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AFTER BURNER CLIMAX

OWNER'S MANUAL

420-6955-01



OWNER'S MANUAL

AFTER BURNER CLIMAX™



IMPORTANT

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

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

To maintain safety:

To ensure the safe operation of this product, be sure to read the following before usage. The following instructions are intended for the users, operators and the personnel in charge of the operation of the product. After carefully reading and sufficiently understanding the warning displays and cautions, handle the product appropriately. Be sure to keep this manual close to the product or in a convenient place for future reference.

Herein, explanations which require special attention are enclosed with dual lines. Depending on the potentially hazardous degrees, the terms of DANGER, WARNING, CAUTION, etc. are used. Be sure to understand the contents of the displays before reading the text.



Indicates that mishandling the product by disregarding this pictograph will cause severe injury or death.



Indicates that mishandling the product by disregarding this caution will cause a slight hazardous situation which can result in personal injury and/or material damage.



Indicates that mishandling the product by disregarding this warning will cause a potentially hazardous situation which can result in death or serious injury.

For the safe usage of the product, the following pictographs are used:



Indicates "HANDLE WITH CARE." In order to protect the human body and equipment, this display is attached to places where the Owner's Manual, Serviceman Manual and/or Service Manual should be referred to.



Indicates a "Protective Earth Terminal." Before operating the equipment, be sure to connect it to the Ground.
(The step may be omitted for products in which a power cord with earth is used.)

- **Perform work in accordance with the instructions herein stated.**
Instructions for work are explained by paying attention to the aspect of accident prevention. Failing to perform work as per the instructions can cause accidents. In the case where only those who have technical expertise should perform the work to avoid hazardous situation, the instructions herein state that the site maintenance personnel should perform such work.
- **Be sure to turn off the power before working on the machine.**
To prevent an electric shock, be sure to turn off the power before carrying out any work that requires direct contact with the interior of the product. If the work is to be performed in the power-on status, the Instruction Manual herein always states to that effect.
- **Be sure to ground the Earth Terminal.**
(This is not required in the case where a power cord with earth is used.)
This product is equipped with the Earth Terminal. When installing the product, connect the Earth Terminal to the "accurately grounded indoor earth terminal" by using an earth wire. Unless the product is grounded appropriately, the user can be subject to an electric shock. After performing repair, etc. for the control equipment, ensure that the Earth Wire is firmly connected to the control equipment.
- **Ensure that the Power Supply used is equipped with an Earth Leakage Breaker.**
This product does not incorporate the Earth Leakage Breaker. Using a power supply which is not equipped with the Earth Leakage Breaker can cause a fire when earth leakage occurs.
- **Be sure to use fuses which meet the specified rating.**
(Only for the machines which use fuses.)
Using fuses exceeding the specified rating can cause a fire and an electric shock.

- **Specification changes (removal of equipment, conversion and addition) not designated by SEGA are not allowed.**

The parts of the product include warning labels for safety, covers for personal protection, etc. It is very hazardous to operate the product by removing parts and/or modifying the circuits. Should doors, lids and protective parts be damaged or lost, refrain from operating the product, and contact where the product was purchased from or the office herein stated.

SEGA shall not be held responsible for any accidents, compensation for damage to a third party, resulting from the specifications not designated by SEGA.

- **Ensure that the product meets the requirements of appropriate Electrical Specifications.**

Before installing the product, check for Electrical Specifications. SEGA products have a nameplate on which Electrical Specifications are described. Ensure that the product is compatible with the power supply voltage and frequency requirements of the location. Using any Electrical Specifications different from the designated Specifications can cause a fire and an electric shock.

- **Install and operate the product in places where appropriate lighting is available, allowing warning labels to be clearly read.**

To ensure safety for the customers, labels and printed instructions describing potentially hazardous situations are applied to places where accidents can be caused. Ensure that where the product is operated has sufficient lighting allowing the warnings to be read. If any label is peeled off, apply it again immediately. Please place an order with where the product was purchased from or the office herein stated.

- **When handling the monitor, be very careful. (Applies only to the product with a monitor.)**

Some of the monitor (TV) parts are subject to high tension voltage. Even after turning off the power, some portions are still subject to high tension voltage sometimes. Monitor repair and replacement should be performed only by those technical personnel who have knowledge of electricity and technical expertise.

- **Be sure to adjust the monitor/projector properly. (Applies only to the product with a monitor/projector.)**

Do not operate the product leaving on-screen flickering or blurring as it is. Using the product with the monitor/projector not properly adjusted may cause dizziness or a headache to an operator, a player, or the customers.

- **When transporting or reselling this product, be sure to attach this manual to the product.**

In the case where commercially available monitors and printers are used in this product, only the contents relating to this product are explained herein. Some commercially available equipment has functions and reactions not stated in this manual. Read this manual together with the specific Instruction Manual of such equipment.

**Descriptions herein contained may be subject to improvement changes without notice.*

**The contents described herein are fully prepared with due care. However, should any question arise or errors be found, please contact SEGA.*

INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION

Normally, at the time of shipment, SEGA products are in a status allowing for usage immediately after transporting to the location. Nevertheless, an irregular situation may occur during transportation. Before turning on the power, check the following points to ensure that the product has been transported in a satisfactory status.

- Are there any dented portions or defects (cuts, etc.) on the external surfaces of the cabinet?
- Are Casters and Adjusters damaged?
- Do the power supply voltage and frequency requirements meet with those of the location?
- Are all wiring connectors correctly and securely connected? Unless connected in the correct way, connector connections can not be made accurately. Do not insert connectors forcibly.
- Do power cords have cuts and dents?
- Do the fuses used meet specified ratings? Is the Circuit Protector in an energized status?
- Are all accessories available?
- Can all Doors and Lids be opened with the Accessory Keys? Can Doors and Lids be firmly closed?

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

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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."

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.



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:	1,225 mm (48.2 in.) [Width] x 1,810 mm (71.3 in.) [Depth]	
Height:	1,980 mm (78.0 in.)	
Weight:	440 kg (970.0 lbs.)	
Power, maximum current:	586 W, 6.30 A	(AC 120 V, 60 Hz Area)
	564 W, 3.30 A	(AC 220 V, 50 Hz Area)
	574 W, 3.35 A	(AC 220 V, 60 Hz Area)
	592 W, 3.21 A	(AC 240 V, 50 Hz Area)
Power, current:	590 W, 6.8 A, (Max.)	(AC 110 V, 60 Hz; Taiwan)
	300 W, 3.5 A, (Min.)	(AC 110 V, 60 Hz; Taiwan)
Monitor:	29 Type Color Monitor	

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

Use of GPL/LGPL software

This product can use GPL/LGPL software, which is open source software. This means that customers who purchase this product can freely obtain, alter and pass-on the source code for this software (hereafter referred to as “the source code”).

Downloaded this software is an indication of the customer’s agreement to the GPL/LGPL contract of use and thus the download and all subsequent use of the source code is the full responsibility of the customer.

Furthermore this source code and the download service are provided totally as-is, with no guarantees of effectiveness, completeness, usefulness or reliability, and our company offers no support concerning this source code.

Customers using this product who wish to obtain this source code should enter the following password on the website below to download it.

URL: <http://amproduct-softlicense.sega.jp/>

ID: amsoftwebdl

Password: segaamhd1

GPL/LGPL Contract Site

URL: <http://www.fsf.org/licenses/gpl.html>

URL: <http://www.fsf.org/licenses/lgpl.html>

Definition of 'Site Maintenance Personnel or Other Qualified Individuals'

WARNING

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

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

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

Site maintenance personnel:

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

Activities to be carried out by site maintenance personnel:

Amusement equipment/vending machine assembly, maintenance inspection and replacement of units/expendable parts.

Other qualified professionals:

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

Activities to be carried out by other qualified professionals:

Amusement equipment/vending machine assembly, repair/adjustment of electrical/electronic/mechanical parts.

1 HANDLING PRECAUTIONS

When installing or inspecting the machine, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.

Non-compliance with the following points or inappropriate handling running counter to the cautionary matters herein stated can cause personal injury or damage to the machine.

WARNING

- Before performing work, be sure to turn the power off. Performing the work without turning the power off can cause an electric shock or short circuit. In the case work should be performed in the status of power on, this manual always states to that effect.
- To avoid an electric shock or short circuit, do not plug in or unplug quickly.
- To avoid an electric shock, do not plug in or unplug with a wet hand.
- Do not expose power cords or 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.

STOP IMPORTANT

- For the IC board circuit inspections, only the logic tester is allowed. The use of a multiple-purpose tester is not permitted, so be careful in this regard.
- When cleaning the CRT surfaces, use a soft and dry cloth. Do not apply chemicals such as thinner, benzine, etc.
- Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.
- Some parts are not designed and manufactured specifically for this game machine. **The manufacturers may discontinue, or change the specifications of such general-purpose parts.** If this is the case, SEGA cannot repair or replace a failed game machine whether or not a warranty period has expired.

CONCERNING THE STICKER DISPLAY

This SEGA product has stickers attached describing the product manufacture No. (Serial No.) and Electrical Specifications. It also has a Sticker describing where to contact for repair and for purchasing parts.

When inquiring about or asking for repairs, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial Number indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this manual. In order to ensure you order the correct parts, mention the Serial No. when contacting the applicable places.

CONCERNING WARNING DISPLAYS

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

In order to prevent accidents, caution any customer ignoring the warnings to cease and desist immediately.

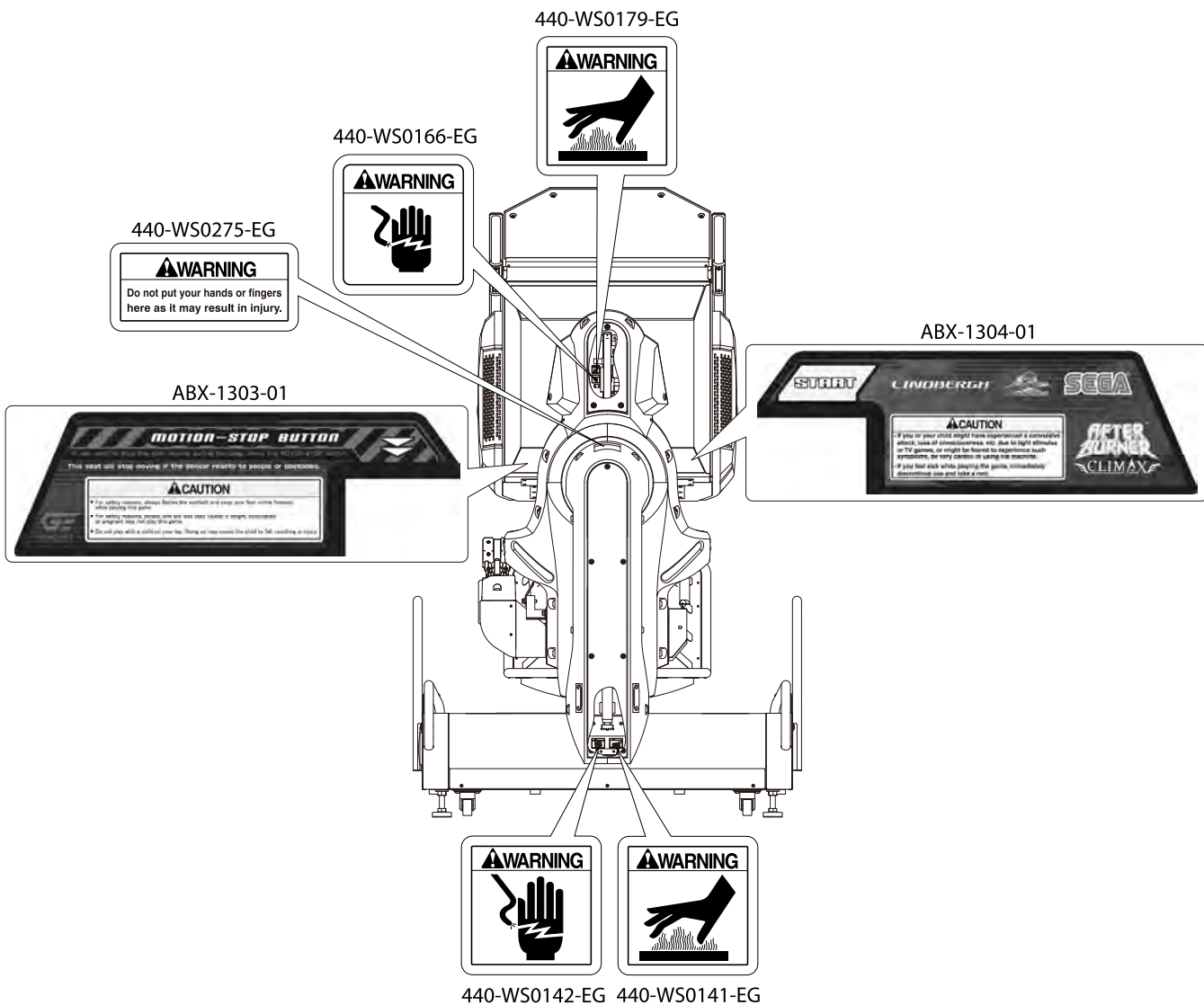


FIG. 1a

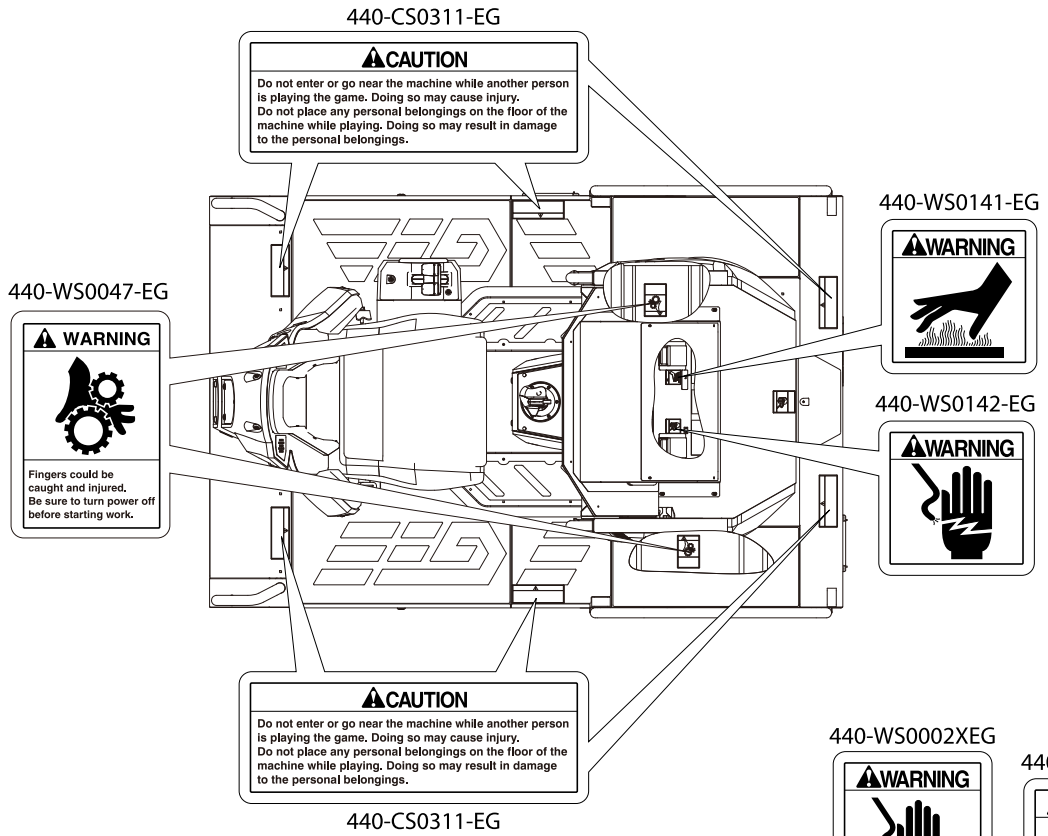
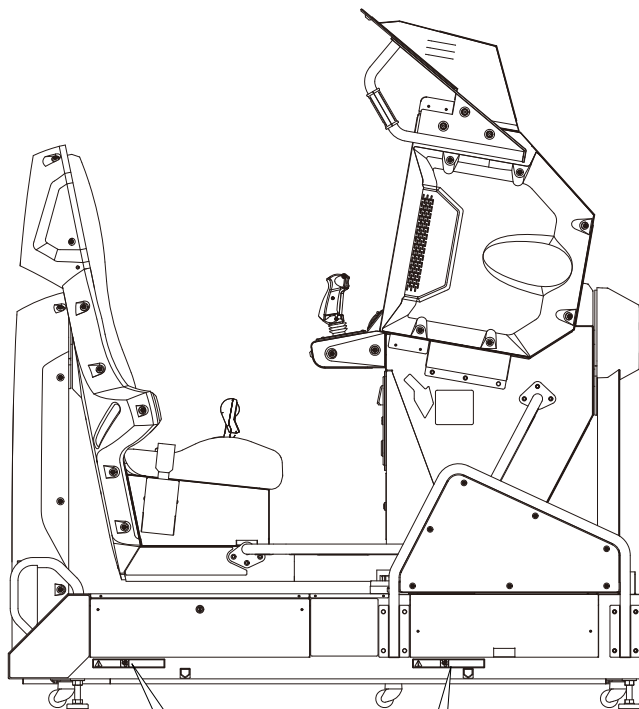


FIG. 1b



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

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(Similarly, two locations on opposite side.)

FIG. 1c

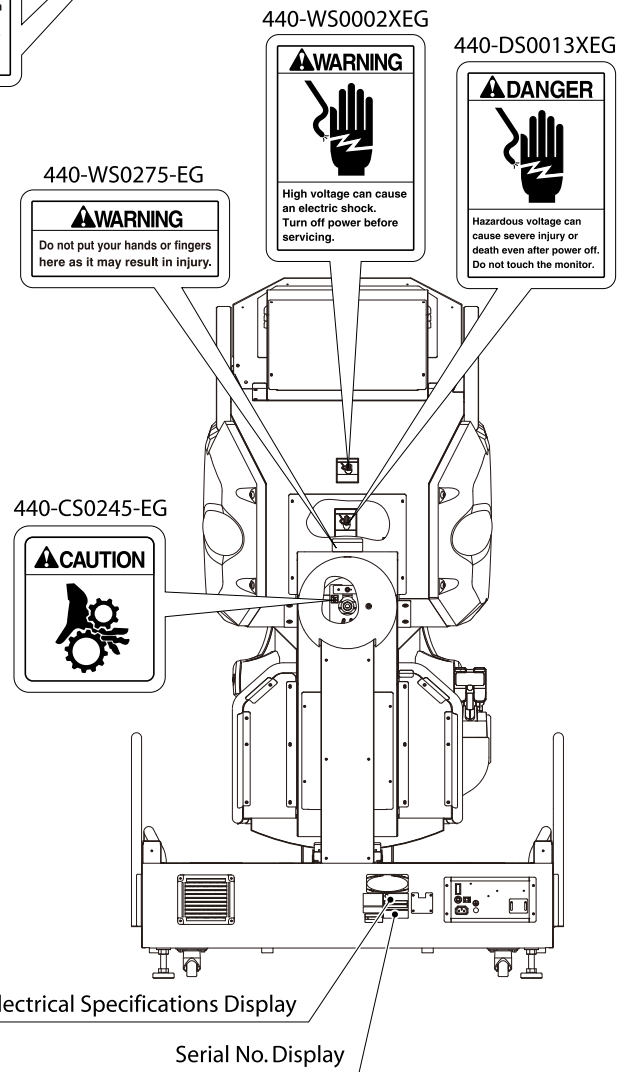


FIG. 1d

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 15A or higher (AC single phase 100V ~ 120V area), and 7A or higher (AC 220V ~ 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 15A or higher (AC 100V ~ 120V area) and 7A or higher (AC 220V ~ 240V area). **Using a cord rated lower than the specified rating can cause a fire and electric shock.**

Electricity Consumption:

MAX. 3.30 A (AC 220 V, 50 Hz)

MAX. 3.35 A (AC 220 V, 60 Hz)

MAX. 3.21 A (AC 240 V, 50 Hz)

MAX. 6.8 A (AC 110 V, 60 Hz) <TAIWAN>

2-2 OPERATION AREA** WARNING**

- For the operation of this machine, secure a minimum area of 2.1 m (W) x 2.18 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 still does not fit through the entryway after following the procedures in this manual, contact your retailer or the office listed in this manual.**
- 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 1.3 m in width and 1.95 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.

STOP IMPORTANT

Under normal operation, the space on the left side as you face the monitor can be 0.25 m in width. However, when performing routine maintenance once every 6 months or year after installation, secure at least 0.7 m of space. Without adequate space, work cannot be performed properly.

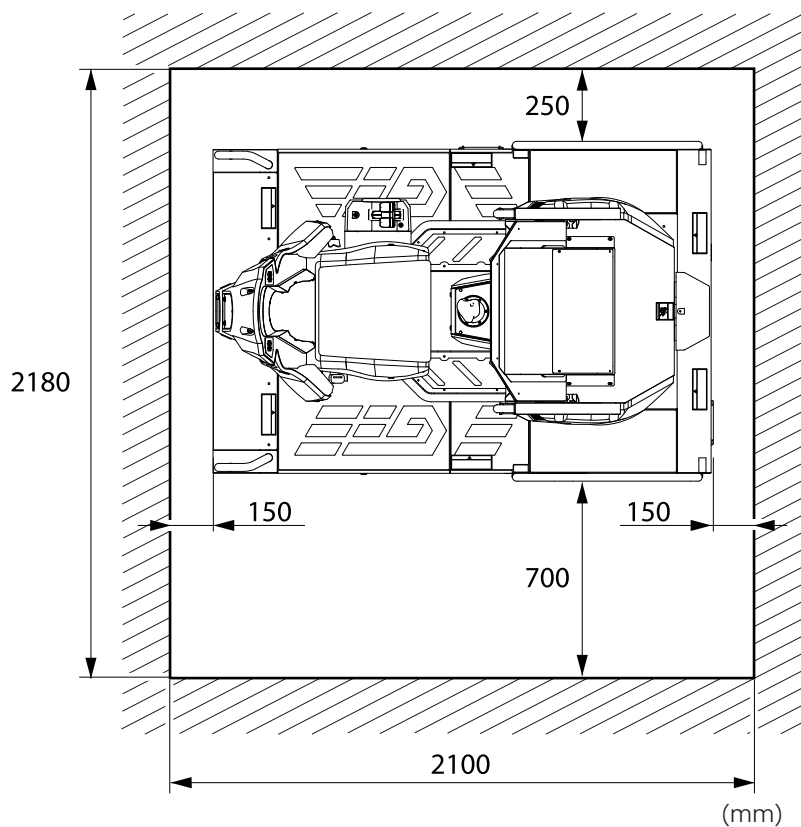


FIG. 2 Installation and operation area

3 PRECAUTIONS REGARDING PRODUCT OPERATION

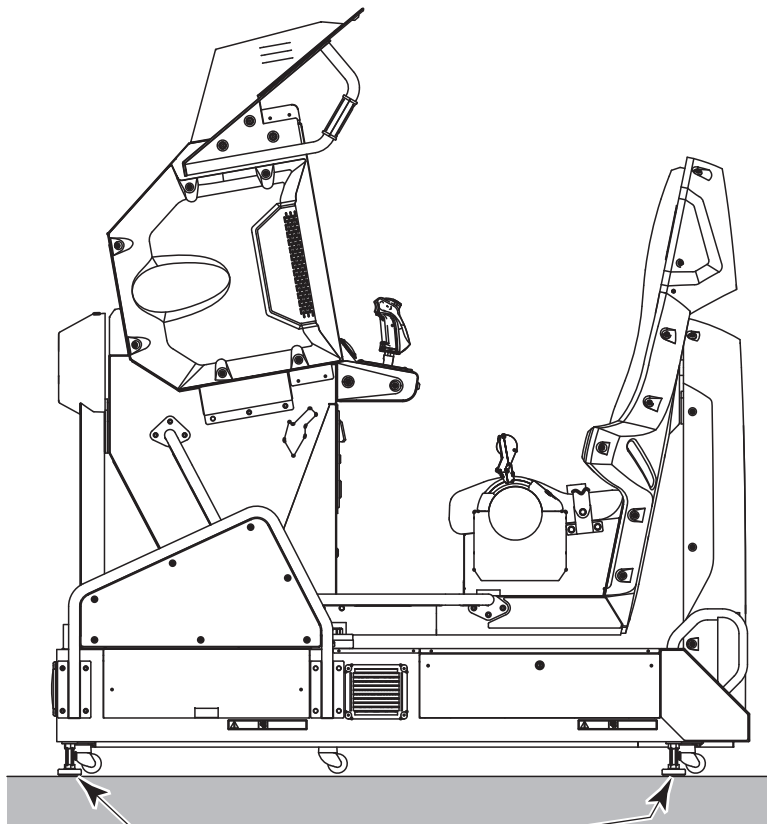
To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

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.

WARNING

- Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step ladder.
- To avoid electric shock, check to see if door & cover parts are damaged or omitted.
- **To avoid electric shock, short circuit and/or parts damage, do not put the following items on or in the periphery of the product. Flower vases, flowerpots, cups, water tanks, cosmetics, and receptacles/containers/vessels containing chemicals and water.**
- 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)

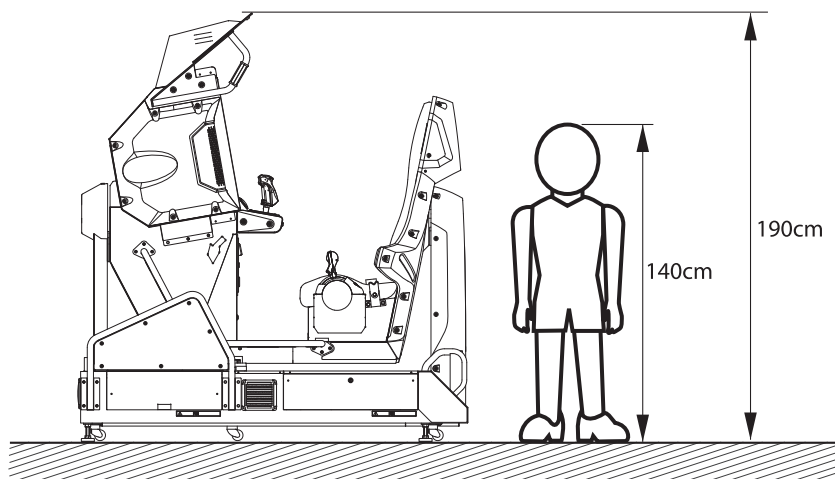
To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

⚠ 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.

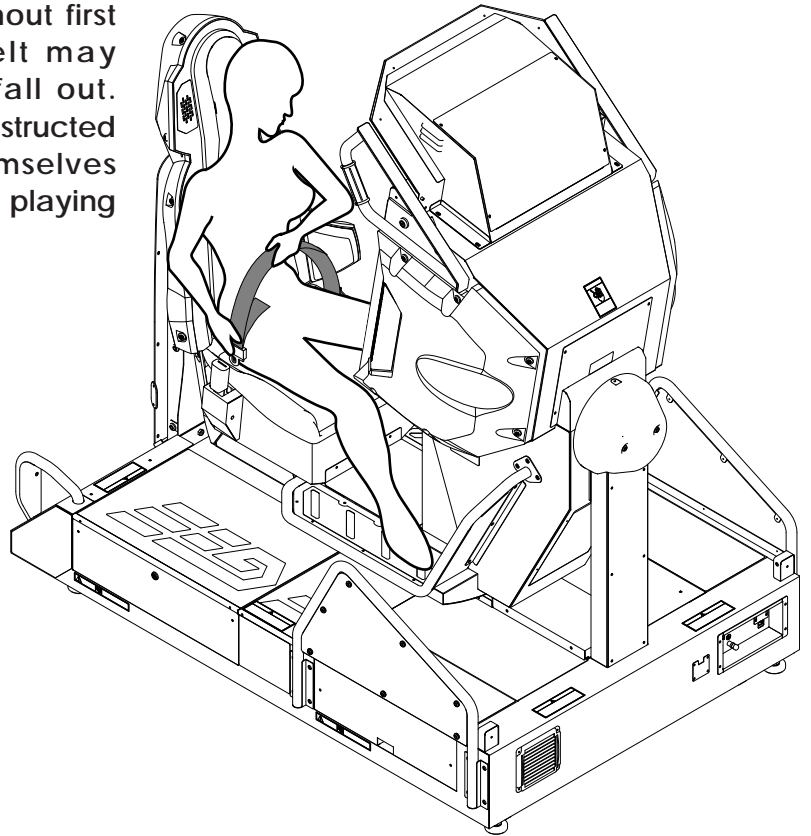
The game cannot be played while sitting in a wheelchair.

- 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.

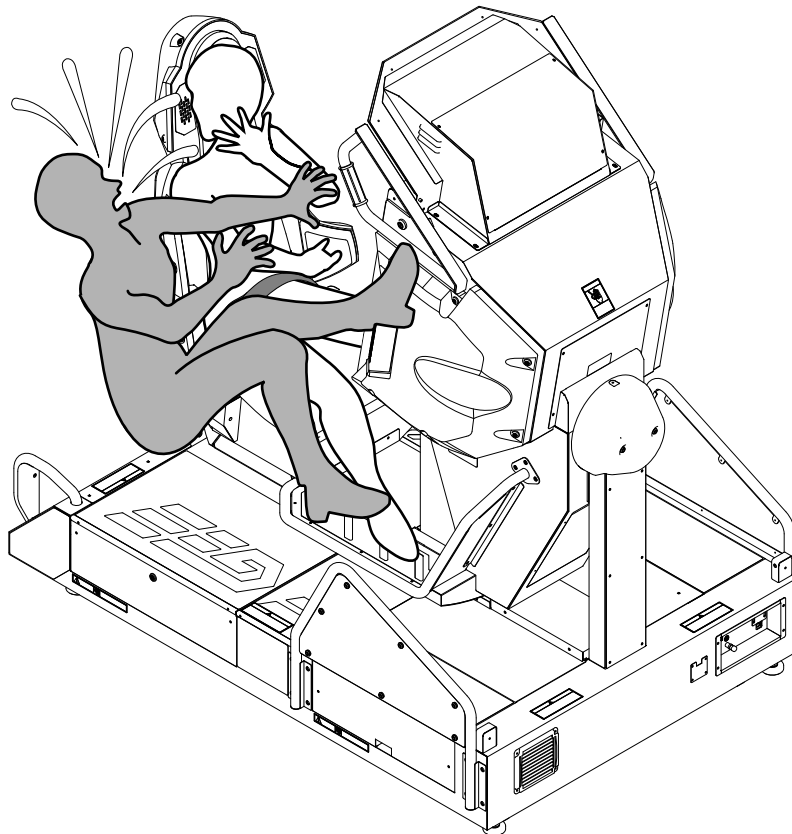


⚠ WARNING

- 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.

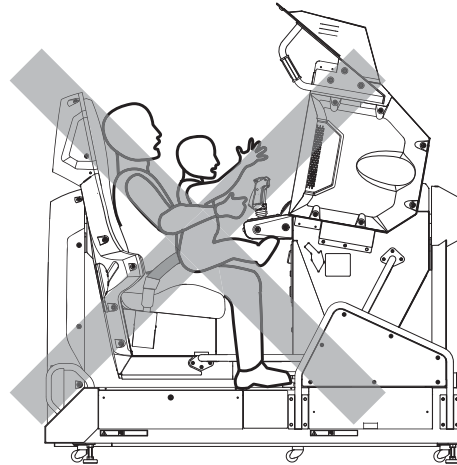


- Prevent customers from sitting two at a time in the seat. This game is for one player only. If two or more customers attempt to sit in the seat and play at the same time, they may hit their heads, hands, or elbows, possibly resulting in serious injury.

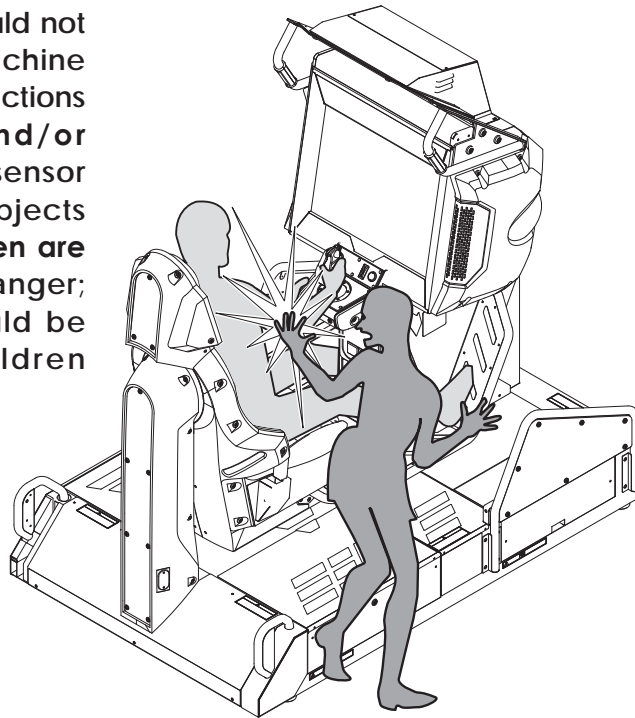


⚠️ WARNING

- 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.



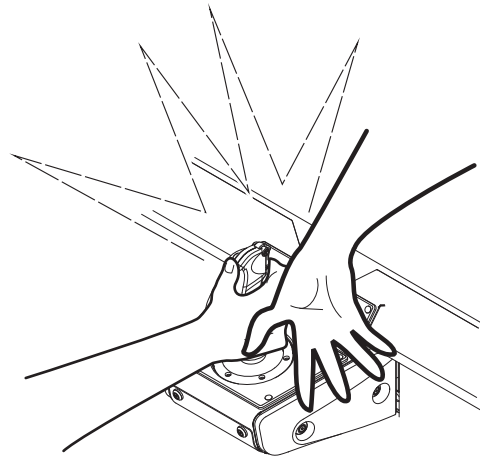
- Persons other than the player should not be allowed to approach the machine while the seat is in motion. Such actions may result in sideswiping and/or collision accidents. The safety sensor is only able to detect foreign objects on top of the base. Young children are especially susceptible to this 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

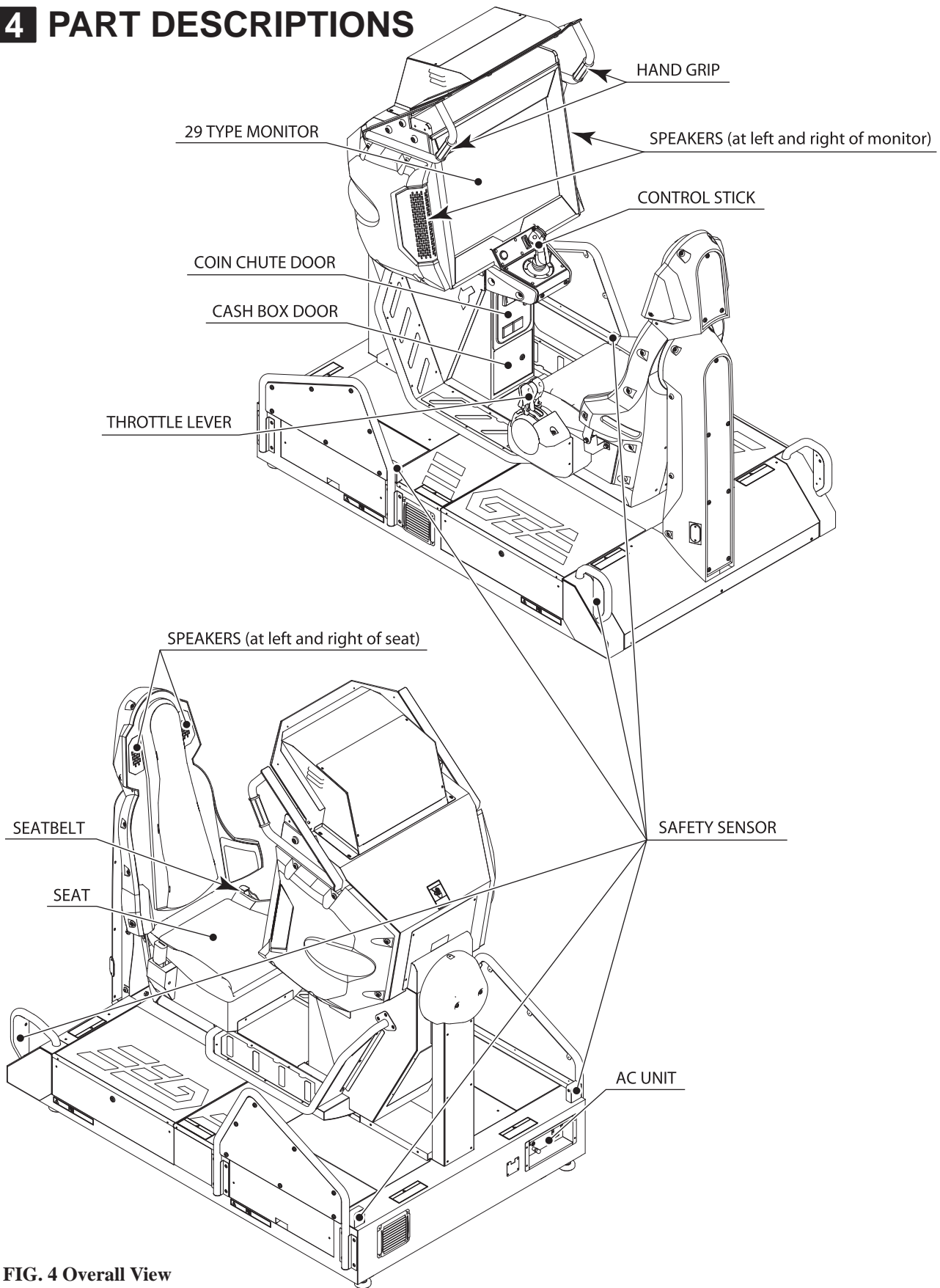


FIG. 4 Overall View

Dimensions Required for Installing Each Unit

	(Width x Length x Height)	(Weight)
Cabinet	1,225 mm x 1,810 mm x 1,900 mm	429 kg
Billboard	660 mm x 510 mm x 270 mm	11 kg
Finished cabinet	1,225 mm x 1,810 mm x 1,980 mm	440 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

<p>OWNER'S MANUAL 420-6955-01 (1) This manual</p>	<p>LINDBERGH SERVICE MANUAL 420-6921-01 (1) Description of mounted game board</p>	<p>MASTER KEY 220-5793-2-A001 (2) For operating/closing the doors</p>
	<p>FUSE 6.3A 514-5138-6300 (1) Spare, see 17-3.</p>	<p>KEY (2) For the cashbox door Located inside the coin chute door of the control tower at time of shipment</p>
<p>VOLUME 220-5737 (1) Spare, see chapter 11.</p>	<p>MICROSWITCH 509-5975 (1) Spare, see chapter 11.</p>	<p>VOLUME 220-5753 (1) Spare, see chapters 12, 13.</p>
<p>NETWORK (LAN) CABLE 600-7269-0300 (1) For network play, see chapter 20.</p>	<p>ALLEN WRENCH 540-0068 (1) Tool, see chapter 11.</p>	

The parts listed in Table 5b are packaged separately, but they must always be attached when using the product. They are attached while assembling and installing the product.

TABLE 5b

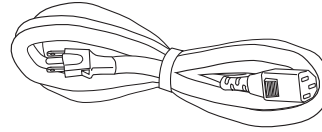
POWER CABLE

600-6729-01 (1) <Taiwan>

600-6619-02 (1) <Singapore, Malaysia>

600-6618-01 (1) <Others>

For installation, see 6-4.



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 5c

XKT-1553-D-EX2: DVD-ROM KIT ABX USA

DVD KIT (1)

Software media, see 6-5.

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: 610-0726-0009: DVD SOFT ABX.

844-0007D-02

443-40007D-02 (1)

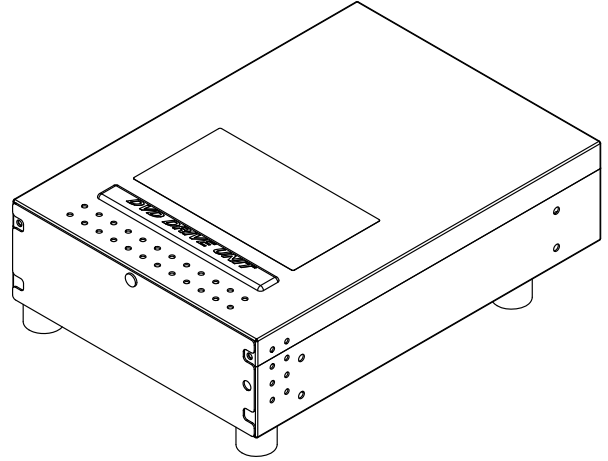
844-0007D-02

Board number stickers, see 6-3.

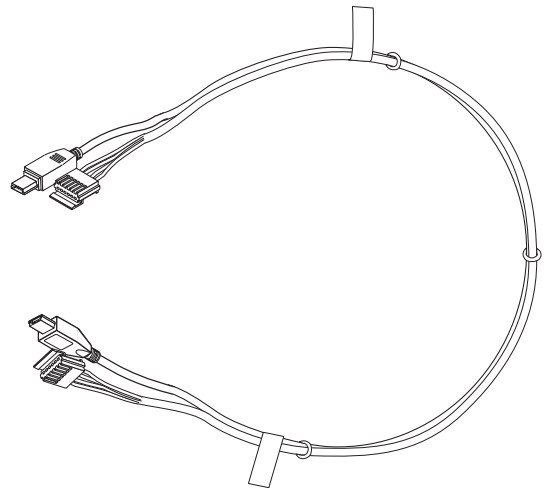
TABLE 5d XKT-1515-01: DVD DRIVE KIT FOR LBG ENG

SERVICE MANUAL
420-6923-01 (1)

DVD DRIVE
610-0719-01-91 (1)
For software installation, see chapter 6 [3].



DVD WIRE
605-0094 (1)
For software installation, see chapter 6 [3].



6 ASSEMBLY AND INSTALLATION

WARNING

- Perform assembly work by following the procedure herein stated. Failure to comply with the instructions can cause electric shock.
- Perform assembling as per this manual. Since this is a complex machine, **incorrect assembling can cause an electric shock, machine damage and/or improper functioning as per specified performance.**
- When assembling, more than one person is required. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.
- Ensure that connectors are properly connected. Improper connections can cause electric shock.
- 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 8; network cable - approx. Ø 5)
- **Have a flashlight or another supplementary lighting unit available while working.** With indoor lighting alone, the cabinet interior may be too dark. Working without proper lighting can lead to accidents. It also hinders proper work performance.

⚠ WARNING

- 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.
- Secure ample ventilation space around the cabinet. If heat builds up, there could be accidents associated with heat or smoke generation.
- If two cabinets are installed in alignment, make sure that there is ample distance between them so that players or other customers will not come in contact or collide with each other. If the distance is too narrow, there could be contacts or collisions. If someone should fall down, head injury or other serious accident could occur. Trouble between customers could also arise.

⚠ 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

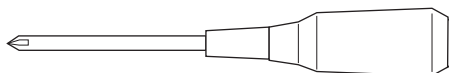
Be careful not to damage parts surfaces. In some cases, if such surfaces are damaged, the part must be replaced; it cannot be reinforced or repaired.

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

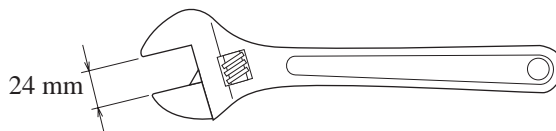
- 1** FIXATION TO INSTALLATION SITE
- 2** ATTACHMENT OF BILLBOARD
- 3** PREPARATION FOR INSTALLATION
- 4** CONNECTION OF POWER AND GROUND
- 5** ENGAGEMENT OF POWER SUPPLY AND SOFTWARE INSTALLATION
- 6** ENGAGEMENT OF POWER SUPPLY AFTER INSTALLING SOFTWARE
- 7** CONFIRMATION OF ASSEMBLY

Essential tools

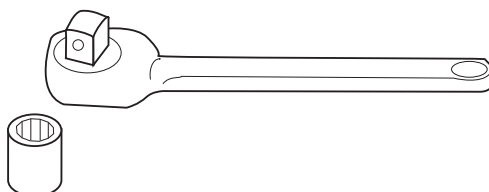
- Philips screwdriver (for M4 screws)



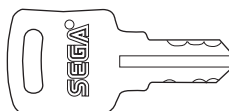
- 24 mm spanner



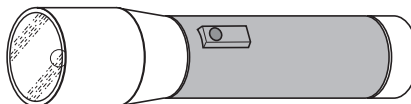
- 7 & 10 mm socket wrenches
(for M4, M6 hexagonal bolts, nuts)



- Master key (accessory)



- Flashlight or other supplementary lighting



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 6 locations and adjusters at 4 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.

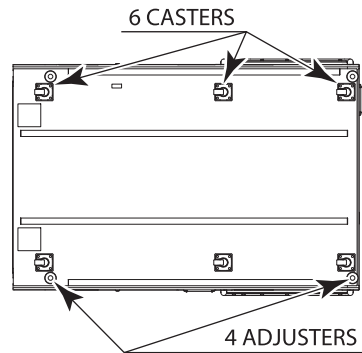


FIG. 6-1a Bottom View

- 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.

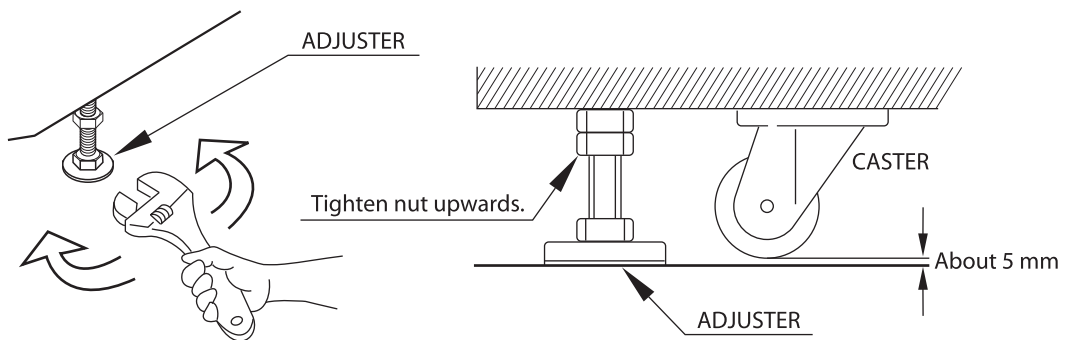


FIG. 6-1b Illustration of Adjuster Setting

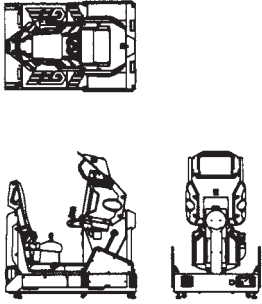


FIG. 6-1c Three Surface Views

Views are reduced to 1/100. Use them for reference in installation site layout.

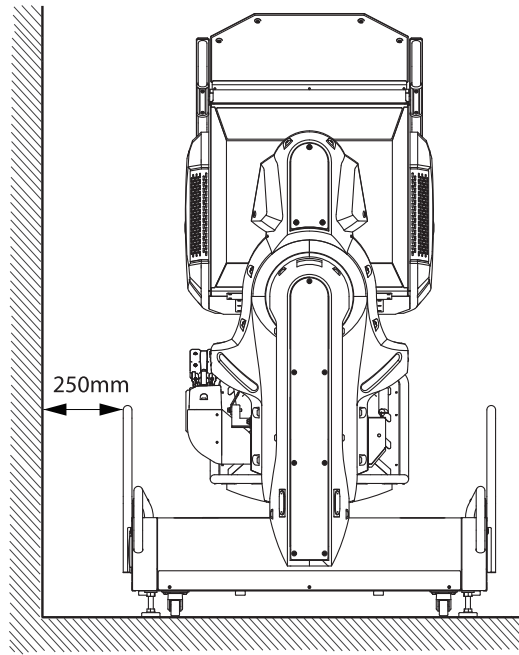


FIG. 6-1d Ventilation Space

When installing the product next to a wall or other game unit, where customers will not be able to pass, secure 250 mm of ventilation space between the product and the wall or game unit, as viewed from the left side facing the monitor.

2 ATTACHMENT OF BILLBOARD

The billboard contains fluorescent lamps and wires. If it is not handled carefully, the lamps might crack and the wires could be damaged.



FIG. 6-2a Billboard

- 1 Remove billboard lid from billboard rear surface. Remove the 4 truss screws. After the billboard has been attached, attach the billboard lid and 4 truss screws to the billboard rear surface.

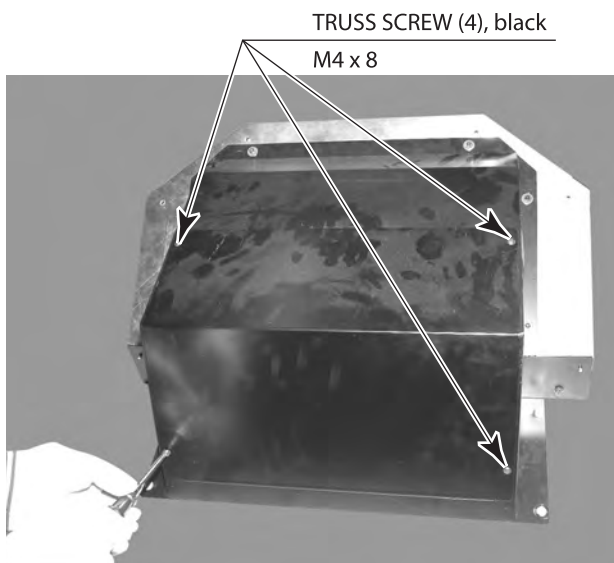


FIG. 6-2b



FIG. 6-2c

- 2** Place the billboard on top of the monitor. Place it from the side of the CRT. Insert the bottom of the billboard into the bracket on the monitor top plate. Have the front and rear of the billboard each held by a separate worker while proceeding. Be careful that your hand or finger does not get caught and that the billboard wire does not get caught anywhere.



FIG. 6-2d



FIG. 6-2e

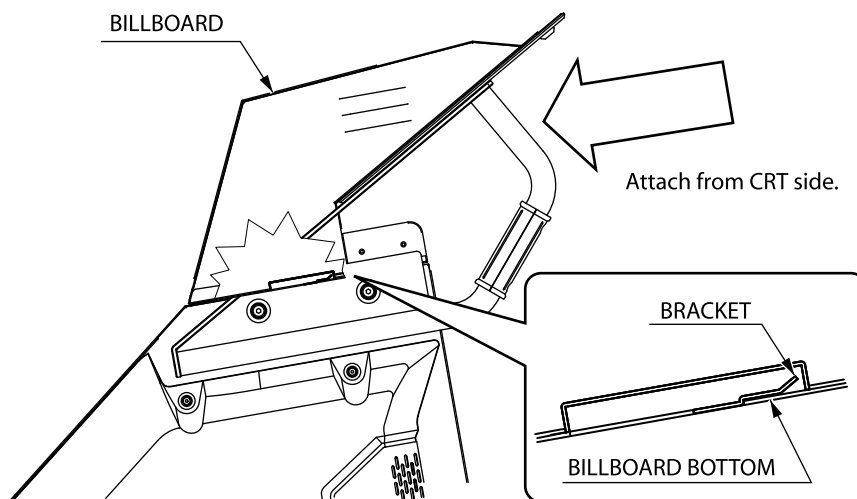
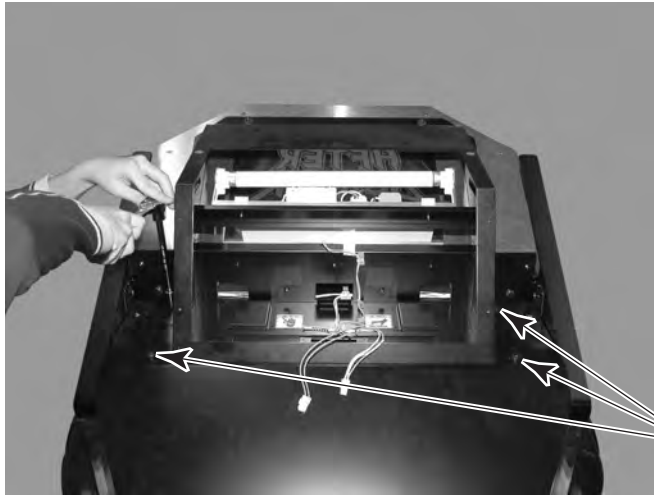


FIG. 6-2f Insertion of Billboard Bottom

- 3** Secure billboard in place with 4 hexagonal bolts. Use a flat washer with each hexagonal bolt with spring washer attached.



HEXAGON BOLT (4), black
M6×12, w/spring washer, flat washer used

FIG. 6-2g

- 4** Connect the two billboard wire connectors to the connectors on the monitor top plate.

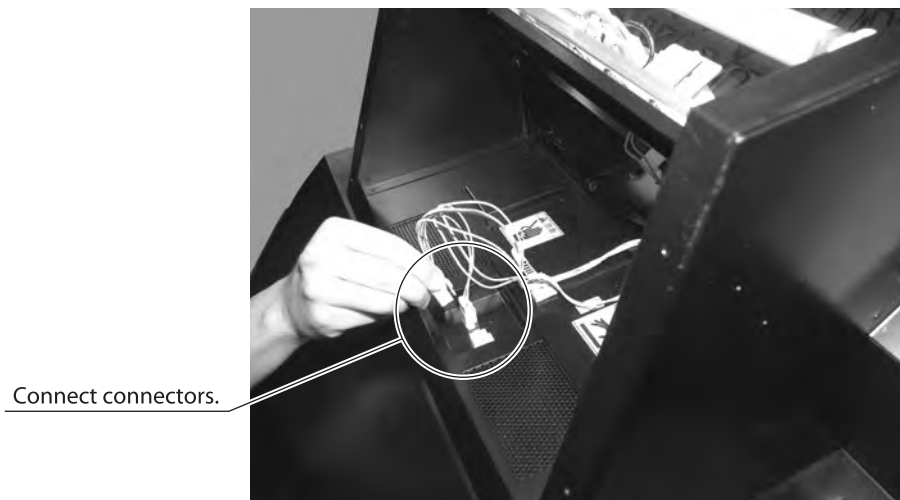


FIG. 6-2h

- 5** Attach billboard lid and secure it in place with 4 truss screws.

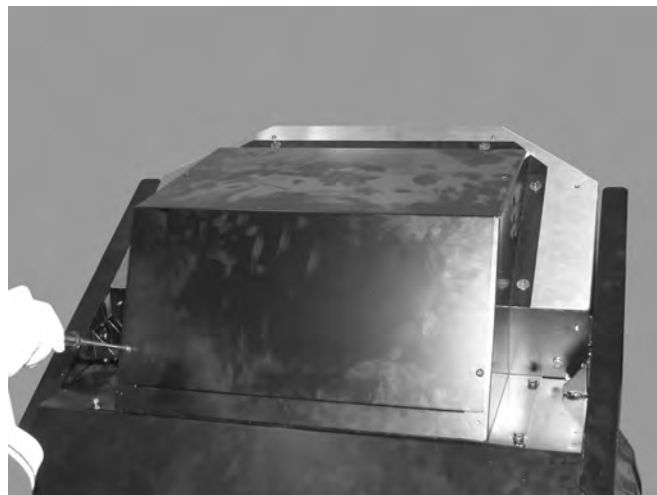


FIG. 6-2i

3 PREPARATION FOR INSTALLATION

⚠ 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.**

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 the 2 truss screws holding the base rear door R.

TRUSS SCREW (2), black
M4×8



FIG. 6-3a

- 2 Unlock and remove rear door R.

Unlock.
REAR DOOR R

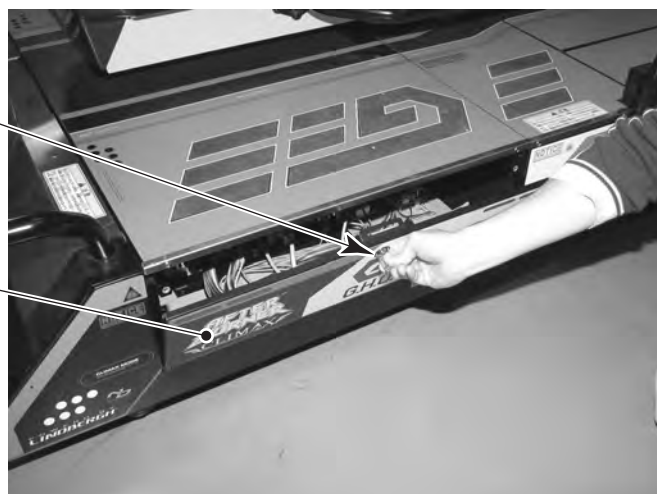


FIG. 6-3b

- 3 There is a wooden base mounted with the LINDBERGH inside the rear door R. Remove the cable lid attached to the base bottom plate inside the slot of the wooden base handle. Remove the 2 flange nuts. After the cable lid has been removed, you will find a hole for passing the DVD wire.

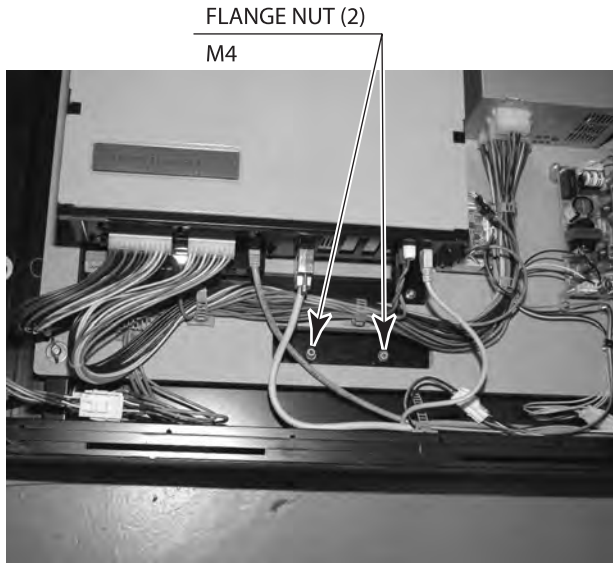


FIG. 6-3c



FIG. 6-3d

- 4 Pass the 2 connectors of the DVD wire on the side with the “LINDBERGH” tag through the hole at the bottom of the base and connect them to the LINDBERGH. There are 4 USB connectors in the LINDBERGH. Connection can be made to any of these 4 connectors.



FIG. 6-3e

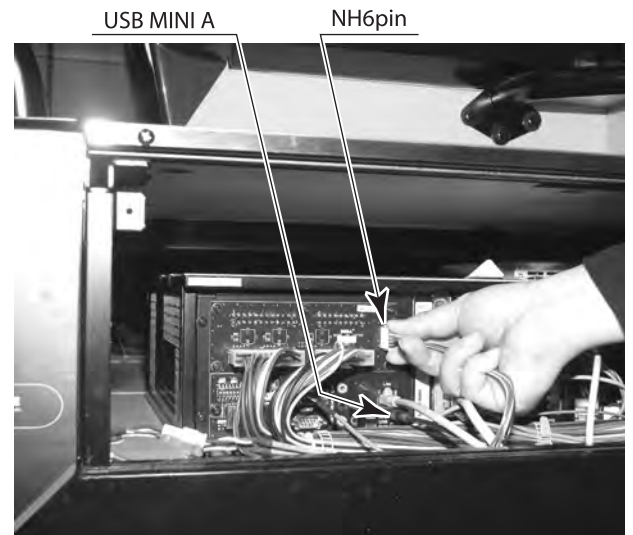


FIG. 6-3f

- 5 Affix the board number sticker above the sticker at the upper left of the LINDBERGH that reads: “844-0001D-**”.

- 6** Remove the key chip from the DVD kit case and insert it into the LINDBERGH. Make sure it is inserted in the proper direction. (In the photo, two connectors have been removed from the LINDBERGH so that the key chip can be seen. In practice, these connectors are not removed.)

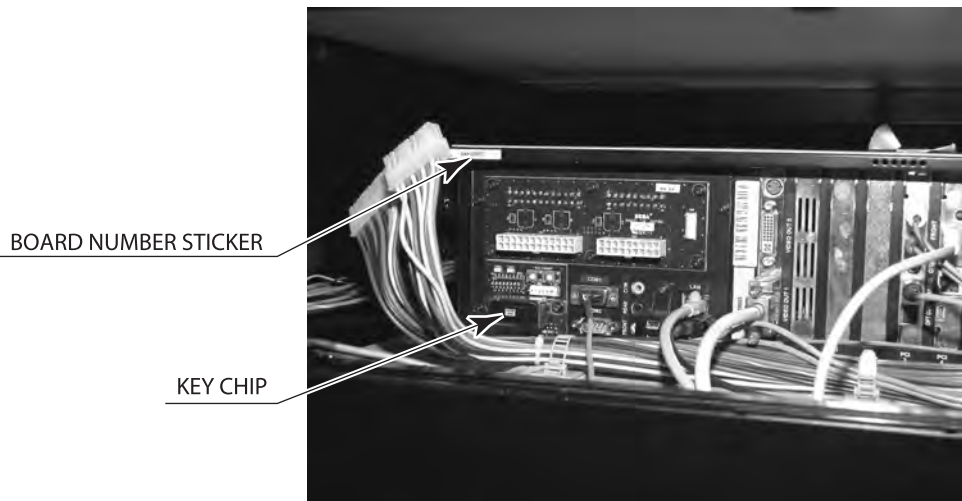


FIG. 6-3g

- 7** On the side of the DVD wire with the “DVD” tag, there are two connectors. Connect them to the DVD DRIVE.

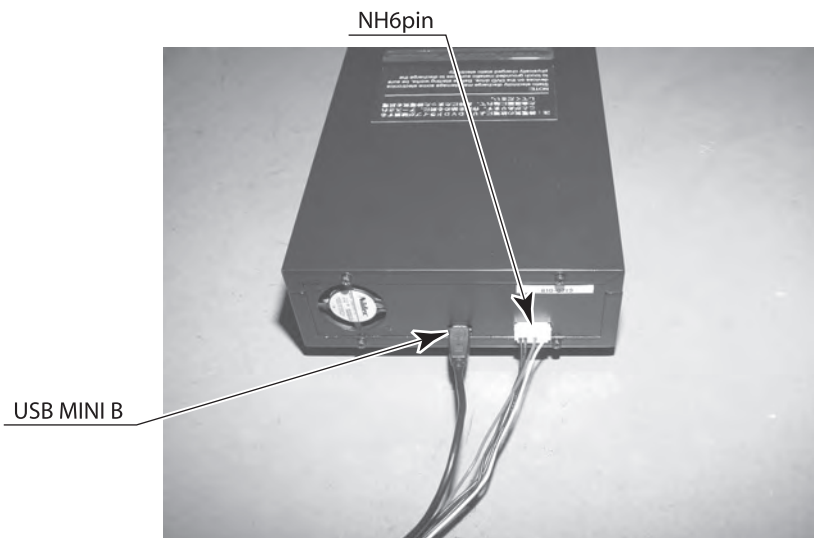


FIG. 6-3h

- 8** Attach rear door R and lock it.

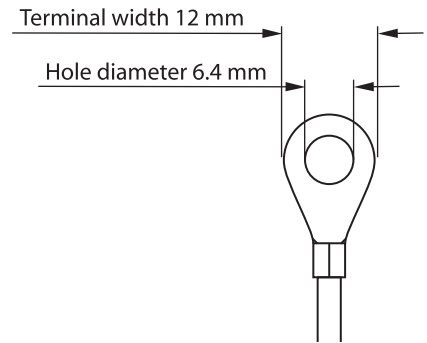


FIG. 6-3i

4 CONNECTION OF POWER AND GROUND

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.
- 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.
- 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.

**STOP IMPORTANT**

If grounding has been established with the ground wire inside the power cord, do not perform grounding with the AC unit ground terminal. Conversely, if the AC unit ground terminal has been used for grounding, do not establish ground with the ground wire in the power cord. Otherwise there could be faulty or erroneous operations.

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

- Main switch
- Inlet for power cable connection
- Ground terminal
- Circuit protector

The accessory power cord has a ground wire inside it.

Connect the power cord to the AC unit then insert the power cord plug into a “power outlet with ground terminal.” If there is no “power outlet with ground terminal,” be sure to establish ground by some other means; for example, by connecting the AC unit ground terminal to a ground wire with a ground mechanism prepared separately. If you use a conversion adapter sold on the market to supply power, connect the ground wire terminal of the adapter to a “securely grounded ground terminal.” <For Taiwan>

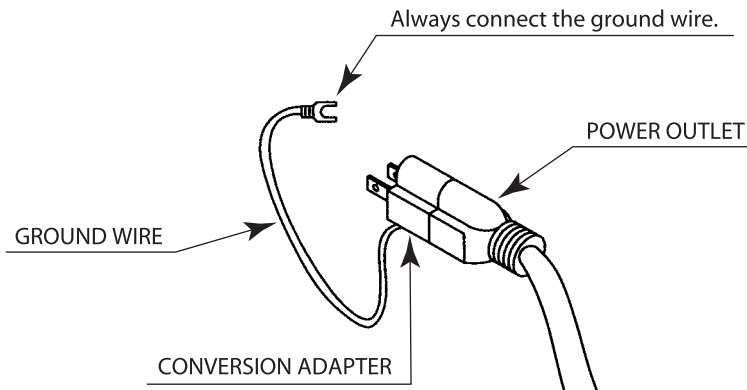


FIG. 6-4a <For Taiwan>

1 Confirm that the main switch is at OFF.

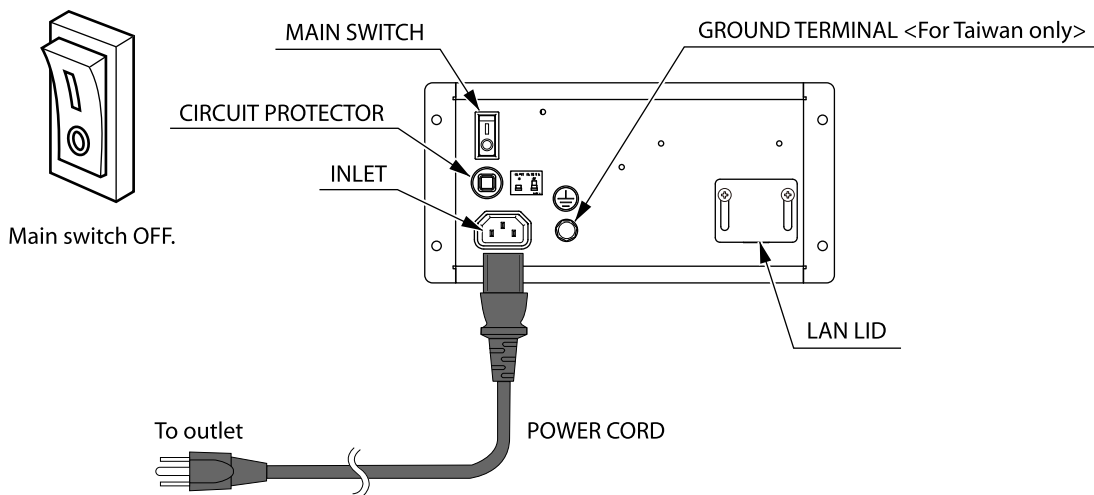


FIG. 6-4b AC Unit

2 Fully insert the power cord connector on the side opposite the power plug into the AC unit inlet.

3 Fully insert the power cord plug into the outlet.

4 When using a ground wire made available separately, connect one end of the wire to the AC unit ground terminal and the opposite end to an indoor ground terminal. The AC unit ground terminal is a bolt-and-nut combination. Remove the nut and pass the bolt through the ground terminal, then secure the nut to the bolt. <For Taiwan>

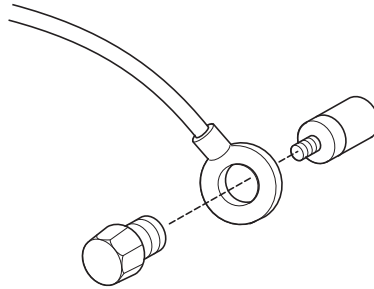


FIG. 6-4c

5 The power cord is laid out indoors. Protect the power cord by attaching wire cover to it. If ground will be established with a ground wire made available separately, lay out the ground wire indoors and have it protected. <For Taiwan>

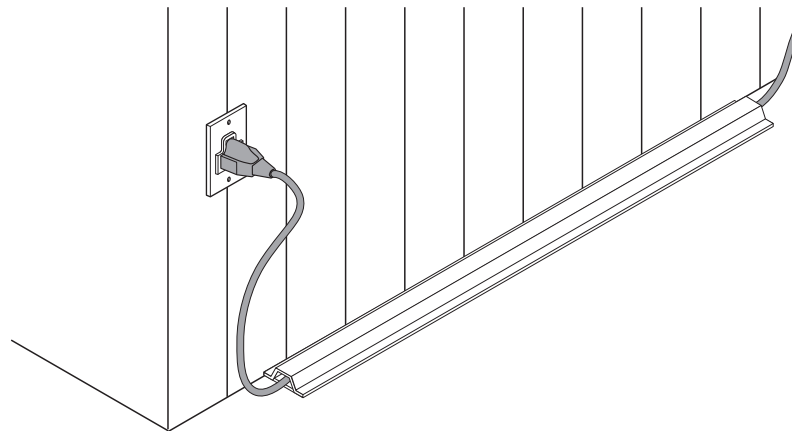


FIG. 6-4d

5 ENGAGEMENT OF POWER SUPPLY AND SOFTWARE INSTALLATION

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.

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.

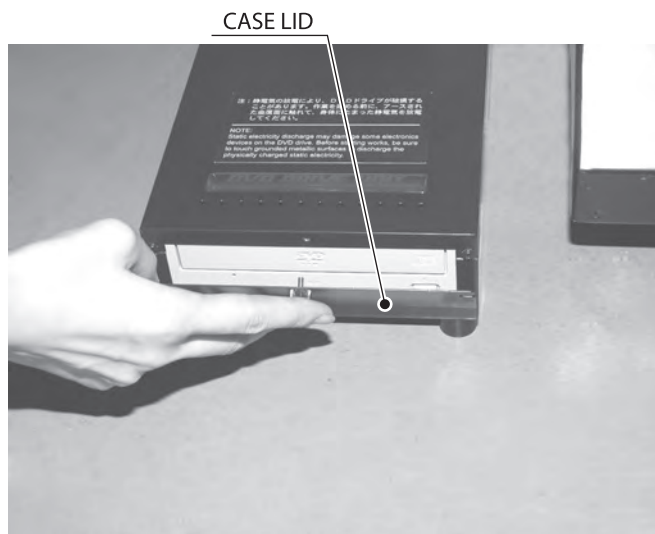


FIG. 6-5a

- 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.

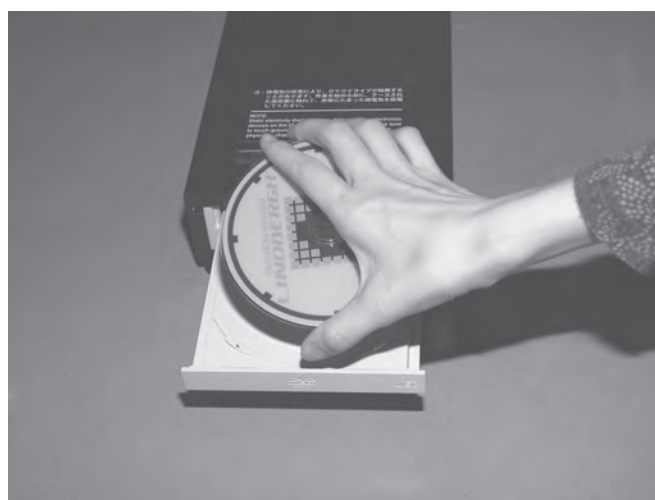


FIG. 6-5b

-
- 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 to the left and right. 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 rear door R.
-
- 20** Store the DVD DRIVE, DVD wire and DVD kit in a location free of dust and cigarette smoke.

6 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 2 minutes and 30 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 AC unit to ON and engage the power. When the power is engaged, 1 fluorescent lamp in the billboard and 2 fluorescent lamps on the seat rear surface will light up.

After the LINDBERGH start-up screen has appeared, the “initialization in progress” screen appears and initialization begins. During initialization the seat moves automatically in the following sequence and stops at the preset values for position and direction.

1 Seat tilts slightly to the left and right.

2 Seat tilts to the limit on the right side.

3 Seat tilts to the limit on the left side.

4 Seat stops at the level position.

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.

Upon completion of initialization, if the seat inclines and stops, for instance, re-engage the power source and execute initialization once again.

If the seat stops at an incline after re-executing initialization, there might be a defective volume setting or other problem. Use the test mode to check numerical settings.

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.

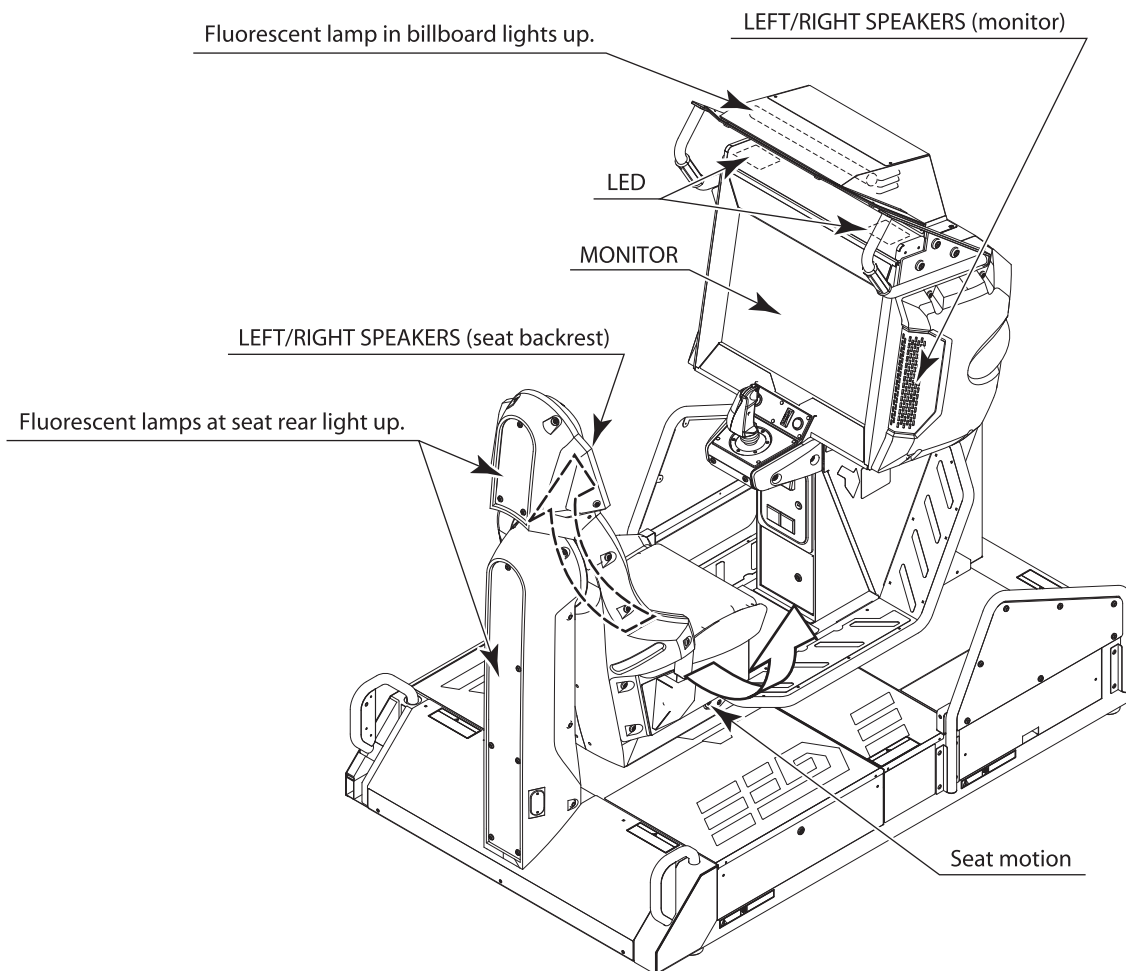


FIG. 6-6 Operation When Power is Engaged

7 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].

The items displayed on the test screen for tests (5) and (6) vary depending on the setting for cabinet type in the game setting screen.

(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.

If each category of information is displayed without anomalies, the LINDBERGH is normal.

(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.

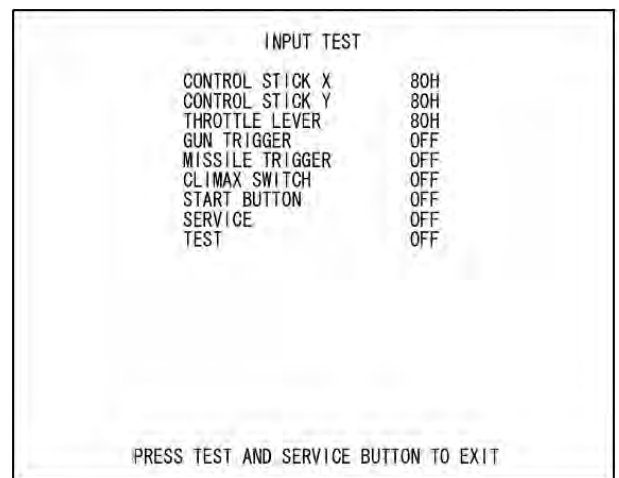
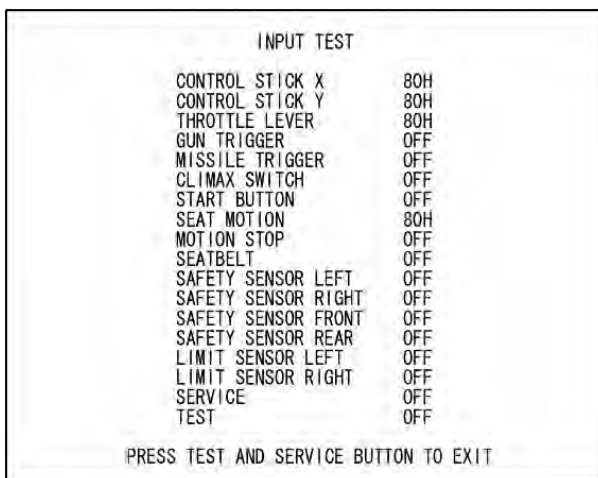


FIG. 6-7a Input Test Screen

(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.

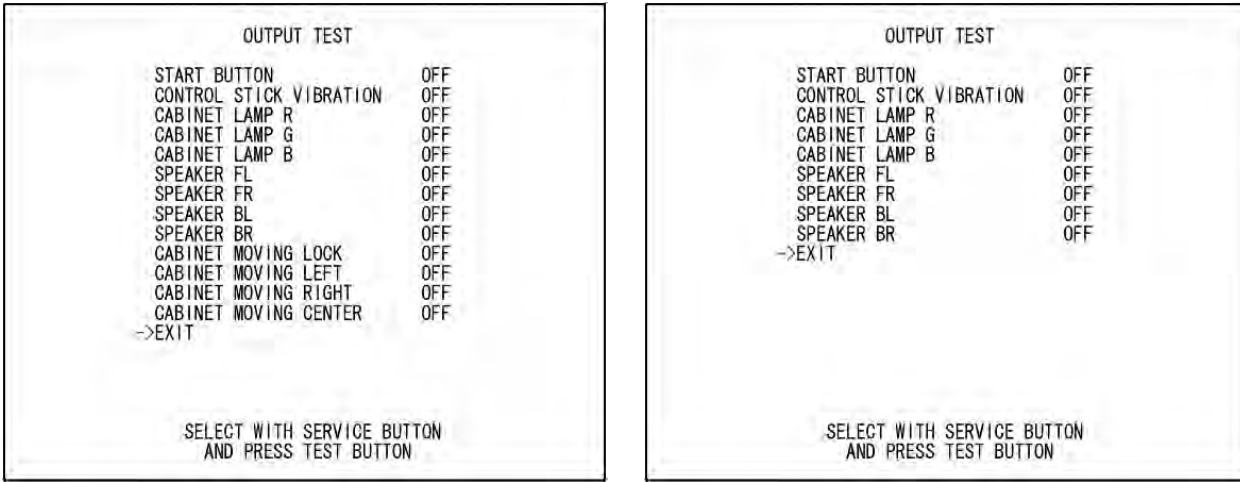


FIG. 6-7b Output Test Screen

(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.



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 adjusters 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 lift up the cabinet, hold it at the bottom. If you hold it anywhere else, the weight of the cabinet could cause damage to parts or attachments, resulting in injury.
- To install this product, the entrance must be at least 1.3 m in width and 1.95 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.

7-1 MOVING THE MACHINE

Do not push on plastic parts or parts shown in the illustration.

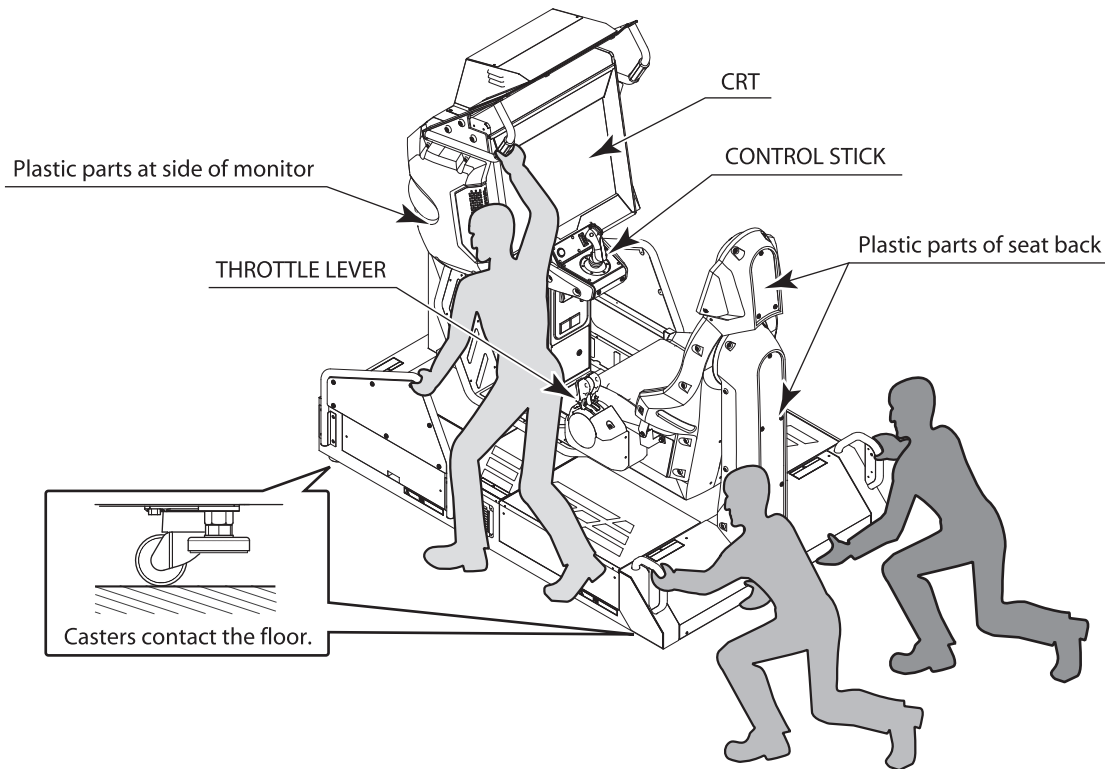


FIG. 7-1a

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.
- If the entrance is narrow or low and the product must be laid down sideways, or if the product must be disassembled in a manner not described in this manual, contact the office given in this manual or the point of purchase. If the product is laid down sideways such that unexpected loads are put on the mechanical components, there could be deformations or gaps, resulting in permanent damages.

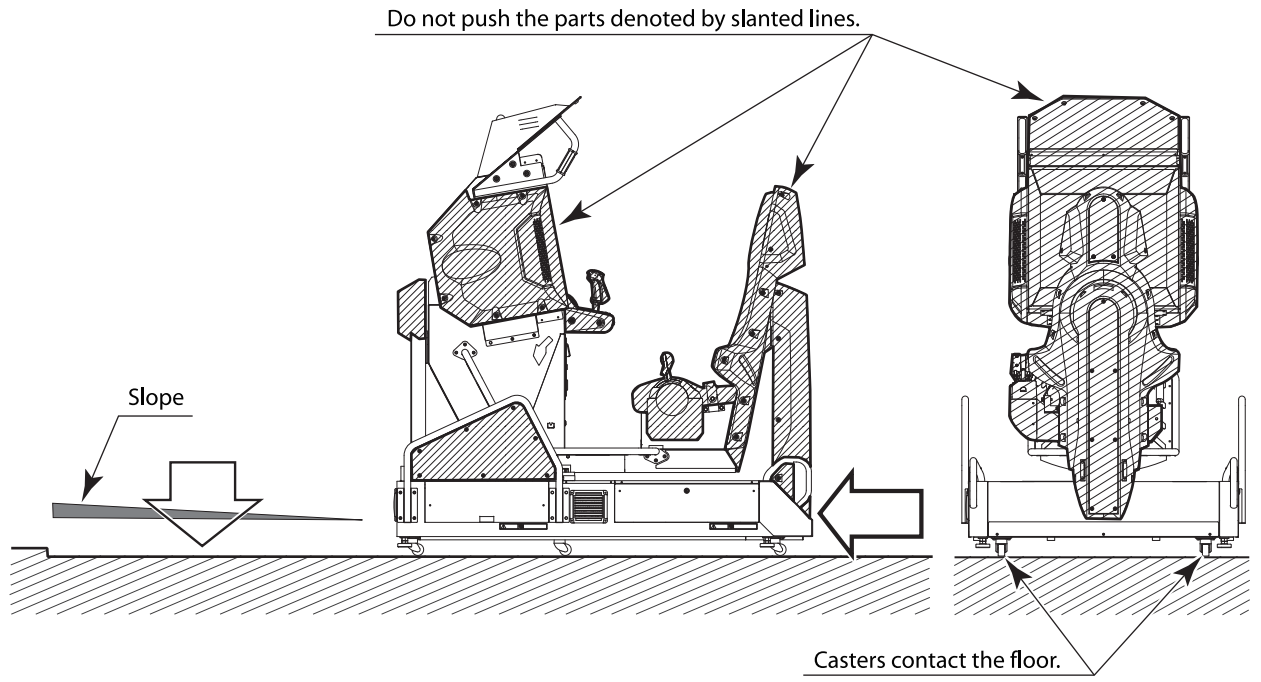


FIG. 7-1b

Precautions in Moving Loads

WARNING

- This product weighs over 400 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.
- When using a crane to move this machine, ensure that the person operating the crane is **properly qualified. Do not attempt to carry out this procedure without properly qualified personnel.**
- Always remove the billboard before moving the product. If the billboard hinders loading operations or collides with the platform, etc., there could be accidents.
- 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.

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 adjusters 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.

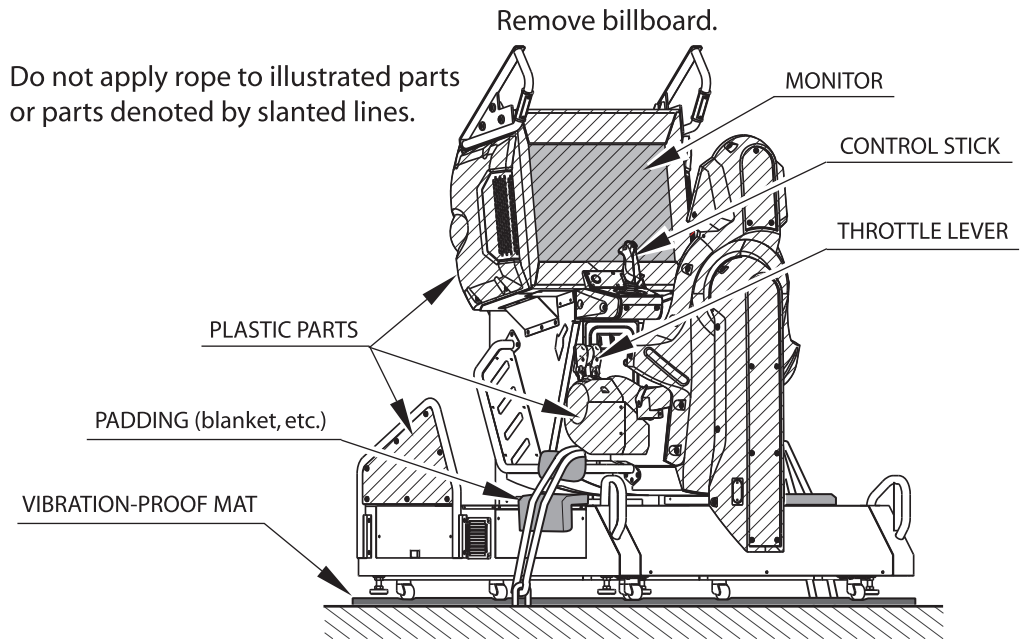


FIG. 7-1c Precautions when securing with rope

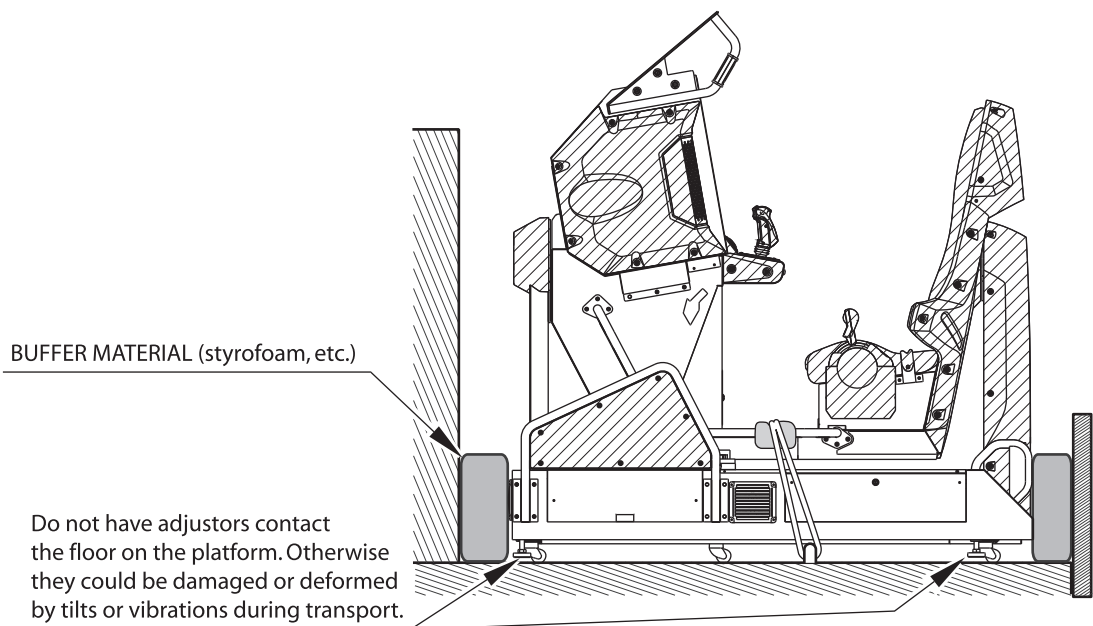


FIG 7-1d Precautions in securing platform

7-2 TRANSPORT WHEN ENTRANCE IS NARROW OR LOW

⚠ WARNING

If you remove door or air vent and leave the interior exposed while moving the unit, exercise ample caution. Be careful that no foreign objects get inside the machine, and do not press or hold interior parts or wires. If foreign objects get in, or if internal parts or wires are damaged, there could be electrical shocks and/or short circuits.

⚠ CAUTION

Before removing guard pipe or handgrip, hold the pipe or grip firmly, then remove fastening bolts or screws. If pipe or grip falls over or drops after bolts or screws have been removed, there could be accidents.

If the entrance is narrow or low, remove the following parts.

When guard pipe has been removed the base width becomes 1,180 mm. If the rear door and air vent are also removed, the width becomes 1,170 mm.

When the handgrip is removed, the unit height becomes 1,680 mm.

If the unit still cannot be hauled through the entrance even after parts have been removed, request service from the office given in this manual or from the point of purchase.

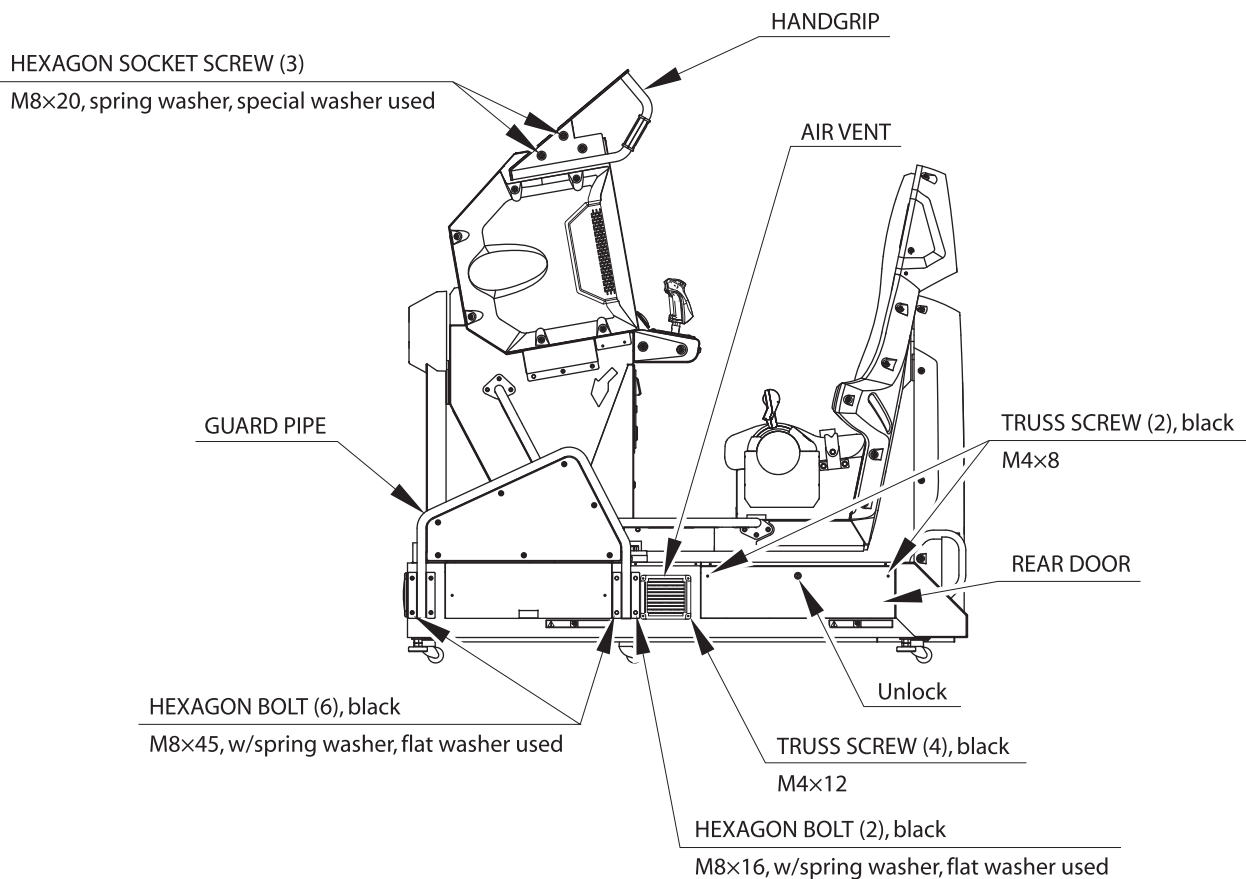


FIG. 7-2a

- 1 Remove the 8 hexagon bolts from guard pipes L and R at the right and left of the base. Hold up the guard pipe securely when removing bolts.

The 2 bolts at the rear are different in length than the other 6 bolts. A flat washer and spring washer are used with hexagon bolts.



FIG. 7-2b

- 2 Remove the guard pipe. A plastic guard plate is attached. Be careful not to damage this plate. If it is placed anywhere indiscriminately or hit by hard objects, it could be damaged, resulting in injuries due to fragments, etc.



FIG. 7-2c

- 3 Remove the 2 truss screws from L and R rear door.



FIG. 7-2d

4 Unlock with the master key and remove the rear doors.



FIG. 7-2e

5 There is an air vent only on the left side of the base. Remove the 4 truss screws that hold it down.

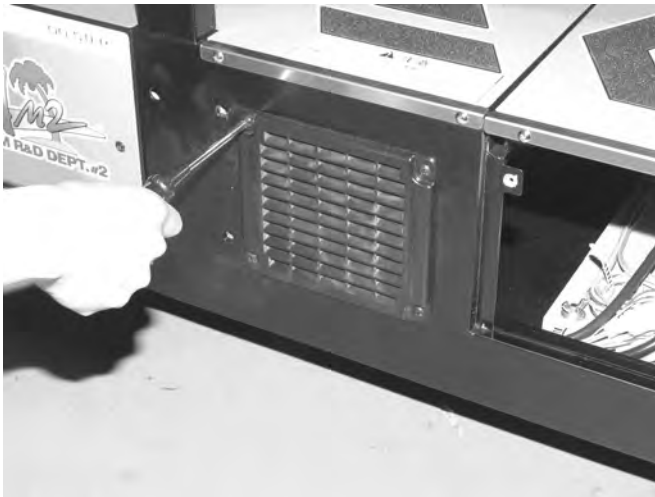


FIG. 7-2f

6 Remove the air vent.

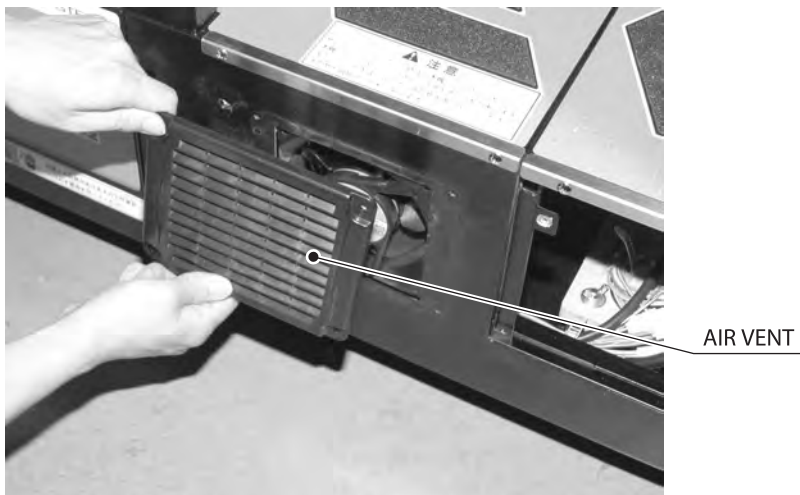


FIG. 7-2g

7 Remove the 3 hexagon socket screws that hold down the L and R handgrips at the top left and right of the monitor. Hold the handgrip securely when removing hexagon socket screws. Use a 5 mm Allen wrench or Allen screwdriver.

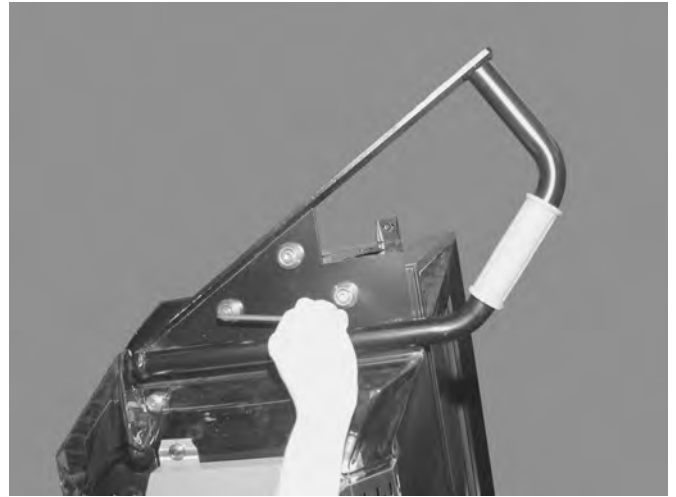


FIG. 7-2h

8 Remove the handgrip.



FIG. 7-2i

Height with handgrip removed: 1,680 mm

Width with door and air vent removed: 1,170 mm

Width with guard pipe removed: 1,180 mm

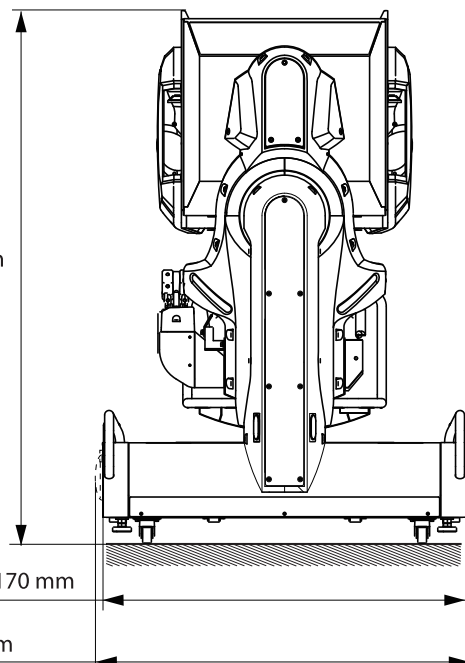


FIG. 7-2j

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, the fluorescent lamp in the billboard on the monitor and the two fluorescent lamps on the seat rear surface are 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 LEDs on the billboard right and left 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 LEDs on the billboard right and left vary depending on conditions.

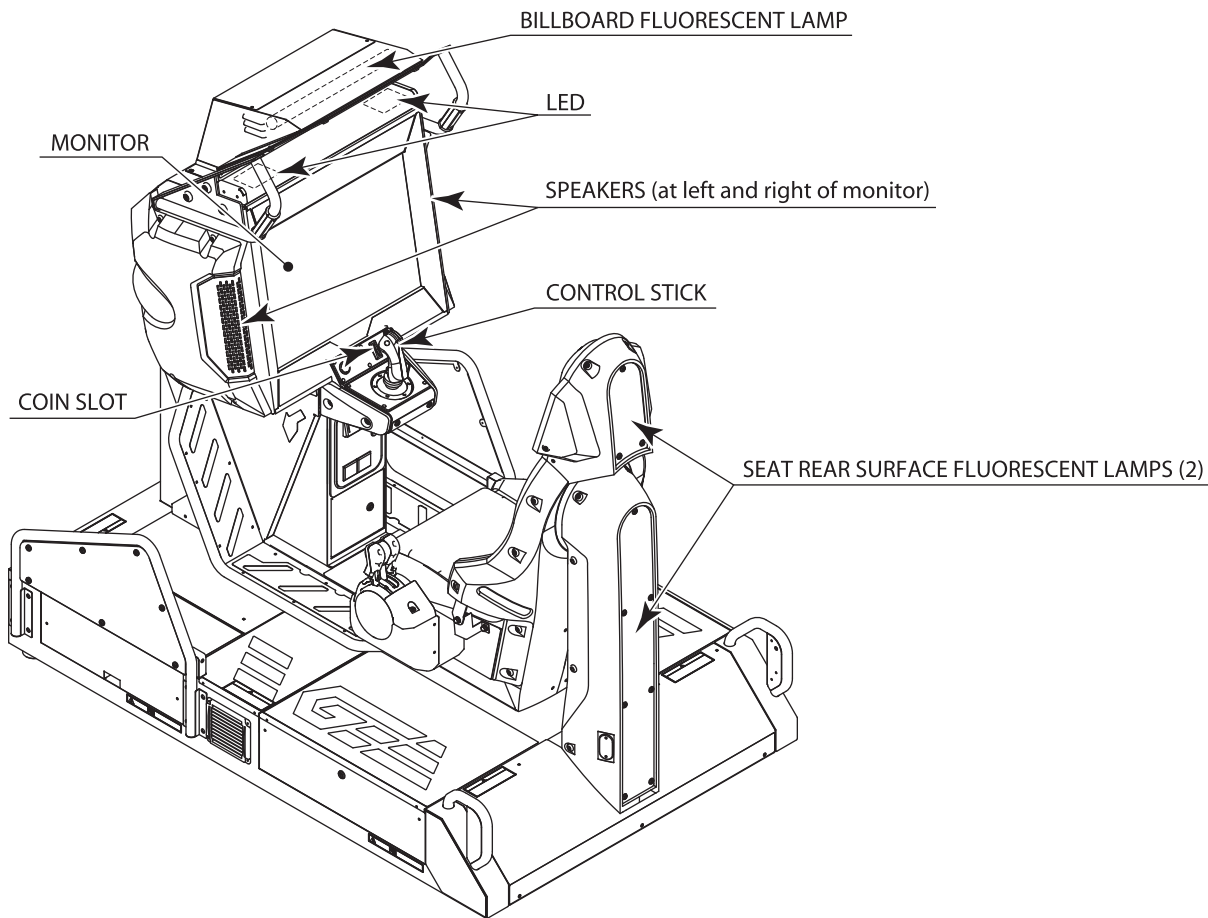


FIG. 8a

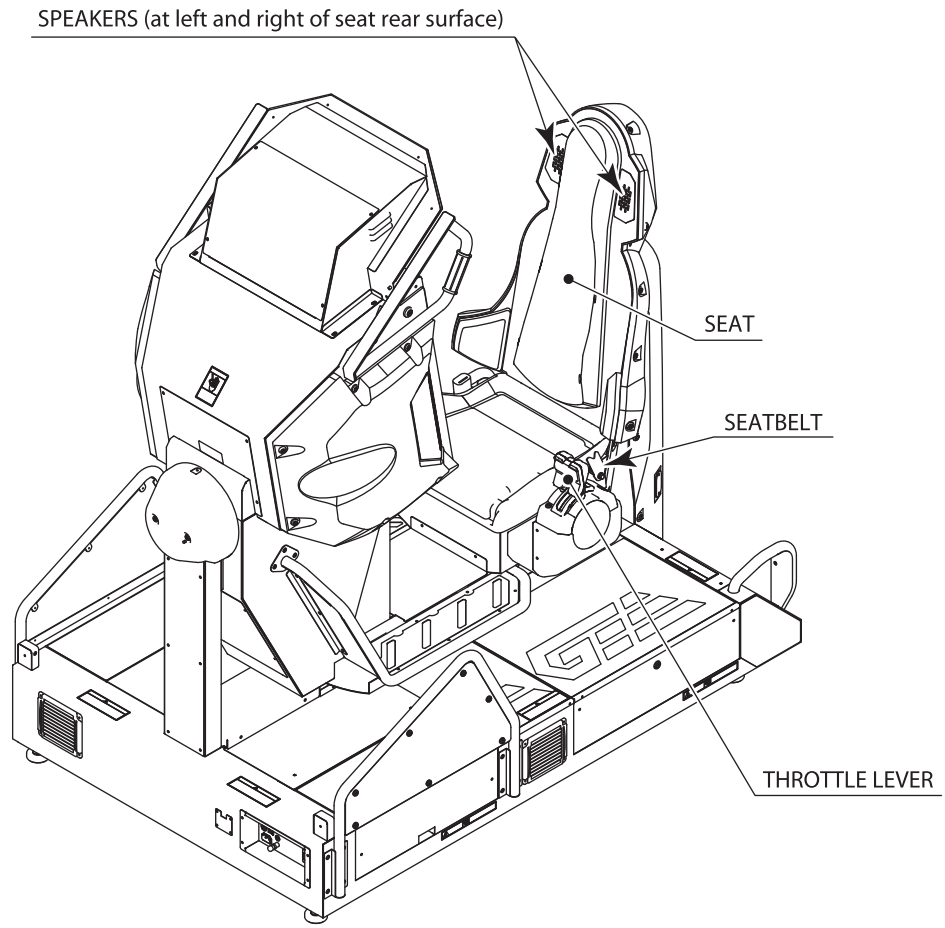


FIG. 8b

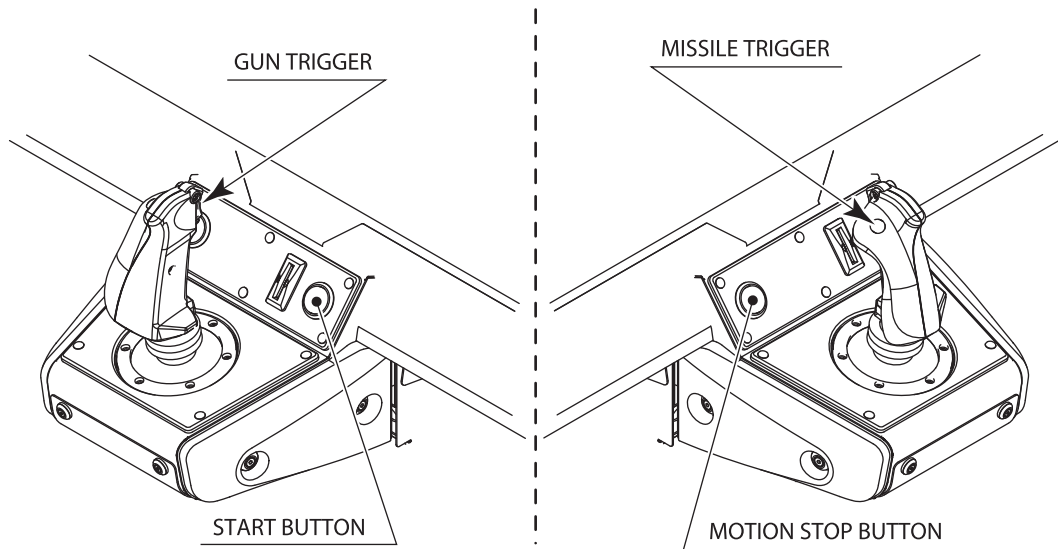


FIG. 8c

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

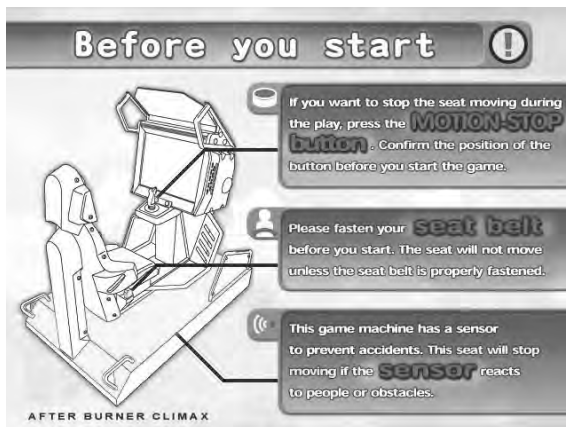
Insert a coin and press the START button during the Attract Mode and the game will start.

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.	Sensor is reacting

NOTE: If any of the above problems occur this screen will be displayed for longer than normal.

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

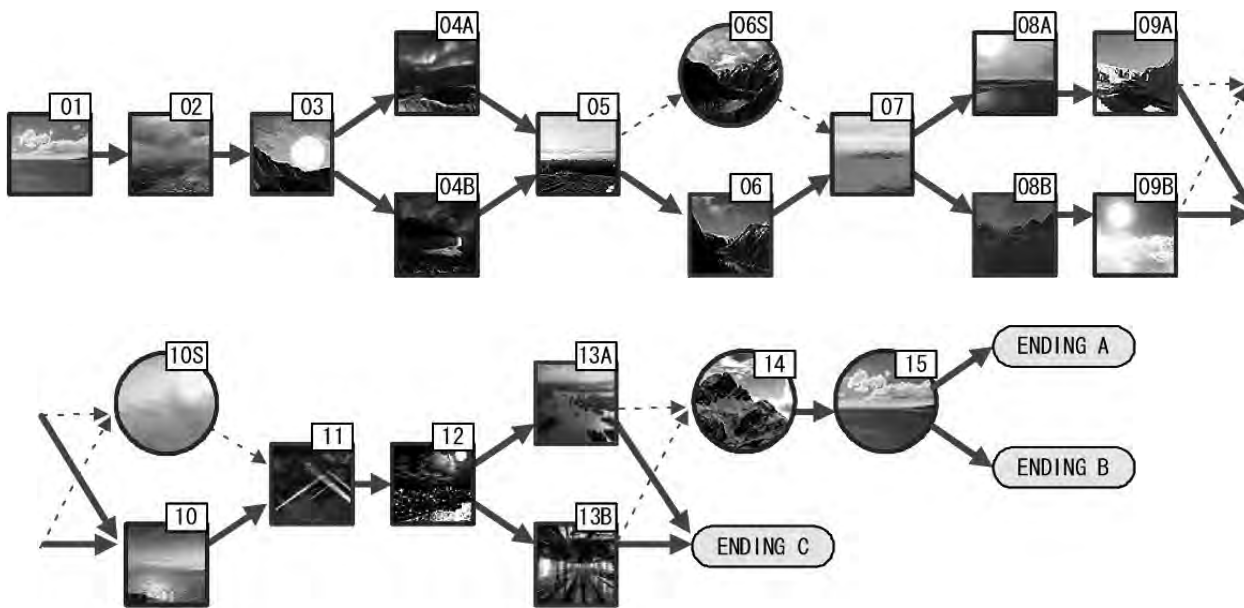


FIG. 8g Stage Composition

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

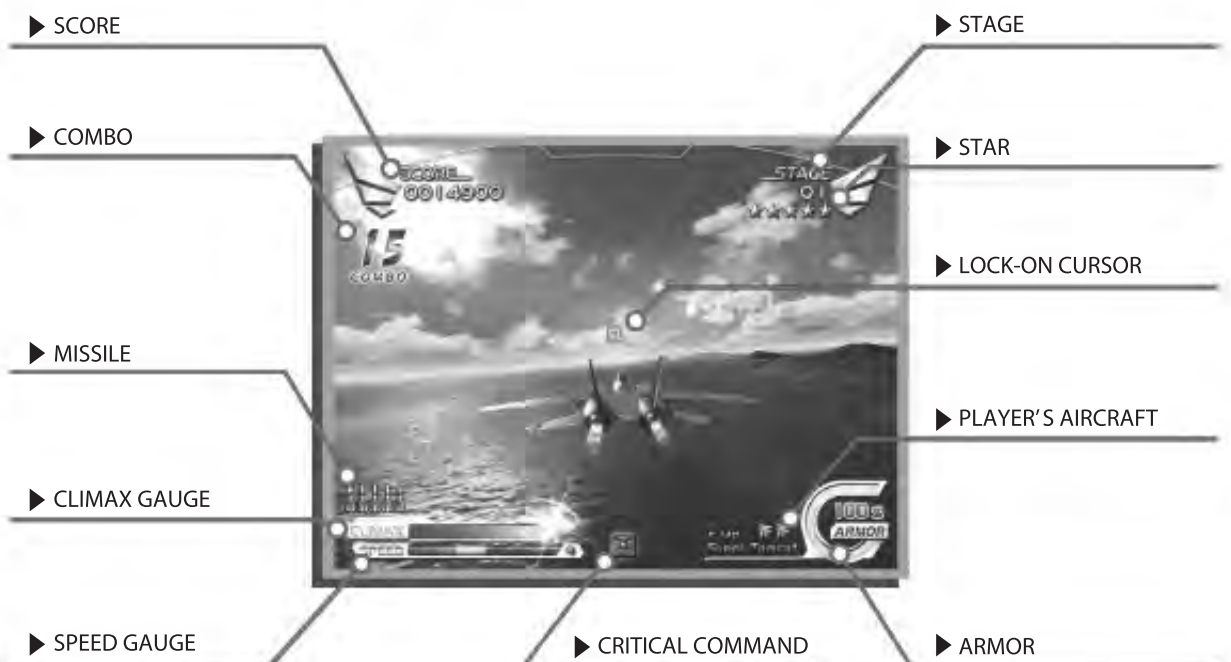


FIG. 8j GAME SCREEN Explanation

<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>

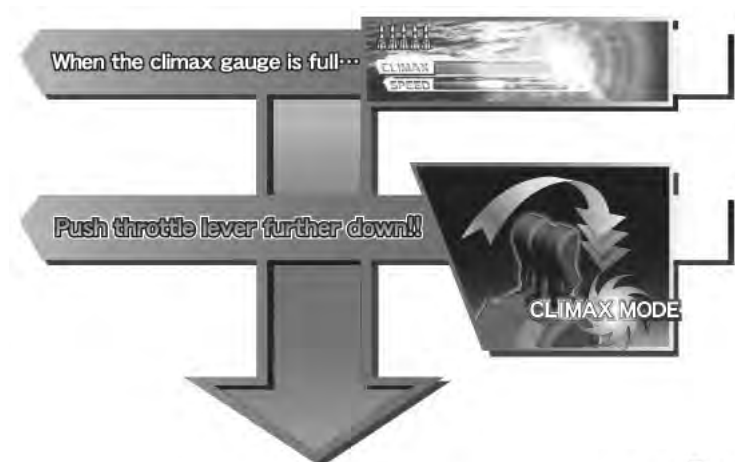


FIG. 8l Activating CLIMAX Mode



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>



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

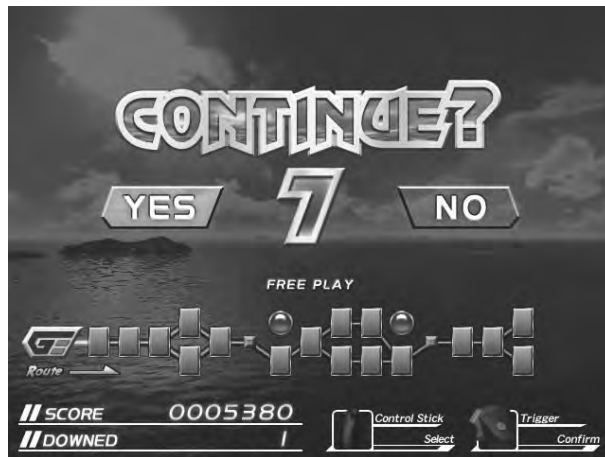


FIG. 8p CONTINUE Screen

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

<Safety 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 licensors.

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9 EXPLANATION OF TEST AND DATA DISPLAY

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 test mode, the seat moves in response to operations irrespective of the safety sensor or seatbelt. There are also cases in which the seat is released from its stationary central position (level condition). 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.
- When the test mode completes, initialization takes place when the power is engaged. Exercise caution as the seat moves left/right. The seat moves even if the seatbelt is unfastened. You could come in contact with the seat or fall down; you could also get a hand or finger caught somewhere.

CAUTION

- Because of the position of the switch unit, you must assume an unnatural posture to operate in test mode, which can cause pain in the shoulder, waist, etc. You could also get caught by parts in the coin chute door, for instance, and suffer abrasions. Have a flashlight on hand and operate in test mode very carefully. The door interior is dark and narrow and you could easily make mistakes in operation.
- Be careful that a finger or hand does not get caught when opening/closing the coin chute door.

STOP IMPORTANT

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

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.

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

TABLE 9

ITEMS	DESCRIPTION	REFERENCE SECTIONS
Game machine installation	<ol style="list-style-type: none"> 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. 	<p>"S/M" Chapter 4 "S/M" Chapter 4, 9-3a, 9-3e "S/M" Chapter 4, 9-3b</p>
Periodic maintenance	<ol style="list-style-type: none"> 1. Check settings. 2. Test each input device on the input test screen. 3. Test each output device on the output test screen. 	<p>"S/M" Chapter 4, 9-3c "S/M" Chapter 4, 9-3a, 9-3e "S/M" Chapter 4, 9-3b</p>
Control problem	<ol style="list-style-type: none"> 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. 	<p>"S/M" Chapter 4, 9-3a, 9-3e Chapters 11, 12, 13 Chapters 11, 12, 13</p>
Monitor problem	On the monitor adjustment check screen, check to be sure the monitor has been adjusted properly.	<p>"S/M" Chapter 4, Chapter 10</p>
IC board problem	<ol style="list-style-type: none"> 1. Information display screen 2. Speaker test 	<p>"S/M" Chapter 4 "S/M" Chapter 4</p>
Date Check	Check data on game play times, histograms, etc., and adjust the level of difficulty.	9-3f

9-1 SWITCH UNIT AND COIN METER

Switch Unit

In test mode, the switch unit in the coin chute door is operated.

Unlock and open the coin chute door. Inside is a switch unit. There is a monitor adjustment panel at the bottom.

(See Chapter 10.)

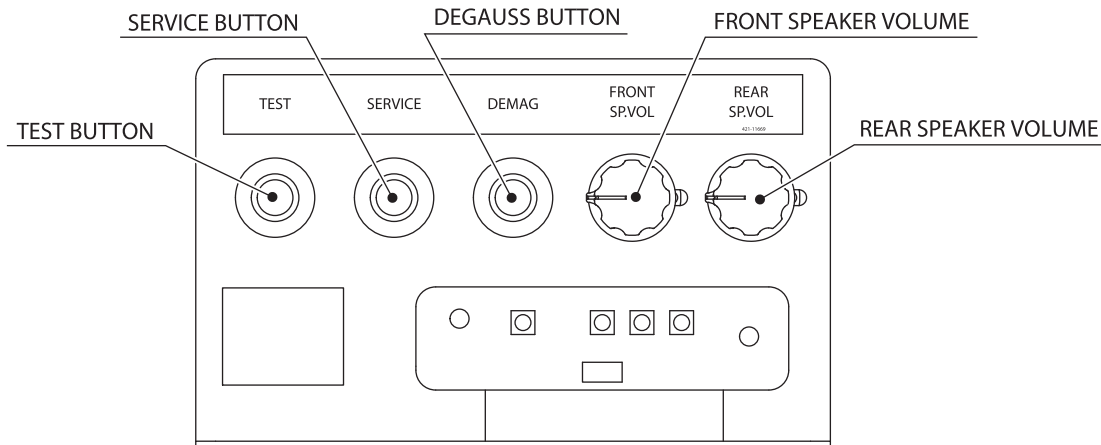


FIG. 9-1a

TEST Button (TEST)

Establishes test mode. Becomes the button to confirm selections in test mode.

SERVICE Button (SERVICE)

Makes it possible to enter credits for service without increasing the coin meter. Becomes the button to select items in test mode.

DEGAUSS Button (DEMAG)

Removes color aberrations on the screen due to magnification of the CRT. Use this button before adjusting monitor colors.

Front Speaker Volume (FRONT SP.VOL)

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 Speaker Volume (REAR SP.VOL)

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.

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.

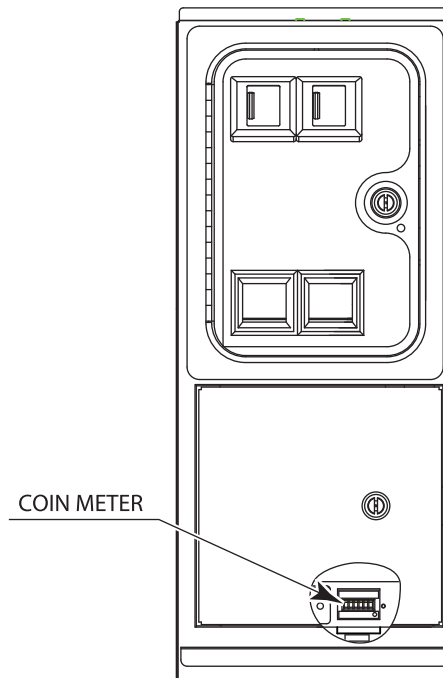


FIG. 9-1b Coin Meter

9-2 SYSTEM TEST MODE

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.

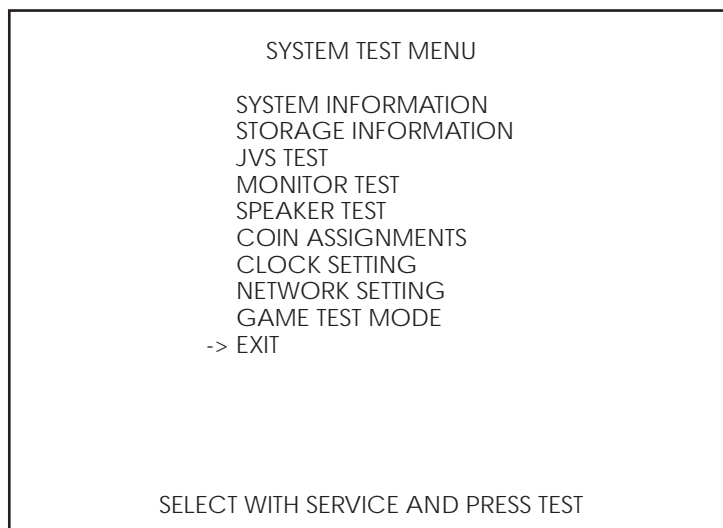


FIG. 9-2 SYSTEM TEST MENU Screen

9-3 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.



FIG. 9-3a Movement to the Left



FIG. 9-3b Movement to the Right



FIG. 9-3c 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

!WARNING

- During the input test the seat will be unlocked and sensor checks will not be performed. Make sure that no one is standing too close, and take due care when performing the test. Because the seat inclines when it is pushed, there could be an accident. Someone could fall down, for instance, or get a finger or hand caught between something.
- When testing input devices involving seat motion, have two or more workers cooperate and push the seat left/right while exercising due caution. If you are not careful, the seat could snap back after it has been pressed, causing an accident. Someone could fall down, for instance, or get a finger or hand caught between something, resulting in a bone fracture.



FIG. 9-3a01 INPUT TEST Screen (CABINET TYPE: DELUXE)

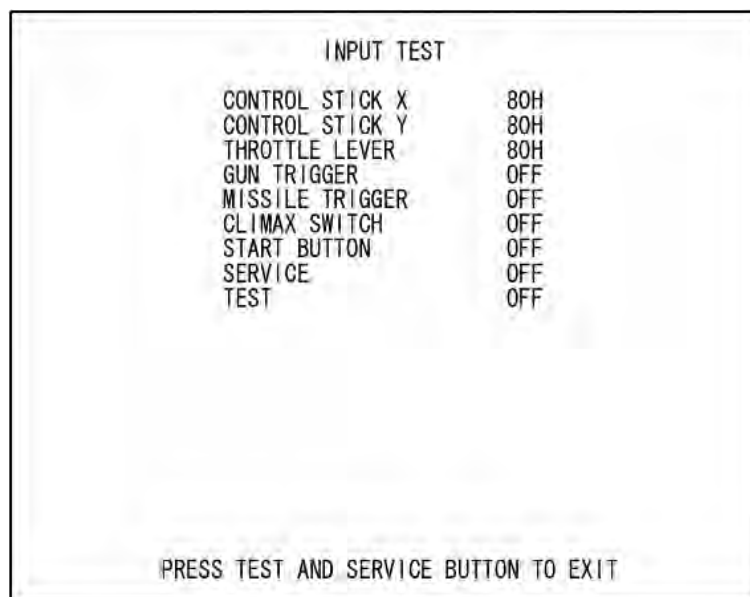


FIG. 9-3a02 INPUT TEST Screen (CABINET TYPE: STANDARD)

The condition of each input device can be checked. Periodically check the condition of each input device on this screen. The number of items displayed varies depending on the setting of CABINET TYPE.

<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** Safety sensors are normal if they go ON when there is an obstacle between them and OFF when the obstacle is removed.
- 4** When testing input devices involving seat motion, have two or more workers push the seat left/right. Confirm that the SEAT MOTION input value changes readily in response to seat motion. The limit sensor is normal if it goes ON when the seat has been fully inclined and OFF when the seat has been lowered.
- 5** 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
SAFETY SENSOR LEFT:	Left side sensor
SAFETY SENSOR RIGHT:	Right side sensor
SAFETY SENSOR FRONT:	Front sensor
SAFETY SENSOR REAR:	Rear sensor
LIMIT SENSOR LEFT:	ON when seat is fully inclined to the left; OFF when seat is lowered
LIMIT SENSOR RIGHT:	ON when seat is fully inclined to the right; OFF when seat is lowered
SERVICE:	SERVICE Button
TEST:	TEST Button

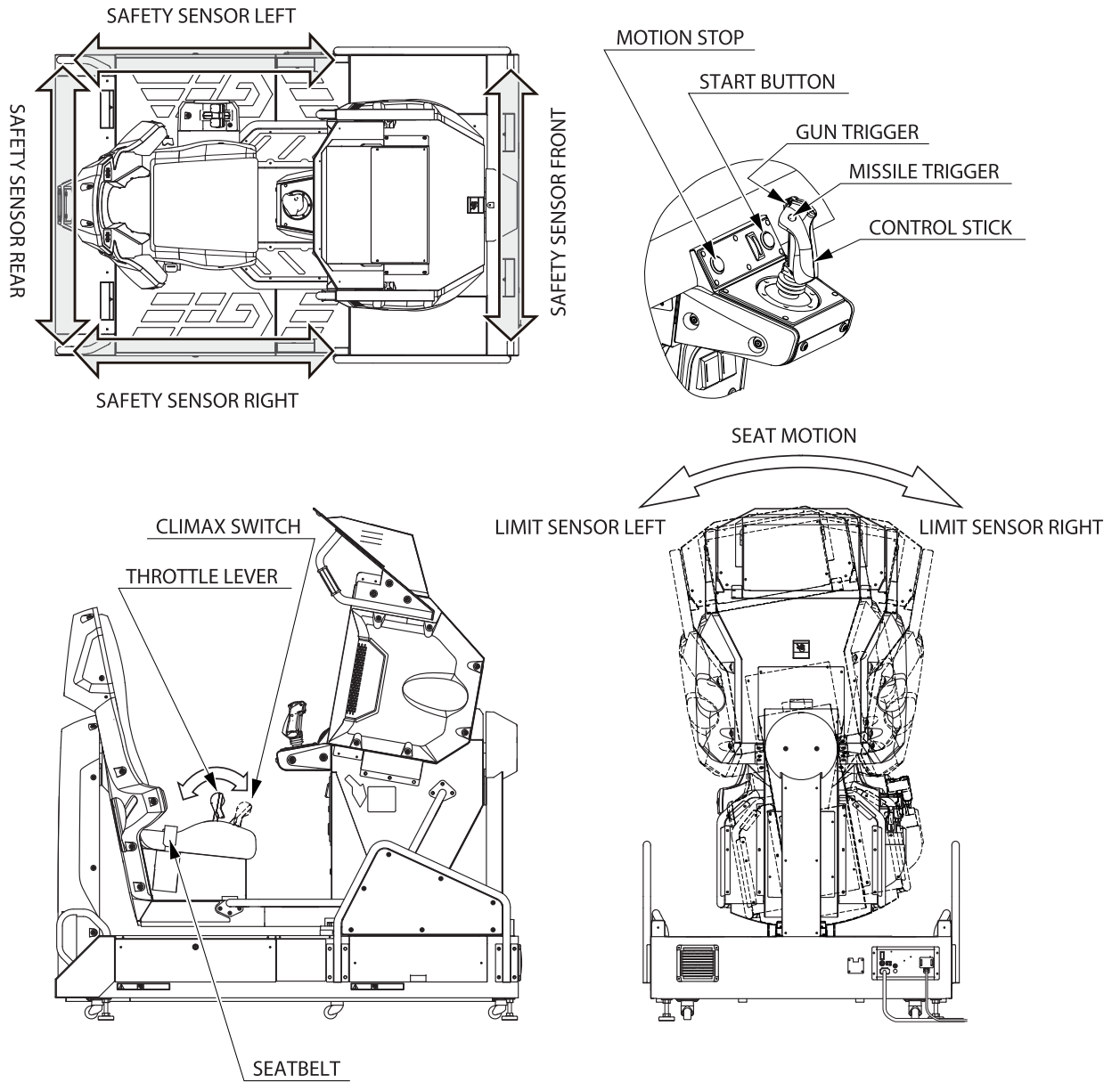


FIG. 9-3a03

b. OUTPUT TEST

⚠ WARNING

- When output test is selected and confirmed from the game test mode menu screen, seat initialization takes place one time automatically. Be careful, as the **seat moves left/right**. Accidents could arise from contacting or colliding with the seat. Once initialization has completed, it will not take place again unless game test mode is first exited.
- During output test, the seat becomes unlocked and checks by sensors do not take place. Make sure no one is nearby and execute the test while exercising due caution. During output test the seat inclines in response to manipulation even if the seatbelt is left unfastened and even if a safety sensor has been blocked. There could be accidents. Someone might fall down, for instance, or get a finger or hand caught in something.

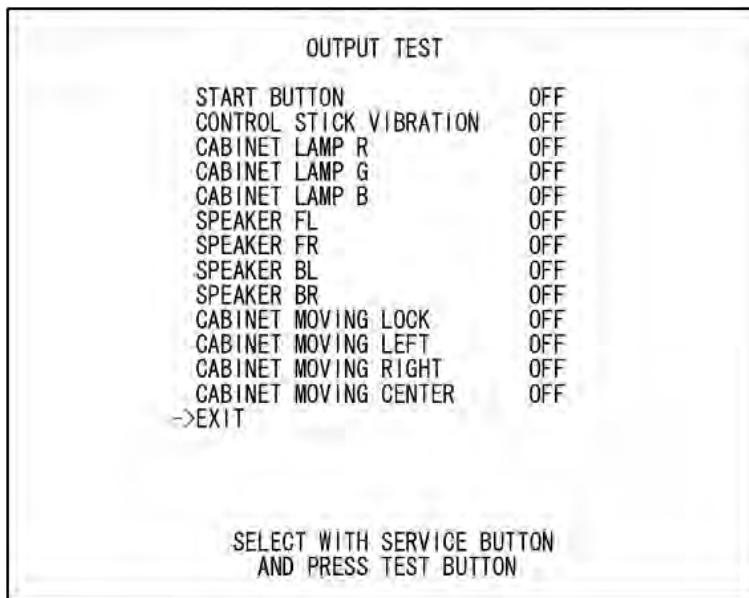


FIG. 9-3b01 OUTPUT TEST Screen (CABINET TYPE: DELUXE)

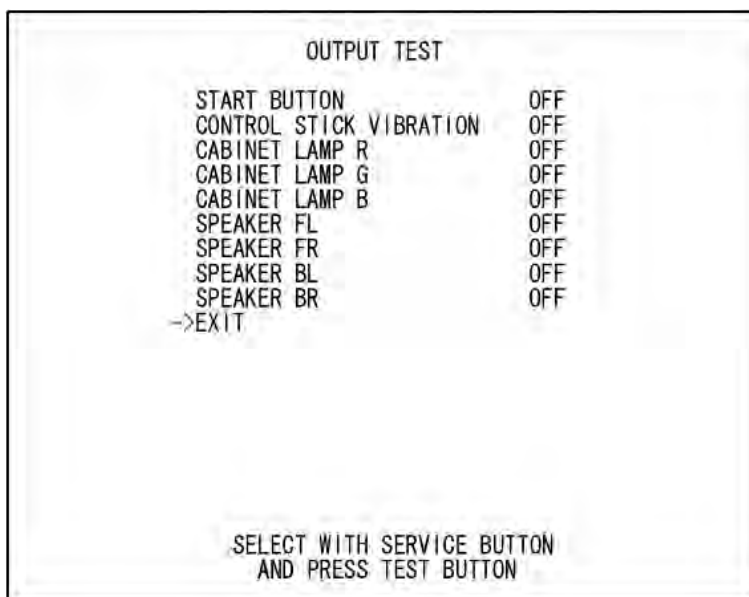


FIG. 9-3b02 OUTPUT TEST Screen (CABINET TYPE: STANDARD)

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.

The number of items displayed varies depending on the setting of CABINET TYPE. For safety, in performing tests in which the seat moves, manipulate the control stick and gun trigger without standing on the base.

<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.
CABINET MOVING LOCK:	Seat locks at ON; unlocks at OFF.
CABINET MOVING LEFT:	Seat moves to left at ON; stops at OFF.
CABINET MOVING RIGHT:	Seat moves to right at ON; stops at OFF.
CABINET MOVING CENTER:	Seat moves to center at ON; stops 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.

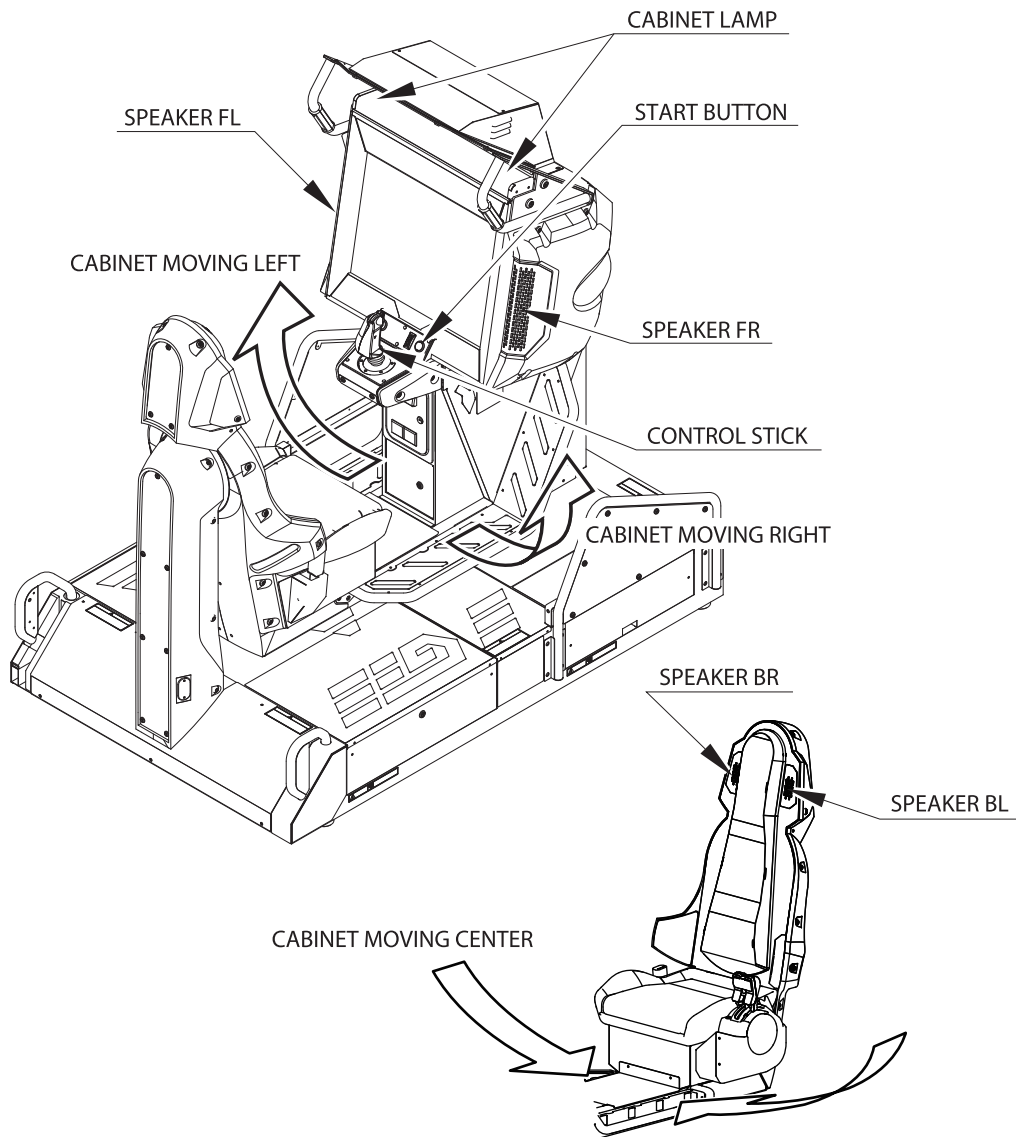


FIG. 9-3b03

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.
- Use this product with the CABINET TYPE set at DELUXE. Otherwise there could be erroneous operations.



FIG. 9-3c01 GAME ASSIGNMENTS Screen (CABINET TYPE: DELUXE)



FIG. 9-3c02 GAME ASSIGNMENTS Screen (CABINET TYPE: STANDARD)

The various game settings are established. The number of menu items differs depending on the CABINET TYPE setting in game assignments.

<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.
- 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.

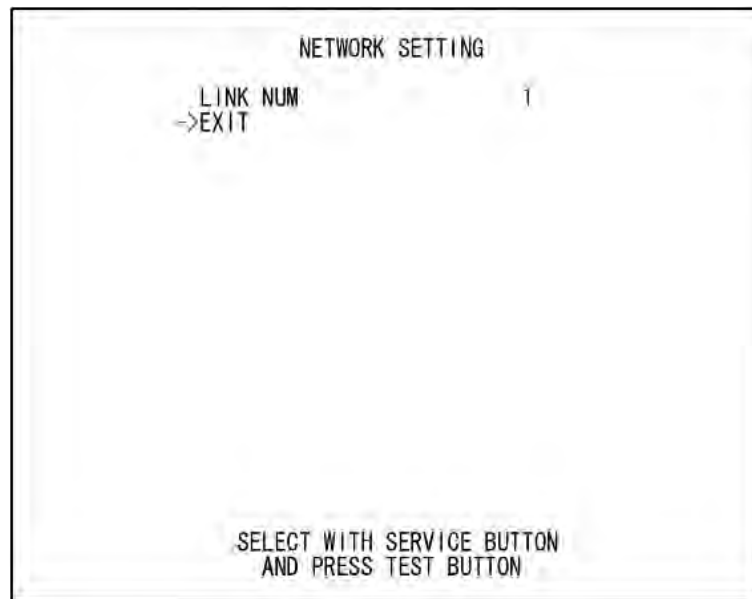


FIG. 9-3d01 NETWORK SETTING Screen (LINK NUM: 1)

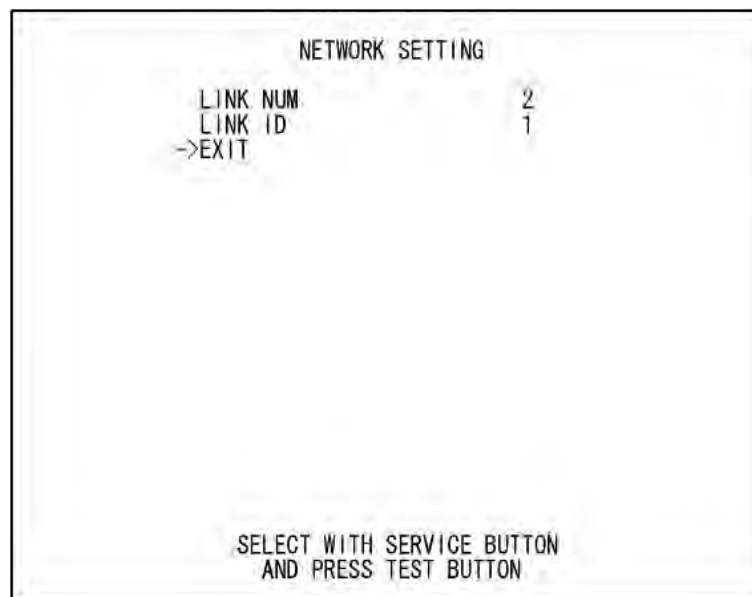


FIG. 9-3d02 NETWORK SETTING Screen (LINK NUM: 2)

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.

<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 is 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.

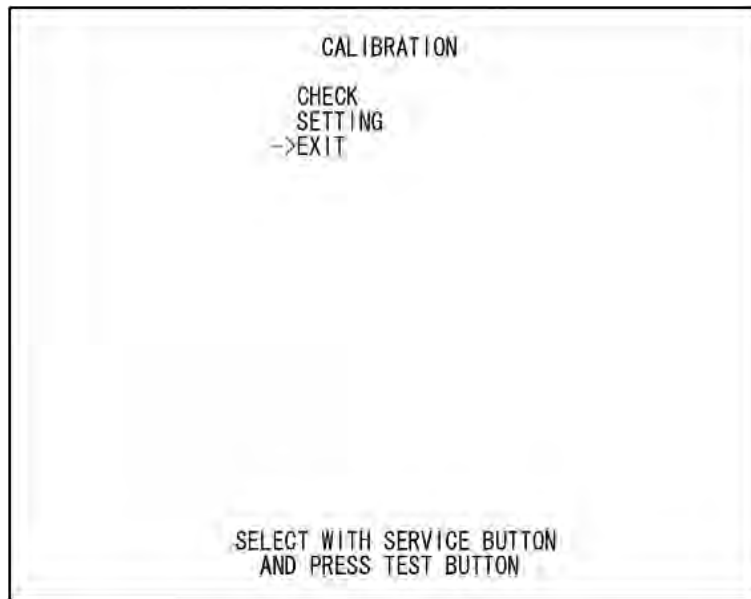


FIG. 9-3e01 CALIBRATION Screen

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

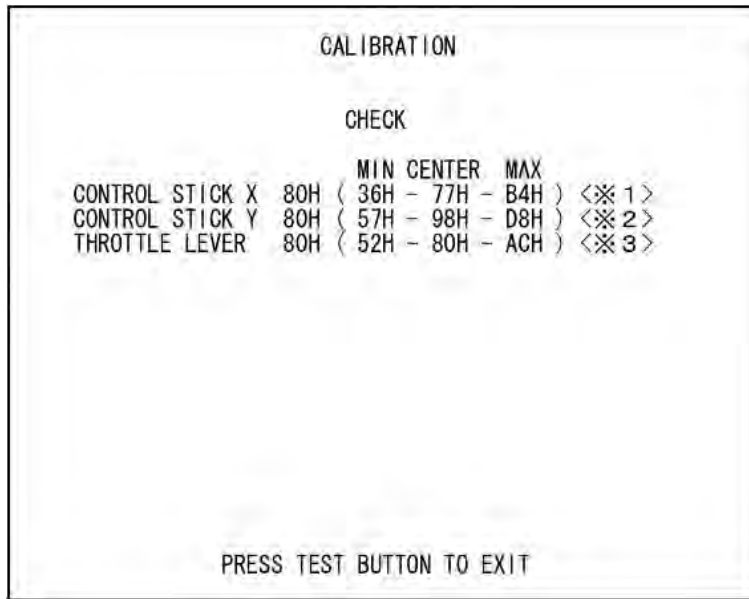


FIG. 9-3e02 CALIBRATION Check Screen

<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, Seat: 80H ± 4H]

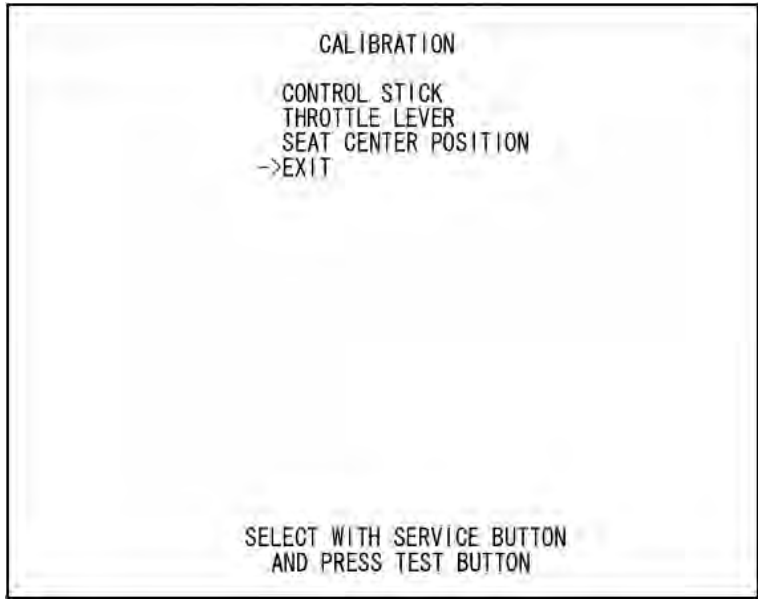


FIG. 9-3e03 CARIBRATION SELECT Screen

<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.
- SEAT CENTER POSITION: Proceed to the calibration screen for seat center position.
- EXIT: Return to the calibration screen.

Control Stick Calibration Screen

- 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.

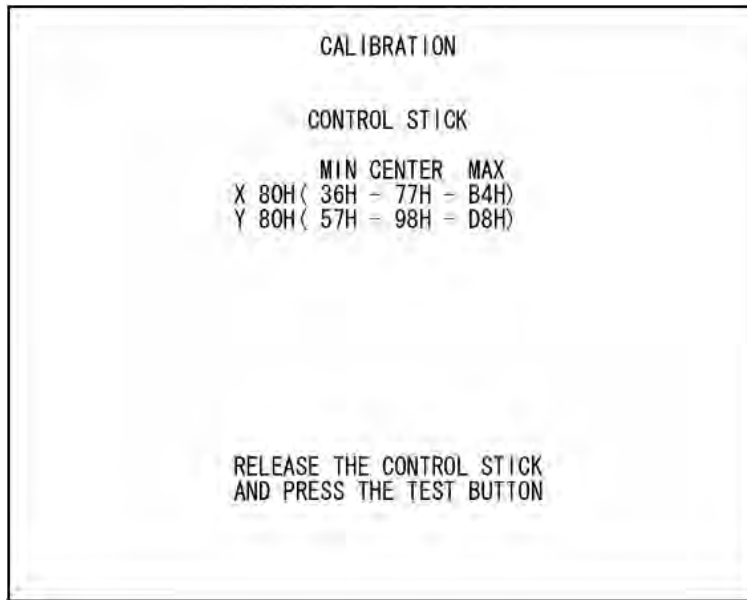


FIG. 9-3e04 CONTROL STICK (STEP1) Screen

- 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.)

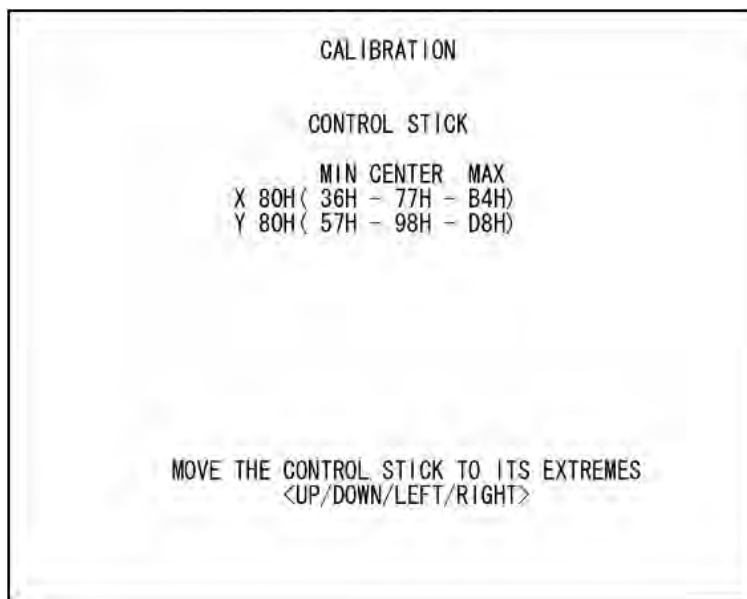


FIG. 9-3e05 CONTROL STICK (STEP2-1) Screen

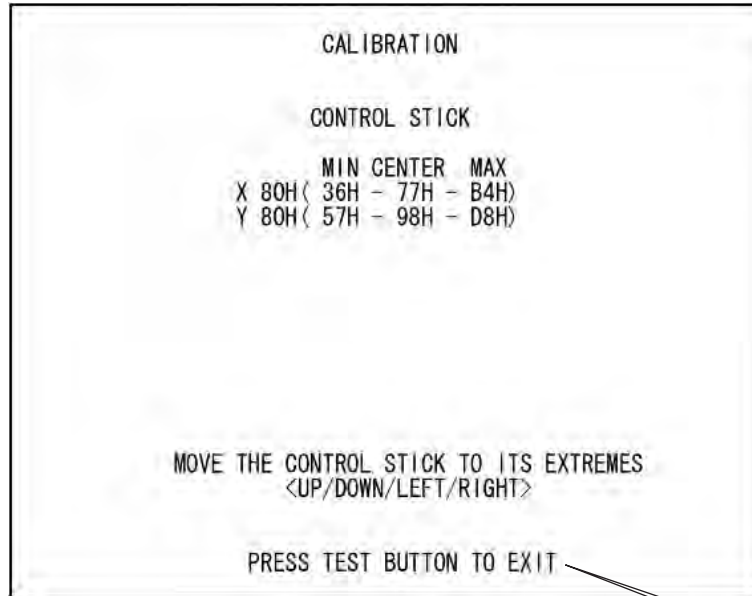


FIG. 9-3e06 CONTROL STICK (STEP2-2) Screen

“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.



FIG. 9-3e07 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.

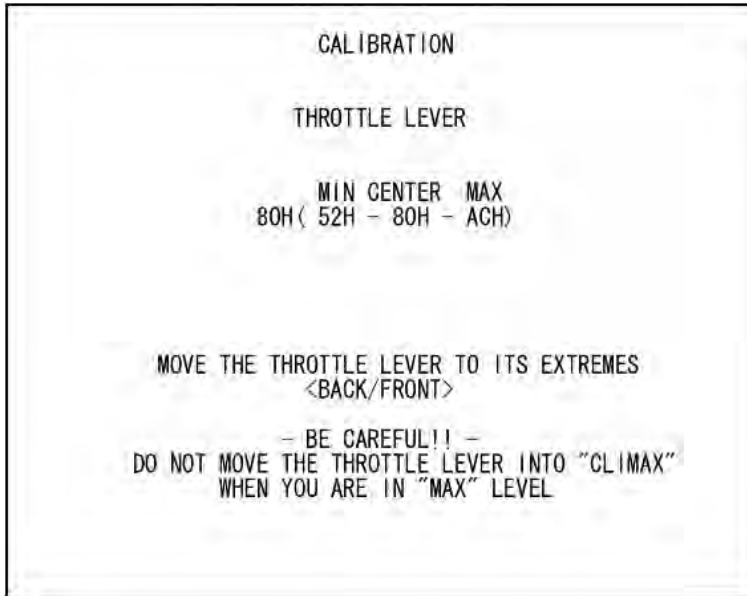


FIG. 9-3e08 THROTTLE LEVER (STEP2-1) Screen



FIG. 9-3e09 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.

Seat Center Position Calibration Screen

WARNING

On this screen sensor checks will not be performed, and the seat will also be unlocked. Make sure that no one is standing too close and take due care when performing the test. Because the seat inclines when it is pushed, there could be an accident. Someone could fall down, for instance, or get a finger or hand caught between something.

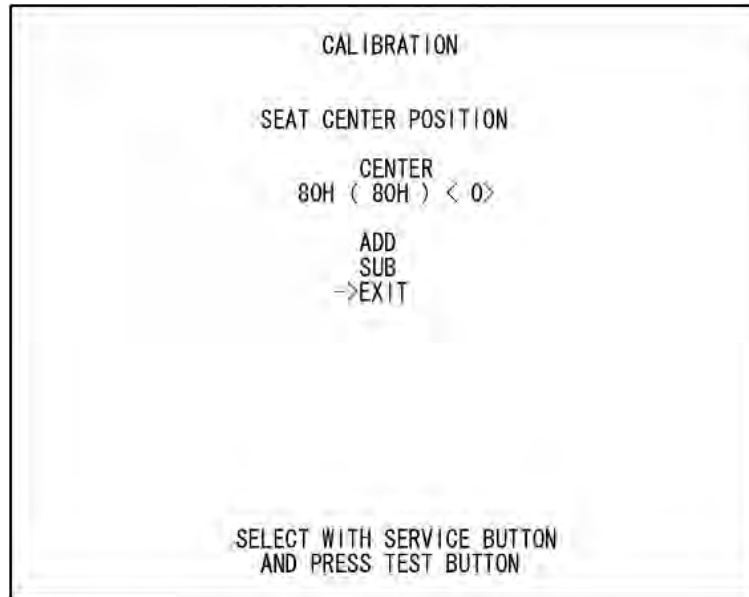


FIG. 9-3e10 SEAT CENTER POSITION Screen

This screen allows you to adjust the seat's center position.

<Operation>

1 Support the seat from left and right in accordance with the center position.

2 Align this volume value with the CENTER position value. Manipulate so that the two numerical values shown on the screen are the same.

80H (80H) < 0>



These two values must match.

The value in < > shows the degree of change from the value in (). This value can vary from -32 to +32.

Press the SERVICE Button and move the cursor to the item (ADD or SUB) to be executed.

Press the TEST Button to perform the highlighted item.

You can also use the control stick and gun trigger to make selections in game test mode.

3 Leave test mode and the center position will be changed.

<Menu Explanation>

ADD: Add 1 to the CENTER position value.

SUB: Subtract 1 from the CENTER position value.

EXIT: Return to 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.

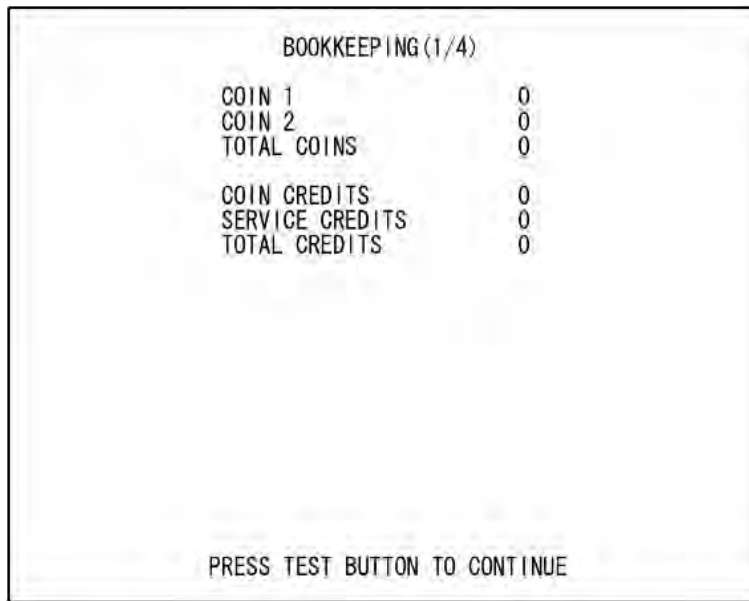


FIG. 9-3f01 BOOKKEEPING Screen (1/4)

<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.



FIG. 9-3f02 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.

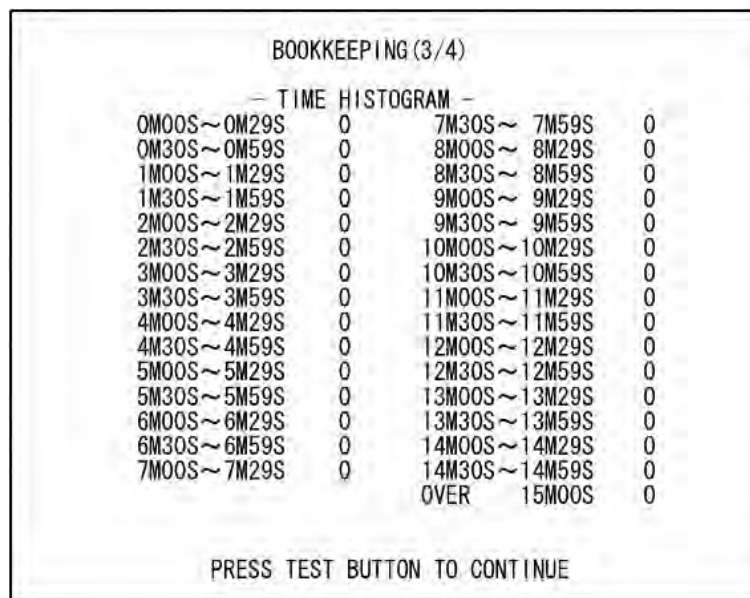


FIG. 9-3f03 BOOKKEEPING Screen (3/4)

<Menu Explanation>

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

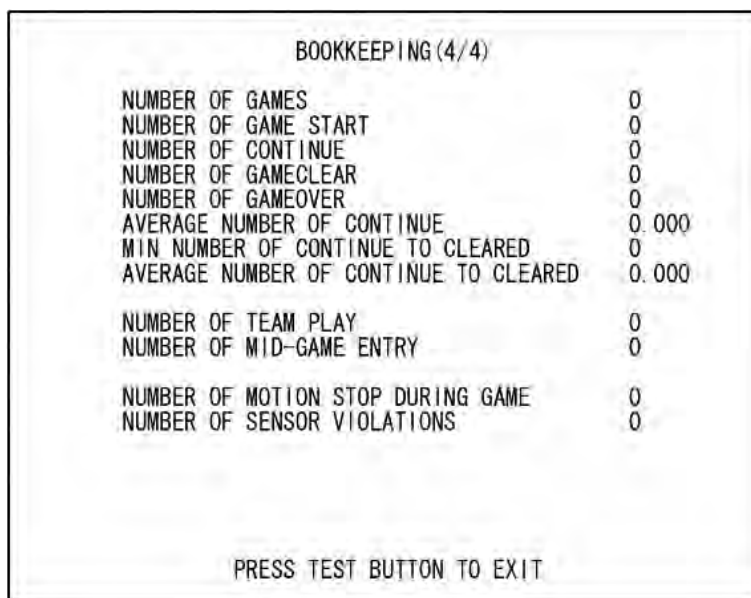


FIG. 9-3f04 BOOKKEEPING Screen (4/4)

<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 CLEAR:	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.
NUMBER OF MOTION STOP DURING GAME:	Number of times the MOTION STOP button has been pressed.
NUMBER OF SENSOR VIOLATIONS:	Number of times a sensor has reacted. (Only counted when the seat is unlocked.)

g. BACKUP DATA CLEAR



FIG. 9-3g01 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.

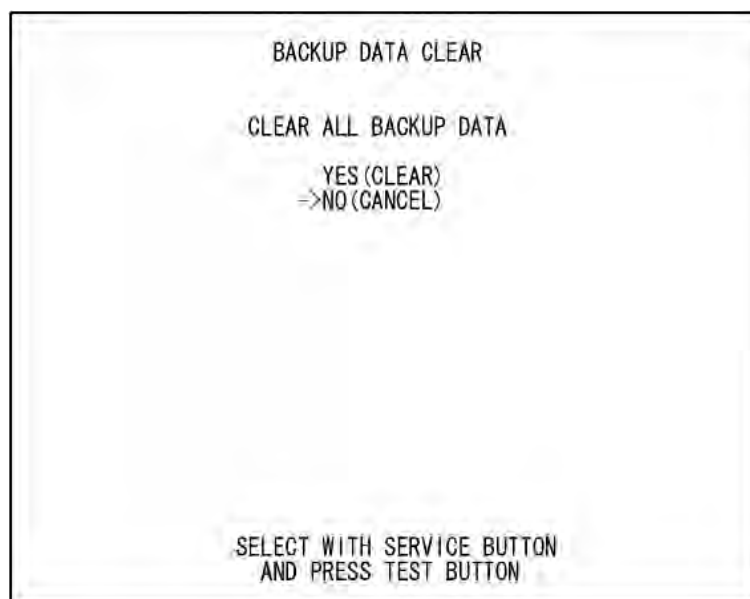


FIG. 9-3g02 BACKUP DATA CLEAR Screen

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.

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.



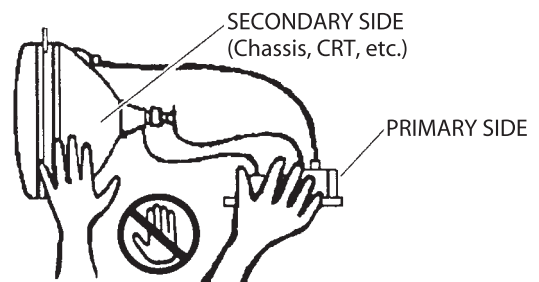
Indicates the instruction to disconnect or unplug a power connector.

⚠️ 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.

⚠️ WARNING

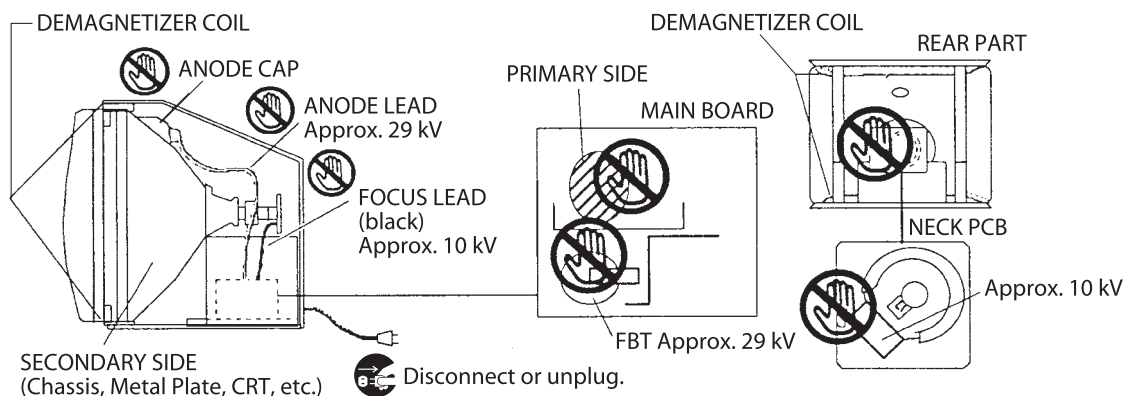
- Primary side and Secondary side
The monitor's circuit, which is divided into the Primary side and Secondary side, is electrically isolated. Do not touch the Primary side, or touch both the Primary side and the Secondary side simultaneously. Failing to observe this instruction can cause electric shock, leading to serious danger. When making monitor adjustments, use a non-conductive driver and make them without touching any part other than the Adjustment V. R. and knob. Also, be sure not to cause a short circuit to the Primary side and Secondary side. If a short circuit occurs, it can cause electric shock or malfunctioning, which poses a serious risk of danger.



⚠ WARNING

- **High Voltage**

Some of the parts inside the monitor are subject to high voltage in excess of 20,000 volts and pose a serious threat. Therefore, do not touch the monitor interior. Should soldering & paper wastes, etc. be mixed in the monitor interior, turn the power off so as not to cause malfunctioning or a fire hazard.



- **Connecting the CRT and PCB**

When combining the CRT and PCB, use the specified part No. to maintain the factory settings. The anode of the CRT itself will charge as time elapses, generating high voltage that is very dangerous. The monitor should be used with the Chassis, CRT, and PCB assembled. When repair, etc. is required at the time of malfunctioning, be sure to send it in an assembled state. If it is disassembled, the charged high voltage can be released, causing a very hazardous situation. Therefore, under no circumstances should it be disassembled.

⚠ CAUTION

- **Static Electricity**

Touching the CRT surface sometimes causes a slight shock. This is because the CRT surfaces are subject to static and will not adversely affect the human body.

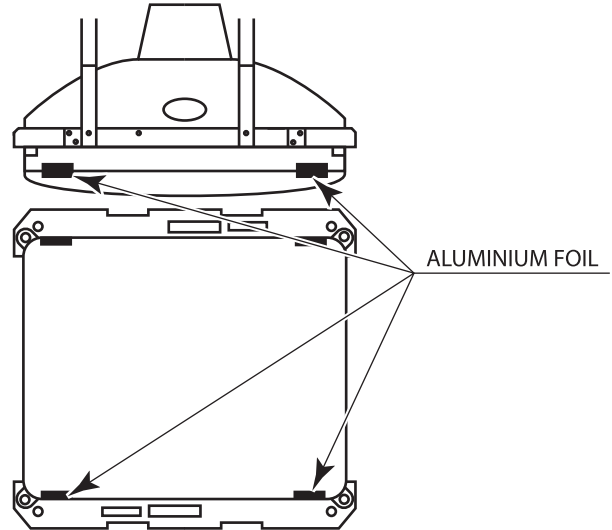
- **Installation and Removal**

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

⚠ CAUTION

Antistatic sheet is used in the product's CRT to prevent electrification. To protect this sheet, observe the following precautions. If the sheet is damaged, the customer could be electrocuted. There are cases in which sheet edges peel off and turn white, but this poses no problems in usage.

- Do not contact the antistatic sheet on the CRT surface, or rub it, with a hard implement (pointed bar or pen, etc.).
- Do not affix stickers or anything else that might damage the antistatic sheet on the CRT surface, or cause the sheet to peel off.
- Do not remove aluminum foils from the CRT corners. Removing the aluminum foils can cause static prevention effects to be lowered.

**10-2 CLEANING THE CRT SURFACES****⚠ CAUTION**

The antistatic sheet is attached onto the CRT surface. Observe the following precautions when cleaning. Damage to the antistatic sheet could result in electrical shock.

- Remove smears by using a dry, soft cloth (flannels, etc.). Do not use a coarse gauze, etc.
- For smear removing solvent, alcohol (ethanol) is recommended. When using chemical detergent, be sure to follow instructions below:
 - Dilute chemical detergent with water and dip a soft cloth in and then thoroughly wring it to wipe smears off.
 - Do not use a chemical detergent containing an abradant, powder or bleaching agent.
 - Do not use alkaline chemical detergents such as "glass cleaner" available on the market or solvents such as thinner, etc.
- Do not rub or scratch the CRT face with hard items such as brushes, scrub brush, etc.

Clean the CRT once a week. Observe the aforesaid precautions in cleaning so as not to damage antistatic sheet on the CRT surface.

10-3 ADJUSTMENT PROCEDURE

⚠ WARNING

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

There is a monitor adjustment board at the bottom of the switch unit inside the coin chute door.

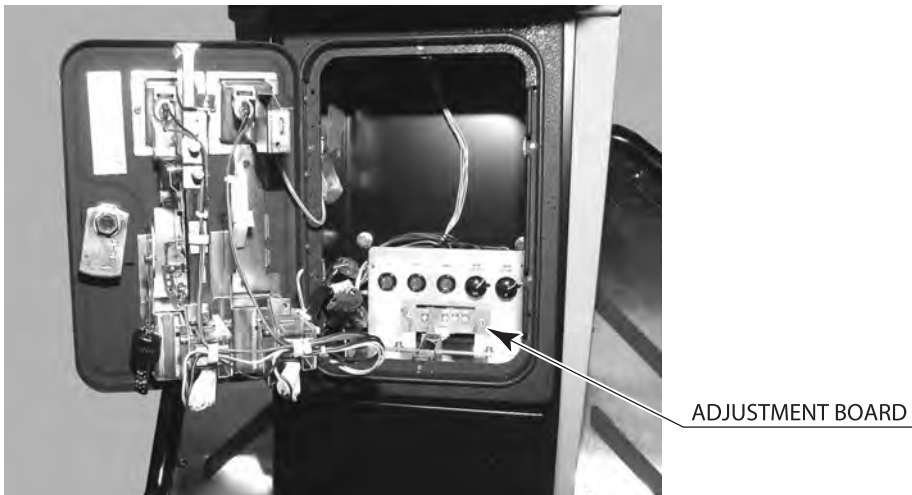
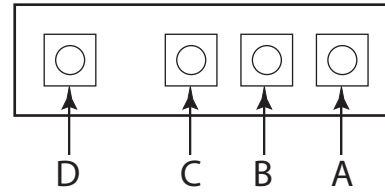


FIG. 10-3

This product's monitor is 200-5955-04. For adjustment method, carefully read and carry out the following. With this product, the hue of each color cannot be adjusted.

- A: FUNC (SA04)
- B: UP (SA03)
- C: DOWN (SA01)
- D: DEGAUSS (SA05)



There are four buttons to operate the adjustment.

Pressing FUNC button displays the following menu screen. The item chosen is red, and the others are green.

When there is no input of the button for 6 seconds, the menu display disappears.

CONT	VSIZ
BRIT	VPOS
HSIZ	RSET
HPOS	EXIT

CONT: adjusts image contrast.

With the UP button, it becomes deep and becomes light with the DOWN button.

BRIT: adjusts the on-screen image brightness.

With the UP button, it becomes bright and becomes dark with the DOWN button.

HSIZ: adjusts the horizontal image size.

With the UP button, it becomes large and becomes small with the DOWN button.

HPOS: adjusts the horizontal image's position.

With the UP button, it moves to the left and moves to the right with the DOWN button.

VSIZ: adjusts the vertical image size.

With the UP button, it becomes large and becomes small with the DOWN button.

VPOS: adjusts the vertical image's position.

With the UP button, it moves upwards and moves downwards with the DOWN button.

EXIT: ends the adjusting mode and exits the menu.

- Each time the FUNC button is pressed, the selection item (red display) moves in following order.

"CONT → BRIT → HSIZ → HPOS → VSIZ → VPOS → RSET → EXIT → CONT → •••••"

- Select the item (red display) and press the UP or the DOWN button once, the following display will appear.

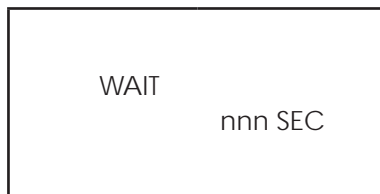


Contrast Adjusting Screen
The "nnn" is a present value of the adjustment value.

Pressing the UP/DOWN button again causes the adjusting works to be done.

When there is no input of the UP/DOWN button for 6 seconds or the FUNC button is pressed, the adjustment value is memorized.

- If EXIT is selected (red display) and the UP/DOWN button is pressed, the adjustment mode will be canceled and the menu display will disappear.
- Selecting RSET and pressing the UP and the DOWN buttons simultaneously causes "RSET" to be displayed for 3 seconds and this resets the on-screen setting status to the factory setting.
- When pressing the DEGAUSS button, degaussing is performed for 5 seconds and displays "DEGAUSS". Once degaussed, it takes 5 minutes or longer to have degaussing function again. If it is pressed before taking 5 minutes, the following screen will appear for the remaining seconds.



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 hexagon socket screws in front of the control stick. The spring washer and special washer are used with hexagon socket screws.



HEXAGON SOCKET SCREW (2)
M4x12, spring washer, special washer used

FIG. 11-1a

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

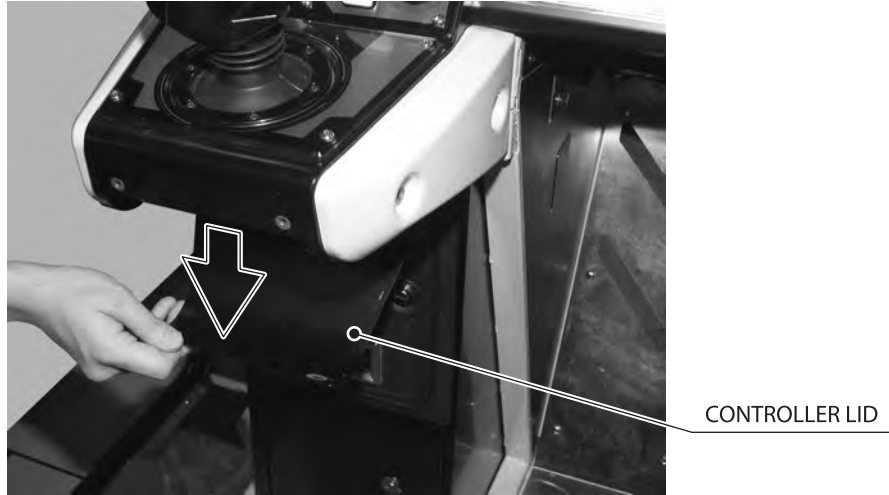


FIG. 11-1b

- 4** Remove the 2 wire connectors on the control stick.



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.

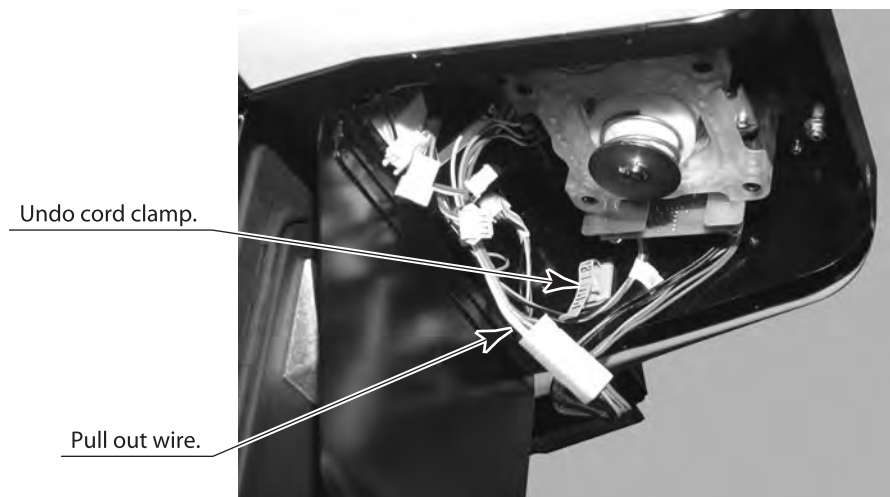


FIG. 11-1d

- 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.



FIG. 11-1e

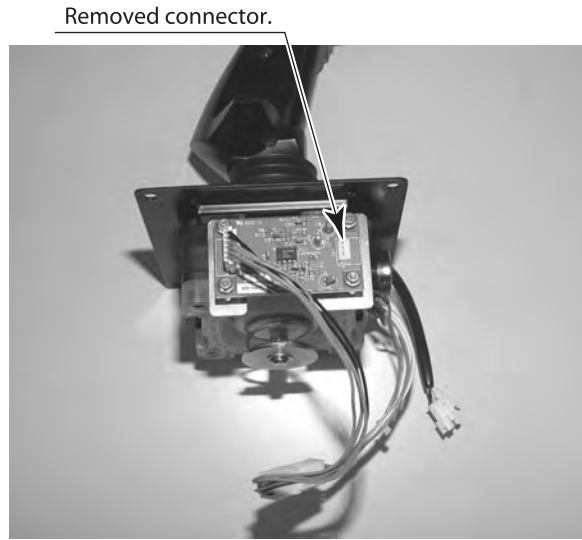


FIG. 11-1f

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

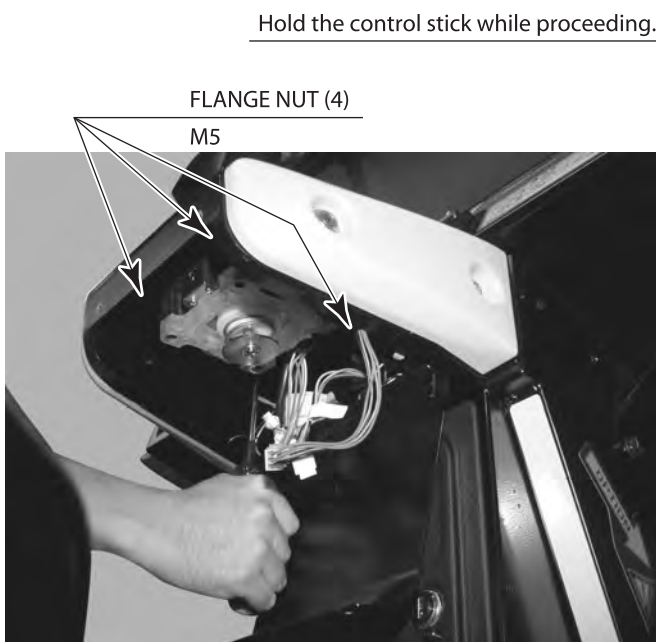


FIG. 11-1g



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).



FIG. 11-2

11-3 VOLUME REPLACEMENT

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.

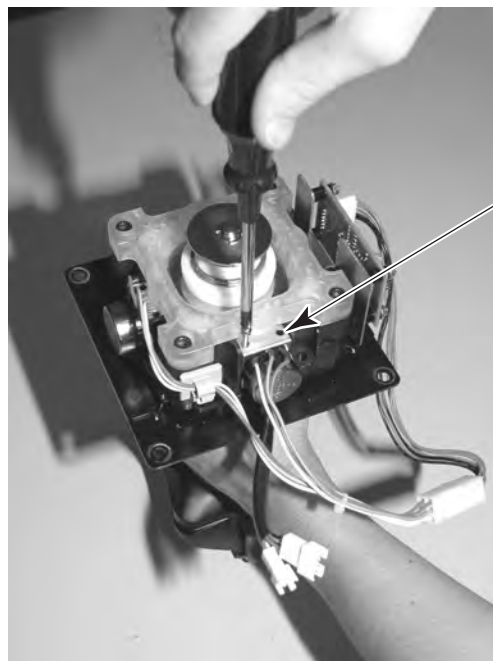
Have available a volume for replacement and three thermal contraction tubes (PART NO. 310-5029-D12).

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)
M3x30, w/spring washer

FIG. 11-3a

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

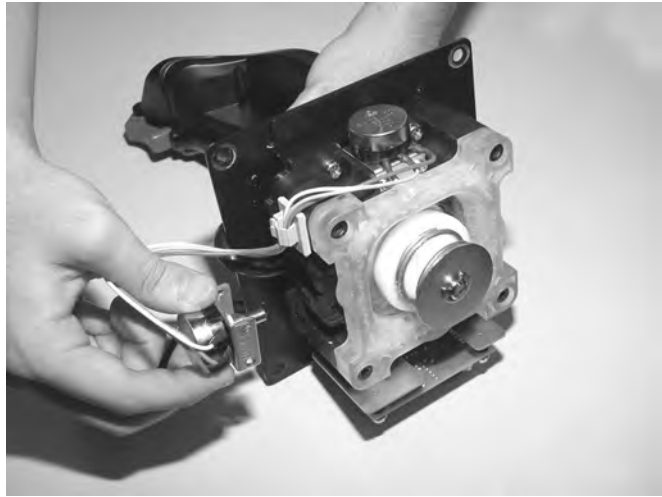


FIG. 11-3b

- 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.

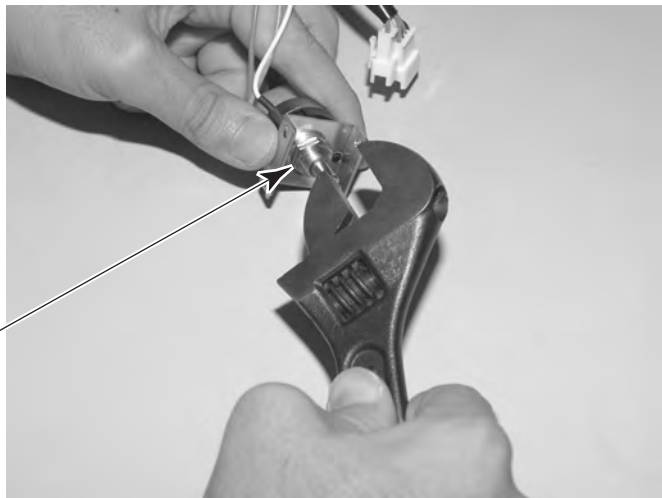


FIG. 11-3c

- 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.

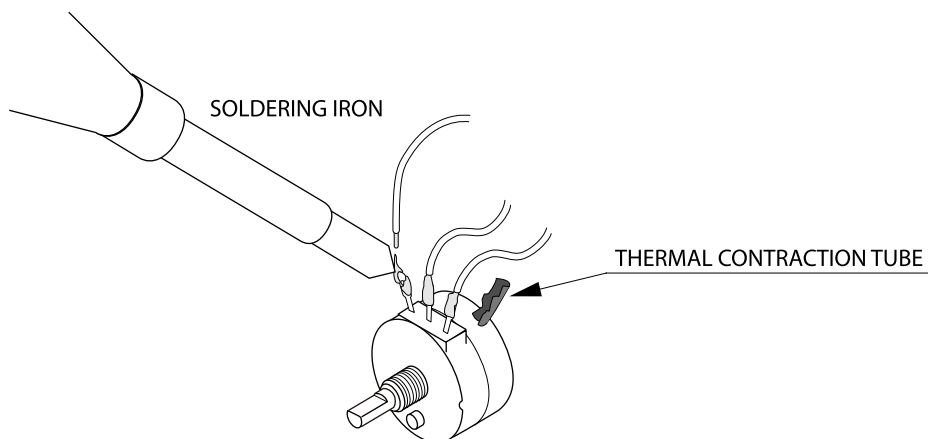


FIG. 11-3d

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.

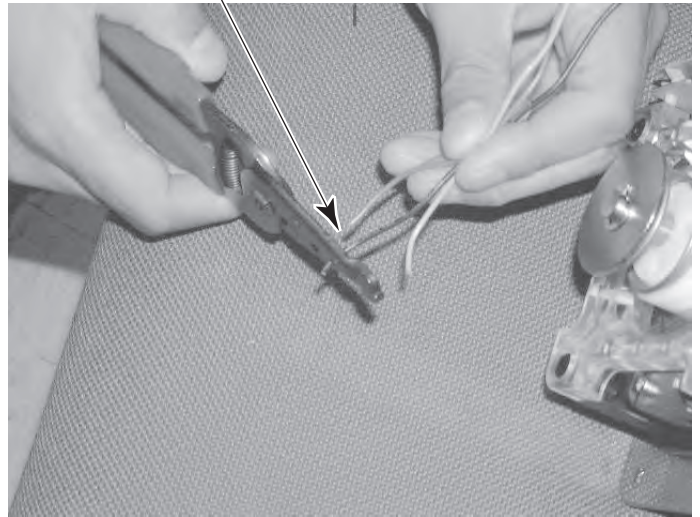
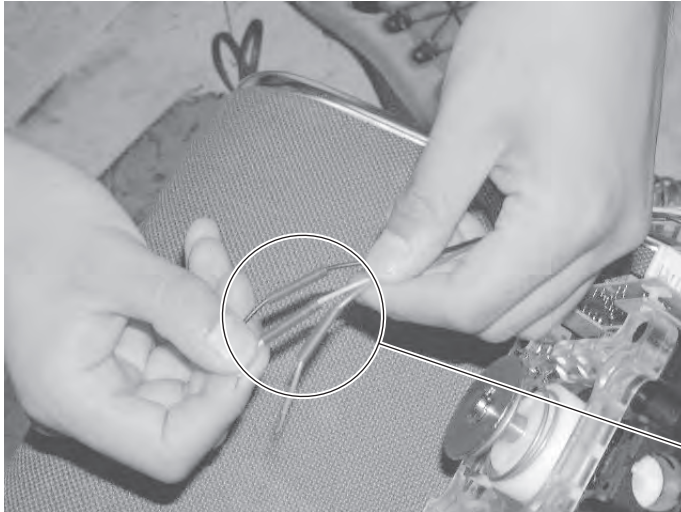


FIG. 11-3e

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.

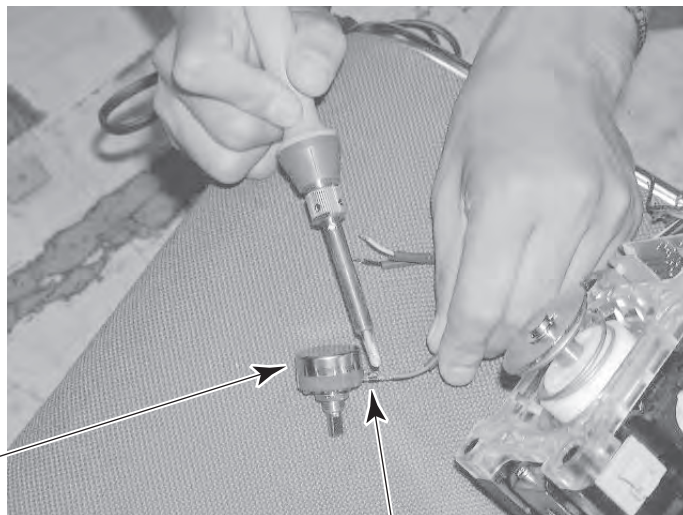


FIG. 11-3g

Soldering

10 Heat with industrial dryer and affix thermal contraction tube so that it covers soldered area.

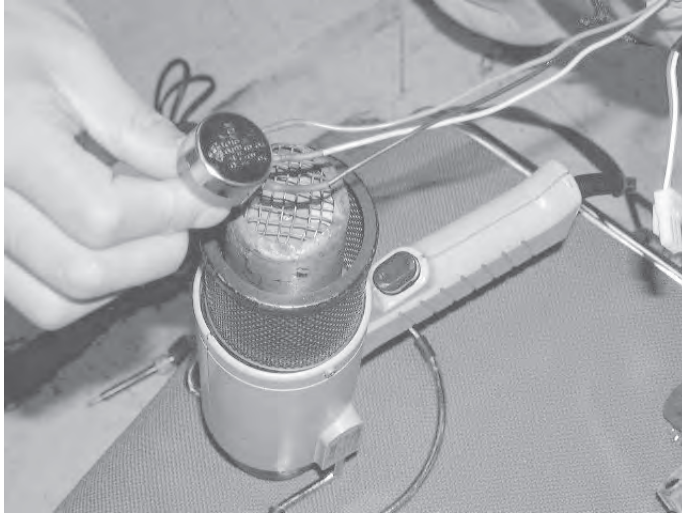


FIG. 11-3h

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.

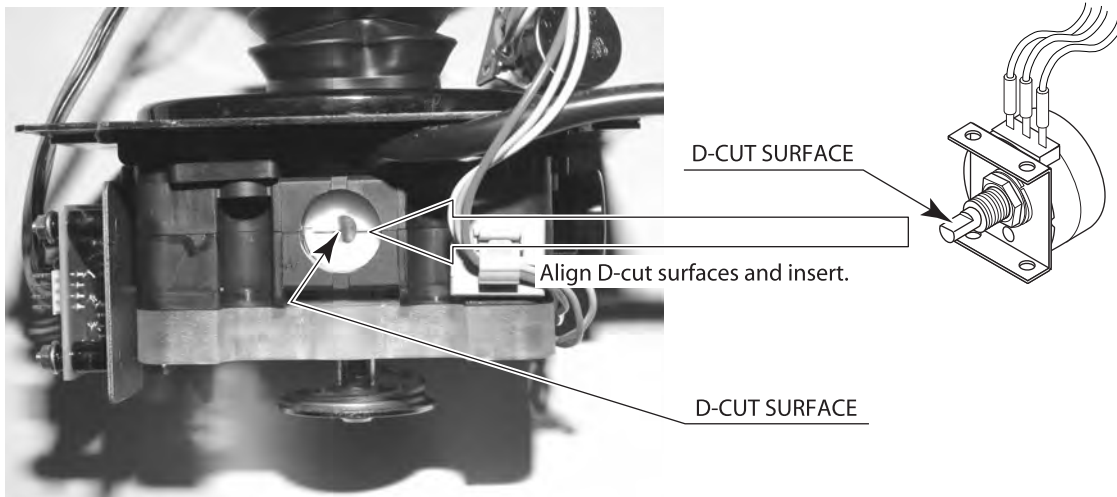


FIG. 11-3i

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 9-3e).

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 MICROWITCH 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.

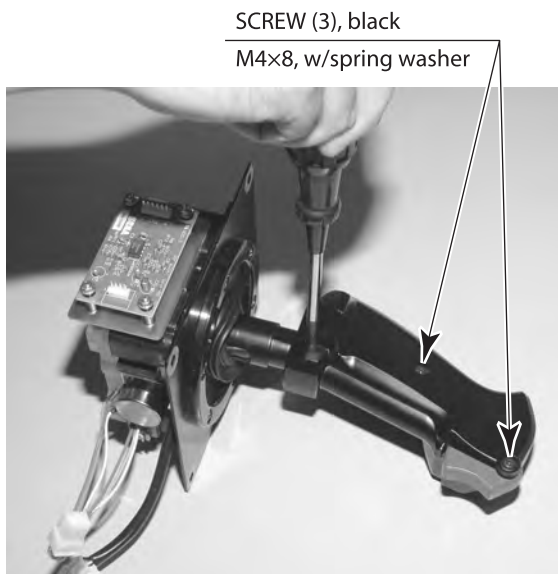


FIG. 11-4b

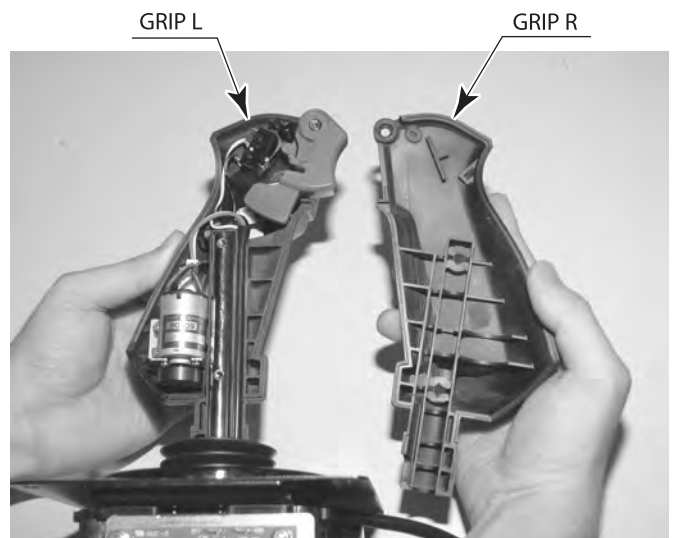


FIG. 11-4c

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

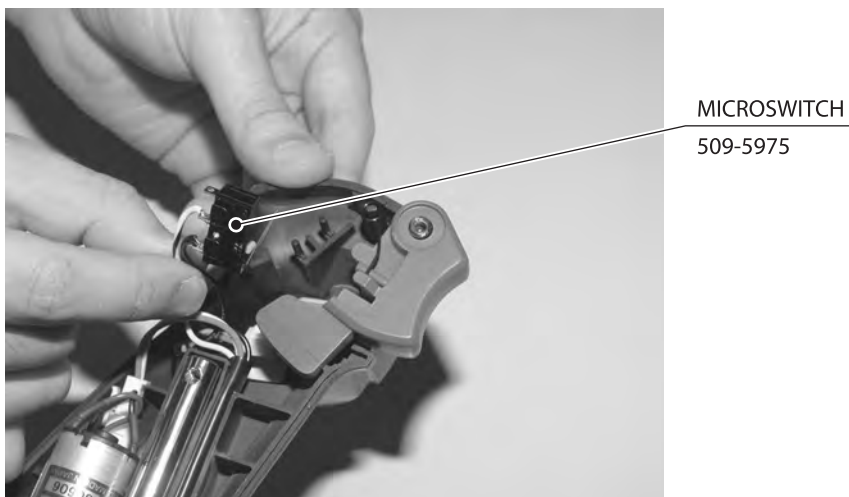


FIG. 11-4d

-
- 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.

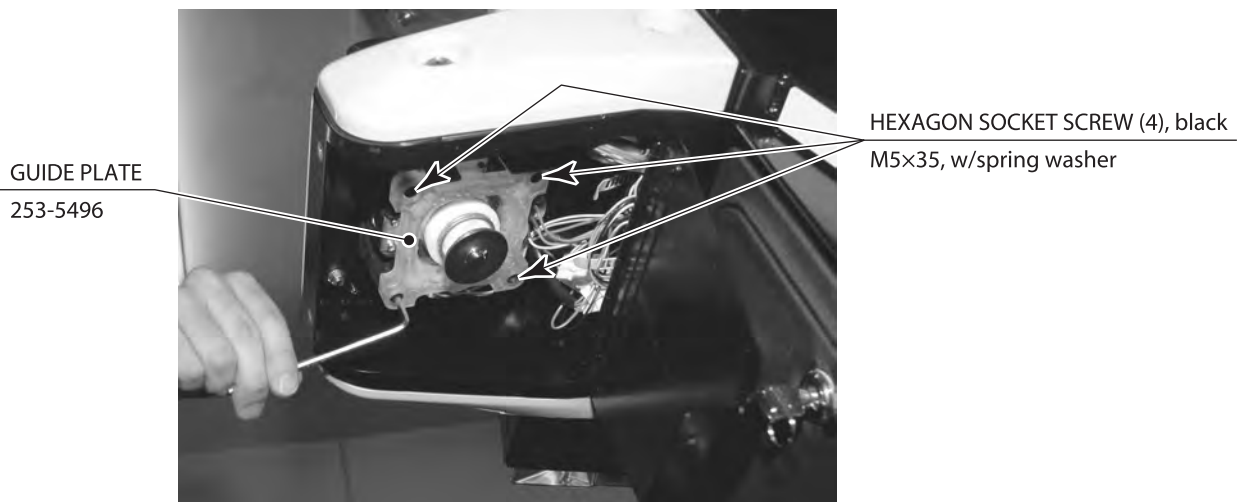


FIG. 11-5

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.

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 undesiged 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

TRUSS SCREW (4), black
M4×12, flat washer used

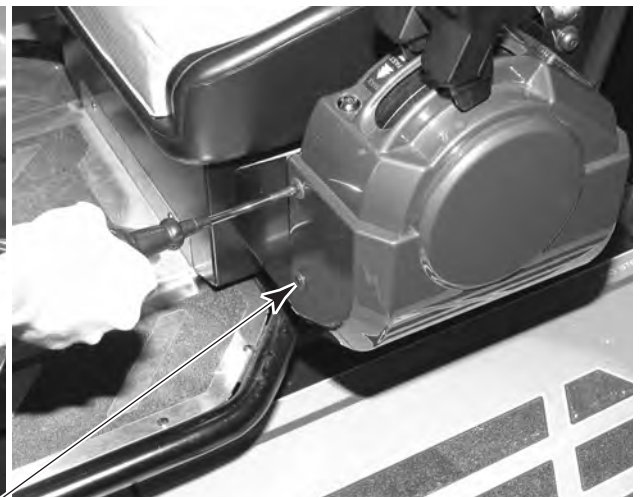


FIG. 12-1b

3 Remove throttle cover lower.



THROTTLE COVER LOWER

FIG. 12-1c

4 Apply grease only at designated locations.



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.

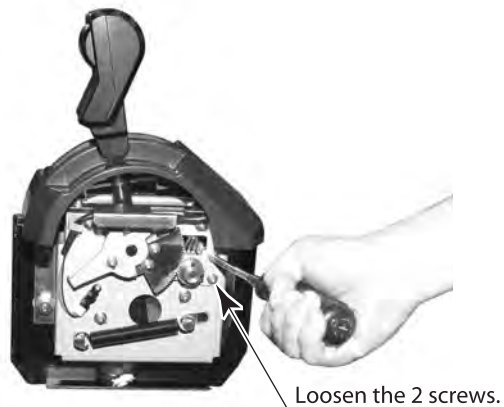


FIG. 12-2a

-
- 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.

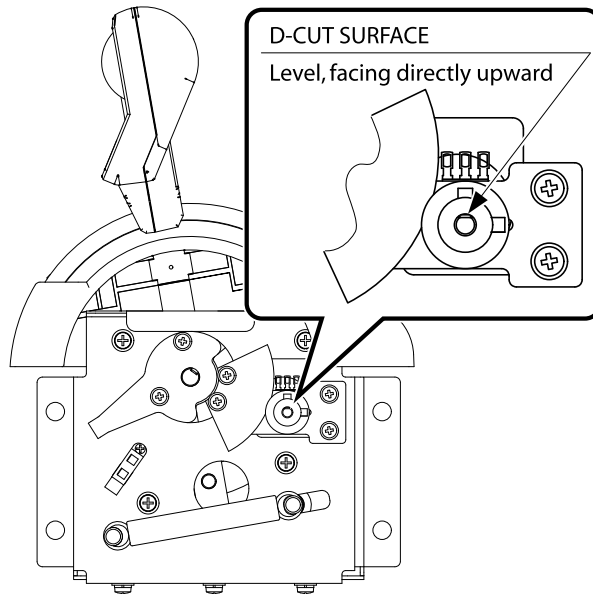


FIG. 12-2b

-
- 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.

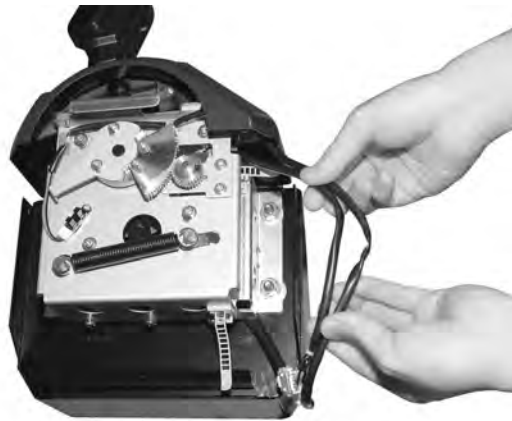


FIG. 12-2c

- 4** Remove the connector.

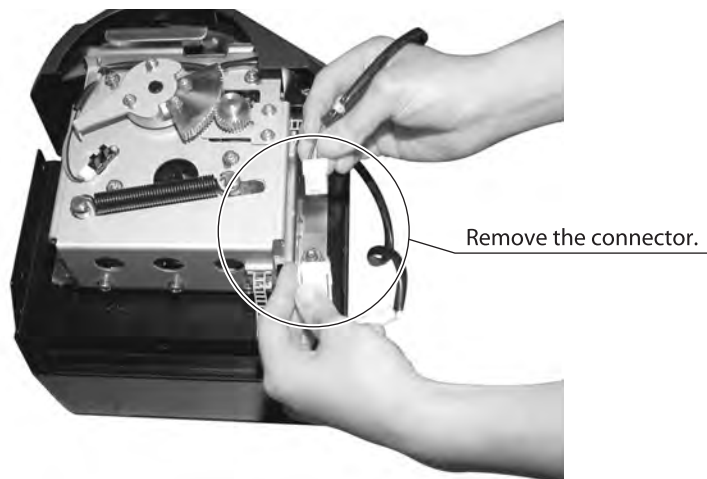


FIG. 12-2d

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

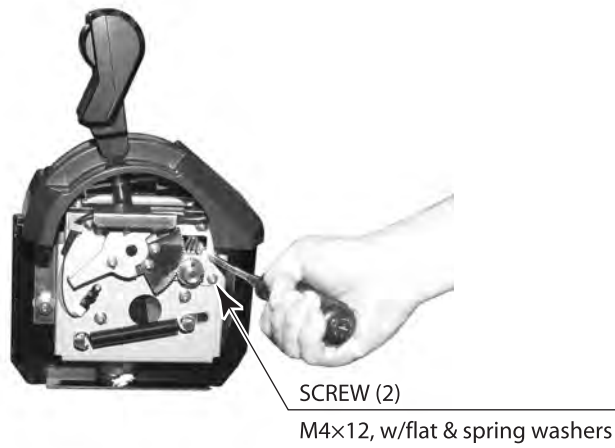


FIG. 12-2e

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



FIG. 12-2f

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

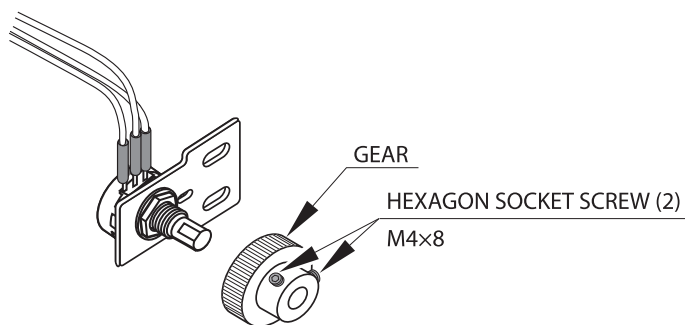


FIG. 12-2g

- 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.

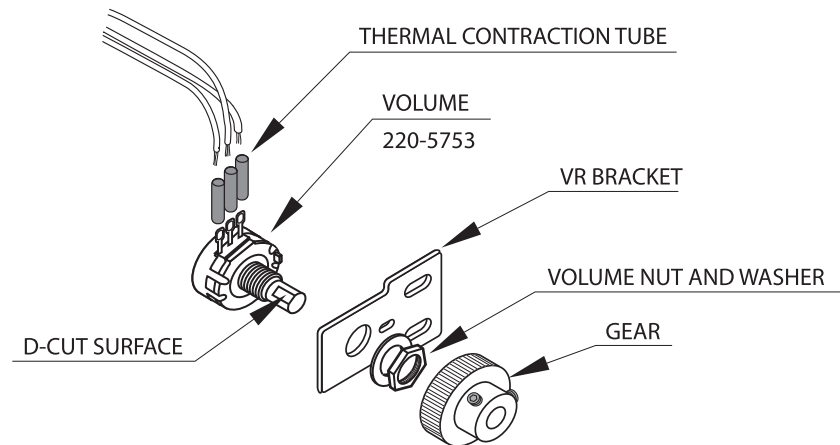


FIG. 12-2h Volume Replacement

- 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.

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.
- For maintenance of moving mechanisms, request service from the customer service center given in this manual or from the point of purchase. Maintenance must be performed by technicians who have taken special coursework. If performed by anyone else, workers could suffer accidents during maintenance and players could suffer accidents during play.
- Be careful not to get caught up in mechanical components. If finger or hand gets caught, there could be a bone fracture or other serious injury.

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.

The volume that detects seat inclination is the roll volume. It is inside the front pillar cover.

13-1 GREASING**STOP IMPORTANT**

- Be sure to use the designated grease. Using undesigned 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, grease the gear mesh that rotates the volume shaft. Use Greasemate (PART NO. 090-0066).

1 Cut off the power supply.

2 Remove the front pillar cover at the back of the CRT. There are 2 types of fastening screws. Remove 1 truss screw from the top. A flat washer is used with the truss screw.

TRUSS SCREW (1), black
M4×12, flat washer used

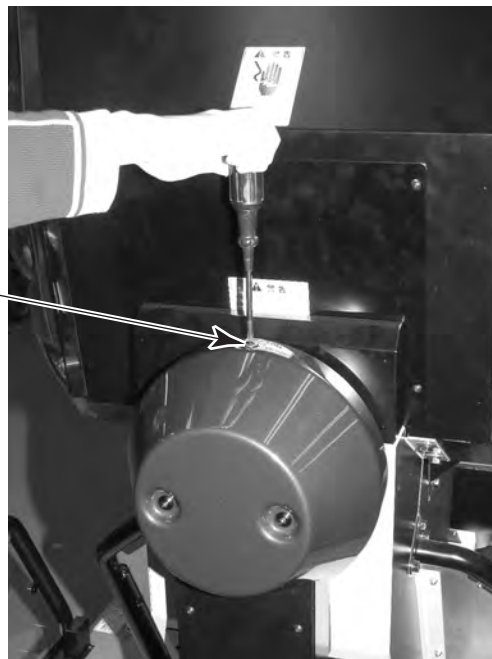
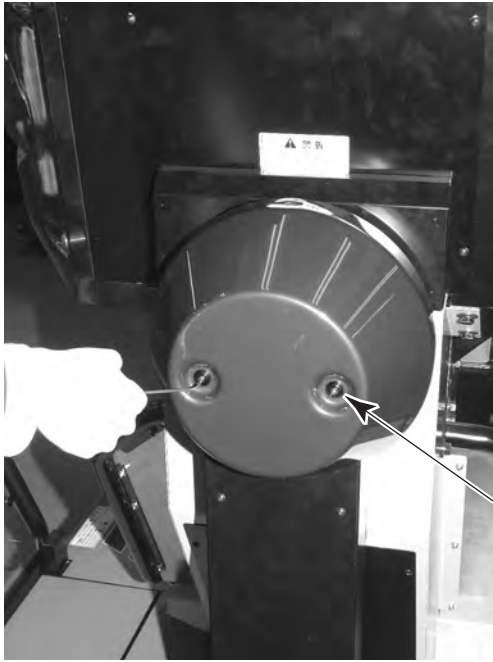


FIG. 13-1a

- 3** Remove the 2 hexagon socket screws from the front surface. A spring washer and special washer are used with the hexagon socket screws.



HEXAGON SOCKET SCREW (2)
M4×16, spring washer, special washer used

FIG. 13-1b

- 4** Remove the front pillar cover.



FIG. 13-1c

- 5** Apply grease only to the gear mesh component.



GEAR MESH COMPONENT

FIG. 13-1d

13-2 ROLL VOLUME ADJUSTMENT OR REPLACEMENT

When seat movement is unsatisfactory and settings on the test mode calibration screen are ineffective, the problem could be faulty volume gear mesh, volume malfunction or an anomaly in a moving mechanical component.

With this product, when the seat has been tilted fully to the right or left, if the volume rotary shaft turns within its movable range, there is no danger that the volume will be damaged.

When the seat is level, fasten it so that the volume shaft is in the prescribed direction and the gear mesh fits properly.

The following tools are required for the following procedure.

- Philips screwdriver for M4 screw
- Flat head screwdriver for M3 screw
- 2.5 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 Remove front pillar cover. Remove 1 truss screw and 2 hexagon socket screws. (See 13-1.)
- 3 Remove 2 screws that hold down the roll volume bracket, then remove the bracket together with the volume.

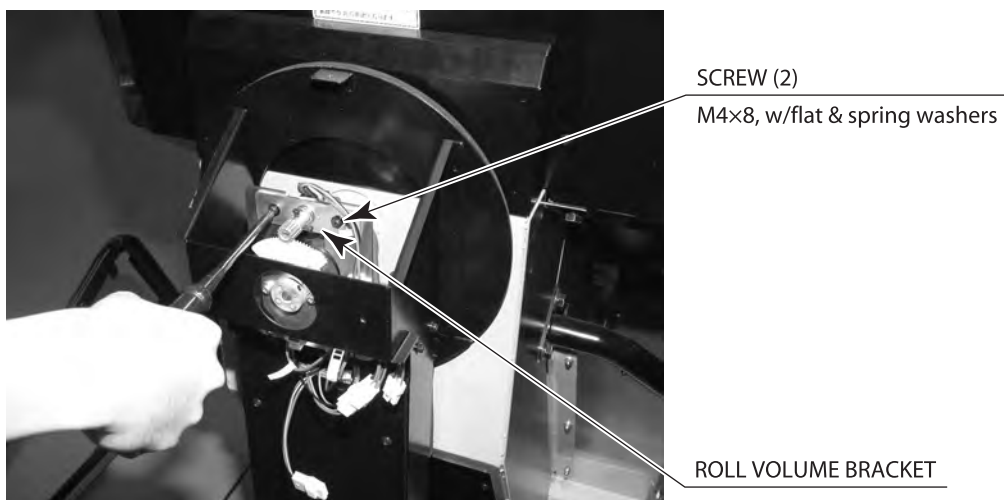


FIG. 13-2a

4 Rotate the gear so that the D cut surface of the volume shaft is level, facing directly upward.

5 Align so that the gear does not rotate, then tighten the 2 screws that hold down the roll volume bracket.

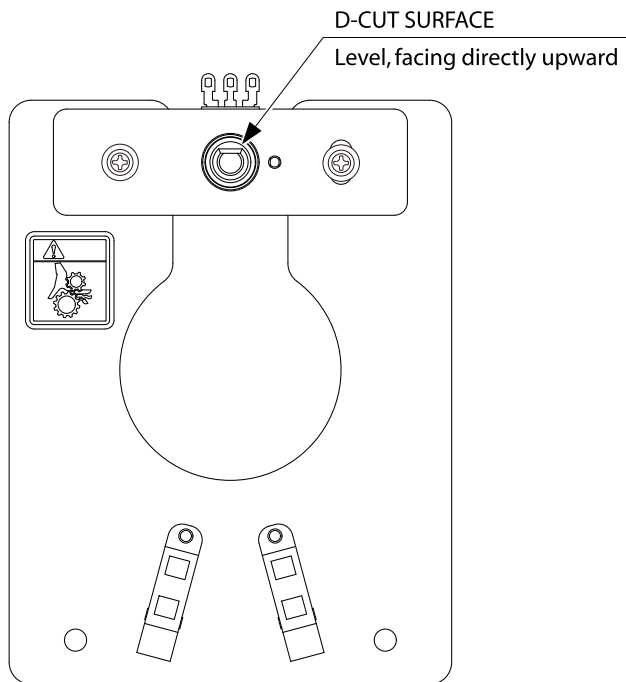


FIG. 13-2b

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 the value changes smoothly in accordance with seat movement. Also confirm that the value is [80H +/- 4H] when the seat has stopped at level position.

8 Align the seat center position on the calibration screen. (See 9-3a.)

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

Replacement Method

Make available the volume for replacement and 3 thermal contraction tubes (PART NO. 310-5029-F20).

- 1 Cut off the power supply.
- 2 Remove the front pillar cover. Remove 1 truss screw and 2 hexagon socket screws. (See 13-1.)
- 3 Unfasten the cord clamp that holds down volume wire.

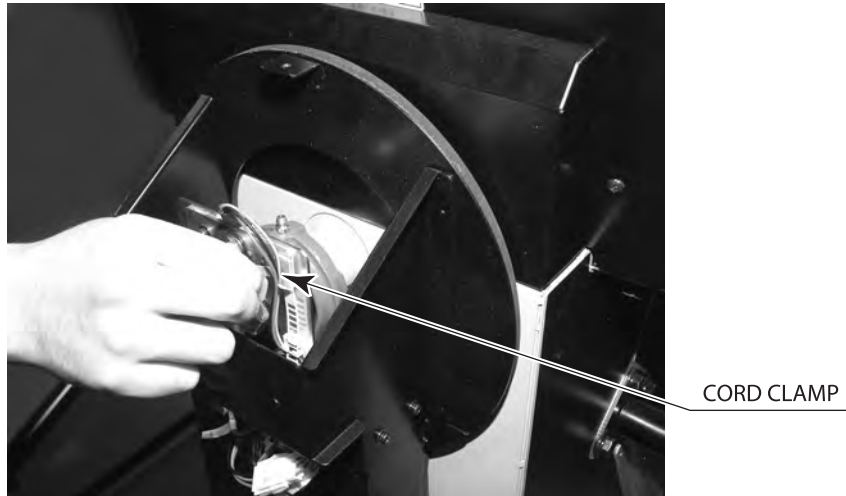


FIG. 13-2c

- 4 Take out the connector.

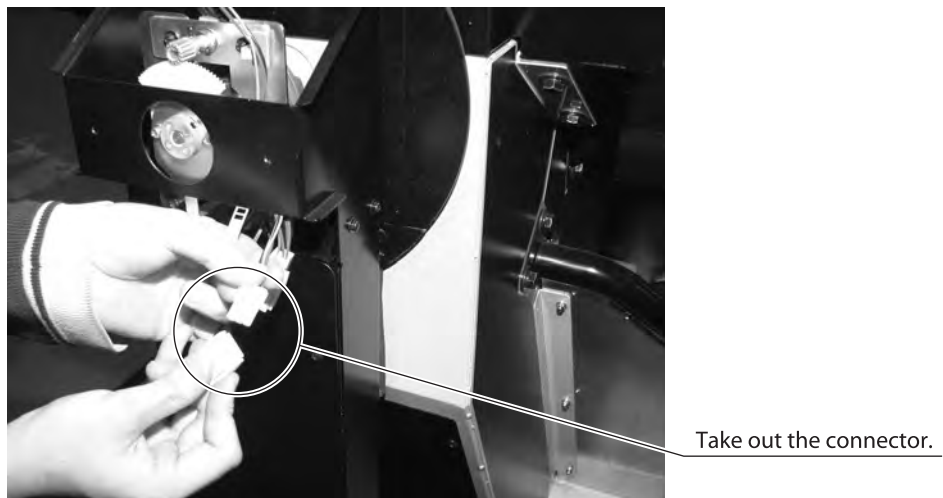
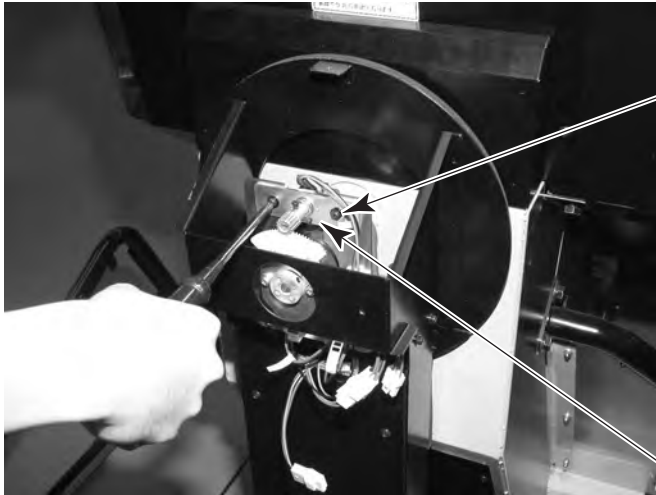


FIG. 13-2d

- 5** Remove the 2 screws that hold down the roll volume bracket. Flat and spring washers are attached with these screws.



SCREW (2)
M4x8, w/flat & spring washers

ROLL VOLUME BRACKET

FIG. 13-2e

- 6** Remove the roll volume bracket together with volume. Be careful not to damage wire connected to the volume.

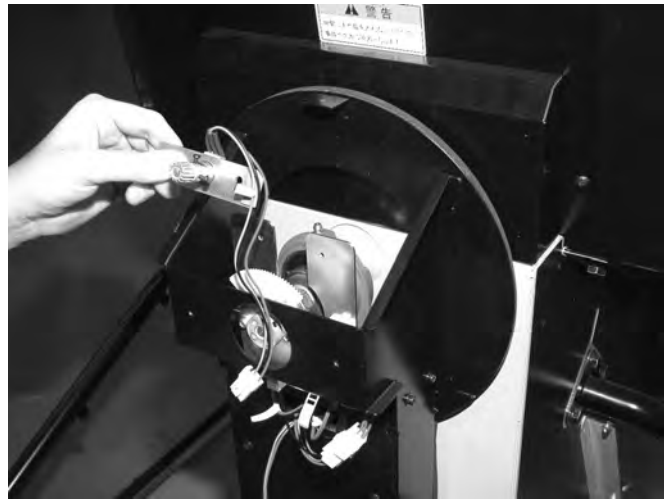
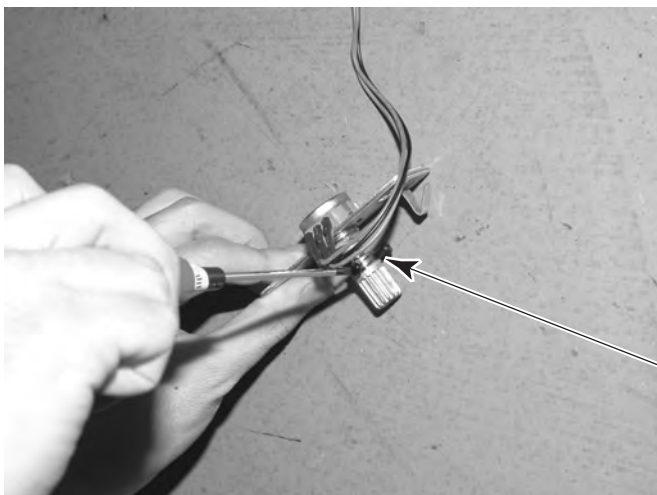


FIG. 13-2f

- 7** Loosen the 2 flat head screws that hold down gear, and then withdraw gear from volume shaft.



FLAT HEAD SCREW (2)
M3x8

FIG. 13-2g

- 8** Remove the nut that holds down the roll volume bracket, then remove volume from roll volume bracket and replace it.
- 9** The wire connected to the volume is used as is. Cut 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 the 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.

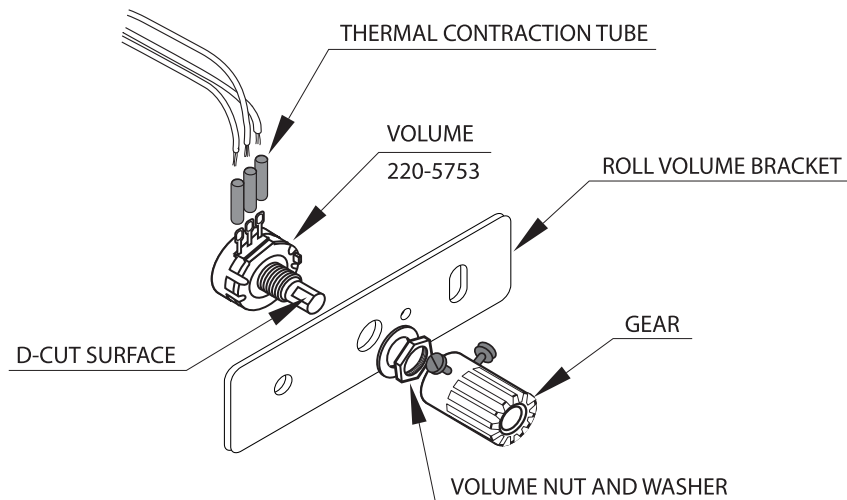


FIG. 13-2h Volume Replacement

- 13** Attach the gear and roll volume bracket to volume.
- 14** Rotate the gear so that the D cut surface of the volume shaft is level, facing directly upward.
- 15** Attach the roll volume bracket so that the seat is level and the gear does not rotate. Tighten the 2 fastening screws. Adjust the gear mesh at this time.
- 16** Connect the connector and fasten wire with cord clamps.
- 17** Attach the front pillar cover.
- 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.

14 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.).

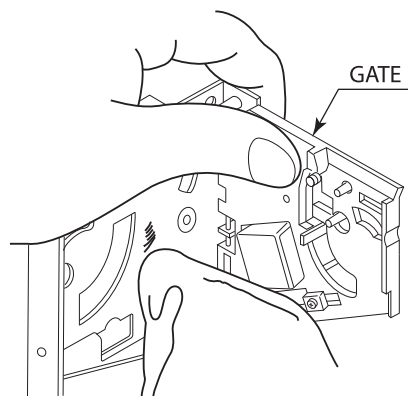


FIG. 14a

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.

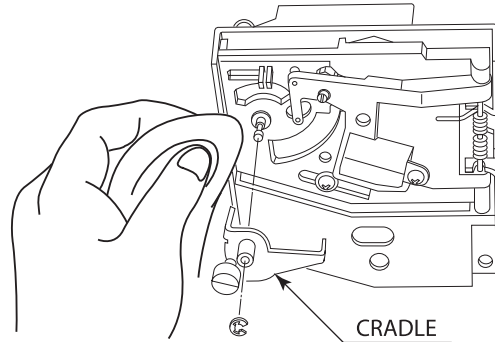


FIG. 14b

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?

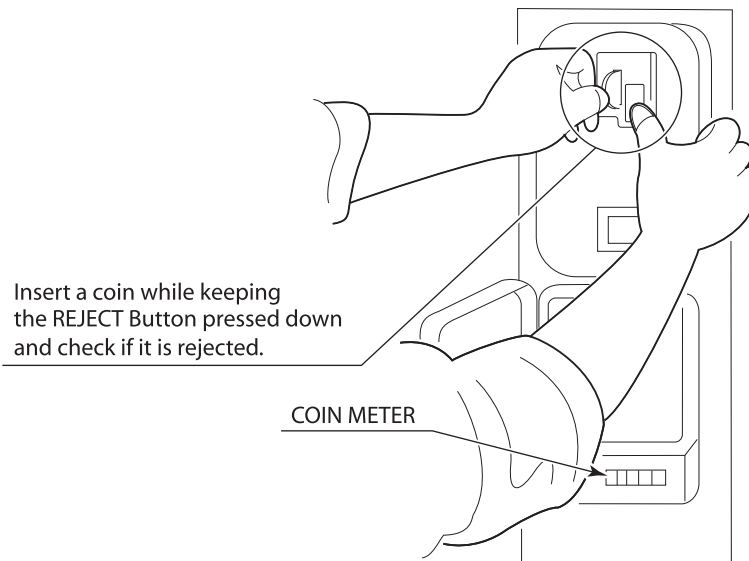


FIG. 14c

15 REPLACING THE FLUORESCENT LAMPS

WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- You may get burned by a hot fluorescent lamp or other lamps. Pay full attention to the lamps when performing the work.
- There is the danger of short circuits or smoke generation due to deterioration of insulation in lighting fixtures resulting from age deterioration. Check for anomalies such as the following: Does it smell like something is burning? Is there socket discoloration? Are any lamps being replaced frequently? Do lamps not go on properly?
- Before turning on the power after a fluorescent lamp has been replaced, inspect carefully to see if anyone is near the product or if tools or other items have been left on the product. When the power is turned on, 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.

CAUTION

- Be careful when handling the plastic parts. Failure to observe this may cause injury or damage due to fragments, etc.
- Do not attempt to replace billboard fluorescent lamps while standing on the base. If you should misstep while working, you could stumble or fall down.

This product has 1 fluorescent lamp in the billboard and 1 fluorescent lamp each at the top and bottom of the seat backrest rear surface.

Billboard

1 Cut off the power supply.

2 Remove 4 truss screws from atop the billboard.

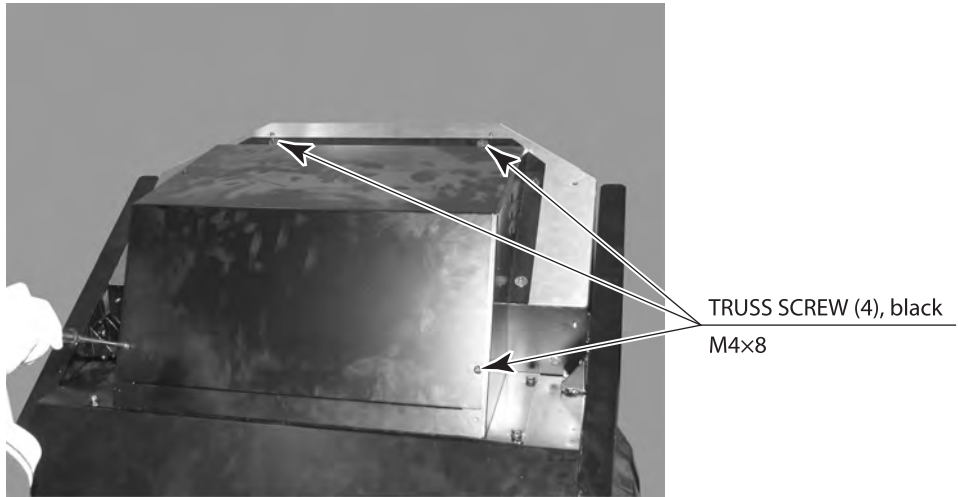


FIG. 15a

3 Remove the billboard lid and replace the fluorescent lamp.

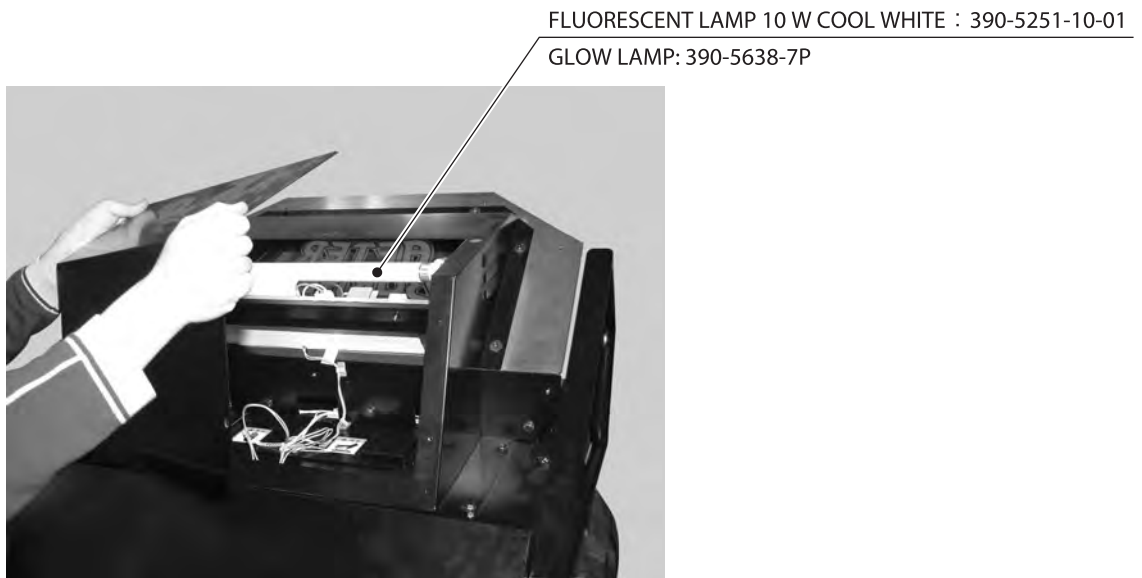


FIG. 15b

Underside of Seat Backrest Rear Surface

1 Cut off the power supply.

2 Remove 7 hexagon socket screws. Use a 2.5 mm Allen wrench or screwdriver. Spring washers and special washers are used with the hexagon socket screws.

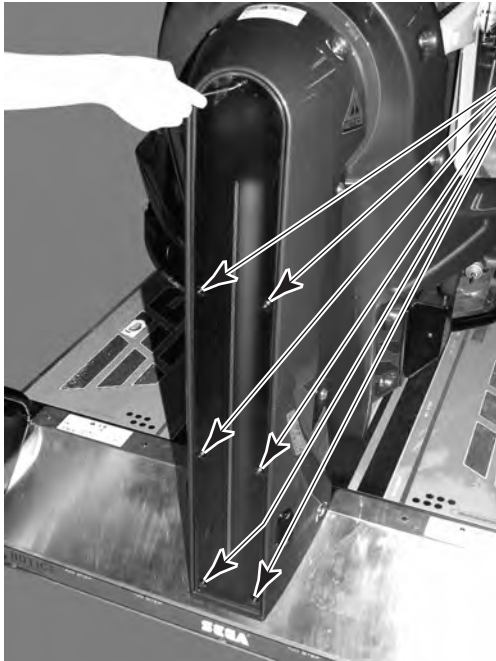


FIG. 15c

HEXAGON SOCKET SCREW (7)
M4×16, spring washer, special washer used

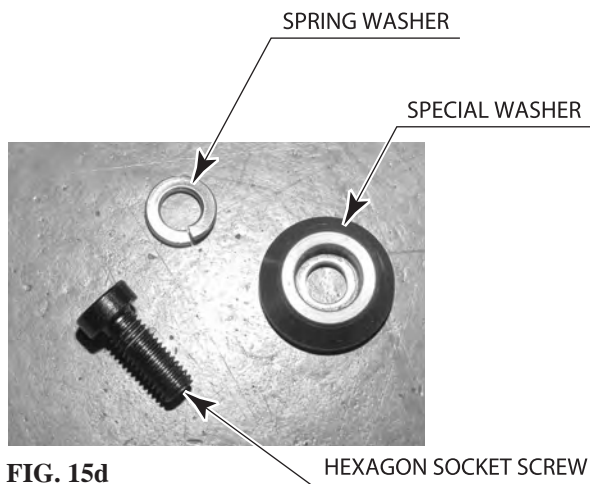


FIG. 15d

3 Remove the rear pillar plate and replace the fluorescent lamp.



FLUORESCENT LAMP 30W COOL WHITE: 390-5251-30-01
GLOW LAMP: 390-5638-1P

REAR PILLAR PLATE

FIG. 15e

Upper Side of Seat Backrest Rear Surface

1 Cut off the power supply.

2 Remove 3 hexagon socket screws. Use a 2.5 mm Allen wrench or screwdriver. Spring washers and special washers are used with the hexagon socket screws.



HEXAGON SOCKET SCREW (3)
M4×16, spring washer, special washer used

FIG. 15f

3 Remove headrest plate and replace fluorescent lamp.



FLUORESCENT LAMP 6W COOL WHITE: 390-5251-06-01
GLOW LAMP: 390-5638-7P

HEADREST PLATE

FIG. 15g

16 PERIODIC INSPECTION

WARNING

- Once a year, check to see if power cords are damaged, the plug is securely inserted, dust is accumulated between the socket outlet and the power plug, etc. Using the product with accumulated dust in the interior may cause fire or electric shock.
- Never use a water jet, etc. to clean the inside and outside of the cabinet. If wetness occurs for any reason, do not use the product until it has completely dried.
- Once a year, request the office shown on this manual or the dealer from whom the product was originally purchased to perform the internal cleaning. Using the product with accumulated dust in the interior may cause fire or other accidents. Note that you are liable for the cost of cleaning the interior parts.
- 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 16 PERIODIC INSPECTION TABLE

ITEMS	DESCRIPTION	PERIOD	REFERENCE
CABINET	Confirm that adjusters contact floor	Daily	3
MONITOR	Screen cleaning	Weekly	10-2
	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
ROLL VOLUME	Inspection of volume	1 month	9-3a
	Greasing	3 months	13-1
COIN SELECTOR	Inspection of coin switch	1 month	Service manual, Chapter 4
	Coin insertion test	1 month	Chapter 14
	Coin Selector cleaning	3 months	Chapter 14
GAME BOARD	Check of board information	1 month	Service manual, Chapter 4
	Check of settings	1 month	9-3c, 9-3d
FLUORESCENT LAMP	Inspection of lighting fixtures	As appropriate	Chapter 15
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

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.

17 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.

17-1 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.

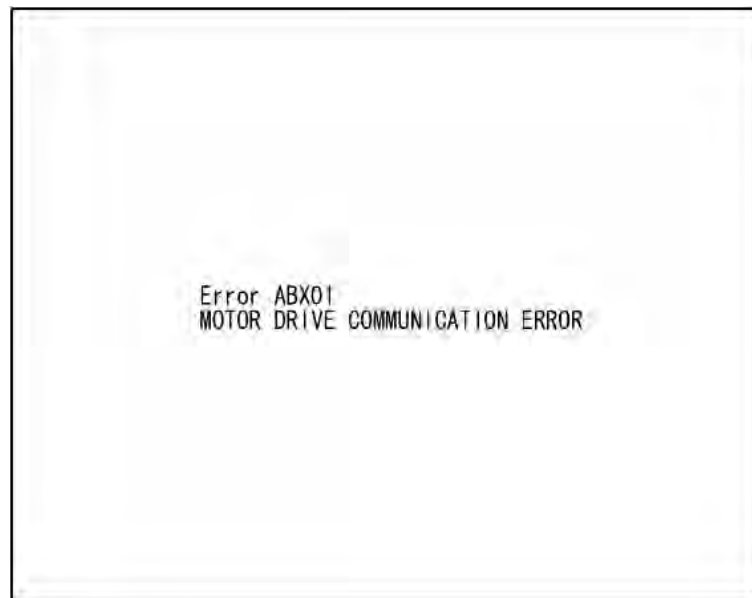


FIG. 17-1 Error Message

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 ABX02 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 ABX03 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 ABX04 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 ABX05 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 ABX06 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 ABX07 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 ABX08 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.

17-2 TROUBLESHOOTING TABLE

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

TABLE 17-2

PROBLEMS	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine is not activated.	The power is not ON.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	The Circuit Protector of the AC Unit functioned due to momentary overcurrent.	After eliminating the cause of overload, have the Circuit Protector of the AC Unit restored. (See Section 6, [4], Refer to the following.)
	The fuse of the fuse holder was blown out due to momentary overcurrent.	After eliminating the cause of overload, replace the specified rating fuse. (Photo 17-3)
Billboard fluorescent lamp does not glow.	Faulty connection of connectors	Join connectors securely between cabinet and billboard. (See chapter 6-2.)
	Fluorescent lamp and glow lamp need replacement.	Replace the fluorescent lamp and the glow lamp. (See chapter 15.)
Sounds are emitted and the lamps are lit, but the screen is black.	Faulty connections for the visual signal connector or the monitor power connector.	Check the connections for the monitor and game board connectors.
	Broken monitor.	Contact the company from whom the unit was purchased.
Sound is not emitted.	Sound volume adjustment is not correct.	Adjust the switch unit's sound adjustment volume. (See 9-1.)
	Faulty connections for various connectors.	Check the connections for the game board, amp, speakers and volume connectors.
	Malfunctioning board, amplifier and speaker.	Perform output test and check. (See 9-3b.)
	Speaker settings are incorrect.	Check the AUDIO OUTPUT setting on the game setting screen. (See 9-3c.)

PROBLEMS	CAUSE	COUNTERMEASURES
Irregular/uneven colors on the monitor screen.	Magnetization of the CRT.	Press the DEGAUSS button on the adjustment board. (See 10-3.)
Colors on the monitor screen are strange.	Faulty connection for the visual signal connector.	Check the visual signal connector connection and make sure it is secured properly.
	Screen adjustment is not appropriate.	Make adjustment appropriately. (See 10-3.)
The on-screen image sways and/or shrinks.	The power source and voltage are no correct.	Make sure that the power supply and voltage are correct.
Does not accept input from any switch or volume.	Faulty connector connections.	Check the connection for the I/O board and cabinet connector. Check the power for the I/O board.
Control stick or throttle lever operation is unsatisfactory.	Faulty setting of volume.	Perform calibration in test mode. (See 9-3e.)
	Faulty volume or faulty gear mesh installation.	Adjust installation and check in test mode. (See chapters 11, 12, and 9-3a.)
	Faulty connection of connectors.	Check connections of control stick and throttle lever connectors.
	Volume malfunction.	Replace the volume. (See chapters 11, 12.)
Seat moving actions are unsatisfactory.	Initialization procedures are inadequate.	Re-engage the power and confirm that initialization completes normally. (See chapter 6 6 .)
	Faulty volume setting.	Perform calibration in test mode. (See 9-3e.)
	Faulty volume or faulty gear mesh installation.	Adjust installation and check in test mode. (See 9-3e and chapter 13.)
	Volume malfunction.	Replace the volume. (See chapter 13.)
	Wire disconnection.	Check connections of wires laid out near movable components. After replacing wires, fasten them where they will not contact movable components.
	Sensor reacts or there is faulty operation.	See if there is anything blocking the sensor. Check sensor operation in test mode. (See chapter 9-3a.)

PROBLEMS	CAUSE	COUNTERMEASURES
Seat does not move.	Initialization procedures are inadequate.	Confirm that initialization completes normally. (See chapter 6 [6].)
	Settings are incorrect.	Check settings of CABINET TYPE and CABINET MOVEMENT on game setting screen. (See 9-3c.)
	Faulty connection of connectors.	Check connections of connectors between game board and servo driver and between servo driver and servo motor.
	Thermal element of servo motor activates.	This element activates when the internal temperature rises. It automatically returns to normal when temperature cools.
	Servo driver fuse blows due to momentary overload.	Contact point of purchase.
Fluorescent lamp doesn't light up.	Fluorescent lamp and glow lamp need replacement.	Replace the fluorescent lamp and the glow lamp. (See chapter 15.)
Failure of the network play.	Network play is wrongly set.	Reset correctly. (See chapter 20.)
	Network cables are disconnected. Network cables are wrongly connected.	Reconnect the cables. (See chapter 20.)
	Damage of network cables.	Replace the cables. Contact the company from whom the unit was purchased.

CIRCUIT PROTECTOR

Functions due to the activation of bimetal. To restore the function, wait for approximately one minute or longer until the bimetal cools off. (Press the button.)

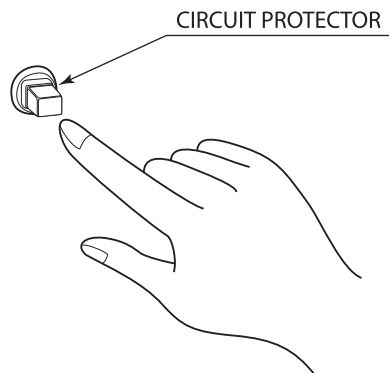


FIG. 17-2

17-3 REPLACING FUSES

⚠ WARNING

- **Never replace a fuse with anything other than designated fuse. Otherwise there could be accidents. In case fuse replacements other than those stated in this manual are necessary, contact where you purchased the product from for inquiries regarding this matter.**
- **In order to prevent an electric shock, be sure to turn power off and unplug from the socket outlet before performing work by touching the internal parts of the product.**
- **Be careful so as not to damage wiring. Damaged wiring can cause electric shock and short circuit accidents.**
- **Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause fire and electric shock accidents.**
- **After eliminating the cause of the blowing of fuse, replace the fuse. Depending on the cause of fuse blowing, continued use with the fuse as is blown can cause generation of heat and fire hazard.**

There are 2 fuses deep within the AC unit in the base. They are to the left as you face the monitor (CRT). If there is only enough space for ventilation, cut off the power supply and move the product to secure enough space for working. Since various situations are possible, this manual does not discuss factors that may cause each specific fuse to melt.

1 Turn the main switch to OFF and remove the power plug from the outlet.

2 Remove 2 truss screws that hold down the front door on the left side of the base.



FIG. 17-3a

3 Remove the front door.



FIG. 17-3b

4 Replace fuse inside base.



FIG. 17-3c

18 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.

18-1 HOW TO REMOVE GAME BOARD

The game board (LINDBERGH) is located on the right side as you face the monitor (CRT) inside the base. Remove the LINDBERGH together with the wooden base (ASSY MAIN BD) on which it has been mounted.

1 Cut off the power supply.

2 Remove 2 truss screws that fasten rear door R.

TRUSS SCREW (2), black
M4x8



FIG. 18-1a

3 Unlock and remove rear door R.



FIG. 18-1b

4 Remove 2 connectors at right and left of the wooden base on which the LINDBERGH is mounted.

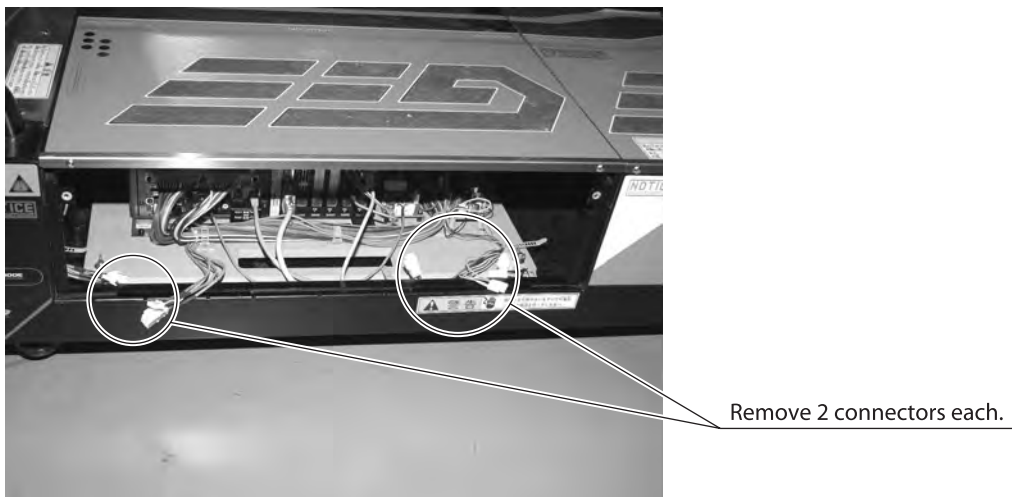


FIG. 18-1c

5 Remove the connector of the LAN, JVS, D-SUB cable connected to the LINDBERGH. When sending the LINDBERGH for replacement or repair, all the connectors connected to the LINDBERGH here can be removed.

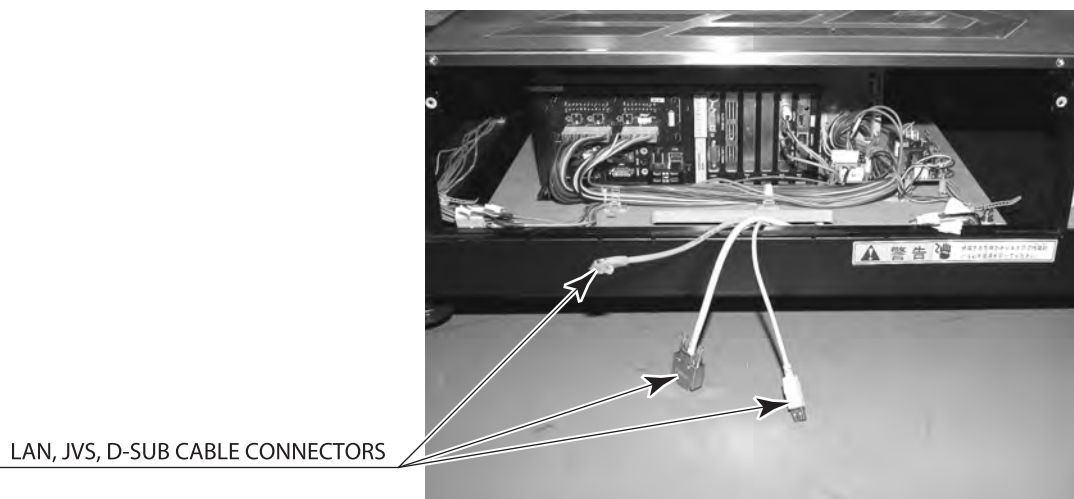


FIG. 18-1d

- 6 Remove 2 butterfly screws that hold down the wooden base. Flat washer and spring washer are used with the butterfly screws.

BUTTERFLY SCREW (2)
M5×25, flat & spring washers used

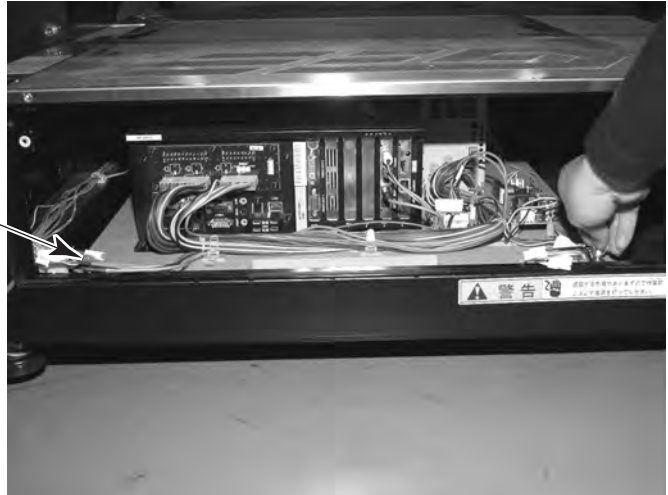


FIG. 18-1e

- 7 Remove the wooden base together with the LINDBERGH. Be careful not to pull on wires or cables, or let them get caught so that they become damaged.

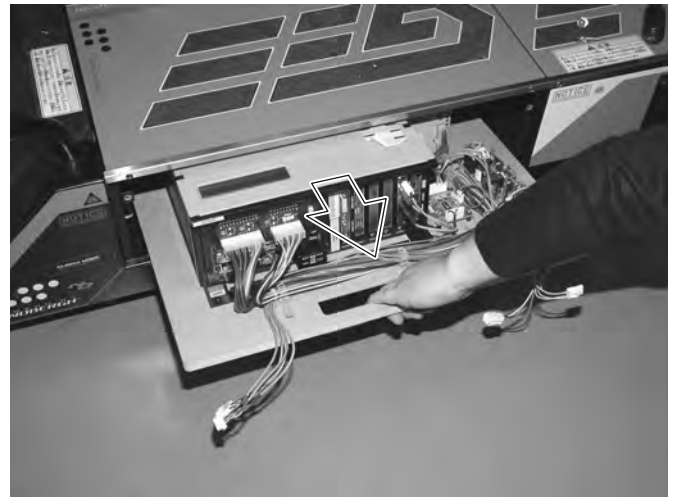


FIG. 18-1f

- 8 Remove all connectors connected to the LINDBERGH.

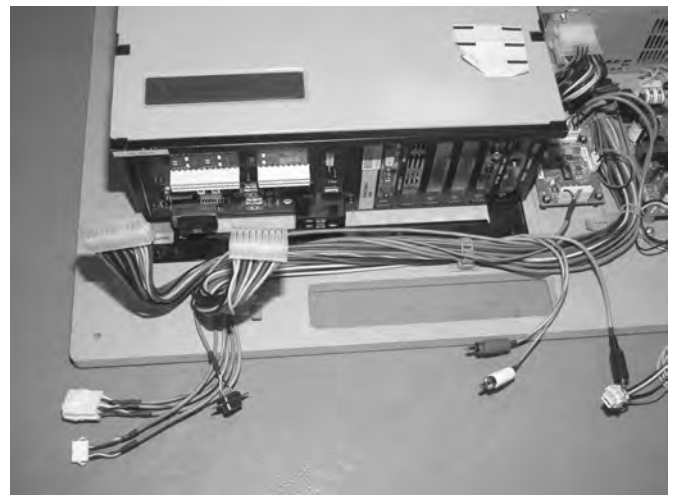


FIG. 18-1g

- 9** Remove 4 screws that hold down the LINDBERGH. Flat washers and spring washers are used with these screws.

SCREW (4)
M4×16, w/flat & spring washers

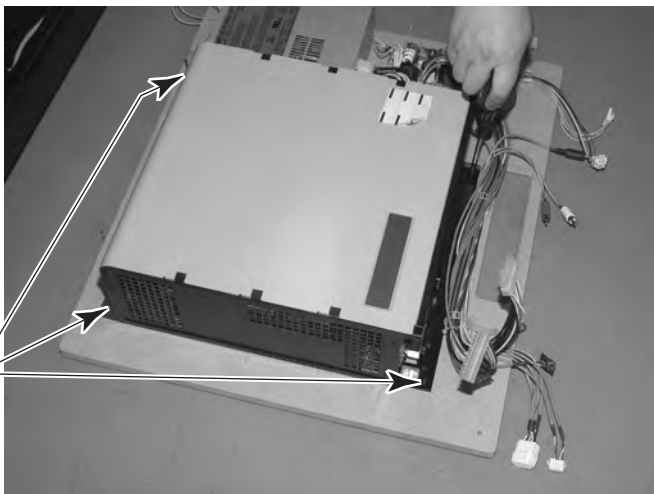


FIG. 18-1h

18-2 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 (844-0007D-02)

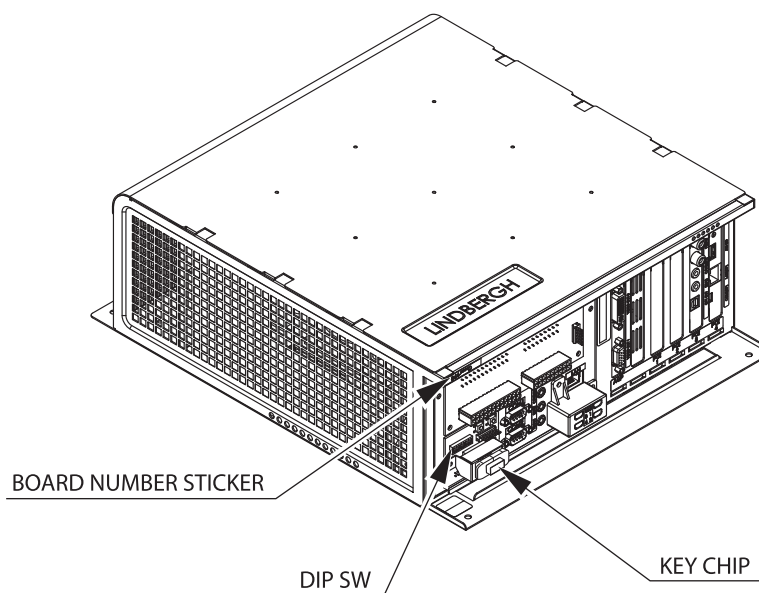


FIG. 18-2a

DIP SW SETTING

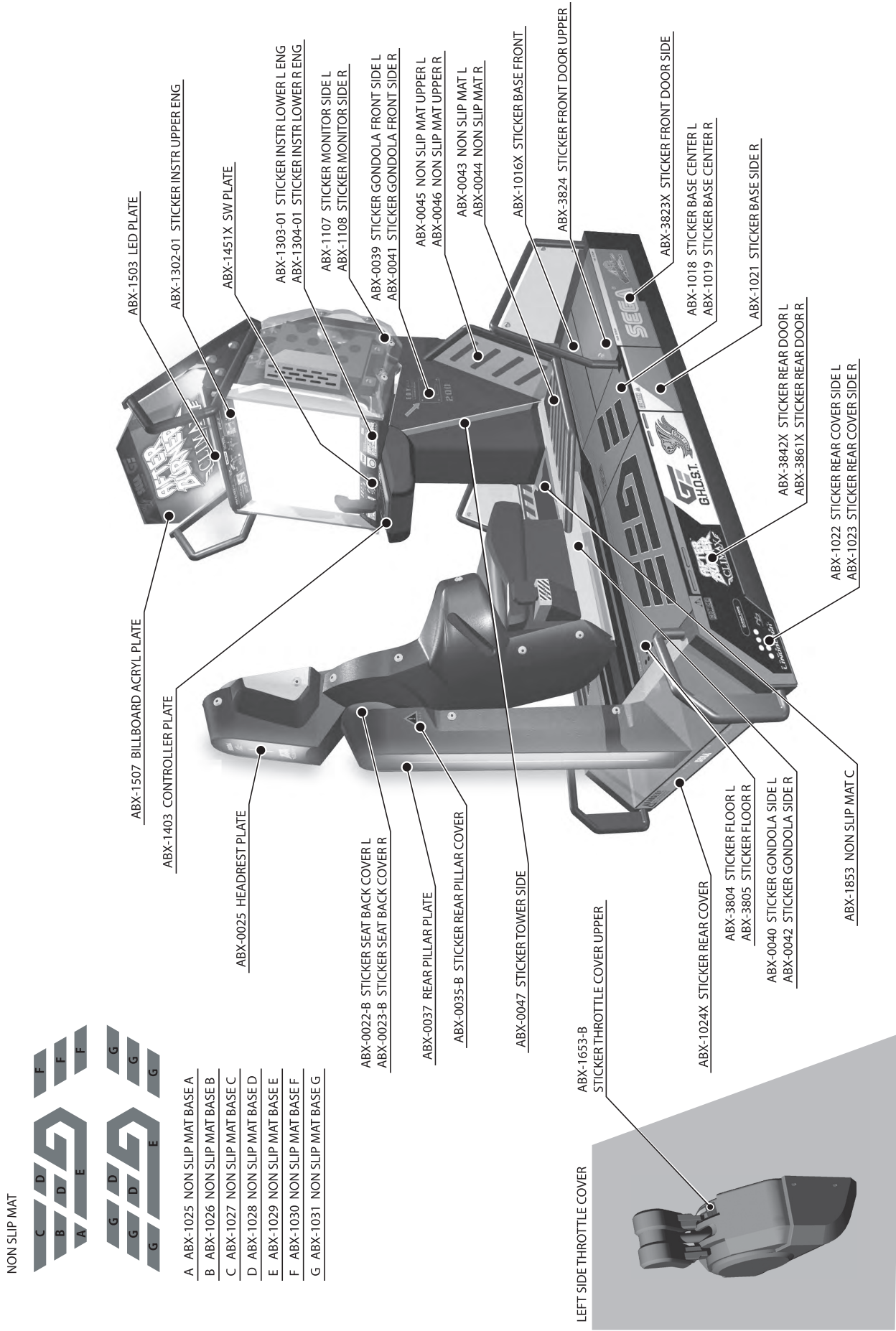
Use this product with the DIP SW settings shown in the figure below.



FIG. 18-2b

19 DESIGN RELATED PARTS

For the warning display stickers, refer to Section 1.



19 DESIGN RELATED PARTS

20 NETWORK PLAY

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

20-1 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 15 A in areas of 100 ~ 120 V, and 7 A in areas of 220 ~ 240 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.

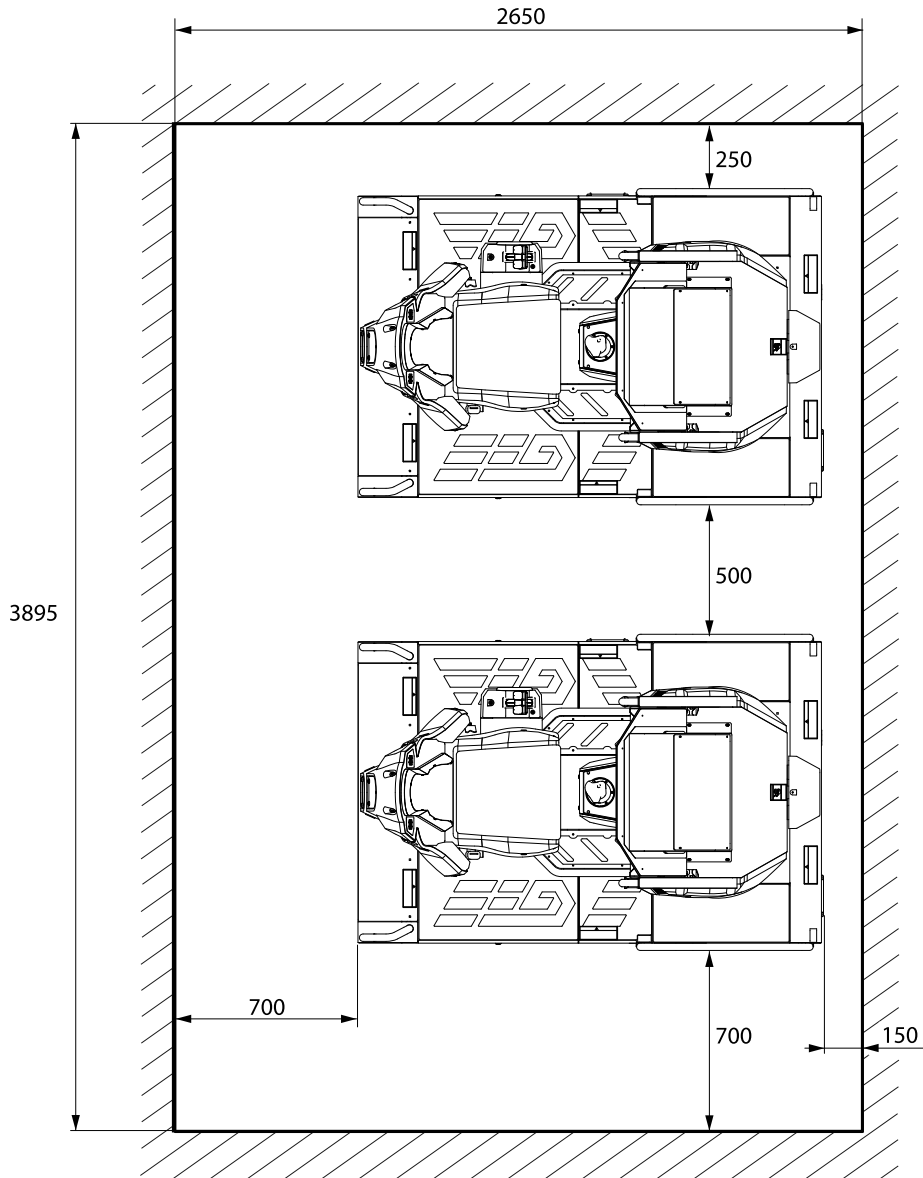


FIG. 20-1 Installation for network play

(mm)

20-2 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.

Have available the accessory network cable, Philips screwdriver for M4 screws, and a 24 mm spanner.

- 1 Cut off the power and pull the power plug from the outlet. Remove the power cord so it will not be damaged while working.
- 2 Align the game units left and right. In order to perform the following work, establish work space on the AC unit side. When aligning the machines, either hold the base or push it. Do not pull or push on the seat or gondola, the control stick or throttle lever. (See chapter 7.)
- 3 Loosen 2 truss screws that hold down the LAN lid of the AC unit in the two game machines.

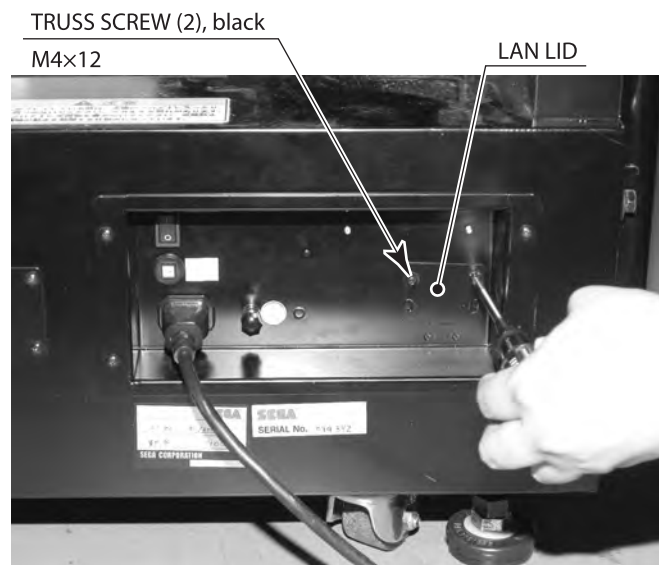


FIG. 20-2a

- 4 When the LAN lid is raised, you see a port. While the port is visible, tighten the 2 truss screws that were loosened in order to fasten the LAN lid.

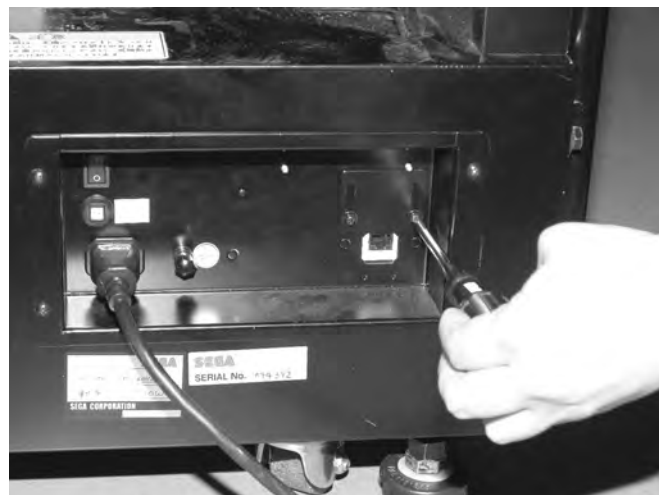


FIG. 20-2b

-
- 5** Connect the connector at one end of the network cable to the port. Connect the connector at the opposite end to the port of the other game unit.



FIG. 20-2c

-
- 6** Move the two game machines joined by network cable and install them aligned. For ventilation, establish an interval of at least 150 mm between one machine and any other machine or the wall. Make the space between aligned machines as wide as possible. (See Fig. 20-1.)

In the manual illustration, the interval between two game machines is taken as 500 mm. To prevent accidents, install the game machines as far apart as possible.

-
- 7** Have all the game machine adjusters come in contact with the floor. (See chapter 6, **1**.)

-
- 8** Connect the game machine power cord and ground wire. (See chapter 6, **4**.)

20-3 NETWORK PLAY SETTING

⚠ WARNING

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 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 or terminate test mode.

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. (See 9-3.)
- 4** On the game test mode menu select NETWORK SETTING and press the TEST Button. The network play setting screen appears.



FIG. 20-3a

5 On the network play setting screen, set LINK NUM. Press the SERVICE Button, move the cursor onto LINK NUM and select it.

6 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.

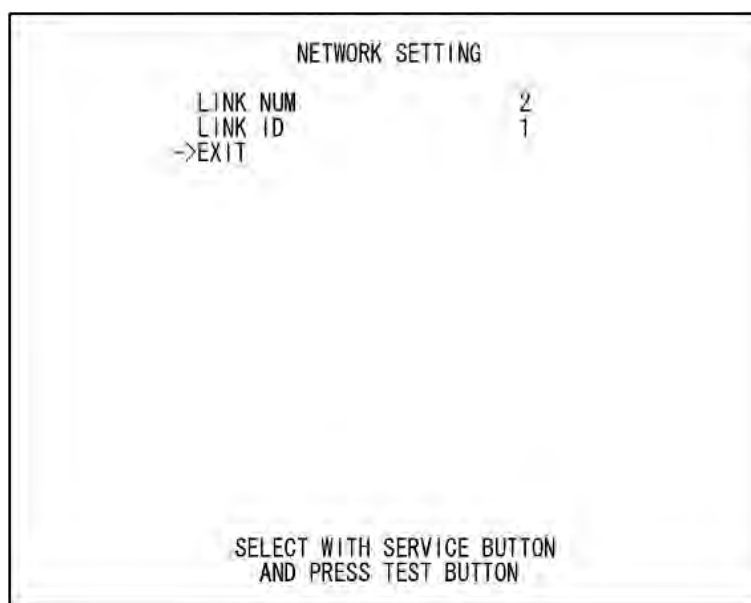


FIG. 20-3b

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

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

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

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

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

12 Press the SERVICE Button, move the cursor to EXIT and press the TEST Button. The test mode terminates. Note that initialization now takes place when the power is engaged.

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

14 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

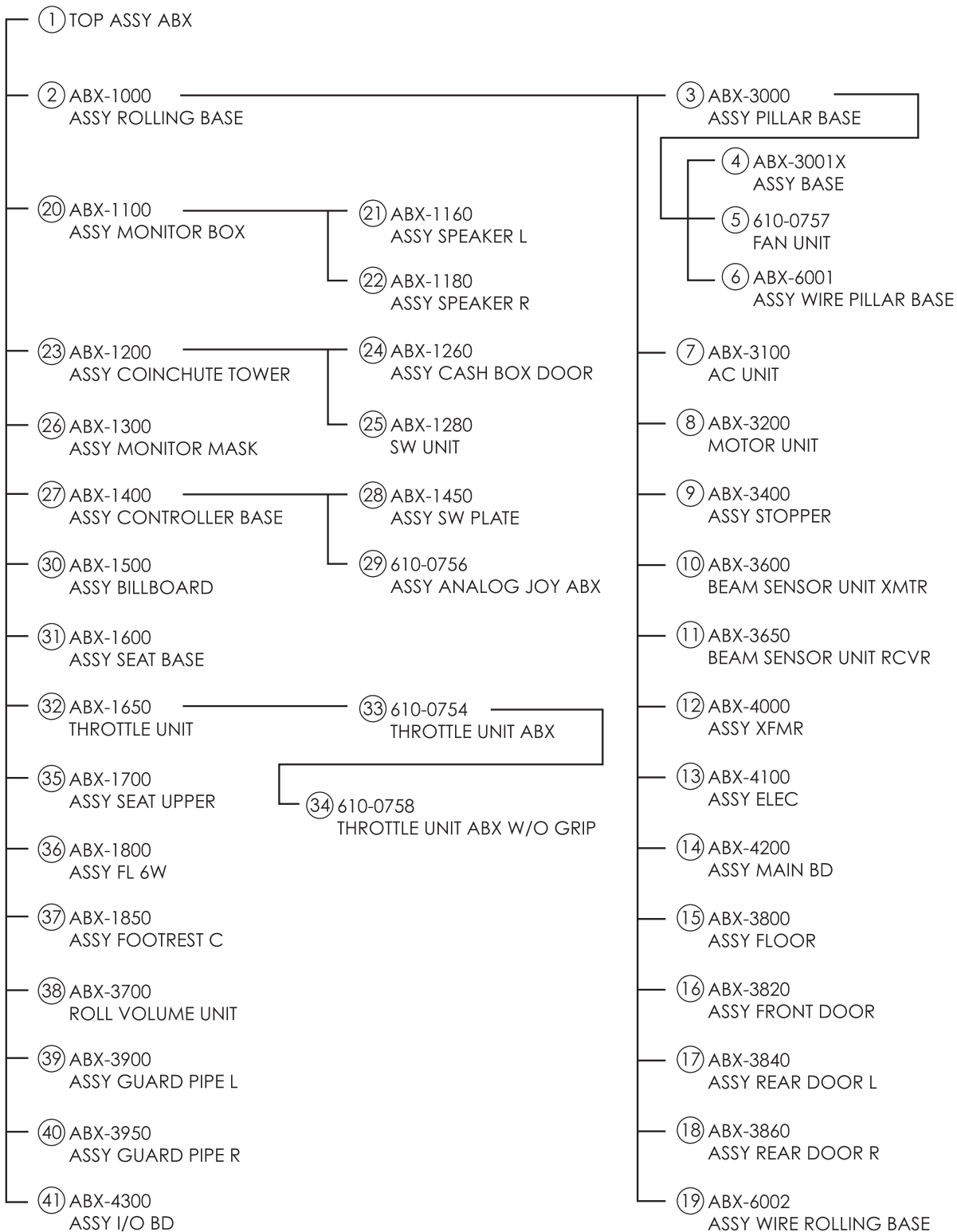
- If communication is interrupted during network play for any reason, network play is disabled and game play continues on each machine individually. If communication is interrupted in the Attract Mode, the network check screen appears.
- If one game machine for network play is put in test mode, the network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

21 PARTS LIST



1 TOP ASSY ABX**(D-2/4)**

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1000	ASSY ROLLING BASE	
2	ABX-1100	ASSY MONITOR BOX	
3	ABX-1200	ASSY COINCHUTE TOWER	
4	ABX-1300	ASSY MONITOR MASK	
5	ABX-1400	ASSY CONTROLLER BASE	
6	ABX-1500	ASSY BILLBOARD	
7	ABX-1600	ASSY SEAT BASE	
8	ABX-1650	THROTTLE UNIT	
9	ABX-1700	ASSY SEAT UPPER	
10	ABX-1800	ASSY FL 6W	
11	ABX-1850	ASSY FOOTREST C	
12	ABX-3700	ROLL VOLUME UNIT	
13	ABX-3900	ASSY GUARD PIPE L	
14	ABX-3950	ASSY GUARD PIPE R	
15	ABX-4300	ASSY I/O BD	
16	ABX-0001	MONITOR JOINT BRKT	
17	ABX-0002	SPACER L=20	
19	ABX-0004	MONITOR SIDE COVER L	
20	ABX-0005	MONITOR SIDE COVER R	
21	ABX-0006	SPEAKER PLATE FRONT	
22	280-6696	SPCL WSHR 5.5-20x6.3 AL YEL	
23	ABX-0007	COINCHUTE BRKT	
24	ABX-0008	MONITOR MASK BRKT	
25	ABX-0009	SPACER L=12	
26	ABX-0010	CTRL SIDE COVER L	
27	ABX-0011	CTRL SIDE COVER R	
28	ABX-0012	FOOTREST FRAME L	
29	ABX-0013X	FOOTREST PLATE L	
30	ABX-0014	FOOTREST FRAME R	
31	ABX-0015X	FOOTREST PLATE R	
32	ABX-0016	SEAT HOLDER	
33	ABX-0017	SEAT CUSHION L	
34	ABX-0018	SEAT CUSHION R	
35	ABX-0019	CLEARANCE BRKT	
36	ABX-0020	SEAT BACK BRKT UPPER	
37	ABX-0021	SEAT BACK BRKT LOWER	
38	ABX-0022	SEAT BACK COVER L	
39	ABX-0023	SEAT BACK COVER R	
40	ABX-0024	HEADREST COVER	
41	ABX-0025	HEADREST PLATE	
42	280-6695	SPCL WSHR 4.5-16x5 AL BLK	
43	ABX-0026	MONITOR LID	
44	ABX-0027	FRONT LID	
45	TTR-2010	GEAR HOLDER 110	
46	601-6450	GEAR 110	
47	ABX-0028X	SENSOR INTERRUPT PLATE	
48	ABX-0029	FRONT PILLAR COVER BRKT	
49	ABX-0030	FRONT PILLAR RUBBER UPPER	
50	ABX-0031X	FRONT PILLAR LID	
51	ABX-0032	FRONT PILLAR COVER	
52	253-5457	FL HOLDER	
53	ABX-0033X	REAR PILLAR COVER BRKT	
54	ABX-0034	REAR PILLAR RUBBER UPPER	
55	ABX-0035	REAR PILLAR COVER	
56	ABX-0036	REAR SENSOR WINDOW	
57	ABX-0037	REAR PILLAR PLATE	
58	ABX-0038X	CASH BOX	
59	ABX-0039	STICKER GONDOLA FRONT SIDE L	
60	ABX-0040	STICKER GONDOLA SIDE L	
61	ABX-0041	STICKER GONDOLA FRONT SIDE R	
62	ABX-0042	STICKER GONDOLA SIDE R	
63	ABX-0043	NON SLIP MAT L	

1 TOP ASSY ABX

(D-3/4)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
64	ABX-0044	NON SLIP MAT R	
69	421-8479-01	STICKER INSTR SUNLIGHT ENG	
70	421-11416	STICKER CAUTION FORK	
73	421-7501-05	STICKER FL 6W	
74	421-7501-09	STICKER FL30W	
75	440-WS0141-EG	STICKER W HIGH TEMP S ENG	
76	440-WS0142-EG	STICKER W POWER OFF S ENG	
77	440-WS0166-EG	STICKER W HI VOLT M ENG	
78	440-WS0179-EG	STICKER W HI TEMP M ENG	
79	440-WS0275-EG	STICKER W PINCH ENG	
83	ABX-0045	NON SLIP MAT UPPER L	
84	ABX-0046	NON SLIP MAT UPPER R	
85	ABX-0047	STICKER TOWER SIDE	
86	ABX-3010X	CABLE LID	
87	ABX-1004	EDY UNIT LID	
101	390-6822-30EX	ASSY FL30W EX W/CONN HIGH	
102	601-5525-080	BUSH 1.2T	
201	030-000816-SB	HEX BLT W/S BLK M8x16	
202	068-852216-0B	FLT WSHR BLK 8.5-22x1.6	
205	030-000612-SB	HEX BLT W/S BLK M6x12	
206	060-F00600-0B	FLT WSHR BLK M6	
207	060-F00800-0B	FLT WSHR BLK M8	
209	050-H00800	HEX NUT M8	
210	060-S00800-0C	SPR WSHR CRM M8	
211	050-F00400	FLG NUT M4	
212	000-T00408-0C	M SCR TH CRM M4x8	
213	000-P00408-W	M SCR PH W/FS M4x8	
214	030-000845-SB	HEX BLT W/S BLK M8x45	
215	032-000425	WING BLT M4x25	
216	060-S00400-0B	SPR WSHR BLK M4	
217	068-441616-0C	FLT WSHR CRM 4.4-16x1.6	
218	FAS-290034	HEX SKT LH CAP SCR STN M5x15	
219	060-S00500-0C	SPR WSHR CRM M5	
220	000-T00408-0B	M SCR TH BLK M4x8	
221	031-000410-0C	CRG BLT CRM M4x10	
222	050-C00400-3C	CAP NUT TYPE3 CRM M4	
223	030-000616-S	HEX BLT W/S M6x16	
224	030-000630-S	HEX BLT W/S M6x30	
226	FAS-290037	HEX SKT LH CAP SCR STN M5x20	
227	000-T00412-0B	M SCR TH BLK M4x12	
228	068-441616-0B	FLT WSHR BLK 4.4-16x1.6	
229	000-T00420-0B	M SCR TH BLK M4x20	
230	FAS-290044	HEX SKT LH CAP SCR STN M4x16	
231	060-S00400-0C	SPR WSHR CRM M4	
232	028-A00408-P	SET SCR HEX SKT CUP P M4x8	
233	000-P00412-W	M SCR PH W/FS M4x12	
234	031-000410-0B	CRG BLT BLK M4x10	
235	000-P00430-W	M SCR PH W/FS M4x30	
237	008-T00412-0B	TMP PRF SCR TH BLK M4x12	

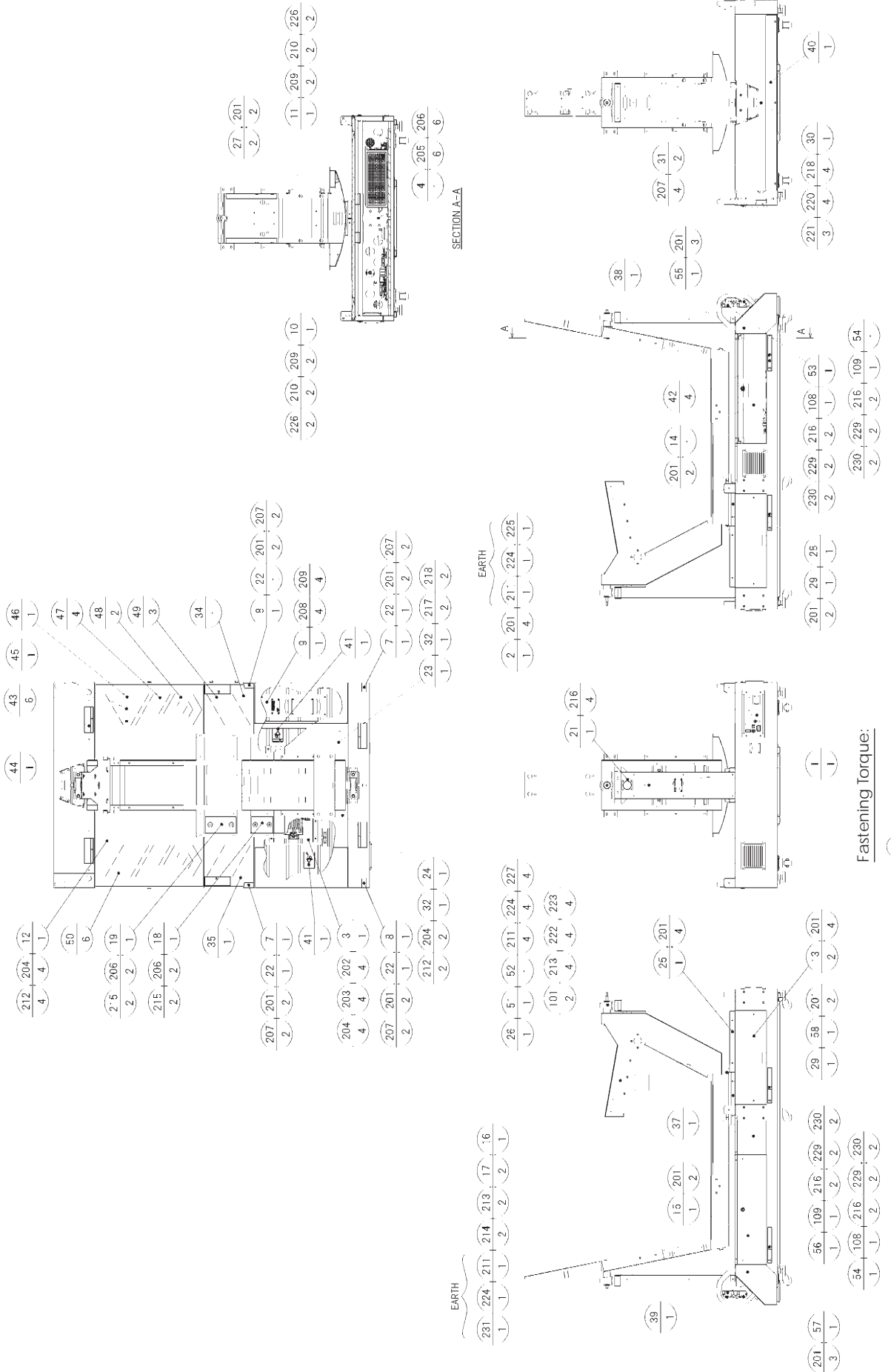
1 TOP ASSY ABX

(D-4/4)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
401	220-5793-2-A001	KEY MASTER A001	
402	SGM-4111Y	KEY BAG	
403	420-6955-01	OWNERS MANUAL ABX ENG	
404	600-6729-01	AC CABLE CONNECT TYPE 15A W/E	<Taiwan>
	600-6619-02	AC CABLE CONNECT TYPE FOR UK	<Singapore, Malaysia>
	600-6618-01	AC CABLE CONNECT TYPE FOR EXP	<Hong Kong, Philippines, Australia, Korea, Indonesia>
406	514-5138-6300	FUSE SG5013 5x20 6300MA 250V	
407	540-0068	L-WRENCH FOR HEX SOC 2.5MM	
409	600-7269-0300	ASSY LAN CABLE 0300CM	
410	420-6921-01	SERVICE MANUAL LBG ENG	
411	220-5753	VOL CONT B-5K OHM (TOCOS)	
412	509-5975	SW MICRO TYPE SS-5GL (OMRON)	
413	220-5737	VOL CONT B-5K(RA25Y20F COSMOS)	
/	421-6690-06	STICKER 110V	<Taiwan>
/	421-6690-03	STICKER 220V	<Hong Kong, Philippines, Korea, Indonesia>
/	421-6690-04	STICKER 230V (230V AREA)	<Singapore>
/	421-6690-05	STICKER 240V	<Malaysia, Australia>

2 ASSY ROLLING BASE (ABX-1000)

(D-1/3)



Fastening Torque:

222 : 122N · m(1240kgf/cm)

2 ASSY ROLLING BASE (ABX-1000)

(D-2/3)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3000	ASSY PILLAR BASE	
2	ABX-3100	AC UNIT	
3	ABX-3200	MOTOR UNIT	
4	ABX-3400	ASSY STOPPER	
7	ABX-3600	BEAM SENSOR UNIT XMTR	
8	ABX-3650	BEAM SENSOR UNIT RCVR	
9	ABX-4000	ASSY XFMR	
10	ABX-4100	ASSY ELEC	
11	ABX-4200	ASSY MAIN BD	
12	ABX-3800	ASSY FLOOR	
13	ABX-3820	ASSY FRONT DOOR	
14	ABX-3840	ASSY REAR DOOR L	
15	ABX-3860	ASSY REAR DOOR R	
16	ABX-1001X	GONDOLA BASE	
17	TTR-3205	FLT 14.5-36x3.2	
18	ABX-1002X	WEIGHT BLOCK FRONT	
19	ABX-1003X	WEIGHT BLOCK REAR	
21	ABX-1005	CABLE GUARD HOLDER	
22	ABX-1006	SENSOR COVER	
23	ABX-1007-01	WHEEL COVER L	
24	ABX-1008X	WHEEL COVER R	
25	ABX-1009X	WHEEL COVER CENTER	
26	ABX-1010	BASE RUBBER LONG	
27	ABX-1011	BASE RUBBER SHORT	
28	ABX-1012	BASE RUBBER BRKT L	
29	ABX-1013	COVER RUBBER	
30	ABX-1014X	BASE REAR COVER	
31	ABX-1015	BASE REAR BRKT	
32	ABX-1016X	STICKER BASE FRONT	
34	ABX-1018	STICKER BASE CENTER L	
35	ABX-1019	STICKER BASE CENTER R	
37	ABX-1021	STICKER BASE SIDE R	
38	ABX-1022	STICKER REAR COVER SIDE L	
39	ABX-1023	STICKER REAR COVER SIDE R	
40	ABX-1024X	STICKER REAR COVER	
41	440-WS0047-EG	STICKER W FINGER GEAR ENG	
42	440-WS0143-EG	STICKER W POWER OFF WIDE ENG	
43	440-CS0311-EG	STICKER C KEEP AWAY ENG	
44	ABX-1025	NON SLIP MAT BASE A	
45	ABX-1026	NON SLIP MAT BASE B	
46	ABX-1027	NON SLIP MAT BASE C	
47	ABX-1028	NON SLIP MAT BASE D	
48	ABX-1029	NON SLIP MAT BASE E	
49	ABX-1030	NON SLIP MAT BASE F	
50	ABX-1031	NON SLIP MAT BASE G	
51	ABX-1032	SLIDE RUBBER BRKT	
52	ABX-1033	FRONT RUBBER BRKT	
53	ABX-3502X	REAR SENSOR HOLDER L	
54	ABX-3503X	REAR SENSOR HOLDER	
55	ABX-3504X	REAR PIPE LID L	
56	ABX-3552X	REAR SENSOR HOLDER R	
57	ABX-3553X	REAR PIPE LID R	
58	ABX-1034	BASE RUBBER BRKT R	
101	100-5240-01	BEARING 30 NTN UCPE206 W/HOLE	
102	280-6676	CORD CLAMP TL-25A TTK	
104	280-5275-SR10	CORD CLAMP SR10	
107	310-5027-1303	INSL SLIT TUBE ID13	
108	370-5298-01	BEAM SENSOR L-9382-12(SEGA)	
109	370-5298-02	BEAM SENSOR R-9382D-12(SEGA)	

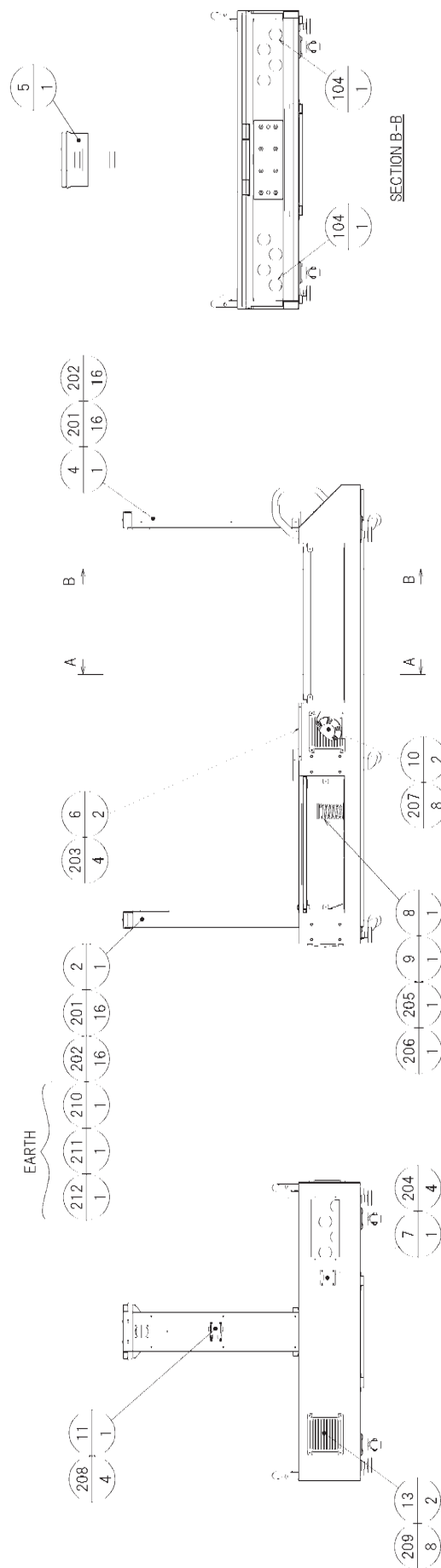
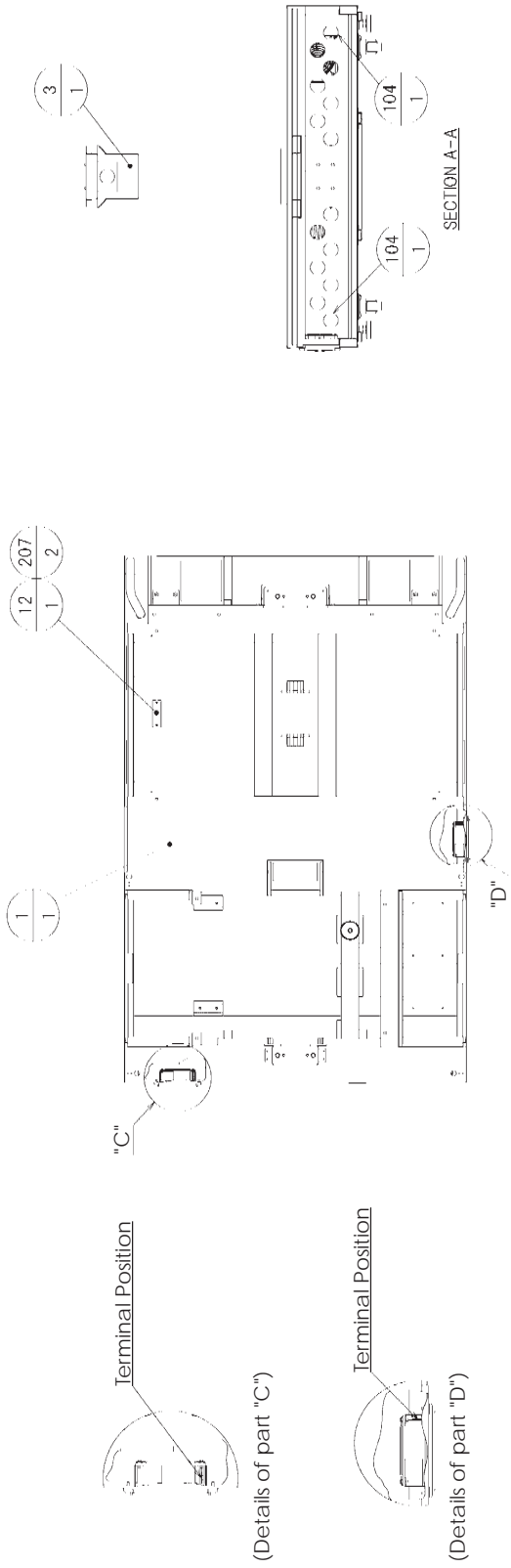
② ASSY ROLLING BASE (ABX-1000)

(D-3/3)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
201	000-T00408-0B	M SCR TH BLK M4x8	
202	020-000616-0Z	HEX SKT H CAP SCR BLK OZ M6x16	
203	060-S00600-0B	SPR WSHR BLK M6	
204	060-F00600-0B	FLT WSHR BLK M6	
205	030-000820-S	HEX BLT W/S M8x20	
206	060-F00800-0B	FLT WSHR BLK M8	
207	000-P00408-W	M SCR PH W/FS M4x8	
208	000-P00525-S	M SCR PH W/S M5x25	
209	068-552016	FLT WSHR 5.5-20 x1.6	
210	032-000525	WING BLT M5x25	
211	060-S00400-0B	SPR WSHR BLK M4	
212	030-000616-S	HEX BLT W/S M6x16	
213	060-S01400	SPR WSHR M14	
214	050-H01400	HEX NUT M14	
215	030-000830-S	HEX BLT W/S M8x30	
216	050-F00400	FLG NUT M4	
217	031-000510-0B	CRG BLT BLK M5x10	
218	050-F00500	FLG NUT M5	
220	031-000516-0C	CRG BLT CRM M5x16	
221	000-T00408-0C	M SCR TH CRM M4x8	
222	FAS-200005	HEX SKT H CAP SCR B OZ M14x40	
223	060-F01400	FLT WSHR M14	
224	060-F00400-0B	FLT WSHR BLK M4	
225	050-H00400	HEX NUT M4	
226	060-S00500-0C	SPR WSHR CRM M5	
227	050-C00400-3B	CAP NUT TYPE3 BLK M4	
229	000-P00316-W	M SCR PH W/FS M3x16	
230	050-H00300	HEX NUT M3	
231	000-P00408	M SCR PH M4x8	
307	ABX-60054X	WH SEAT BILLBD	
308	600-7009-1000	ASSY RGB CA D-SUB 15P 1000MM	
309	600-7141-100	CABLE JVS TYPE A-B 100CM	
310	ABX-6002	ASSY WIRE ROLLING BASE	
311	ABX-60029	WH BASE06	

3 ASSY PILLAR BASE (ABX-3000)

(D-1/2)

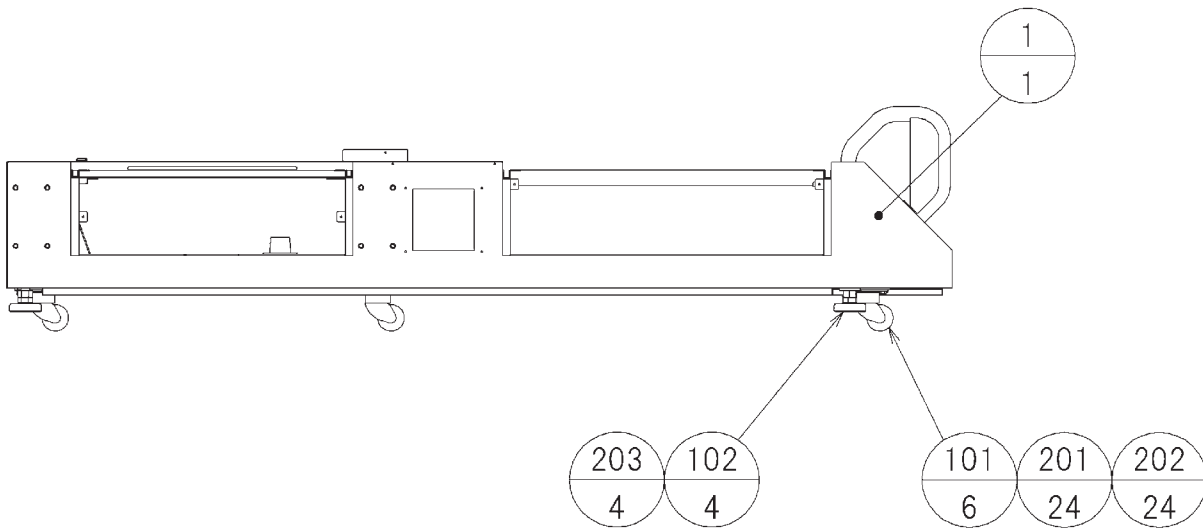


3 ASSY PILLAR BASE (ABX-3000)

(D-2/2)

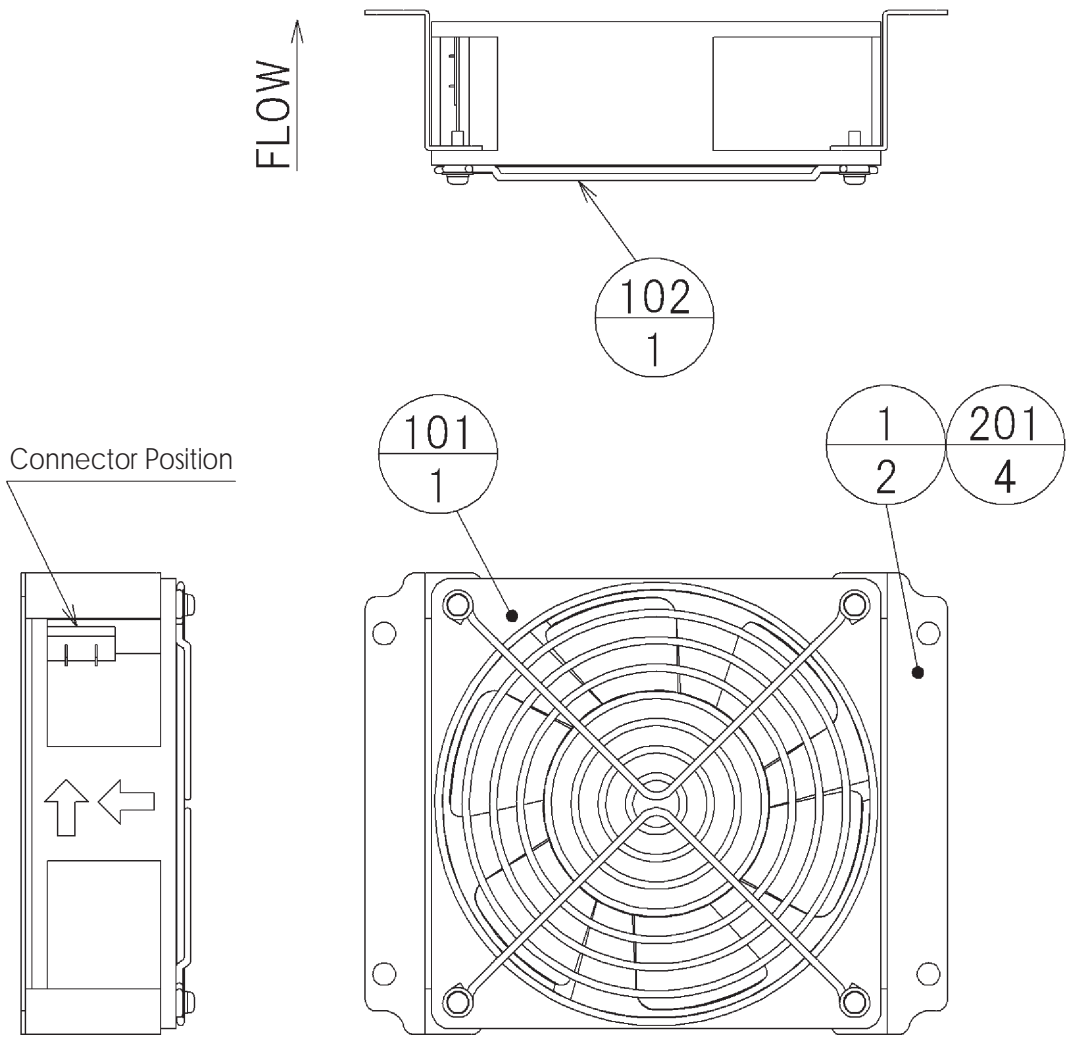
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3001X	ASSY BASE	
2	ABX-3003X	FRONT PILLAR	
3	ABX-3004	FRONT PILLAR RUBBER A	
4	ABX-3005X	REAR PILLAR	
5	ABX-3006	REAR PILLAR RUBBER A	
6	ABX-3007	BASE SASH	
7	ABX-3008	EDY CABLE LID	
8	TX-2017	COMP SPRING	
9	ABX-3009X	SPRING SUPPORT	
10	610-0757	FAN UNIT	
11	839-1176R	CONN BD JVS & RGB	
12	ABX-3010X	CABLE LID	
13	253-5460-01	AIR VENT BLACK	
101	280-6676	CORD CLAMP TL-25A TTK	
103	280-5275-SR10	CORD CLAMP SR10	
104	601-5526-080	BUSH 1.6T	
201	030-000820-S	HEX BLT W/S M8x20	
202	060-F00800-0B	FLT WSHR BLK M8	
203	000-T00408-0C	M SCR TH CRM M4x8	
204	000-T00408-0B	M SCR TH BLK M4x8	
205	FAS-300055	HEX BLT M12x140	
206	060-F01200	FLT WSHR M12	
207	050-F00400	FLG NUT M4	
208	050-F00300	FLG NUT M3	
209	000-T00412-0B	M SCR TH BLK M4x12	
210	060-F00400-0B	FLT WSHR BLK M4	
211	060-S00400-0B	SPR WSHR BLK M4	
212	050-H00400	HEX NUT M4	
302	ABX-60024	WH REAR BILLBD	
315	ABX-60067	WH E COCKPIT	
316	600-7141-250	CABLE JVS TYPE A-B 250CM	
317	600-7009-2500	ASSY RGB CA D-SUB 15P 2500MM	
318	600-7269-0300	ASSY LAN CABLE 0300CM	
319	ABX-6001	ASSY WIRE PILLAR BASE	

4 ASSY BASE (ABX-3001X)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3002X	BASE	
101	601-11312	CASTER 50(TAKIGEN K-300HJ-50)	
102	601-5882	LEG ADJUSTER (TAKIGEN C-280-2)	
201	030-00620-S	HEX BLT W/S M6x20	
202	068-652016	FLT WSHR 6.5-20 x1.6	
203	050-H01600-0B	HEX NUT BLK M16	

⑤ FAN UNIT (610-0757)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	105-5561	FAN BRKT	
101	260-0011-03	AXIAL FLOW FAN AC100V 50-60HZ	
102	601-8543	FAN GUARD	
201	000-P00312-W	M SCR PH W/FS M3x12	

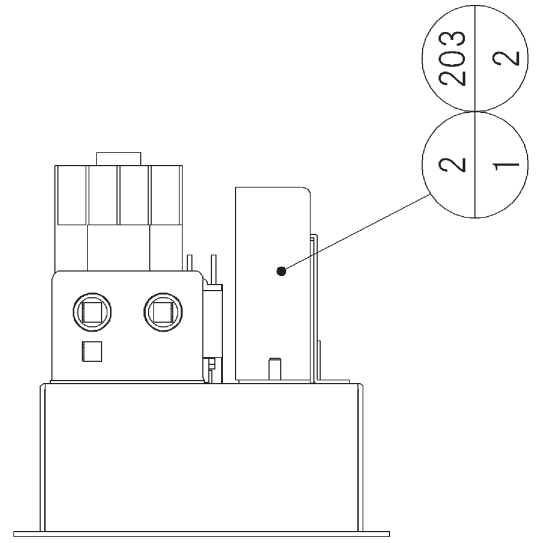
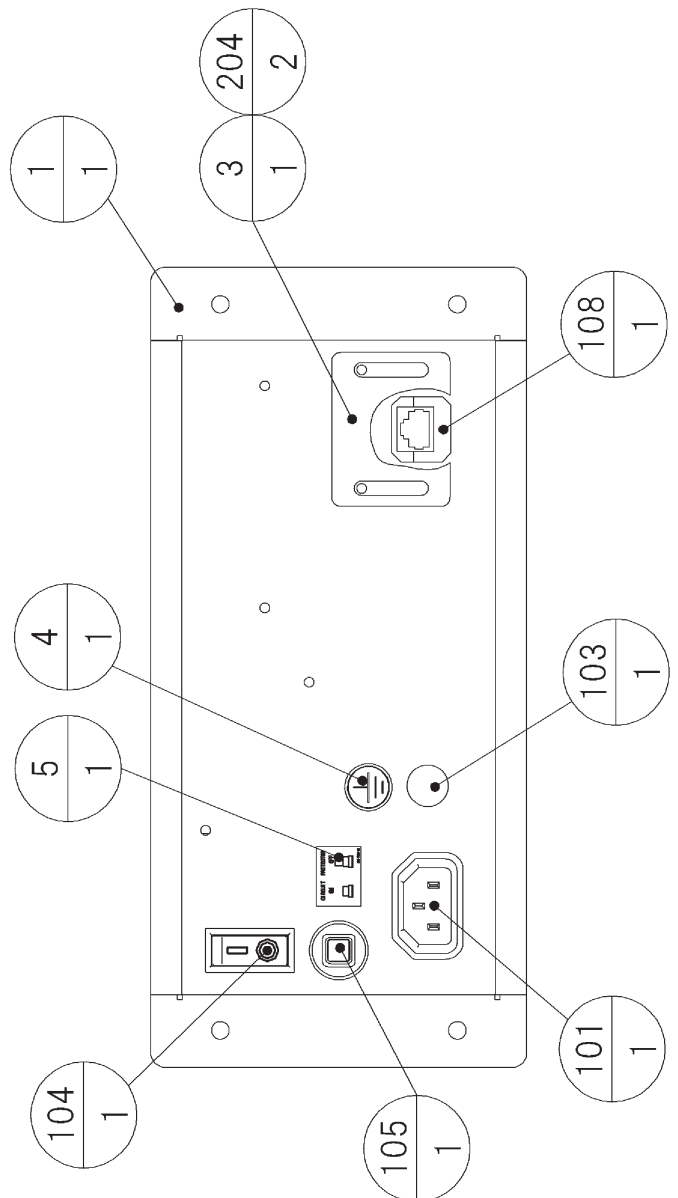
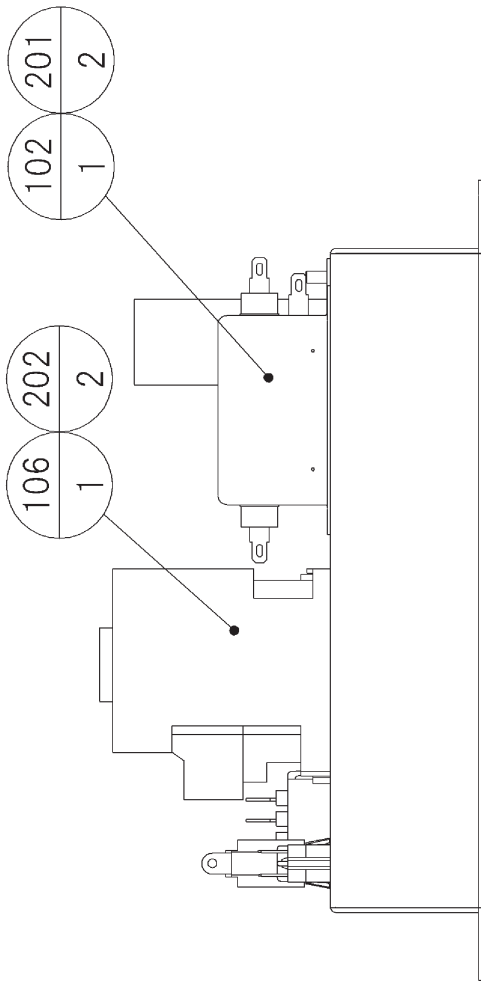
6 ASSY WIRE PILLAR BASE (ABX-6001)

This is comprised of the following wire harnesses. ASSY drawing is not available.

ITEM NO.	PART NO.	DESCRIPTION	NOTE
101	601-0460	PLASTIC TIE BELT 100 MM	
301	ABX-60023	WH BASE01	
302	ABX-60025	WH BASE02	
303	ABX-60026	WH BASE03	
304	ABX-60027	WH BASE04	
305	ABX-60028	WH BASE05	
306	ABX-60030	WH BASE07	
307	ABX-60033X	WH BASE08	
308	ABX-60034	WH BASE09	
309	ABX-60035	WH BASE10	
310	ABX-60036	WH BASE11	
311	ABX-60038	WH BASE13	
312	ABX-60064	WH E BASE01	

7 AC UNIT (ABX-3100)

(D-1/2)



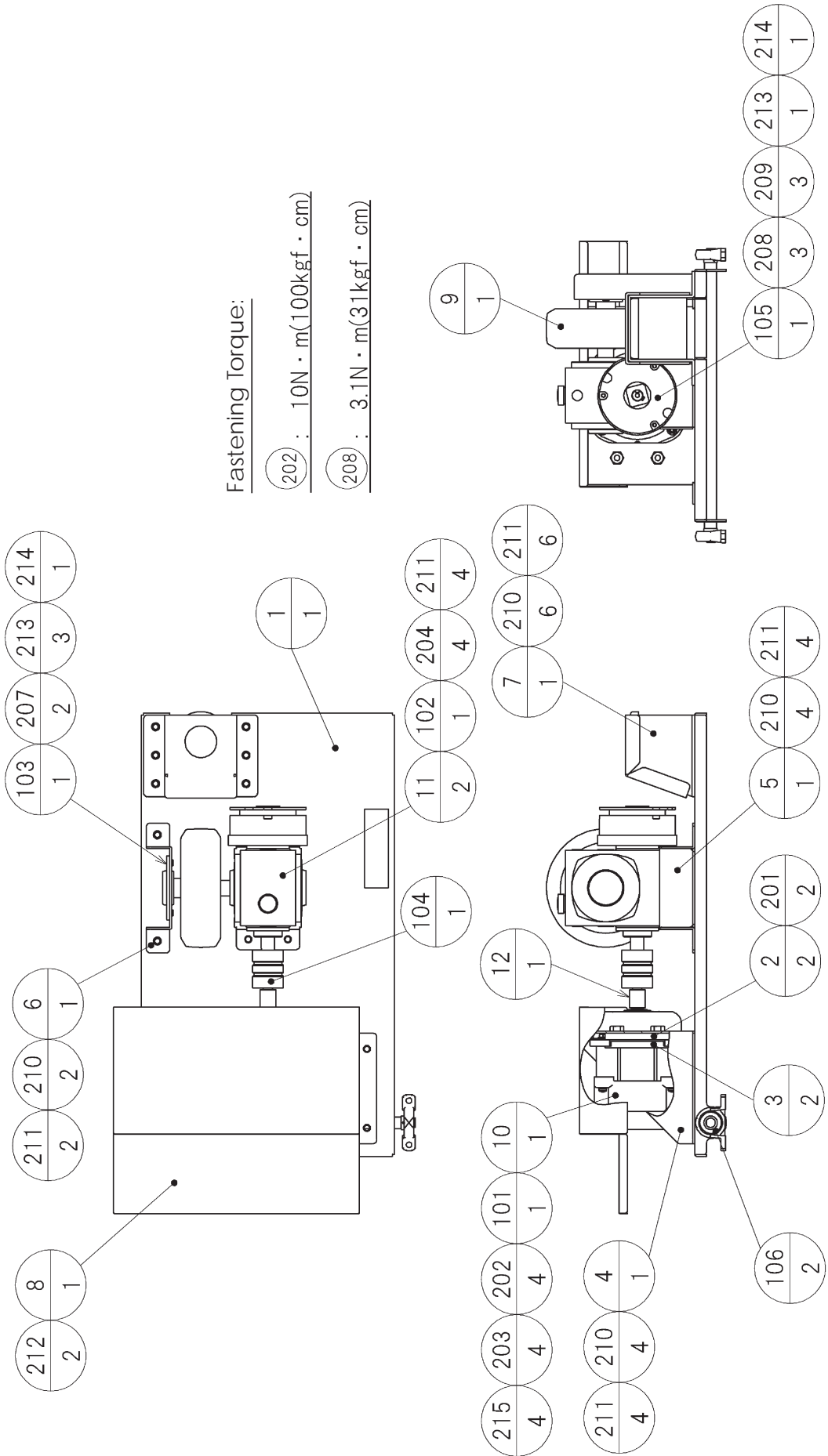
7 AC UNIT (ABX-3100)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3101X	AC BRKT	
2	ABX-3102X	LAN JOINT HOLDER	
3	ABX-3103	LAN LID	
4	421-8202	STICKER EARTH MARK	
5	421-7468-01	STICKER C.P W/PIC	
101	214-0202	AC INLET PANEL TYPE	
102	270-5081	NOISE FILTER 20A	
103	280-0417	TERMINAL BINDING POST BLACK NOT USED	<Taiwan> <Hong Kong, Singapore, Philippines, Malaysia, Indonesia, Australia, Korea>
104	509-6102-V-B	SW ROCKER J8 V-B AJ8202BF	
105	512-5046-15000 512-5046-91-08	C.P 15000MA CE UL C.P 8A CE UL NRW10-8A-TK2421	<Taiwan> <Hong Kong, Singapore, Philippines, Malaysia, Indonesia, Australia, Korea>
106	450-5126 450-5134	MAGNET CONTACT S-NIOCX MAGNET CONTACT S-NIOCX AC 230V	<Taiwan> <Hong Kong, Singapore, Malaysia, Australia, Indonesia>
	450-5133	MAGNET CONTACT S-NIOCX AC 200V	<Philippines, Korea>
107	310-5029-H20	SUMITUBE F H 20MM	
108	211-5679	LAN JOINT ACROS ALA615	
109	280-5275-SR10	CORD CLAMP SR10	
201	000-P00408-W	M SCR PH W/FS M4x8	
202	000-P00416-W	M SCR PH W/FS M4x16	
203	050-F00400	FLG NUT M4	
204	000-T00412-0B	M SCR TH BLK M4x12	
301	ABX-60001	WH AC UNIT01	
302	ABX-60002	WH AC UNIT02	
303	ABX-60003	WH AC UNIT03	
304	ABX-60004	WH AC UNIT04	
/	050-H00400	HEX NUT M4	<Hong Kong, Singapore, Philippines, Malaysia, Indonesia, Australia, Korea>
/	060-F00400	FLT WSHR M4	<Hong Kong, Singapore, Philippines, Malaysia, Indonesia, Australia, Korea>
/	060-S00400	SPR WSHR M4	<Hong Kong, Singapore, Philippines, Malaysia, Indonesia, Australia, Korea>

8 MOTOR UNIT (ABX-3200)

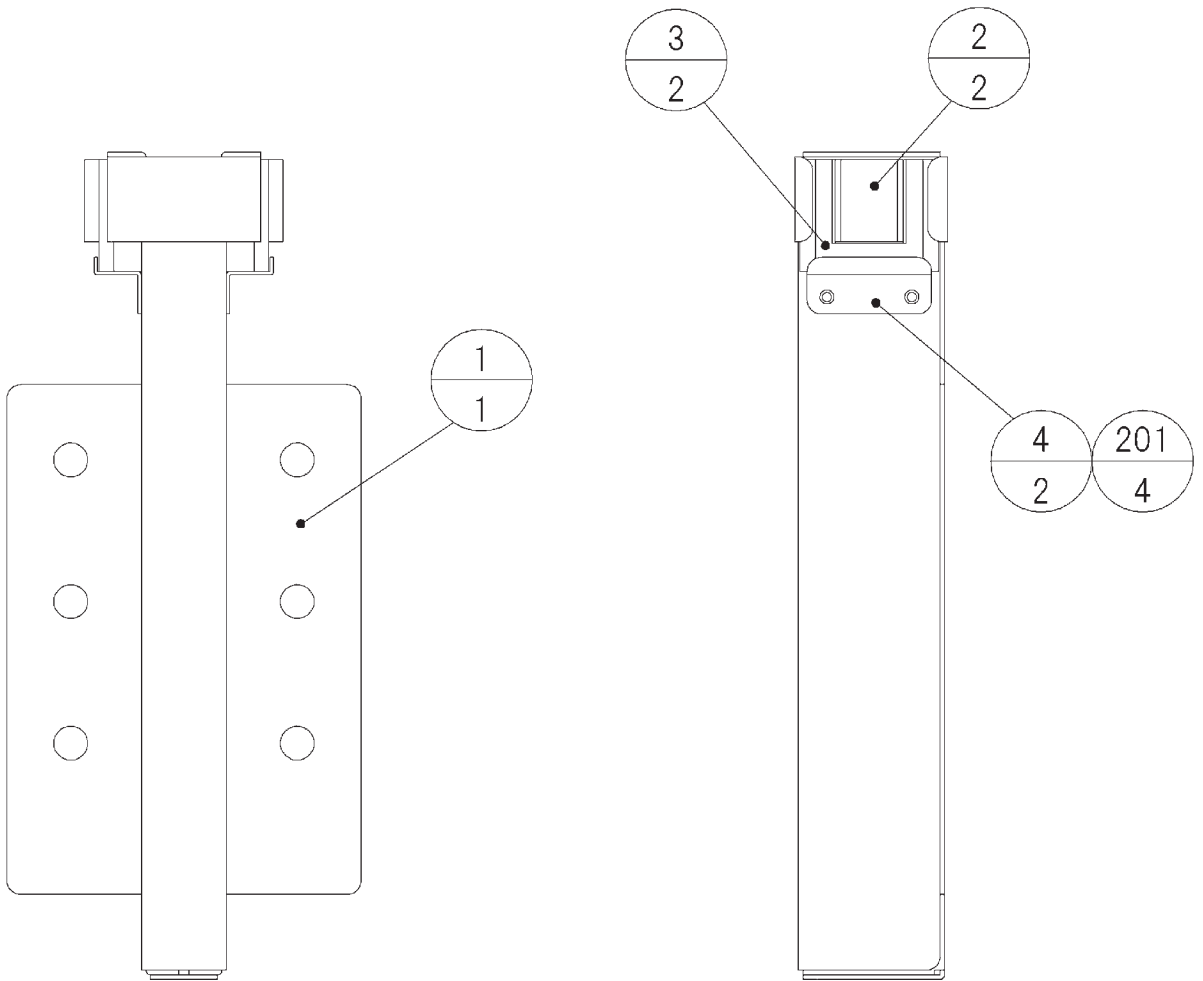
(D-1/2)



8 MOTOR UNIT (ABX-3200)**(D-2/2)**

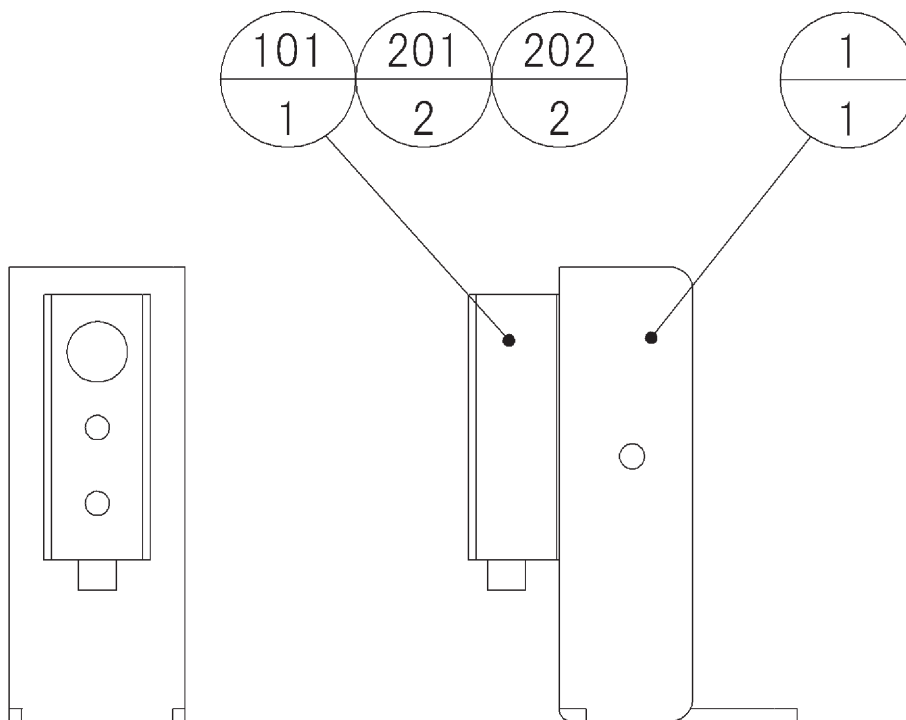
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3201X	MOTOR UNIT BASE	
2	253-5592	MOTOR INSULATOR A	
3	253-5593	MOTOR INSULATOR B	
4	ABX-3202X	MOTOR BRKT	
5	ABX-3208	REDUCTION BRKT B	
6	ABX-3204X	WHEEL BRKT	
7	ABX-3205X	SPRING BRKT	
8	ABX-3206	WATER COVER	
9	ABX-3207	DRIVE WHEEL ABX	
10	SPG-2453	KEY 4x4x40	
11	ASK-3606	KEY 5x5-10.5	
12	ABX-3209X	MOTOR COLLAR	
101	350-5805	SERVO MOTOR Y21C-5010S	
102	350-5809	REDUCER 1/10 BHF-40	
103	100-5045	BEARING 15 FYH SBPFL 202	
104	111-1153	COUPLING MIKI SFC-035DA2	
105	601-11311	BRAKE BXH-08-10 24V	
106	100-5488	BEARING FYH UP001	
107	280-5008	CORD CLAMP 15	
108	280-5275-SR10	CORD CLAMP SR10	
109	601-0460	PLASTIC TIE BELT 100 M/M	
110	211-5409	AMP S. S.PRESSOR CONN 172006-1	
111	211-5410	CONTACT 170284-1	
112	481-5511	DIODE 1S1887A(TOSHIBA)	
113	209-0023	CONN CLOSED END	
201	012-P00410	TAP SCR #2 PH 4x10	
202	020-000840-OZ	HEX SKT H CAP SCR BLK OZ M8x40	
203	068-852216-0B	FLT WSHR BLK 8.5-22x1.6	
204	030-000816-SB	HEX BLT W/S BLK M8x16	
207	060-F00600-0B	FLT WSHR BLK M6	
208	020-000530-OZ	HEX SKT H CAP SCR BLK OZ M5x30	
209	060-S00500-0C	SPR WSHR CRM M5	
210	030-000820-S	HEX BLT W/S M8x20	
211	060-F00800-0B	FLT WSHR BLK M8	
212	000-P00408-W	M SCR PH W/FS M4x8	
213	030-000612-SB	HEX BLT W/S BLK M6x12	
214	068-652016	FLT WSHR 6.5-20 x1.6	
215	060-S00800	SPR WSHR M8	
301	ABX-60062	WH BRAKE	

9 ASSY STOPPER (ABX-3400)



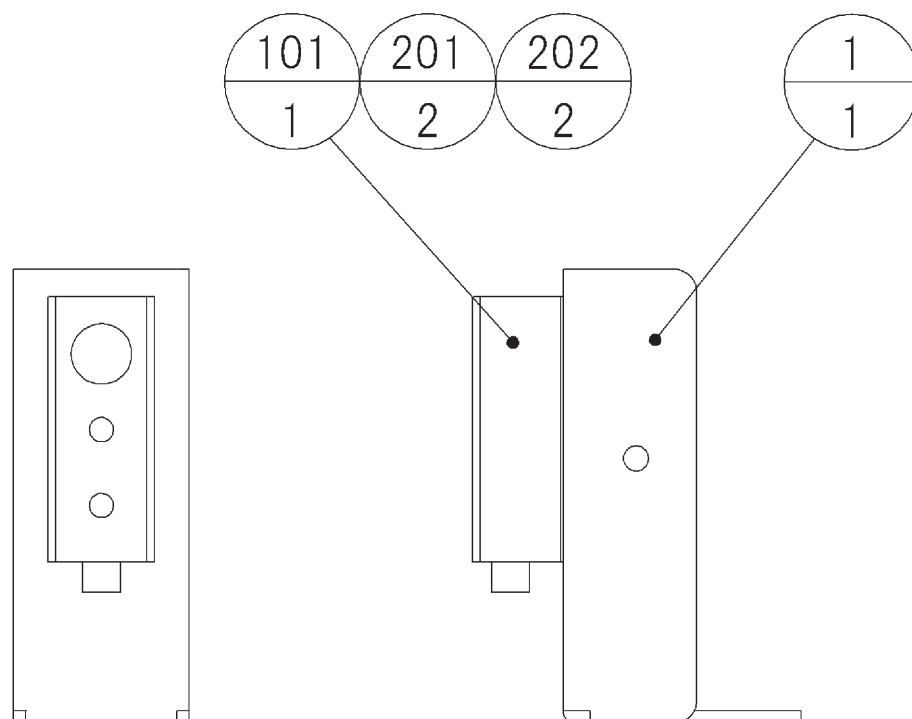
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3401	STOPPER BASE	
2	ABX-3402	STOPPER RUBBER	
3	ABX-3403	STOPPER URETHANE	
4	ABX-3404	RUBBER BRKT	
201	000-P00408-W	M SCR PH W/FS M4x8	

10 BEAM SENSOR UNIT XMTR (ABX-3600)



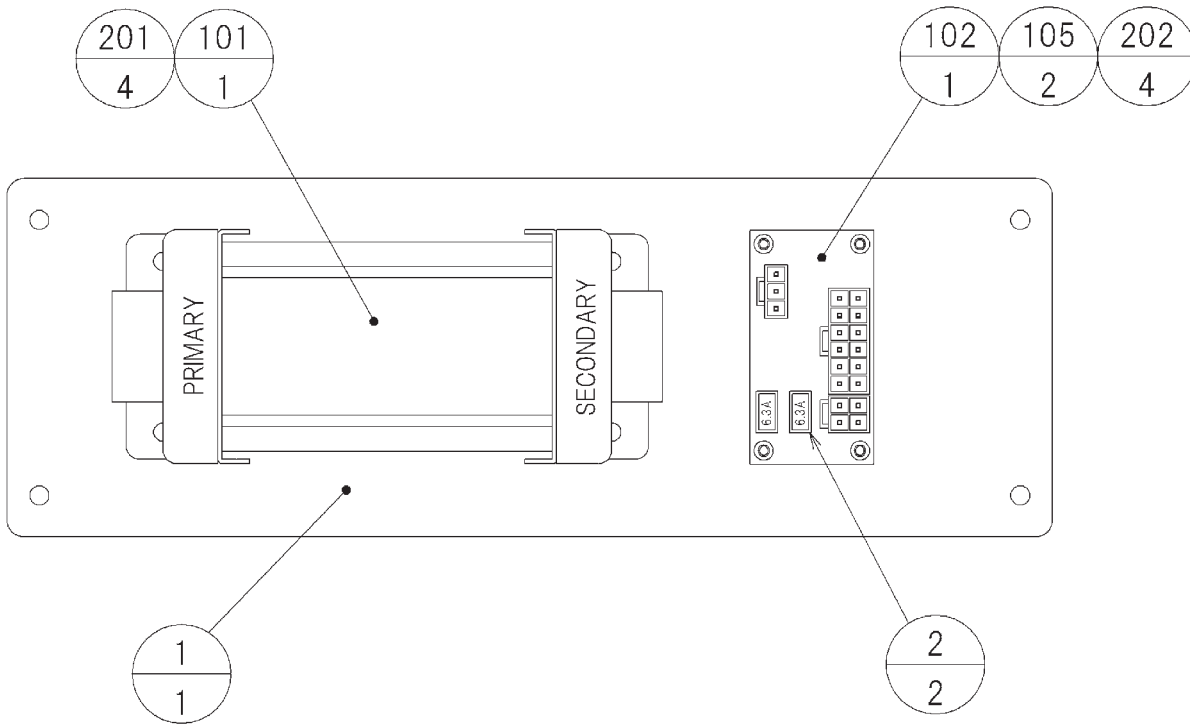
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3601X	BEAM SENSOR BRKT	
101	370-5298-01	BEAM SENSOR L-9382-12(SEGA)	
201	000-P00316-W	M SCR PH W/FS M3x16	
202	050-H00300	HEX NUT M3	

11 BEAM SENSOR UNIT RCVR (ABX-3650)



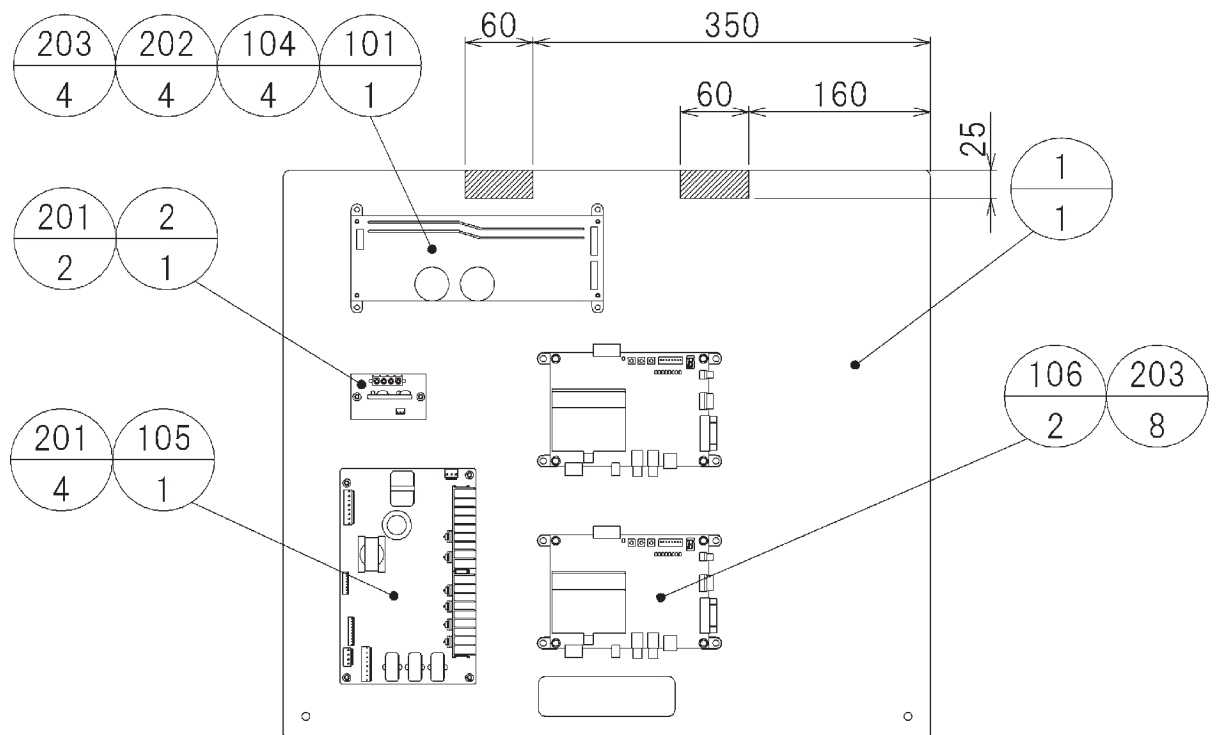
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3601X	BEAM SENSOR BRKT	
101	370-5298-02	BEAM SENSOR R-9382D-12(SEGA)	
201	000-P00316-W	M SCR PH W/FS M3x16	
202	050-H00300	HEX NUT M3	

12 ASSY XFMR (ABX-4000)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-4001X	WOODEN BASE XFMR	
2	421-6595-13	STICKER 6.3A	
101	560-5532-V 560-5538-V	XFMR 100-120V 100V10A WB V XFMR 220-240V 100V10A WB V	<Taiwan> <Hong Kong, Singapore, Philippines, Malaysia, Australia, Korea, Indonesia>
102	838-14551-02	DISTRIBUTION BD W/FUSEX2	
103	280-6676	CORD CLAMP TL-25A TTK	
104	280-0419	HARNESS LUG	
105	514-5138-6300	FUSE SG5013 5x20 6300MA 250V	
201	000-P00516-W	M SCR PH W/FS M5x16	
202	011-P00325	TAP SCR PH 3x25	
203	011-F00312	TAP SCR #1 FH 3x12	
204	011-T03512	TAP SCR TH 3.5x12	
301	ABX-60005	WH PWR SPLY01	
302	ABX-60006	WH PWR SPLY02	
303	ABX-60007	WH PWR SPLY03	

13 ASSY ELEC (ABX-4100)

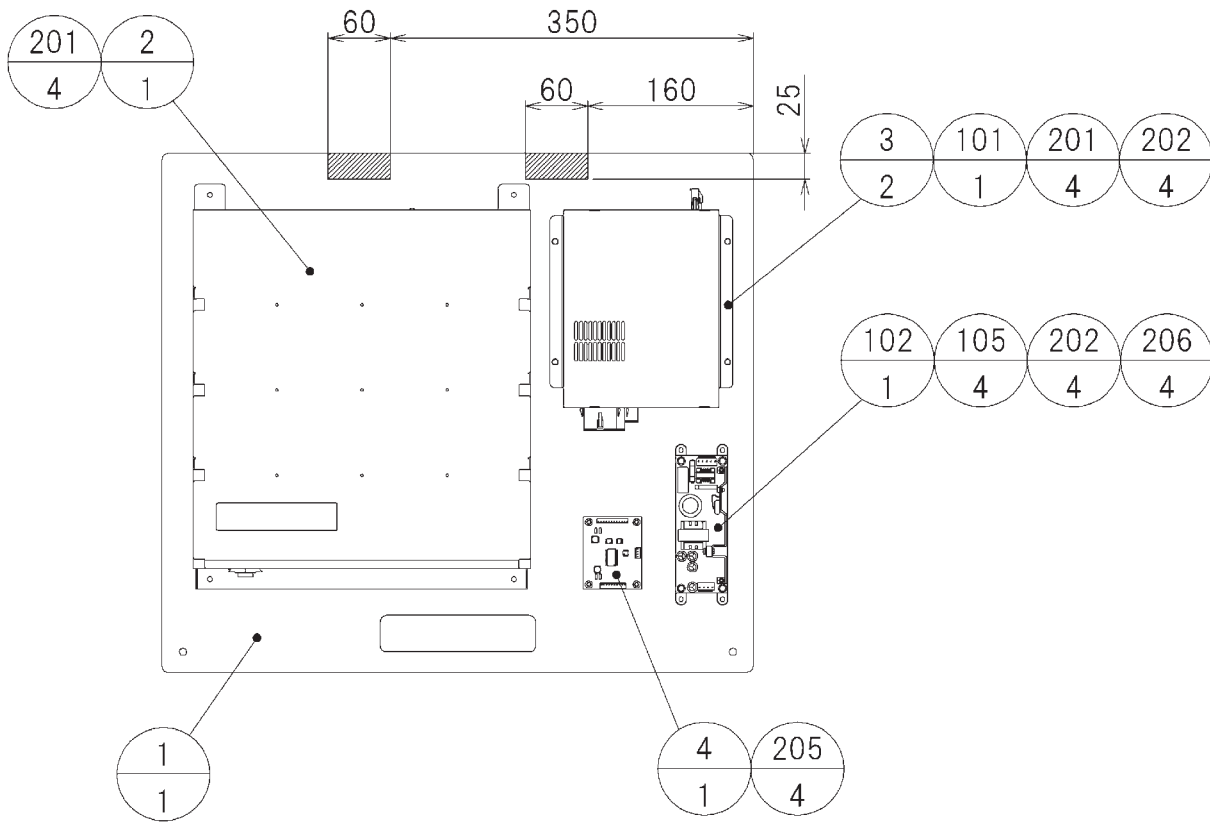


NOTE: Make sure that there is no parts, wiring, etc. in the slash mark portions.

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-4101	WOODEN BASE ELEC	
2	839-1148R	4A DC SSR BD NH4P	
101	400-5421-15024	SW REGU LCA150S-24	
102	280-5277	CORD CLAMP 18	
103	280-0419	HARNESS LUG	
104	280-6681	L-LOCK LT-320PCG	
105	838-14592	SERVO MOTOR DRIVE BD SER	
106	838-14515-A0191	SOUND AMP ANALOG IN	
201	011-P00325	TAP SCR PH 3x25	
202	000-P00308-W	M SCR PH W/FS M3x8	
203	011-T03516	TAP SCR TH 3.5x16	
204	011-F00312	TAP SCR #1 FH 3x12	
205	011-T03512	TAP SCR TH 3.5x12	
301	ABX-60008	WH ELEC01	
302	ABX-60009X	WH ELEC02	
303	ABX-60010	WH ELEC03	
304	ABX-60011	WH ELEC04	
305	ABX-60012X	WH ELEC05	
306	ABX-60014	WH ELEC07	
307	ABX-60071	WH ELEC08	
308	ABX-60072	WH ELEC09	

14 ASSY MAIN BD (ABX-4200)

(D-1/2)

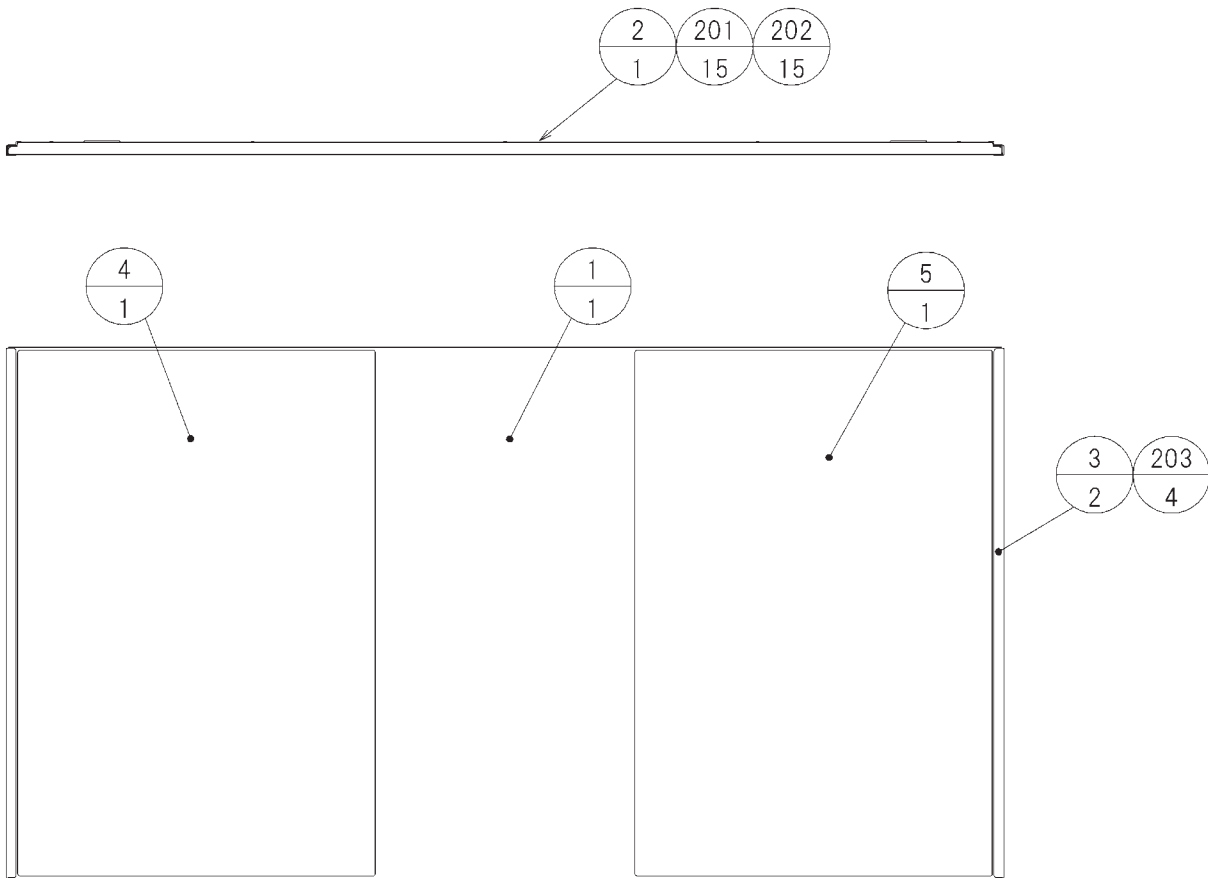


NOTE: Make sure that there is no parts, wiring, etc. in the slash mark portions.

14 ASSY MAIN BD (ABX-4200)**(D-2/2)**

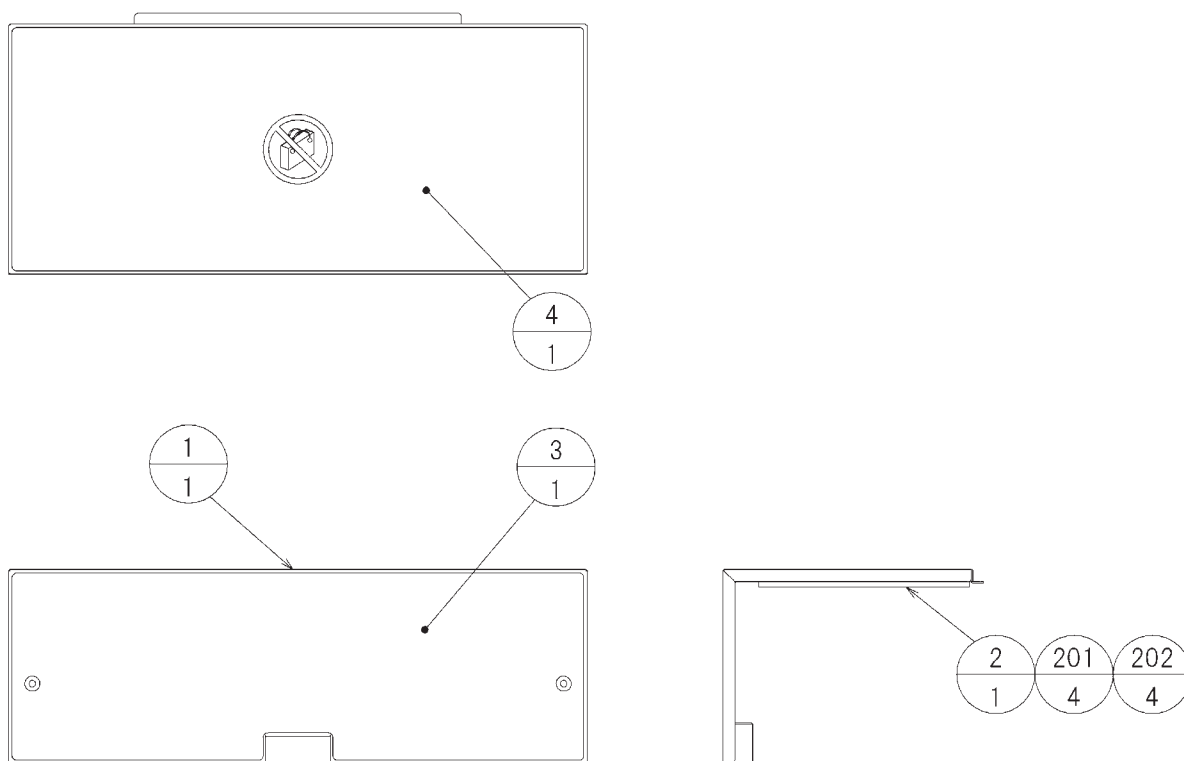
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-4201	WOODEN BASE MAIN BD	
2	844-0001D-91-12	ASSY CASE LBG L 1GB 7800 EXP	
3	HDF-4202	BRKT PWR SPLY	
4	839-1256R	RS232 TO 422 & 485 BD	
101	400-5457-91	SW REGU ATX/JVS	
102	400-5421-03012	SW REGU LCA30S-12	
103	280-6676	CORD CLAMP TL-25A TTK	
104	280-0419	HARNESS LUG	
105	280-6681	L-LOCK LT-320PCG	
106	280-5277	CORD CLAMP 18	
201	000-P00416-W	M SCR PH W/FS M4x16	
202	000-P00308-W	M SCR PH W/FS M3x8	
203	011-F00312	TAP SCR #1 FH 3x12	
204	011-T03512	TAP SCR TH 3.5x12	
205	011-P00325	TAP SCR PH 3x25	
206	011-T03516	TAP SCR TH 3.5x16	
301	ABX-60017	WH MAIN BD01	
302	ABX-60018	WH MAIN BD02	
303	ABX-60019X	WH MAIN BD03	
304	ABX-60021	WH MAIN BD05	
305	ABX-60022X	WH MAIN BD06	
306	600-7360-0750	WH LBG PWR 24P P TO P 0750MM	
307	600-7361-0750	WH LBG PWR 18P P TO P 0750MM	

15 ASSY FLOOR (ABX-3800)



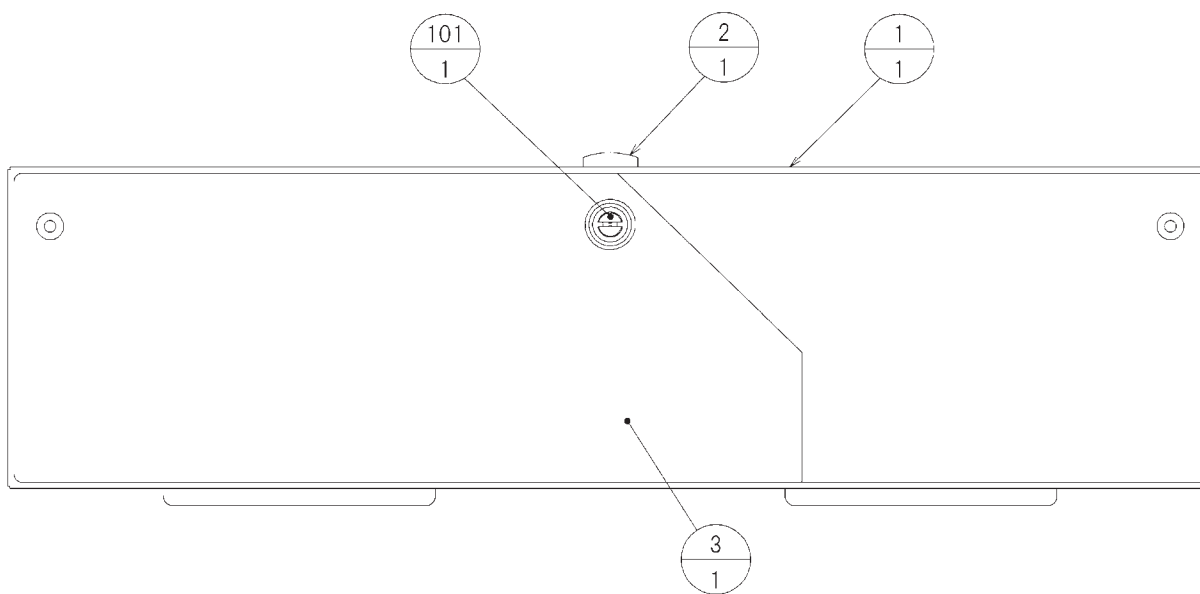
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3801	FLOOR BASE	
2	ABX-3802	WOODEN BASE FLOOR	
3	ABX-3803	FLOOR SASH	
4	ABX-3804	STICKER FLOOR L	
5	ABX-3805	STICKER FLOOR R	
201	050-F00500	FLG NUT M5	
202	068-552016	FLT WSHR 5.5-20 x1.6	
203	000-T00408-0C	M SCR TH CRM M4x8	

16 ASSY FRONT DOOR (ABX-3820)



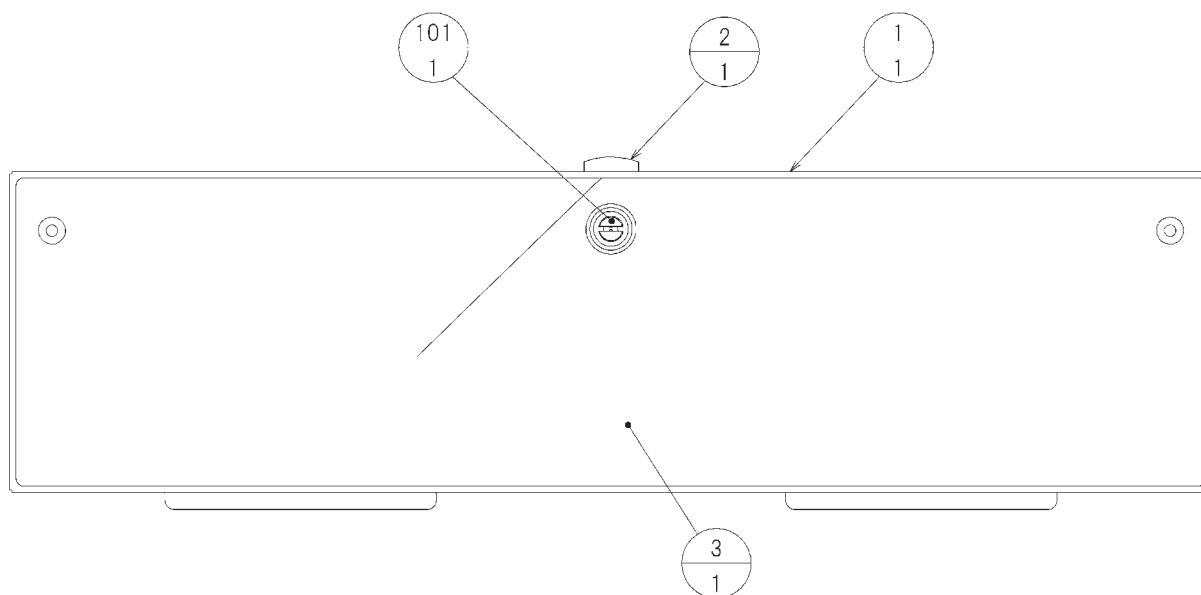
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3821	FRONT DOOR	
2	ABX-3822	WOODEN BASE FRONT DOOR	
3	ABX-3823X	STICKER FRONT DOOR SIDE	
4	ABX-3824	STICKER FRONT DOOR UPPER	
201	050-F00500	FLG NUT M5	
202	068-552016	FLT WSHR 5.5-20 x1.6	

17 ASSY REAR DOOR L (ABX-3840)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3841X	REAR DOOR	
2	DP-1167	TNG LKG	
3	ABX-3842X	STICKER REAR DOOR L	
101	220-5793-1-A001	CLY LOCK MASTER W/O KEY A001	

18 ASSY REAR DOOR R (ABX-3860)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3841X	REAR DOOR	
2	DP-1167	TNG LKG	
3	ABX-3861X	STICKER REAR DOOR R	
101	220-5793-1-A001	CLY LOCK MASTER W/O KEY A001	

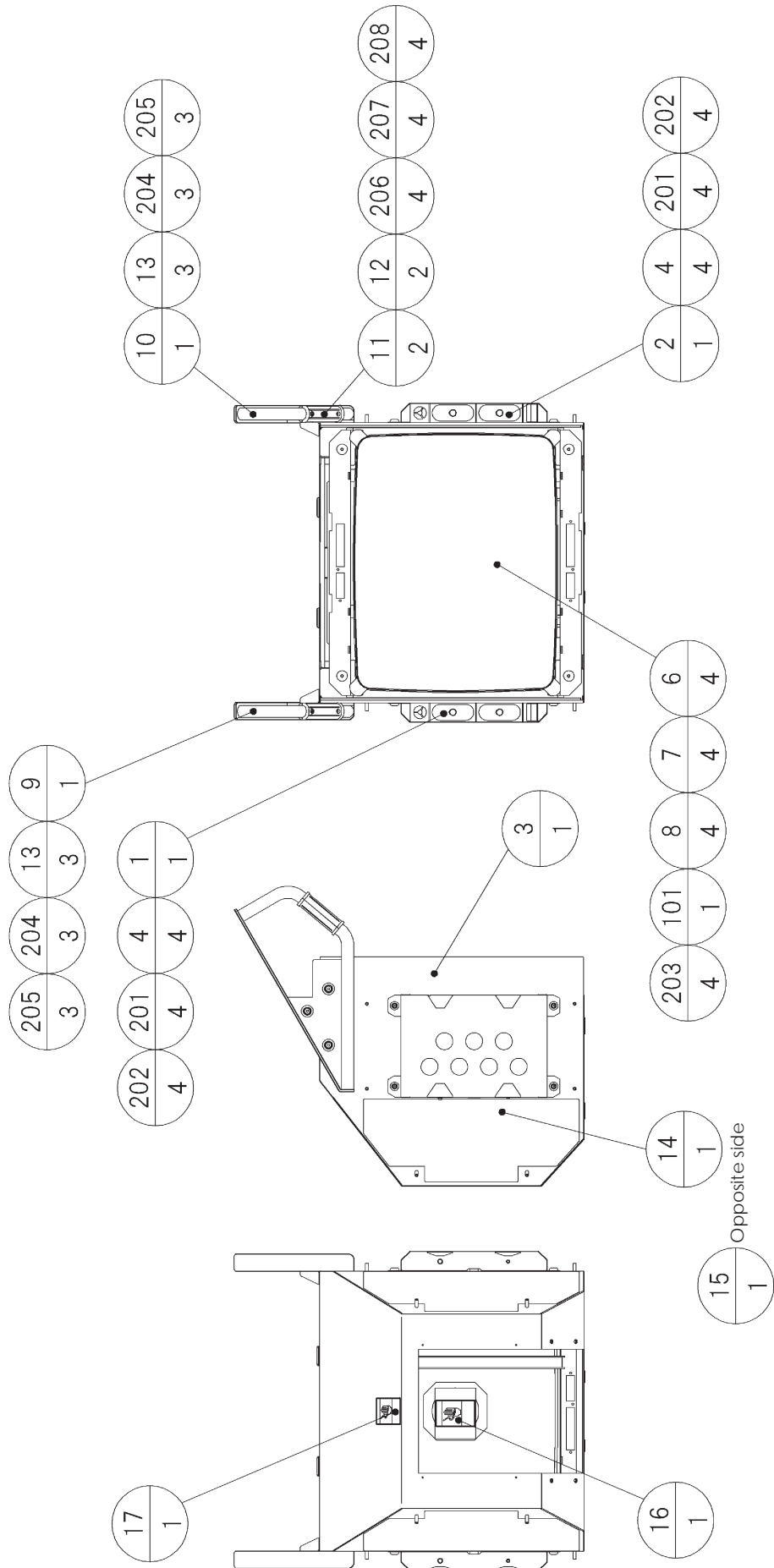
19 ASSY WIRE ROLLING BASE (ABX-6002)

This is comprised of the following wire harnesses. ASSY drawing is not available.

ITEM NO.	PART NO.	DESCRIPTION	NOTE
101	601-0460	PLASTIC TIE BELT 100 MM	
301	ABX-60039	WH CRADLE01	
302	ABX-60040	WH CRADLE02	
303	ABX-60041	WH CRADLE03	
304	ABX-60042X	WH CRADLE04	
305	ABX-60043	WH CRADLE05	
306	ABX-60044	WH CRADLE06	

20 ASSY MONITOR BOX (ABX-1100)

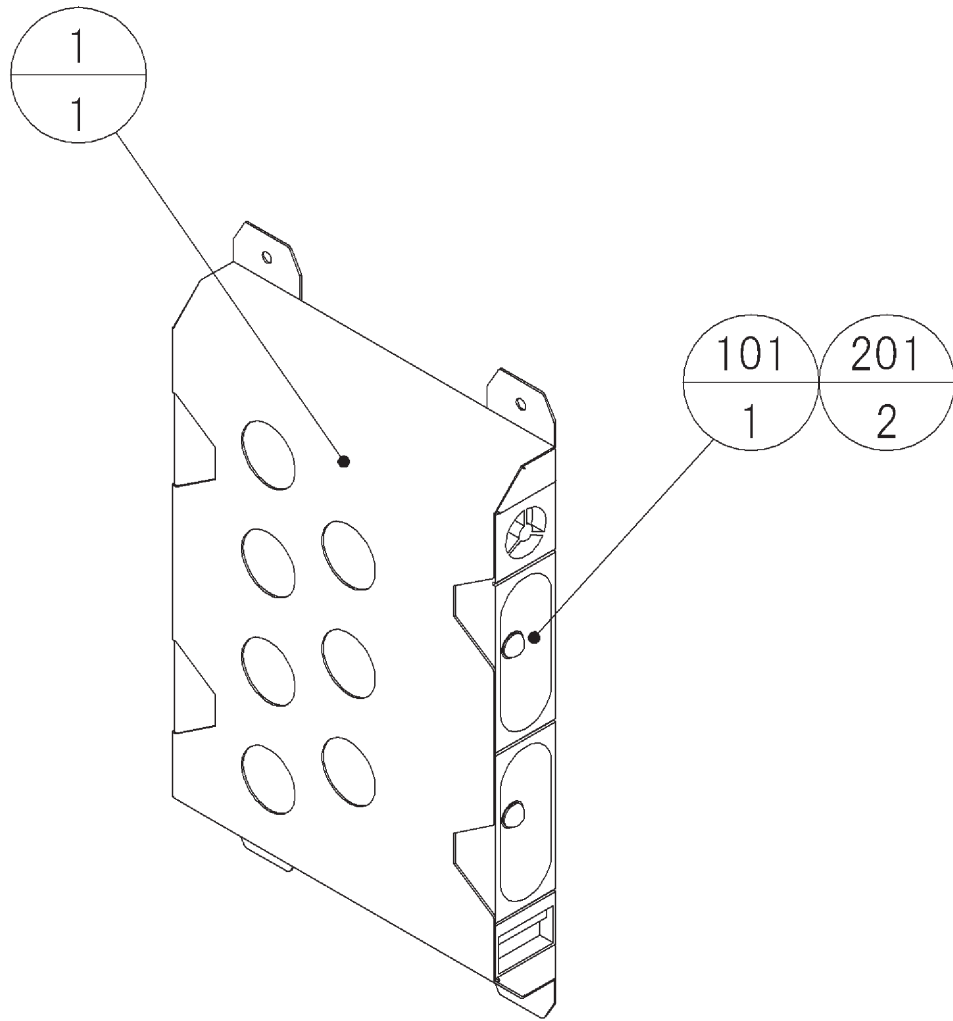
(D-1/2)



20 ASSY MONITOR BOX (ABX-1100)**(D-2/2)**

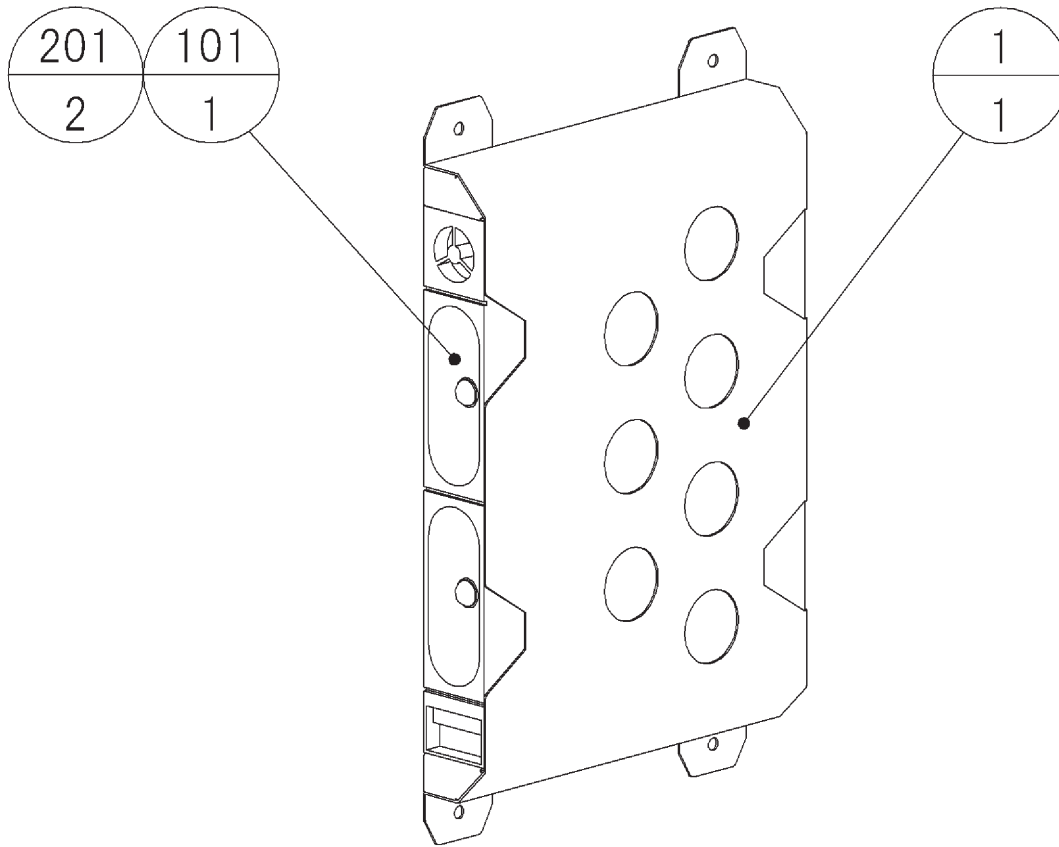
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1160	ASSY SPEAKER L	
2	ABX-1180	ASSY SPEAKER R	
3	ABX-1101X	MONITOR BASE	
4	280-6696	SPCL WSHR 5.5-20x6.3 AL YEL	
6	280-5112	BUSH FOR TV	
7	280-5113	COLLAR FOR TV	
8	280-5114	SPACER 6.4-25x2	
9	ABX-1103	HAND GRIP L	
10	ABX-1104	HAND GRIP R	
11	ABX-1105	GRIP A	
12	ABX-1106	GRIP B	
13	280-6697	SPCL WSHR 8.5-28x9.5 AL YEL	
14	ABX-1107	STICKER MONITOR SIDE L	
15	ABX-1108	STICKER MONITOR SIDE R	
16	440-DS0013XEG	STICKER D MONITOR ENG	
17	440-WS0002XEG	STICKER W POWER OFF ENG	
101	200-5955-04	ASSY CLR DSPL 29TYPE AUTO MY	
102	280-5008	CORD CLAMP 15	
103	280-5275-SR10	CORD CLAMP SR10	
201	FAS-290038	HEX SKT LH CAP SCR STN M5x10	
202	060-S00500-0C	SPR WSHR CRM M5	
203	050-F00600	FLG NUT M6	
204	FAS-290048	HEX SKT LH CAP SCR STN M8x20	
205	060-S00800-0C	SPR WSHR CRM M8	
206	FAS-290051	HEX SKT LH SCR STN S=15 M4x25	
207	060-S00400-0B	SPR WSHR BLK M4	
208	060-F00400-0B	FLT WSHR BLK M4	
301	ABX-60065	WH MONITOR BOX01	
302	ABX-60066	WH MONITOR BOX02	
303	ABX-60068	WH MONITOR BOX03	
304	ABX-60069	WH MONITOR BOX04	

21 ASSY SPEAKER L (ABX-1160)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1161X	SPEAKER BRKT	
101	130-5156-02	SPEAKER BOX 8OHM 20W VA1 YL	
201	000-P00512-WB	M SCR PH W/FS BLK M5x12	

22 ASSY SPEAKER R (ABX-1180)

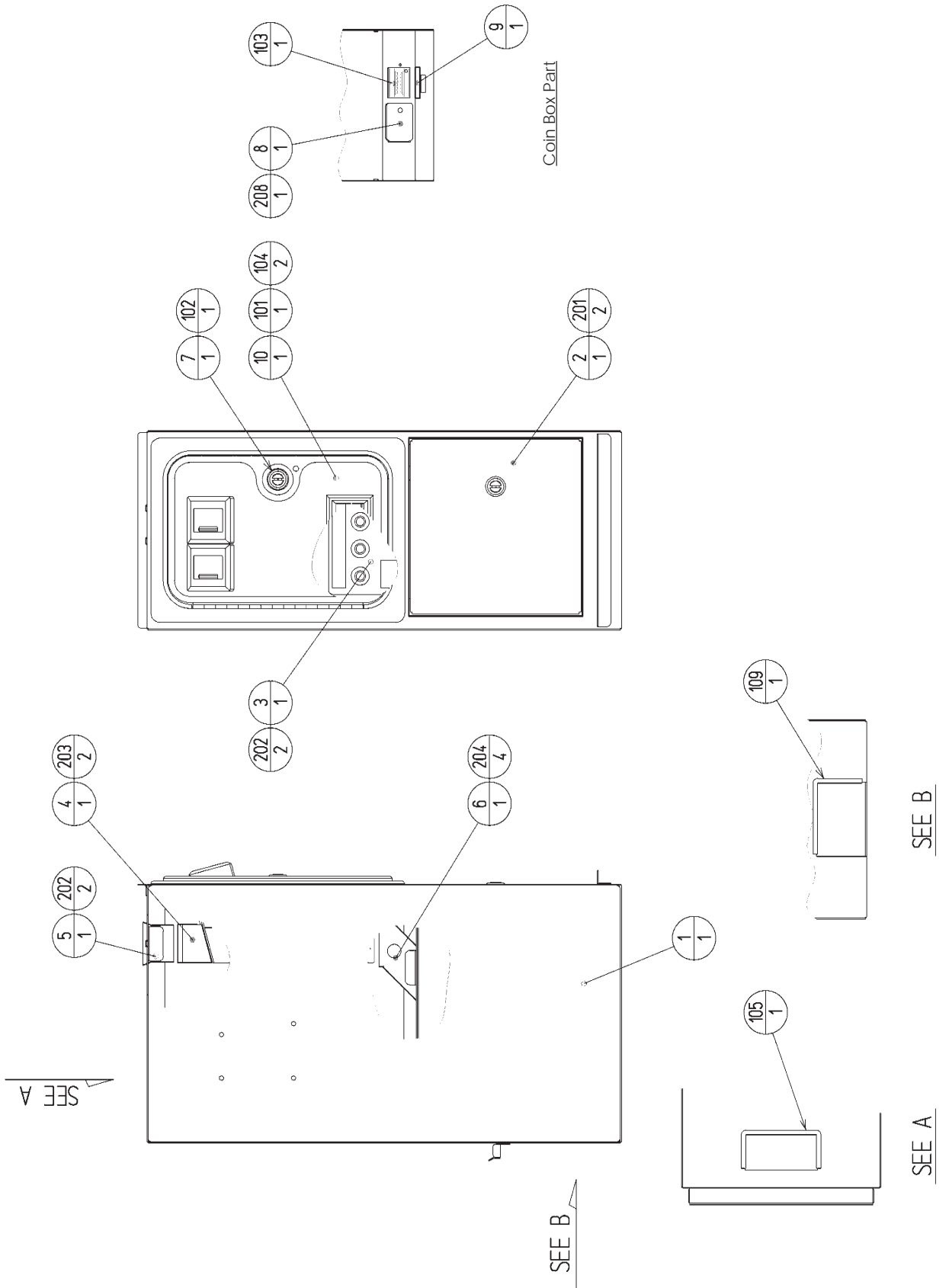


ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1161X	SPEAKER BRKT	
101	130-5156-02	SPEAKER BOX 8OHM 20W VA1 YL	
201	000-P00512-WB	M SCR PH W/FS BLK M5x12	

23 ASSY COINCHUTE TOWER (ABX-1200)

(D-1/2)

2 PARTS LIST



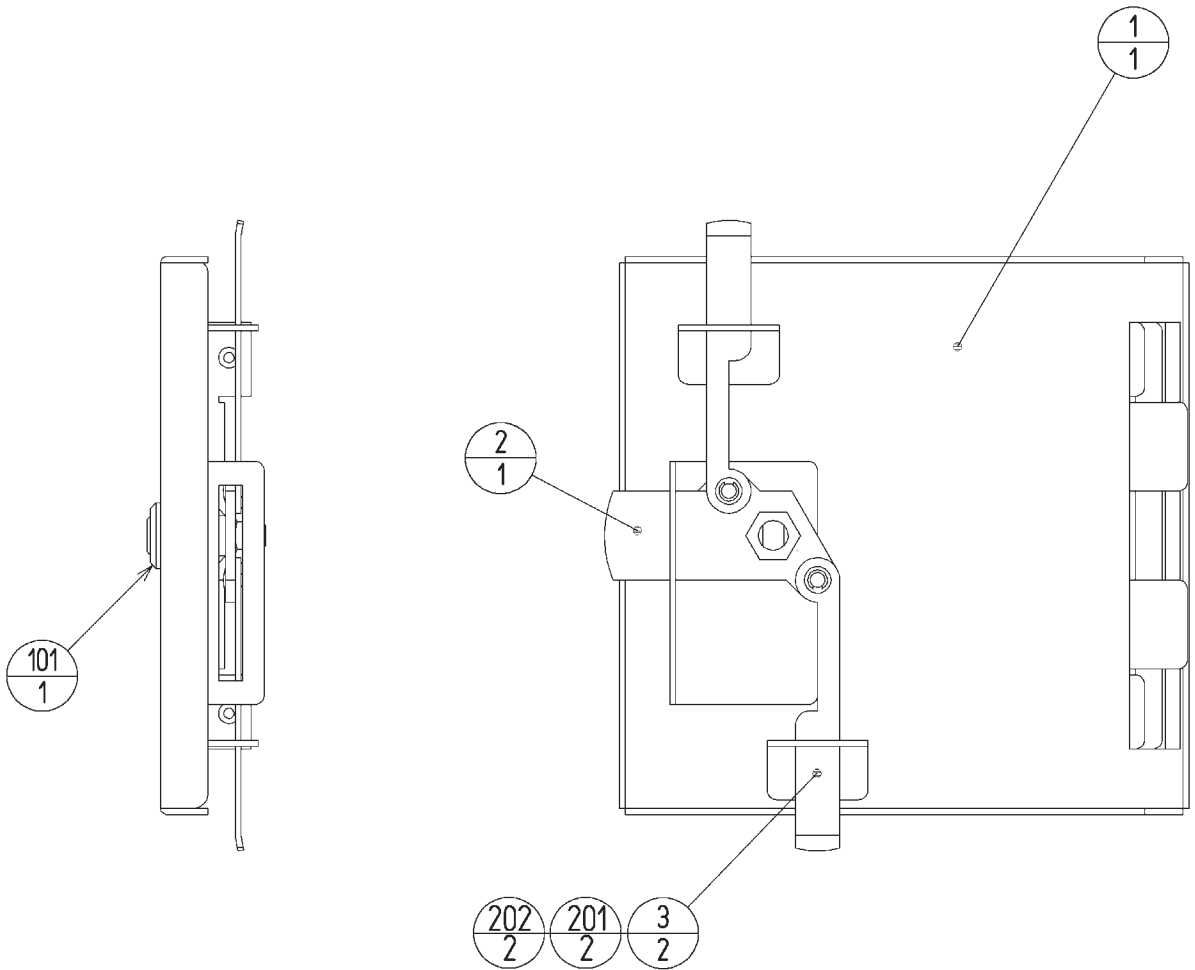
23 ASSY COINCHUTE TOWER (ABX-1200)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1201X	COINCHUTE TOWER	
2	ABX-1260	ASSY CASH BOX DOOR	
3	ABX-1280	SW UNIT	
4	ABX-1202	TOP ENTRY BRKT	
5	ABX-1203	CHUTE JOINT BRKT	
6	ABX-1204X	CHUTE PLATE SINGLE	
7	DP-1167	TNG LKG	
8	HOT-1007	LID COIN CNTR	
9	421-9168-01	STICKER COIN METER	
10	421-7501-02	STICKER 6.3V 0.15A	
101	220-5282-92-05	ASSY C.C 1DR TAIWAN NT\$10	<Taiwan>
	220-5282-92-06	ASSY C.C 1DR HONG KONG \$1	<Hong Kong>
	220-5282-92-19	ASSY C.C 1DR SINGAPORE \$1	<Singapore, Philippines, Malaysia, Indonesia>
	220-5282-92-09	ASSY C.C 1DR AUSTRALIA \$1	<Australia>
	220-5282-92-07	ASSY C.C 1DR KOREA100W	<Korea>
102	220-5793-1-A001	CLY LOCK MASTER W/O KEY A001	
103	220-5798-01	MAG CNTR 4P MZ674-DC5V-D41 JC	
104	310-5029-F20	SUMITUBE F F 20MM	
105	601-5525-160	BUSH 1.2T	
106	280-6676	CORD CLAMP TL-25A TTK	
107	280-5008	CORD CLAMP 15	
108	280-5275-SR10	CORD CLAMP SR10	
109	601-5525-130	BUSH 1.2T	
201	000-F00308	M SCR FH M3x8	
202	000-P00408-W	M SCR PH W/FS M4x8	
203	010-P00308-F	S-TITE SCR PH W/F M3x8	
204	050-F00400-3B	CAP NUT TYPE3 BLK M4	
205	060-S00400-0B	SPR WSHR BLK M4	
206	060-F00400-0B	FLT WSHR BLK M4	
208	000-P00308-W	M SCR PH W/FS M3x8	
301	ABX-60058	WH COINCHUTE TOWER	
302	ABX-60059	WH COIN SW01	
303	600-6972-0150	WIRE HARN EARTH ID5 0150MM	

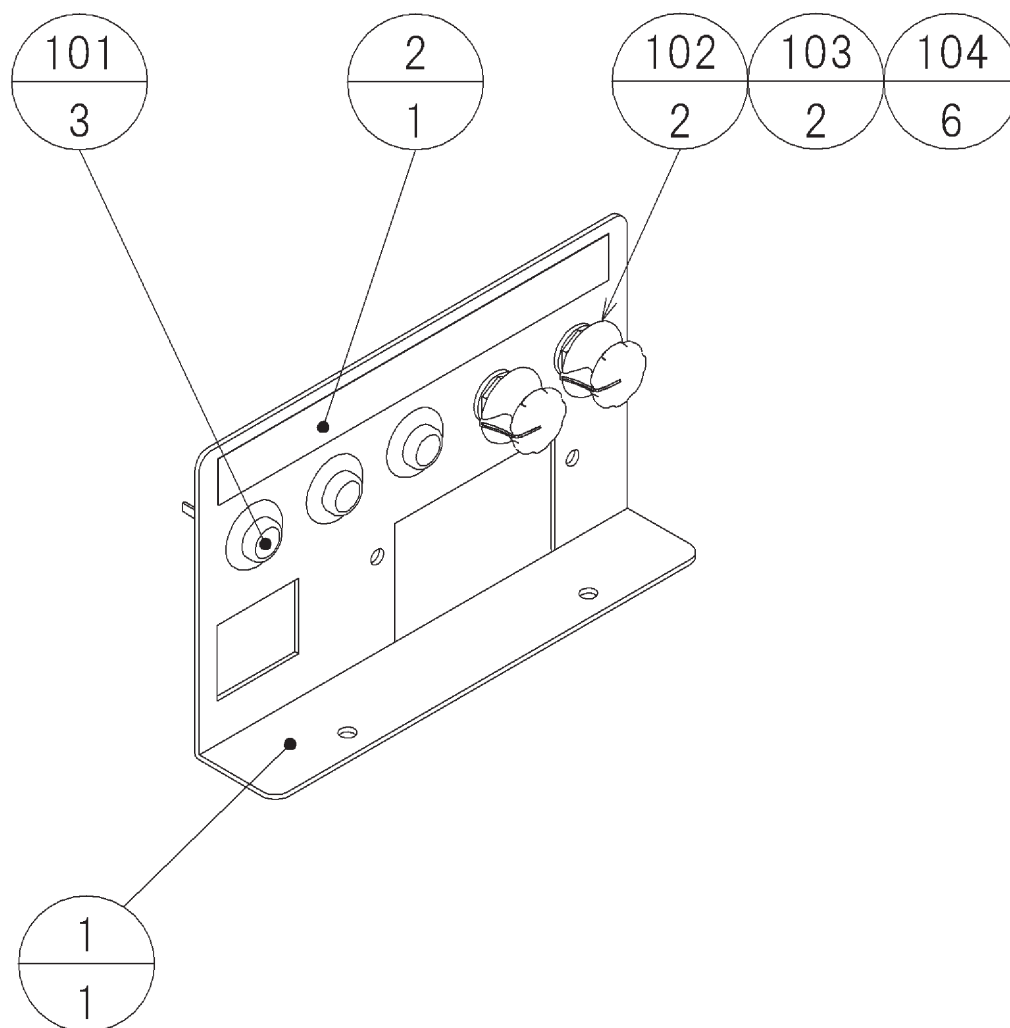
24 ASSY CASH BOX DOOR (ABX-1260)

21 PARTS LIST



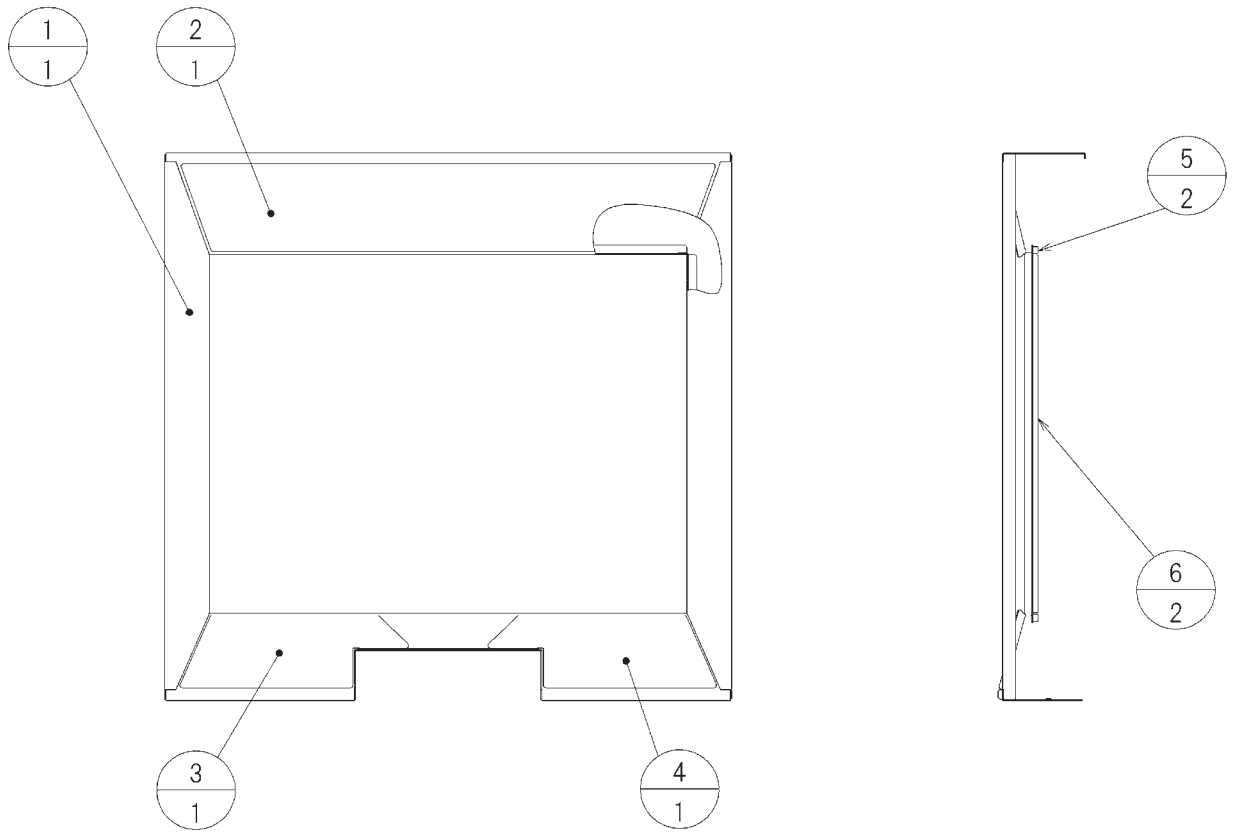
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1261	CASH BOX DOOR	
2	HOT-1203X	CENTER TNG	
3	ABX-1262	SIDE TNG	
101	220-5794	CLY LOCK W/KEYS	
201	060-F00400-0B	FLT WSHR BLK M4	
202	065-E00300	E RING 3MM	

25 SW UNIT (ABX-1280)



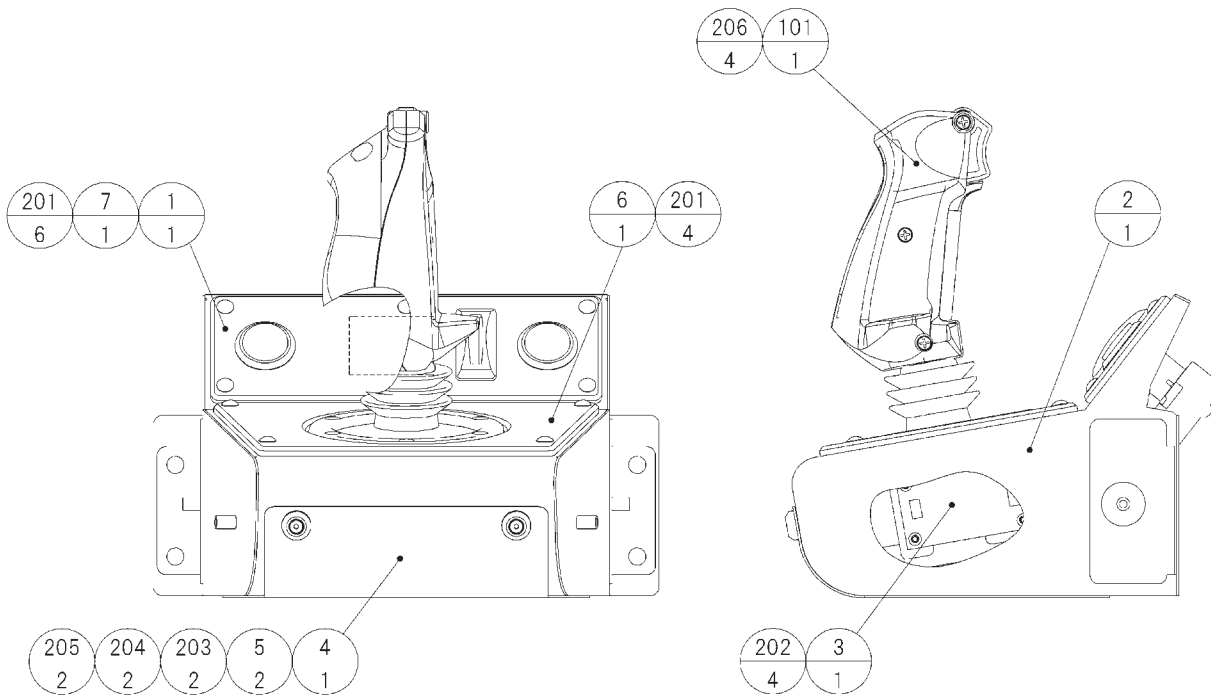
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1281	SW BRKT	
2	421-11669	STICKER SW UNIT FZR STD	
101	509-5028	SW PB 1M (MIYAMA DS-412R)	
102	220-5810	VOL CONT C5KOHM(RV24YN15SC502)	
103	601-0042	KNOB 22 MM	
104	310-5029-D20	SUMITUBE F D 20MM	
105	601-0460	PLASTIC TIE BELT 100 MM	
301	ABX-60060	WH SW UNIT01	
302	ABX-60061	WH SW UNIT02	

26 ASSY MONITOR MASK (ABX-1300)



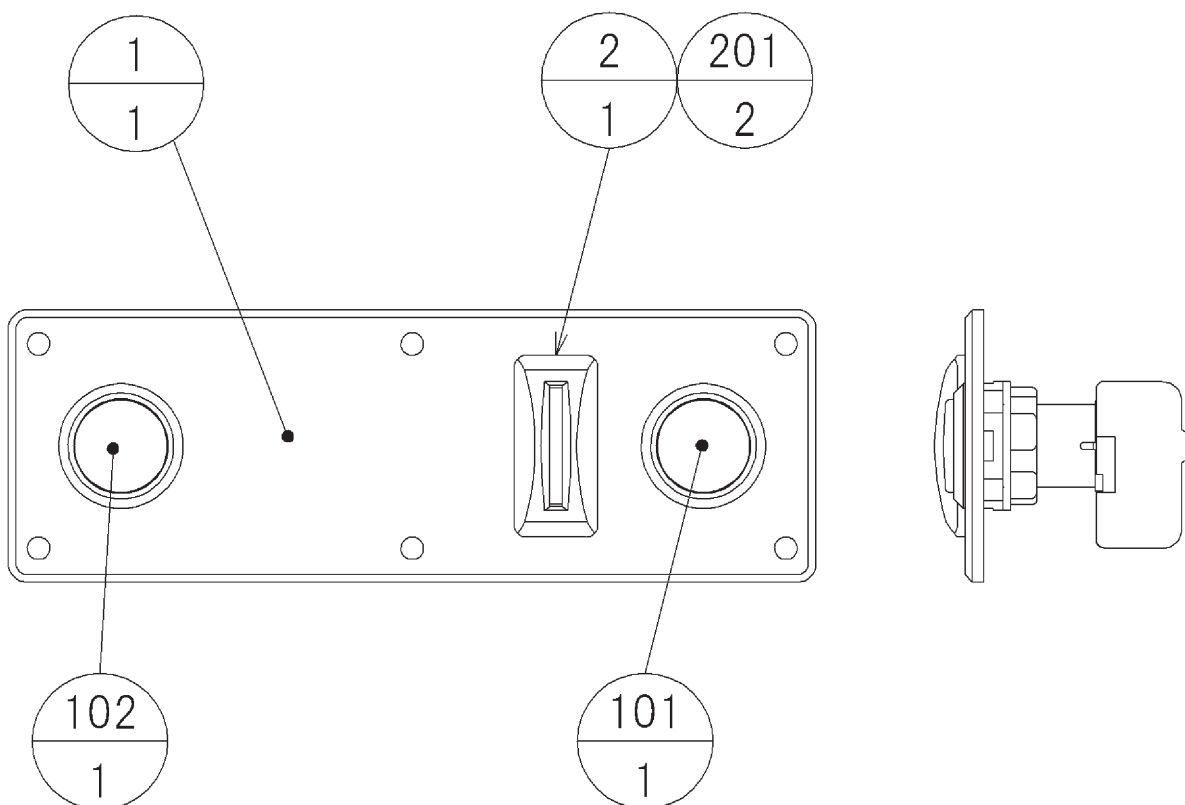
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1301	MONITOR MASK	
2	ABX-1302-01	STICKER INSTR UPPER ENG	
3	ABX-1303-01	STICKER INSTR LOWER L ENG	
4	ABX-1304-01	STICKER INSTR LOWER R ENG	
5	ABX-1305	BEZEL SPONGE LONG	
6	ABX-1306	BEZEL SPONGE SHORT	

27 ASSY CONTROLLER BASE (ABX-1400)



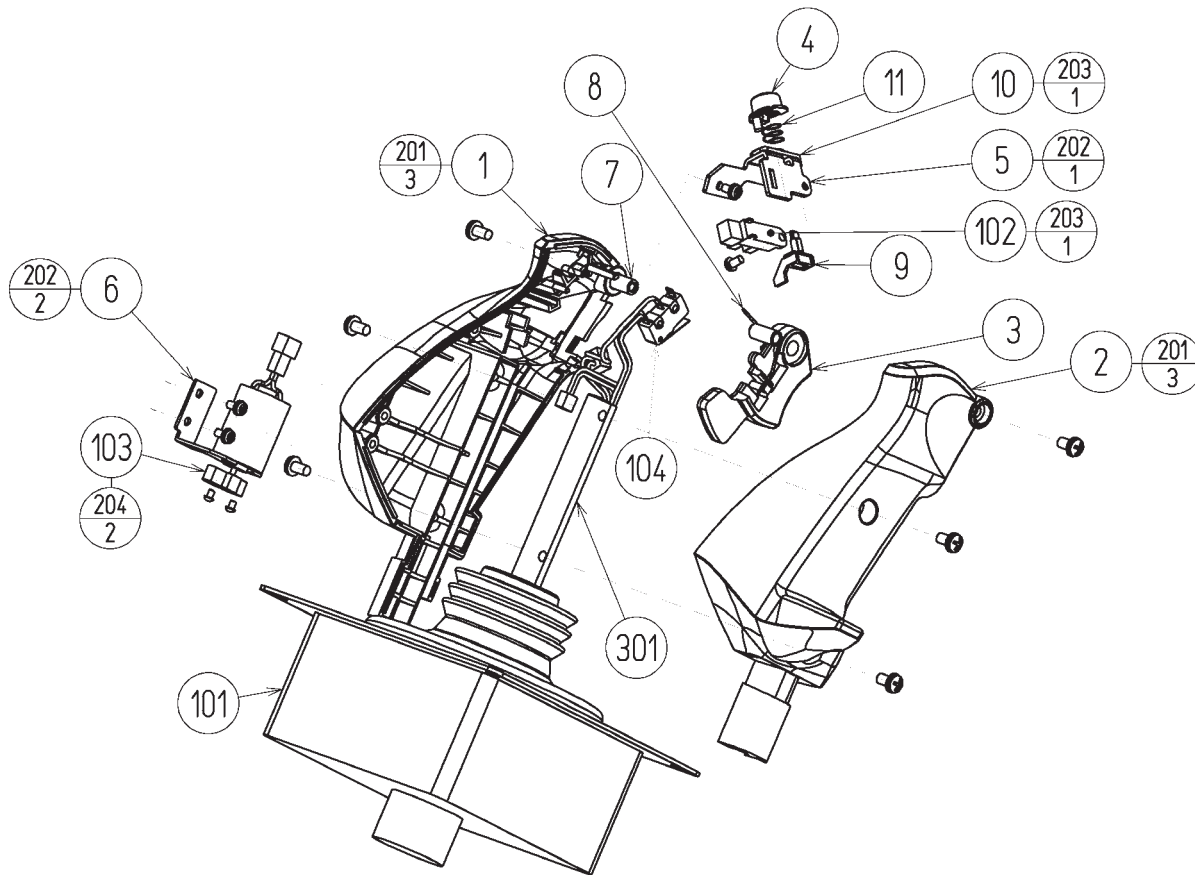
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1450	ASSY SW PLATE	
2	ABX-1401X	CONTROLLER BASE	
3	839-1187R	AMP BD FOR ANALOG JOYSTICK	
4	ABX-1402	CONTROLLER LID	
5	280-6695	SPCL WSHR 4.5-16x5 AL BLK	
6	ABX-1403	CONTROLLER PLATE	
101	610-0756	ASSY ANALOG JOY ABX	
102	280-5008	CORD CLAMP 15	
201	008-T00410-0C	TMP PRF SCR TH CRM M4x10	
202	050-F00300	FLG NUT M3	
203	050-F00400	FLG NUT M4	
204	FAS-290042	HEX SKT LH CAP SCR STN M4x12	
205	060-S00400-0C	SPR WSHR CRM M4	
206	050-F00500	FLG NUT M5	
301	ABX-60049X	WH CTRL PNL01	
302	ABX-60050	WH CTRL PNL02	

28 ASSY SW PLATE (ABX-1450)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1451X	SW PLATE	
2	220-5167-19	COIN ENTRY TAIWAN NT\$10	<Taiwan>
	220-5167-10	COIN ENTRY HONG KONG \$1	<Hong Kong>
	220-5167-15	COIN ENTRY ENG 1 POUND	<Singapore, Philippines, Malaysia, Indonesia>
	220-5167-11	COIN ENTRY AUSTRALIA \$1	<Australia>
	220-5167-02	COIN ENTRY 25	<Korea>
101	509-6084-YY	SW PB OBSA-30UM-Y-1F LED-Y-12V	
102	509-6084-RLN	SW PB OBSA-30UM-R-1F LN	
201	000-P00310-W	M SCR PH W/FS M3x10	

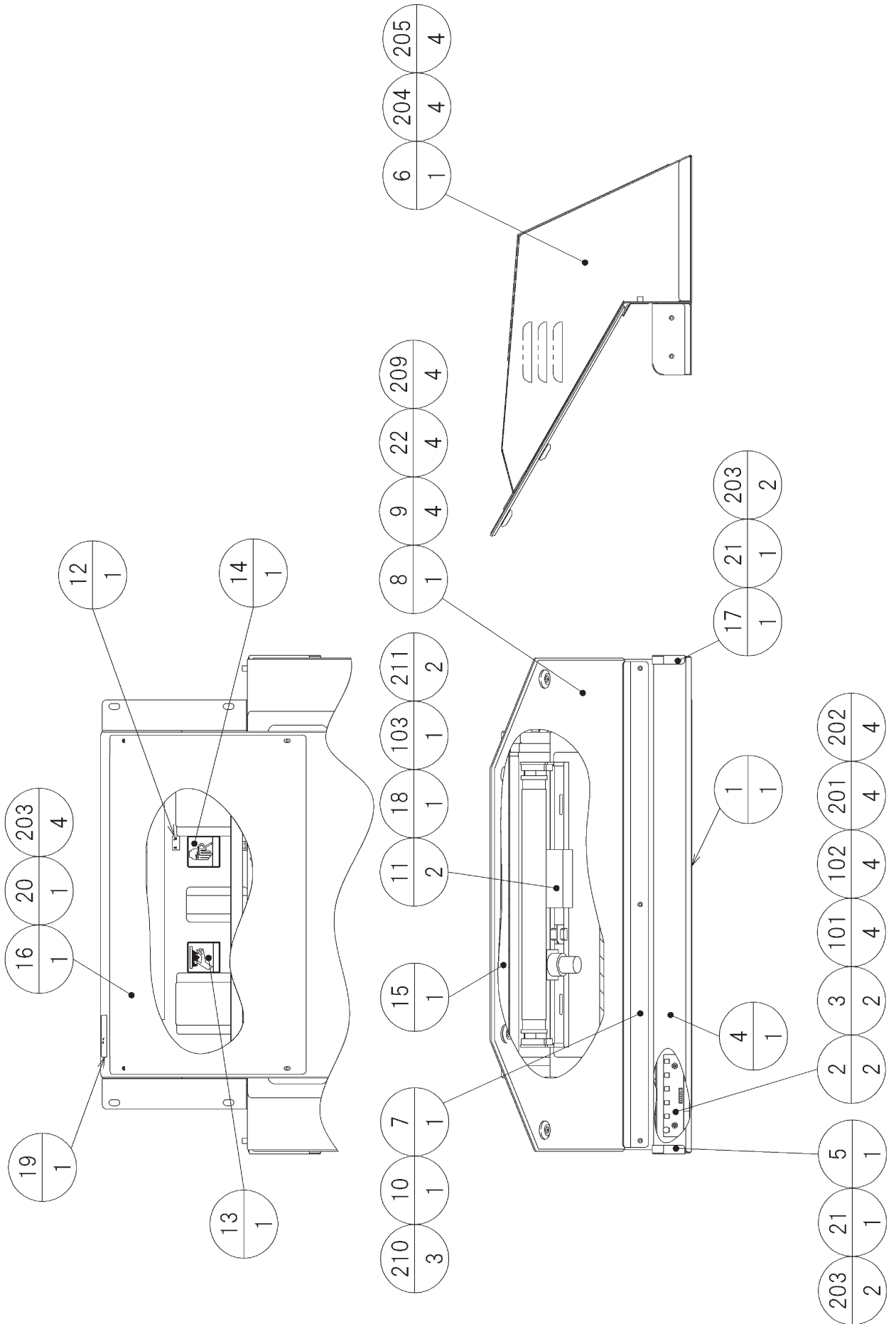
29 ASSY ANALOG JOY ABX (610-0756)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
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 GP1A75EJ000F	
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 M4x8	
202	000-P00306-S	M SCR PH W/S M3x6	
203	000-P00305	M SCR PH M3x5	
204	FAS-000157	M SCR PH M2.3x3	
301	ABX-60099	WH ANALOG JOYSTICK ABX	

30 ASSY BILLBOARD (ABX-1500)

(D-1/2)

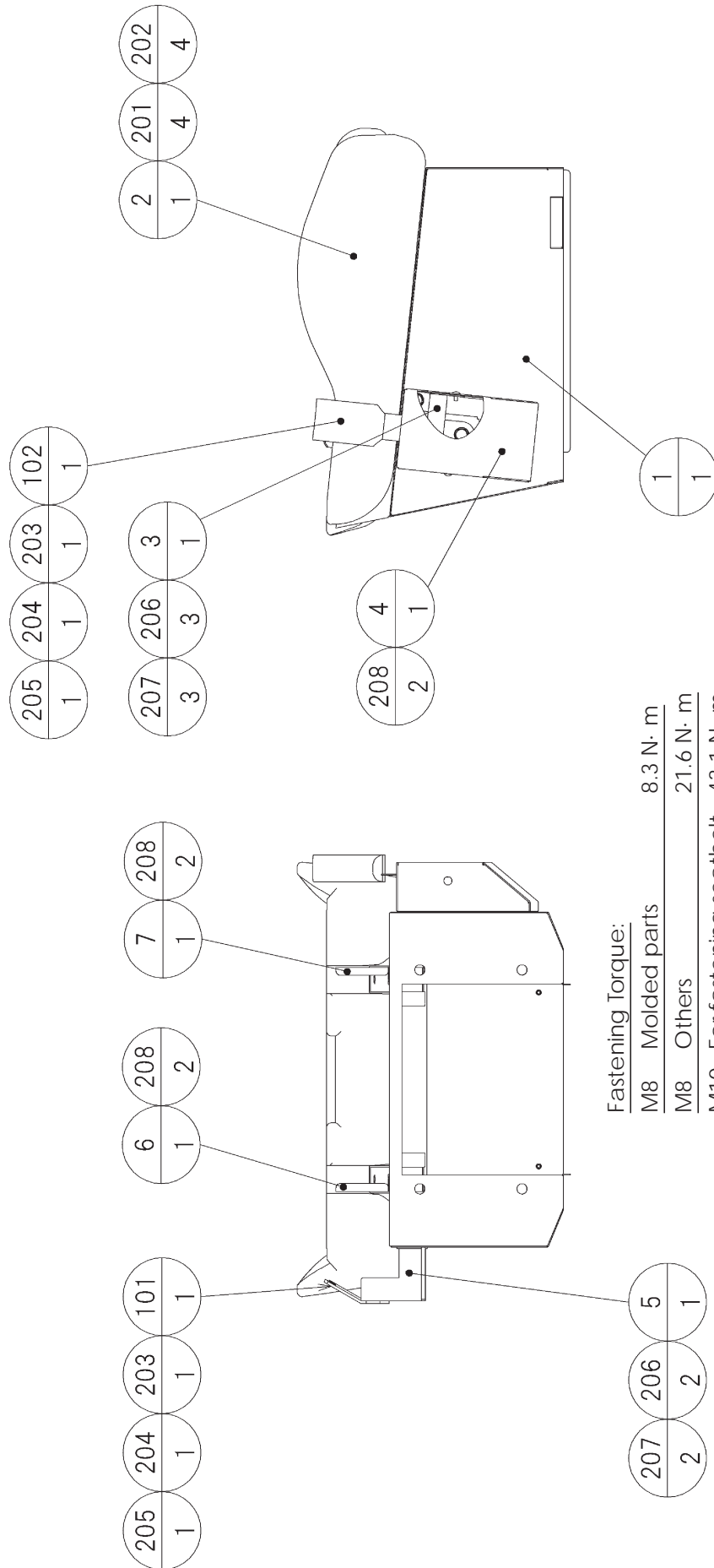


30 ASSY BILLBOARD (ABX-1500)**(D-2/2)**

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1501X	LED BOX	
2	ABX-1502	LED HOLDER	
3	839-1267R	RGB LED 6 BAR BD	
4	ABX-1503	LED PLATE	
5	ABX-1504	LED PLATE HOLDER L	
6	ABX-1505X	BILLBOARD BOX	
7	ABX-1514	CUSHION SPONGE SASH	
8	ABX-1507	BILLBOARD ACRYL PLATE	
9	CTF-1002	WASHER CTF	
10	ABX-1508X	ACRYL PLATE SASH	
11	253-5457	FL HOLDER	
12	421-7501-15	STICKER FL 10W	
13	440-WS0141-EG	STICKER W HIGH TEMP S ENG	
14	440-WS0142-EG	STICKER W POWER OFF S ENG	
15	ABX-1509	BILLBOARD REFLECT SHEET	
16	ABX-1510X	BILLBOARD LID	
17	ABX-1511	LED PLATE HOLDER R	
18	ABX-1512X	BILLBOARD SHEET LOWER	
20	ABX-1513	BILLBOARD LID REFLECT SHEET	
21	ABX-1515	CUSHION SPONGE LED PLATE	
22	ABX-1516	CUSHION SPONGE 19	
101	280-5247	ONE TOUCH BUSHING	
102	280-5248-10	ONE TOUCH COLLAR M3 L=10	
103	390-6822-10EX	ASSY FL10W EX W/CONN HIGH	
104	280-5008	CORD CLAMP 15	
105	280-5275-SR10	CORD CLAMP SR10	
201	050-F00400	FLG NUT M4	
202	000-P00320-W	M SCR PH W/FS M3x20	
203	000-T00408-0B	M SCR TH BLK M4x8	
204	030-000612-SB	HEX BLT W/S BLK M6x12	
205	060-F00600-0B	FLT WSHR BLK M6	
209	FAS-290038	HEX SKT LH CAP SCR STN M5x10	
210	000-T00408-0C	M SCR TH CRM M4x8	
211	000-P00430-W	M SCR PH W/FS M4x30	
301	ABX-60047X	WH TOP BILLBD01	
302	ABX-60048	WH TOP BILLBD02	

31 ASSY SEAT BASE (ABX-1600)

(D-1/2)



205 1
204 1
203 1
101 1

6 1
208 2

7 1
208 2

207 2
206 2
5 1

205 1
204 1
203 1
102 1

207 3
206 3
3 1

208 2
4 1

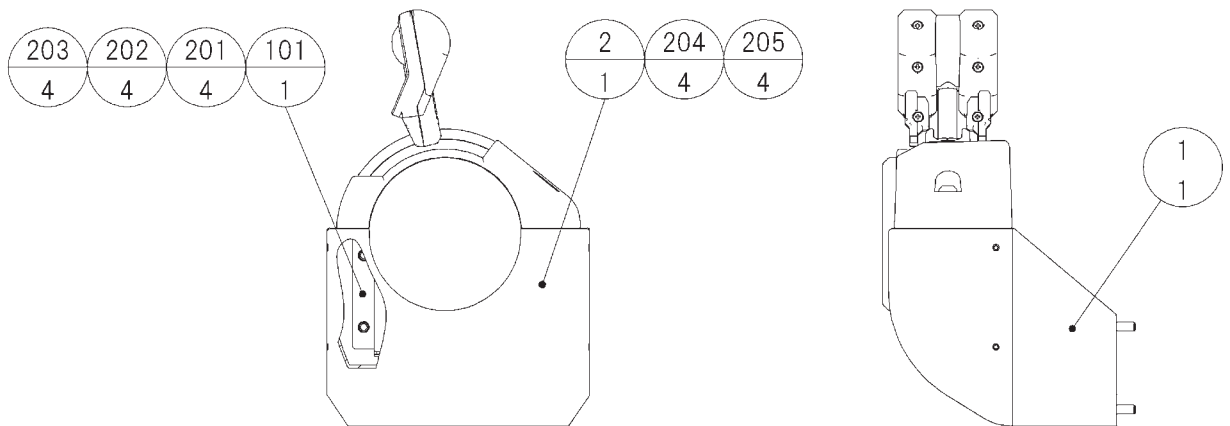
2 1
201 4
202 4

1 1

31 ASSY SEAT BASE (ABX-1600)**(D-2/2)**

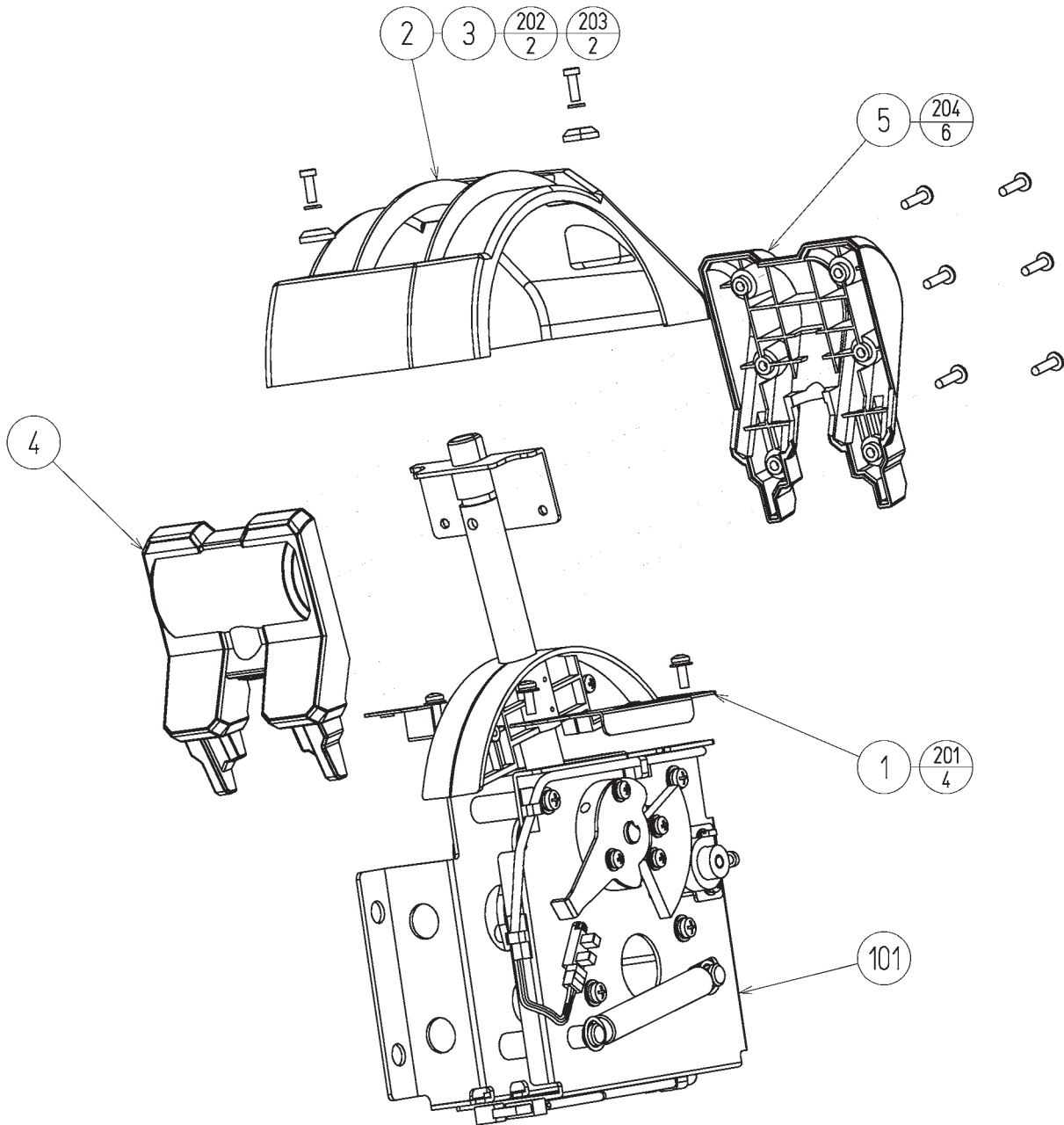
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1601X	SEAT BASE	
2	ABX-1602	LOWER SEAT	
3	ABX-1603	SEAT BELT CATCH	
4	ABX-1604	SEAT BELT CATCH COVER	
5	ABX-1605X	SEAT BELT BASE	
6	ABX-1606	SEAT CLEARANCE BRKT L	
7	ABX-1607	SEAT CLEARANCE BRKT R	
101	601-11715	SEAT BELT	
102	601-11162-01	SEAT BELT CATCH W/TUBE	
103	280-5008	CORD CLAMP 15	
104	280-5275-SR10	CORD CLAMP SR10	
105	209-0023	CONN CLOSED END	
106	601-0460	PLASTIC TIE BELT 100 MM	
203	FAS-290036	HEX SKT SCR BH BLK M10x20	
204	060-S01000-0B	SPR WSHR BLK M10	
205	060-F01000-0B	FLT WSHR BLK M10	
206	030-000816-SB	HEX BLT W/S BLK M8x16	
207	060-F00800-0B	FLT WSHR BLK M8	
208	000-T00408-0B	M SCR TH BLK M4x8	
301	ABX-60051X	WH SEAT EXT01	
302	ABX-60070	WH SEAT BELT	

32 THROTTLE UNIT (ABX-1650)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1651	THROTTLE BRKT	
2	ABX-1654X	THROTTLE COVER LOWER	
101	610-0754	THROTTLE UNIT ABX	
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 M4x12	
205	068-441616-0B	FLT WSHR BLK 4.4-16x1.6	
301	ABX-60073	WH THROTTLE EXT	

33 THROTTLE UNIT ABX (610-0754)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1652X	THROTTLE COVER BRKT	
2	ABX-1653X	THROTTLE COVER UPPER	
3	280-6695	SPCL WSHR 4.5-16x5 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 M4x12	
202	FAS-290042	HEX SKT LH CAP SCR STN M4x12	
203	FAS-600023	SPR WSHR NI M4	
204	FAS-120035	TAP SCR P-TITE BI H BLK 4x16	

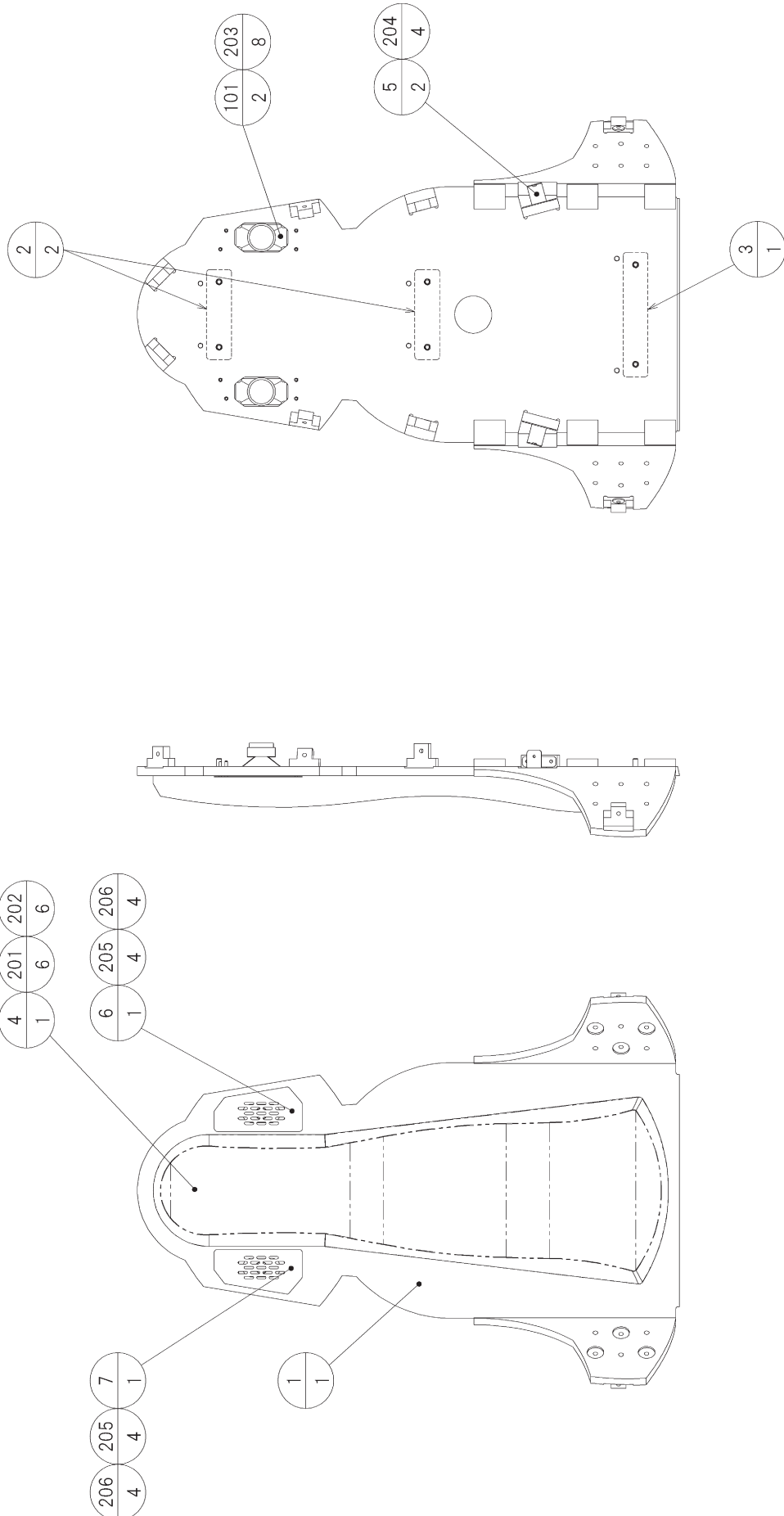
34 THROTTLE UNIT ABX W/O GRIP (610-0758)**(D-2/2)**

ITEM NO.	PART NO.	DESCRIPTION	NOTE
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 M5x14	
202	000-P00412-W	M SCR PH W/FS M4x12	
203	028-A00408-P	SET SCR HEX SKT CUP P M4x8	
204	012-P00410	TAP SCR #2 PH 4x10	
205	000-P00308	M SCR PH M3x8	
301	ABX-60056	WH THROTTLE VR	
302	ABX-60057	WH CLIMAX SW	

35 ASSY SEAT UPPER (ABX-1700)

(D-1/2)

2 PARTS LIST

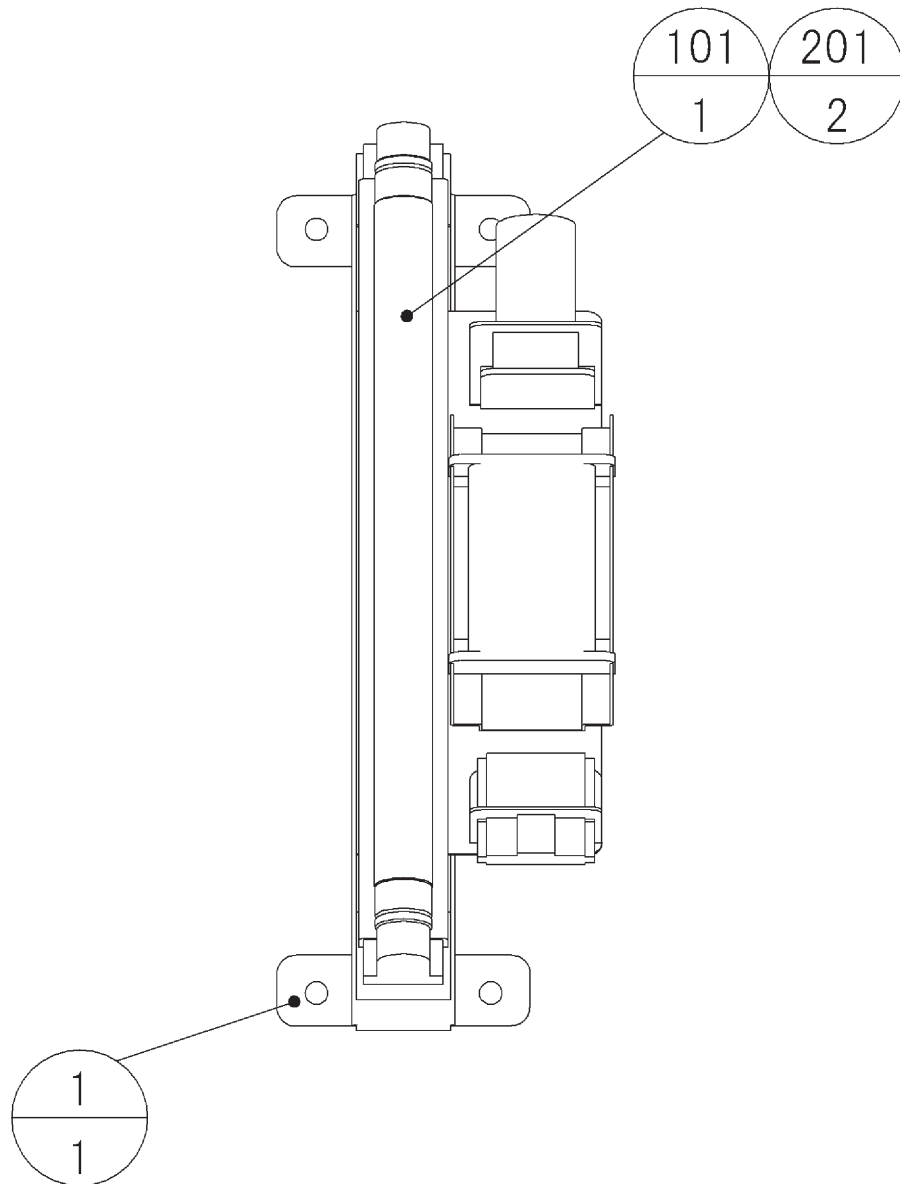


35 ASSY SEAT UPPER (ABX-1700)

(D-2/2)

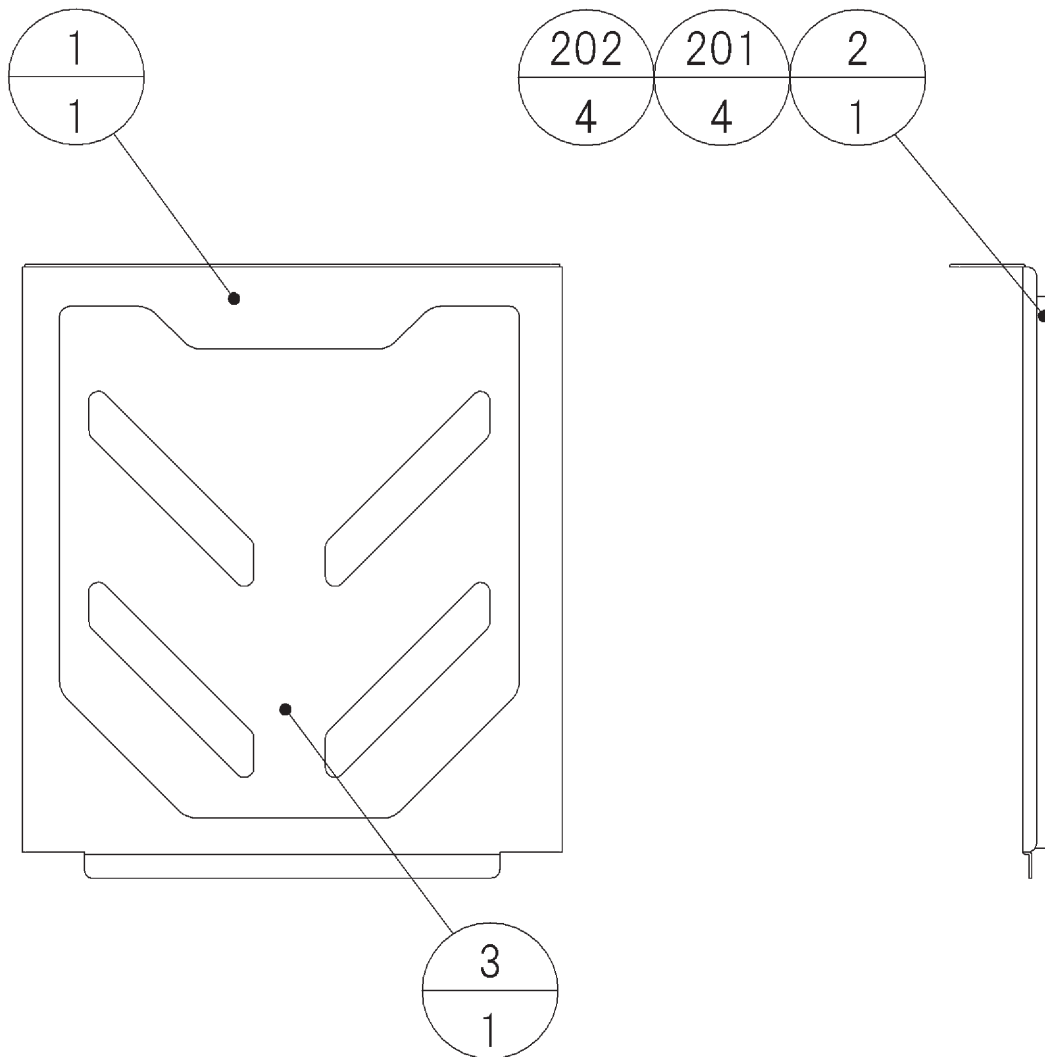
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1701	WOODEN BASE UPPER SEAT	
2	ABX-1702	SEAT JOINT SHORT	
3	GSF-1608	SEAT JOINT	
4	ABX-1703	SEAT CUSHION CENTER	
5	ABX-1704	SEAT BACK BRKT SIDE	
6	ABX-1705	SPEAKER NET L	
7	ABX-1706	SPEAKER NET R	
101	130-5241	SPEAKER 8OHM 15W 50x90	
102	280-0419	HARNES LUG	
201	068-652016	FLT WSHR 6.5-20 x1.6	
202	030-000630-S	HEX BLT W/S M6x30	
203	FAS-110023	TAP SCR TH #1 3.5x6	
204	000-P00416-W	M SCR PH W/FS M4x16	
205	068-441616-0B	FLT WSHR BLK 4.4-16x1.6	
206	050-F00400	FLG NUT M4	
207	011-T03512	TAP SCR TH 3.5x12	
301	ABX-60055	WH REAR SPEAKER	

36 ASSY FL 6W (ABX-1800)



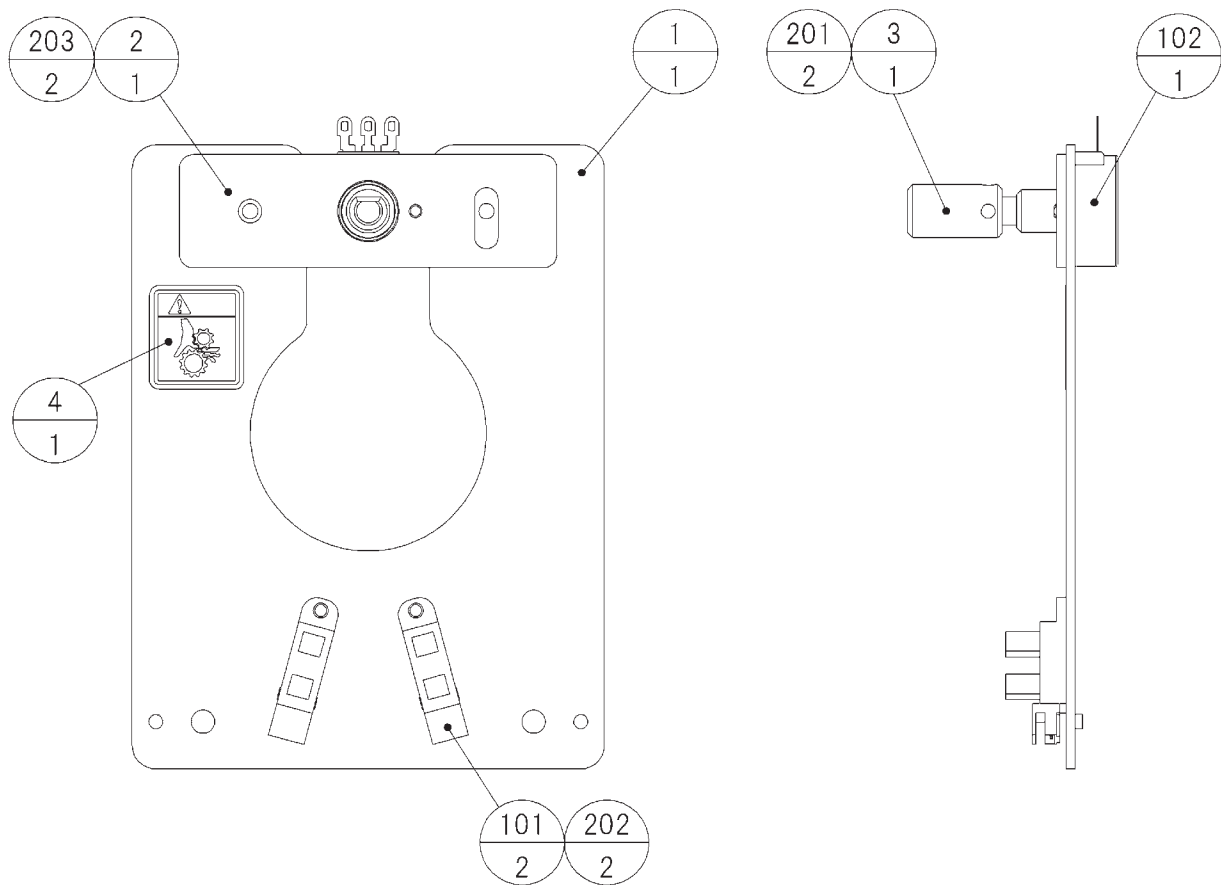
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1801X	FL BRKT 6W	
101	390-6837	ASSY FL6W EX W/CONN ABX	
102	280-5275-SR10	CORD CLAMP SR10	
201	000-P00408-W	M SCR PH W/FS M4x8	

37 ASSY FOOTREST C (ABX-1850)



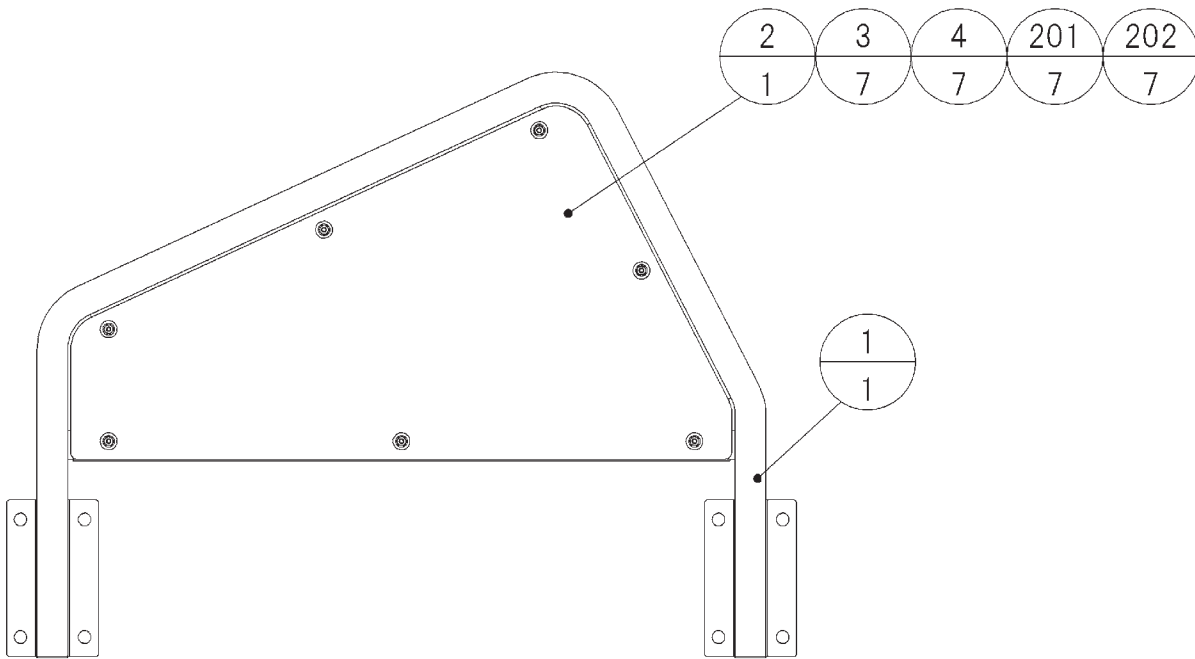
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-1851X	FOOTREST PLATE C	
2	ABX-1852	WOODEN BASE FOOTREST C	
3	ABX-1853	NON SLIP MAT C	
201	068-441616-0B	FLT WSHR BLK 4.4-16x1.6	
202	050-F00400	FLG NUT M4	

38 ROLL VOLUME UNIT (ABX-3700)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3701X	VOLUME BASE	
2	ABX-3702X	ROLL VOLUME BRKT	
3	601-7944	GEAR 15	
4	440-CS0245-EG	STICKER C GEAR S ENG	
101	370-5297	PHOTO INTERRUPTER GP1A75EJ000F	
102	220-5753	VOL CONT B-5K OHM (TOCOS)	
103	310-5029-F20	SUMITUBE F F 20MM	
104	280-5008	CORD CLAMP 15	
105	280-5275-SR10	CORD CLAMP SR10	
201	028-C00308-P	SET SCR CH CUP P M3x8	
202	FAS-000159	M SCR PH W/SMALL FS M3x8	
203	000-P00408-W	M SCR PH W/FS M4x8	
301	ABX-60031	WH GRADIENT VR	
302	ABX-60032X	WH LIMIT SW	

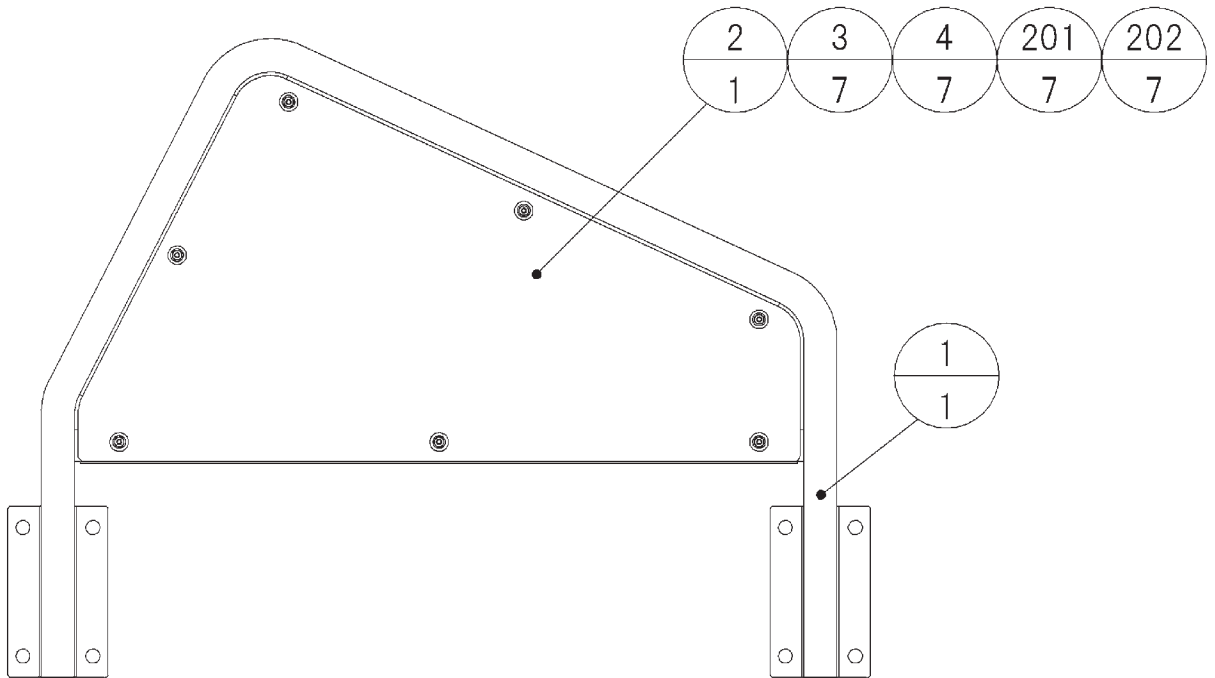
39 ASSY GUARD PIPE L (ABX-3900)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3901	GUARD PIPE L	
2	ABX-3902	GUARD PLATE	
3	ABX-3903	CUSHION WASHER	
4	280-6695	SPCL WSHR 4.5-16x5 AL BLK	
201	FAS-290045	HEX SKT LH CAP SCR STN M4x6	
202	060-S00400-0C	SPR WSHR CRM M4	

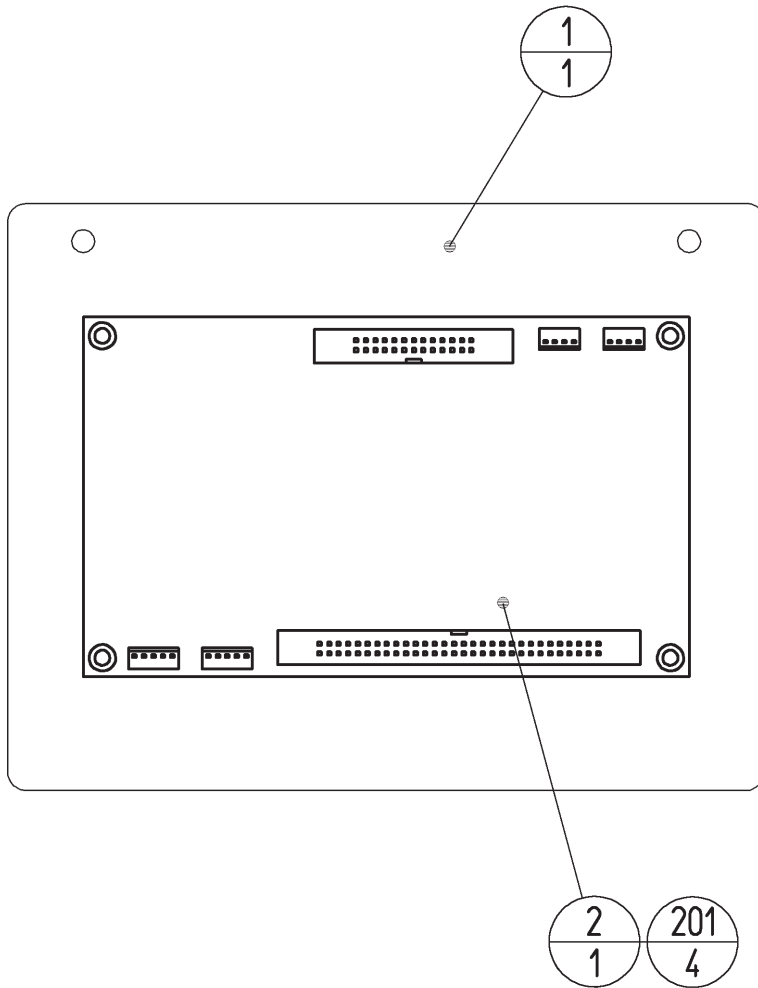
40 ASSY GUARD PIPE R (ABX-3950)

21 PARTS LIST



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-3951	GUARD PIPE R	
2	ABX-3902	GUARD PLATE	
3	ABX-3903	CUSHION WASHER	
4	280-6695	SPCL WSHR 4.5-16x5 AL BLK	
201	FAS-290045	HEX SKT LH CAP SCR STN M4x6	
202	060-S00400-0C	SPR WSHR CRM M4	

41 ASSY I/O BD (ABX-4300)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	ABX-4301	WOODEN BASE I/O BD	
2	837-14505	I/O CONTROL BD FOR JVS	
101	280-5277	CORD CLAMP 18	
201	011-P00325	TAP SCR PH 3x25	
202	011-F00312	TAP SCR #1 FH 3x12	
301	ABX-60045	WH I/O BD01	
302	ABX-60046	WH I/O BD02	

22 WIRE COLOR CODE TABLE

⚠ WARNING

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

22

WIRE COLOR CODE TABLE

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

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

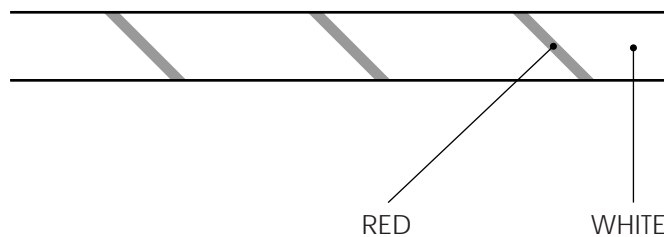
Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

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

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

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

<Example> 51.....WHITE/RED



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

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

