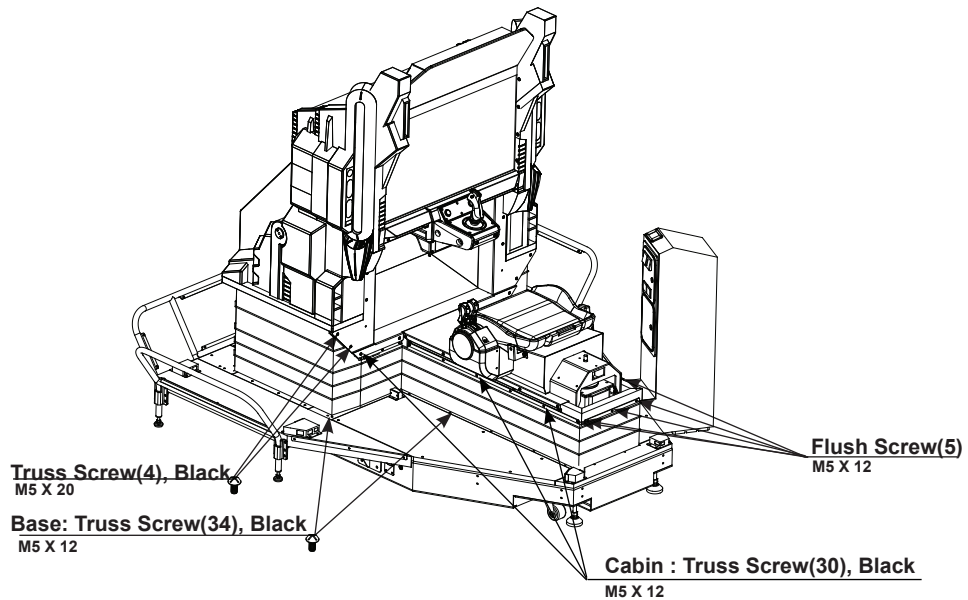
FIG 16e

< Checking the bellows >

■ Check the tightness of the fastening bolts on the bellows bracket weekly.

■ Check for de-formation or damage of exterior of the bellows and bellows bracket daily.

17 PERIODIC INSPECTION

⚠️**WARNING**

- Once a year, check to see if power cords are damaged, the plug is securely inserted.

- 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.

- Once a year, request the office shown in this manual or the dealer from whom the product was originally purchased to perform routine maintenance on moving mechanisms. Failure to perform maintenance can lead to accidents.

- 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.

⚠️**CAUTION**

If there is only enough space for ventilation in the area reserved for product installation and operation, do not begin maintenance work until space has also been set aside for maintenance. Such work cannot be performed safely and thoroughly in narrow spaces.

In order to maintain the performance of this product and operate it safely, inspect the following items routinely and perform maintenance.

The player directly touches and manipulates the control stick and throttle lever with his/her hands. Clean these components as necessary and provide hand towels, etc., so that players will be comfortable while playing.
The service manual referred in the table is the LINDBERGH service manual, which is provided separately.

TABLE 17 PERIODIC INSPECTION TABLE

ITEMS	DESCRIPTION	PERIOD	REFERENCE
CABINET	Confirm that adjusters contact floor	Daily	3
MONITOR	Check screen adjustment	Monthly or when moving	6 7 , 10-3
CONTROL STICK	Inspection of volume, switch	1 month	9-3a
	Greasing	3 months	11-2
THROTTLE LEVER	Inspection of volume, switch	1 month	9-3a
	Greasing	3 months	12-1
COIN SELECTOR	Inspection of coin switch	1 month	Service manual, Chapter 4
	Coin insertion test	1 month	Chapter 13
	Coin Selector cleaning	3 months	Chapter 13
GAME BOARD	Check of board information	1 month	Service manual, Chapter 4
	Check of settings	1 month	9-3c, 9-3d
ELECTRICAL/ ELECTRONIC PARTS	Inspection	As appropriate	Previous page
POWER CABLE	Inspection, Cleaning	1 year	See above.
CABINET INTERIOR	Cleaning	1 year	See above.
CABINET SURFACES	Cleaning	As appropriate	See below.
MOVING MECHANISMS	Maintenance	1 year	Previous page
	Grease up	Daily	Chapter 15
SAFETY EQUIPMENT	Seatbelt	Daily	9-5
	Motion stop button	Daily	9-5
	Floor sensor	Daily	9-5, 14
	Bellows	6 month	Chapter 16

Cleaning the Cabinet Surfaces

When the cabinet surfaces become dirty, remove stains with a soft cloth soaked in water or diluted (with water) chemical detergent and then wrung dry. To avoid damaging the finish, do not use such solvents as thinner, benzene, etc. (other than ethyl alcohol) or abrasives (bleaching agent and chemical dust-cloth).

Some general-purpose household, kitchen, and furniture cleaning products may contain strong solvents that degrade plastic parts, 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.

18 TROUBLESHOOTING

⚠WARNING

- **If an error message is displayed, have the problem looked at by a store maintenance person or a technician. Unless the problem is addressed by someone with specialized knowledge or skills, there could be electrical shock, short circuits or fire. If there are no store maintenance people or technicians, or moving mechanisms are involved, cut off the power immediately and contact the office shown in this manual or the dealer from whom the product was originally purchased.**

- **If problems other than those covered in this manual arise, or if no improvements can be noted after measures given in this manual have been taken, do not take measures indiscriminately. Cut off the power immediately and contact the office shown in this manual or the dealer from whom the product was originally purchased. Indiscriminate countermeasures could lead to unforeseeable accidents. They could also result in permanent damages.**

- **After the cause of an error message display has been removed, before re-engaging the power or entering or leaving test mode, inspect carefully to be sure that no one is near the product and that no tools or items have been left on the product. When the power has been engaged or the test mode has been terminated, initialization takes place automatically. If anyone is near the product, they could collide with the product or come in contact with it accidentally. Accidents could also occur if tools or other items fly off the product.**

- **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.**

- **After the cause of circuit protector activation has been removed, have the circuit protector re-engaged. If the unit is used continuously as is, there could be heat generation or fire, depending on the cause of the activation.**

⚠CAUTION

If there is only enough space for ventilation in the area reserved for product installation and operation, do not begin maintenance work until space has also been set aside for maintenance. Such work cannot be performed safely and thoroughly in narrow spaces.

18-1 GAME BOARD ERROR MESSAGES

 STOP IMPORTANT

- **Apart from the error messages given below, there are errors for the LINDBERGH. Consult the LINDBERGH service manual.**
- **If there is an error message other than the ones below or those in the LINDBERGH service manual, stop using the product and have the LINDBERGH sent for servicing.**

Because the seat moves, and for other reasons, this product has a unique set of error messages. These error messages appear in the middle of the screen as shown below.


```
Error ABX01
MOTOR DRIVE COMMUNICATION ERROR
```

FIG. 18-1 Error Message

If an error has occurred, after the problem has been resolved, power up again or enter and leave the test mode so that the machine can be restored.

[DISPLAY]	Error ABX01　MOTOR DRIVE COMMUNICATION ERROR
[CAUSE]	A motor drive communication error.
[COUNTERMEASURES]	Failure to communicate with the control board for seat movement. Check the cable connecting them.
[DISPLAY]	Error ABS02　MOTOR DRIVE OVERHEATING/OVERLOAD ERROR
[CAUSE]	A motor drive overheating/overload error.
[COUNTERMEASURES]	The seat movement motor thermal element has been activated. Wait for it to cool down and then restart.
[DISPLAY]	Error ABS03　MOTOR DRIVE ENCODER ERROR
[CAUSE]	A motor drive encoder error.
[COUNTERMEASURES]	Irregular encoder data for seat movement. Check that there are no irregularities with the cable to the encoder.
[DISPLAY]	Error ABS04　MOTOR DRIVE OVERCURRENT ERROR
[CAUSE]	A motor drive over current error.
[COUNTERMEASURES]	Too much current flowed into the seat movement motor. Check that there are no problems with the cable to the motor.
[DISPLAY]	Error ABS05　THE SENSOR REACTED.　PLEASE REMOVE THE OBSTACLES, AND RESTART.
[CAUSE]	A sensor reacted during cabinet initialization.
[COUNTERMEASURES]	A sensor reacted during initialization. Remove the obstacle and restart the cabinet.
[DISPLAY]	Error ABS06　INITIALIZING ERROR
[CAUSE]	An error occurred during cabinet initialization.
[COUNTERMEASURES]	An error occurred during initialization. Check that nothing could be blocking the movement of the seat and restart the cabinet.
[DISPLAY]	Error ABS07　CONNECTION TIMEOUT
[CAUSE]	Timed-out connecting to the network.
[COUNTERMEASURES]	Failed to connect to the network. Check that the network cable is connected properly.　Confirm that the LINK NUM setting is not set to "1".
[DISPLAY]	Error ABS08　LINK ID ERROR
[CAUSE]	LINK ID is not set correctly.　LINK ID is set to the same number.
[COUNTERMEASURES]	An error occurred when trying to connect to the network. Set the LINK ID of 2 game units to different numbers.

18-2 TROUBLESHOOTING TABLE

If a problem has occurred, first inspect the connection of the wiring connector.

TABLE 18-2

PROBLEMS	CAUSE	COUNTERMEASURES
Display and billboard stay off when the Main Power is switched on.	Because of the temporary overcurrent, Circuitbreaker of the AC unit is no in operation.	Remove the cause of the overcurrent and switch the breaker on.
	Power is not supplied to the machine. Power source or the voltage might not be sufficient.	Check if the main power terminal of the ACUnit is getting sufficient power/ voltage.
	Malfunction of GAME BD	Contact the service representative listed in this manual.
No sound from the speakers.	Bad volume adjustment	Re-adjust the sound volume.
	Bad connections	Run the SYSTEM TEST MODE. Check for the sound from the speakers and check speaker connections.
	Audio Output of the game assignment in the test mode is set at 2CH.	Change the setting to 4CH.
No monitor display.	Bad connections	Check the video connection at the game board.
	Malfunction of GAME BD	Contact the service representative listed in this manual.
Incorrect display of colors	Bad monitor settings	Re-adjust the monitor settings.
All switches and volume do not input.	Bad connections	Check the connectors at the I/O board.
CONTROL STICK, THROTTLE LEVER input is sluggish	Bad potentiometer settings	Run GAME BD TEST MODE and adjust CALIBRATION.
	Bad installation of potentiometer and gears.	Re install the potentiometer and gears and check the settings in the TEST MODE
	Potentiometer failure	Replace potentiometer

CIRCUIT BREAKER
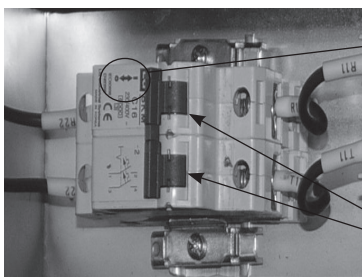
Circuit breaker protect the product and circuit boards from over-current. Circuit breaker is 'ON' when the switch is pushed to 'I' position as shown in the picture.

Circuit Breaker SW

FIG. 18-2

PROBLEMS	CAUSE	COUNTERMEASURES
Access failure to MOTION CONTROL BD TEST MODE	Game is running.	Retry when ADVERTISE screen is on.
SEAT does not operate	Cabinet movement is set at OFF in the game assignment of the test mode.	Change the setting to ON.
	LINK ID setting is not proper.	Adjust the link ID settings
	Seat does not initialize.	Shut down the power to the machine and re-connect the power. Restart the initialization.
	FLOOR SENSOR is blocked.	Remove all obstacles.
	FLOOR SENSOR beam is not targeted at the center of the mirror.	Adjust the SENSOR.
	SEATBELT is not fastened	Lock the SEATBELT.
	MOTION STOP BUTTON is pressed.	End the game.
	MOTOR / DRIVE BD malfunction.	Check the function in the MOTION TEST.
Some of the items on the input test of the GAME BDTEST MODE are not selectable.	Communications check between GAME BD and MOTION CONTROL BD is not complete.	Complete the communications check.
Network play does not work.	Bad network settings	Adjust settings
	LAN cable is not connected	Check the connections
	Damaged LAN cable	Replace cables

18-3 MOTION CONTROL BOARD ERROR MESSAGES

Next is a list of ERROR CODES regarding the Motion Control BD malfunction. Please check the error codes when an error occurs.

Press MONITOR CHANGE BUTTON of SW UNIT to switch to MOTION CONTROL BD. When an error occurs, Status display of the MOTION CONTROL BD shows the Error Code.

Below is an example for 'FF00' Error.

```
MOTION  CONTROL SOFTWARE VER x.xx

LINK ID : 1
[Game Stage} :ADVERTISE              [TIMER MODE] : NONE
CONTROL STATUS CODE : [1}FF00   [2]XXXXX
CONTROL POSITION : [1] XXXX   [2] XXXX

[I/O Status] Port A : XXX    Port B : XXX
SEATBELT :UNLOCK    SENSOR : OFF    MOTION STOP : OFF

[SMCP Status Code] : XXXX

 POS BIT : NEUTRAL   NORMAL BIT : ON   DRIVING BIT : OFF
 SEATBELT BIT : ON   SENSOR BIT : ON   MOTIONSTOP BIT : OFF
 Host Command : INITIALIZATION at NORMAL

             PRESS 'SET' TO ENTER TEST MODE
```

FIG. 18-3

TABLE 17-3

Error Code	CAUSE	COUNTERMEASURES
FF00	Encoder connector at the Motor Drive Board is unplugged.	[Check the Encoder Connector] Check the connection of encoder connector at the Motor Drive Board and MCU. Check for any damages.
FFFF FFC7	Motor Drive Board did not receive signal from encoder after the power is switched on.	[Check 5V SMPS output] 1.Check to see if the voltage between DGND and +5V stays within the range of DC5.0V~5.2V. 2.If 1. checks out OK, and the problem repeats, contact the service representative listed in this manual.
F800	Motor Drive Board (J1,J7) +12V relay at the input power is disconnected.	Check if the power unit Motor Drive Board input power SMPS +12V is normal. If SMPS +12V power is normal, check the Motor Drive BD J7 Connector +12V power with a tester. When the +12V power is not available, check the connection harness.

Error Code	CAUSE	COUNTERMEASURES
FFFE	Actuator Limit Sensor is not responding.	1.Check the connection/installation of Actuator Limit Sensor. 2.If 1. checks out OK, and the particular Motor Drive BD repeats FFFE Error, contact service representative listed in this manual and replace the applied BD.
90AE 9086	Error at the #1,2 Actuators when the power is supplied. (Motor Encoder was supplied with power and the motor could not find the phase information. In result, motor could not find Z pulse.	1.This may happen when the machine was started in a slanted position. Restart the system. 2.Actuator Limit Sensor(Bottom Sensor) installation is not in order.
8C3	Motor Drive BD IPM Error	1.Check the if AC power to the Motor Drive BD stays in the range of AC200V~AC230V. 2.Check the operation of the fan at the Motor Drive BD Heatsink. 3. 1,2 checks out and particular motor drive BD repeats the same error, contact service representative listed in this manual and replace the applied BD.
10C3 90C3	Overcurrent protection Error	1.Check to see if the output voltage of the Main Transformer(220R,220T) stays within the range of 210V~230V. 2.Insufficient Actuator lubing may cause this error. Check the actuator for lubing, and apply lubing when needed. 3. 1,2 checks out and particular motor drive BD repeats the same error, contact service representative listed in this manual and replace the applied BD.
40C3 DOC3	Overvoltage protection error	1. Check to see if the output voltage of the Main Transformer(220R,220T) stays within the range of 210V~230V. 2.Check the input power source. Check if there's a possibility of temporary voltage over 240V. 3. 1,2 checks out and particular motor drive BD repeats the same error, contact service representative listed in this manual and replace the applied BD.

19 GAME BOARD

⚠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 electric shock or short circuit or present a fire risk.

- Do not expose the game board, etc. without a good reason. Failure to observe this can cause electric shock hazard or malfunctioning.

- Do not use this product with connectors other than those that were connected and used with the game board at the time of shipping. Do not carelessly connect wires to connectors that were not used at the time of shipping, as this may cause overheating, smoke or fire damage.

- When returning the game board after making repairs or replacements, make sure that there are no errors in the connection of connectors. Erroneous connections can lead to electrical shock, short circuits or fires.

- When connecting a connector, check the direction carefully. Connectors must be connected in only one direction. If indiscriminate loads are applied in making connections, the connector or its terminal fixtures could be damaged, resulting in electrical shock, short circuits or fires.

⚠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.

- 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.

(STOP) IMPORTANT

- When a game board is to be replaced, put the old game board with anomaly into a special box for replacing the game board and send it. If a special box is not available or if it has been damaged, arrange to obtain a box with the following part number/name.

    601-11691 / CARTON BOX LBG

- For replacement or repair, pack the game board and send it without disassembling it. Order for servicing might not be accepted if any part of the game board has been removed. If any part is removed, a service fee will be charged even if the warranty period has not yet expired.

- Do not remove the key chip from the game board before sending the board for servicing.

19-1 HOW TO REMOVE GAME BOARD

The game board (LINDBERGH) is located on the left side as you face the monitor inside the base.

1 Cut off the power supply.

2 Remove 6 round head wrench screws that fasten maintenance cover L.

Maintenance Cover L

Round Head Wrench Screw(6)
M5 X 35, Flat Washer Used
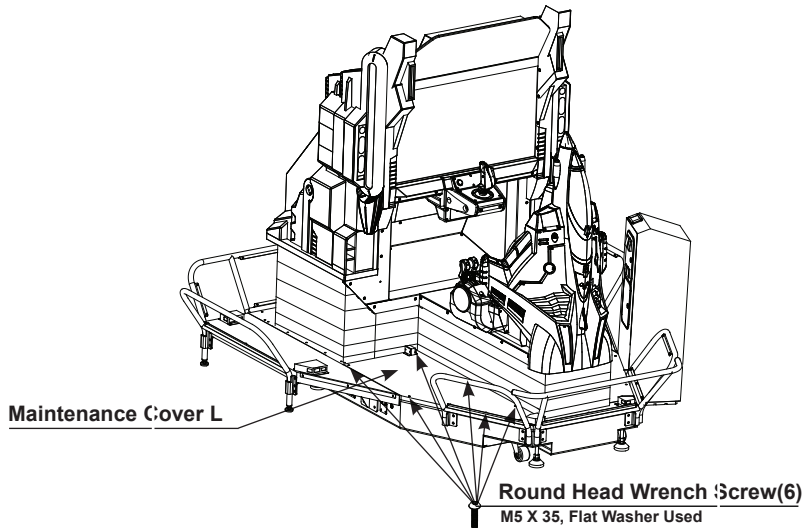
FIG. 19-1a

3 Unlock and remove maintenance cover L.

Maintenance Cover L

Key Lock
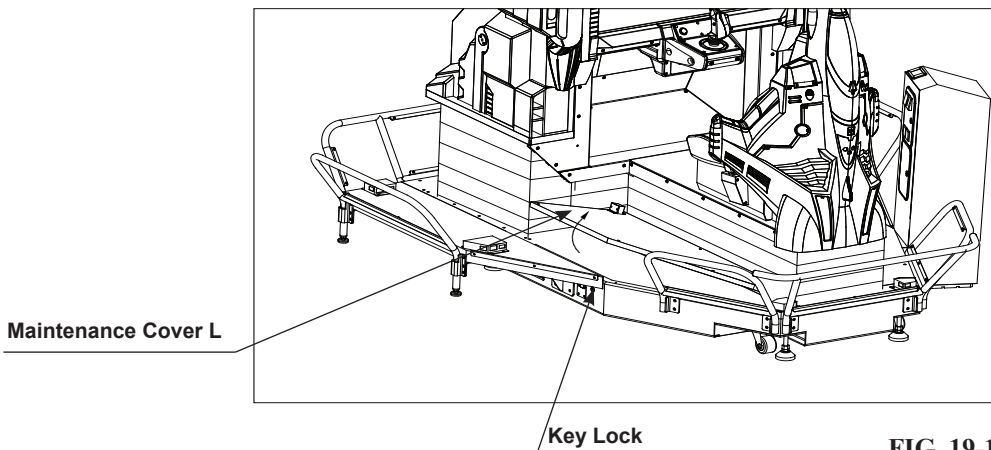
FIG. 19-1b

4 Remove all connectors connected to the game board.
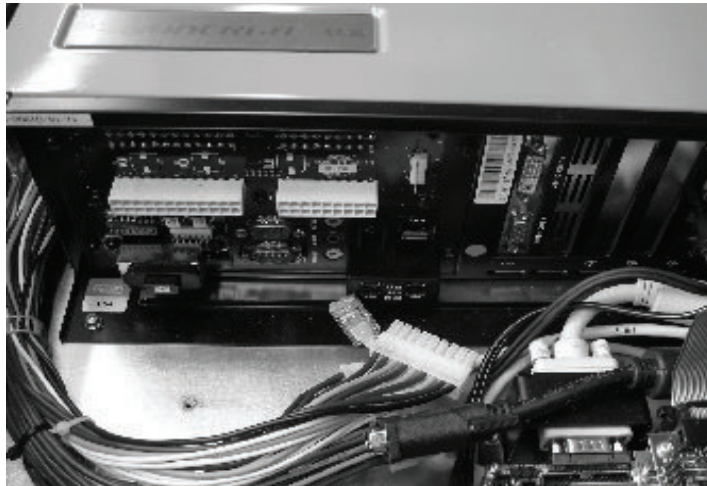
FIG. 19-1c

5 Remove 4 Round Head Bolts M3 X 8L that hold down the steel base of the Game Board.
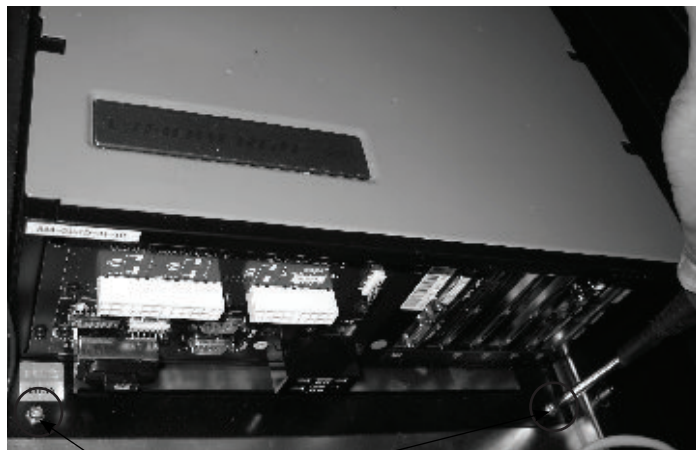
Round Head Screw(4)
M4 X 8, W/Spring & Flat Washers

FIG. 19-1d

6 Remove the Game Board. Be careful of injuries from pulling wires or cables.
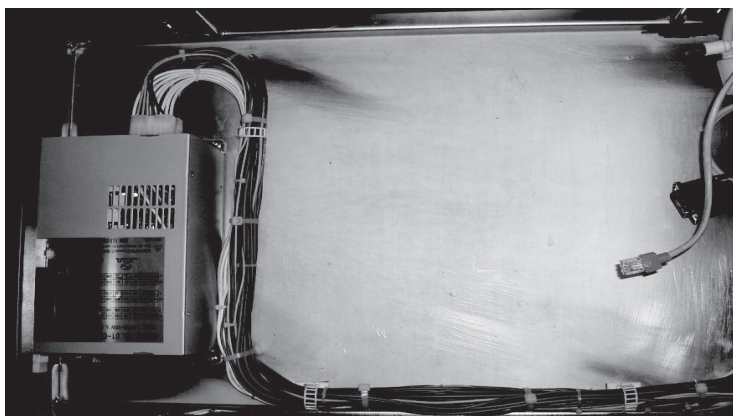
FIG. 19-1e

19-2 COMPOSITION OF THE GAME BOARD

(STOP) **IMPORTANT**

- **With the key chip inserted into it, this board serves as a special-purpose game board for the product.**
- **Use with the dip switches (DIP SW) on the board at the prescribed settings. If settings do not match the product, an error message will be displayed. In some cases, the game cannot be started.**

ASSY CASE LBG L 1GB ABX EXP (844-0013D)

BOARD NUMBER STICKER

DIP SW

KEY CHIP
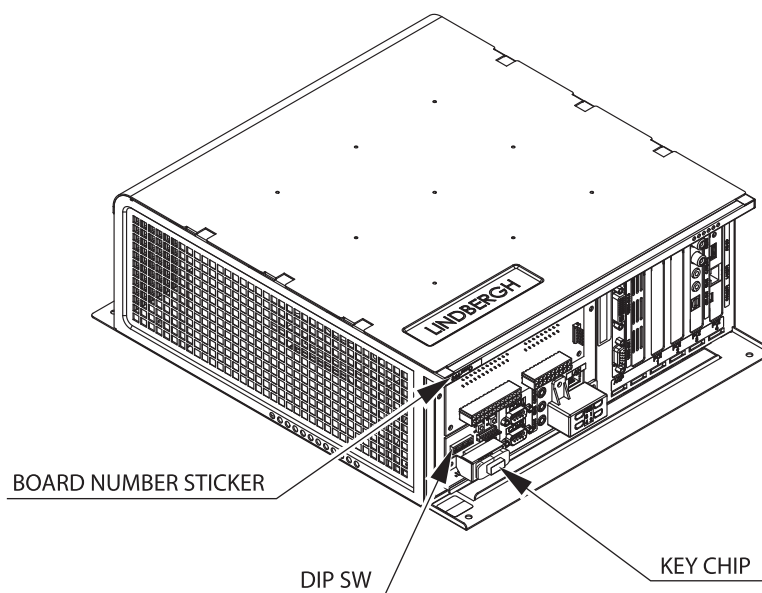
FIG. 19-2a

DIP SW SETTING

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

FIG. 19-2b

20 DESIGN RELATED PARTS

For the warning display stickers, refer to Section 1.

ABS-EN-025S STICKER INSTRUCTION ATTACK

ABS-EN-006S STICKER FRP SEAT

ABS-EN-005S STICKER COIN BOX

ABS-EN-024S STICKER INSTRUCTION CLIMAX

ABS-04-005M SIDE LED COVER L.R

ABS-03-014M SW PLATE
ABS-EN-012S MOTION STOP

ABS-03-013M CONTROLLER PALTE

ABS-EN-010S NON SLIP TAPE FOOT REST L
ABS-EN-011S NON SLIP TAPE FOOT REST R

ABS-EN-009S NON SLIP TAPE CABIN BASE

ABS-EN-003S STICKER SIDE STEP L
ABS-EN-004S STICKER SIDE STEP R

ABX-1653-B
STICKER THROTTLE
COVER UPPER

ABS-EN-001S STICKER BASE COVER L
ABS-EN-001S STICKER BASE COVER R

ABS-EN-007S NON SLIP TAPE BASE COVER A

ABS-EN-008S NON SLIP TAPE BASE COVER B

21 NETWORK PLAY

Network play can be enjoyed with this product by having two units connected by LAN cable.

21-1 PRECAUTIONS REGARDING NETWORK PLAY SETUP

⚠WARNING

- **Before starting to work, ensure that the power switch is OFF. Failure to observe this can cause electric shock or short circuit.**

- **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 with non-technical personnel can cause electric shock.**

- **When linking a number of machines, be sure to supply sufficient power for the corresponding number of machines. Be sure to secure per machine current as stated in this manual. Failure to observe this can cause a fire and an electric shock accident.**

- **The distance between game machines is limited by the length of the network cable used, but try to separate the machines as much as possible. If the interval between them is too short, and if a customer should fall down, there could be a head injury or other serious accident. The interval shown in the illustration in this manual assumes that optional items have been attached.**

- **Do not work in areas where there are inclines, level differences, grooves, etc. Otherwise workers could stumble and fall or suffer other serious accident. Also, work cannot be performed properly.**

⚠CAUTION

- **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.**

Provide appropriate electrical power to each of the two game machines.
Use the following as a guide: current capacity per machine is 5.1 A in areas of 220 V.

Game Unit Installation

Because of the game screen composition, it is recommended that installed game machines used for network play be aligned left and right.
The distance between the Side Step Fences of the game machines should be 500mm
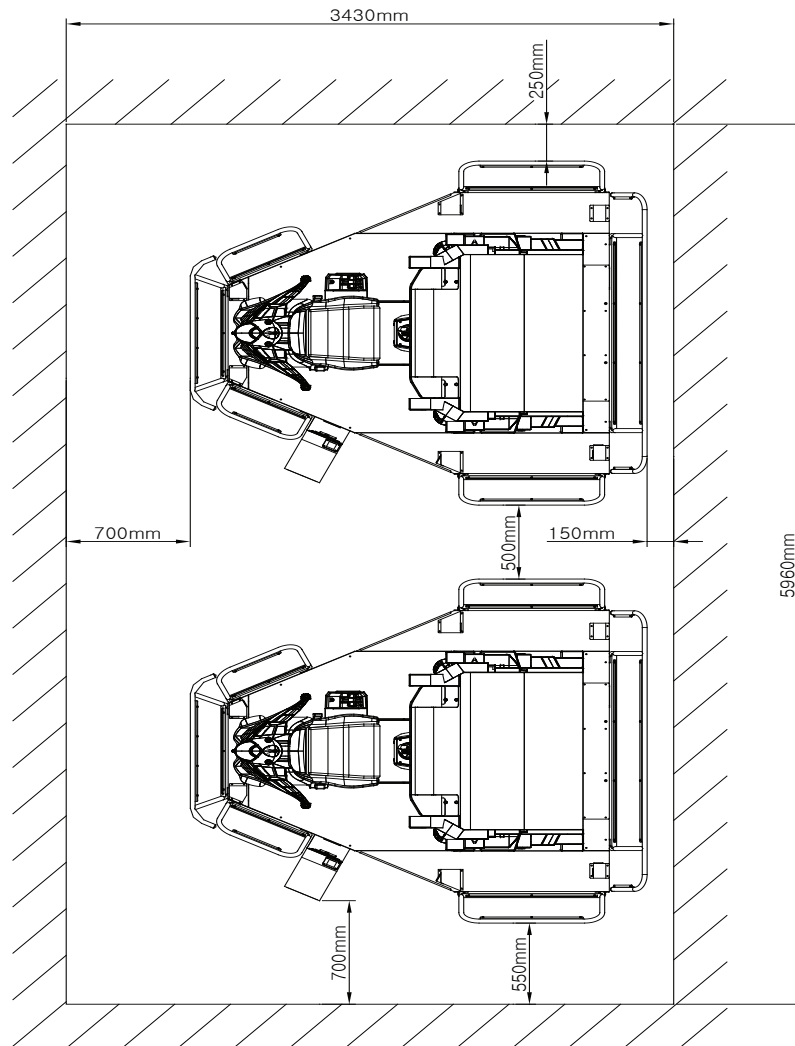
FIG. 21-1 Installation for network play

21-2 NETWORK CABLE CONNECTIONS

To setup network play, connect the two game machines for network play with a network (LAN) cable. Do not connect a network cable to any game machine not being used for network play.

1 Cut off the power and pull the power plug from the outlet.

2 Align the game units left and right. When aligning the machines, either hold the base or push it. Do not pull or push on the seat, the control stick or throttle lever.

3 Remove 6 round head wrench screw that hold down Matenance Cover R.

Maintenance Cover R

Round Head Wrench Screw(6)
M5 X 35, Flat Washer Used
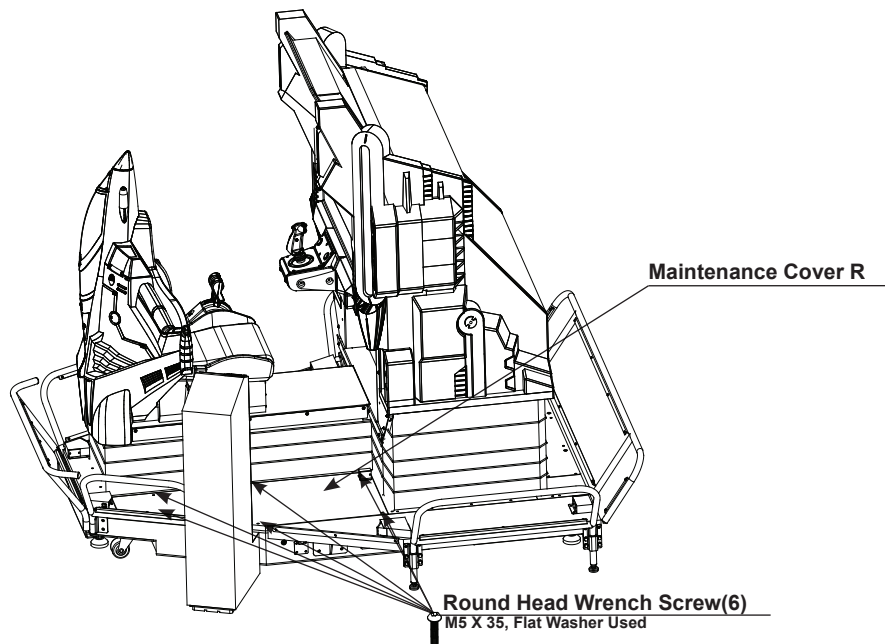
FIG. 21-2a

4 Unlock and open Maintenance Cover R as shown in figure 21-2b.

Maintenance Cover R
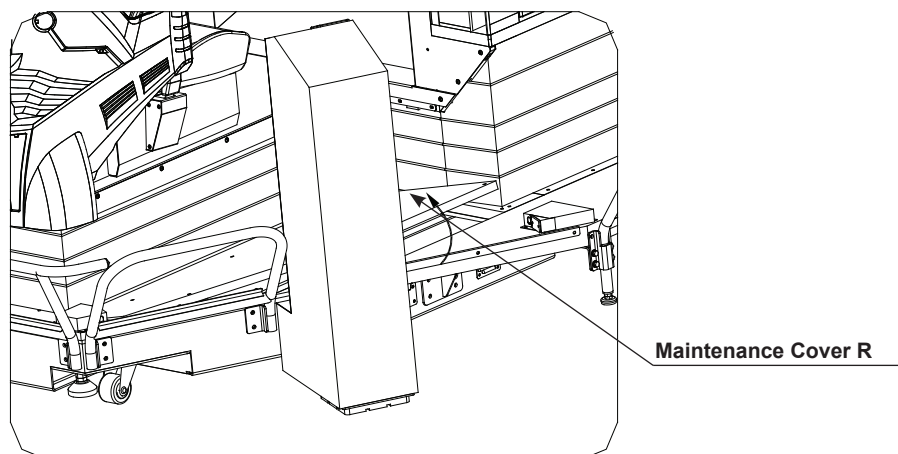
FIG. 21-2b

5 Remove the Hole Lid on the Base and pull the network cable through the hole to connect it to the HERB in the base. Then fasten it in place with the Code Clamp as in figure 21-2d. Close the Hole Lid in the direction as shown in the figure below.

Coinchute Tower

Truss Screw(4), Black M5 X 12

Hole Lid

Network Cable

FIG. 21-2c

Network Cable

Code Clamp

LAN Port
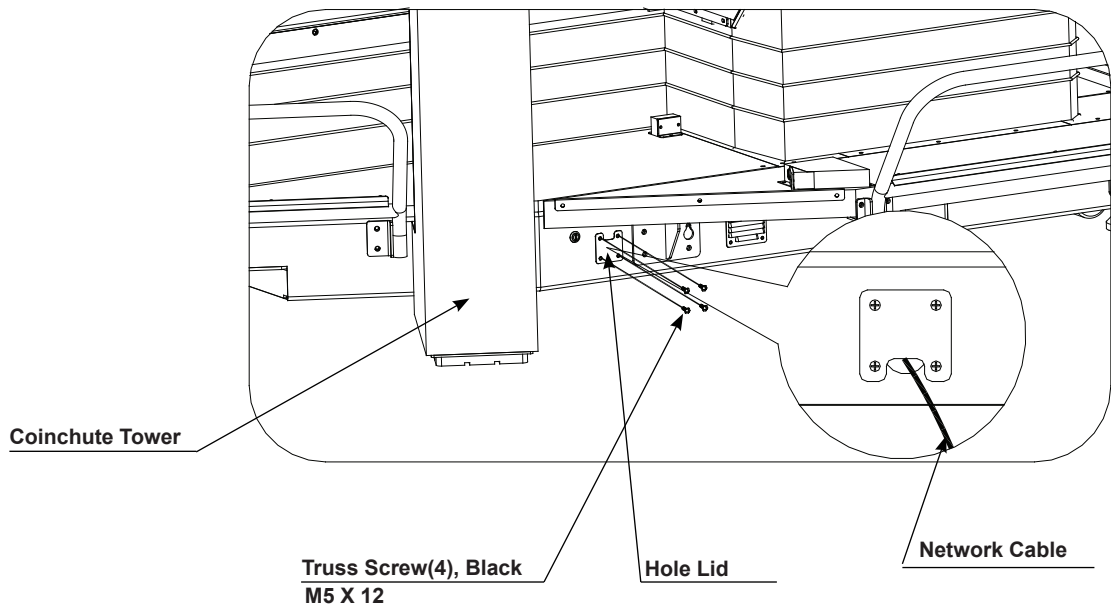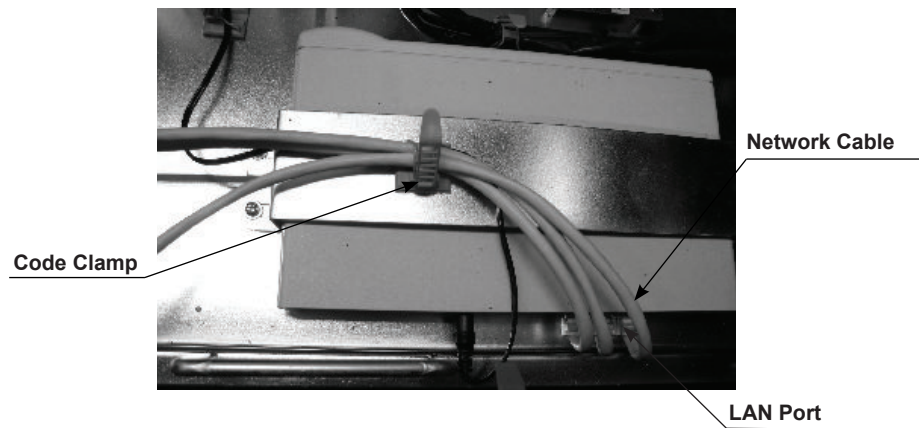
FIG. 21-2d

6 Close the Maintenance Cover R and lock it.

7 Follow the same directions to connect the other network cable to the different.

21-3 NETWORK PLAY SETTING

⚠WARNING

When the power has been engaged, initialization takes place automatically. If anyone is near the product, they could come in contact or collide with it. Check carefully to be sure that no one is near the product and that no tools or items have been left on the product, then engage the power.

(STOP) IMPORTANT

Upon completion of initialization, call up the network check screen and check connections and settings for network play. If the network check screen appears continuously on one machine, an error message is displayed. The power must be re-engaged and the test mode must be established and terminated once.

Set the two game machines for network play. If the setting is incorrect, network play cannot be implemented.

---

1 Power up the two game machines for network play. Wait for proper completion of initialization.

---

2 Put the two game machines in test mode. (See chapter 9.)

---

3 Select GAME TEST MODE and press the TEST Button. Game test mode is established and the game test mode menu appears. shouwn as below.

```
                    NETWORK SETTING

          LINK NUM              1
          LINK ID               1
        ->EXIT




                  SELECT WITH SERVICE BUTTON
                  AND PRESS TEST BUTTON
```
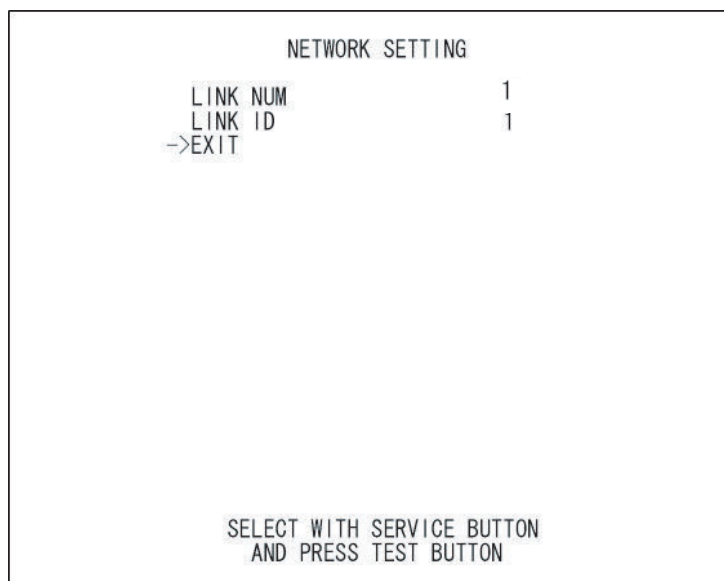
FIG. 21-3a

---

4 On the network play setting screen, set LINK NUM. Press the SERVICE Button, move the cursor onto LINK NUM and press the TEST Button.

5 When the TEST Button is pressed, the LINK NUM preset value changes. Set "2" in each of the two game machines. When "2" has been set, LINK ID appears below LINK NUM.

```
┌─────────────────────────────────────────────┐
│                                             │
│              NETWORK SETTING                │
│                                             │
│         LINK NUM              2             │
│         LINK ID               1             │
│        ->EXIT                               │
│                                             │
│                                             │
│                                             │
│                                             │
│                                             │
│                                             │
│                                             │
│                                             │
│                                             │
│          SELECT WITH SERVICE BUTTON         │
│           AND PRESS TEST BUTTON             │
│                                             │
└─────────────────────────────────────────────┘
```
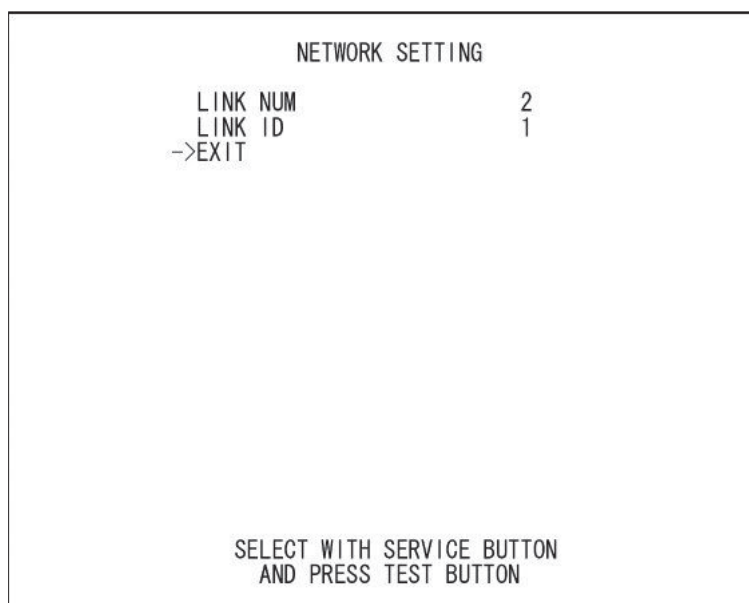
FIG. 210-3b

6 Press the SERVICE Button, move the cursor to LINK ID and select it.

7 When the TEST Button is pressed, the preset value of LINK ID changes. Set [1] in one machine and [2] in the other machine.

8 Press the SERVICE Button and move the cursor to EXIT.

9 When the TEST Button is pressed, the network play setting screen exits and the game test mode menu reappears.

10 Press the SERVICE Button, move the cursor to EXIT and press the TEST Button. The system test mode menu reappears.

11 Press the SERVICE Button, move the cursor to EXIT and press the TEST Button. The test mode of Game Board terminates.

12 Press Monitor Change Button. When the display switches to Motion Control BD, look for [Press 'SET' to enter test mode] sign. Press SET button for a couple of seconds to enter the Motion Control BD test mode.

13 Press Select button until 'Network Settings' high lights. Press SET button.

14 Press Select button until 'LINK ID' high lights. Press SET button to give game BD and Link ID the same number..

15 Press Select button until 'EXIT' high lights, press SET button to move to Test Mode Main Menu and move to 'EXIT.' 'Please power off and power on' message will show. Turn the power of and wait about a minute and re-start the system.

16 Upon completion of initialization, network check begins. The monitor screen shows that network check is in progress.

17 If there are no problems with the connections and settings for network play, the Attract Mode is established. When the Attract Mode screen appears, setting is completed.
Network check will be completed after about 20 seconds or longer. If the network check screen continues to be displayed, there could be an error in the settings, error in the network cable connections, faulty network cable connection, cable disconnection, etc.

20-4 PRECAUTIONS IN NETWORK PLAY

(STOP) **IMPORTANT**

- **If communication is interrupted during network play for any reason, network play is disabled and game play continues on each machine individually. If communication is interrupted in the Attract Mode, the network check screen appears.**

- **If one game machine for network play is put in test mode, the network check screen appears on the other game machine.**

- **Even when a game machine is connected for network play, game settings and coin/credit settings can be made individually. Individual changes can also be made in settings, for example to those for experienced players or for beginners, but usually the two machines should be set the same. If there are errors in coin/ credit settings, earnings and expenses might not be balanced.**

When two game machines are connected for network play, they operate differently than when they are set up individually. Remember this when operating the machines.

When the test mode is used, the network check screen appears on the other game machine connected for network play. Do not indiscriminately engage the test mode while a customer is playing, even if the machine is not currently being played on.

If the network check screen appears for a long time, an error message is displayed. The power must be re-engaged or the test mode must be established and terminated once.

AFTER BURNER CLIMAX SDX
DRAWING PART LIST

1.ABS-00-000M
AFTER BURNER CLIMAX SDX ASSY

2.ABS-01-000M
BASE ASSY

3.EEX-02-R701M
AC UNIT

4.EEX-02-R702M
ASSY MAIN BD

5.EEX-02-R703M
ASSY POWER SUPPLY

6.ABS-02-000M
SIDE STEP ASSY

7.ABS-08-000M
FENCE PART

8.BJ01-00-000M
BALL JOINT ASSY

9.ATH230-00-000M
ACTUATOR

10.ABS-07-000M
COINCHUTE TOWER ASSY

11.SCT01-00-000M
COINCHUTE TOWER

12.SCV01-00-000M
COIN VAULT ASSY

13.ABS-03-000M
CABIN ASSY

14.ABS-03-101M
BILLBOARD ASSY

15.ABS-03-102M
ASSY CONTROLLER BASE

16.610-0756
ASSY ANALOG JOY ABX

17.ABS-04-000M
CABIN FRP COVER ASSY

18.EEX-02-R704M
SW UNIT

19.ABS-05-000M
CABIN SEAT BASE BOX ASSY

20.ABX-1650
THROTTLE UNIT

21.610-0754
THROTTLE UNIT ABX

22.610-0758
THROTTLE UNIT ABX W/O GRIP

23.ABS-06-000M
CABIN FRP SEAT ASSY

1. AFTER BURNER CLIMAX SDX ASSY (ABS-00-000M)
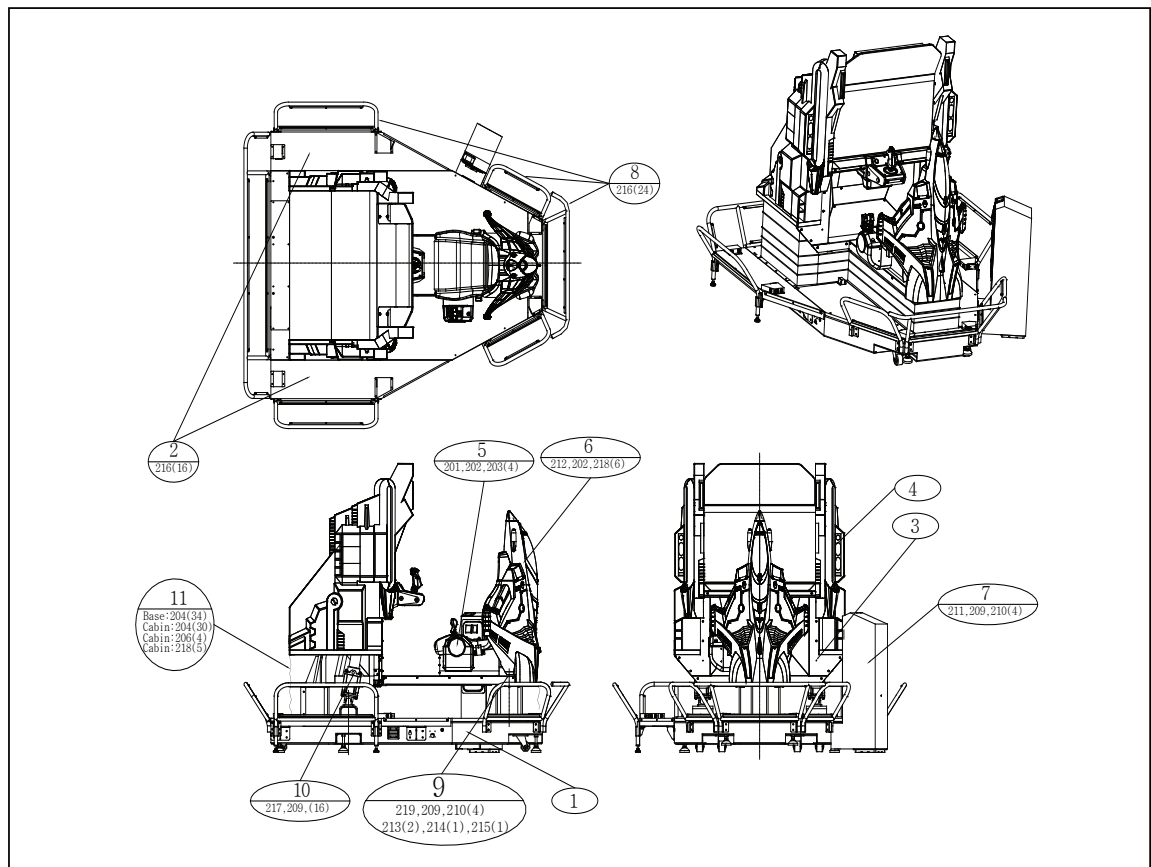
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-01-000M	–	Base Assy
2	ABS-02-000M	–	Side Step Assy
3	ABS-03-000M	–	Cabin Assy
4	ABS-04-000M	–	Cabin FRP Cover Assy
5	ABS-05-000M	–	Cabin Seat Base Box Assy
6	ABS-06-000M	–	Cabin FRP Seat Assy
7	ABS-07-000M	–	Coinchute Tower Assy
8	ABS-08-000M	–	Fence Part
9	BJ01-00-000M	–	Ball Joint Assy
10	ATH230-00-000M	–	Actuator
11	ABS-11-000M	–	Bellows
201	HB08-025HNB	–	Hex Bolt(M8X25L)
202	W-SP08HNB	–	Spring Washer(M8)
203	W-FL08HNB	–	Flat Washer(M8)
204	TR05-012NNB	–	Truss Screw(M5X12L)

ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
206	TR05-020NNB	–	Truss Screw(M5X20L)
209	W-SP10HNB	–	Spring Washer(M10)
210	W-FL10HNB	–	Flat Washer(M10)
211	N-HN10HNB	–	Hex Nut(M10)
212	HB08-035HNB	–	Hex Bolt(M8X35L)
213	N-HN16HNB	–	Hex Nut(M16)
214	W-SP16HNB	–	Spring Washer(M16)
215	W-FL16HNB	–	Flat Washer(M16)
216	SH08-025HNB	–	Hex Bolt W/FS(M8X25L)
217	HB10-040HNB	–	Hex Bolt(M10X40L)
218	FL05-012NSW	–	Flush Screw(M5X12L)
219	HB10-035HNB	–	Hex Bolt(M10X35L)

2. BASE ASSY (ABS-01-000M)
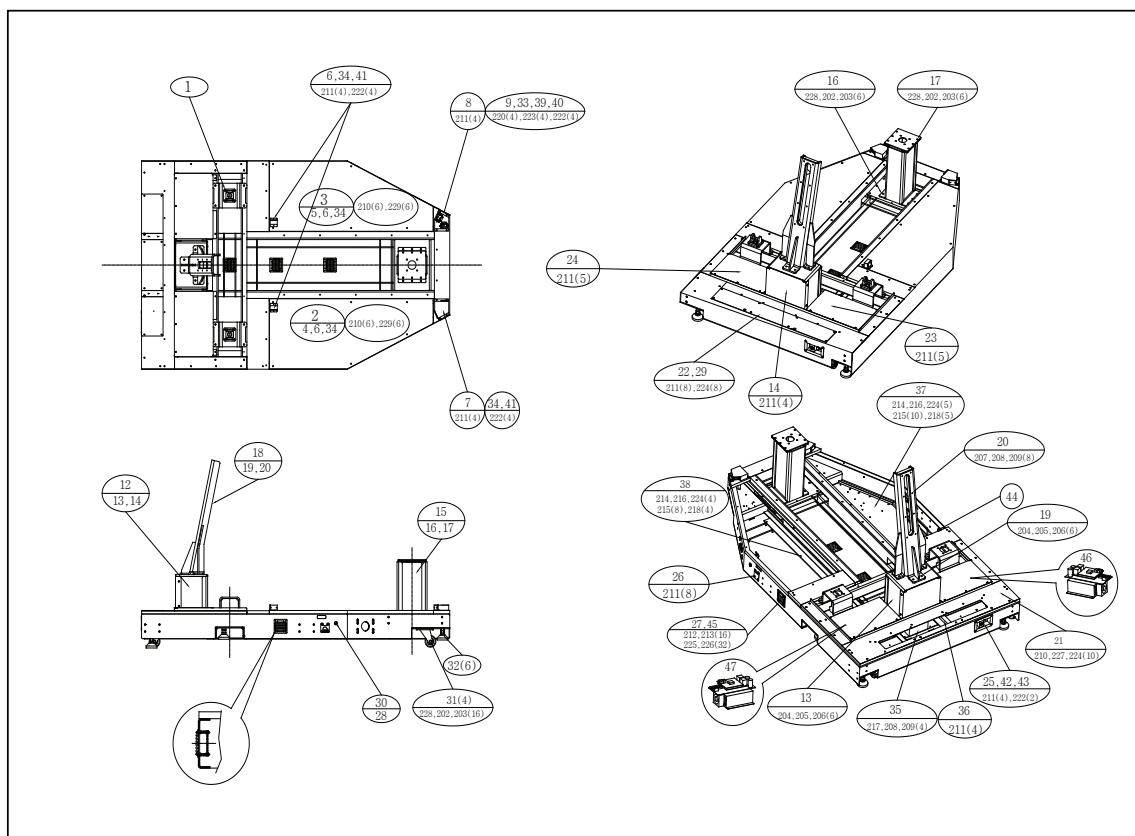
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-01-001M	–	Base Structure
2	ABS-01-002M	–	Maintenance Cover Set L
3	ABS-01-003M	–	Maintenance Cover Set R
4	ABS-01-004M	–	Maintenance Cover L
5	ABS-01-005M	–	Maintenance Cover R
6	ABS-01-006M	–	M-Reflector Bracket
7	ABS-01-007M	–	R-Floor Sensor Box-L
8	ABS-01-008M	–	R-Floor Sensor Box-R
9	ABS-01-009M	–	Floor Sensor Fix Bracket
11	ABS-01-011M	–	Reflector BK Rubber Gasket
12	ABS-01-012M	–	Guide Rail Adaptor Assy
13	ABS-01-013M	–	Guide Rail Adaptor
14	ABS-01-014M	–	Transformer Cover
15	ABS-01-015M	–	Ball Joint Adaptor Assy
16	ABS-01-016M	–	Ball Joint Adaptor
17	ABS-01-017M	–	Ball Joint Plate
18	ABS-01-018M	–	Guide Rail Assy
19	ABS-01-019M	–	Guide Rail
20	ABS-01-020M	–	Guide Rail Block
21	ABS-01-021M	–	Front Cover
22	ABS-01-022M	–	AC Unit Cover
23	ABS-01-023M	–	Motor Drive Board Cover L
24	ABS-01-024M	–	Motor Drive Board Cover R
25	ABS-01-025M	–	Main SW Panel
26	ABS-01-026M	–	Hole Lid

ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
27	ABS-01-027M	–	Air Vent
28	ABS-01-028M	–	Key-Lock Plate
29	ABS-01-029M	–	Front Cover Rubber Gasket
30	–	220-5793-1-A001	Cly Lock Master W/O Key A001
31	JW-FC76-51S	–	Caster
32	A-MZSR-16-130-78	–	Adjuster(M16X130L)
33	ESU-05-R046P	–	Floor Sensor
34	ESU-05-R047P	–	Reflector
35	EMU-40-R105M	–	Transformer
36	EEX-02-R701M	–	AC Unit
37	EEX-02-R702M	–	Assy Main BD
38	EEX-02-R703M	–	Assy Power Supply
39	ABS-01-039M	–	Floor Sensor Adjust Bracket-L
40	ABS-01-040M	–	Floor Sensor Adjust Bracket-R
41	ABS-01-041M	–	Reflector Support Plate
42	ABS-01-042M	–	Cable Gland Cover
43	EAS-35-R321P	–	Main Power SW : VLA04-62
44	EMU-21-R106PA	–	Left Fan : 3110KL-04W-B50-L00
45	EMU-21-R106PB	–	Right Fan : 3110KL-04W-B50-L00
46	EMU-01-R501MA	–	Motor Drive BD1: After Burner Controller 1.2Kw
47	EMU-01-R501MB	–	Motor Drive BD2: After Burner Controller 1.2Kw
202	W-FL10HNB	–	Flat Washer(M10)
203	W-SP10HNB	–	Spring Washer(M10)
204	HB08-025HNB	–	Hex Bolt(M8X25L)
205	W-FL08HNB	–	Flat Washer(M8)
206	W-SP08HNB	–	Spring Washer(M8)
207	WR06-030HNB	–	Wrench Screw(M6X30)
208	W-SP06HNB	–	Spring Washer(M6)
209	W-FL06HNB	–	Flat Washer(M6)
210	RW05-035NSW	–	Round Head Wrench Screw(M5X35L)
211	TR05-012NNB	–	Truss Screw(M5X12L)
212	TR04-016NNB	–	Truss Screw(M4X16L)
213	N-HN04NNB	–	Hex Nut(M4)
214	VB0514-1514	–	Vibroisolation Bolt(M5)
215	N-HN05NNB	–	Hex Nut(M5)
216	N-TB05NNB	–	Wing Nut(M5)
217	WR06-010NNB	–	Wrench Screw(M6X10L)
218	W-SP05NNB	–	Spring Washer(M5)
220	SR03-010NNB	–	Round Head Screw W/FS(M3X10L)
222	TR04-012NNB	–	Truss Screw(M4X12L)
223	SR03-020NNB	–	Round Head Screw W/FS(M3X20L)
224	W-FL05NNW	–	Flat Washer(M5)
225	W-FL04NNB	–	Flat Washer(M4)
226	W-SP04NNB	–	Spring Washer(M4)
227	W-SP05NNW	–	Spring Washer(M5)
228	HB10-035HNB	–	Hex Bolt(10X35L)
229	W-PW05NNW	–	Plastic Washer(M5)

3. AC UNIT (EEX-02-R701M)
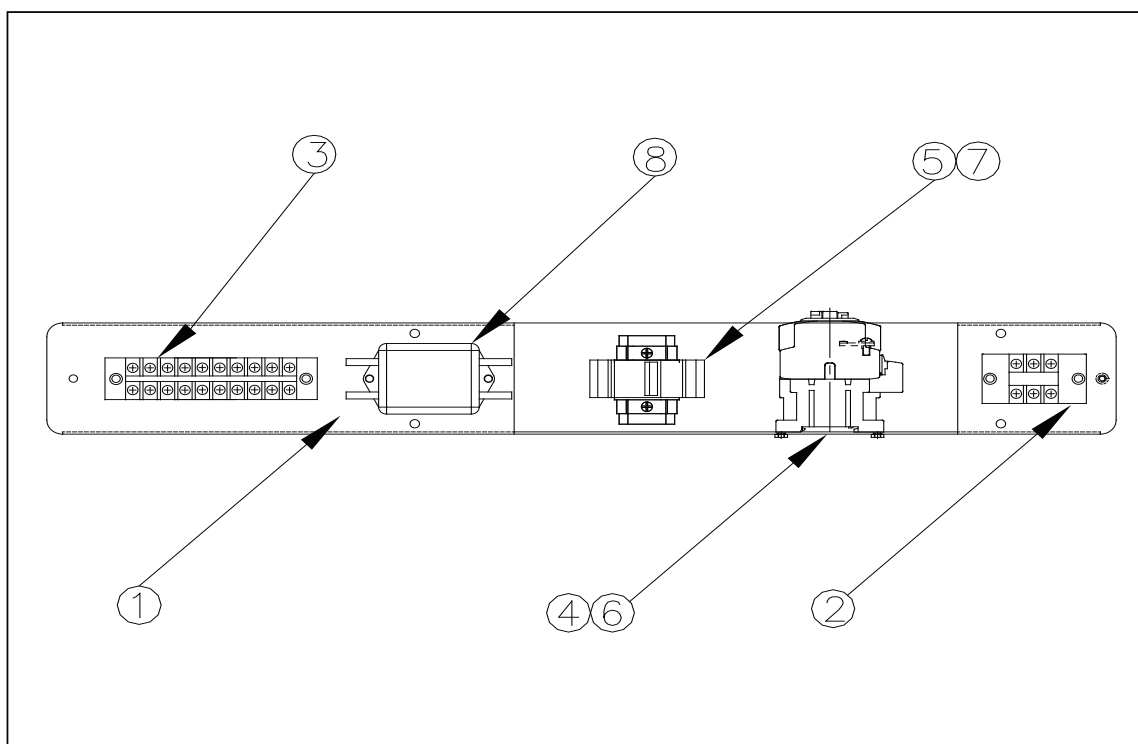
ITEM NO	PART NO SIMULINE	SEGA	DESCRIPTION
1	ABS-EL-003M	–	AC Unit Plate
2	EEC-10-R045P	–	Terminal Block : DFT30A-3P
3	EEC-10-R048P	–	Terminal Block : DFT20A-10P
4	EMU-27-R101P	–	UL Type Magnet : GMC-12(220VAC 60Hz/200VAC 50Hz)
5	EMU-29-R310P	–	UL Type NFB : DCP51-DF15A HS/UL
6	EMU-27-R102P	–	CE Type Magnet : GMC-12(240VAC 50Hz)
7	EMU-29-R312P	–	CE Type NFB : BKM-C16 / 2P
8	EMU-30-R105P	–	NFB : FM-215S

4. ASSY MAIN BD (EEX-02-R702M)
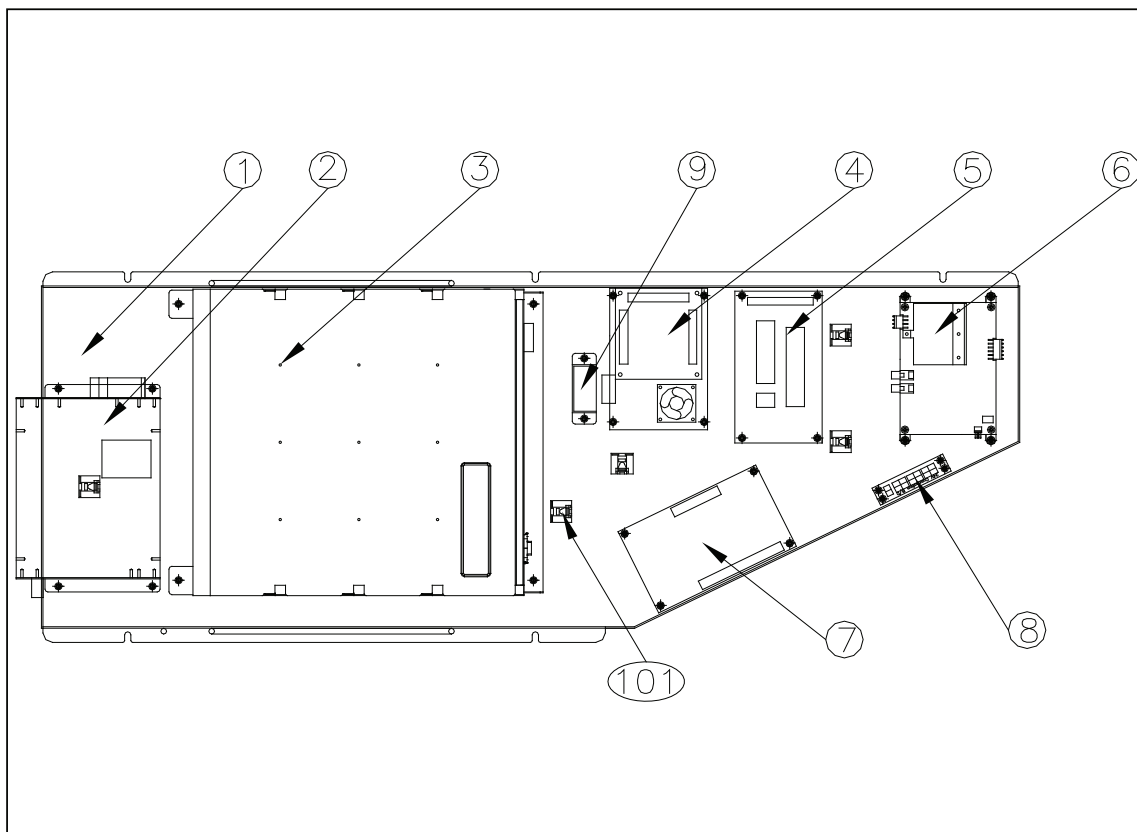
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-EL-001M	–	Main BD Plate
2	–	400-5457-91	SMPS : SW REGU ATX/JVS
3	–	844-0001D-91-10	GAME BD : ASS'Y CASE LBG L 1GB 7800
4	ESU-19-R135P	–	Motion BD: Motion PC ASS'Y
5	ESU-00-R801P	–	Board : SRIP BD
6	–	838-14515-A0191	AMP BD : SOUND AMP ANALOG IN 839-1187R
7	–	837-14505	DIO BD : I/O CONTROL BD FRO JVS
8	ESU-00-R805P	–	Board : DC24 JC BD
9	ABS-EL-010M	–	VGA Cable Support
101	EEX-10-R018P	–	Code Clamp : TL-18A

5. ASSY POWER SUPPLY (EEX-02-R703M)
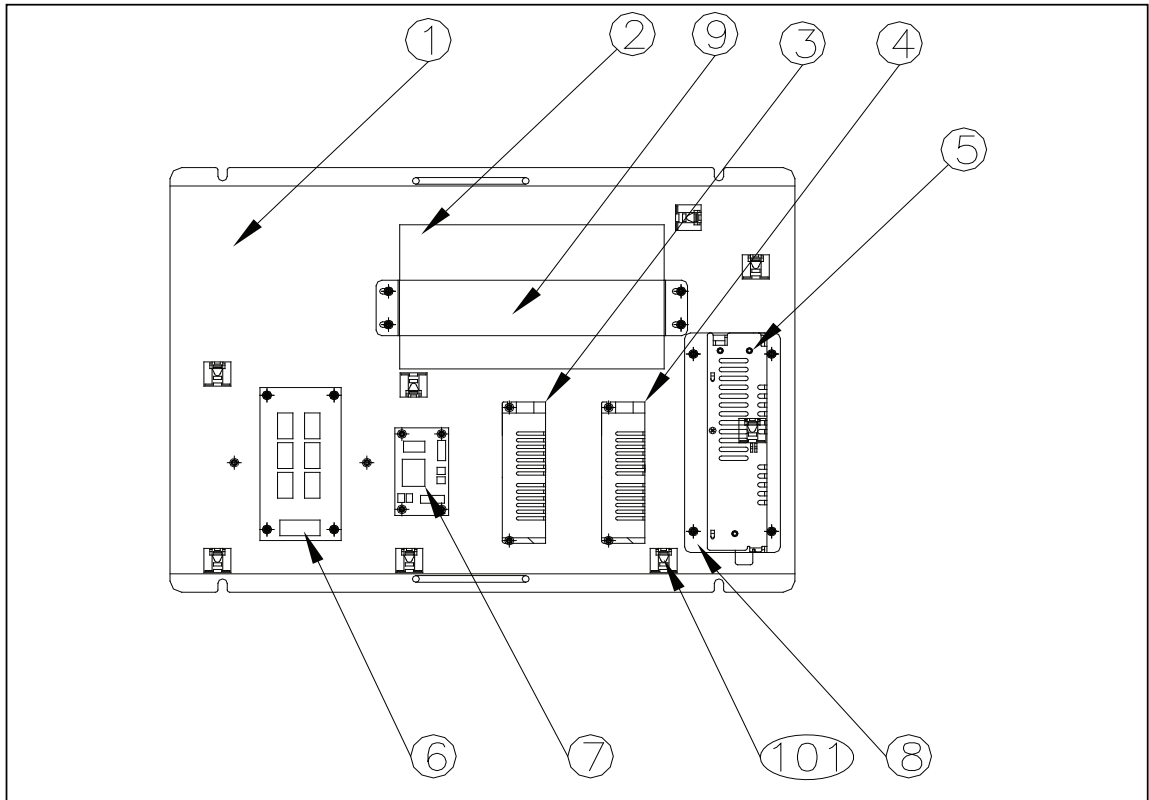
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-EL-002M	–	Power Supply Plate
2	ESU-05-R048P	–	HUB : 3C16790A 5 Port HUB
3	ESU-05-R043P	–	SMPS : RD-65A (DC12V,5V)
4	ESU-05-R043P	–	SMPS : RD-65A (DC12V,5V)
5	ESU-05-R044P	–	SMPS : SWS150-24 (DC24V)
6	ESU-00-R804P	–	Board : AC220 JC BD
7	ESU-00-R803P	–	Board : DC0512 JC BD
8	ABS-EL-006M	–	SMPS Bracket-AMP
9	ABS-EL-007M	–	HUB Bracket
101	EEX-10-R018P	–	Code Clamp : TL-18A

6. SIDE STEP ASSY (ABS-02-000M)
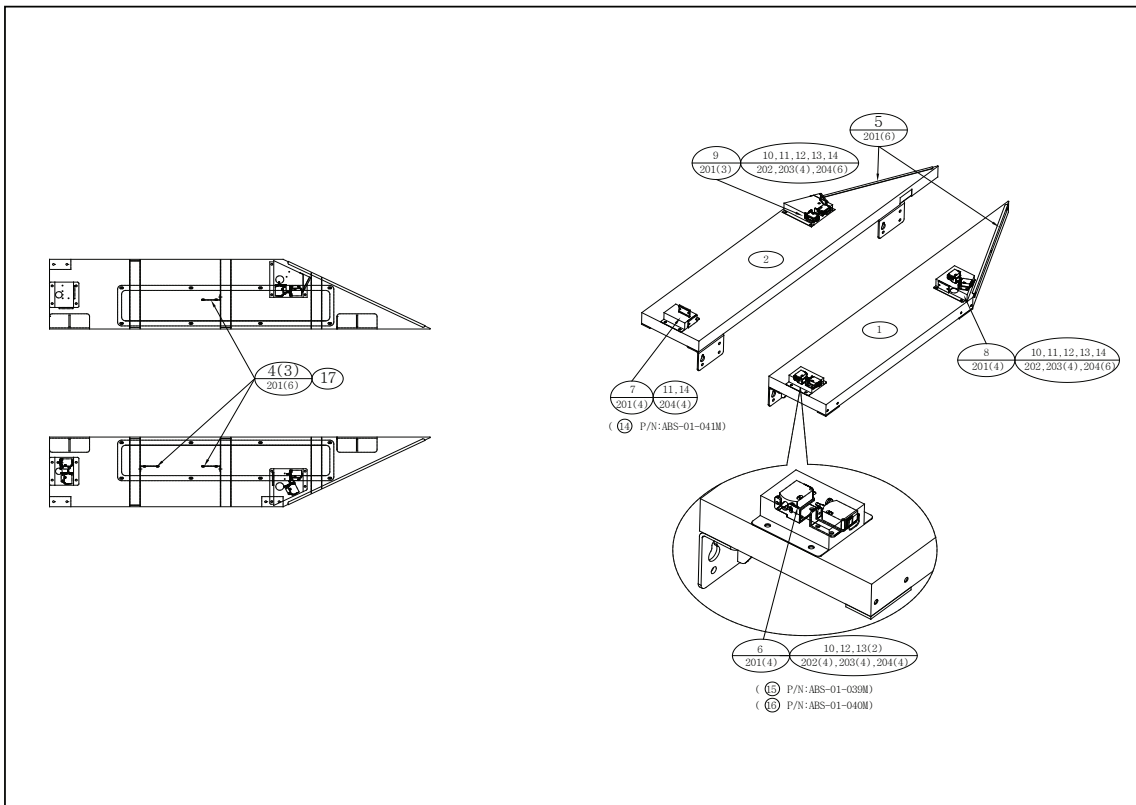
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-02-001M	–	Side Step-L
2	ABS-02-002M	–	Side Step-R
3	ABS-02-003M	–	Side Step Cover
4	ABS-02-004M	–	Floor Sensor Board Bracket
5	ABS-02-005M	–	Edge Plate
6	ABS-02-006M	–	F-Floor Sensor Box-L
7	ABS-02-007M	–	F-Floor Sensor Box-R
8	ABS-02-008M	–	M-Floor Sensor Box-L
9	ABS-02-009M	–	M-Floor Sensor Box-R
10	ESU-05-R046P	–	Floor Sensor
11	ESU-05-R047P	–	Reflector
14	ABS-01-041M	–	Reflector Support Plate
15	ABS-01-039M	–	Floor Sensor Adjust Bracket-L
16	ABS-01-040M	–	Floor Sensor Adjust Bracket-R
17	ESU-00-R806P	–	Floor Sensor JC BD
201	TR05-012NNB	–	Truss Screw(M5X12L)
202	SR03-010NNB	–	Round Head Screw W/FS(M3X10L)
203	SR03-025NNB	–	Round Head Screw W/FS(M3X25L)
204	TR04-012NNB	–	Truss Screw(M4X12L)

7. FENCE PART (ABS-08-000M)
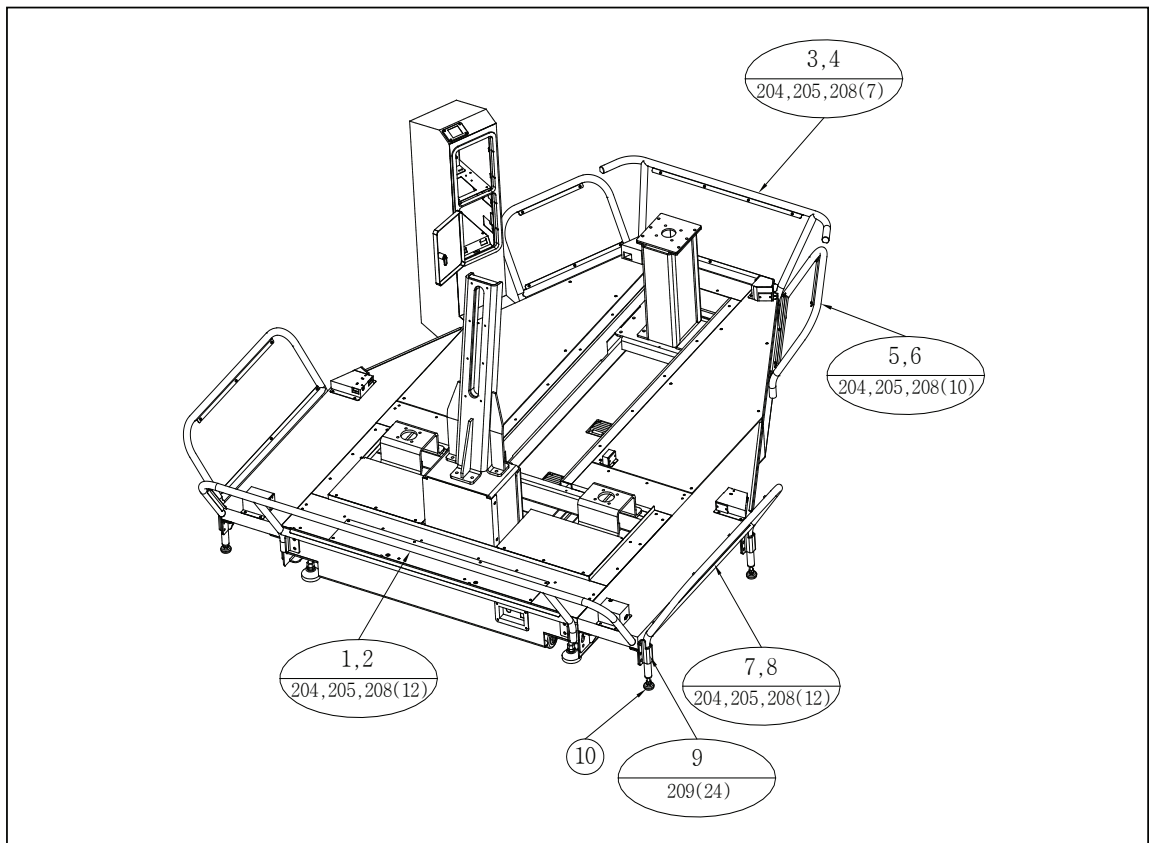
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-08-001M	–	F-Fence Assy
2	ABS-08-002M	–	F-Fence Cover
3	ABS-08-003M	–	R-Fence Assy
4	ABS-08-004M	–	R-Fence Cover
5	ABS-08-005M	–	S-Fence Assy
6	ABS-08-006M	–	S-Fence Cover
7	ABS-08-007M	–	Side Step Fence Assy
8	ABS-08-008M	–	Side Step Fence Cover
9	ABS-08-009M	–	Pipe Holder
10	A-VS-10-60	–	Adjuster(M10X60L)
204	FL05-012NSW	–	Flush Screw(M5X12L)
205	W-LC05NNB	–	Rack Washer(M5)
208	W-RB05NNB	–	Rubber Washer(M5)
209	SH08-015HNB	–	Hex Bolt W/FS(M8X15L)

8. BALL JOINT ASSY (BJ01-00-000M)
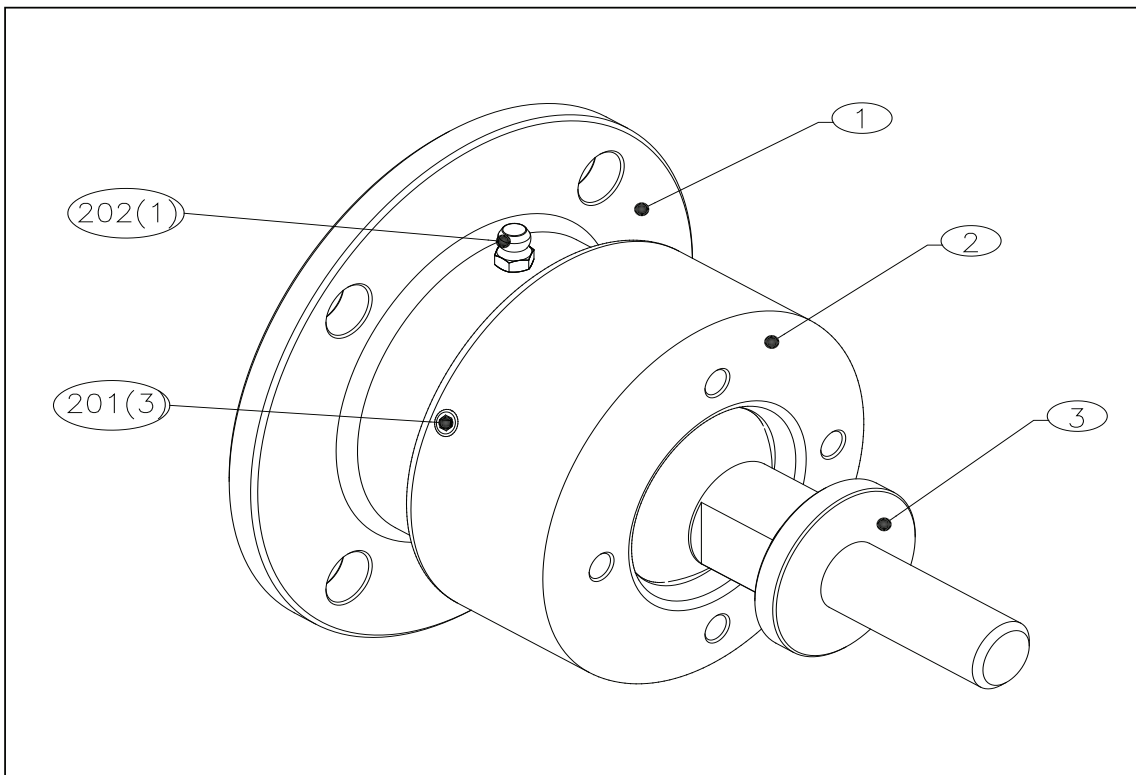
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	BJ01-01-001M	–	Ball Joint Housing
2	BJ01-02-002M	–	Ball Joint Cap
3	BJ01-03-003M	–	Ball Joint Shaft
201	ST06-010HNP	–	Set Screw(M6X10L)
202	MAT-00-101P	–	Grease Nipple

9. ACTUATOR (ATH230-00-000M)
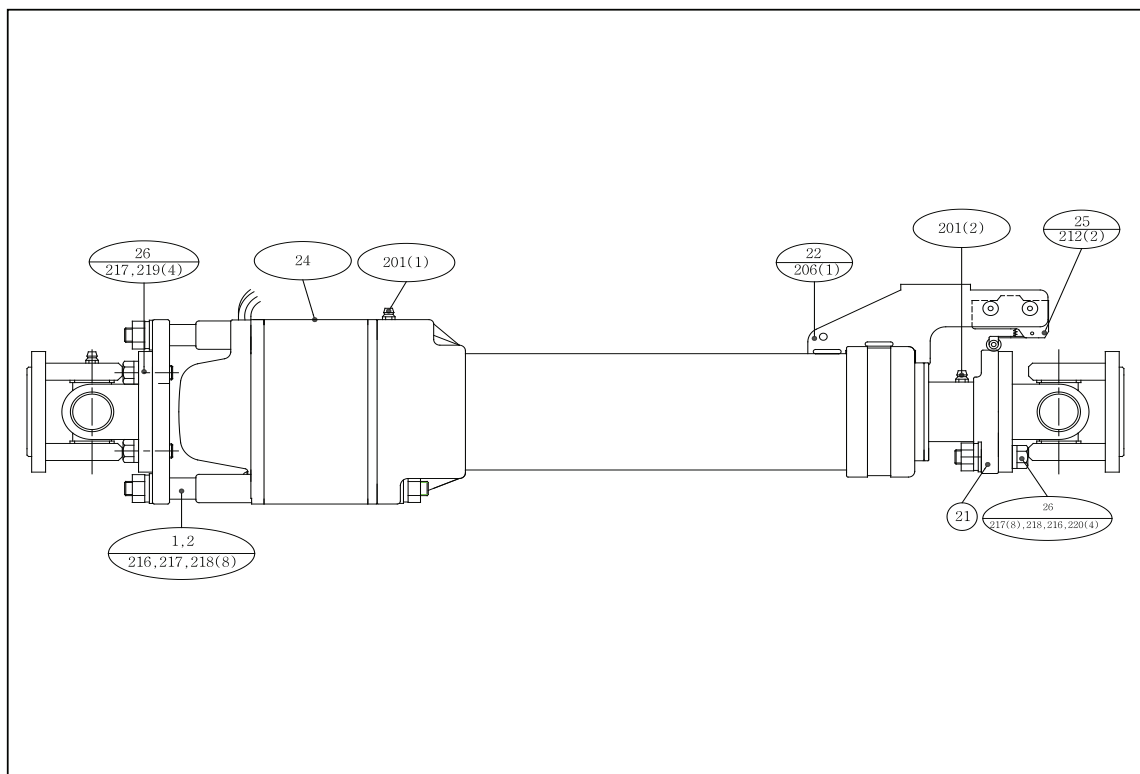
ITEM NO	PART NO SIMULINE	SEGA	DESCRIPTION
1	ATH230-01-001M	–	Base Plate
2	ATH230-02-002M	–	Post
21	ATH230-21-021M	–	Joint Flange
22	ATH230-22-022M	–	Limit SW Bracket
24	ATH230-24-024P	–	AC Servo Motor(APM-SE12ASW-SL/1.2Kw 3000rpm)
25	MAT-00-100P	–	Limit SW(OMRON:Z-15GW22-B)
26	MMB-00-001M	–	A/T Joint(100X100)
201	MAT-00-101P	–	Grease Nipple(M6)
212	FL04-022NNB	–	Flush Screw(M4X22L)
216	N-HN10HNB	–	Hex Nut(M10)
217	W-SP10HNB	–	Spring Washer(M10)
218	W-FL10HNB	–	Flat Washer(M10)
219	HB10-025HNB	–	Hex Bolt(M10X25L)
220	HB10-040HNB	–	Hex Bolt(M10X40L)

10. COINCHUTE TOWER ASSY (ABS-07-000M)
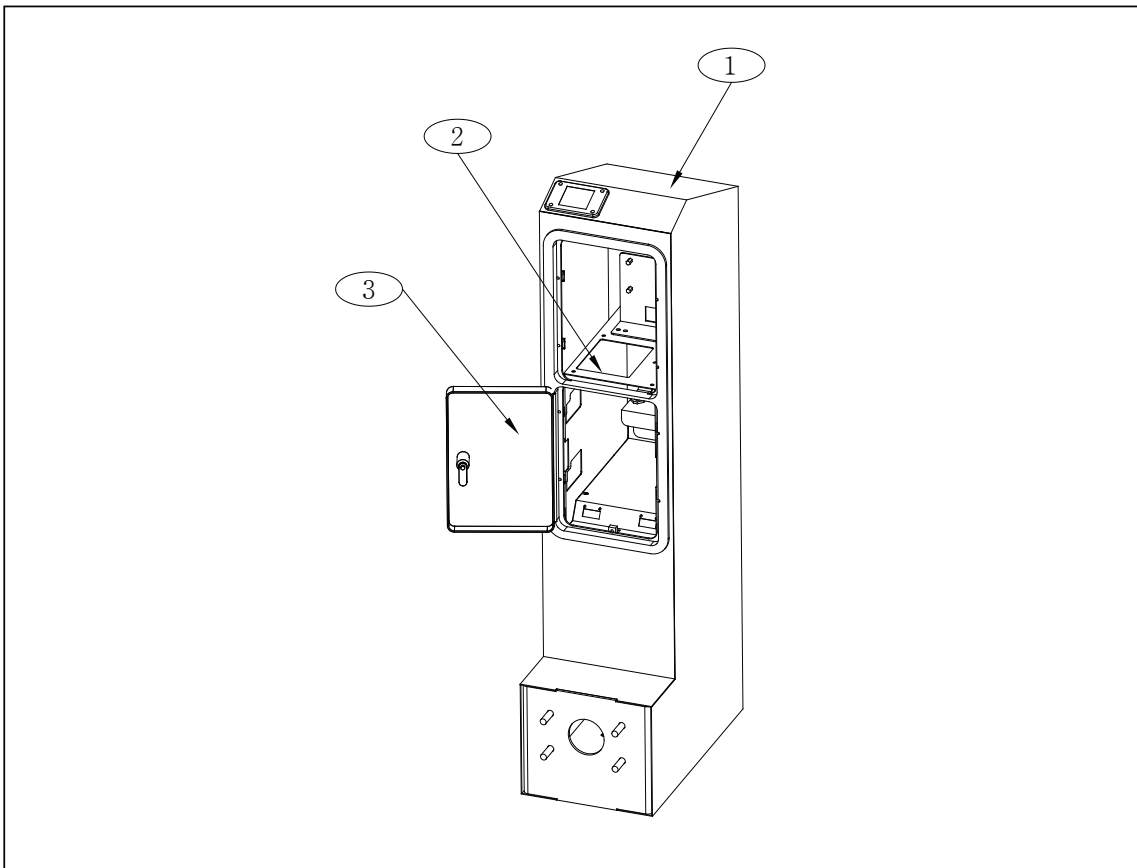
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	SCT01-00-000M	–	Coinchute Tower
2	SCV01-00-000M	–	Coin Vault Assy
3	–	–	Coin Frame(Option)

11. COINCHUTE TOWER (SCT01-00-000M)
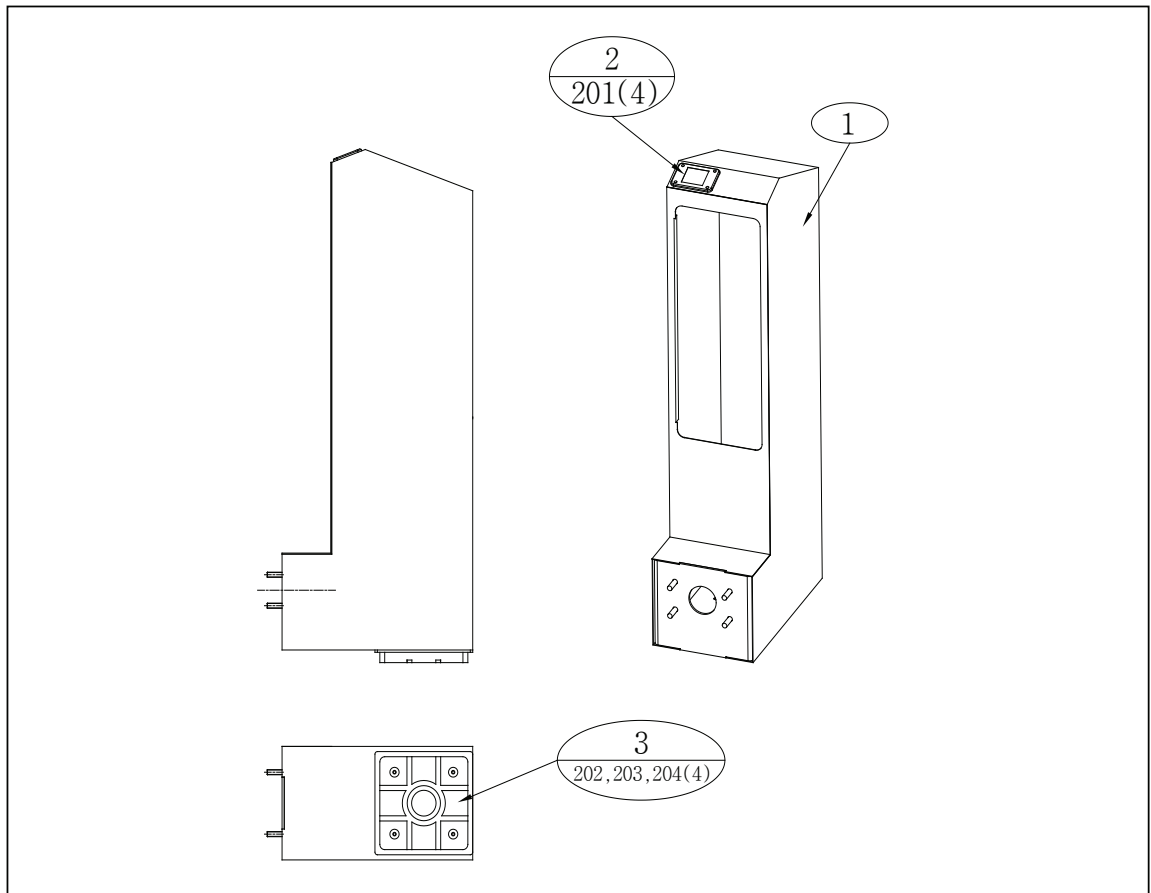
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	SCT01-01-000M	–	Coinchute Tower
2	SCT01-02-000M	–	Denomi Plate
3	MET-03-025P	–	Rubber Pad
201	TR05-012NNB	–	Truss Screw(M5X12L)
202	WR06-025HNB	–	Wrench Screw(M6X25L)
203	W-SP06HNB	–	Spring Washer(M6)
204	W-LF06HNB	–	Large Flat Washer(M6)

12. COIN VAULT ASSY (SCV01-00-000M)
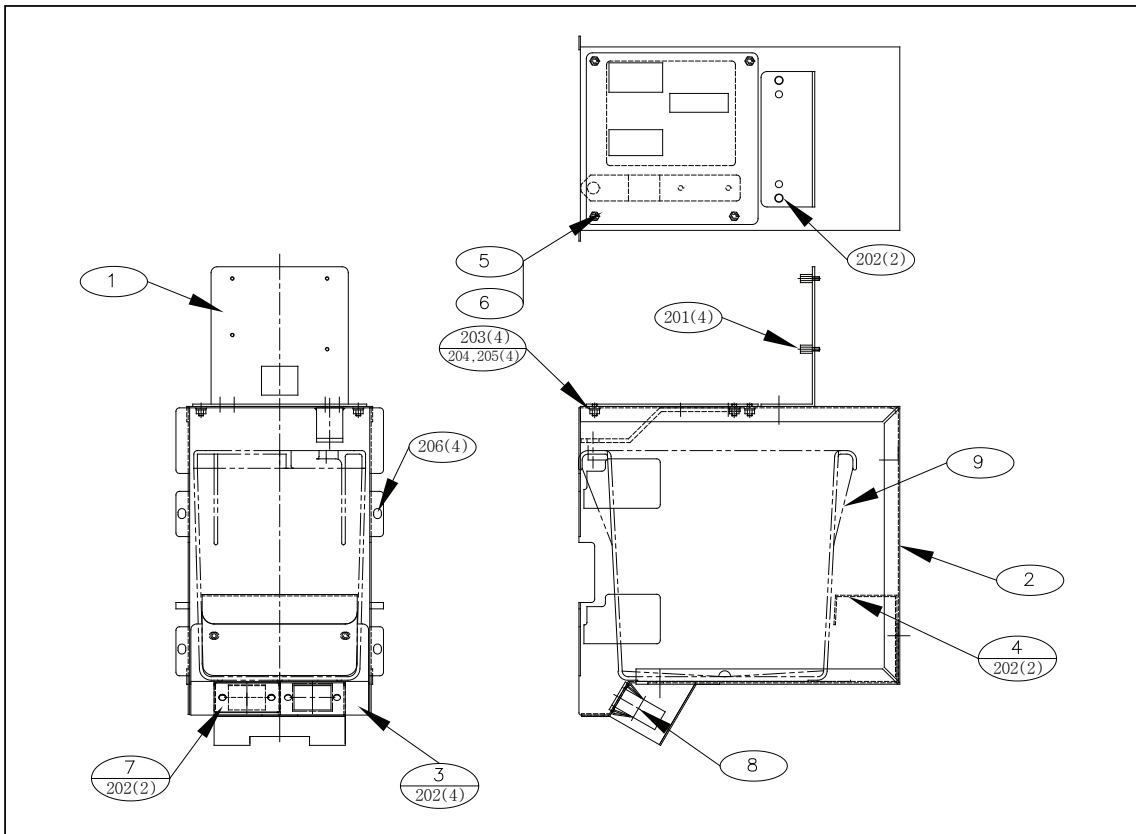
ITEM NO	PART NO SIMULINE	SEGA	DESCRIPTION
1	SCV01-01-000M	–	Credit Board Bracket
2	SCV01-02-000M	–	Coin Vault Box Assy
3	SCV01-03-000M	–	Vault Base Plate
4	SCV01-04-000M	–	Cash Box Stopper
5	SCV01-05-000M	–	Select Bracket(2Entry)
6	SCV01-06-000M	–	Select Bracket(1Entry)
7	SCV01-07-000M	–	Coin Meter Cover
8	–	220-5798-01	Coin Meter(DC5V;LINE SEIKI(MZ-674(P0107))
9	–	253-5366	Cash Box
201	MET-03-214P	–	Plastic Support(M3X10L)
202	TR04-008NNB	–	Truss Screw(M4X8L)
203	N-HN04NNB	–	Hex Nut(M4)
204	W-SP04NNB	–	Spring Washer(M4)
205	W-FL04NNB	–	Flat Washer(M4)
206	SR04-008NNW	–	Round Head Screw W/FS(M4X8L)

13. CABIN ASSY (ABS-03-000M)
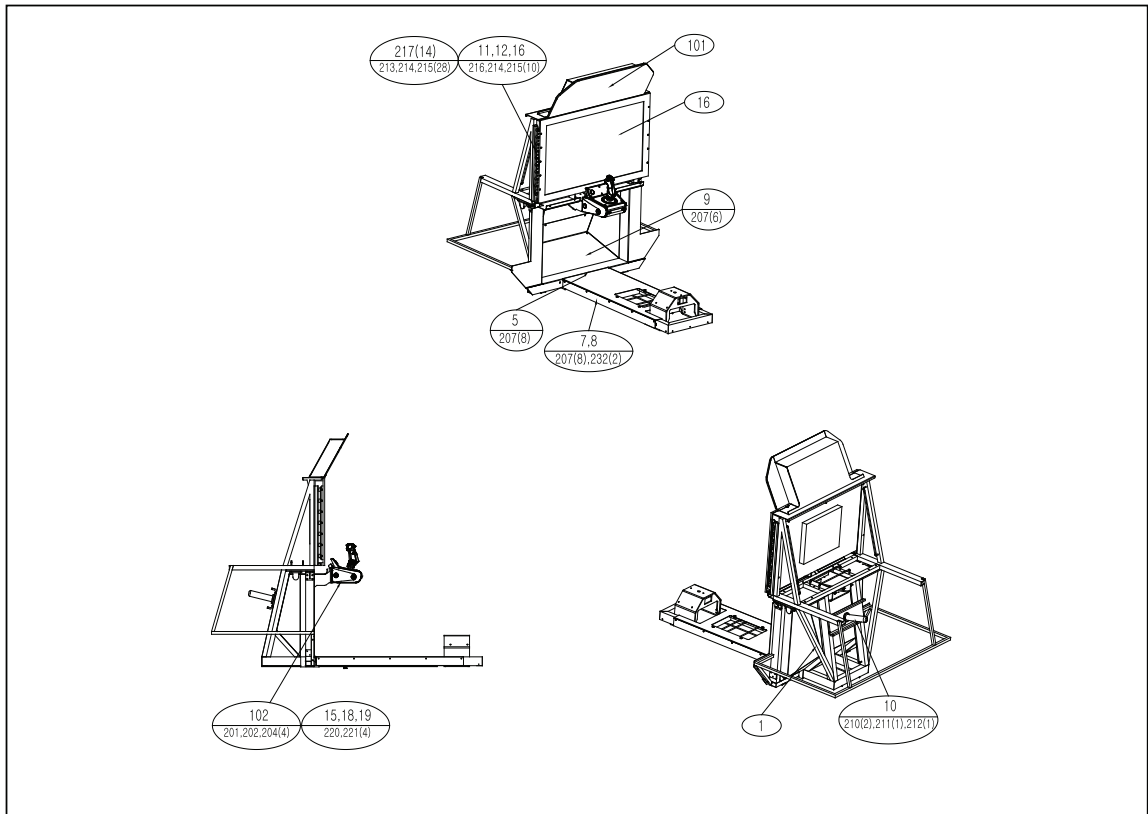
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-03-001M	–	Cabin Assy
5	ABS-03-005M	–	Cabin Foot Plate
7	ABS-03-007M	–	Cabin Side Cover-L
8	ABS-03-008M	–	Cabin Side Cover-R
9	ABS-03-009M	–	Cabin Foot Out Cover
10	ABS-03-010M	–	Guide Pin
11	ABS-03-011M	–	Monitor Bracket-L
12	ABS-03-012M	–	Monitor Bracket-R
15	ABS-03-015M	–	CTRL Spacer
16	ESU-05-R045P	–	LCD Monitor(EFL-4002WIG)
18	–	ABX-0010	CTRL Side Cover-L
19	–	ABX-0011	CTRL Side Cover-R
101	ABS-03-101M	–	Billboard Assy
102	ABS-03-102M	–	Assy Controller Base
201	HB08-015HNB	–	Hex Bolt(M8X15L)
203	W-SP08HNB	–	Spring Washer(M8)
204	W-FL08HNB	–	Flat Washer(M8)
207	TR05-012NSW	–	Truss Screw(M5X12L)
209	RW04-012NSW	–	Round Head Wrench Screw(M4X12L)
210	N-HN20HNB	–	Hex Nut(M20)

ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
211	W-SP20HNB	–	Spring Washer(M20)
212	W-FL20HNB	–	Flat Washer(M20)
213	N-HN06HNB	–	Hex Nut(M6)
214	W-SP06HNB	–	Spring Washer(M6)
215	W-FL06HNB	–	Flat Washer(M6)
216	RW06-015HNB	–	Round Head Wrench Screw(M6X15L)
217	VB0615-2215	–	Vibroisolation Bolt(M6)
220	FW05-010NNB	–	Flush Wrench Screw(M5X10L)
221	W-LC05NNB	–	Rack Washer(M5)
232	TR05-006NSW	–	Truss Screw(M5X6L)

14. BILLBOARD ASSY (ABS-03-101M)
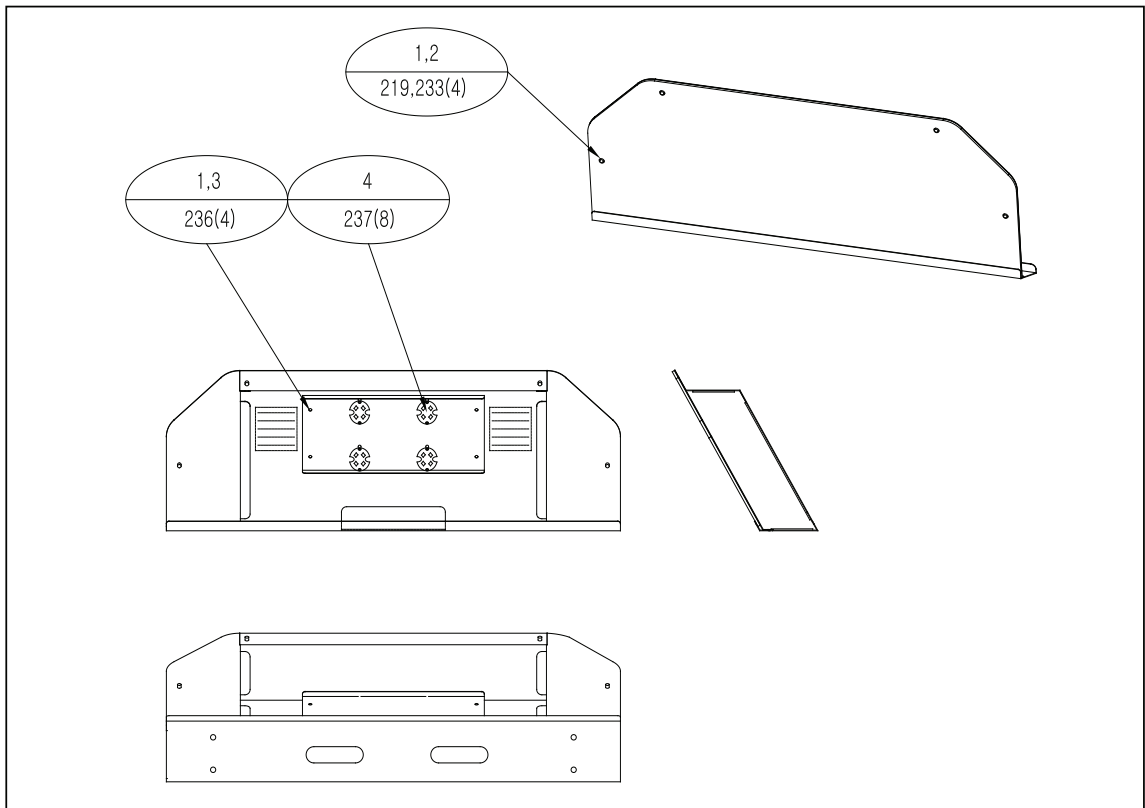
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-03-002M	–	Billboard Base
2	ABS-03-003M	–	Billboard Plate
3	ABS-03-004M	–	LED Board Support
4	–	838-14596	LED BD White 4EA
219	CTF-1002-KO	–	CTF Washer
233	LH05-008NNW	–	Low Head Wrench Screw(M5X8L)
236	TR05-008NNB	–	Truss Screw(M5X8L)
237	SR03-006NSW	–	Round Head Screw W/FS(M3X6L)

15. ASSY CONTROLLER BASE (ABS-03-102M)
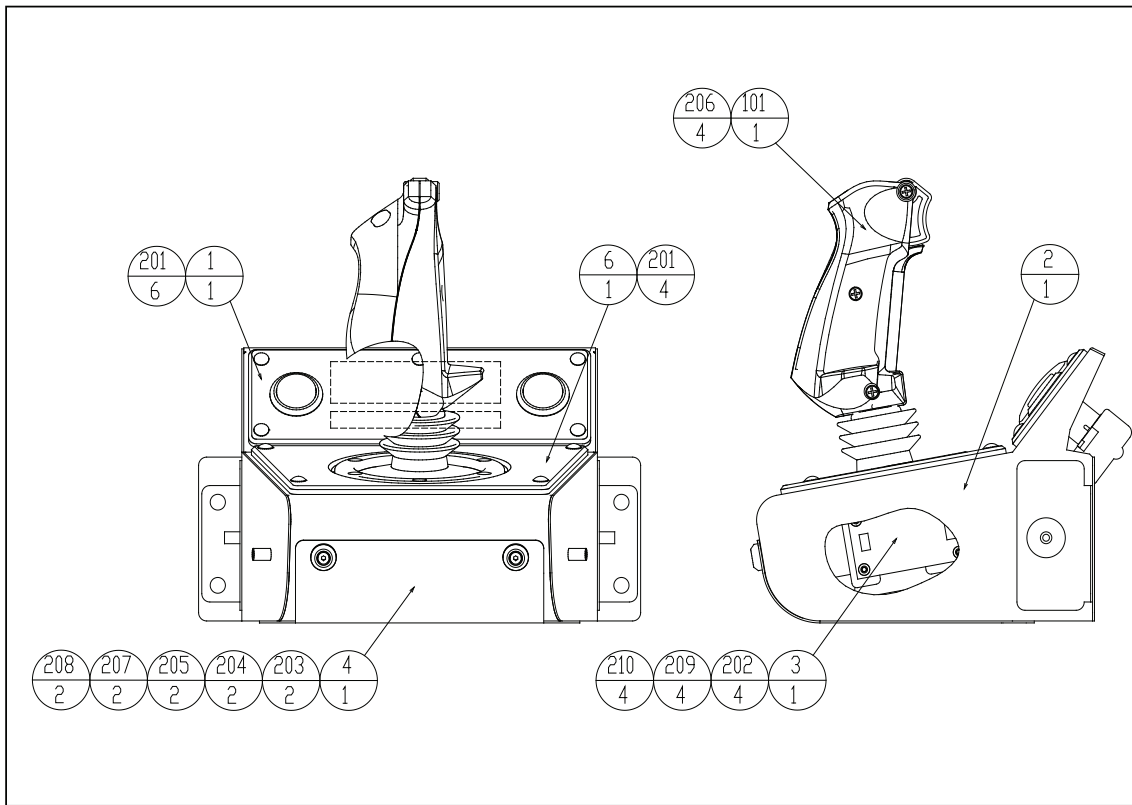
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-03-014M	–	SW PLATE
2	–	ABX-1401X	CONTROLLER BASE
3	–	839-1187R	AMP BD FOR ANALOG JOYSTICK
4	–	ABX-1402	CONTROLLER LID
6	ABS-03-013M	–	CONTROLLER PLATE
7	–	509-6084-RLN	SW PB OBSA-30UM-R-1F LN
8	–	509-6084-YY	SW PB OBSA-30UM-Y-1F LED-Y-12V
101	–	610-0756	ASSY ANALOG JOY ABX
102	EEX-10-R018P	–	Code Clamp:TL-18A
201	LH04-012NSW	–	Round Head Wrench Screw(M4X12L)
202	N-HN03NNB	–	Hex Nut(M3)
203	N-HN04NNB	–	Hex Nut(M4)
204	FL04-012NNB	–	Flush Screw(M4X12L)
205	W-LC04NNB	–	Rack Washer(M4)
206	N-FH05NNW	–	Flange Nut(M5)
207	W-SP04NNB	–	Spring Washer(M4)
208	W-FL04NNB	–	Flat Washer(M4)
209	W-SP03NNB	–	Spring Washer(M3)
210	W-FL03NNB	–	Flat Washer(M3)

16. ASSY ANALOG JOY ABX (610-0756)
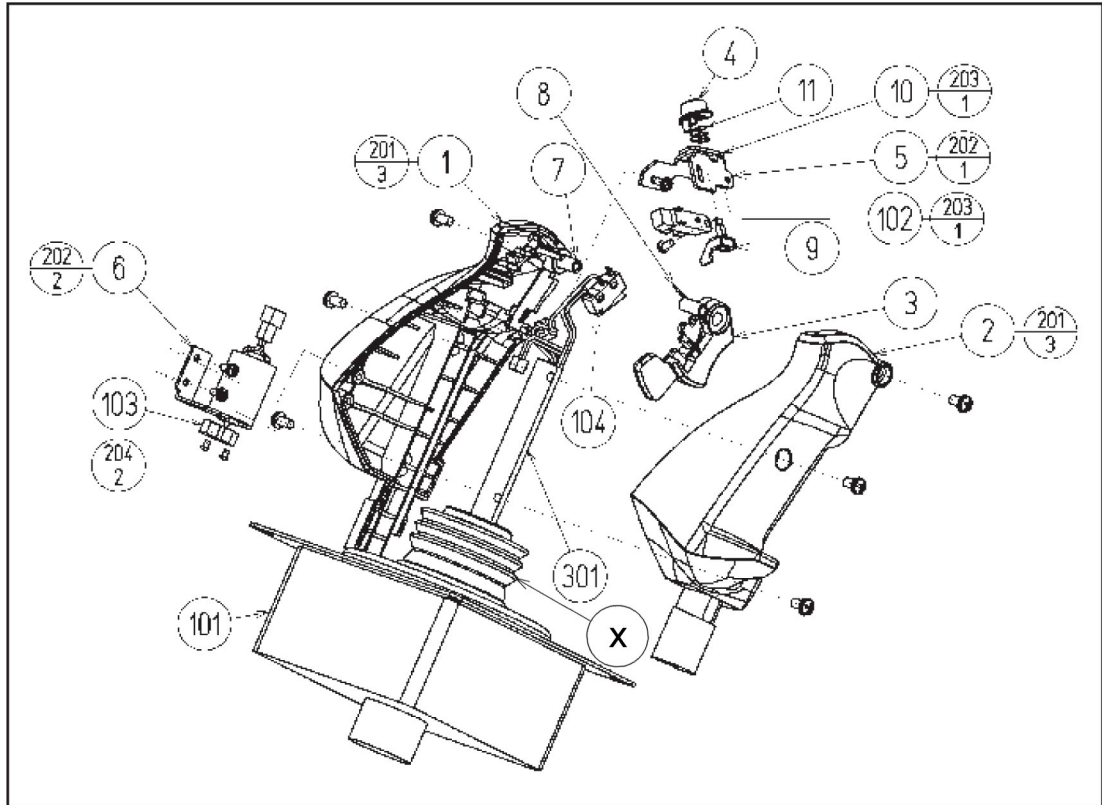
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	–	ABX-1404	CONTROLLER GRIP L
2	–	ABX-1405	CONTROLLER GRIP R
3	–	ABX-1406	TRIGGER
4	–	ABX-1407	THUMB BUTTON
5	–	ABX-1408	SWITCH BRKT
6	–	ABX-1409	MOTOR BRKT
7	–	ABX-1410	TRIGGER SHAFT
8	–	ABX-1411	TRIGGER SPRING
9	–	ABX-1412	SENSOR DOG
10	–	ABX-1413	BUTTON GUIDE
11	–	ABX-1414	BUTTON SPRING
101	–	610-0755	ASSY ANALOG JOY W/O GRIP
102	–	370-5297	PHOTO INTERRUPTER GP 1A75J000F
103	–	350-5801	MOTOR DC5V TG-01H
104	–	509-5975	SW MICRO TYPE SS-5GL
201	–	000-P00408-SB	M SCR PH W/S BLK M4 X 8
202	–	000-P00306-S	M SCR PH W/S M3 X 6
203	–	000-P00305	M SCR PH M3 X 5
204	–	FAS-000157	M SCR PH M2.3 X 3
301	–	ABX-60074	WH ANALOG JOYSTICK ABX
X	–	280-6624	RUBBER COVER MRF RUBBER BOOT

17. CABIN FRP COVER ASSY (ABS-04-000M)
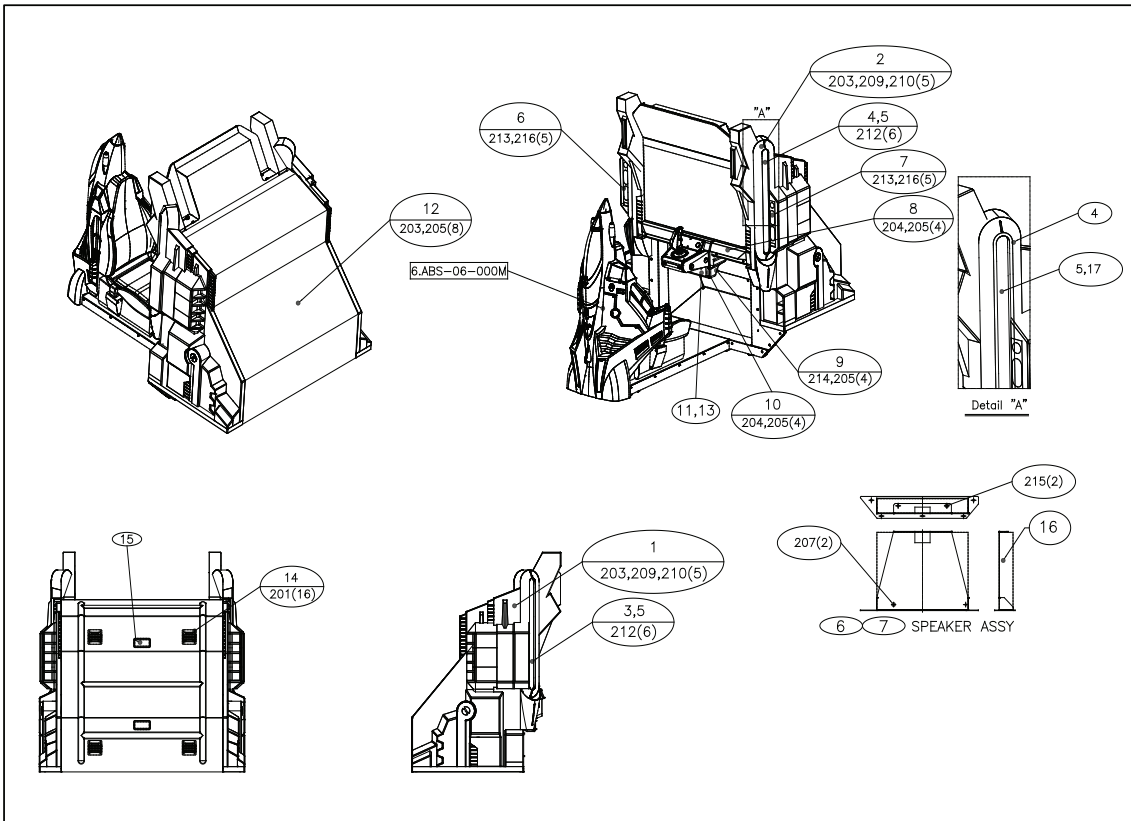
ITEM NO	PART NO SIMULINE	SEGA	DESCRIPTION
1	ABS-04-001M	–	Cabin Side FRP Assy-L
2	ABS-04-002M	–	Cabin Side FRP Assy-R
3	ABS-04-003M	–	LED Board Bracket-L
4	ABS-04-004M	–	LED Board Bracket-R
5	ABS-04-005M	–	Side LED Cover-L,R
6	ABS-04-006M	–	Side Speaker Bracket-L
7	ABS-04-007M	–	Side Speaker Bracket-R
8	ABS-04-008M	–	Monitor Mask
9	ABS-04-009M	–	Switch Unit Box Cover
10	ABS-04-010M	–	Switch Unit
11	ABS-04-011M	–	Switch Unit Key Lock Plate
12	ABS-04-012M	–	Front Cover
13	–	220-5793-1-A001	Cly Lock Master W/O Key A001
14	ABS-01-027M	–	Air Vent
15	ABS-04-015P	–	Door Handle
16	–	130-5156-02	Speaker Box 8Ω 20W VA1 YL
17	–	838-14552	LED BD RGB 12EA

| ITEM NO | PART NO | | DESCRIPTION |
	SIMULINE	SEGA	
201	TR04-012NNB	–	Truss Screw(M4X12L)
203	TR05-016NNB	–	Truss Screw(M5X16L)
204	RW05-012NSW	–	Round Head Wrench Screw(M5X12L)
205	W-PW05NNW	–	Plastic Washer(M5)
207	TP04-012NNB	–	Tapping Screw(M4X12L)
209	W-SP05NNB	–	Spring Washer(M5)
210	W-LF05NNB	–	Large Flat Washer(M5)
212	TR04-008NNB	–	Truss Screw(M4X8L)
213	RW04-012NNB	–	Round Head Wrench Screw(M4X12L)
214	TR05-020NNB	–	Truss Screw(M5X20L)
215	TR05-008NNB	–	Truss Screw(M5X8L)
216	W-PW04NNW	–	Plastic Washer(M4)

18. SW UNIT (EEX-02-R704M)
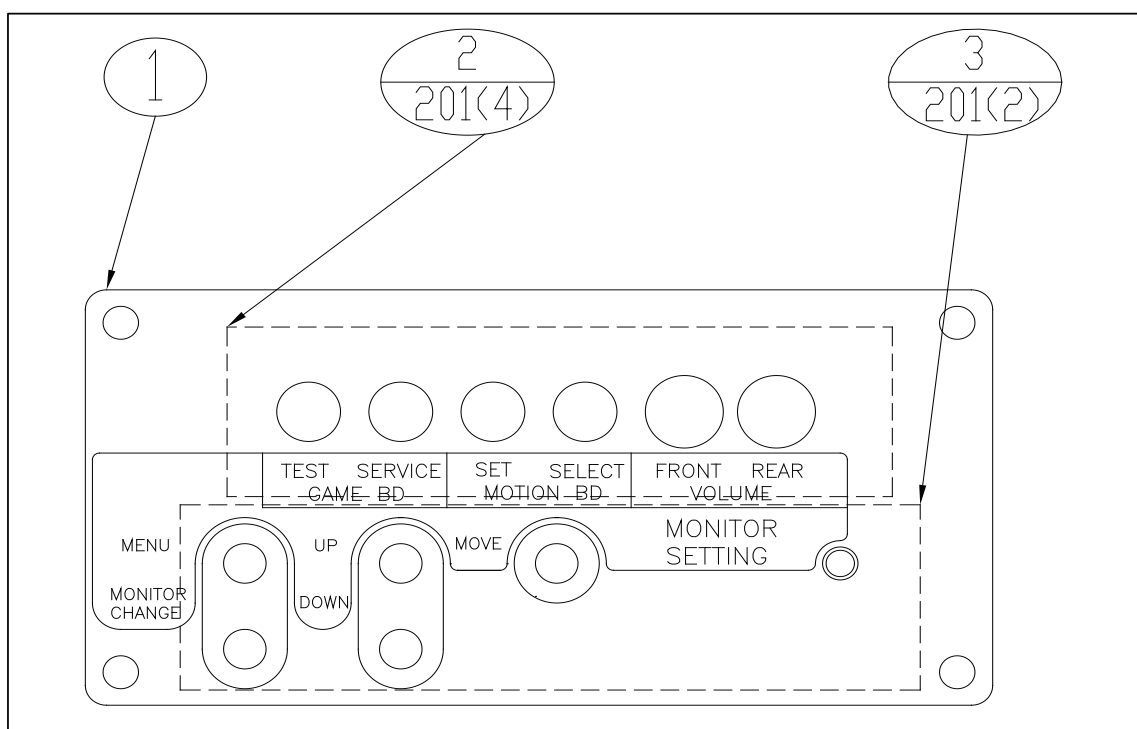
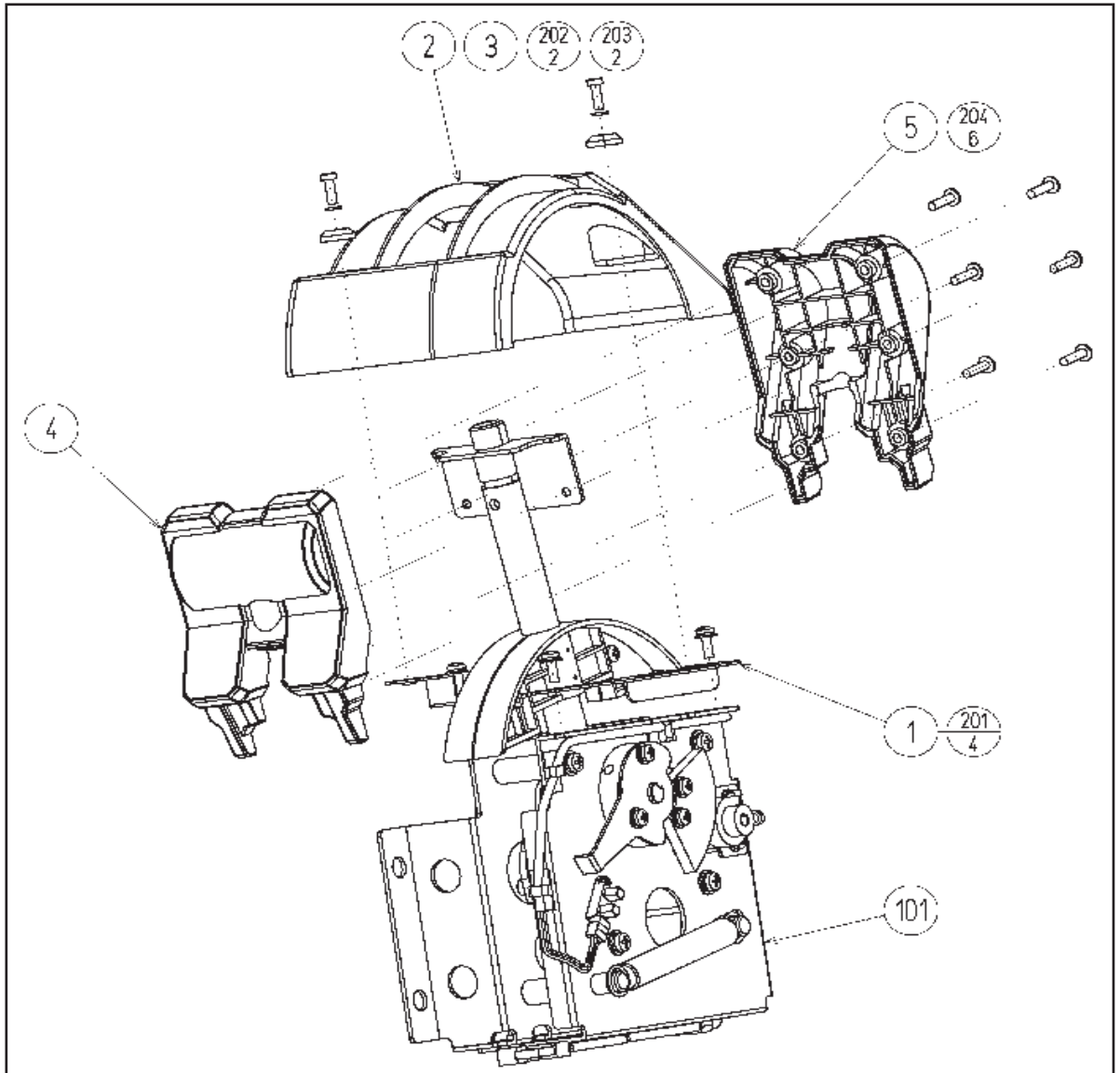| ITEM NO	PART NO SIMULINE	SEGA	DESCRIPTION
1	ESU-16-R806M	–	Switch Unit Plate
2	ESU-00-R802P	–	Switch BD
3	ESU-00-R807P	–	Monitor Switch BD(EFL-1501XV-CON REV. 00A)
201	SR03-006NSW	–	Round Head Wrench Screw(M3X6L)

19. CABIN SEAT BASE BOX ASSY (ABS-05-000M)
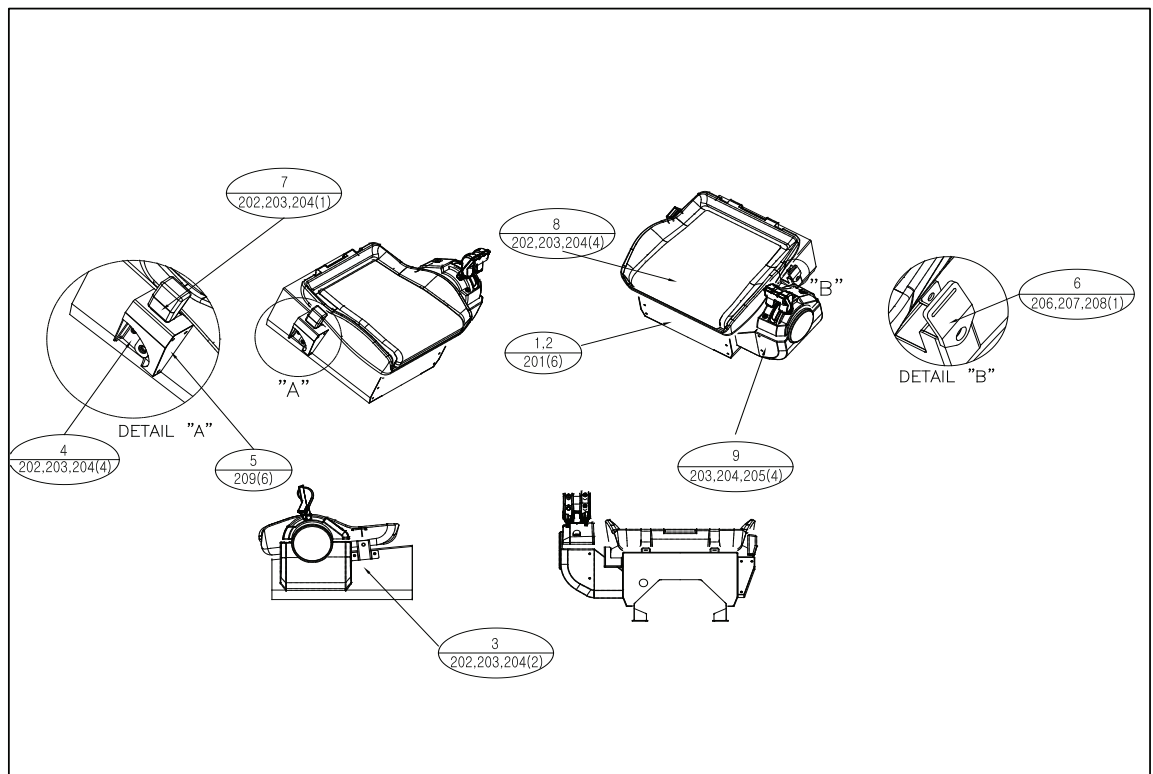
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-05-001M	–	Seat Base Assy
2	ABS-05-002M	–	Seat Base Front Cover
3	ABS-05-003M	–	Seat Belt Bracket
4	ABS-05-004M	–	Buckle Bracket
5	ABS-05-005M	–	Buckle Cover
6	ABS-06-006M	–	Seat Belt(A-RR 2PT ASSY)
7	ABS-06-007M	–	Buckle(96484955;N-O TYPE))
8	–	ABX-1602	Lower Seat
9	–	ABX-1650	Throttle Unit
201	TR04-008NNB	–	Truss Screw(M4X8L)
202	HB08-020HNB	–	Hex Bolt(M8X20L)
203	W-SP08HNB	–	Spring Washer(M8)
204	W-FL08HNB	–	Flat Washer(M8)
205	N-HN08HNB	–	Hex Nut(M8)
206	HB10-015HNB	–	Hex Bolt(M10X15L)
207	W-SP10HNB	–	Spring Washer(M10)
208	W-FL10HNB	–	Flat Washer(M10)
209	TR04-010NNB	–	Truss Screw(M4X10L)

20. THROTTLE UNIT (ABX-1650)
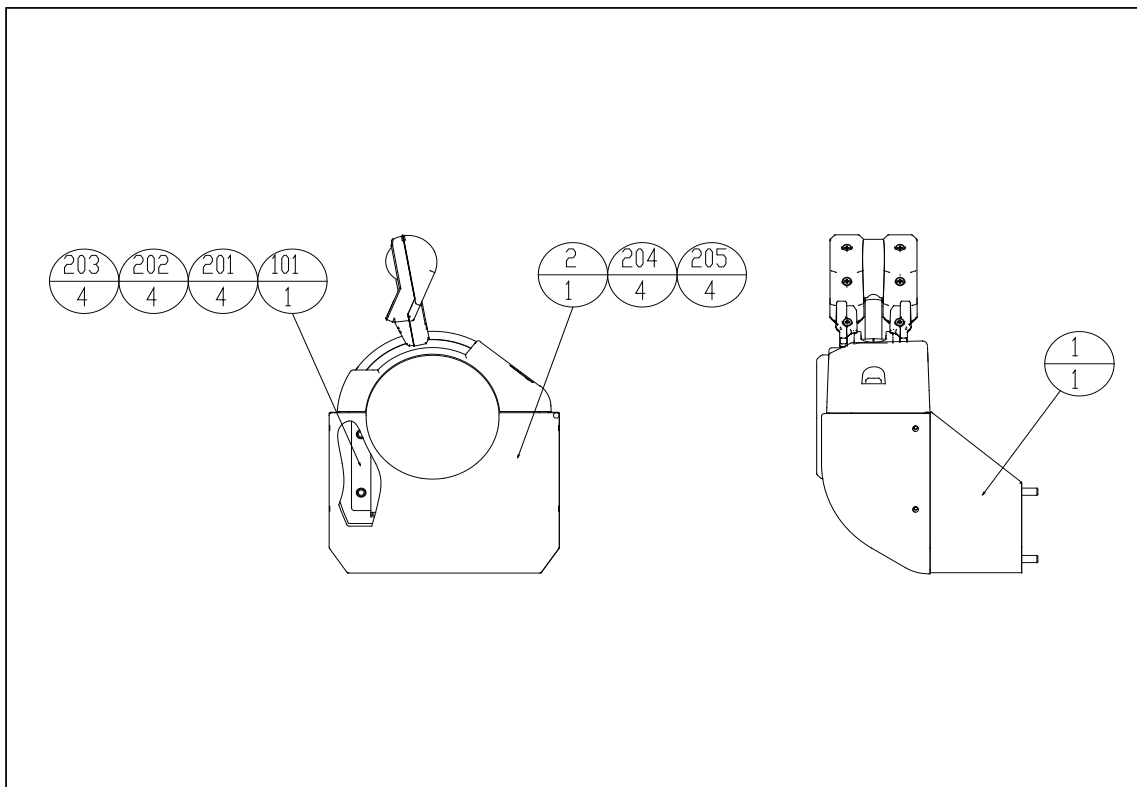
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	–	ABX-1651	THROTTLE BRKT
2	–	ABX-1654X	THROTTLE COVER LOWER
101	–	610-0754	THROTTLE UNIT ABX
102	–	310-5029-D20	SUMITUBE F D 20MM
103	–	610-0758	THROTTLE UNIT ABX W/O GRIP
201	–	050-H00800	HEX NUT M8
202	–	060-S00800-0C	SPR WSHR CRM M8
203	–	060-F00800-0B	FLT WSHR BLK M8
204	–	000-T00412-0B	M SCR TH BLK M4 X 12
205	–	068-441616-0B	FLT WSHR BLK 4.4-16 X 1.6

21. THROTTLE UNIT ABX (610-0754)

ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	–	ABX-1652X	THROTTLE COVER BRKT
2	–	ABX-1653X	THROTTLE COVER UPPER
3	–	280-6695	SPCL WSHR 4.5-16 × 5 AL BLK
4	–	ABX-1655	THROTTLE GRIP A
5	–	ABX-1656	THROTTLE GRIP B
101	–	610-0758	THROTTLE UNIT ABX W/O GRIP
201	–	000-P00412-W	M SCR PH W/FS M4 × 12
202	–	FAS-290042	HEX SKT LH CAP SCR STN M4 × 12
203	–	FAS-600023	SPR WSHR NI M4
204	–	FAS-120035	TAP SCR P-TITE BI H BLK 4 × 16

22. THROTTLE UNIT ABX W/O GRIP (610-0758)
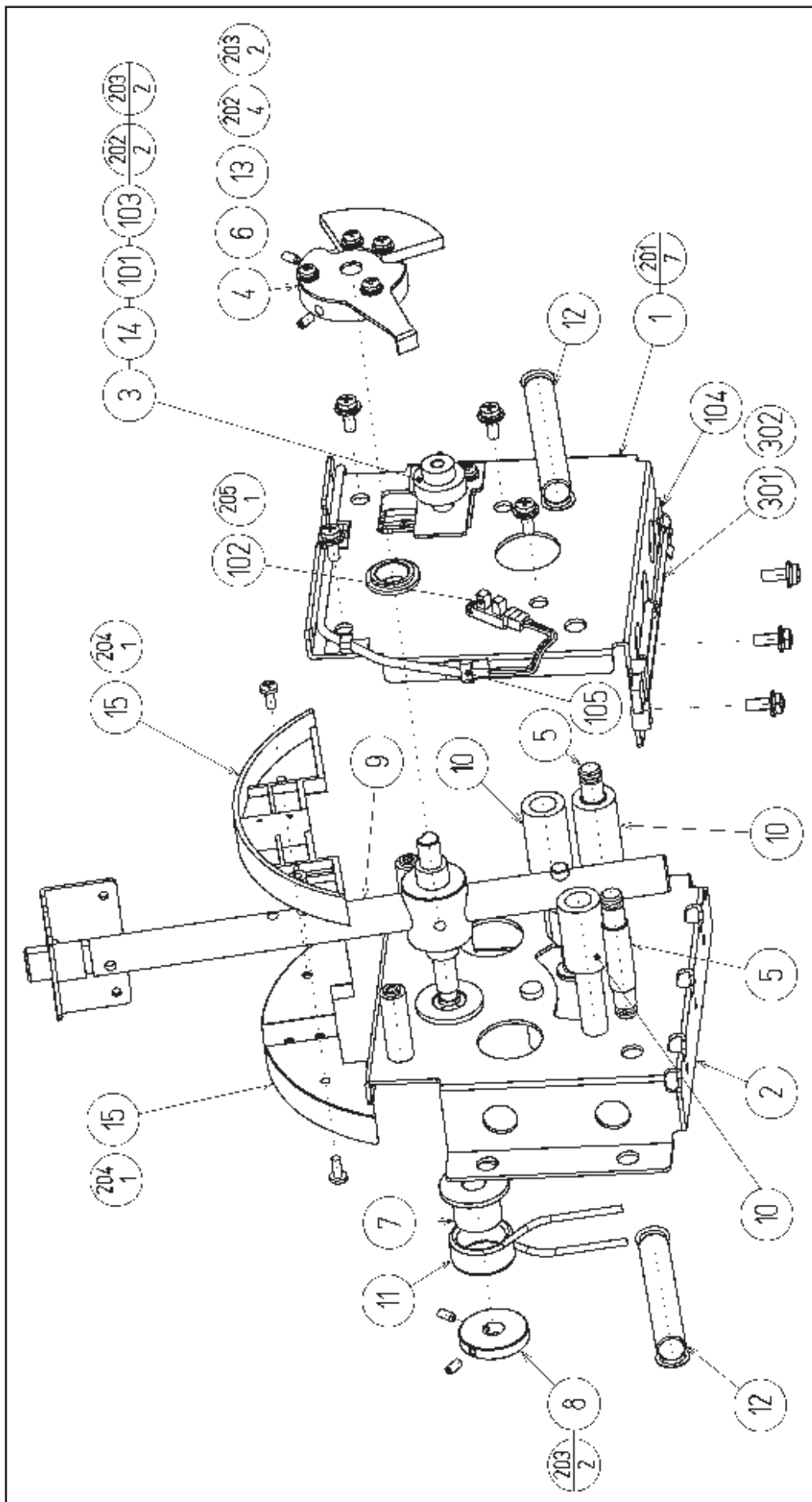
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	–	ABX-1658	FRAME L
2	–	ABX-1659	FRAME R
3	–	ABX-1660	VR BRKT
4	–	ABX-1661	SENSOR PLATE
5	–	ABX-1662	SPRING SHAFT
6	–	ABX-1663	GEAR BASE
7	–	ABX-1664	SPRING COLLAR
8	–	ABX-1665	SPRING STOPPER
9	–	ABX-1666	MAIN SHAFT
10	–	ABX-1667	STOP DAMPER
11	–	ABX-1668	LEVER SPRING
12	–	ABX-1669	TENSION SPRING
13	–	ABX-1670	LEVER GEAR
14	–	ABX-1671	VR GEAR
15	–	ABX-1657	SLIDE GUARD
101	–	220-5753	VOL CONT B-5K OHM (TOCOS)
102	–	370-5297	PHOTO INTERRUPTER GP1A75EJ000F
103	–	310-5029-D20	SUMITUBE F D 20MM
104	–	280-5008	CORD CLAMP 15
105	–	280-5275-SR10	CORD CLAMP SR10
201	–	000-P00514-W	M SCR PH W/FS M5 × 14
202	–	000-P00412-W	M SCR PH W/FS M4 × 12
203	–	028-A00408-P	SET SCR HEX SKT CUP P M4 × 8
204	–	012-P00410	TAP SCR #2 PH 4 × 10
205	–	000-P00308	M SCR PH M3 × 8
301	–	ABX-60056	WH THROTTLE VR
302	–	ABX-60057	WH CLIMAX SW

23. CABIN FRP SEAT ASSY (ABS-06-000M)
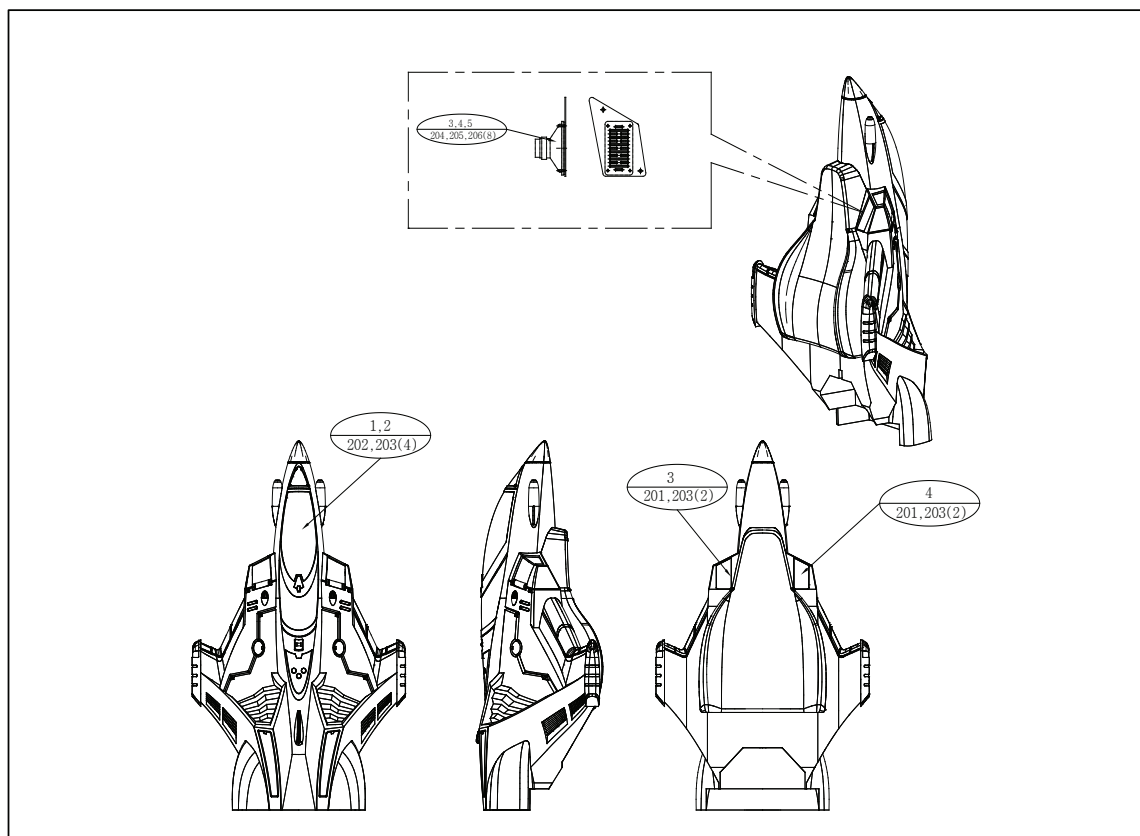
ITEM NO	PART NO		DESCRIPTION
	SIMULINE	SEGA	
1	ABS-06-001M	–	FRP Seat Assy
2	ABS-06-002M	–	Cover
3	ABS-06-003M	–	Seat Speaker Bracket-L
4	ABS-06-004M	–	Seat Speaker Bracket-R
5	–	130-5241	Speaker 8Ω 15W 50X90
6	ABS-06-006M	–	Square Washer
201	RW-04-012NSW	–	Round Head Wrench Screw(M4X12L)
202	RW-04-015NSW	–	Round Head Wrench Screw(M4X15L)
203	W-PW04NNW	–	Plastic Washer(M4)
204	N-HN03NNB	–	Hex Nut(M3)
205	W-SP03NNB	–	Spring Washer(M3)
206	W-FL03NNB	–	Flat Washer(M3)

24. WIRE HARNESS

ITEM NO	PART NO SIMULINE	SEGA	DESCRIPTION
1	EAB-14-001M	–	GAME BD 24P POWER CON
2	EAB-14-002M	–	GAME BD 18P POWER CON
3	EAB-14-003M	–	GAME BD 14P POWER CON
4	EAB-14-004M	–	100V PS INPUT CON
5	EAB-14-005M	–	+24V SMPS TO DC24 JC BD CON1
6	EAB-14-006M	–	FRONT AUDIO AMP +24V CON
7	EAB-14-007M	–	REAR AUDIO AMP +24V CON
8	EAB-14-008M	–	MAIN TRANS EARTH LINE
9	EAB-14-009M	–	CAN MPC TO CONTROLLER CON
10	EAB-14-010M	–	JVS DIO 26P 60P CON
11	EAB-14-011M	–	CABIN EARTH LINE
12	EAB-14-012M	–	SWITCH UNIT BD SW 8P CON TO SRIP
13	EAB-14-013M	–	SWITCH UNIT BD VOL 6P CON TO AUDIO AMP
14	EAB-14-014M	–	RIGHT FAN CON1
15	EAB-14-015M	–	JOYSTICK 6P CON TO AMP BD
16	EAB-14-016M	–	JVS DIO 6P CON TO THROTTLE
17	EAB-14-017M	–	JVS DIO 3P CON TO GUN BUTTON
18	EAB-14-018M	–	JVS DIO 2P CON TO VIBRATOR
19	EAB-14-019M	–	JVS DIO 4P CON TO START BUTTON
20	EAB-14-020M	–	JVS DIO TO COIN METER CON1
21	EAB-14-021M	–	JVS DIO 26P TO JOYSTICK AMP BD
22	EAB-14-022M	–	SRIP 4P CON TO MOTION STOP BUTTON
23	EAB-14-023M	–	SEAT BELT MOTION STOP 4P TO 2P CON
24	EAB-14-024M	–	SEAT BELT 2P CON
25	EAB-14-025M	–	NETWORK GAME LAN CABLE
26	EAB-14-026M	–	RD-65A AC INPUT 220V LINE
27	EAB-14-027M	–	SRIP 8P CON TO COIN SW 6P CON1
28	EAB-14-028M	–	LEFT FAN CON1
29	EAB-14-029M	–	COIN SW 6P CON2
30	EAB-14-030M	–	MOTION CONTROL BD TO SRIP FLAT CABLE
31	EAB-14-031M	–	MAIN TR 110V TO CASH BOX CON1
32	EAB-14-032M	–	MAIN TR 110V TO CASH BOX CON2
33	EAB-14-033M	–	AUDIO AMP OUTPUT FRONT CON1
34	EAB-14-034M	–	AUDIO AMP OUTPUT FRONT CON2
35	EAB-14-035M	–	AUDIO AMP OUTPUT REAR CON1
36	EAB-14-036M	–	AUDIO AMP OUTPUT REAR CON2
37	EAB-14-037M	–	AC UNIT GMC12(5) TO MAIN SWITCH(2)
38	EAB-14-038M	–	LCD MONITOR AC220V POWER LINE
39	EAB-14-039M	–	MOTION CONTROL BD SMPS AC220V INPUT CON
40	EAB-14-040M	–	SRIP 6P TO FLOOR SENSOR JC BD1 CON1
41	EAB-14-041M	–	SRIP 6P TO FLOOR SENSOR JC BD1 CON2
42	EAB-14-042M	–	SRIP 6P TO FLOOR SENSOR JC BD2 CON1
43	EAB-14-043M	–	RD-65A TO MPC+ SRIP POWER CON1
44	EAB-14-044M	–	FLOOR SENSOR1 CON
45	EAB-14-045M	–	FLOOR SENSOR2 CON
46	EAB-14-046M	–	FLOOR SENSOR3 CON
47	EAB-14-047M	–	FLOOR SENSOR4 CON

AFTER BURNER CLIMAX SDX CIRCUIT DRAWING 1

AFTER BURNER CLIMAX SDX CIRCUIT DRAWING 2
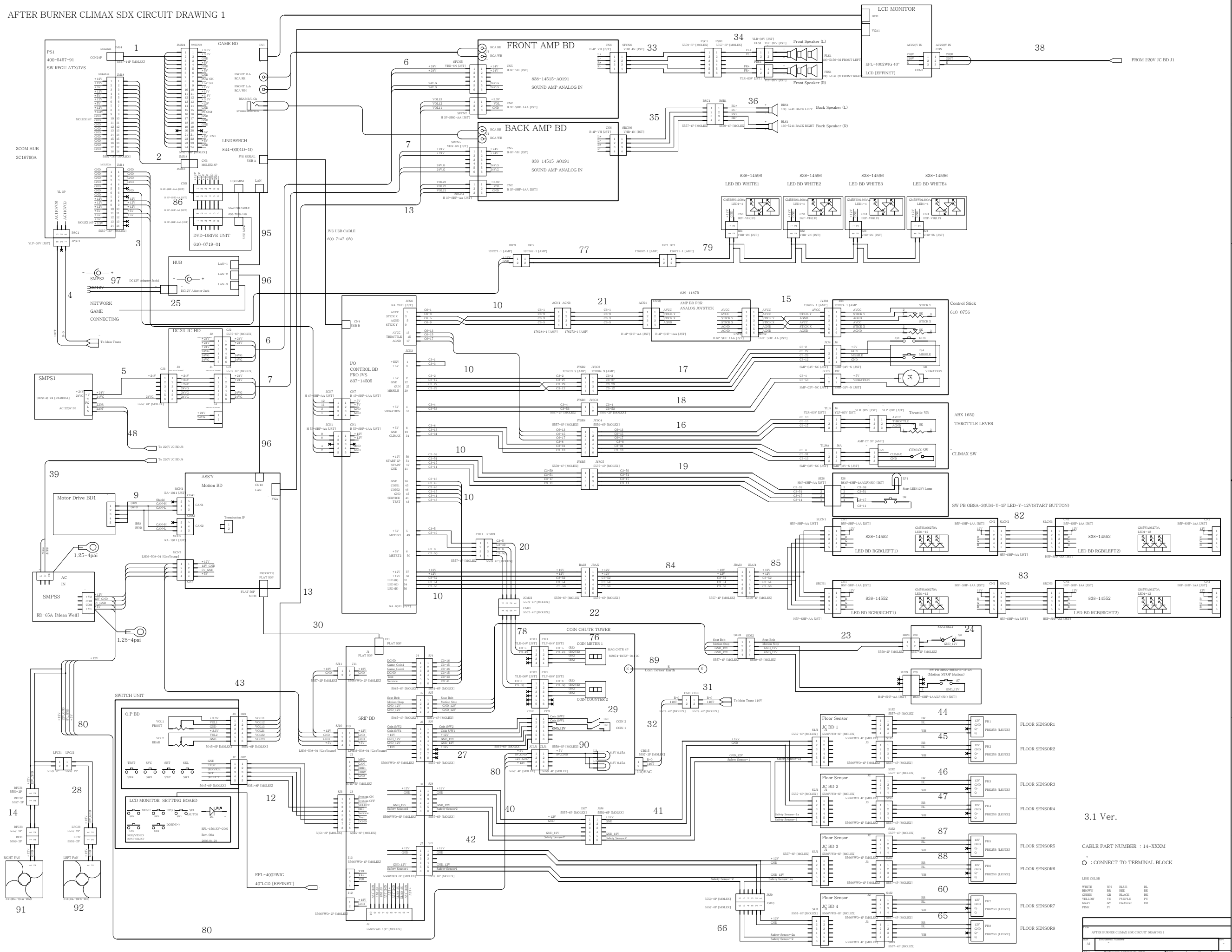
3.1 Ver.

CABLE PART NUMBER : 14-XXXM

○ : CONNECT TO TERMINAL BLOCK