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THE HOUSE OF THE DEAD 4 SPECIAL

OWNER'S MANUAL

420-6941-01



## OWNER'S MANUAL



*(Note: Photos show items with optional accessories attached.)*

### 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.

 **WARNING**

In order to manage this product, there must be fire-fighting facilities and evacuation space as prescribed by related laws and by local government ordinances in the district where the product has been installed, so that countermeasures can be taken if there is an accident, fire or earthquake. There are cases, depending on the environment or district where a structure has been installed, in which inspection by a fire station or other public institution is required. Consult with your local fire department before installing the product.

# 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, "THE HOUSE OF THE DEAD 4 SPECIAL."

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:	3,600 mm (141.7 in.) [Width] x 3,000 mm (118.1 in.) [Depth]	
Height:	2,720 mm (107.1 in.)	
Weight:	1,600 kg (3,527.4 lbs.)	
Power, maximum current:	1.8 k/140 W, 9.5/3 A	(AC 200/200 V, 50 Hz)
(Single phase/Triple phase)	1.5 k/142 W, 10/3 A	(AC 200/200 V, 60 Hz)
	1.8 k/860 W, 8.7/2.0 A	(AC 220/380 V, 50 Hz)
	1.8 k/810 W, 8.8/2.0 A	(AC 220/380 V, 60 Hz)
	1.8 k/830 W, 8.4/1.9 A	(AC 230/400 V, 50 Hz)
	1.9 k/880 W, 8.8/1.8 A	(AC 230/400 V, 60 Hz)
	1.9 k/850 W, 8.5/1.9 A	(AC 240/415 V, 50 Hz)
	2.0 k/720 W, 8.9/1.7A	(AC 240/415 V, 60 Hz)

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

## Definition of 'Site Maintenance Personnel or Other Qualified Individuals'

### WARNING

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

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

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

#### **Site maintenance personnel:**

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

#### **Activities to be carried out by site maintenance personnel:**

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

#### **Other qualified professionals:**

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

#### **Activities to be carried out by other qualified professionals:**

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

### WARNING

To operate this product, there must always be an attendant on site. To prevent accidents and take immediate countermeasures if there is an accident, fire or earthquake, always have an attendant on duty while operating the product. The customers play inside the cabinet. The seat rotates. Have an attendant do the following: assist the customer in entering and leaving, confirm that safety measures have been taken, explain precautionary points to prevent accidents and watch the customers playing. In addition, prepare a system for quick countermeasures in the event of accident, fire or earthquake.



# 1 HANDLING PRECAUTIONS

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

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

## WARNING

- Before performing work, be sure to turn the power off. Performing the work without turning the power off can cause an electric shock or short circuit. In the case work should be performed in the status of power on, this manual always states to that effect.
- Do not expose power cords or earth wires on the surface (floor, passage, etc.). If exposed, the power cords and earth wires are susceptible to damage. Damaged cords and wires can cause an electric shock or short circuit.
- To avoid causing a fire or an electric shock, do not put things on or damage the power cords.
- When or after installing the product, do not unnecessarily pull the power cord. If damaged, the power cord can cause a fire or an electric shock.
- In case the power cord is damaged, ask for a replacement through where the product was purchased from or the office herein stated. Using the cord as is damaged can cause fire, an electric shock or leakage.
- Be sure to perform grounding appropriately. Inappropriate grounding can cause an electric shock.
- Be sure to use fuses meeting the specified rating. Using fuses exceeding the specified rating can cause a fire or an electric shock.
- Completely make connector connections for IC BD and others. 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.
- This product uses a projector. The projector's screen can be easily damaged so exercise caution when cleaning it. For details, read the chapter on "Projector."
- 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.

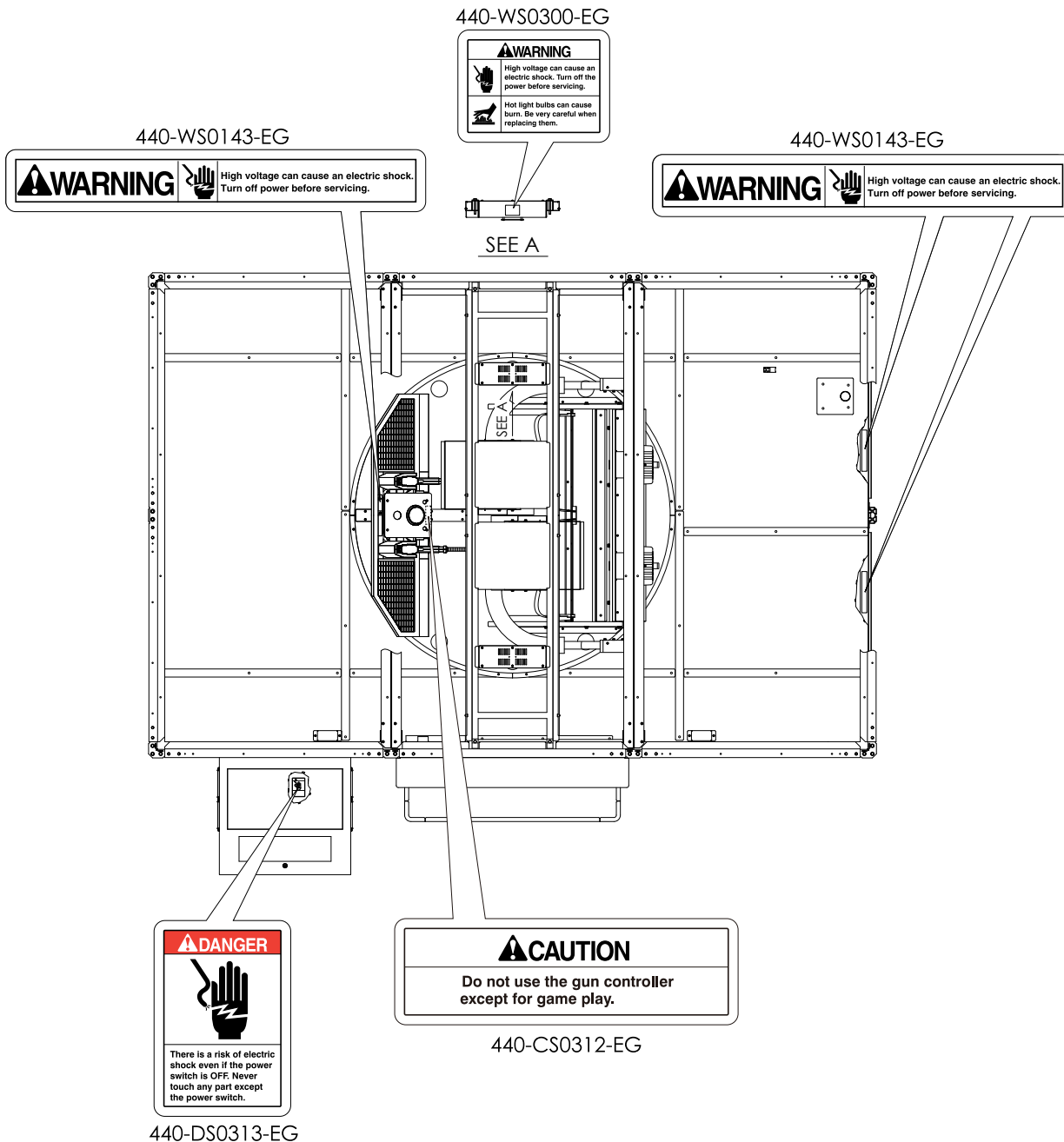


FIG. 1a

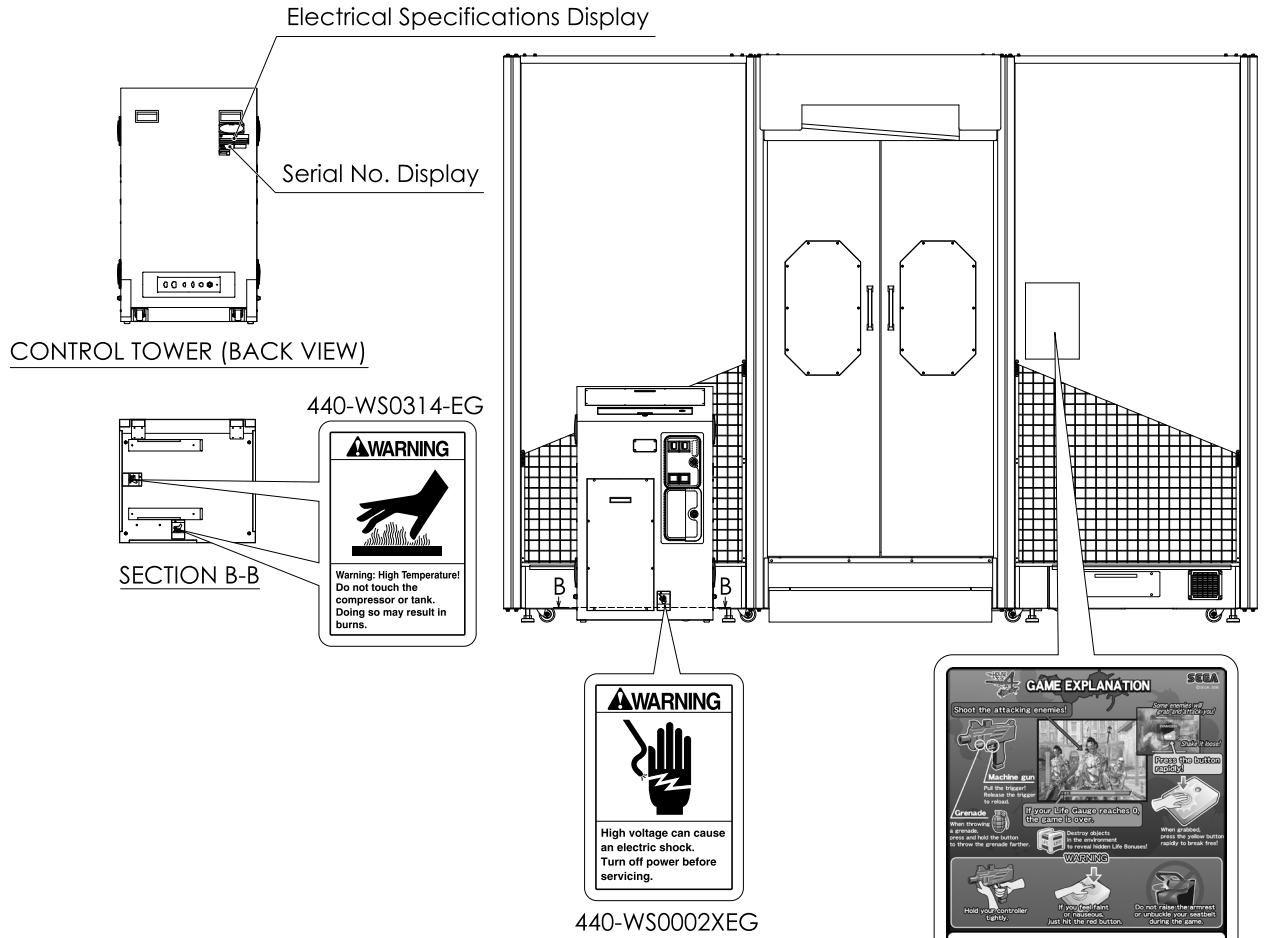


FIG. 1b

HSP-001-01

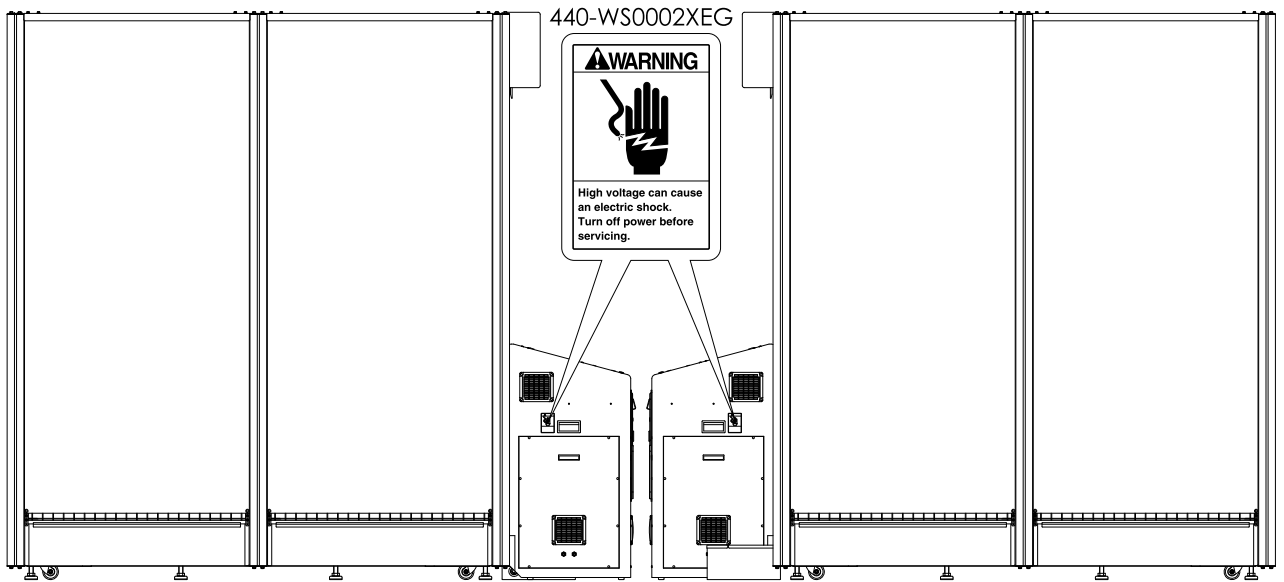


FIG. 1c

## 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.
- Make sure that the power supply wiring in the unit can support the following current loads. Use of wire of different electrical specification can cause fire and electric shock.
  - Single phase AC 200 V: 15 amperes or more
  - Triple phase AC 200 V: 10 amperes or more
- 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.
- Use cable as rated below for the power cable. Use of a rated cable that does not satisfy the prescribed rating can cause fire and electric shock.
  - Single phase AC 200 V: 15 amperes or more
  - Triple phase AC 200 V: 10 amperes or more

## 2-2 OPERATION AREA

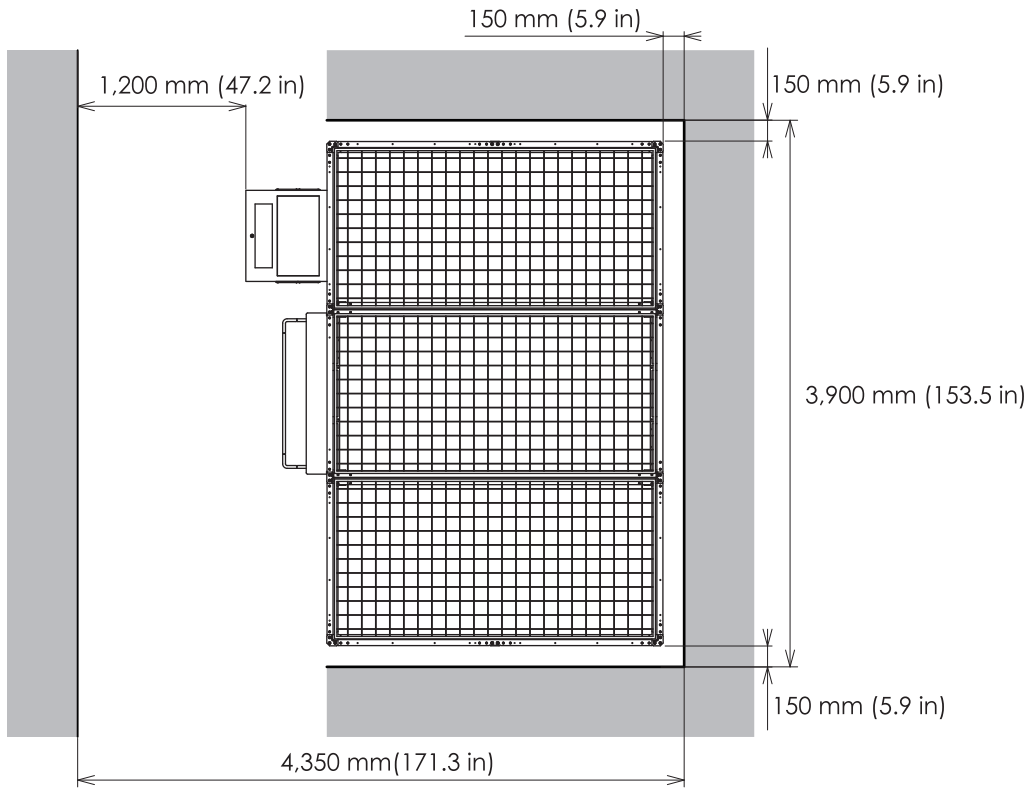
### WARNING

- For the operation of this machine, secure a minimum area of 4.35 m (14.3 ft) [W] x 3.9 m (12.8 ft) [D]. In order to prevent injury resulting from falls/accidents during game play, be sure to secure the minimum area for operation.
- 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.

### IMPORTANT

- In order to transport the machine into a building, the minimum necessary dimensions of the opening (of doors, etc.) are 1.7 m (5.6 ft) [W] and 1.6 m (5.2 ft) [H].
- This product uses a projector to project images. While operating or playing, turn off ambient lighting at the installation site. Also be careful not to block off the ceiling. Otherwise you might obstruct ceiling sprinklers or other fire-fighting equipment at the site.
- It might be necessary to incline the unit from its middle base in order to get it through a narrow entrance. In such cases, contact the office indicated in this manual or the point-of-purchase beforehand. If the unit is not inclined carefully, problems such as oil leakage from the ride drive part can arise.

Figure 2 illustrates a sample installation with evacuation space. The dimensions required for evacuation space by public institutions such as the fire department may vary from those indicated in this sample because of the fire-fighting facilities in the building of installation, topographical conditions, and local ordinances pertaining to the installation site.



**FIG. 2**

## 3 PRECAUTIONS REGARDING PRODUCT OPERATION

### 3-1 BEFORE OPERATION

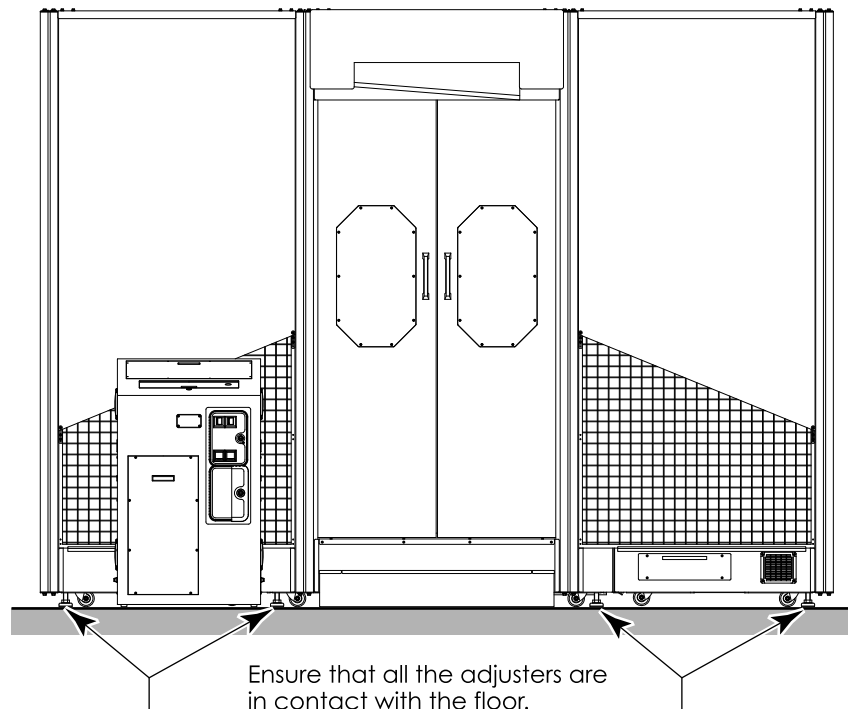
To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

#### ! WARNING

- There must be an attendant on duty when this product is being operated. Players play inside the cabinet. In addition, the ride (seat) rotates. The attendant shall do the following and work to guarantee safe operation at all times.
  - Open/close door.
  - Usher players inside the cabinet to the seat.
  - Explain precautionary points to prevent accidents.
  - Raise and lower armrest.
  - Check seatbelt.
  - Select motion mode (ROTATE or STILL).
  - Start game.
  - Observe cabinet interior during game play.
  - Usher players out of cabinet when game is over.
  - Make sure that nothing has been forgotten and left behind.
  - Inspect seat and Control Unit (Gun).
  - Stop game in the event of an accident.
  - Assist players in evacuating if there is a fire or earthquake.

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

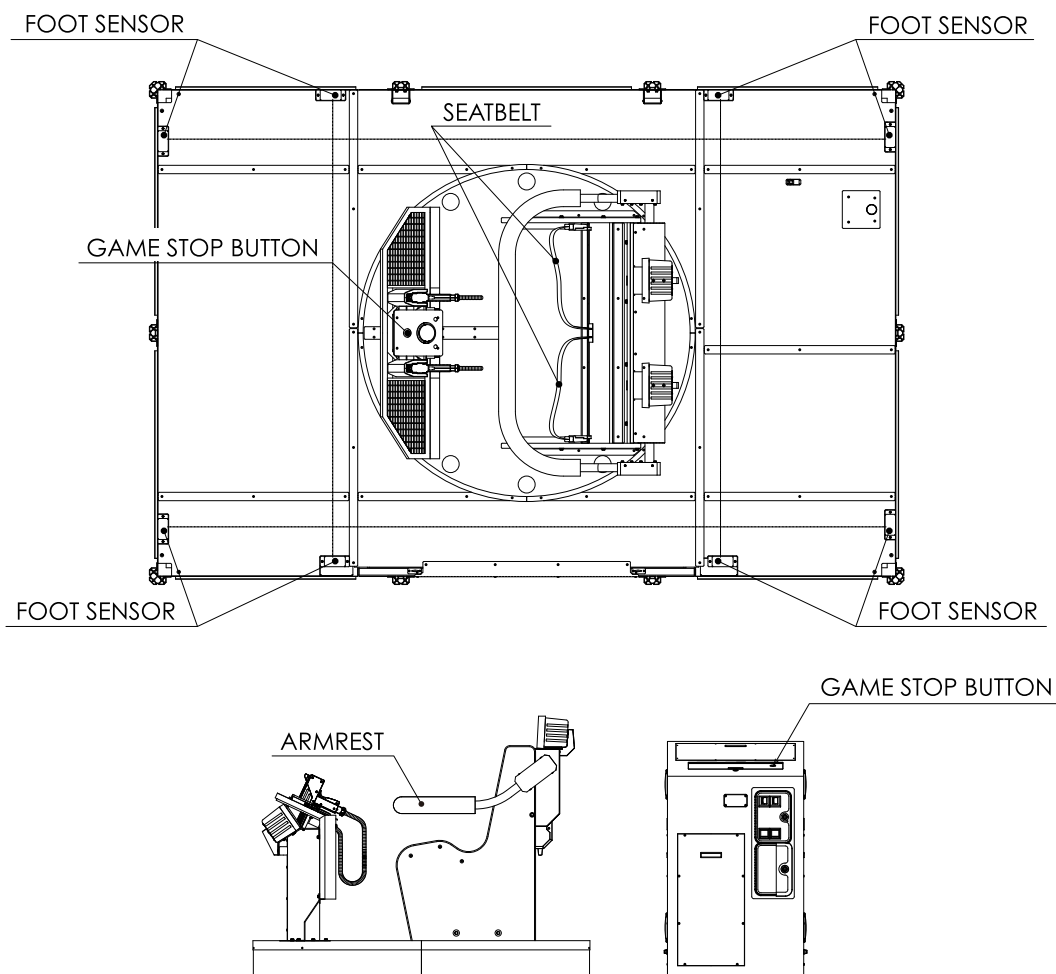
- Check if all of the adjusters are in contact with the surface. If they are not, the cabinet can move and cause an accident.





## ⚠ WARNING

- Conduct a trial run before operation and confirm that the following safety parts work properly. Each safety part is a vital component for preventing accidents. Any abnormality in a safety part can cause an accident.
  - Armrest
  - Foot sensor
  - Seatbelt
  - Player GAME STOP Button
  - Control tower GAME STOP Button
  - Door sensor



- Make sure that nothing has been put in the evacuation space set aside at the time of installation. If anything occupies this space, it can obstruct evacuation in the event of an accident, fire or earthquake.
- Make sure that the door opens and closes easily. If the door does not open easily, it can obstruct evacuation.
- For safety, players whose bodily features inhibit proper functioning of the seatbelt or armrest must only be allowed to play in STILL Mode (without ride rotation). To ensure safety and prevent needless trouble, always display the stickers that announce restrictions in use.

**⚠ WARNING**

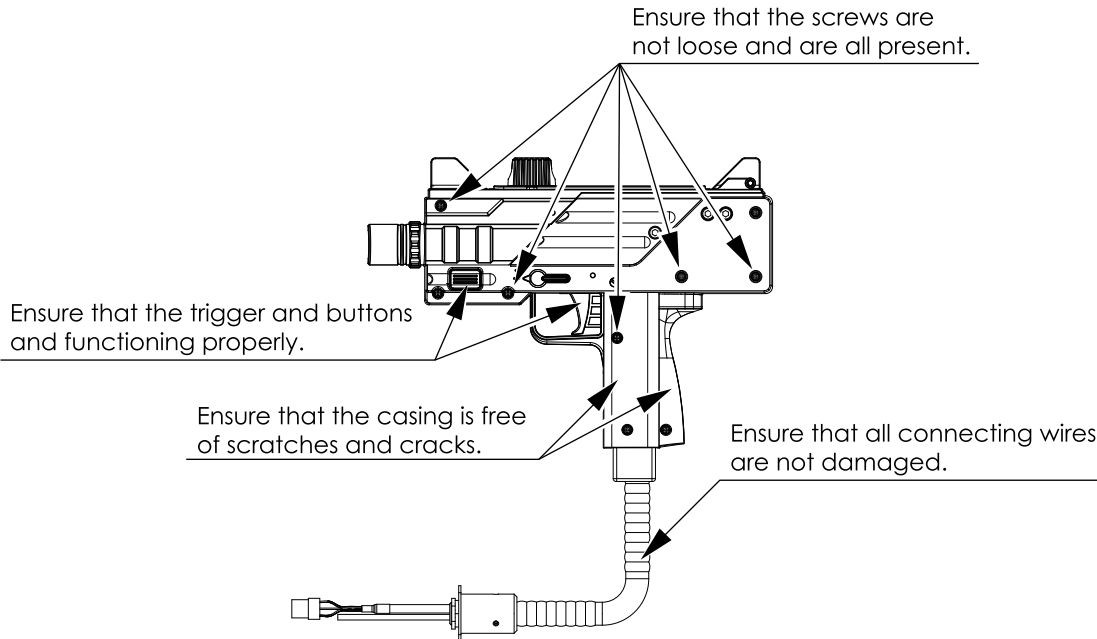
- Stickers or warning labels are posted to prevent accidents. Players, however, cannot read these labels because of the cabinet structure. Upon ushering players to the seat, the attendant should pay special attention to the step, explain safety measures including how to use the seatbelt before the game starts and take other measures to prevent accidents.
- Be sure to perform appropriate adjustments of the projector. Do not leave the machine operating with screen flickering or malfunctioning. Failure to observe this can have a bad influence upon the players' or the customers' physical condition.
- It is suggested to ensure a space for players who feel sick while playing the game to take a rest.
- Do not put any heavy items on this product. Placing heavy items on the product can cause accidents or parts damage.
- Do not climb on the product. Climbing on the product can cause accidents. To check the top portion of the product, use a stepladder.
- To avoid electric shock, check that no door & cover parts are damaged or missing.
- 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 or water.

**⚠ CAUTION**

- To avoid injury, be sure to provide sufficient space by considering the crowd situation at the installation location. Insufficient installation space can cause customers to bump into each other, causing trouble.

## ⚠ CAUTION

- Every day when cleaning the Control Unit (Gun), inspect the gun and make sure that there are no scratches or cracks in the surface, and that the fastening screws are not loose. If the game is played with scratches, cracks or loose screws, it can cause injuries to the player or to people nearby.



- Inspect for the following items during a trial run. If there is any type of error, use the Test Mode, etc., to resolve the problem. If you continue use with an error, it can cause an accident or irreparable parts damage.
  - Does the ride (seat) rotate smoothly at initial operation? (See Section 7.)
  - Does the Control Unit (Gun) aim properly?
  - Are there any errors with the reaction mechanism of the gun?
  - Are there any misalignments to the screen image?
  - Are there any errors with the compressor?
  - Does the drain discharge drainage properly?

## STOP IMPORTANT

- Players directly hold the controller with their bare hands so it is recommended that wet towels (paper towels) be provided.
- Be sure to clean the cabinet interior and Control Unit (Gun) at appropriate times.
- Set aside a container or space for storing customer baggage, etc. To prevent accidents and protect parts, take steps to prohibit players from carrying umbrellas or other raingear, or juice or other drinks, into the cabinet.
- Turn off ambient lighting so that projector images can be easily seen during the game.

## 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, 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 or those who could be pregnant.
  - Those who are not in good health.
  - Those who do not follow the attendant's instructions.
  - Those who cannot grasp the Control Unit (Gun) 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.
- The following people must be allowed to play only in STILL Mode (without ride rotation). Otherwise there might be an accident. To avoid needless trouble, always explain these matters to the player before starting the game.
  - Persons susceptible to motion sickness.
  - Those who require supporting devices, etc., to walk.
  - Those who cannot bend their knees because of illness, etc.
  - Those who have fractures or other bone abnormalities anywhere in the body.
- Even players who have never been adversely affected by light stimulus might experience dizziness or headache depending on their physical condition when playing the game. Small children are especially likely to experience these symptoms. Caution guardians of small children to keep watch on their children during play.
- Instruct those who feel sick during play to have a medical examination.
- To avoid injury from falls and electric shocks due to spilled drinks, instruct the player not to place heavy items or drinks on the product.
- To avoid electric shocks and short circuits, do not allow customers to put hands and fingers or extraneous matter in the openings of the product or small openings in or around the doors.
- To avoid falls and resulting injury, immediately stop the customer from leaning against or climbing on the product, etc.
- Warn players not to wrap the Control Unit (Gun) wire around their wrists or neck. Otherwise there could be a serious accident.
- This product has a capacity of two people. Make sure that there are never any more than two people riding the machine. Otherwise the safety devices might not function properly and there could be accident such as a tumble or fall.

## WARNING

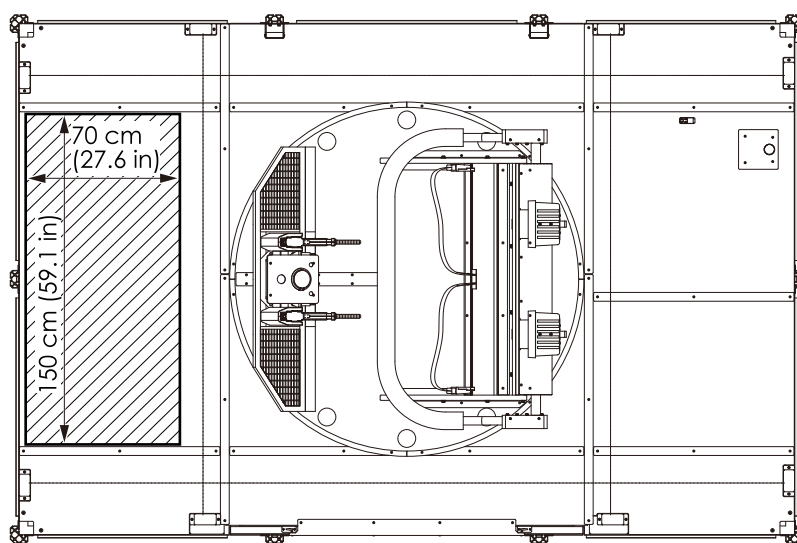
- Entering the cabinet with a wet umbrella or wet shoes is strictly forbidden. There are electrical parts and wiring underneath the cabinet floor. If these become wet, this can cause an electric shock or short circuit. Be especially careful in managing the product on rainy days.
- The attendant should always remain near the product during operating so he or she can respond quickly to accidents, fire or earthquake. The attendant must also constantly observe the interior of the cabinet.
- Do not put drinks or heavy objects on the ride or seat. The player could be accidentally hit by an object due to the ride rotation. Spilt fluids can cause an electric shock or short circuit and they can also cause the player to slip and fall.
- The armrest should be raised and lowered only by the attendant. To insure safety, make sure that the seatbelt is never unfastened and the armrest is never raised during play.
- Explain that, for the sake of safety, the following people must be allowed to play only in STILL Mode (without ride rotation). Otherwise the safety devices might not function properly and there could be accident such as a tumble or fall.
  - Those who are less than 110cm in height.
  - Those who range from 110 to 130cm in height but are not accompanied by a guardian.
  - Those who weigh 150kg or more.Those from 110 to 130cm in height who are with a guardian must play in MILD Mode in which movement of the ride is restricted.
- Someone might try to insert such things as an umbrella through the fence or place foreign objects inside the cabinet. Stop such activity, as it could cause an accident.
- Have players remove scarves, long necklaces, etc. Such items could get caught in the armrest or rotating ride and cause strangulation or some other kind of accident.
- Whenever the attendant leaves the control tower, he or she should lock the control panel lid. If someone were to mishandle the panel, it could cause a very serious accident.
- Have players remove any candy, gum, etc., from their mouths beforehand. Such items could get caught in the throat while playing.

## ⚠ CAUTION

- Immediately stop such violent acts as hitting and kicking the product. Such violent acts can cause parts damage or cause the cabinet to fall over, resulting in injury.
- Instruct players to hold the Control Unit (Gun) securely while playing. If the gun is dropped, it could cause injury to the player.
- Items such as large finger rings can cause injury to the fingers while playing. Instruct players to remove all accessories that could cause an accident before playing.
- Instruct players that a single Control Unit (Gun) is never to be held by two or more people during play. Otherwise there could be dangerous contact or a collision.
- Explain that the GAME STOP Button can be pressed to stop play whenever the player feels ill.
- Explain that the attendant will stop the game if he or she judges that a situation is dangerous.
- Do not allow other customers to open the door during play. Otherwise there could be accidents or conflicts between customers.
- Inside the cabinet there is a step leading to the ride. Instruct players to watch their step when entering or leaving.
- Do not allow players to extend their hands or feet out from the ride during play. Otherwise there could be bruises, sprains or other accidental injuries.

## STOP IMPORTANT

- Explain that if handbags or other items are placed under the ride, the foot sensor will stop ride rotation. Have customers put their handbags, etc. at a location outside the range of the foot sensor on the front screen side, that is within an area 150 cm (59.1 in) in width, 70 cm (27.6 in) in length and 50 cm (19.7 in) in height under the front screen.



- Make sure that customers do not forget anything when leaving.

# 4 PART DESCRIPTIONS

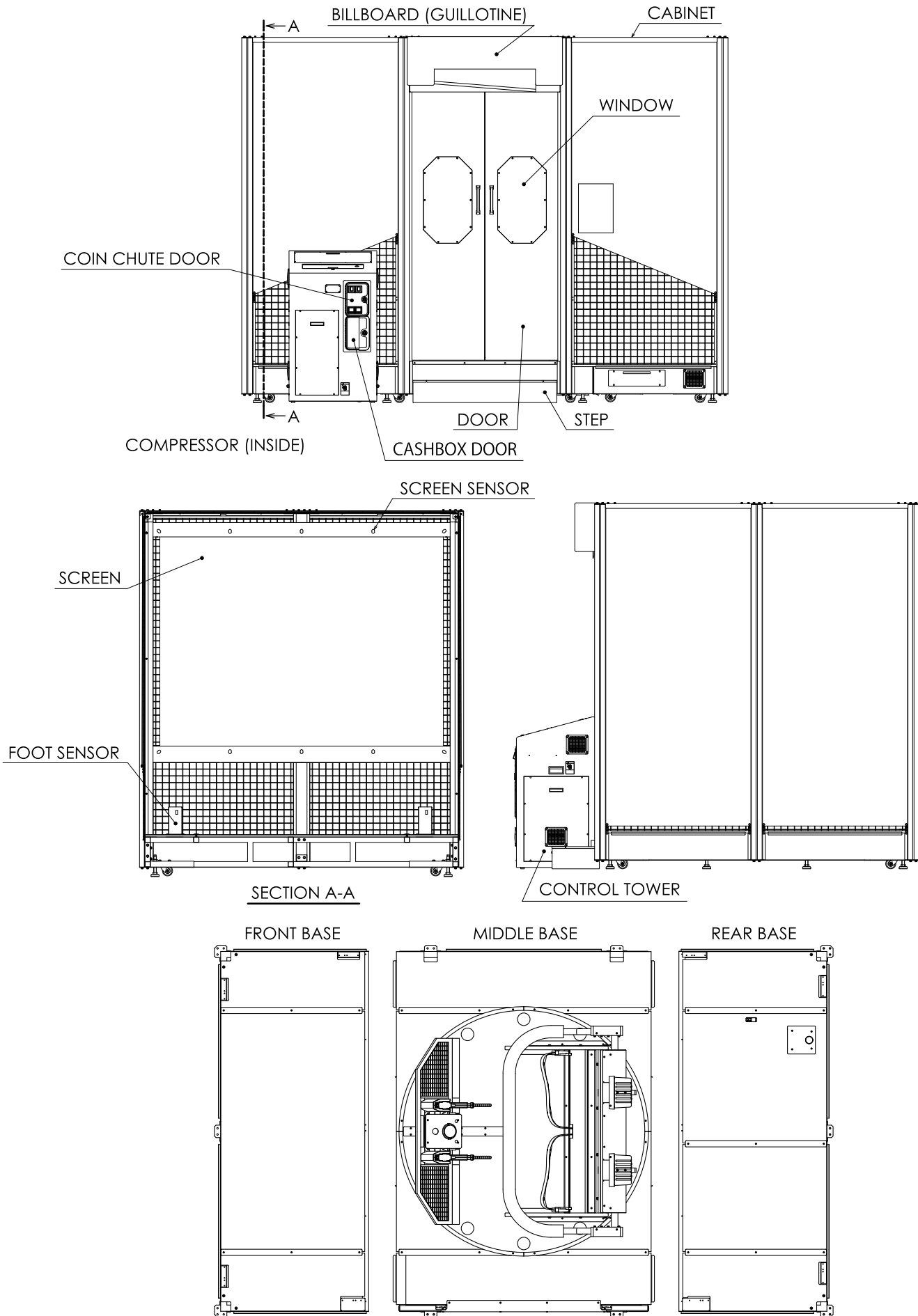


FIG. 4a

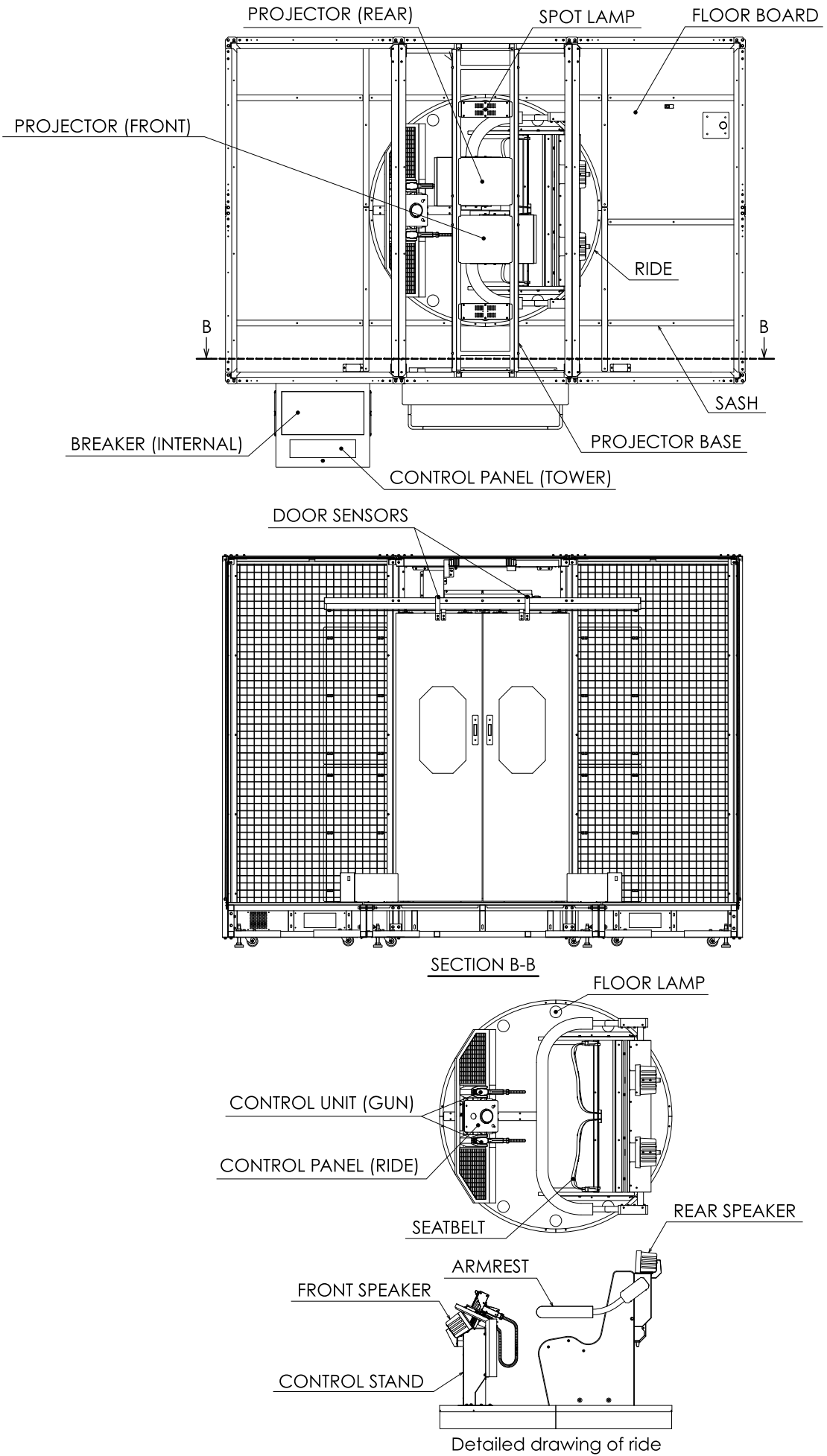


FIG. 4b



**TABLE 4**

ITEMS	Width x Depth x Height	Weight
MIDDLE BASE	1,700 mm (66.9 in) x 2,400 mm (94.5 in) x 1,550 mm (61.0 in)	626 kg (1,380 lb)
FRONT BASE	1,000 mm (39.4 in) x 2,400 mm (94.5 in) x 310 mm (12.2 in)	116 kg (256 lb)
REAR BASE	1,000 mm (39.4 in) x 2,400 mm (94.5 in) x 310 mm (12.2 in)	202 kg (445 lb)
CONTROL TOWER	680 mm (26.8 in) x 640 mm (25.2 in) x 1,125 mm (44.3 in)	123 kg (271 lb)
STEP	1,070 mm (42.1 in) x 360 mm (14.2 in) x 170 mm (6.7 in)	19 kg (42 lb)
PROJECTOR BASE	2,310 mm (90.9 in) x 470 mm (18.5 in) x 130 mm (5.1 in)	33 kg (73 lb)
BILLBOARD	1,170 mm (46.1 in) x 270 mm (10.6 in) x 430 mm (16.9 in)	23 kg (51 lb)
FINISHED CABINET	3,600 mm (141.7 in) x 3,000 mm (118.1 in) x 2,720 mm (107.1 in)	1,600 kg (3,527 lb)

# 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 ACCESSORIES

**DESCRIPTION:** OWNER'S MANUAL  
**Part No. (Qty.):** 420-6941-01 (1)  
**Note:** This manual  
**Figures:**  
 Parts not labeled with part numbers are as yet unregistered or cannot be registered. Be sure to handle all parts with care, as some parts are not available for purchase separately.

SERVICE MANUAL  
 420-6962-01 (1)  
 Explanation of software

PARTS CATALOG  
 420-6963-01 (1)  
 Parts list

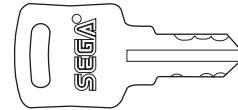
LINDBERGH SERVICE MANUAL  
 420-6921-01 (1)  
 Explanation of built-in game board

DVD DRIVE SERVICE MANUAL  
 420-6923-01 (1)  
 Explanation of DVD DRIVE

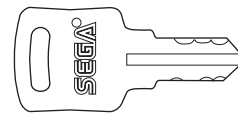
ADJUSTMENT JOINT  
 VRF-0008 (1)  
 Installation/assembly tool. See chapter 6.



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

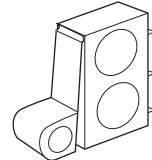


KEY  
 (2)  
 For the cashbox door

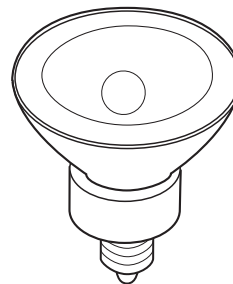


Located inside the coin chute door of the control tower at time of shipment

MICRO SWITCH  
 509-5080 (1)  
 Spare. See chapter 12.



HALOGEN LAMP  
 390-6732-40W (1)  
 Spare. See chapter 13.

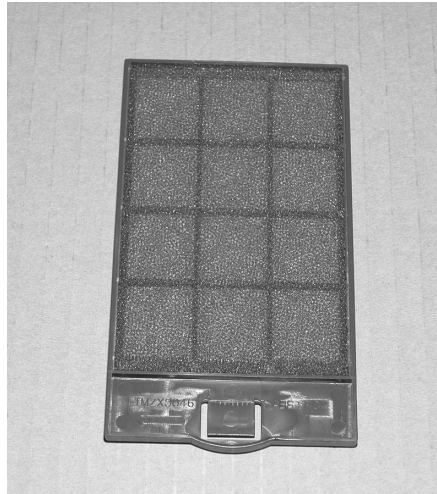
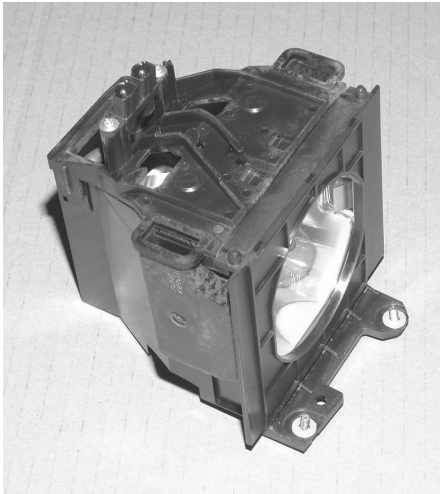


Two separate lamps that are the same as the lamp attached for installation assembly.

PROJECTOR LAMP

200-6031-01 (2)

Spare. See chapter 10-5. Included in package containing filter and replacement instructions.



AIR TUBE 9 m

601-6842-89000 (2)

Drain tube. See chapter 6 17.



HEIGHT STICKER

HSP-0003 (2)

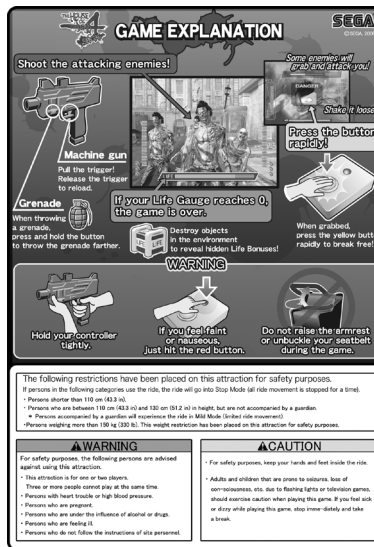
For confirming height. See chapter 6 20.



PLAY INSTRUCTIONS

HSP-0001-01 (1)

Explanation of play procedures and restrictions



STICKERS

HSP-0002-01 (1)

Warnings and play instructions are the same in content but different in size.

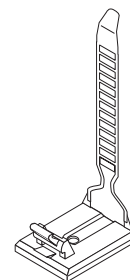
See chapter 6 20.

CORD CLAMP

280-6676 (4)

For fastening power cable.

See chapter 6 17.



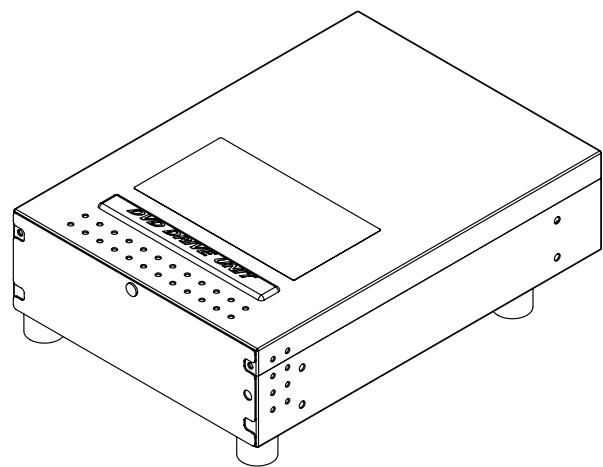
The parts given in Table 5b are contained in a separate package at shipment from the factory, but they must always be used when using this product. They are attached to the product during product installation and assembly and they are used for software installation.

**STOP IMPORTANT**

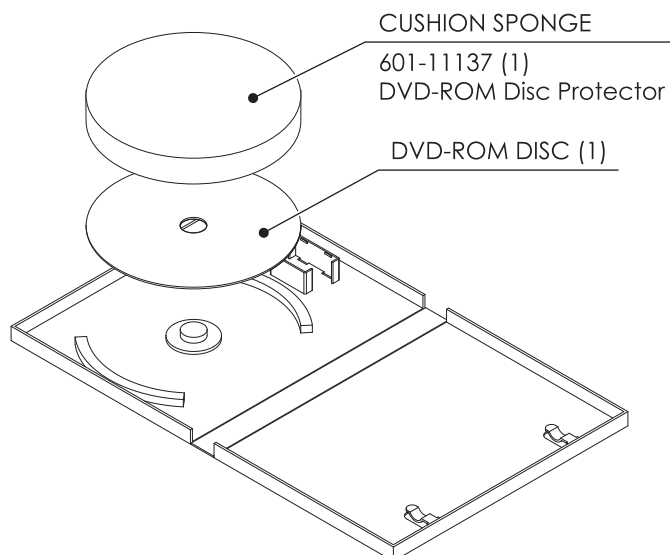
After software installation, the DVD software kit and DVD DRIVE should be carefully stored. When the game board is replaced, they are used to install software in the same manner as at the time of installation. They are also used for upgraded versions of software.

TABLE 5b

DVD DRIVE  
610-0719-01-91 (1)  
For software installation.  
See chapter 6 [16](#).



DVD SOFTWARE KIT  
(1)  
For software installation.  
See chapter 6 [18](#).



CUSHION SPONGE  
601-11137 (1)  
DVD-ROM Disc Protector

DVD-ROM DISC (1)

*Note: When you order the DVD-ROM disc only, specify the part number 610-0726-0010 (DVD SOFT HSP).*

## 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, be sure to use plural persons. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.
- Adhere strictly to all of the work procedures stipulated in this document. If two or more workers are working at the same time, exercise special caution. If sequences are carried out erroneously, accidents can result. There might also be cases in which the assembly cannot be completed.
- Pay special attention to the surroundings when a multiple number of workers are working at the same time. There is always the danger that a worker might be injured. In assembly and installation of this product, there are procedures in which a stepladder is used, procedures in which heavy objects are attached, and procedures involving connection of a rated power supply of 15 amperes. Carelessness in doing work could lead to grave injuries and even fatalities.
- Ensure that connectors are accurately connected. Incomplete connections can cause electric shock.
- This work should be carried out by the site maintenance personnel or other qualified professionals. Work performed by non-technical personnel can cause a severe accident such as electric shock. Failing to comply with this instruction can cause a severe accident such as electric shock to the player during operation. If no one with proper technological expertise is available, request service from the office indicated in this document or the point of purchase so as to ensure safety.
- Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a risk of fire.
- Do not leave power cable or earth lines exposed over passageways. Exposure could lead to damage, electric shock or short circuit. Wherever wiring has been laid out on a floor surface, use a wiring protection cover. (Wiring diameter: Power cable, approx. Ø 18)
- Persons who connect indoor power supplies must be qualified electricians. Do not allow anyone without proper qualifications to make such connections. Otherwise there could be electric shock.
- Provide a power cable for connecting the indoor power supply to the product. This power cable must be rated at 15 amperes or more. The cable must meet this requirement and also be of sufficient length to facilitate connection between the product and the indoor power supply. Use of a cable that does not meet requirements can result in fires or electric shock. The dimensions recommended for the power cable terminal are 6.4 mm in hole diameter and 12 mm in width.

**⚠ WARNING**

- For safety and workability, use the cab fire cable for single phase power and for triple phase power.
- Provide an earth wire for connecting the indoor earth terminal to the product earth terminal. Unless grounding is secure, there could be electric shock, damage to parts, or faulty operation. The terminal dimensions recommended for connection to the product's earth terminal are 4.3 mm in hole diameter and 9.5 mm in width.
- When inserting or removing a connector, always hold it by its main part. If you hold it by anything else while doing so, the connections between wire and connector terminal fixtures could be damaged; and there could be a short circuit or fire.
- Make sure that all the adjusters are resting on the floor. The cabinet may move and cause an accident if the adjusters are not laid out properly.
- Whenever any fasteners (e.g. screws, nuts) have been lost, always use replacement fasteners with proper dimensions as specified in this document. If fasteners of any other dimensions are used, it could cause damage and/or separation of parts that result in secondary accidents.
- Two or more stepladders are required to assemble this product. The job cannot be done with one stepladder only. If it is attempted with only one stepladder, there could be falls or other serious accidents.
- Exercise due caution when using stepladders while working. If anyone stumbles or falls, it could cause a serious accident. In locations where the ceiling is low, a head injury could occur.
- Be careful when aligning, attaching or mounting parts so that your head, hands, fingers, etc., do not get caught in anything. If two or more workers are working at the same time, exercise special caution. Failure to be cautious could result in accidental bone fractures or amputation. Check the surroundings carefully before proceeding.
- When connecting wires inside the cabinet, there may be instances in which the indoor lighting does not reach that location. Have a flashlight or other auxiliary lighting equipment on hand. If wires are connected carelessly, there could be an accidental short circuit, fire, etc.
- In the course of assembly work, the base floor (floorboard) is removed and attached repeatedly. If there are directions for attaching floorboard so as to prevent accidents, be sure to proceed in compliance with the directions. Adhere strictly to all other accident prevention measures as well. If such preventive measures are neglected, workers could suffer accidents. Also, parts or wiring, for instance, could be damaged and customers could experience electric shock or other accidents during operation.
- When tightening screws or bolts, make sure that parts are held in place or suspended securely. Enforce accident prevention measures such as having a separate worker support the parts, etc. If parts collapse during work and fall down, it could result in a serious accident.

## CAUTION

- When removing or attaching the base floor (floorboard), be careful that your hands or fingers do not get caught in anything.
- Support and hold parts in place securely and fasten them with screws and/or bolts. Use two workers, one to support the part and another to fasten it in place. If a part is not supported securely, it might fall down, resulting in an accident.
- Wear appropriate work clothing so that work can be performed safely. Use gloves and safety shoes to prevent accidents or injuries.
- When installing a wire protection cover over a floor, use a material shaped so that no one passing by will stumble over it. Using a material that could be stumbled over might lead to an accidental fall.
- Be careful in handling plastic parts. Be sure not to tighten screws or nuts too tightly. If such parts are exposed to excessive loads or impact, they might become damaged, resulting in fragments or cracks that could cause accidental injury.

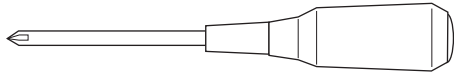
**STOP**

## IMPORTANT

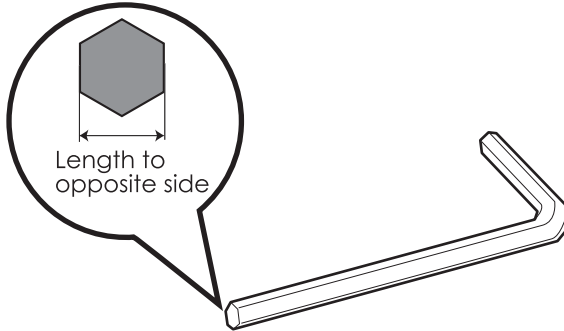
- There are many parts that are similar in shape to the parts being attached. Check each part carefully, noting its shape and the printed part number.
- Confirm the direction of installation for a part before proceeding. Make sure you understand the part's orientation in terms of up or down, left or right, front or rear, etc.
- Be careful in handling screens and curtains. They can easily be damaged, and if they are damaged, it might not be possible to service or repair them.

Use the following tools for assembly work.

- Philips screwdrivers (for M4, M6, M8)

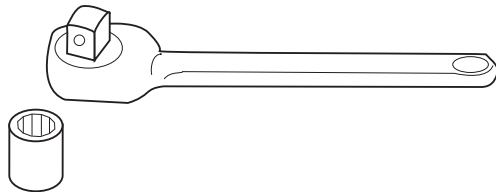


- Sockets or hexagon bar wrenches measuring 3 mm and 8 mm to opposite side

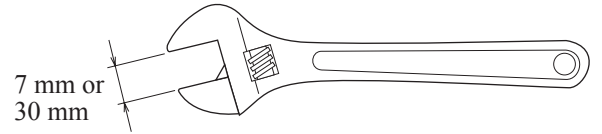


- Sockets for hexagon bolts and nuts (for M6, M8)

- Socket wrench



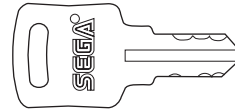
- Spanners measuring 7 mm and 30 mm to opposite side



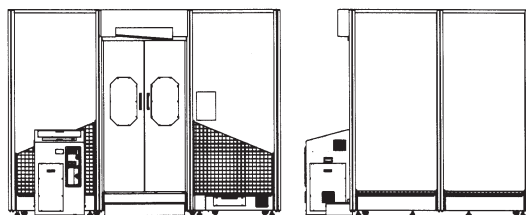
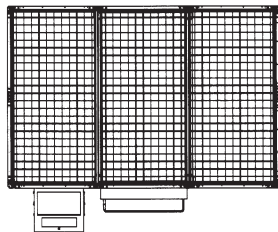
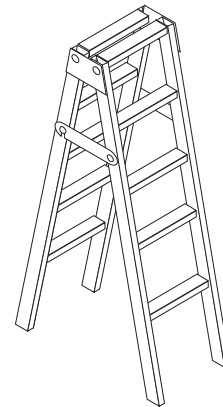
- ADJUSTMENT JOINTS (Accessory)



- MASTER KEYS (Accessory)



- Two or more stepladders (1.5 m or greater in height and 100 kg or greater permissible load)



Drawing reduced to 1/100 scale.  
Use as reference for installation site layout.



## 1 BASE ATTACHMENT

### WARNING

- Secure a flat location measuring 6 m in width, 6 m in length and at least 3 m in height and perform assembly work. If the location is narrower or lower than specified, or if it is inclined or has level differences, accidents could result. And work cannot be done thoroughly at such locations.
- If the location of assembly is not the installation site, be sure to obtain space with adequate dimensions for moving the assembly. This product is heavy and large, and if an error is made in moving it, a serious accident could result.
- When aligning the bases, make sure your hands or fingers do not get caught between things. If they get between heavy objects, there could be accidental bone fractures or amputation. If two or more workers will be working together, always check the surroundings carefully.
- After attaching the bases, always have the adjusters make contact correctly with the floor so as to secure the base to the work site. If the base moves during assembly work, there could be an accident.
- After the floorboard has been removed, be careful not to stand on the rectangular pipe of the base. If your foot slipped on this pipe, causing you to fall, you could hit your head against something or suffer other serious injury.
- Be careful not to step on wiring inside the base. If this wiring is damaged, there could be an accidental short circuit or electric shock.

### CAUTION

- Confirm that all fastening screws have been removed, then remove the floorboard. If you attempt to remove the floorboard with even just one screw left in place, there could be an accident.
- When removing the triangular shaped floorboard around the ride, make sure your fingers do not get caught between anything. If the triangular floorboard gets caught between the cover at the bottom of the ride and the rectangular pipe of the base, it will be very difficult to remove it.

### IMPORTANT

- Be careful not to lose floorboard, sash or fastening screws.
- Store the oil pin at a secure location. Before moving the oil pin, insert it in the oil cap.

Remove all floorboard from front base, middle base and rear base and then join each base. The side where the middle base motor is mounted is the rear side.

To remove floorboard, first remove the sashes on the floorboard. There are three types of sashes: common sashes for front and rear base at 5 locations, sashes for middle base top surface at 2 locations and a side surface sash.

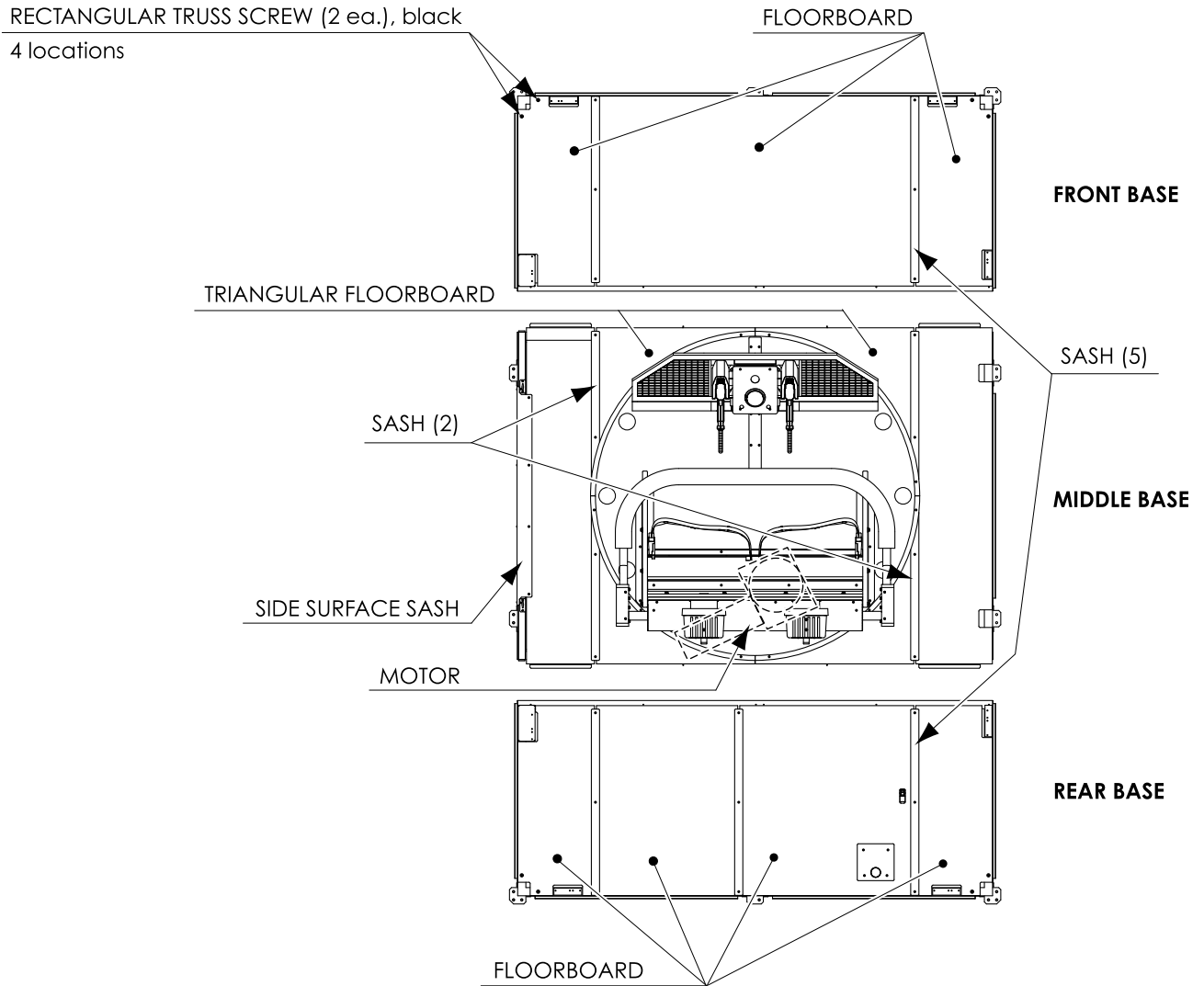
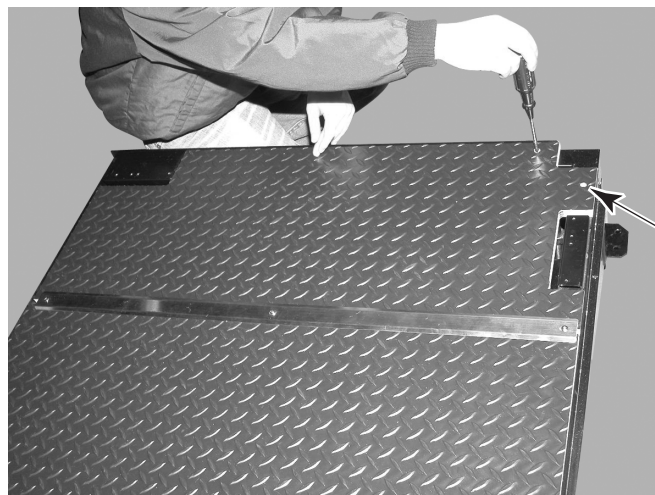


FIG. 6-1a

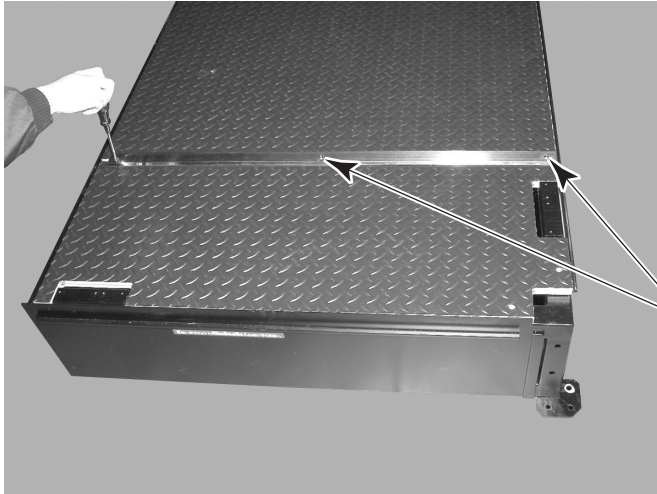
- 1 The rectangular top surfaces of front base and rear base floorboard are each held down by two truss screws. Flat washers are used with the truss screws.



TRUSS SCREW (2 ea.), black  
M4×25, flat washer used

PHOTO 6-1a

**2** Remove truss screws that hold down sashes. Each sash is held down by 3 truss screws.



TRUSS SCREW (3 ea.), chrome  
M4×25

PHOTO 6-1b

**3** The two sashes on the top of the middle base are each held down by 4 truss screws.

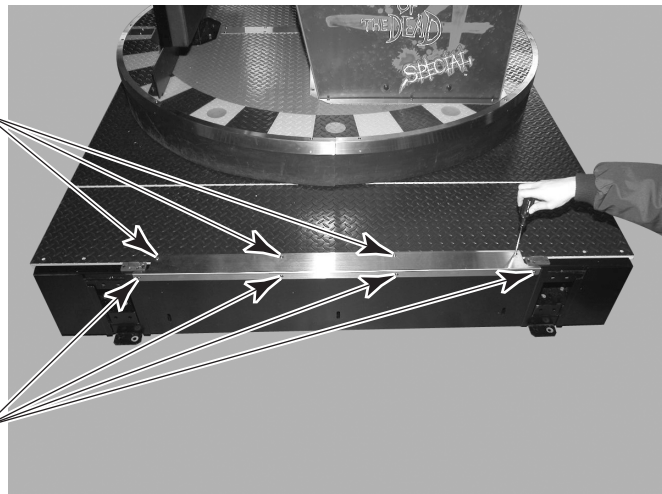


TRUSS SCREW (4 ea.), chrome  
M4×25

PHOTO 6-1c

**4** The truss screws used for the sash on the sides of the middle base (truss screws at the top surface (4) and side surfaces (4)) differ in length. The side surface sash is located only at one side of the middle base.

TOP SURFACE: TRUSS SCREW (4), chrome  
M4×25



SIDE SURFACE: TRUSS SCREW (4), chrome  
M4×8

PHOTO 6-1d

- 5** Remove floorboard. Unlock MAIN BD of rear base floorboard and remove it.

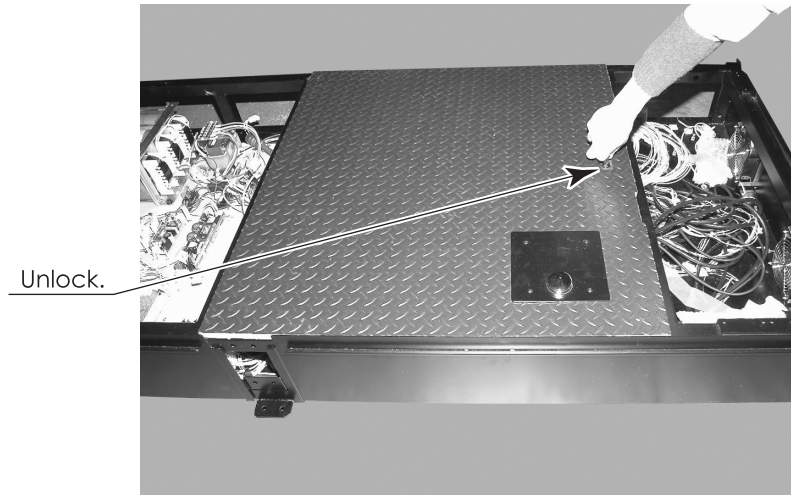


PHOTO 6-1e

- 6** Remove oil pin from the oil cap above the gearbox of the ride drive part inside the middle base. Store the oil pin carefully. Insert it into the oil cap before moving it.

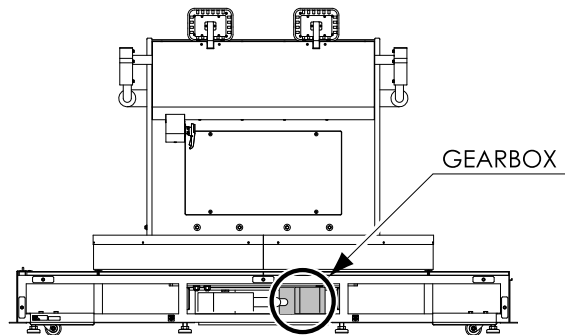


FIG. 6-1b Middle base motor side

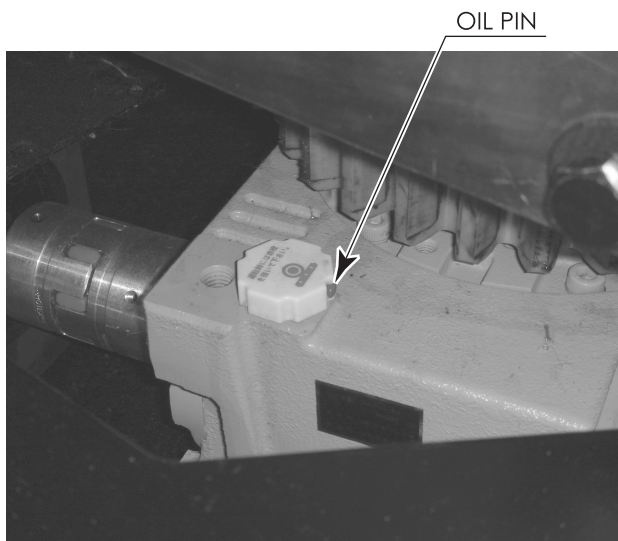


PHOTO 6-1f

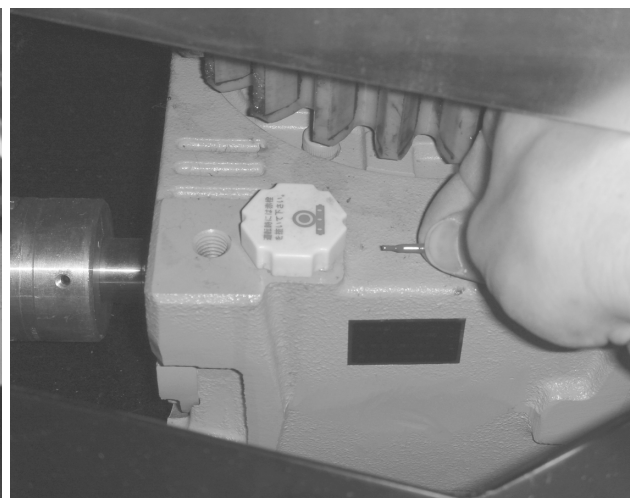


PHOTO 6-1g

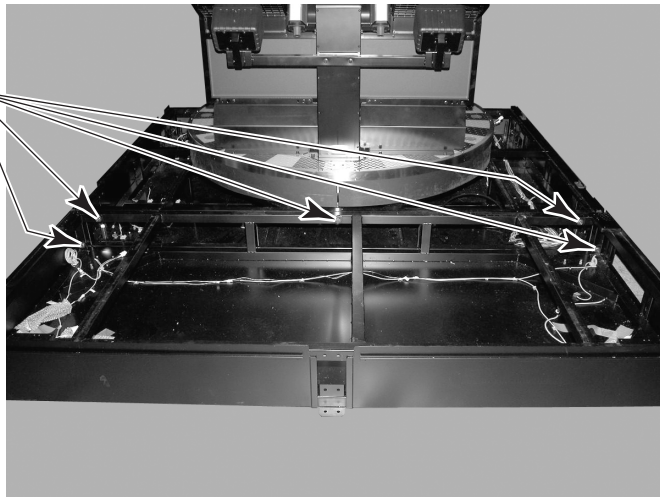
**7** Align middle base and front base. Align so that the front base can be placed onto the middle base protrusion.



**PHOTO 6-1h**

**8** Join the bases from the front base side to the middle base side using 5 bolts with hexagon holes. Flat and spring washers are used with these bolts. If holes cannot be aligned so that bolts go through, have the adjusters at the bottom surface of the base contact the floor and adjust the base height.

BOLT WITH HEXAGONAL HOLE (5), black  
M10×120, flat & spring washers used



**PHOTO 6-1i**

**9** Follow the same procedure to join the rear base and front base.

BOLT WITH HEXAGONAL HOLE (5), black  
M10×120, flat & spring washers used



**PHOTO 6-1j**

**10** Have the adjusters at the bottom of the base contact the floor and secure the assembled base in place. Steps for having the adjusters make contact are performed from inside the base. Fit accessory adjustment joint to the tip of the adjustor bolt and rotate it with a socket wrench.

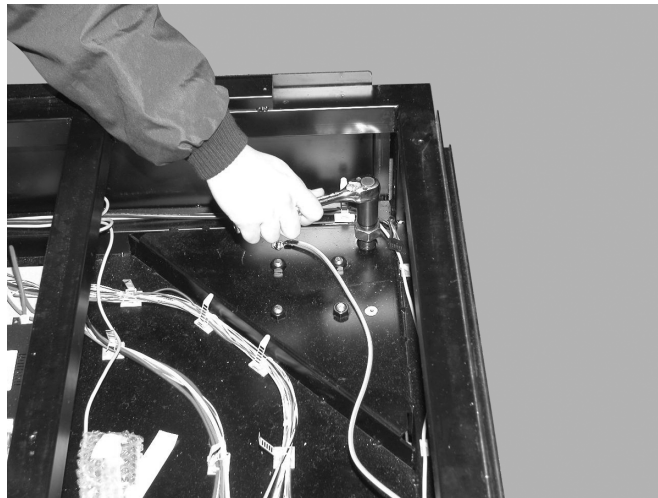


PHOTO 6-1k

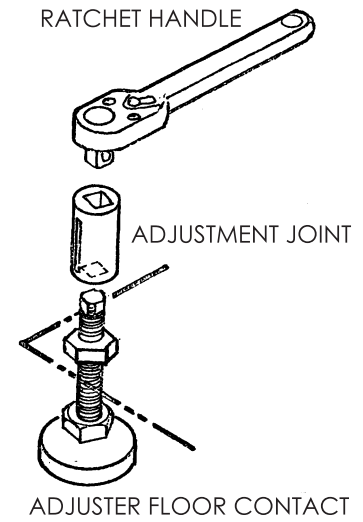


FIG. 6-1c

**11** Connect wiring between bases. At the centers of the middle base and rear base, connect a total of 7 connectors to the right side, 2 connectors to the motor and 3 connectors to the left side. For the left side there are 2 YL3P connectors of the same type. Connection can be made with either of these connectors.

7 CONNECTORS  
YL4P, YL8P, YL9P, YL12P, YL15P, YL16P, SM6P



PHOTO 6-1l

2 CONNECTORS to MOTOR  
Insert and twist ring.

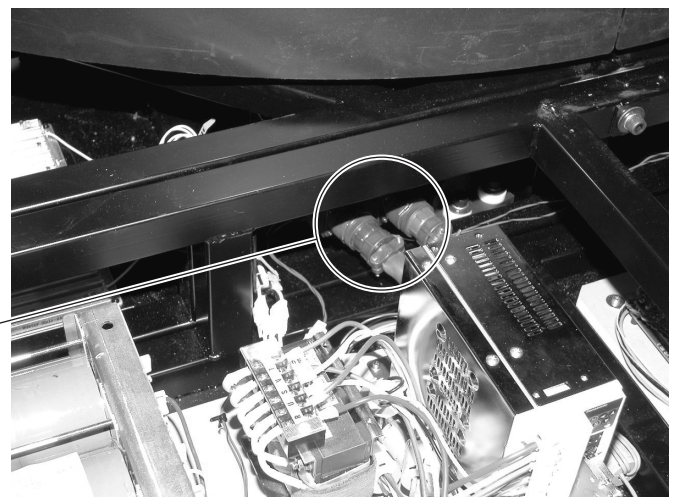


PHOTO 6-1m

3 CONNECTORS  
YL3P, YL3P, VL3P

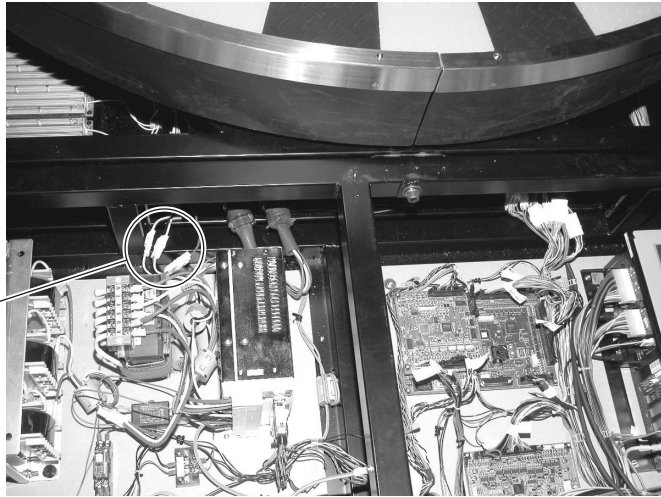


PHOTO 6-1n

**12** Pass wire for projector, lamps and foot sensors housed in the rear base to the middle base side.

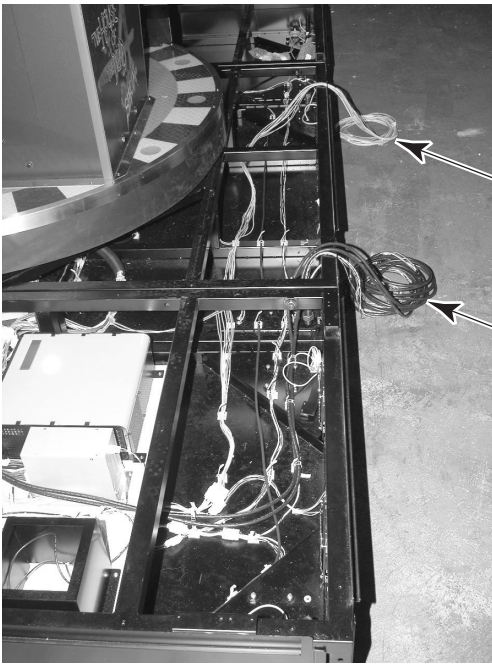


PHOTO 6-1o

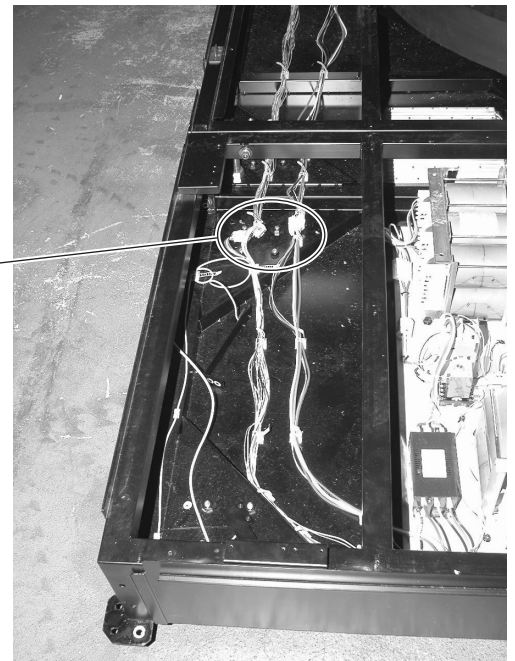
**13** Pass the foot sensor wire through the middle base and attach it to the connector in the front base. After connecting, use the base cord clamp to secure the wire in place.



CONNECTOR  
YL6P

PHOTO 6-1p

**14** When the control tower is installed on the left side facing the door, connect the connector on the door side between the rear base and the middle base. When the control tower is installed on the right side facing the door, do not connect this connector.



4 CONNECTORS  
YL8P, YL15P, VL3P, VL4P

PHOTO 6-1q Control tower installed on left side.

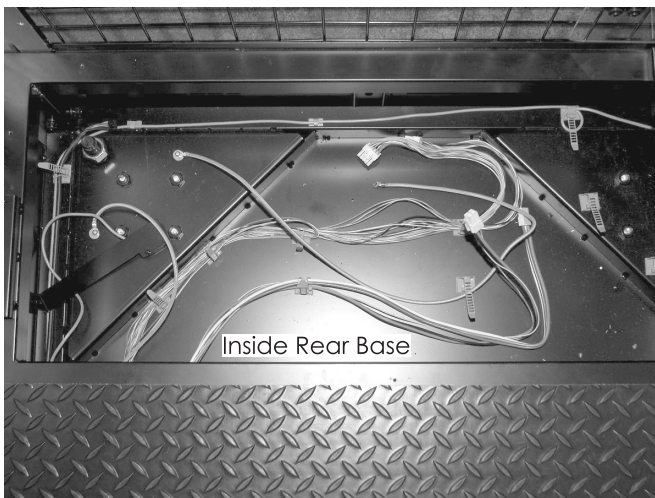


PHOTO 6-1r Control tower installed on right side.



## 2 PILLAR ATTACHMENT

### WARNING

- Be careful not to apply loads to parts that are fastened provisionally. If such parts were to separate, it could result in an accident.
- When attaching pillar to base, make sure it does not hit anyone. If two or more workers will be working together, check the surroundings carefully.
- Pay special attention to ceiling fluorescent lights and piping at the site of assembly work. If pillars or other long parts are contacted, there could be an electric shock. If something is damaged, there could be accidental injuries from fragments, etc.

### IMPORTANT

- There is a nut plate on the side of the pillar part for base attachment. Parts are not attached to the side where there is a nut plate.



- Pillar-related bolts are to be added provisionally up to where the side fence is attached. The upper bracket, however, is to be fastened in place. (See **4**.)

There are a total of 10 pillars, comprised of 6 types, to be assembled and attached to base.

Pillar parts are as follows: 4 corner pillars, 4 straight pillars, and 1 straight pillar each for left and right door. Parts are attached to pillar part edges and 6 types of pillars are assembled.

The difference between straight pillars and straight pillars for door is that the latter contains black plastic parts, but the former does not.

The difference between the left and right straight pillars for door lies in the position where the black plastic parts have been affixed.

The parts to be attached to pillar are shown in Photo 6-2a. In addition to 4 part types, there are long and short T bars.

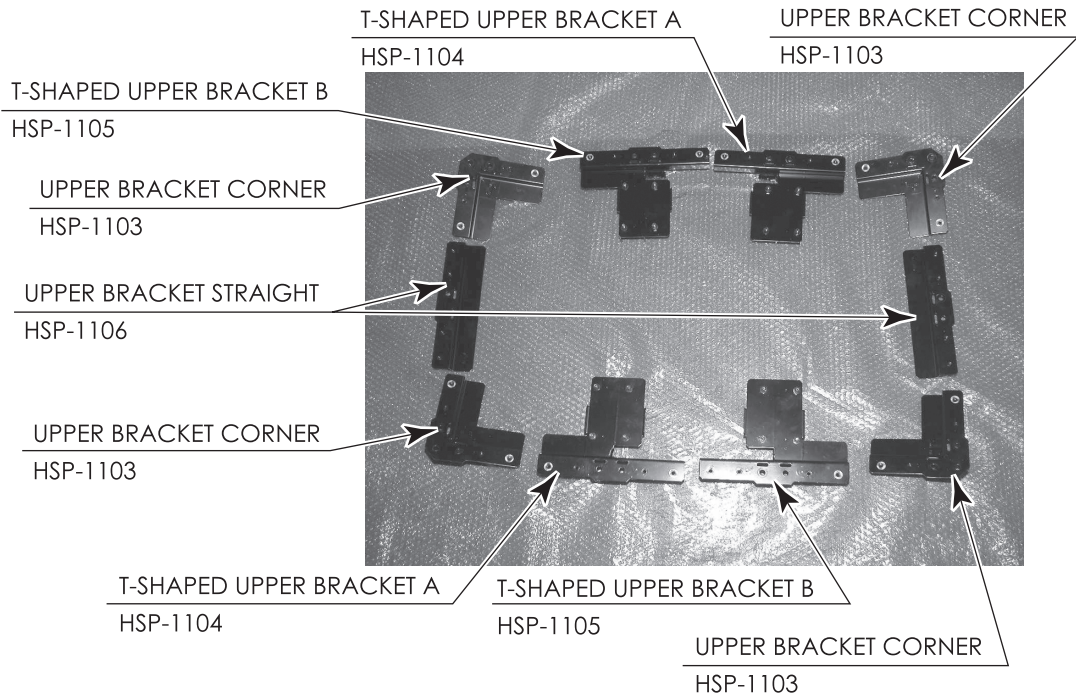


PHOTO 6-2a Parts attached to pillar.

- 1 Four units of pillar A are assembled. An L-shaped upper bracket corner and 2 short T bars are attached to the corner pillar of L-shaped cross section.

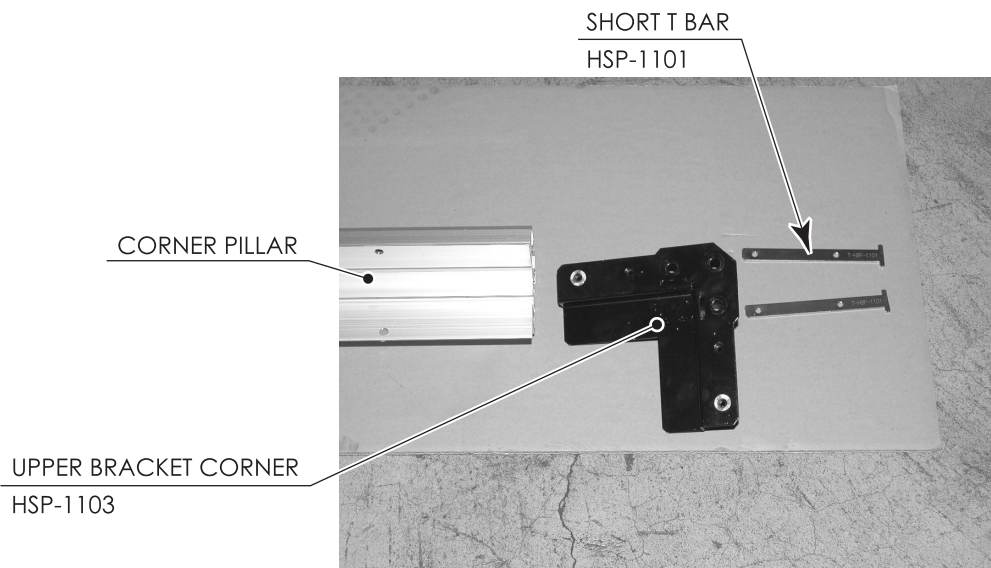


PHOTO 6-2b

**a** Attach the upper bracket corner in alignment with the corner pillar cross section. Then fasten in place with 3 hexagon bolts with cross holes.

HEXAGON BOLT WITH CROSS HOLE (3), black  
M8×18, w/flat & spring washers

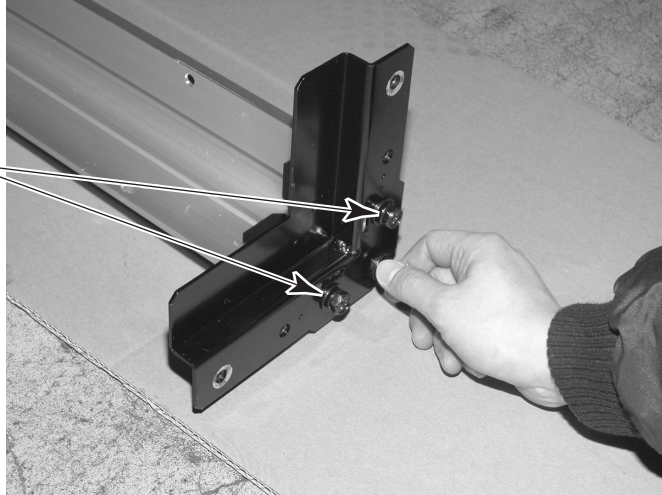
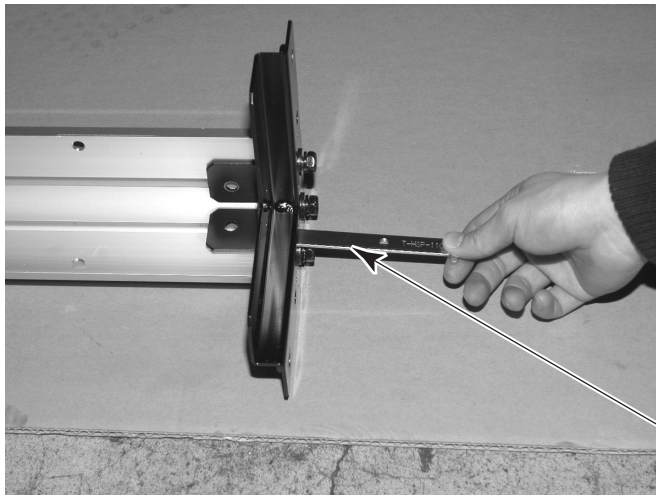


PHOTO 6-2c

**b** Insert 2 short T bars.



SHORT T BAR

PHOTO 6-2d

**c** Secure each short T bar in place with 1 hexagon bolt with cross hole.

HEXAGON BOLT WITH CROSS HOLE (1 ea.), black  
M6×18, w/flat & spring washers

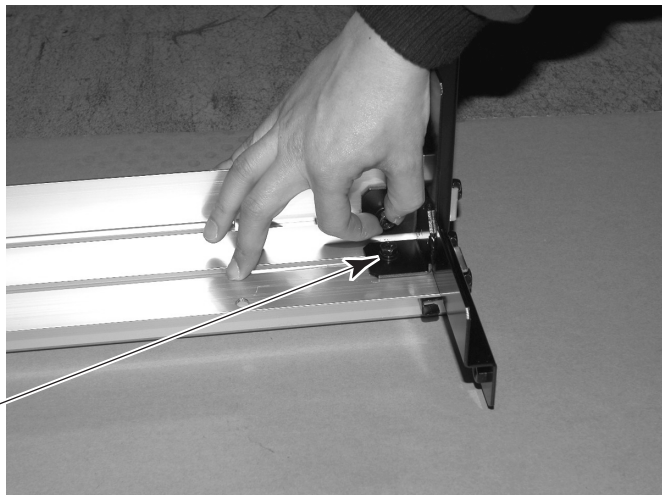
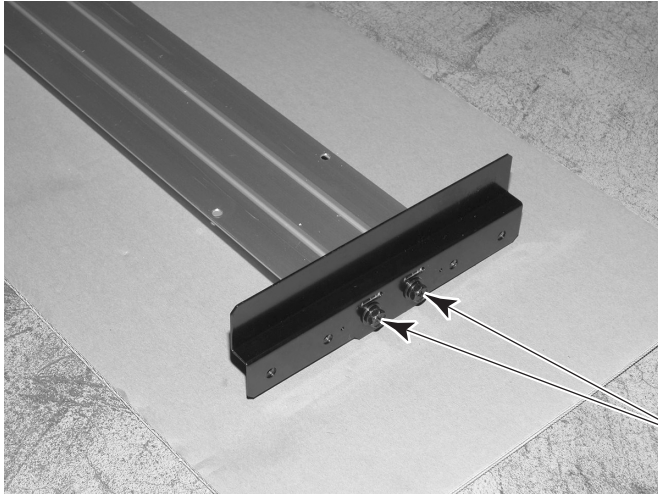


PHOTO 6-2e

- 2** Two units of pillar B are assembled. Attach upper bracket straight to straight pillar and secure in place with 2 hexagon bolts with cross holes.



HEXAGON BOLT WITH CROSS HOLE (2), black M8×18, w/flat & spring washers

PHOTO 6-2f

- 3** One unit each of pillars C and D is assembled. Attach T-shaped upper bracket and long T bar to straight pillar. Pay special attention to the position where T bar is inserted.

- a** Attach T-shaped upper brackets A and B to straight pillar and fasten them with 2 hexagon bolts with cross holes.

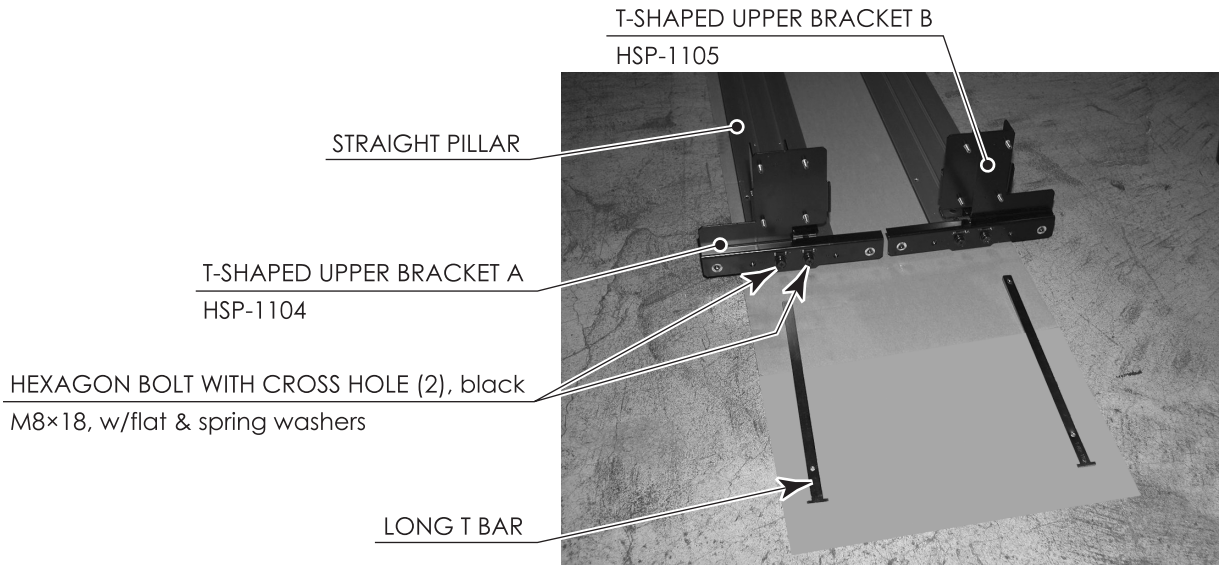


PHOTO 6-2g

- b** Insert long T bar and fasten it with 1 hexagon bolt with cross hole.

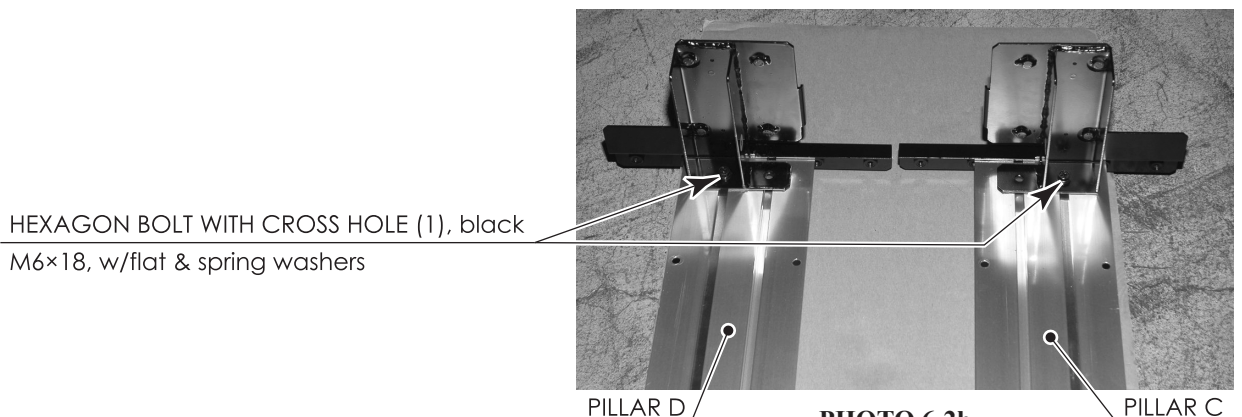


PHOTO 6-2h

**4** One unit each of pillars E and F is assembled. Attach T-shaped upper bracket and long T bar to straight pillar for door. Pay special attention to the position where T bar is inserted.

**a** Attach T-shaped upper brackets A and B to straight pillar for door and fasten them with 2 hexagon bolts with cross holes.

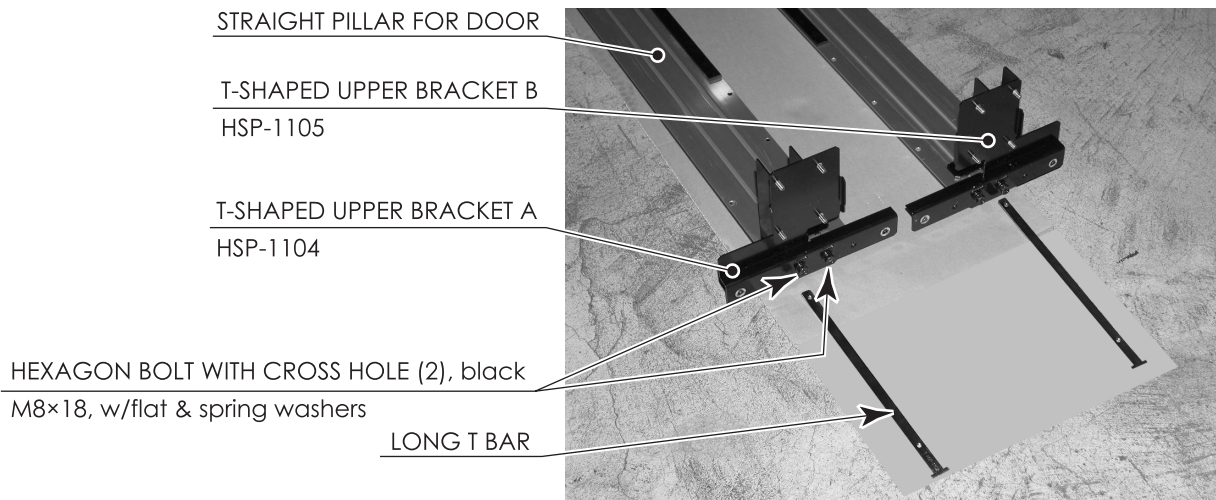


PHOTO 6-2i

**b** Insert long T bar and fasten it with 1 hexagon bolt with cross hole.

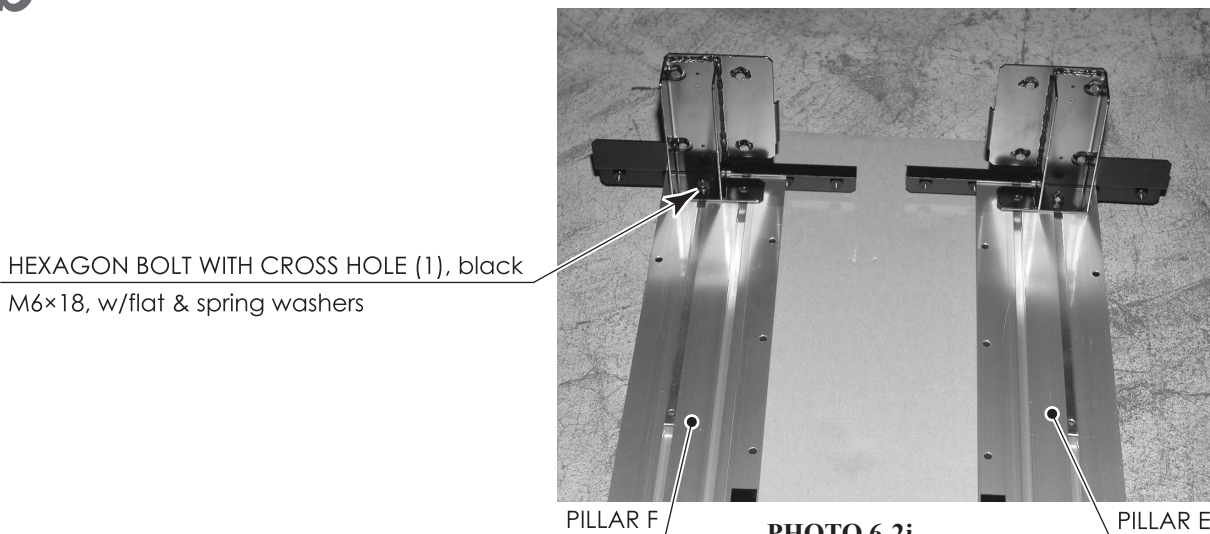


PHOTO 6-2j

**5** Attach pillar to base. Align with positions shown in Figure 6-2. Insert pillar from above into pillar attachment part at base.  
Be careful at this time that pillar does not contact piping or lighting on the work site ceiling.



PHOTO 6-2k

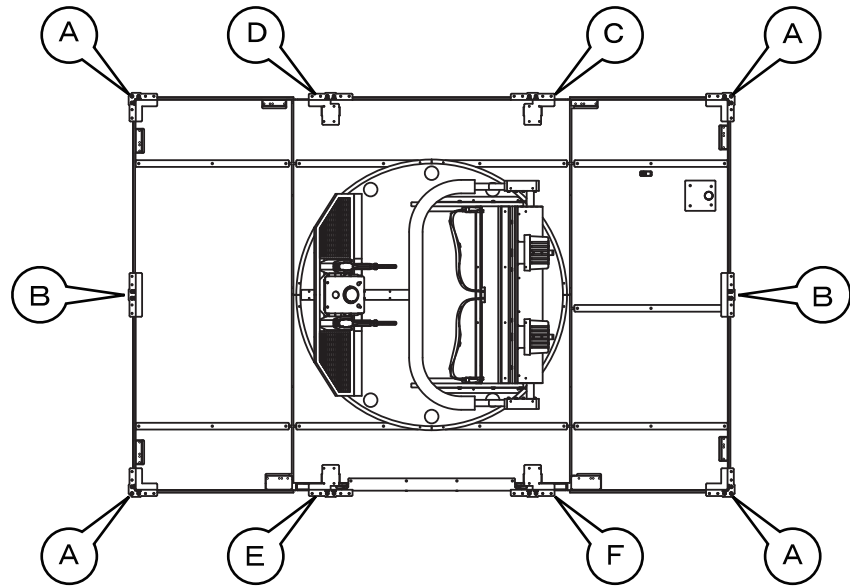


FIG. 6-2 Pillar Positions

- 6** From the bottom surface of pillar, provisionally attach hexagon bolts with cross holes. Pillar A takes 3 bolts and the other pillars each take 2 bolts.

HEXAGON BOLT WITH CROSS HOLE (3 ea.), black  
M8×18, w/flat & spring washers

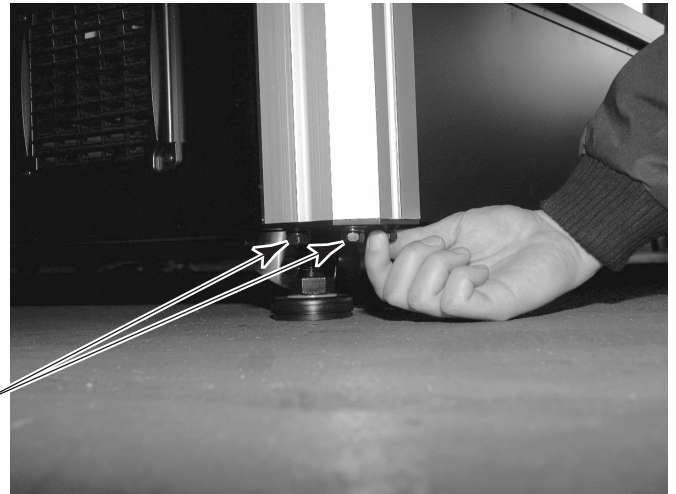


PHOTO 6-21

- 7** Use 4 hexagon bolts with cross holes to provisionally attach pillar A from the base inner side.

HEXAGON BOLT WITH CROSS HOLE (4 ea.), black  
M8×55, w/flat & spring washers

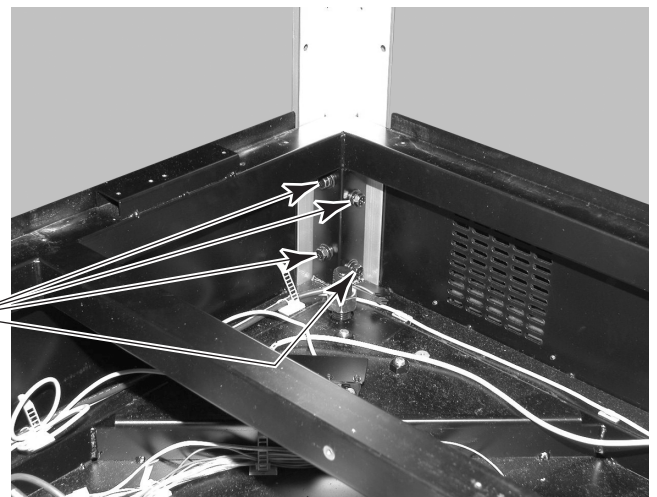


PHOTO 6-2m

- 8** Provisionally attach pillars B to F from the base inner side, using 4 hexagon bolts with cross holes for each pillar. The bolts that pass through base rectangular pipe differ in length from bolts that pass through brackets.

HEXAGON BOLT WITH CROSS HOLE (2 ea.), black  
M8×55, w/flat & spring washers

HEXAGON BOLT WITH CROSS HOLE (2 ea.), black  
M8×18, w/flat & spring washers

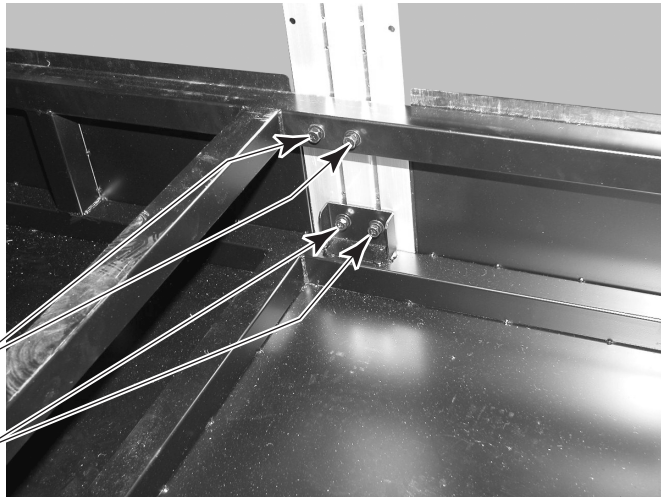


PHOTO 6-2n

- 9** Insert long T bar that was not attached while assembling pillars C to F. Insert to side where one has not been inserted. The T bar is tightened together with the upper beam. Do not tighten bolts at this time. (See 3 -1.)

LONG T BAR

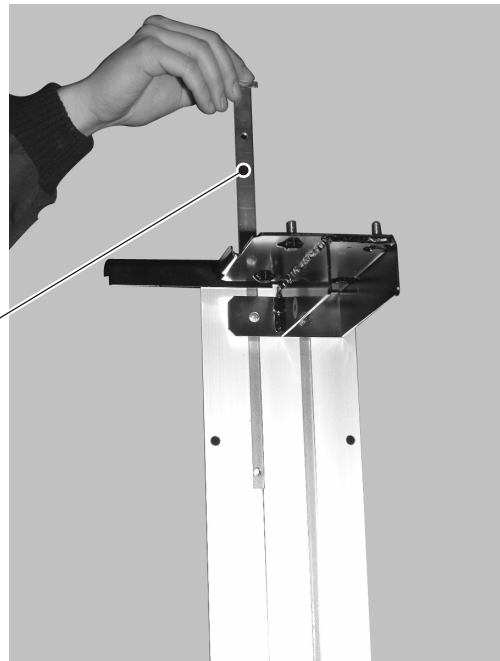


PHOTO 6-2o

- 10** Provisionally place floorboard other than the 4 boards around the ride.

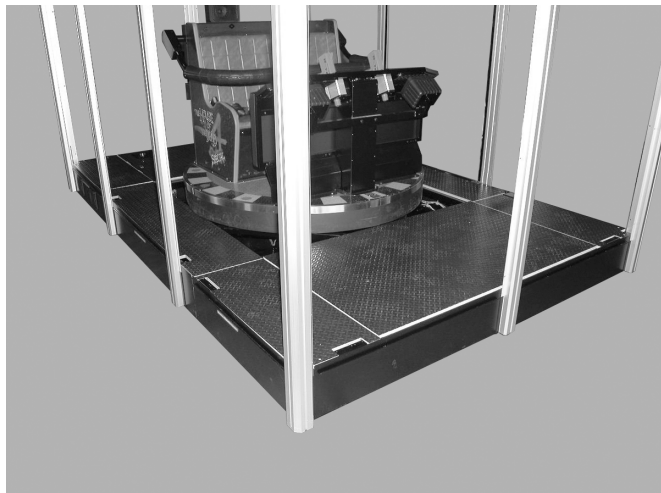


PHOTO 6-2p

**3 ATTACHMENT OF UPPER BEAM, PROJECTOR BASE, ETC.**

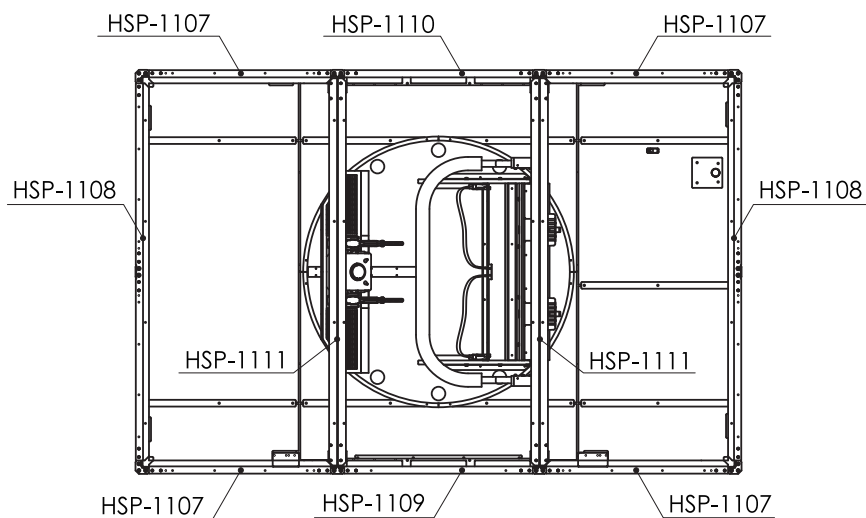
**⚠ WARNING**

- Be careful not to apply loads to parts that are attached provisionally. If such parts were to separate, it could result in an accident.
- When assembling at high locations, use more than one stepladder. Work cannot be done with one stepladder alone. Using only one stepladder can lead to accidents.
- Always have at least two workers when using a stepladder: one to work on the stepladder and another to hand up parts, etc. from below.
- Check the permissible load of each stepladder. Never have 2 or more workers on a ladder at the same time. Otherwise there could be an accidental fall.
- In attaching parts at high locations, make sure that bolts and other items do not fall down. Even if items are small, if they fall down from a high place, there can be accidents.

**STOP IMPORTANT**

- Check the number printed on the upper beam before attaching it.
- Attach the side fence first, then fully tighten the nuts and bolts associated with upper beam and projector base. (See **4** ).

Attach 5 types of upper beam (HSP-1107, HSP-1108, HSP-1109, HSP-1110, HSP-1111), door beam, projector base and top fence. This job requires that long parts be attached at high locations. Set stepladders at each side of the base and have work performed by at least 3 people.



**FIG. 6-3 Upper beam positions**

- 1** Attach the 5 types of upper beam to the positions shown in the illustration, and attach them provisionally with hexagon bolts with cross holes or with hexagon nuts. For convenience, explanations of upper beams are given in sequence below, but the 5 beam types can be attached in any order.



**a** Place upper beams between brackets at the top of pillars. Place upper beams (HPS-1109 and HPS-1110) while tilting them so they can be inserted.



PHOTO 6-3a

**b** Attach upper beams (HSP-1107, HSP-1108) with bolts from the top surface.

HEXAGON BOLT WITH CROSS HOLE (4), black  
M6×18, w/flat & spring washers

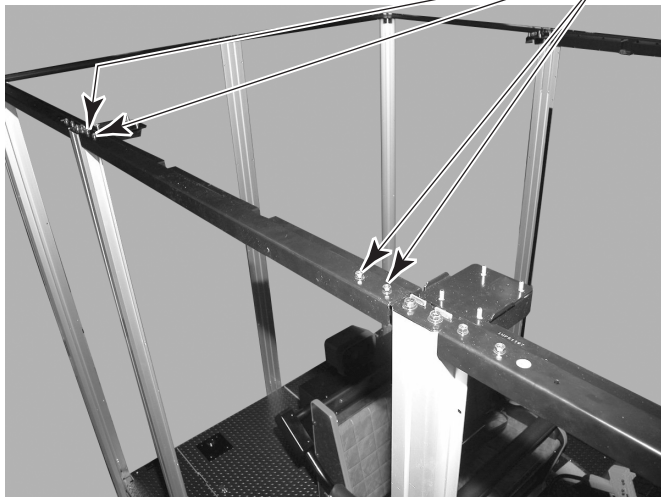


PHOTO 6-3b

HEXAGON BOLT WITH CROSS HOLE (8), black  
M6×18, w/flat & spring washers

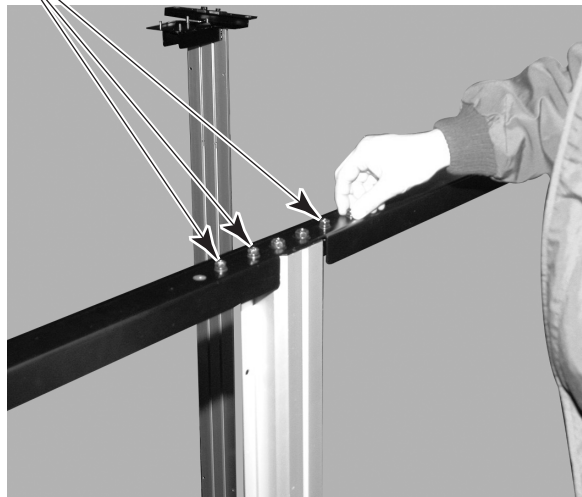


PHOTO 6-3c

**c** Provisionally attach upper beams (HSP-1109 and HSP-1110) each with a total of 6 bolts: 4 bolts from the top surface and 2 bolts that also hold down the long T bars inserted in pillars C to F. (See 2 -9.)

HEXAGON BOLT WITH CROSS HOLE (6), black  
M6×18, w/flat & spring washers

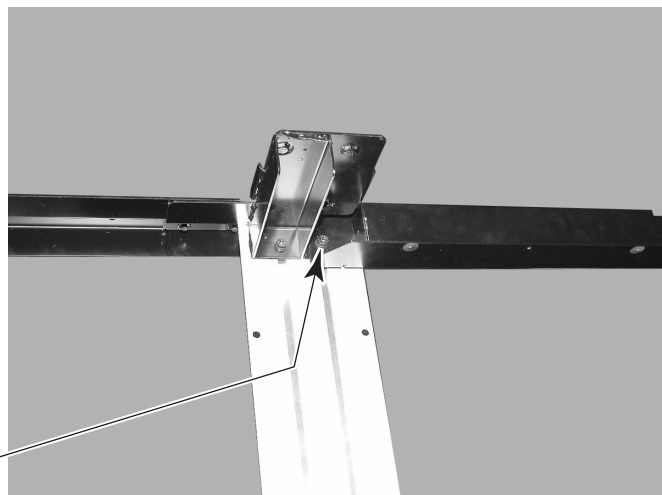


PHOTO 6-3d

**d** On each end of the upper beam (HSP-1111) there are 2 holes for bolts to pass through. The bracket studs (threaded shafts) for pillars C to F and pillars D to E are applied by being passed through the holes on both ends of the upper beam. Apply the studs so that the threaded hole of the upper beam is located at the central side.

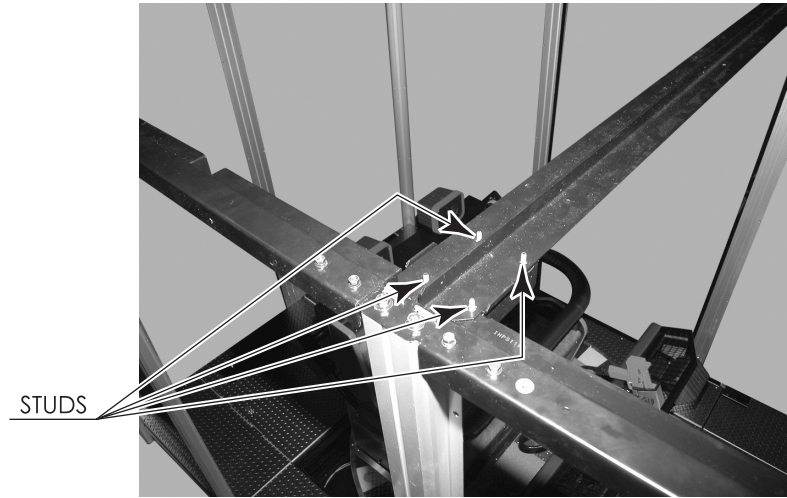
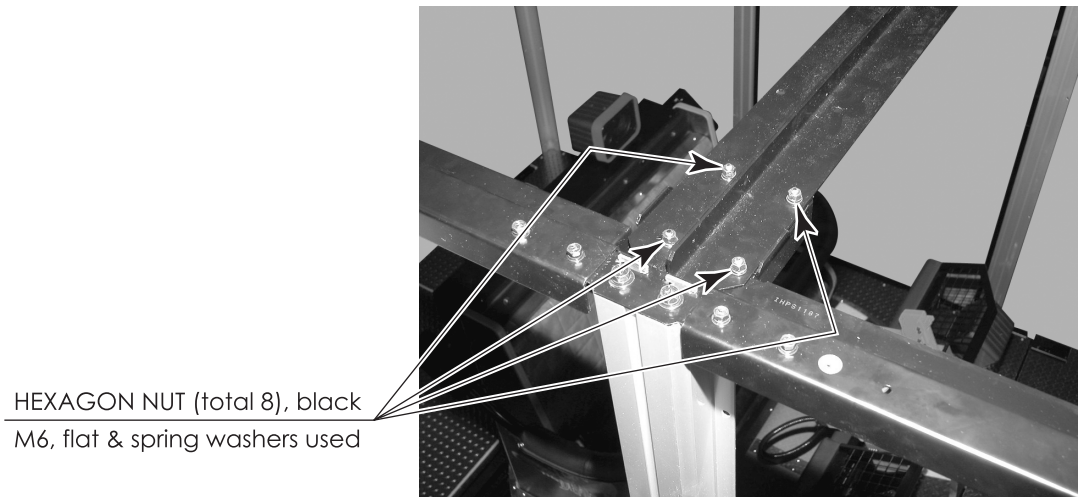


PHOTO 6-3e

**e** Pass studs through flat washer, spring washer and hexagon nut in sequence and attach them provisionally.



HEXAGON NUT (total 8), black M6, flat & spring washers used

PHOTO 6-3f

**2** Provisionally attach the door base. The view in the photo is of the base inner side.

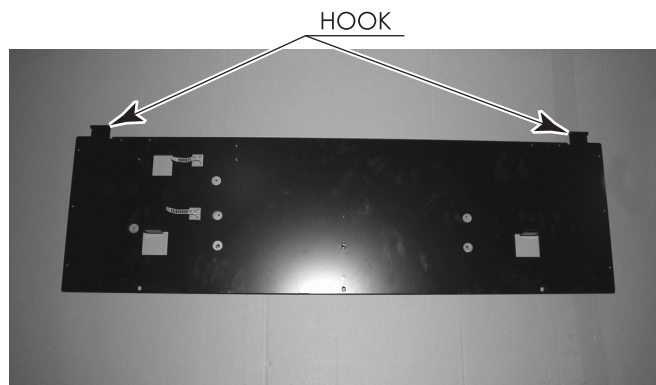


PHOTO 6-3g Door base

- a** Attach door base hooks by suspending it in the rectangular holes of the upper beam that has been attached provisionally between pillars E and F.

RECTANGULAR HOLE

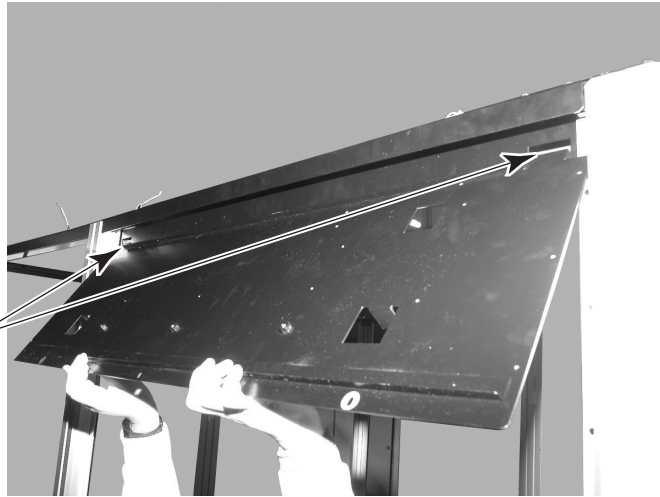


PHOTO 6-3h

- b** Provisionally attach 6 screws from the base outer side.

SCREW (6), black  
M4×8, w/flat & spring washers

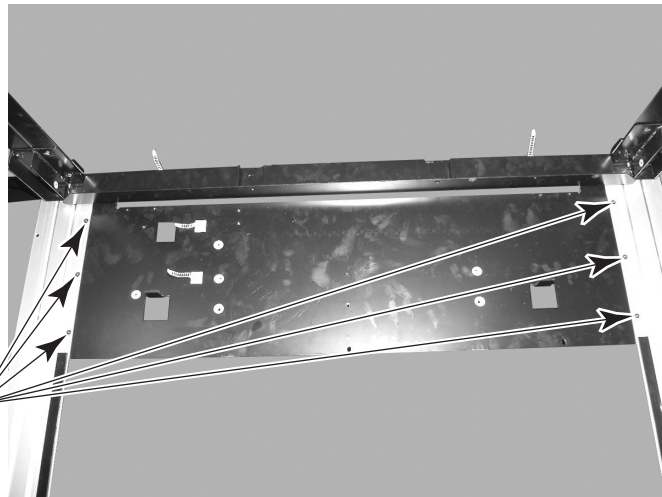


PHOTO 6-3i

- 3** Attach the projector base. Wiring in the projector base has been completed. The AC cable comes out from the front side and the BNC cable comes out from the rear. Studs are at the bottom side. The projector base should not be attached provisionally. Tighten the nuts fully.

- a** The projector base is mounted on the upper beams (HSP-1109, HSP-1110). Mount by passing studs through upper beam holes. Place stepladders on each side of the base. Have one worker climb up on each stepladder and have a third worker hold up the projector base from its center.



PHOTO 6-3j

**b** Pass each stud through a flat washer, then tighten a U-nut to it.

U-NUT (4)  
M8, flat washer used



PHOTO 6-3k

**c** After applying the U nut, attach and tighten a cap nut.

CAP NUT (4), black  
M8

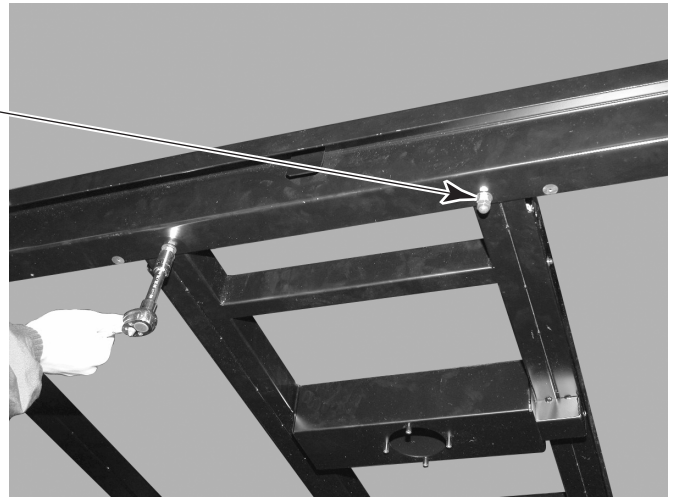


PHOTO 6-3l

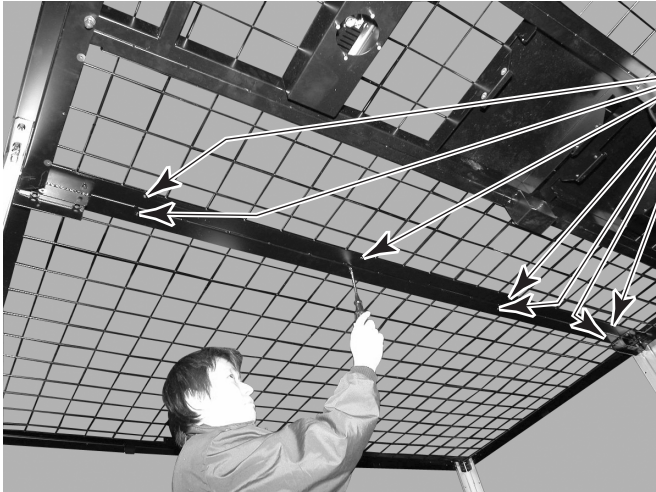
**4** Provisionally fasten three boards of top fence.

**a** Mount fence so that screw holes in the top fence frame face downward.



PHOTO 6-3m

**b** Provisionally attach 8 screws from the upper beam underside.



SCREW (8 ea.), black  
M4×8, w/flat & spring washers

PHOTO 6-3n

**5** Provisionally attach 9 side fence boards between each pillar. Of these side fences, one is very wide. This wide side fence is attached between pillars C and D, in other words, to the opposite side of the door.

The same method of attachment is used in common. There are screw holes on each side of side fence frames. Attach so that the surface having screw holes at uniform intervals becomes the base inner side and the surface with two consecutive screw holes becomes the base outer side. Either top or bottom of fence is okay.

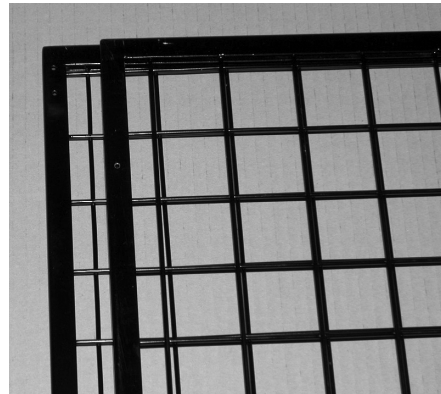


PHOTO 6-3o

**a** Attach side fence from the base outer side. Insert upper side of frame from the underside between the upper beam hooks.

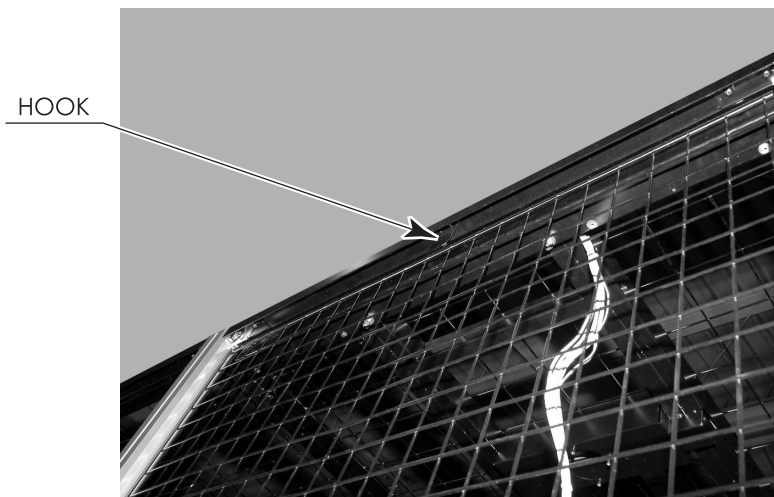


PHOTO 6-3p

**b** Mount under side of frame onto the base protrusion.



PHOTO 6-3q

**c** Pass screws through pillar inner side and attach them provisionally. Each fence board takes 10 screws.

SCREW (10 ea.), black  
M4×8, w/flat & spring washers

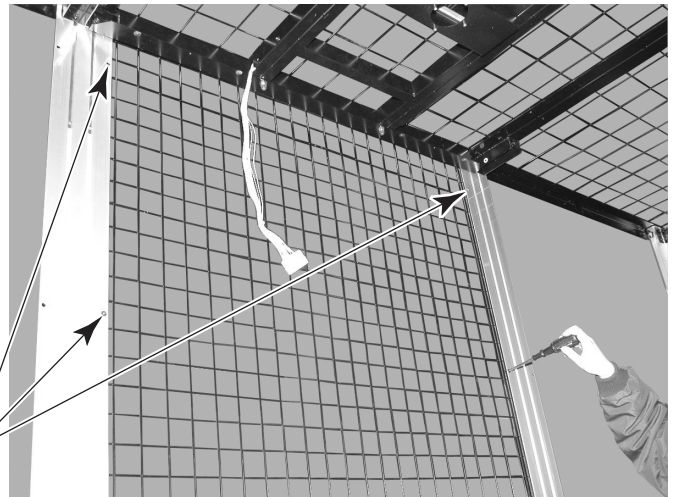


PHOTO 6-3r

## 4 TIGHTENING OF BOLTS AND SCREWS

### WARNING

Securely tighten all bolts and screws that have been applied provisionally. If bolts or nuts are left only provisionally tightened, an accident might occur.

- 1 Check application status in the sequence of assembly from step 6 in section 2, provisional attachment of pillar.
- 2 If the application status is unsatisfactory, adjust the positions and angles of parts attached. Be careful not to damage wiring at this time.
- 3 Fully tighten nuts and bolts.
- 4 Remove floorboard and tighten bolts that provisionally held down pillar from the base inner side.

**5** SCREEN ATTACHMENT**⚠ WARNING**

- When tightening bolts or nuts, be sure to take accident prevention measures. For example, check the integrity of hooks to parts held in place and always have a separate worker hold up items. If parts drop or fall while working, there could be serious accidents.
- Be sure to always screw down earth wires and establish secure grounding. If grounding is neglected, there could be an electric shock or short circuit. There could also be malfunction and/or poor operation and parts damage.

**⚠ CAUTION**

The top fence (ceiling) and upper beam have already been attached. When using a stepladder, make sure you do not hit your head against anything.

**STOP IMPORTANT**

- Check shape and number of parts before making attachments. Different parts should be attached at left and right, and at top and bottom.
- Always use a flat washer and spring washer with the screws for holding down earth terminal.
- The screen surface where flame prevention mark is attached is the back surface for projected images. Be careful not to mistake the direction for attachment.
- Be careful not to scratch or soil screen surface on which images are projected. When carrying the screen, try to replicate the conditions of shipping as closely as possible. For example, roll the screen in paper, etc.



The screen is attached to both the front and rear surfaces of the inside of the side fence.

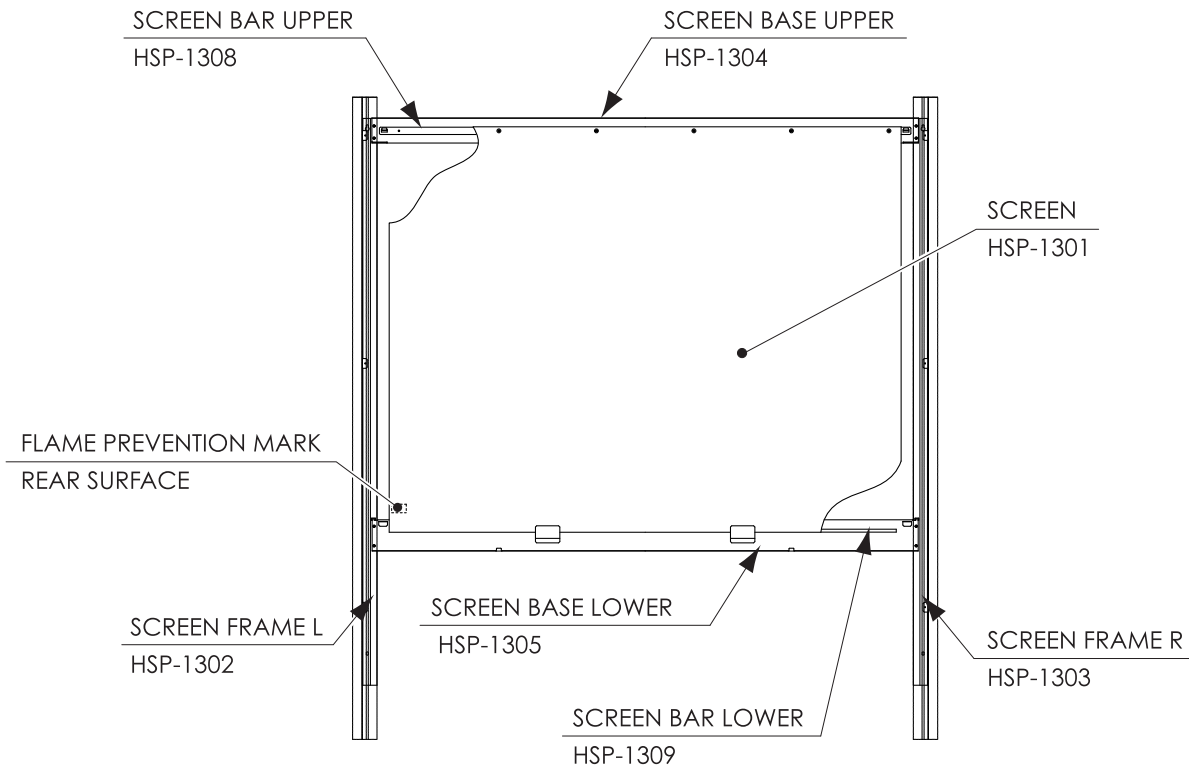


FIG. 6-5

- 1 Provisionally attach 1 hexagon bolt with cross hole each to the front and rear sides of pillar A.

HEXAGON BOLT WITH CROSS HOLE (1 ea.), black  
M6×18, w/flat & spring washers

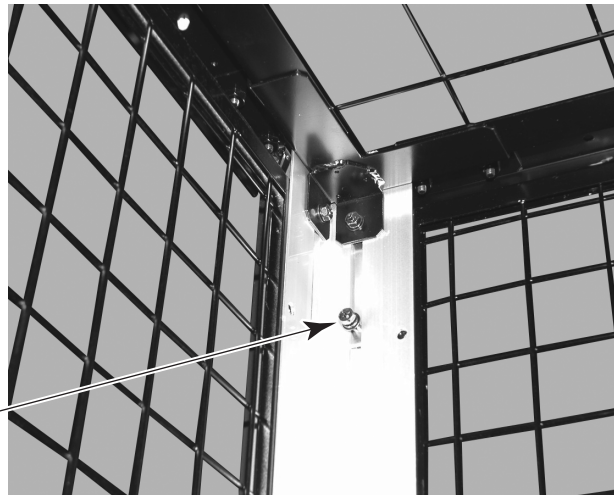


PHOTO 6-5a

**2** Screen frames L and R are attached to pillar A. When screen frame is being attached, the side with keyhole should be at the top.

**a** Attach screen frame to pillar A by fastening the keyhole to provisionally attached bolts.

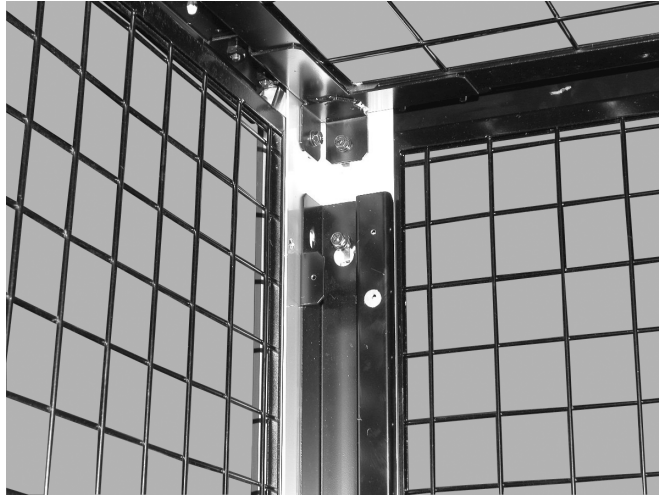


PHOTO 6-5b

**b** Fasten the screen frame with 3 separate bolts in addition to the provisionally attached bolt, for a total of 4 bolts.

HEXAGON BOLT WITH CROSS HOLE (total 4), black  
M6×18, w/flat & spring washers

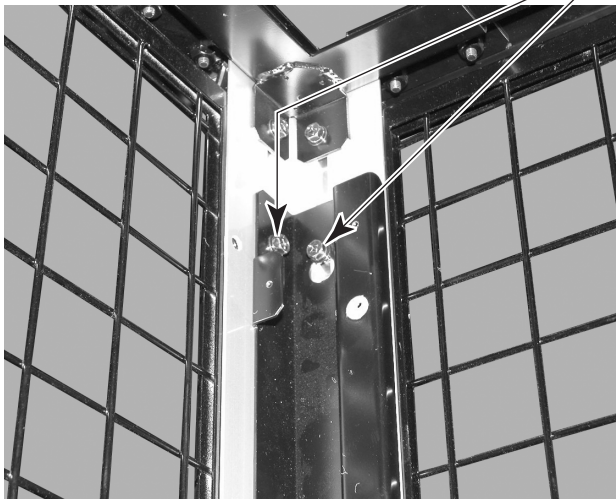


PHOTO 6-5c Two bolts at upper side

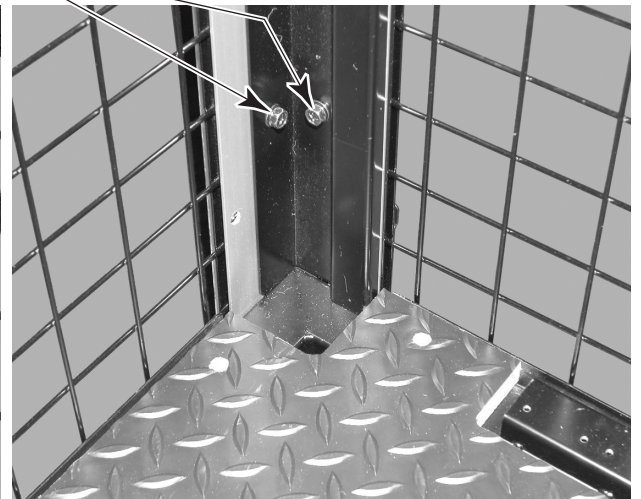
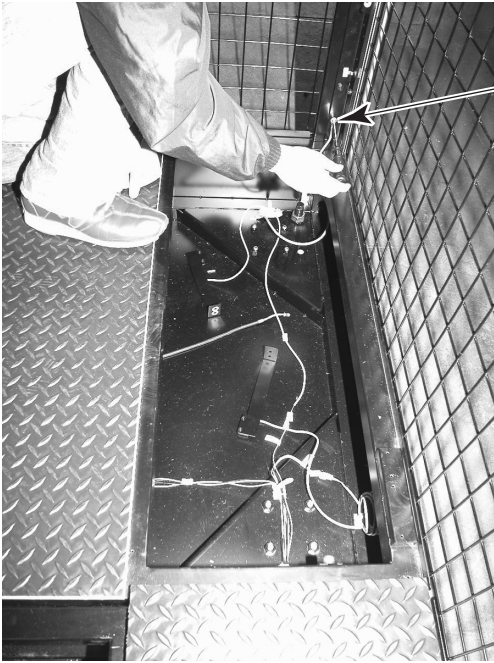


PHOTO 6-5d Two bolts at lower side

**c** Standing inside the base and facing its front side, remove the floorboard on your right. Inside the base there is an earth wire. Standing inside the base and facing its rear, again remove the floorboard on your right.

- d** Use one screw to secure the round terminal of earth wire tip to the screen frame. Always use a flat washer and spring washer with the screw.



SCREW (1 ea.), black  
M4×8, flat & spring washers used



PHOTO 6-5e

- e** Lay down floorboard, being careful not to have earth wire get caught anywhere.

- 3** Attach screen base upper.

- a** While inclining the screen base upper, mount it onto the tops of screen frames L and R. Mount by having the hooks of the screen base upper suspended from the screen frame.



PHOTO 6-5f

**b** Fasten with 4 screws. Use screws with flat and spring washers attached. Provisionally attach 2 screws to the right and left each, confirm that all 4 screws can be tightened and then tighten the screws fully.

SCREW (4), black  
M4×8, w/flat & spring washers

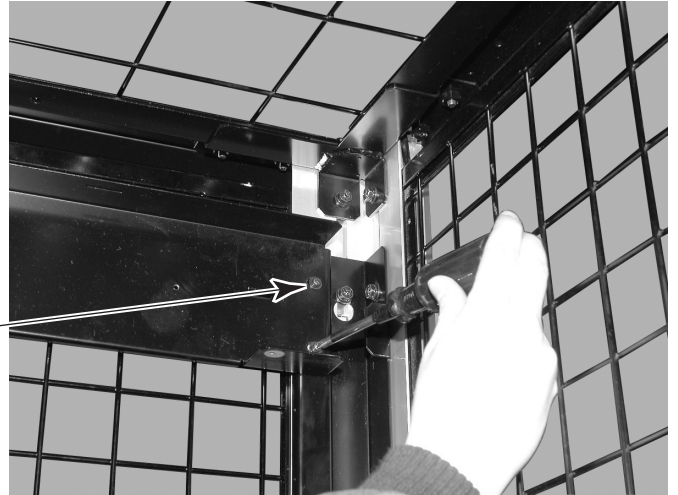


PHOTO 6-5g

**4** Attach the screen base lower.

**a** While tilting the screen base lower, insert hooks into the rectangular holes of screen frames L and R.

Insert hooks into rectangular holes.

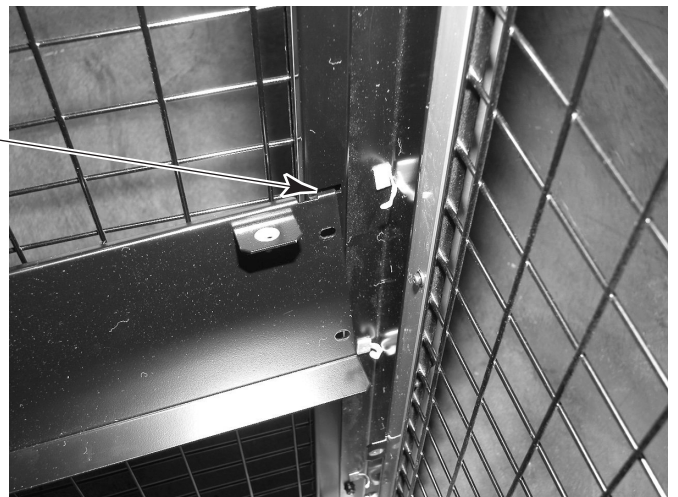


PHOTO 6-5h

**b** Fasten with 4 screws. Use screws with flat and spring washers attached.

SCREW (4), black  
M4×8, w/flat & spring washers



PHOTO 6-5i

- 5** Attach the screen. The screen has an upper and lower part. The cylindrical part with 6 screw holes is at the top and the cylindrical part with no screw holes is at the bottom. There is a flame prevention mark on one side of the screen. Images are projected onto the surface that is the back of the flame prevention mark's surface.

- a** Pass the screen bar upper through the screen cylindrical part with screw holes. The screen is rolled up in paper for shipment. It can be inserted in this rolled up condition.

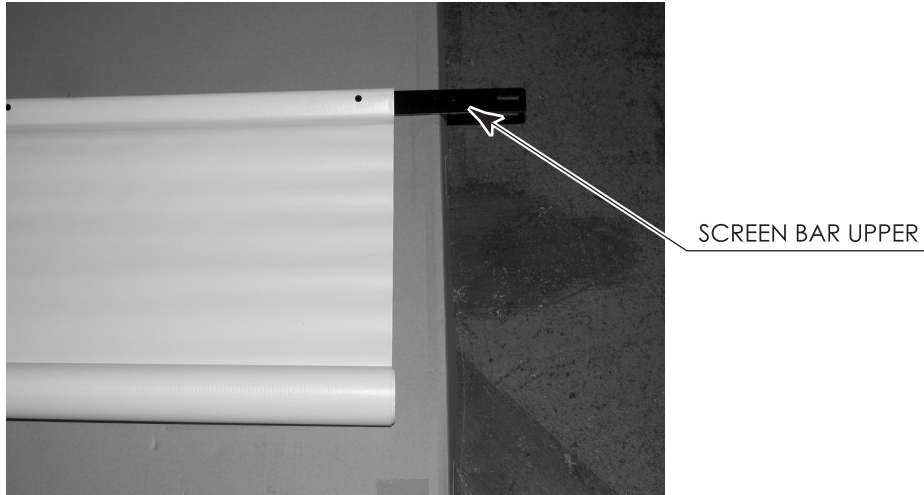


PHOTO 6-5j

- b** Have two people bring up the screen while it is still rolled up. Suspend screen bar upper to the hooks on both sides of the screen base upper. Then roll down the screen, being careful not to damage it.

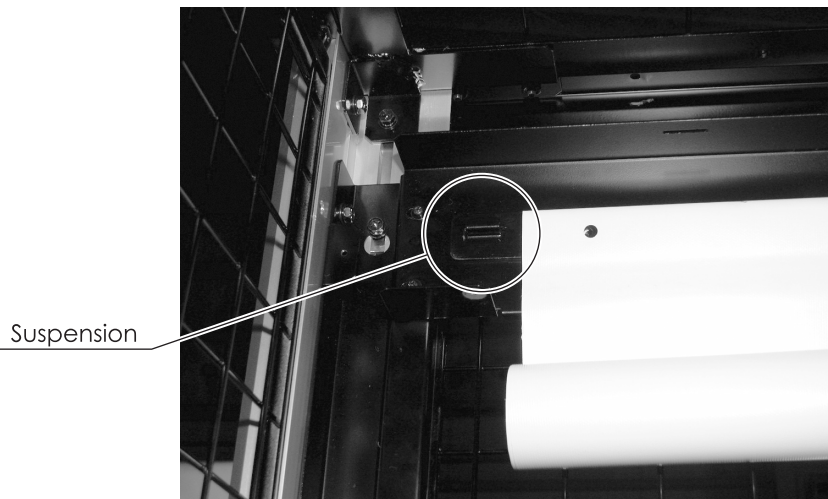


PHOTO 6-5k

- c** Check the orientation of screen attachment. Confirm that the flame prevention mark can be seen from outside the side fence.

**d** Fasten screen with screws. Pass the screen bar upper through the screen cylindrical part and fasten it with 6 screws. Use flat washer on screws with spring washer attached.

SCREW (6)  
M4×12, w/spring washer, flat washer used

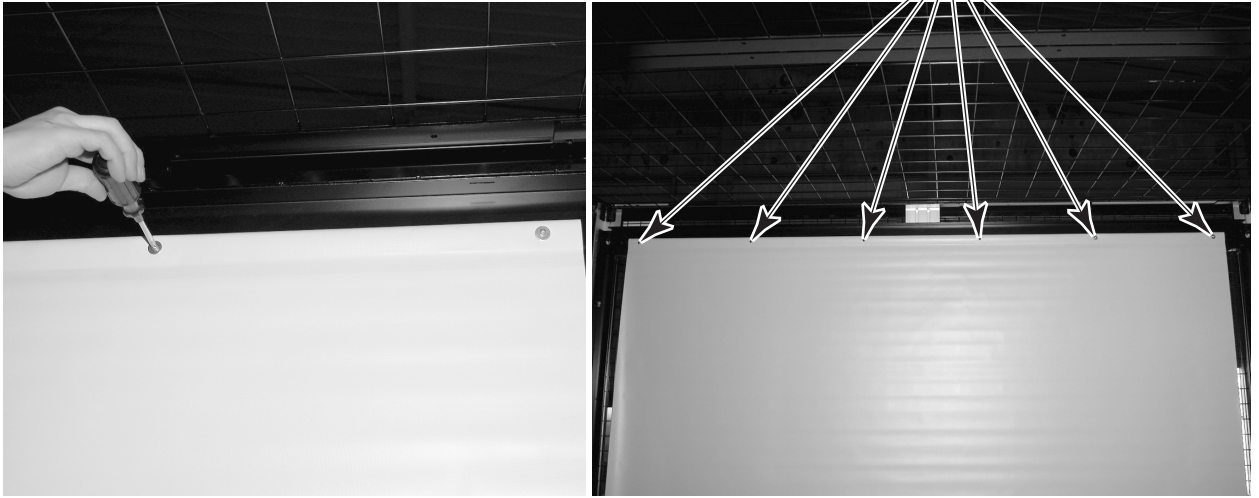


PHOTO 6-5l

**e** Insert screen bar lower through the cylindrical part at the bottom of the screen. Insert into screen cylindrical part from outside the side fence.



PHOTO 6-5m

**f** Attach the cylindrical part at the bottom of the screen to the hooks of the screen base lower.



PHOTO 6-5n

## 6 ATTACHMENT OF AIM SENSOR

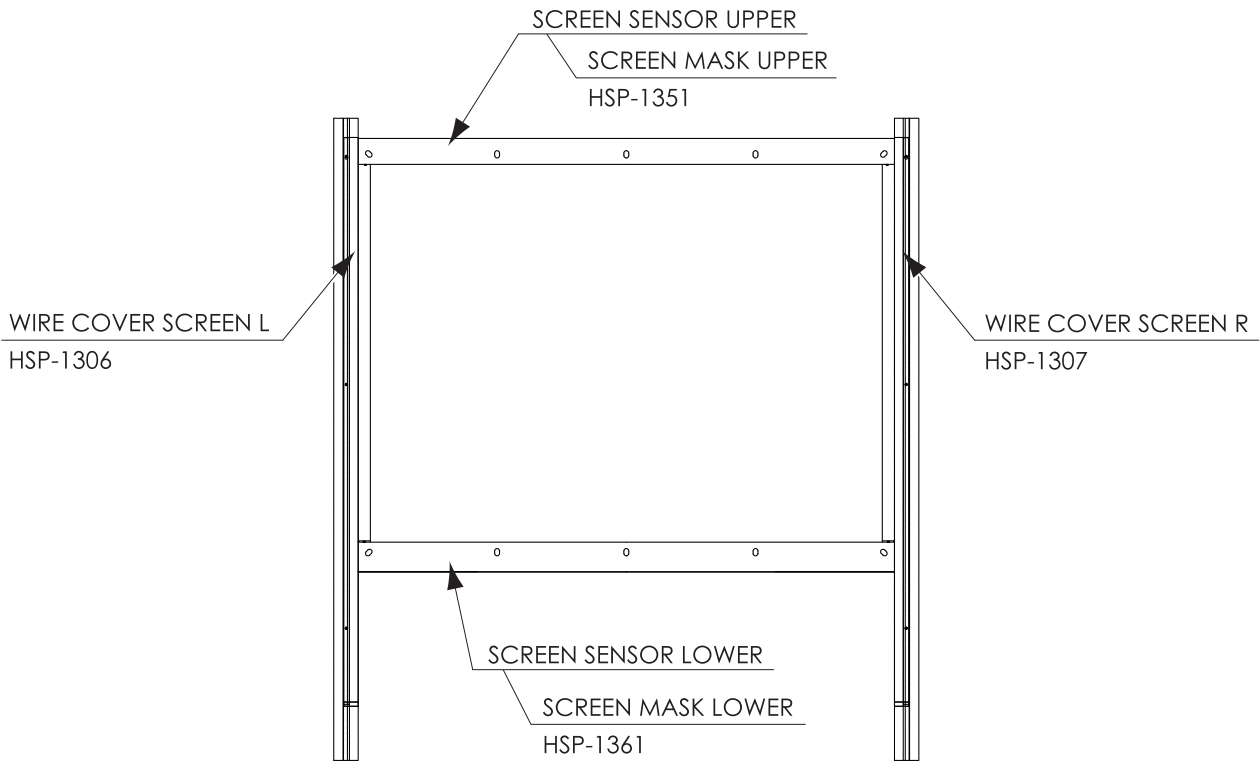


FIG. 6-6

Parts associated with the aim sensor are attached at the top, bottom, left and right of the screen.

**1** Attach the screen sensor upper. Be careful not to damage the wire or baseboard to the left and right.

**a** Hang the wire of the screen sensor upper to the left and right and suspend it to the screen base upper at the top.



PHOTO 6-6a

**b** Attach the screen sensor upper so that it covers the screen base upper. Hold the wire while attaching so that the wire does not get caught anywhere.

Make sure wire does not get caught.



PHOTO 6-6b

**c** Fasten the screen sensor upper with 2 screws. Use screws with flat and spring washers attached.

SCREW (2), black  
M4×8, w/flat & spring washers



PHOTO 6-6c

**2** Attach the screen sensor lower.

**a** Suspend the screen sensor lower to the hook of the screen base lower.

Suspension



PHOTO 6-6d



- b** Take the connectors of wire suspended at left and right from the screen sensor upper and connect them to the sensor LED boards at left and right of the screen sensor lower. Perform this task with the screen sensor lower suspended. Hold the part firmly while working since it has not been fixed in place.

LEFT SIDE CONNECTOR (OUT SIDE)

XH6P



PHOTO 6-6e

RIGHT SIDE CONNECTOR (IN SIDE)

XH6P



PHOTO 6-6f

- c** Attach the screen sensor lower so that it covers the screen base lower. Fasten it with 2 screws. Use screws with flat and spring washers attached.

SCREW (2), black  
M4×8, w/flat & spring washers



PHOTO 6-6g

- 3** Lay out wire over the L and R screen frames. Use a cord clamp to secure the wire in place, being careful not to apply dead weight to the wire.

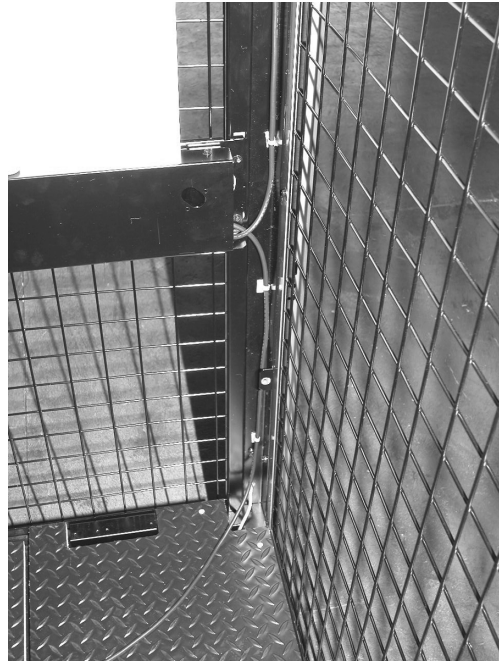


PHOTO 6-6h

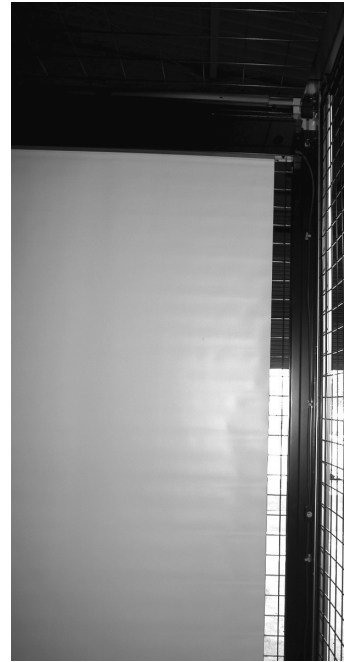


PHOTO 6-6i

- 4** Take wire that comes out from the right side of the screen sensor lower and connect it to wire below the floorboard. Remove the floorboard and connect to wire in the base.

CONNECTOR  
SM7P

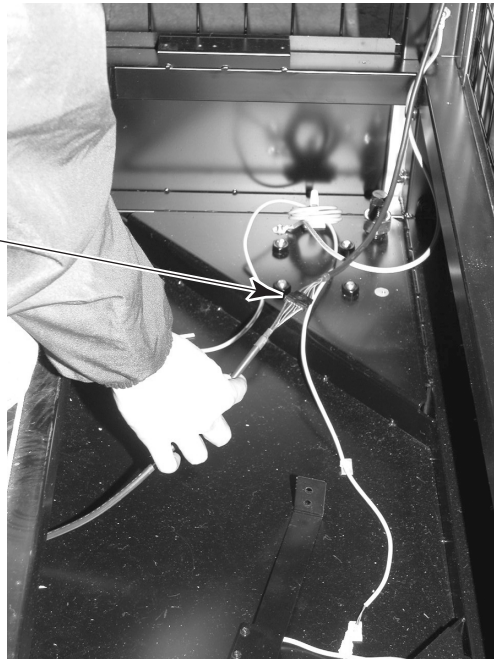


PHOTO 6-6j

**5** Reattach the floorboard.

**6** Attach the left and right wire cover screens. Insert screens from below so that they cover the L and R screen frames. Fasten each wire cover screen with 3 screws. Use screws with flat and spring washers attached.



**PHOTO 6-6k**

**PHOTO 6-6l**

## 7 PROJECTOR BASE WIRING

**⚠ WARNING**

Be sure to always screw down earth wires and establish secure grounding. If grounding is neglected, there could be an electric shock or short circuit. There could also be malfunction and/or poor operation and parts damage.

**STOP IMPORTANT**

Always use a flat washer and spring washer with the screws for holding down earth terminal.

Wiring is to be laid out from the base interior to the projector.

**1** Remove floorboard on opposite side of door.

**2** Attach wire duct to pillars C and D on opposite side of door and secure earth terminal.

**a** Wire duct is the same for both pillars. The side with notch is the upper side. Insert the side with notch into the upper beam.

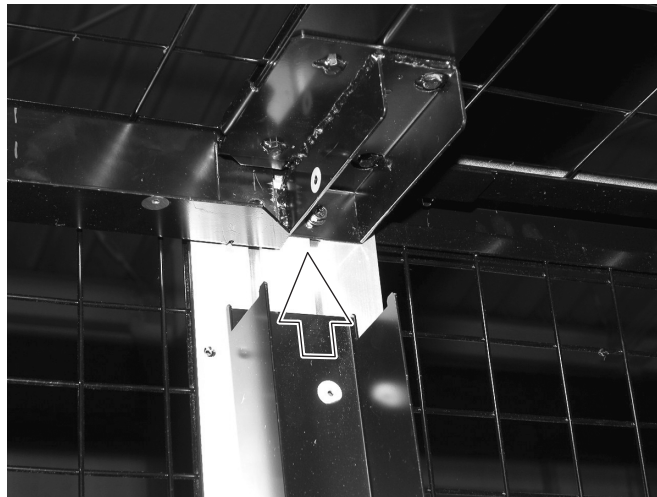


PHOTO 6-7a

**b** Secure wire duct with 4 hexagon bolts with cross holes.



PHOTO 6-7b 2 bolts at upper side

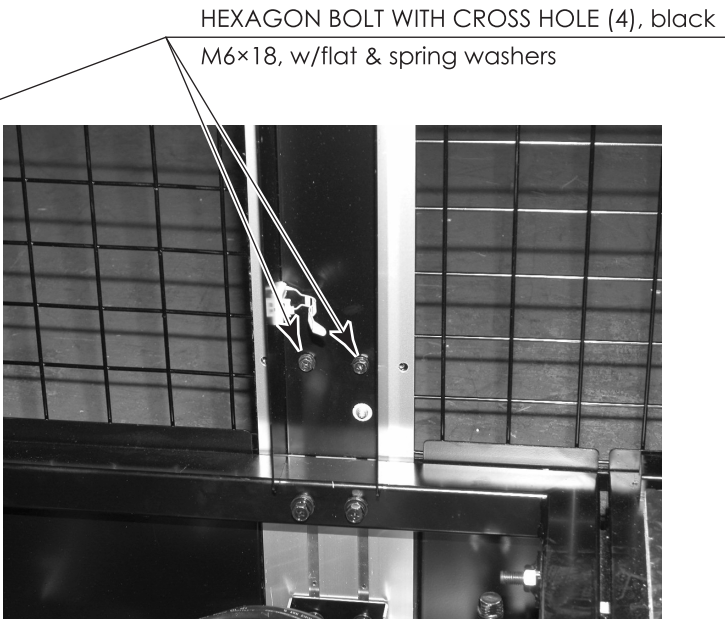


PHOTO 6-7c 2 bolts at lower side

HEXAGON BOLT WITH CROSS HOLE (4), black  
M6×18, w/flat & spring washers

**c** Inside the base there is an earth wire. Use one screw to secure the round terminal of earth wire tip to the wire duct. Always use a flat washer and spring washer with the screw.

SCREW (1 ea.)  
M4×8, flat & spring washers used

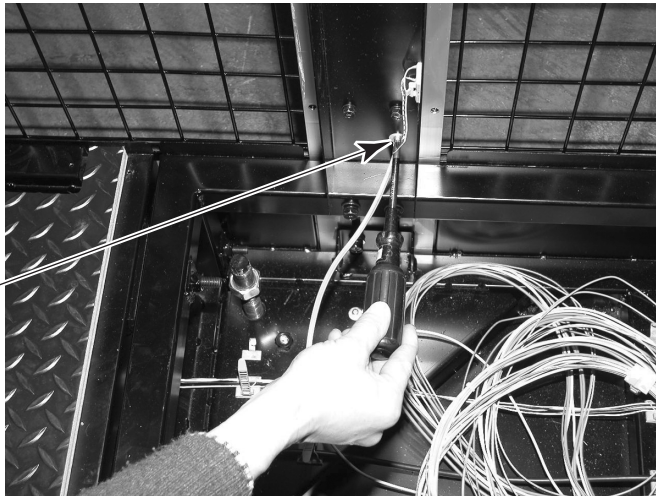


PHOTO 6-7d

**3** Pass wire in base through the wire duct interior and connect it to the projector base wiring.

**a** Lay out wire on the power supply (AC) side to pillar D on the front side. Use a cord clamp and secure wire so that no dead weight is applied to it.



PHOTO 6-7e

**b** Connect to wire on projector base side and secure inside wire duct, using a cord clamp.



CONNECTOR  
VL12P

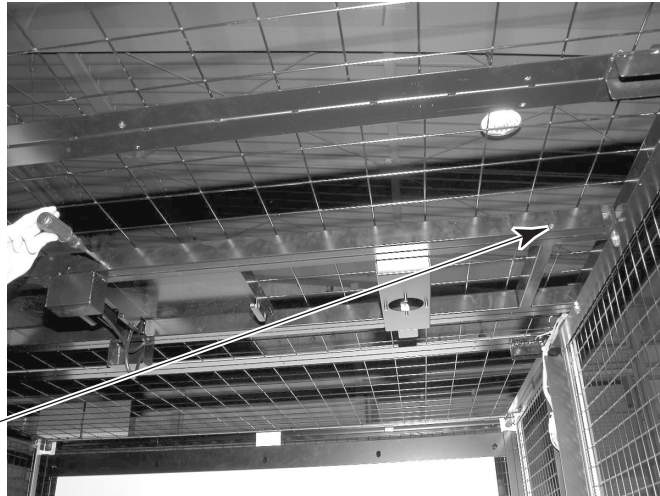
PHOTO 6-7f

**C** Lay out 2 video cables and wire going to billboard in pillar C on rear side. Use a cord clamp to fasten cable and wire, making sure that no dead weight is applied to either.



PHOTO 6-7g

**d** Remove wire cover on side of pillars C and D at the rear of projector base. Remove 2 screws.

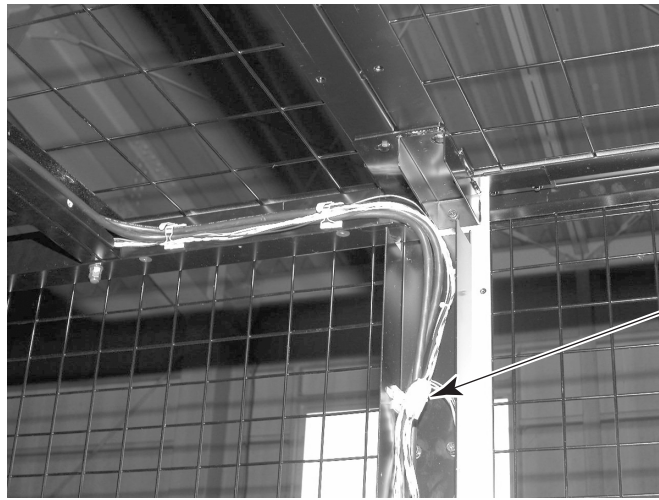


SCREW (2), black  
M4×8, w/flat & spring washers

PHOTO 6-7h

**e** Connect wire going to billboard to wire on projector base side.

**f** Use a cord clamp to fasten video cable and wire going to billboard from wire duct to projector base interior.



CONNECTOR  
YL6P

PHOTO 6-7i

**g** Pass 2 video cables into projector base interior. One cable has 5 BNC connectors. Pass each connector one at a time.

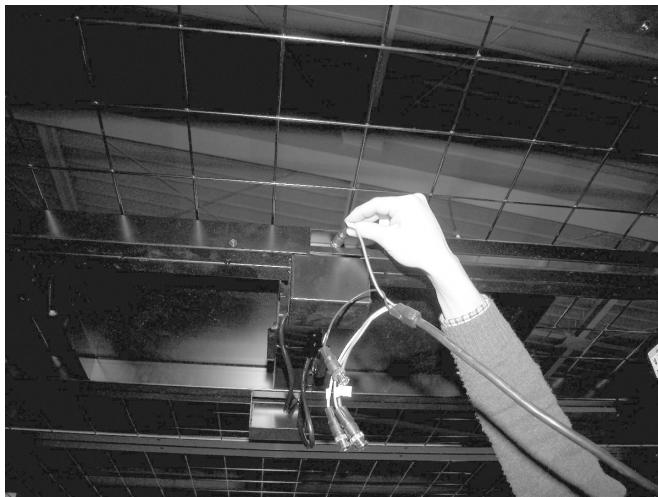


PHOTO 6-7j



BNC CONNECTORS (10)

PHOTO 6-7k

**h** Restore wire cover that was removed to its original position. Fasten with 2 screws.



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**4** Attach wire duct cover to wire duct. Be careful not to damage wiring.

---

**a** Wire duct covers are all the same. The side with hook is the upper side.

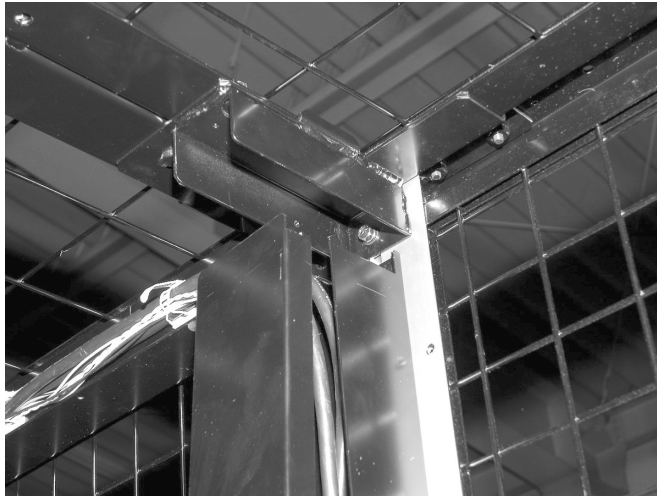


PHOTO 6-7l

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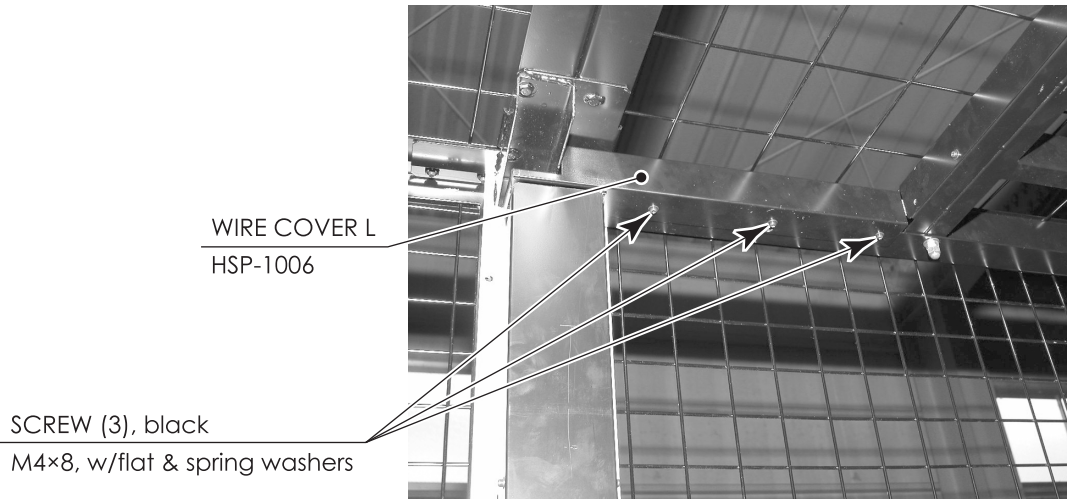
**b** Fasten each wire duct cover with 6 screws.

SCREW (6), black  
M4x8, w/flat & spring washer

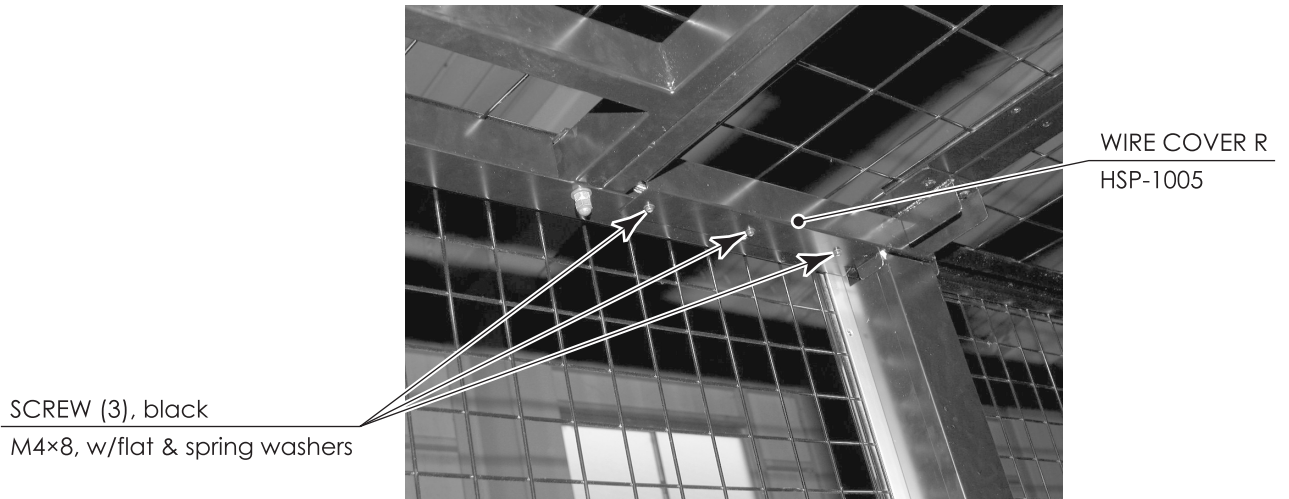


PHOTO 6-7m

**5** Attach L and R wire covers. Be careful not to damage wiring. Fasten each cover at the bottom with 3 screws.



**PHOTO 6-7n**



**PHOTO 6-7o**

**6** Restore floorboard on opposite side of door.

## 8 PROJECTOR INSTALLATION

### WARNING

- Always have two people lift up the projector to install it. If one person works alone, there could be accidents.
- Even when the projector is being installed by two people, take accident prevention measures such as having another worker to give assistance.
- The projector is a precision instrument. Be careful not to expose it to impact or loads. If it should fall while work is being done to install it, do not use the projector. Even if there are no abnormalities on its exterior, there could be damage inside the projector. If you establish electrical continuity through a damaged interior, there could be an electrical shock, short-circuit and/or fire.

### CAUTION

- The top fence (ceiling) and upper beam are already attached. When using a stepladder within the base, be careful not to hit your head against anything.
- Be careful not to get your hands or fingers caught in anything while attaching or removing parts.

### STOP IMPORTANT

- The projector is already set for the product. Do not change the setting, etc., indiscriminately.
- When installing the projector, it is assumed that the ride seat will be stepped on. Cover this seat or take other measures to ensure it does not get dirty.

In this work, heavy objects are attached at high locations. In addition to having two people install the projector, take accident prevention measures; for example, have an additional worker to provide extra lighting, and another who can give directions from above.

Attach the projector cover after turning on electricity and adjusting the screen. (See [19](#).)

- 1 Attach set base to projector. Fasten with 4 screws with hexagon holes. Use flat and spring washers with screws. Tighten screws firmly.

SCREW WITH HEXAGON HOLE (4), black  
M4×12, flat & spring washers used

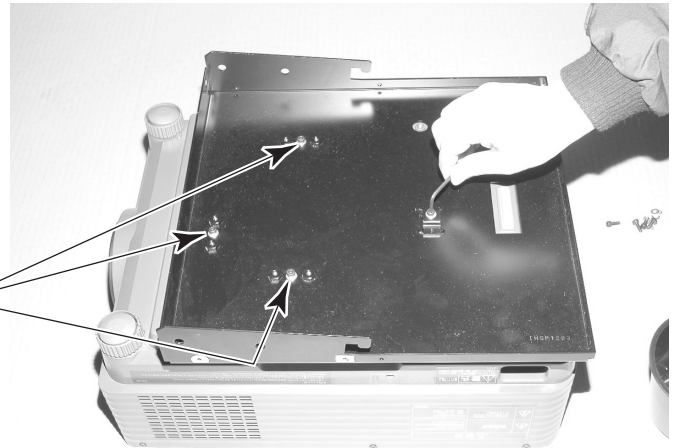


PHOTO 6-8a

- 2 To the tops of 3 of the screws with hexagon holes, attach bolt holders to prevent the screws from falling off. Fasten with 2 screws at each location.

SCREW (2 ea.), black  
M4×8, w/flat & spring washers

BOLT HOLDER

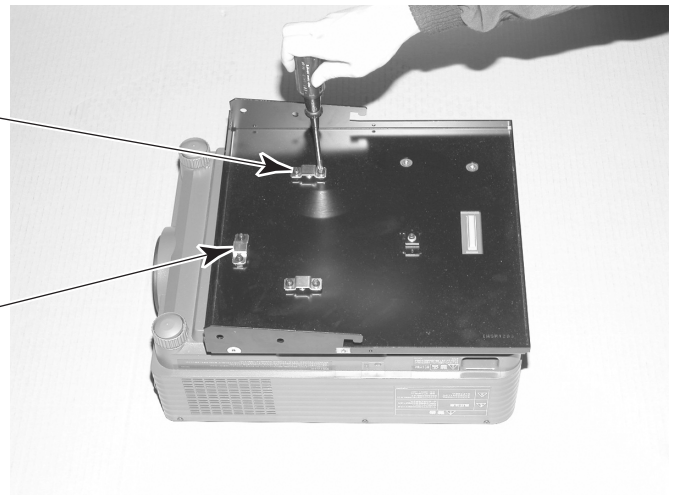


PHOTO 6-8b

- 3 Attach projector to projector base. The projector that projects onto the front screen is at the door side (side of pillars E and F).

- a Have two workers hold the project to install it. Hook the projector base onto the DLP frame. There are two hook locations each at the front and rear, for a total of four locations.



PHOTO 6-8c

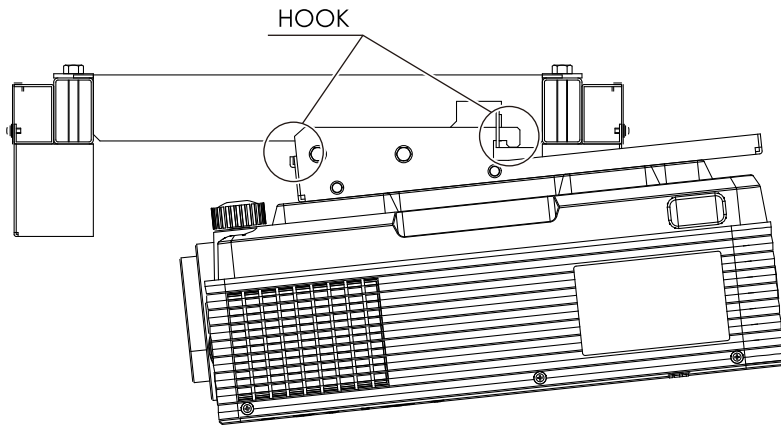


FIG. 6-8

**b** Fasten with 4 hexagon bolts with cross hole.



HEXAGON BOLT WITH CROSS HOLE (4), black  
M6×18, w/flat & spring washers

PHOTO 6-8d

**c** In the same manner, install the projector that projects onto the screen at the opposite side.

**d** Confirm that the projector power switch is at ON.



PHOTO 6-8e

- 4** Connect the power cable and BNC cable to the projector. Connect BNC cable so that side with “VIDEO 0” tag is at the front (door side) and side with “VIDEO 1” tag is at the rear (interior side).

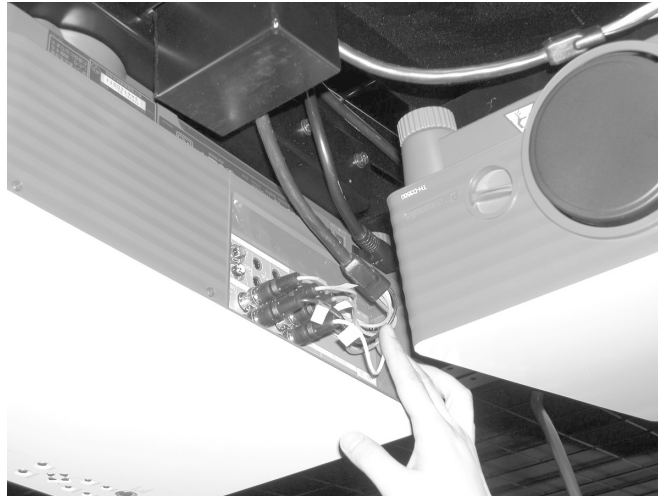


PHOTO 6-8f

Connect the BNC cable connector to the projector “RGB 1 IN” connector. Determine connectors to be connected based on the color of the wire covering.

Wire covering colors: Code for connector

- Black: VD
- White: SYNC/HD
- Blue: B/PB
- Green: G/Y
- Red: R/PR

- 5** Remove lens cap.



PHOTO 6-8g

## 9 BILLBOARD (GUILLOTINE) INSTALLATION

### **⚠ WARNING**

In this installation job, two stepladders are used to bring heavy objects up to a high location. Use a total of four people to do this job: two people to work on the stepladders and another two people to hand up parts from below. If less than the prescribed number of workers are used, accidents might occur.

### **⚠ CAUTION**

Place long door frame in the side fence and attach it. Be careful not to hit against other workers or parts.

- 1 Attach door frame so that it hangs from the door base and then fasten it with 7 hexagon bolts.

DOOR FRAME

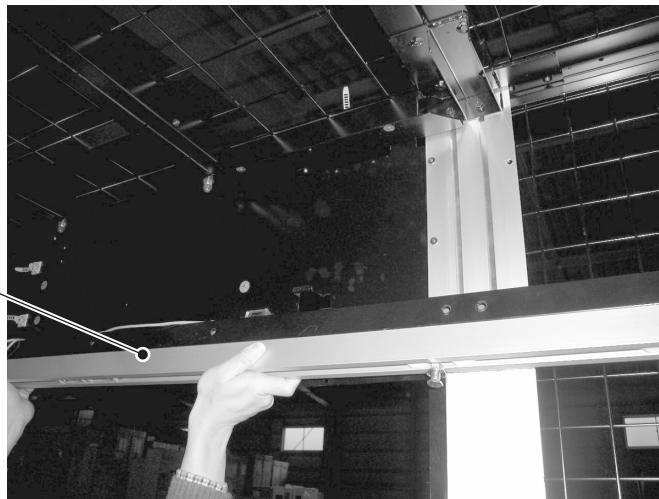


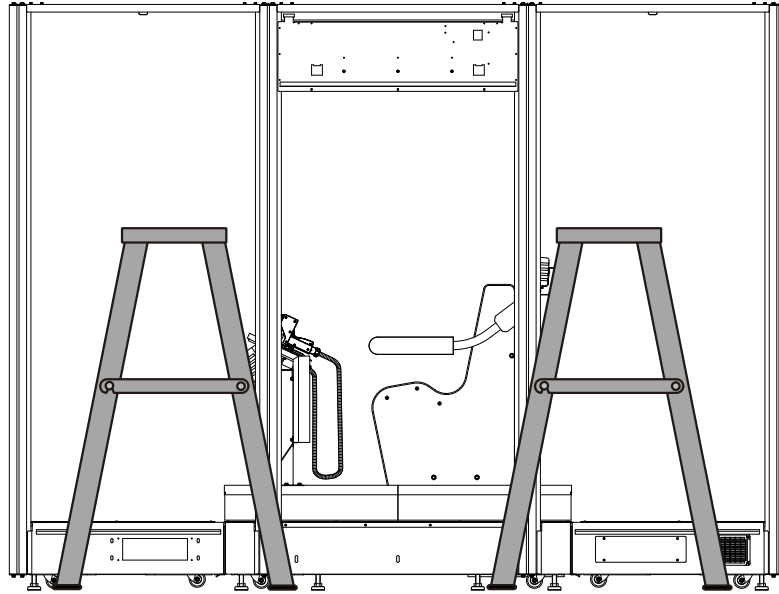
PHOTO 6-9a

HEXAGON BOLT (7)  
M6×55, w/flat & spring washers



PHOTO 6-9b

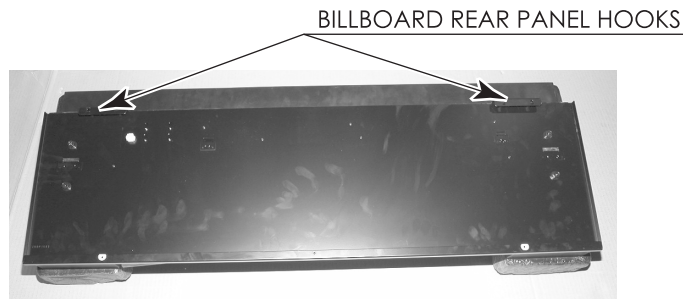
- 2** Place two stepladders at the door side (side of pillars E and F) of the base.



**FIG. 6-9a** Positions of two stepladders

- 3** Install the billboard (guillotine).

- a** There are two hooks on the rear panel of the billboard. Hitch rear panel hooks to the upper edge of the door base between pillars E and F.



**PHOTO 6-9c**



**PHOTO 6-9d**





PHOTO 6-9e



PHOTO 6-9f

**b** Fasten from inside with 7 screws.

SCREW (7), black  
M4x8, w/flat & spring washers

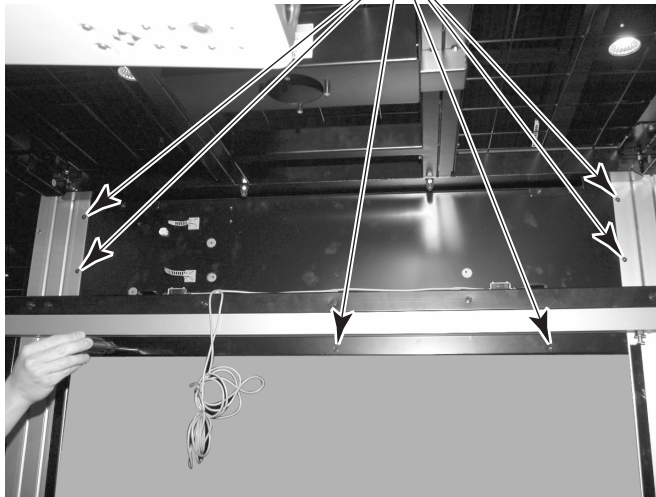


PHOTO 6-9g

- 4** Remove the wire cover of projector base near the rear door side. Remove 2 screws.

SCREW (2), black  
M4×8, w/flat & spring washers



PHOTO 6-9h

- 5** Pull out wire in projector base and lay it out. Connect the connector with “RIGHT” tag attached to the left side sensor connector as viewed from inside. Connect the connector with “LEFT” tag attached to the right side sensor connector.

2 CONNECTORS  
SM3P CONNECTOR (2)

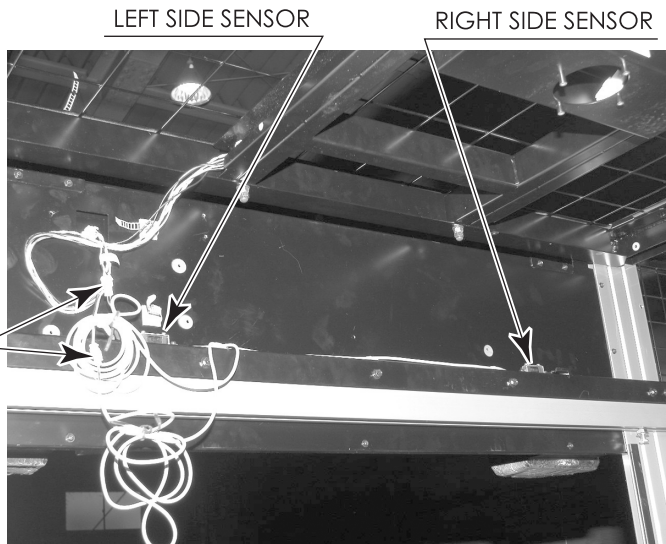
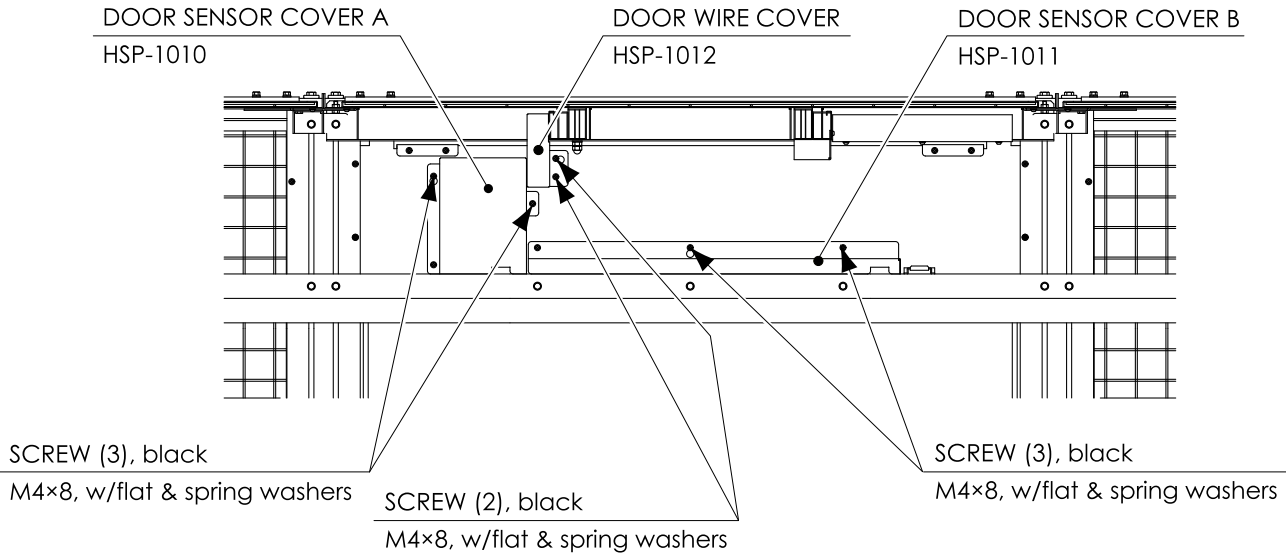


PHOTO 6-9i

- 6** With cord clamp, bundle wire together and fasten it.

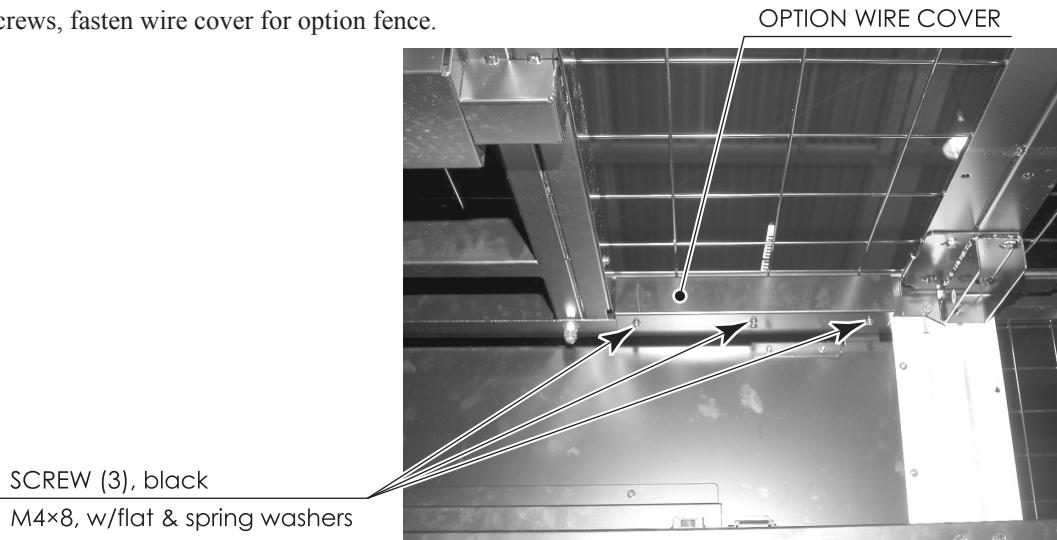
- 7** Restore wire cover to its original position at projector base. Fasten cover with 2 screws.

**8** Attach door sensor covers A and B and door wire cover. Hide the wire but make sure it does not get caught in anything.



**FIG. 6-9b**

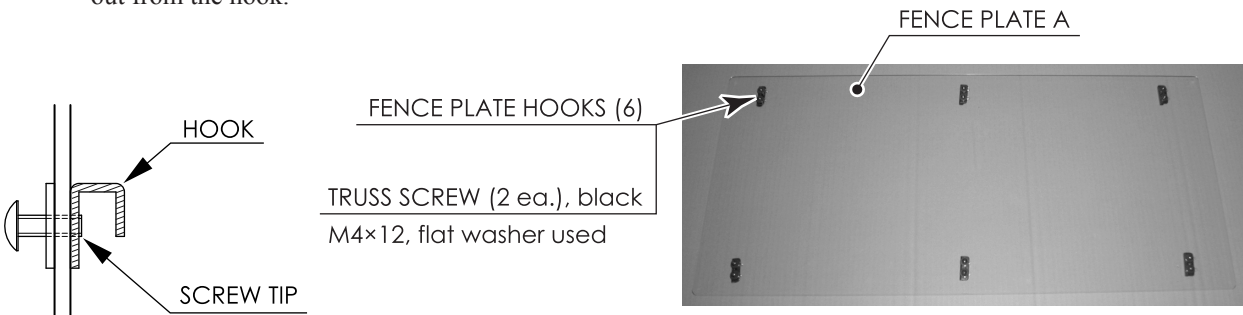
**9** With 3 screws, fasten wire cover for option fence.



**PHOTO 6-9j**

**10** Provisionally attach fence plate hook to fence plates A (4 small plates) and B (1 large plate). For fence plate A, 6 fence plate hooks are used; for fence plate B, 9 hooks are used.

Secure with 2 truss screws, and use a flat washer with each. Tighten each screw until its tip is almost coming out from the hook.



**FIG. 6-9c**

**PHOTO 6-9k**

**11** Hitch fence plates to each of the positions shown in the figure and tighten all screws.

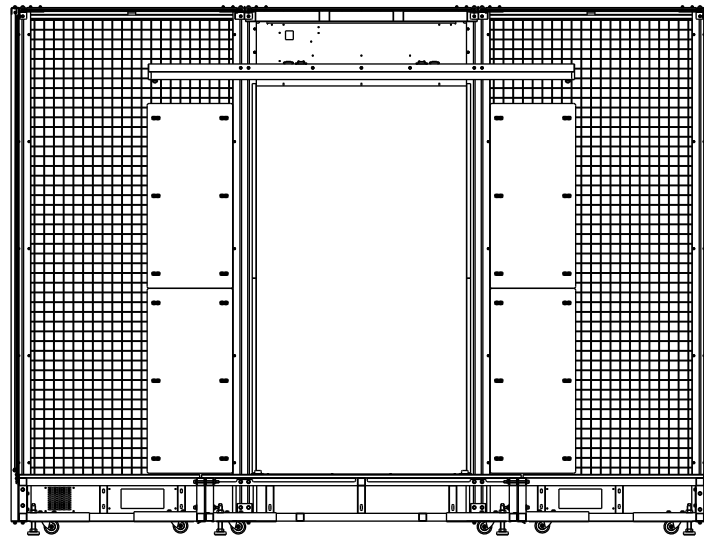
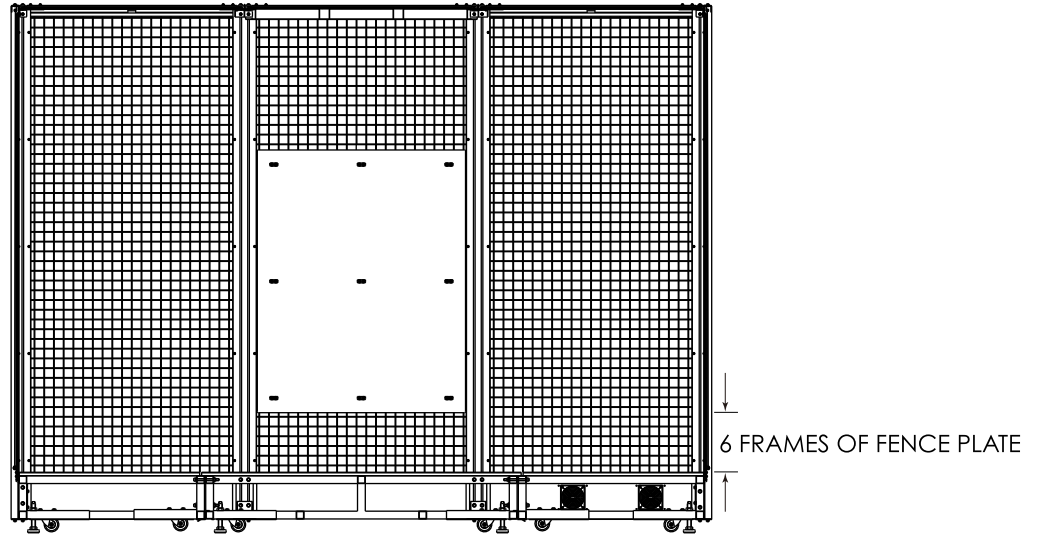


FIG. 6-9d



PHOTO 6-9i

## 10 CURTAIN INSTALLATION

Attach 1 curtain center sheet, 2 left sheets, 2 right sheets and 4 screen back sheets.

Installation positions are: center sheet is between pillars C and D, left sheets are between pillars A and C and between A and E, right sheets are between A and D and between A and F, screen back sheets are on the outside of the front and rear screens.

There is a print of a zombie on each side of the curtain, and on both sides the screen back is black. The red printed surface of the curtain is attached to the outside. The screen back is attached so that the surface with flame prevention mark is at the outside.

Determine the top and bottom orientation of the curtain from the print. The flame prevention mark on the screen back is at the lower side. At both ends of the cylindrical part at the lower side there are screw holes.

- 1 Pass the hook bar (aluminum rod) through the cylindrical part of the curtain upper side. Insert the slightly longer bar only into the curtain center (shortest curtain).



PHOTO 6-10a

- 2 Loosen bolts holding down the upper beam on one side. Do not remove the bolts completely. Loosen them so that about 5mm of the threaded portion can be seen.



PHOTO 6-10b

- 3 Hitch the hook bar tip to the hook in the upper beam on the side where bolts have not been loosened. Pay special attention to the curtain front and rear. If hitching is difficult, also loosen the bolts on the side where bolts have not yet been loosened.

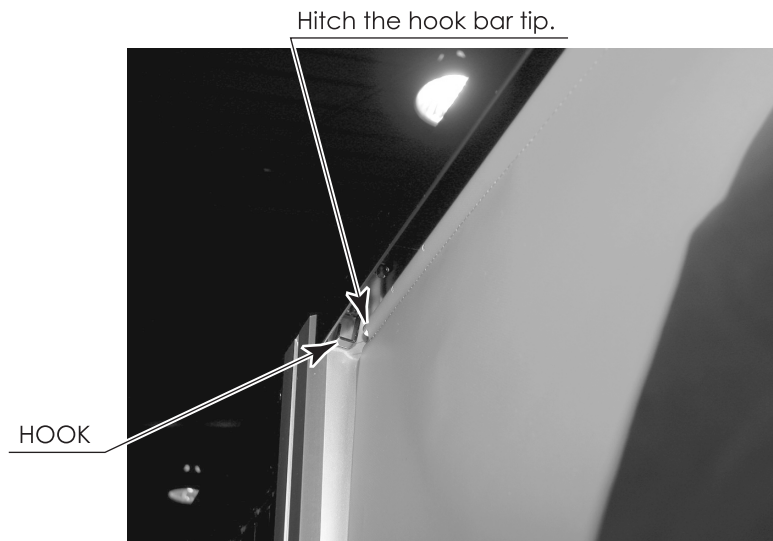


PHOTO 6-10c

- 4 Hitch the other tip of the hook bar from below the hook on the opposite side.
- 5 Confirm that the tips of the hook bar are hitched securely in the hooks, and then tighten the loosened bolts that fasten the upper beam.
- 6 Insert curtain weights (aluminum rectangular rods) in the cylindrical parts at the lower side of curtain and screen back. The lower sides of the right and left curtains are inclined and will fall if not supported.

- One rod of intermediate length: for center HSP-1614
- 4 long rods: for left and right HSP-1615
- 4 short rods: for screen back HSP-1616

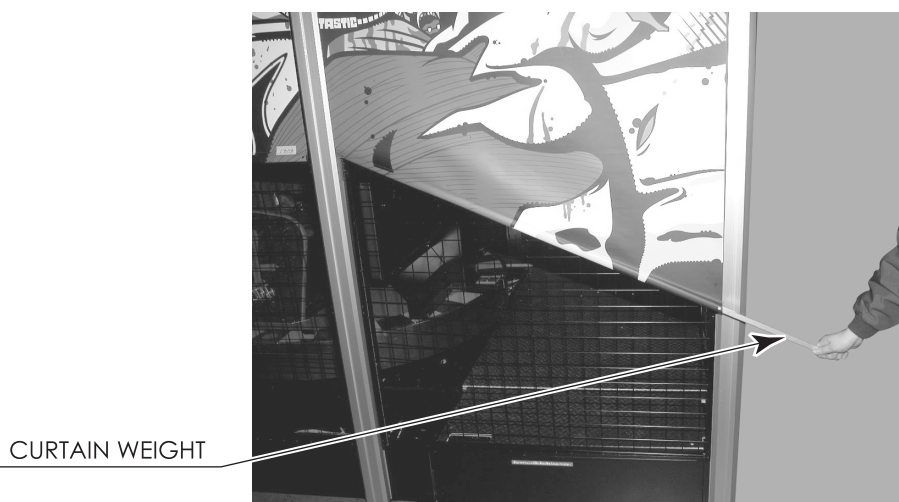


PHOTO 6-10d

- 7** Attach curtain bracket to curtain rear and to both ends of the curtain weight. Provisionally fasten with one truss screw each. Pass truss screws through the hole of the cylindrical part of the curtain and the hole at both ends of the curtain weight. Then tighten screws to fasten curtain bracket. Use flat washers with truss screws.

TRUSS SCREW (1 ea.), black  
M4×14, flat washer used

CURTAIN BRACKET  
HSP-1603

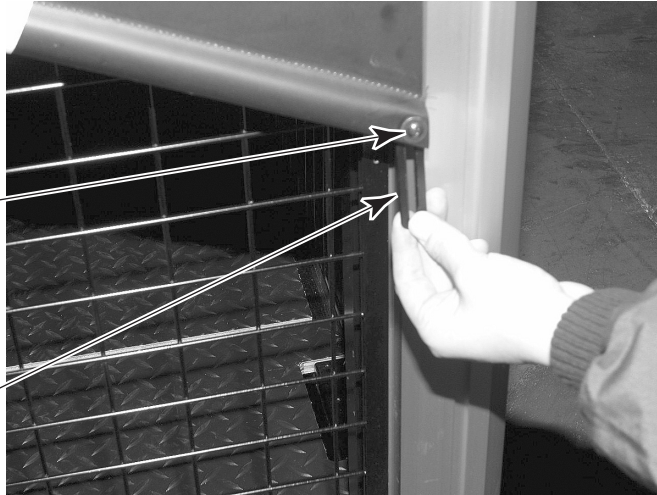


PHOTO 6-10e

- 8** Fasten the curtain bracket to side fence frame using 2 screws each. In fastening the curtain bracket attached to both ends of the curtain weight, the curtain becomes fastened. Pass screws through the slots of the curtain bracket, adjust the curtain as much as possible so it will not slacken, and then tighten screws. At the same time, tighten the truss screws of the curtain bracket that had been tightened provisionally.

SCREW (2 ea.), black  
M4×8, w/flat & spring washers

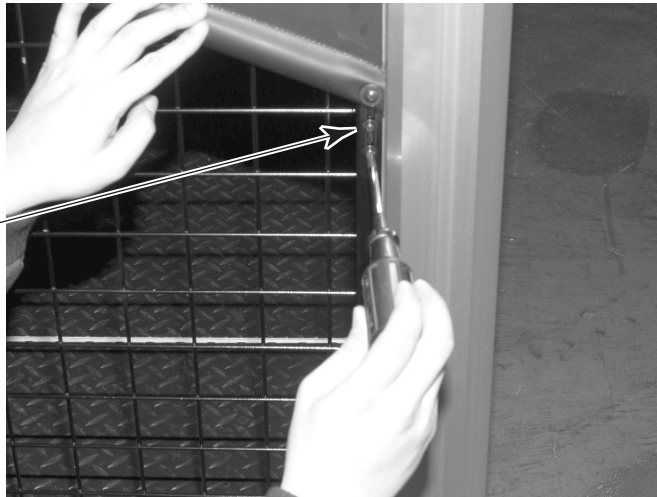


PHOTO 6-10f

## 11 DOOR INSTALLATION

Two doors are attached. The positions of the handles of the two doors are different. Attach doors being careful to observe the following.

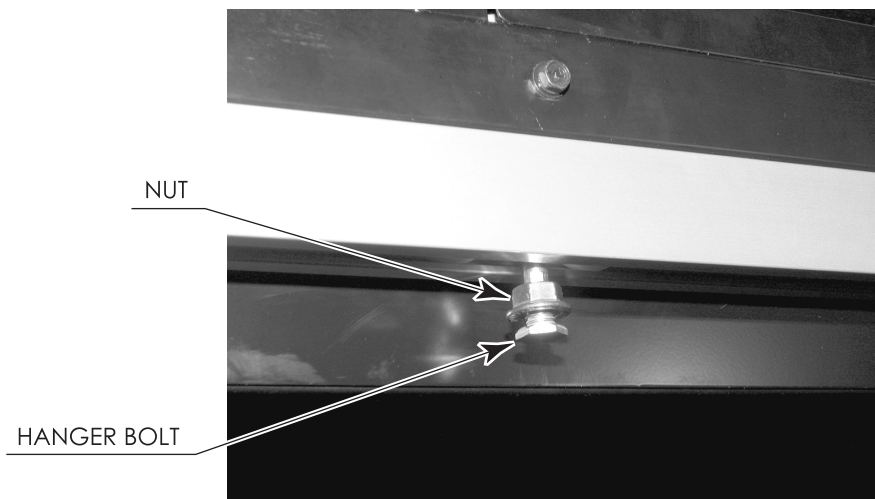
- The door handle is on the side of the door that matches with the surrounding wall when the door is shut.
- The printed surface is on the outside and the black surface is on the inside.
- The surface with a grooved end is at the bottom and the surface with a hanger bracket is at the top.

- 1 On the side of the base where door is attached, there is a door guide near pillars E and F. Fit door groove into this door guide.



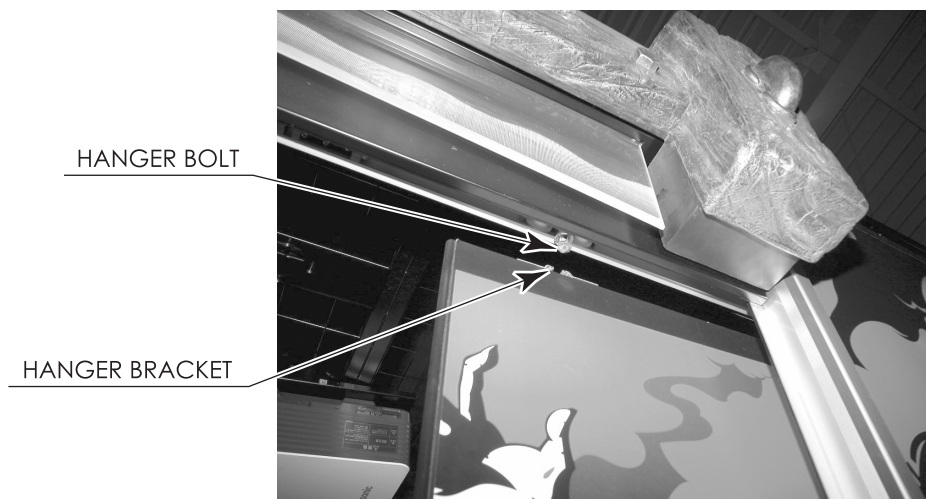
PHOTO 6-11a

- 2 There are 4 hanger bolts in the door rail at the bottom surface of the door frame. Loosen the hanger bolts nuts adequately.





- 3** Hitch the hanger bracket at the top of the door to the hanger bolts. If the task is difficult, adjust the positions of the hanger bolt nuts.

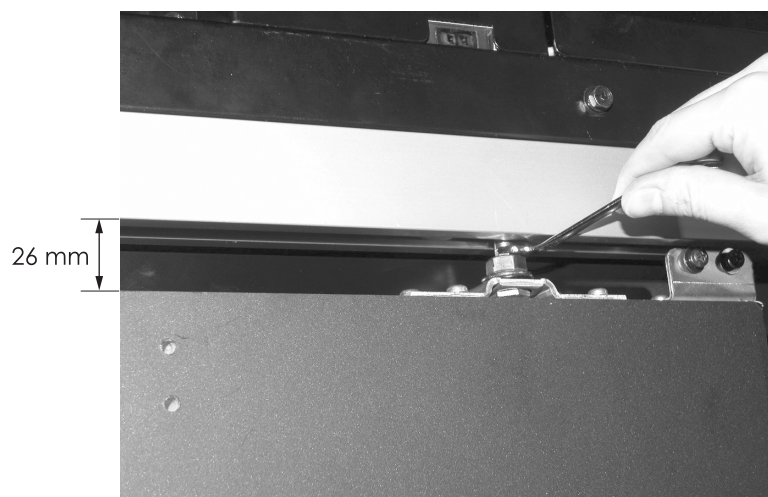


**PHOTO 6-11c**



**PHOTO 6-11d**

- 4** Turn and adjust hanger bolts so that the gap between door frame and door upper end is 26 mm at both the left and right sides. Use a spanner measuring 7 mm to opposite side.



**PHOTO 6-11e**

After checking adjustments, tighten nuts downward to fasten.



PHOTO 6-11f

- 
- 5** Make sure that there are no gaps when the two doors are attached and aligned. If there is a gap, adjust the hanger bolts with the two doors shut together.

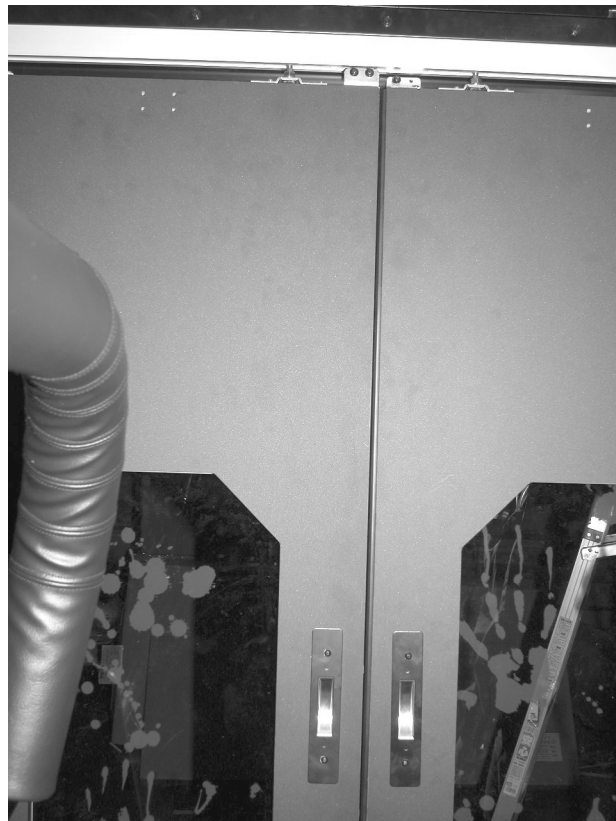
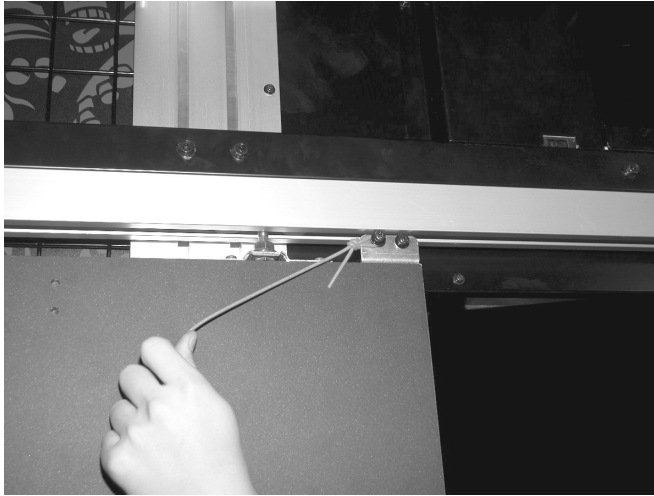


PHOTO 6-11g

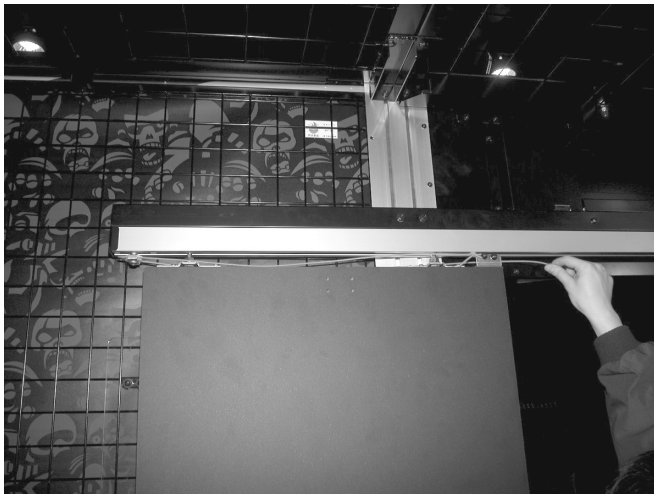
- 
- 6** Provisionally attach the end where there is synchro rope loop to the synchro bracket on the side facing you. Provisionally attach to the bracket screw at the door upper right on the left side as viewed from the base interior. Loosen one screw on the left side of the bracket, apply rope loop and lightly tighten screws.



**PHOTO 6-11h**

- 
- 7** Open door fully. Keep door fully opened until the loop is fastened.

- 
- 8** Pass the synchro rope from the base interior to exterior and pass it through the rear of the synchro bracket to the pulley at the left end of the door rail as viewed from the base interior.



**PHOTO 6-11i**

- 9** Pass the synchro rope from the base exterior to interior and pass it through to the synchro bracket (interior side) of the door upper left on the right side to the pulley at the right end of the door rail as viewed from the base interior.

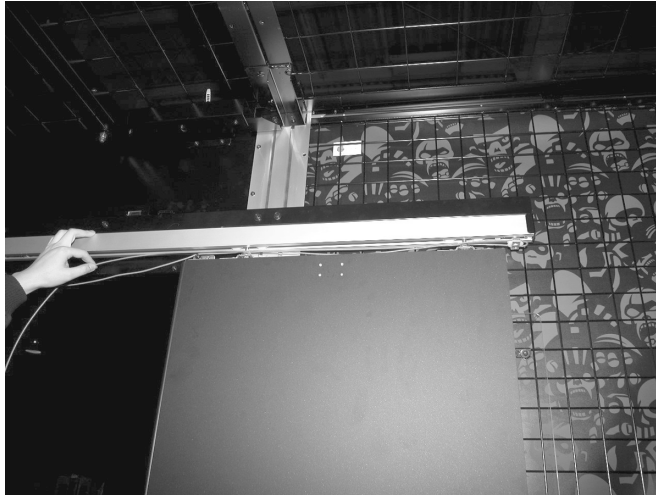


PHOTO 6-11j

- 10** Pull rope as much as possible so it will not slacken, then make a loop at the synchro bracket (interior side) screw and fasten lightly. Allow for the rope to be adaptable, since it will be fastened after making adjustments.



PHOTO 6-11k

- 11** Loosen the right side screw and the screw where loop was initially applied. Then pull firmly on the end of rope at the side where rope has not yet been fastened so that rope will not slacken. Turn the rope counterclockwise once around the screw on the right side.

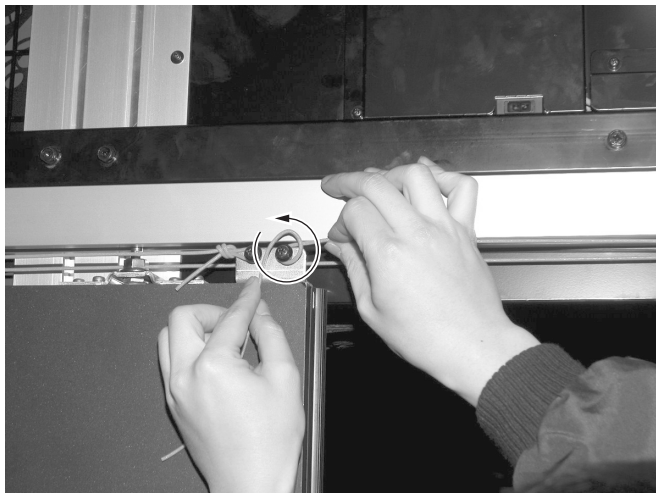


PHOTO 6-11l

---

**12** While pulling surplus rope firmly, tighten the right side screw.



PHOTO 6-11m

---

**13** Turn the rope clockwise once around the screw where loop was attached initially, and tighten screw.

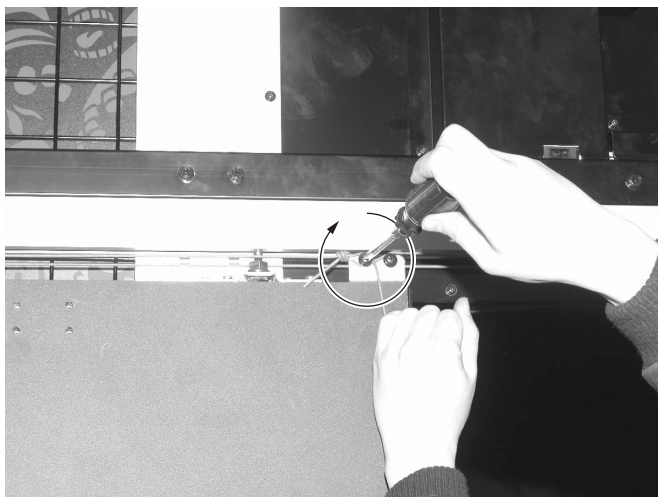


PHOTO 6-11n

---

**14** Tighten screws of synchro bracket (interior side).

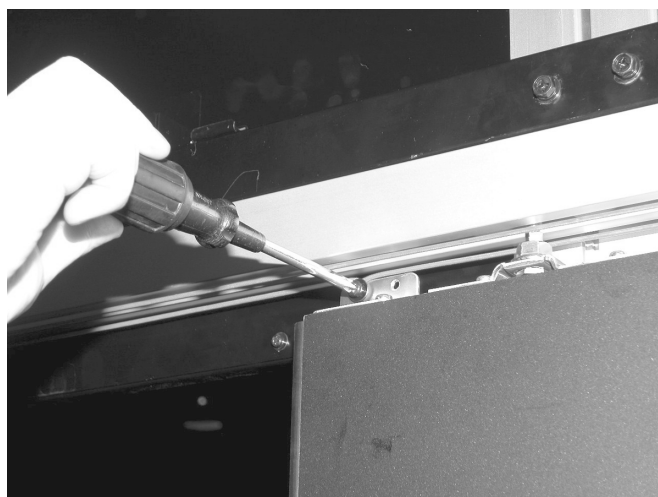


PHOTO 6-11o

**15** Move one door and confirm that the second door is linked and moves smoothly. If the synchro rope is too long, cut the excess off.

**16** Attach door bracket to two doors. Insert door bracket tip into door rail groove to attach it, then fasten each door with two truss screws.  
Use screw holes on side matching door.

DOOR BRACKET  
HSP-1405

TRUSS SCREW (2 ea.), black  
M4×25

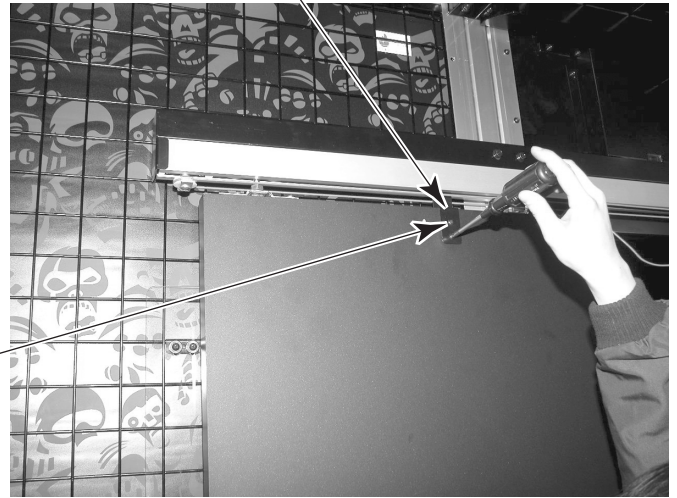


PHOTO 6-11p

**17** Attach reflector bracket to the two doors. Fasten each with two truss screws. Use the screw holes next to the screw holes for door bracket.

REFLECTOR BRACKET  
HSP-1406

TRUSS SCREW (2 ea.), black  
M4×25



PHOTO 6-11q



PHOTO 6-11r

**18** Remove handle from inner side of door. Remove two screws.

SCREW (2 ea.), black  
M4×25

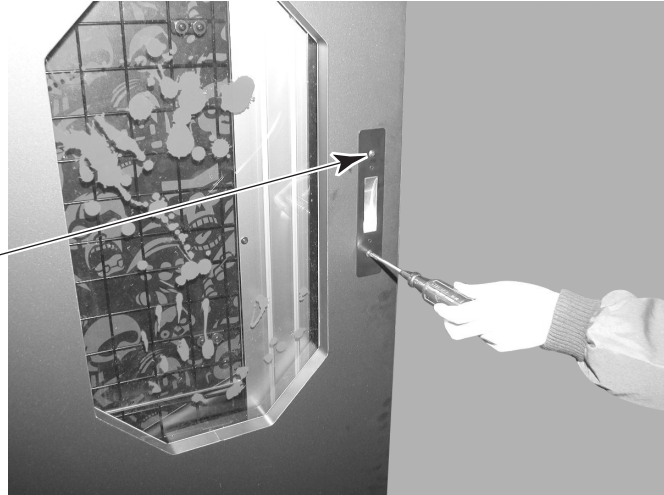


PHOTO 6-11s

**19** Attach handle on outer side of door. Fasten with two hexagon bolts. Use flat washer with hexagon bolts that have spring washer attached.

HEXAGON BOLT (2 ea.)  
M8×40, w/spring washer, flat washer used



PHOTO 6-11t



PHOTO 6-11u

**20** Restore the handle that was removed to its original position. Fasten with two screws. Attach handle to the door on the opposite side in the same manner.



**PHOTO 6-11v**



## 12 TRANSFER TO INSTALLATION SITE AND ANCHORAGE

### **⚠ WARNING**

- Do not move unit with the adjusters in contact with the floor. Otherwise parts might be damaged or deformed and there might be accidents.
- After the floorboard has been removed, be careful not to stand on the rectangular pipe of the base. If your foot slipped on this pipe, causing you to fall, you could hit your head against something or suffer other serious injury.
- Check surroundings carefully while moving the unit. If you should get caught between the unit and a wall, for instance, there could be a serious accident.
- Always secure the unit to the installation site by having the adjusters contact the floor. If the unit is moved while it is being assembled or while it is being operated after completion of assembly, there could be a very serious accident.

### **⚠ CAUTION**

Hold pillar and base parts made of metal plate and push to move unit. Do not hold or push the side fence while moving the unit. Otherwise there could be accidents resulting in injury. There could also be deviations in parts' positions, or damage and deformation to parts.

### **STOP IMPORTANT**

If the unit is moved over floor surfaces where there is carpet, decorative panel, etc., there might be friction or soiling.

- 1 The adjusters put in contact with the floor provisionally are pulled up, and casters are brought into contact with the floor. Adjusters can also be pulled up from inside the base after removing floorboard. (See [1](#) -9.)

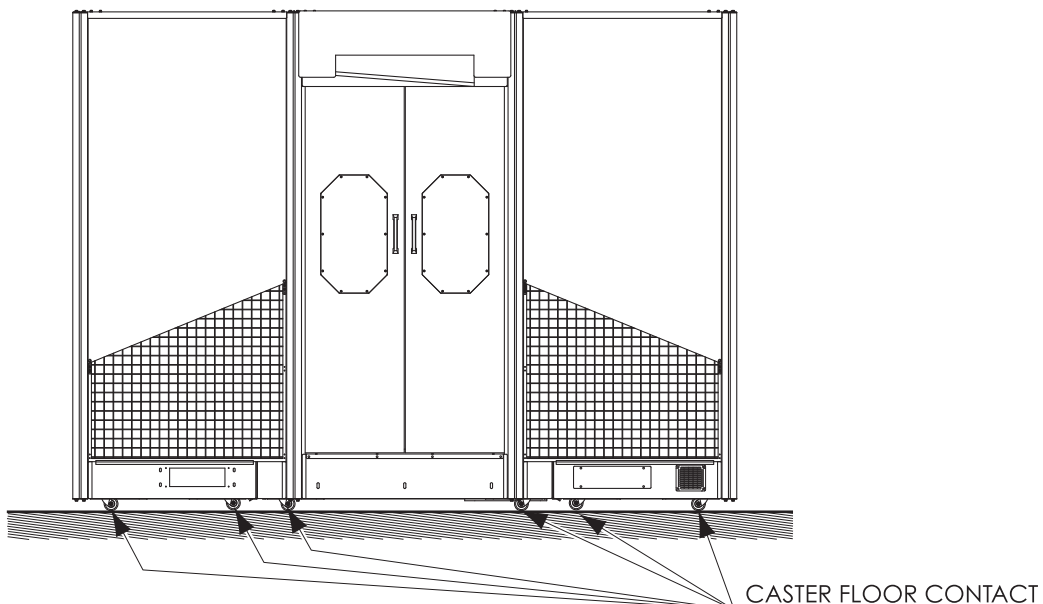


FIG. 6-12a

**2** Hold pillar and base parts made of metal plate and push to move unit.

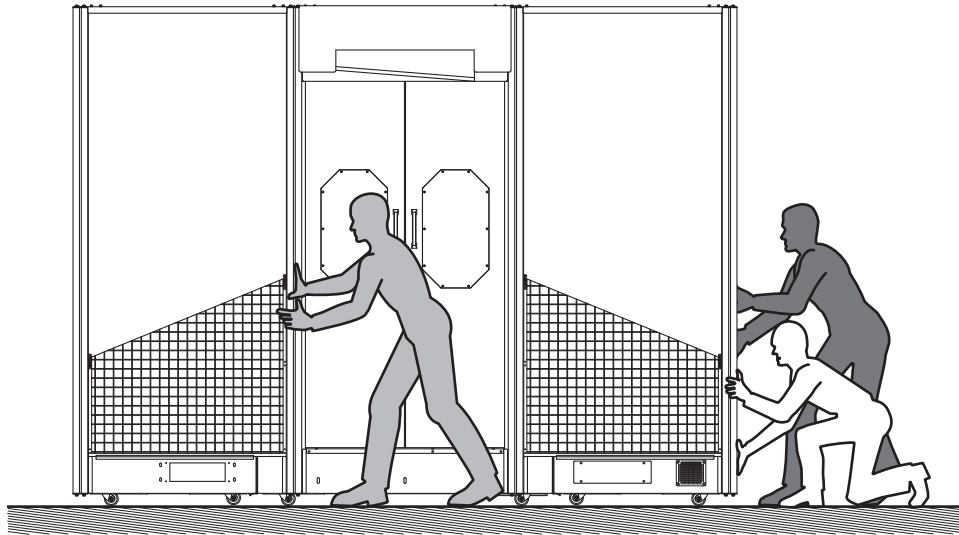


FIG. 6-12b

**3** After moving unit to the installation site, confirm that the width of the customer passageway is at least 1.2 m and that air ventilation space is at least 15 cm. Attach control tower to base. If option fence is to be attached, secure even wider space.

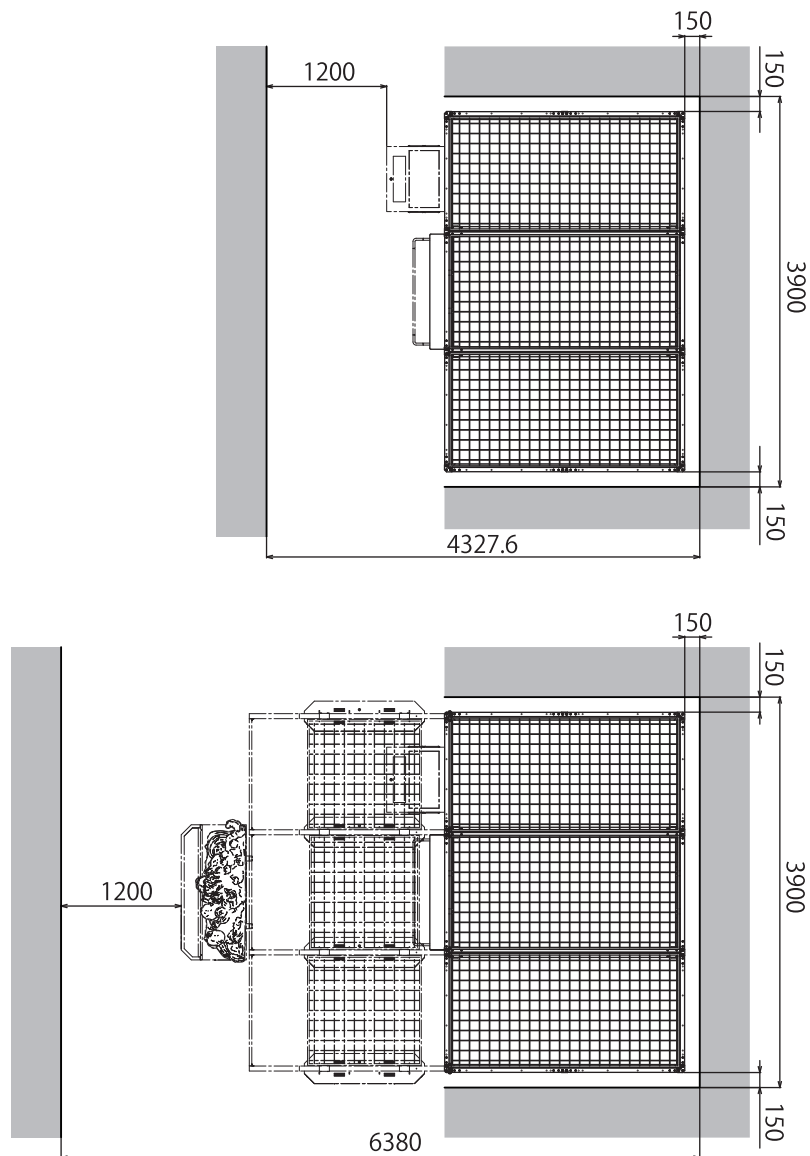


FIG. 6-12c

- 4** Bring all ten adjusters into contact with the floor. However, do not bring the two adjusters near the ride at the base center into floor contact until the very end.

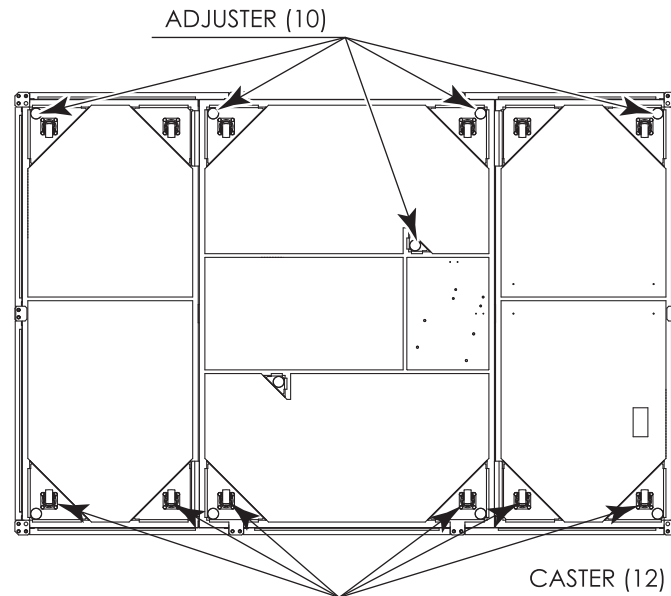


FIG. 6-12d

- 5** Adjust the adjuster heights. Leave a gap between caster and floor of 5 mm. Adjust heights from inside the base. Have two people do the job: one adjusting from inside the cabinet and another directing adjustments from the outside. After adjusting, tighten adjuster axial nuts downward to hold the adjuster at the fixed height.

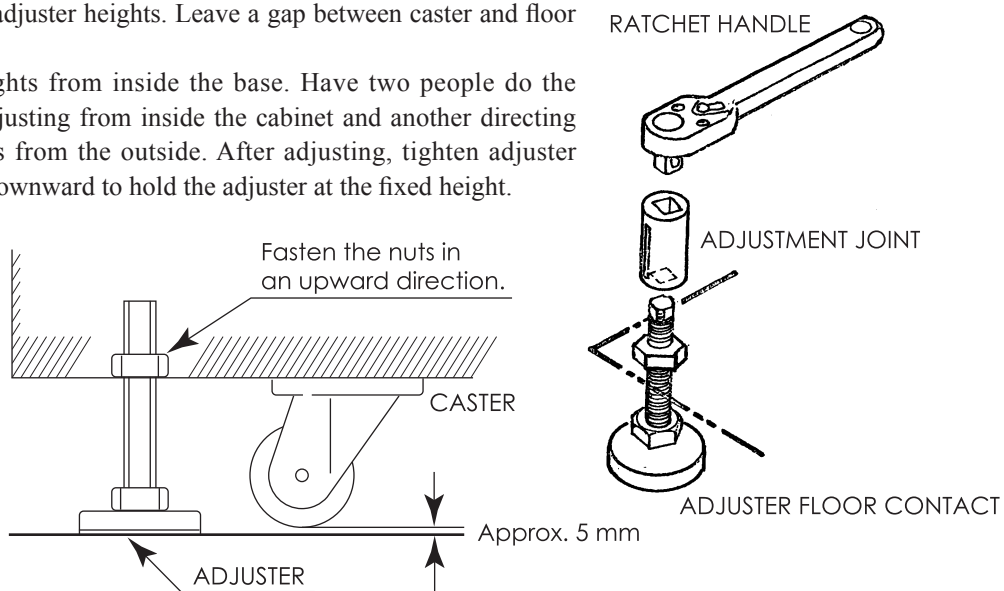


FIG. 6-12e

- 6** Remove floorboard and have the two adjusters near the ride at the base center contact the floor. After the adjusters make contact, turn them by about one rotation, being careful that they do not go downward too far.

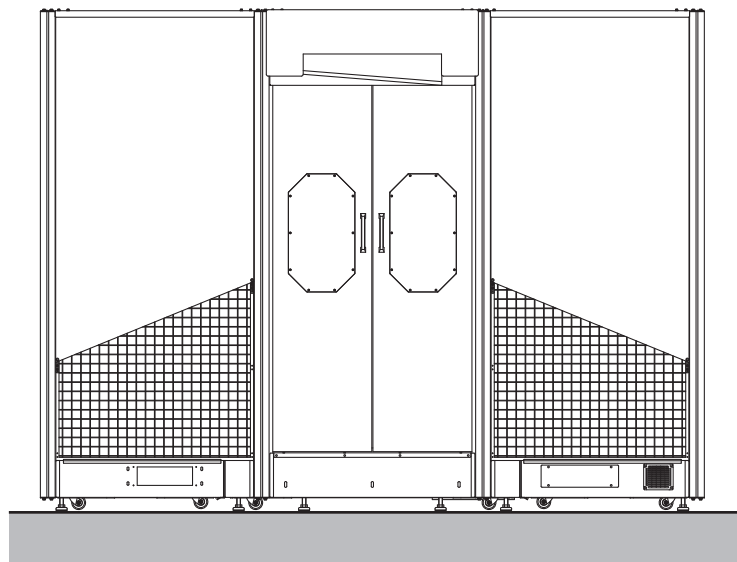


FIG. 6-12f

13 SENSOR BRACKET INSTALLATION

**WARNING**

- The foot sensor is a vital part for preventing accidents. Be sure to always attach it as indicated in these instructions. If the unit is operated without foot sensor attached properly, players could suffer serious accidents.
- After the floorboard has been removed, be careful not to stand on the rectangular pipe of the base. If your foot slipped on this pipe, causing you to fall, you could hit your head against something or suffer other serious injury.
- Be careful not to step on wiring inside the base. If this wiring is damaged, there could be an accidental short circuit or electric shock.

**CAUTION**

While removing floorboard, be careful that your hands or fingers do not get caught in anything.

Set sensor bracket upright and fasten it in the position shown in the illustration.

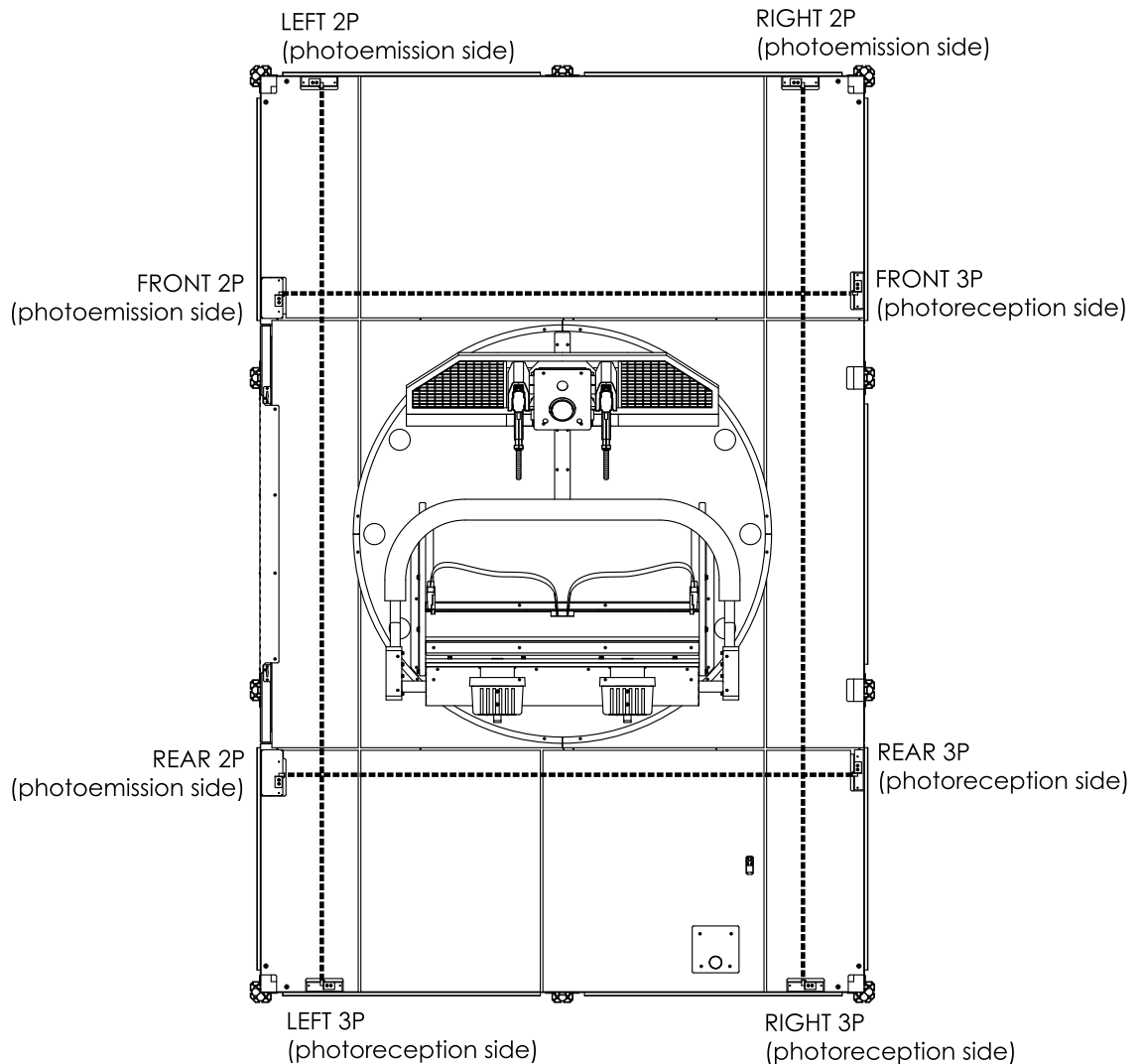


FIG. 6-13

---

**1** Remove floorboard, but do so only as necessary.

---

**2** Inside the base is a sensor bracket. Set the sensor bracket upright on the base and fasten it with two screws.

SCREW (2 ea.), black  
M4×8, w/flat & spring washers



**PHOTO 6-13**

---

**3** Use cord clamp to secure wire inside base.

**14** STEP INSTALLATION

**⚠ CAUTION**

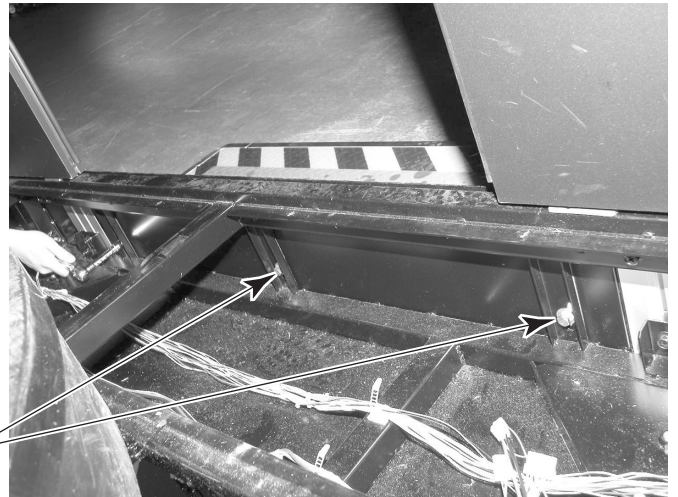
- Do not allow one person alone to carry the step. They could suffer injury to arms or back. Always use two people.
- Align step with base. In aligning bolt hole positions, be careful not to get hands or fingers caught in anything.

Attach step at bottom of door (entrance). The floorboard is removed at this time. Be careful that you do not stumble or fall while moving the unit inside the base.

**1** Set step at bottom of door and secure it firmly to base.

**2** Fasten with 3 hexagon bolts from the base interior. Use flat washers with bolts that have spring washers attached.

HEXAGON BOLT (3)  
M8×25, w/spring washer, flat washer used



**PHOTO 6-14a**

**3** Lay out floorboard.



**PHOTO 6-14b**

## 15 CONTROL TOWER INSTALLATION

### **CAUTION**

- Do not allow one person alone to haul the control tower. Otherwise there could be injury to arm or back, etc. Always have two people haul the control tower.
- Align control tower with base and align bolt hole positions. Have this job performed by a total of three people: two to move the control tower and one to observe hole positions from inside the base. Use of fewer people could lead to accidents and make the task very difficult.
- In aligning control tower with base and in aligning bolt hole positions, be careful that your hands or fingers don't get caught in anything.
- Be sure to always screw down earth wires and establish secure grounding. If grounding is neglected, there could be an electric shock or short circuit. There could also be malfunction and/or poor operation and parts damage.

### **STOP IMPORTANT**

Always use spring washer and flat washer with screw for holding down earth wire.

Facing the entrance (door), you can attach the control tower at either left or right. If there is a base lid on one side, remove it and attach it at the opposite side.

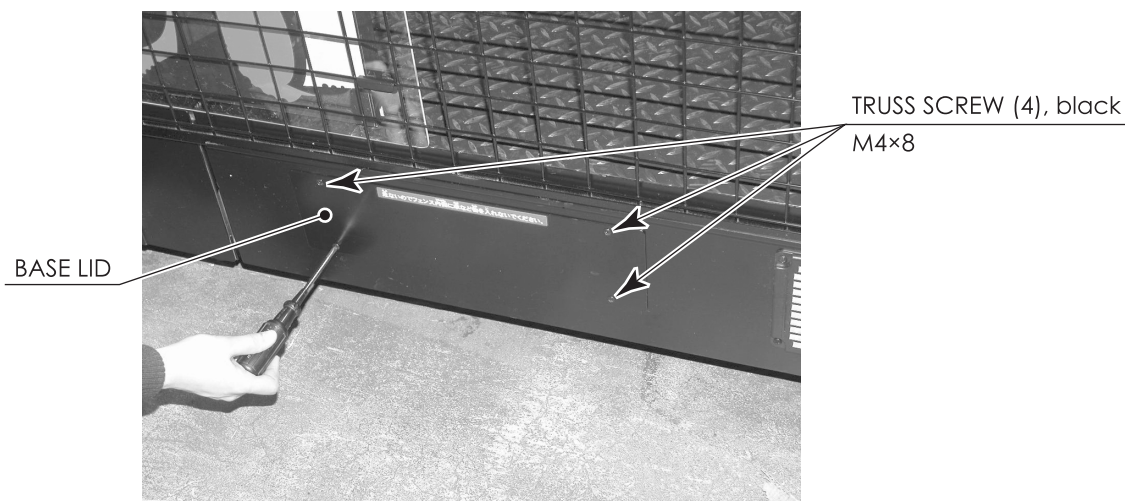


PHOTO 6-15a

When this product is shipped from the factory, a drain tube is inserted for drain piping. This is at the left side door as viewed when facing the control tower. If you install the control tower at the right side of the entrance, change the piping inside the tower so that draining will occur from the right side.

## How to Change Piping

To have draining occur from the right side door, remove the air tube inserted at the left side door and insert it into the air joint of the right side door.

- a** Remove side doors of control tower on both sides. Remove 8 truss screws from each door. There is a fan at the right side door. Be careful not to damage wiring.

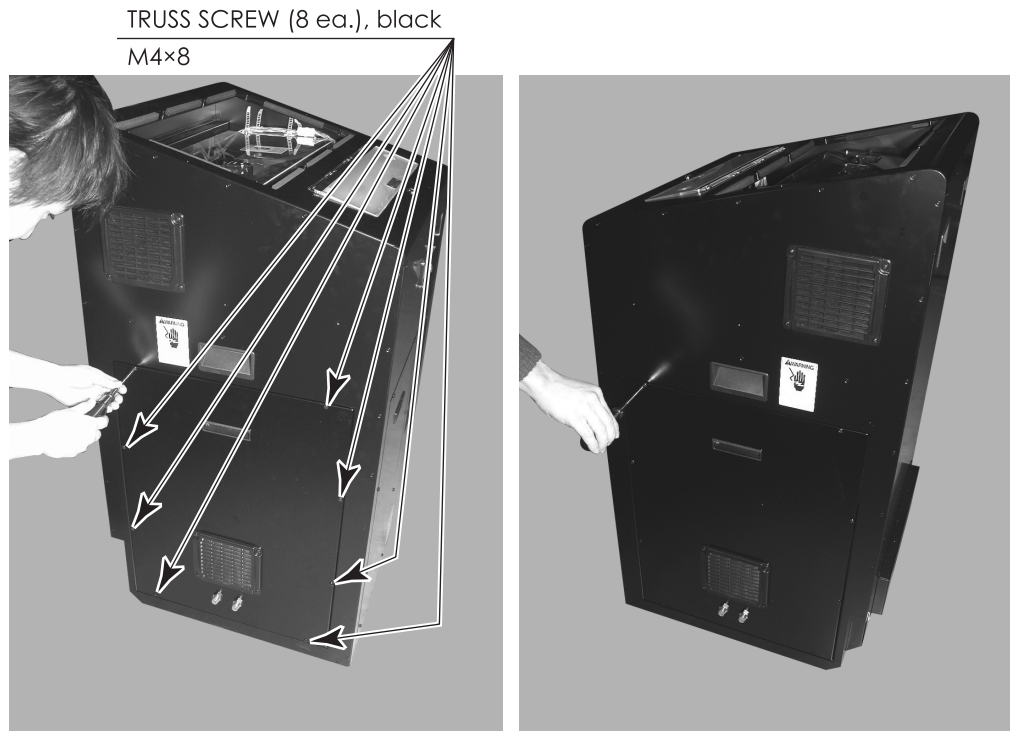


PHOTO 6-15b

- b** Remove tube from air joint at left side door. Pull tube while pressing down on the plastic part of the joint.

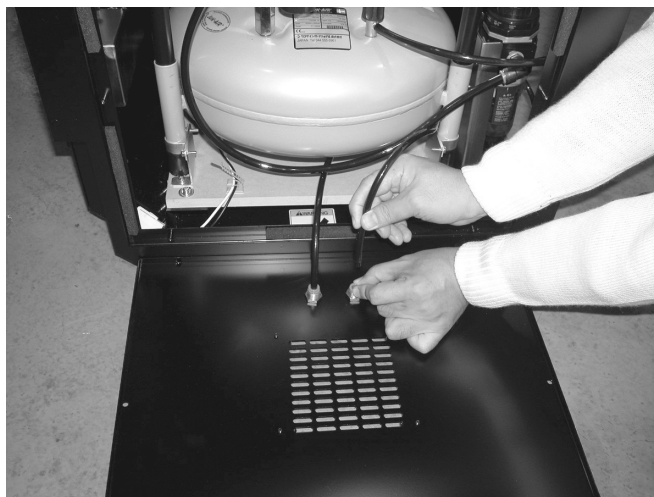


PHOTO 6-15c



- 
- c** Insert tube into air joint of right side door. Either the right or left side of the tube can be inserted.

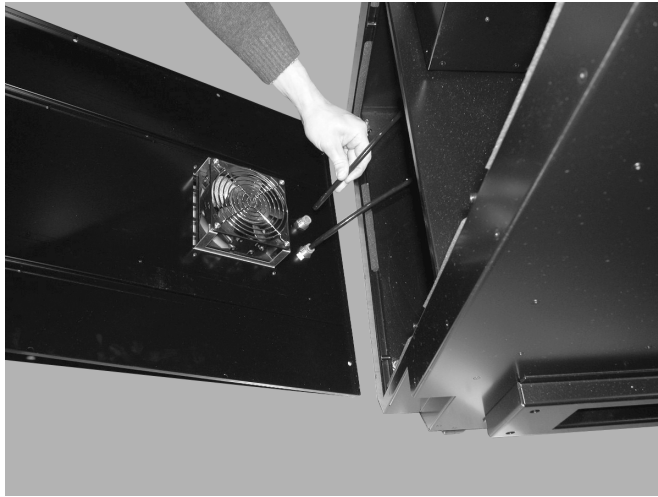


PHOTO 6-15d

- 
- d** Attach both side doors.

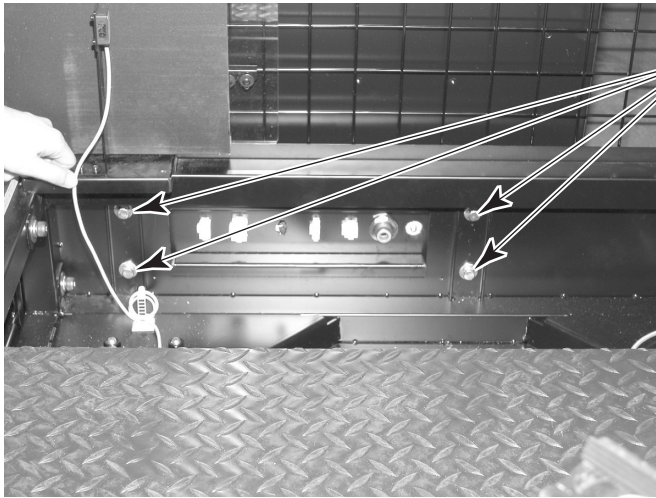
- 
- 1** Haul control tower and place it where it will be attached.



PHOTO 6-15e

- 
- 2** Align the bolt holes on the control tower rear panel with the base rectangular pipe holes. Have three people perform this task: two people to move the control tower and one to observe hole positions from inside the base.

- Secure control tower with 4 hexagon bolts. Use flat washers with bolts that have spring washers attached.



HEXAGON BOLT (4)  
M8×25, w/spring washer, flat washer used

PHOTO 6-15f

- Connect the 4 wire connectors inside the base to the connectors on the control tower rear panel.
- With 1 screw, fasten the round terminal of the earth wire inside the base to the control tower rear panel. Always use flat and spring washers with the screw. If there is no earth wire, move to the control tower attachment side.
- Insert air tube of inside base into the air joint on the control tower rear panel.

CONNECTOR (4)  
YL8P, YL15P, VL3P, VL4P

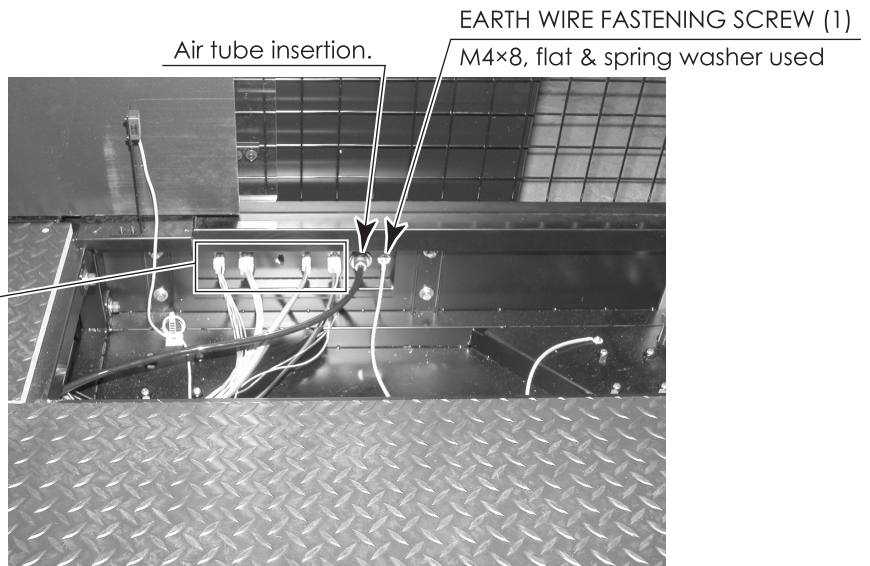


PHOTO 6-15g

## 16 PREPARATION FOR SOFTWARE INSTALLATION

### **! WARNING**

- When connecting DVD wire connectors, check orientation carefully and connect securely. The direction for connecting connectors is predetermined. If connection is made in the wrong direction, or if a careless attempt is made to connect with an incline, connectors and/or terminal fixtures, etc., can be damaged when loads are applied and there could be an accident such as a short circuit or fire.
- Be careful that the DVD wire does not become damaged by getting caught in something, for instance. Otherwise there could be an accident such as a short circuit or fire.

If work is performed incorrectly after the power has been connected, operations could lead to accidents. Attach 2 halogen lamps and prepare for installing software. There are 3 halogen lamps in the package upon shipment. The extra lamp serves as a spare.

Make available the master key, which comes as an accessory, and the DVD DRIVE.

- 1 On the projector base, there are lamp sockets to the right and left of the projector. Attach halogen lamps to these sockets. Be careful at this time not to touch any glass on the front of lamp. There is danger that oil from your finger will be burnt, resulting in damage.

HALOGEN LAMP



PHOTO 6-16a

**2** Attach lamp cover plate. Fasten with 4 truss screws.

TRUSS SCREW (4), chrome  
M4×8

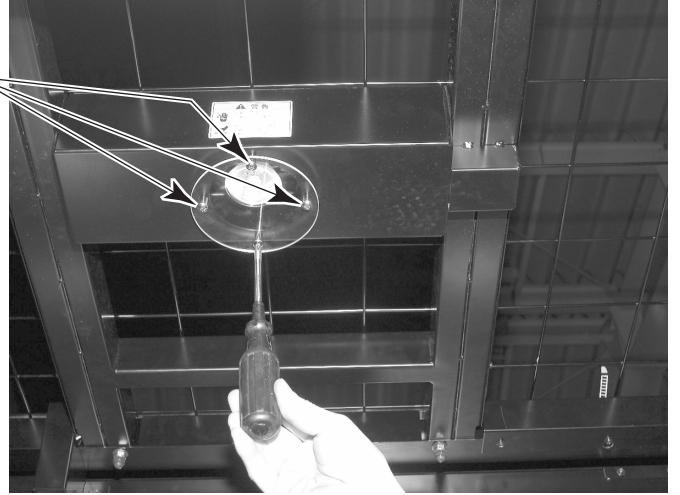


PHOTO 6-16b

**3** Remove the DVD lid of the MAIN BD floorboard at the rear base. Remove 4 truss screws.

TRUSS SCREW (4), black  
M4×20

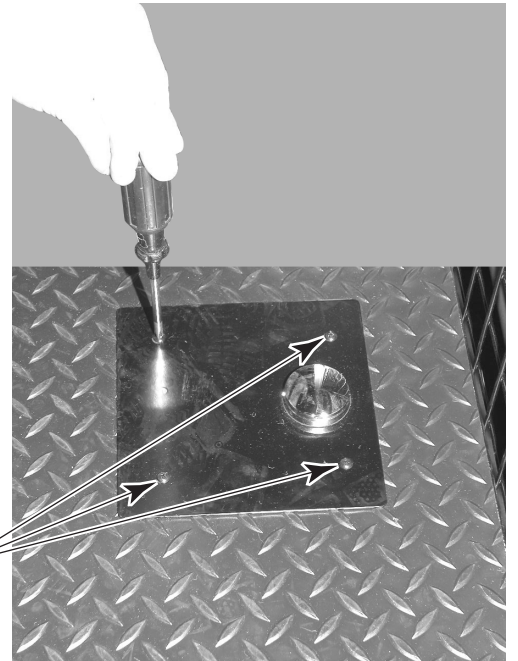


PHOTO 6-16c

**4** Use the master key to unlock the DVD lid, and then remove it.

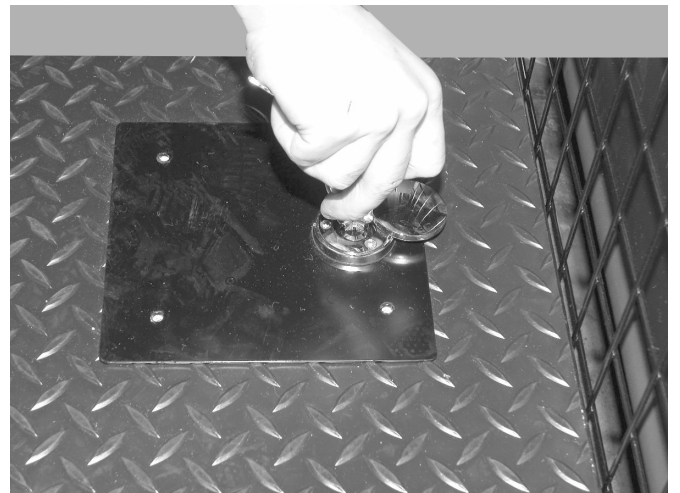
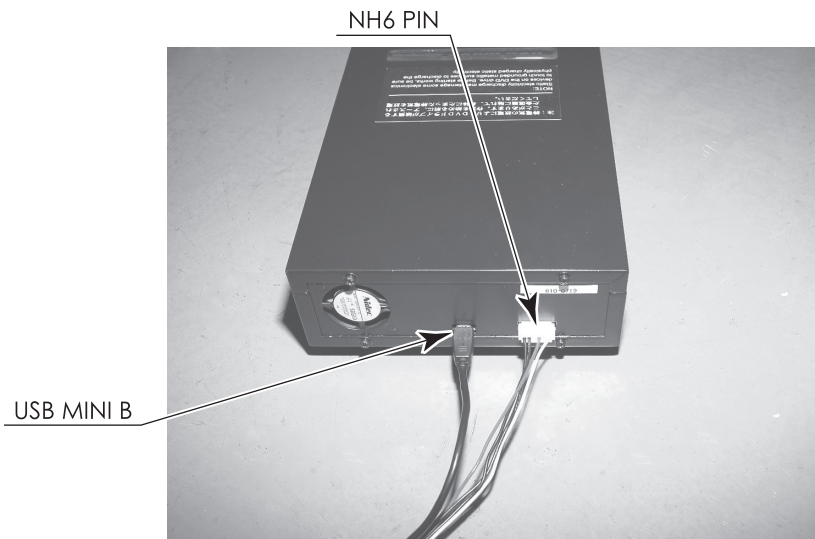


PHOTO 6-16d

**5** When the DVD lid is removed, you can see DVD wire inside. Pull out this wire and connect it to the DVD DRIVE.



**PHOTO 6-16e**



**PHOTO 6-16f**

**⚠ WARNING**

- The work must only be carried out by personnel with electrical appliance knowledge. Shocks and other serious accidents may result if the work is carried out by unqualified individuals. If personnel are not available, be sure to contact the point-of-purchase for this product or the office listed in this manual, and request that
- Use a power supply with an earth leakage breaker. If a power supply without such breaker is used, there could be a fire whenever leakage is produced.
- Prepare a securely grounded earth terminal and earth wire, and then ground the product appropriately. If the product is not grounded properly, there could be electric shock, damage to parts, and/or poor operation.
- Do not leave power cable or earth wire exposed. If left exposed, these wires could be easily damaged if, for example, customers should stumble on them. And if they are damaged, there could be an electric shock or short circuit. Either cover the wires or place them at locations where they will not interfere with customer passage.
- For safety, connect the power cable to the product first. If cable is connected to the power supply side first, there could be an electric shock or short circuit.
- Be sure to insert the drain tube and maintain conditions for drainage as necessary. If a drain tube is not used, drainage can flow down the side of the tower, resulting in electric shock, short circuit or water leakage.
- If a drainage container is used, make sure that the tube does not come out from the container. If the container is left with tube coming out, there could be electric shock, short circuit or water leakage.
- Do not leave the drain tube exposed. If left exposed, this tube could be easily damaged if, for example, customers should stumble on it. And if this tube is damaged, there could be electric shock, short circuit or leakage. Either cover the tube or place it at locations where it will not interfere with customer passage.

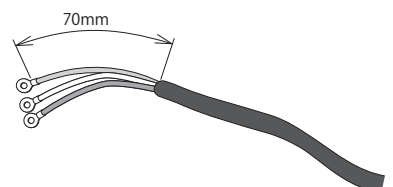
**STOP IMPORTANT**

Because the compressor compresses air continuously, moisture in the air collects at the same time, making it imperative to have water drainage. Drain drainage from the compressor directly into the sewage system.

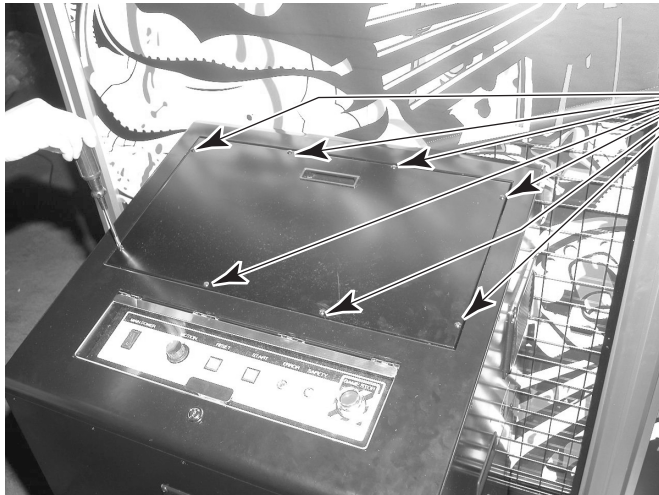
Secure power supply cable and earth wire terminal to the breaker inside the control tower, and connect power supply and earth.

In the photo shown, the control tower is installed at the left side of the door, but power cable and earth wire can be placed inside the tower from either the right or left side. Also, in the photo, earth wire coaxial cable is used, but the cable does not have to be coaxial if it satisfies the rating specified.

There should be a distance of 70 mm between round terminal and outer covering of the power cable.



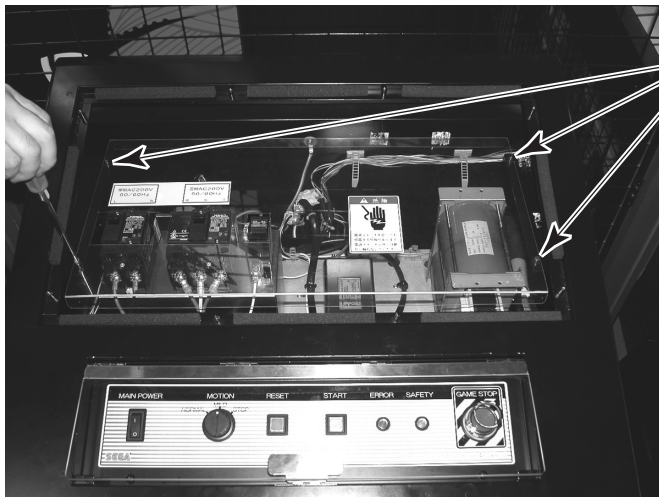
**1** Remove the tower lid top from the control tower. Remove 8 screws.



TRUSS SCREW (8), black  
M4×8

PHOTO 6-17a

**2** Remove breaker cover made of transparent vinyl chloride. Remove 4 screws.



SCREW (4)  
M4×8, w/flat & spring washers

PHOTO 6-17b

**3** Pass power cable from below the corner of the control tower rear panel side to the tower interior.



PHOTO 6-17c

In cases where the control tower is installed on the right side of the door, the power cable can be inserted from the corner on the opposite



PHOTO 6-17d

**4** Remove breaker screw and secure the terminal at the cable tip.

**5** Between two breakers there is an earth wire fastening screw. Remove screw, and then fasten the earth wire terminal of the coaxial, single phase power cable.

SINGLE PHASE POWER SUPPLY

EARTH WIRE FASTENING SCREW (1)  
M4×8, flat & spring washers used

TRIPLE PHASE POWER SUPPLY

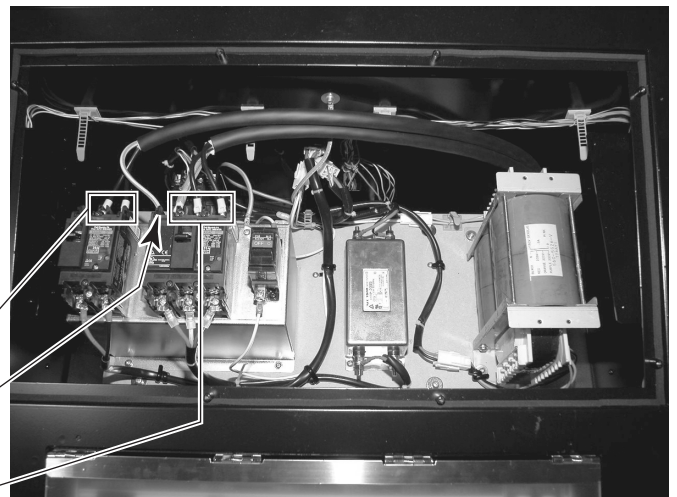


PHOTO 6-17e

**6** Use cord clamp, which comes as an accessory, to fasten perimeter (sheath) of power cable separately. Fasten the earth wire along with the single phase power supply cable. Attach cord clamp to inside of control tower and fasten power cable. Be sure to attach to the correct place, or else you may become unable to install the breaker cover.

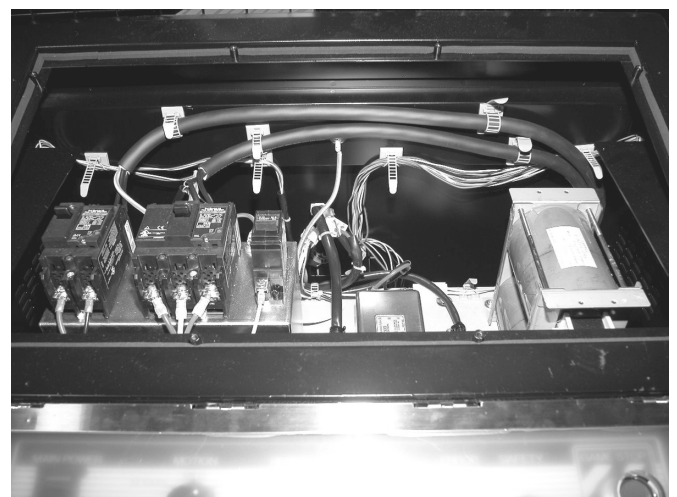


PHOTO 6-17f



**7** Attach breaker cover. Secure with 4 screws.

**8** Turn three breakers to ON.

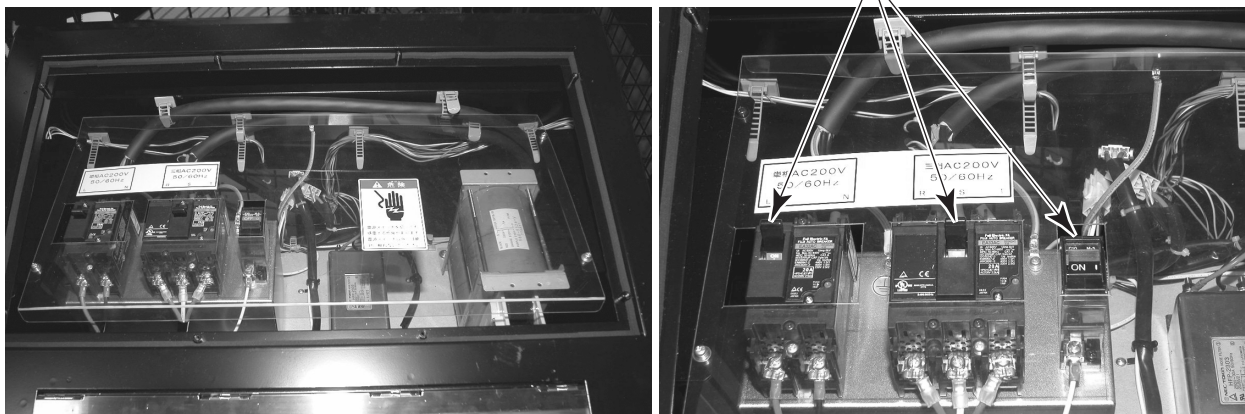


PHOTO 6-17f

**9** Attach tower lid top. Secure with 8 screws.

**10** Take the opposite side of the connected power cable and connect it to the indoor power supply switchboard. Connect the earth wire to a [unit that is securely grounded].

**11** Complete indoor wiring of power cable and earth wire. Always attach protective cover, etc.

**12** Insert two air tubes for water drainage into each air joint at control tower side door.

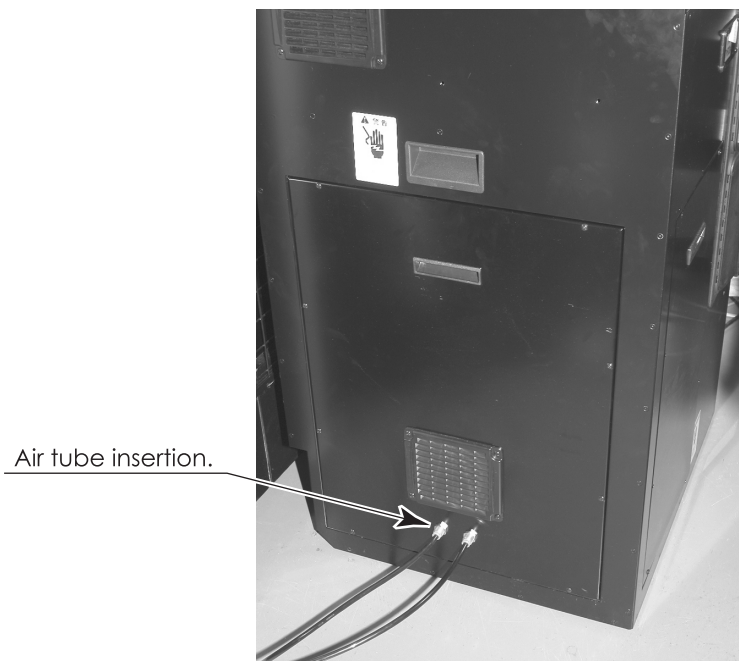


PHOTO 6-17g

**13** Bring the tip of the air tube for drainage up to the drainage port, or insert it into the drainage container.

**14** Always attach a protective cover, etc., to the air tube for drainage.

**⚠ WARNING**

- Be careful not to damage DVD wire, for example, by letting it get caught in something. Otherwise there could be a short circuit or fire.
- The following explanation assumes that the unit has been assembled properly as instructed. If there are operations or abnormalities other than as mentioned below, cut off the power supply immediately. If power is left on, there could be an electric shock or fire.
- Do not look directly into the DVD DRIVE interior. If you look directly at the laser beam inside the DVD DRIVE, your vision could be impaired.
- For safety, be careful not to lean on or contact the ride during installation. If the ride should move, there could be an accident.

**STOP IMPORTANT**

- Because power is engaged while software has not been installed in the game board (LINDBERGH), "Error 22" is displayed, but this is not a malfunction. However, if any other error is displayed, or if the screen remains completely blank, it could be that there was an error in assembly, a wire connection is faulty, or the LINDBERGH has broken down.
- After turning on the power, wait for "Error 22" to be displayed. If you perform some operation beforehand, there could be problems, malfunction and/or damage to parts.
- After "Error 22" has been displayed, set the DVD disc in the DVD DRIVE, reset the power. Then, installation is executed.
- For about 30 seconds after the power has been engaged, the tray will not come out even if the switch is pressed because the DVD DRIVE is initializing.
- The DVD DRIVE tray can be made to come out and/or go back in only while the power is on. The tray does not move if the power has been disconnected.
- After software has been installed, be sure to store the DVD software kit, DVD DRIVE and DVD wire at a secure location.
- If for some reason installation cannot be completed, an error message will be displayed. Take corrective action as indicated in the service manual.
- After the power has been engaged, it will take several minutes before a projector image can be seen.
- For instructions on how to operate the projector and replace lamps or filters, read the projector manual included in the product package. To avoid duplication of content and considering changes in projector specifications, etc., these instructions contain descriptions of the projector only as relevant to this product.
- To engage the power again, wait for about 5 minutes for the projector lamp to cool down. Otherwise images might not be projected or the lamp might not light up.

Take out the DVD software kit provided.  
The LINDBERGH for installation is in the rear base.

Engage the power by turning the switchboard breaker of the indoor power supply and the MAIN POWER switch to ON.

Unlock the control tower panel lid and open it so that the control tower panel can be operated. The MAIN POWER switch is on the control tower panel.



PHOTO 6-18a

- 1** Before turning on the power, make sure that no one is inside the base and that there are no tools, etc., on the ride.
- 2** When power is engaged, the compressor motor, which does not control software, starts up. If this motor does not start up, the problem could be an error in assembly or faulty wire connection.
- 3** The LINDBERGH startup image appears on the screen. However, it does take several minutes for the projector image to become visible. Wait for at least one minute. An error will occur. Check to see if it is "Error 22." If it is "Error 22," proceed to the next operation. If it is not "Error 22," take corrective measures as indicated in the service manual.
- 4** Screen display cannot be deciphered if the projector screen size and focus adjustments are grossly mismatched. Adjust as directed in the projector operating instructions.
- 5** Remove 1 thumbscrew, and then remove DVD DRIVE case lid.

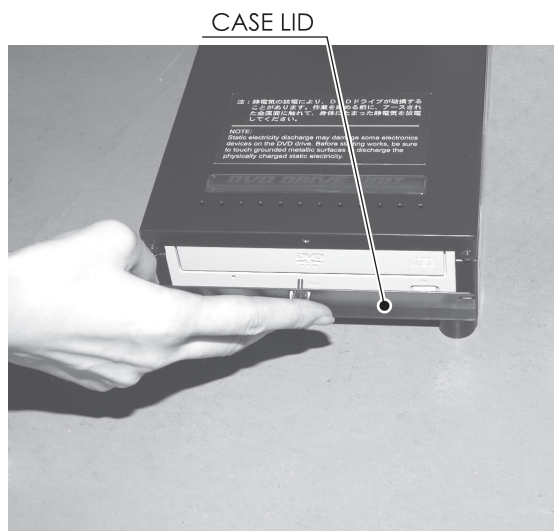
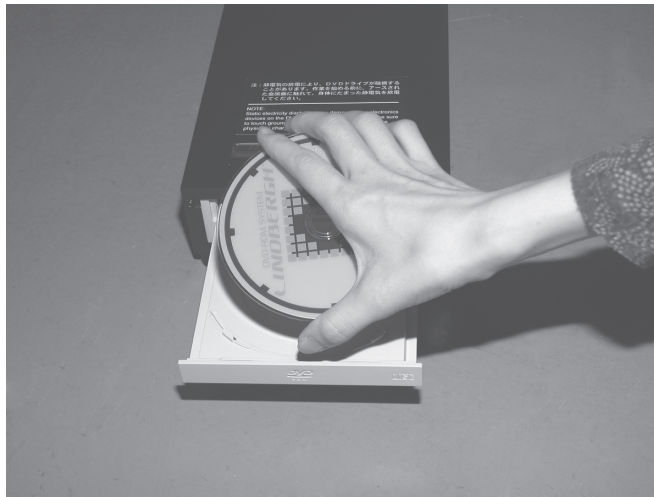


PHOTO 6-18b

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



**PHOTO 6-18c**

- 
- 7** Press the DVD DRIVE switch and the tray returns to its original position.
- 
- 8** Reset power. Turn the MAIN POWER switch to OFF, wait for at least 5 minutes, and then turn the switch to ON. Wait until the projector lamp cools.
- 
- 9** Software installs automatically from the DVD to the LINDBERGH. In some cases, it may take as long as 5 minutes for the software to install to the LINDBERGH.
- 
- 10** When the game image appears, installation is complete.
- 
- 11** Press the DVD DRIVE switch to have the tray come out, and then remove the DVD.
- 
- 12** Press the DVD DRIVE switch to have the tray return. When the power is cut off the tray will not move.
- 
- 13** Set the MAIN POWER switch to OFF.
- 
- 14** Remove 2 DVD wires from the DVD DRIVE.
- 
- 15** Attach DVD DRIVE case lid and fasten it with 1 urea screw.
- 
- 16** Store 2 DVD wires inside base.
- 
- 17** Lock DVD lid and fasten with 4 truss screws.
- 
- 18** Store DVD DRIVE and DVD software kit at a location where there is no dust or cigarette smoke.

## 19 ATTACHMENT OF SENSOR COVER, PROJECTOR COVER AND FLOORBOARD

### WARNING

When power is engaged, initialization of motor, board and other internal system parts takes place automatically. At this time the ride (seat) rotates. Before turning on the power, make sure that no one is inside the base and that there are no tools, etc., on the ride.

### CAUTION

When installing triangular shaped floorboard around the ride, check configurations carefully. Also be careful not to get fingers or hands caught in anything. There are two types of triangular shaped floorboard.

If triangular floorboard gets sandwiched forcibly between base rectangular pipe and cover below the ride, it will be difficult to perform work and accidents could occur.

### IMPORTANT

- Wait for initialization to be completed, the ride to stop and the customer welcome screen to appear. Problems can arise if, for example, the switch is manipulated carelessly.
- When the power has been engaged again, wait for about 5 minutes for the projector lamp to cool down. Otherwise images might not be projected, or the lamp might not light up.

Engage power again, check foot sensor operation, adjust projector screen and attach sensor cover, projector cover and floorboard.

---

**1** Turn off the power and make sure five minutes have elapsed.

---

**2** Turn the MAIN POWER switch to ON and engage the power. Initialization takes place automatically. Wait until initialization is completed.

- 3 Confirm that the foot sensor optical axes match. Block the gap between photoreceptor and photoemission sensors and confirm that the photoreceptor side responds. If there is no obstruction between the sensors, the photoreceptor sensor lamp lights up. If there is blockage, the lamp goes out. (See Fig. 6-13)

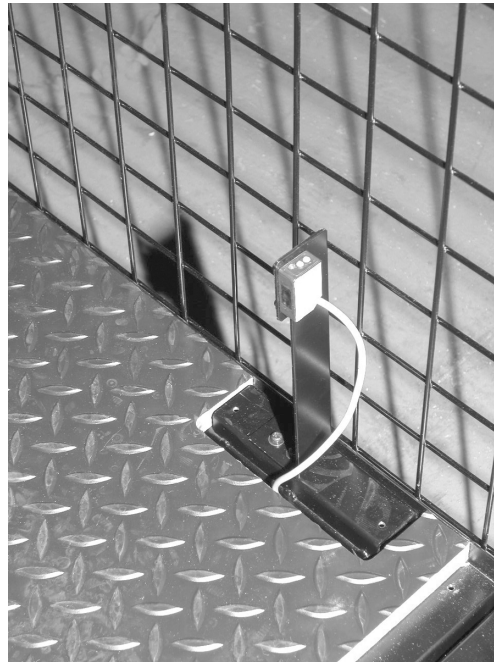


PHOTO 6-19a

If response is unsatisfactory, loosen the screws fastening the sensor bracket and adjust the direction of fastening so that foot sensor optical axes match.

- 4 Attach sensor cover. Fasten with 2 screws.

SCREW (2 ea.), black  
M4×8, w/flat & spring washers

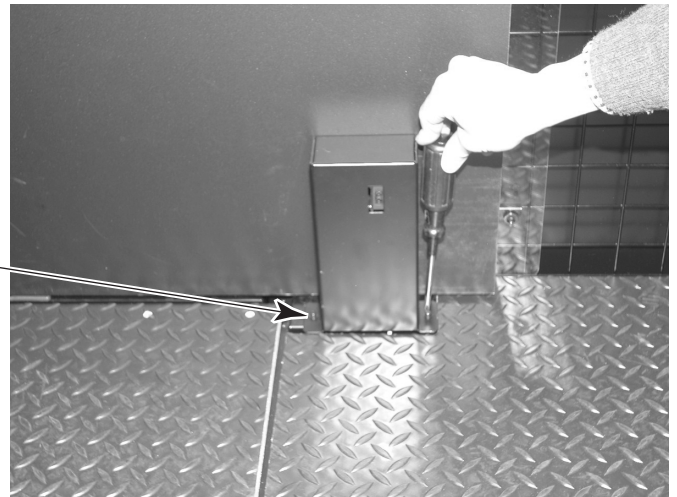


PHOTO 6-19b

- 5 Adjust the projector screen as indicated in the projector operation instructions. Manipulate the switch panel on the projector main unit to adjust.  
In LINDBERGH system test mode, project the MONITOR TEST screen and adjust it.  
(See LINDBERGH service manual.)

- 6 After screen adjustment, exit the LINDBERGH system test mode.

- 7 Turn the MAIN POWER switch to OFF.

---

**8** Attach projector cover.

---

**a** Remove two front legs of projector.

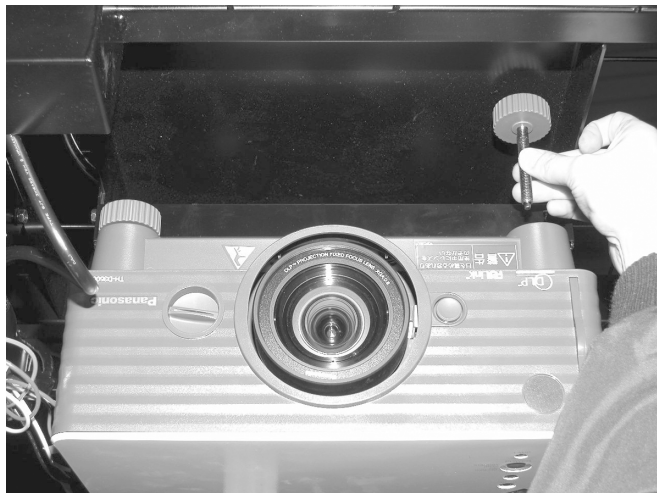


PHOTO 6-19c

---

**b** While covering the projector with projector cover, hitch hook to projector base.



PHOTO 6-19d

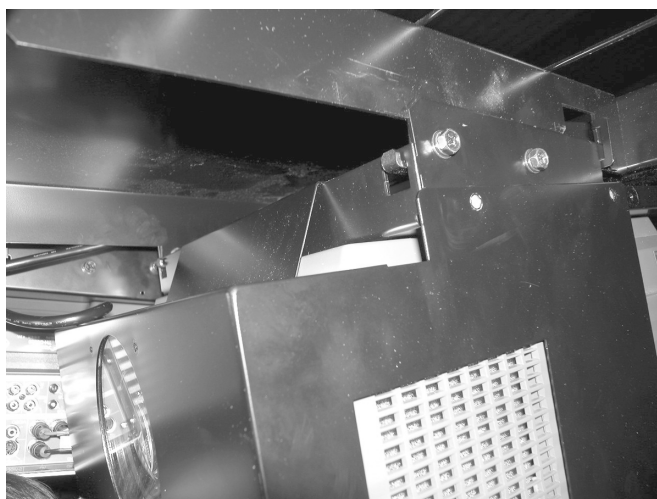


PHOTO 6-19e

- c** Fasten one side of the projector cover with 2 screws.

SCREW (4), black  
M4×8, w/flat & spring washers

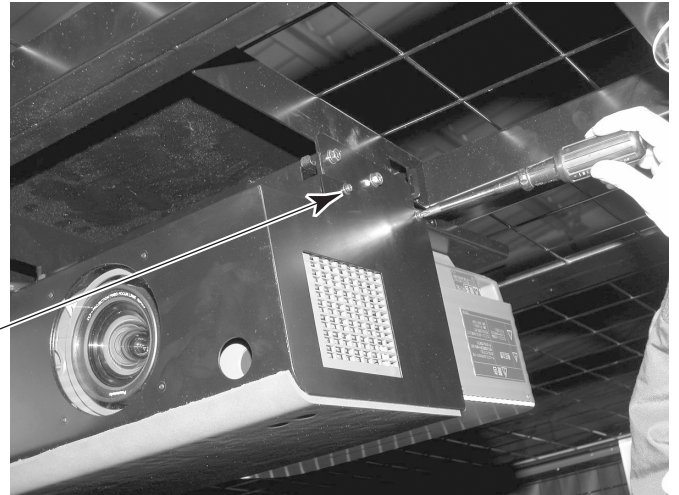


PHOTO 6-19f

- d** Attach the two front legs.



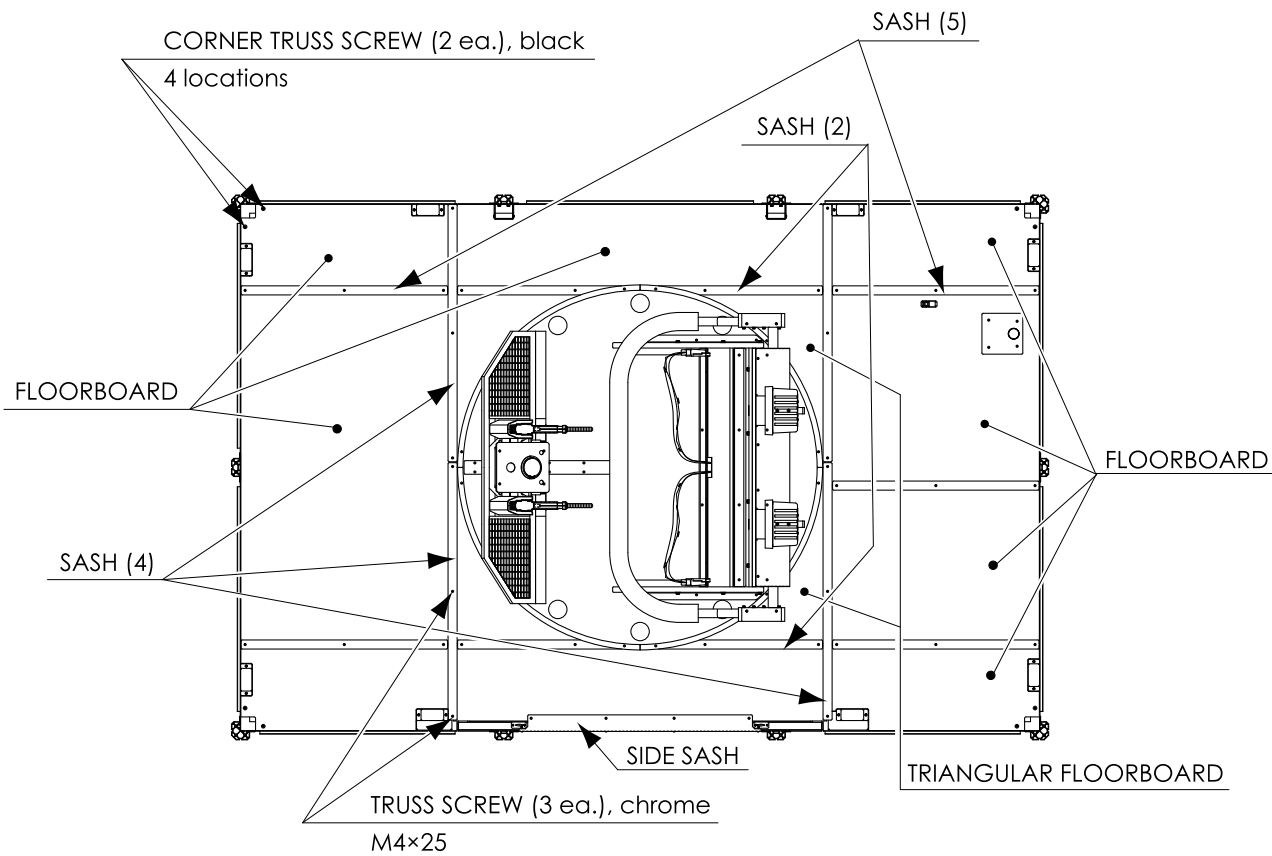
PHOTO 6-19g

- 9** Place all floorboards on the base. There are two types of triangular shaped floorboard around the ride. Check board configurations carefully and insert board under the ride.
- 10** Place sash on the floorboard and fasten it with truss screws. Of the truss screws used for the door sash, 4 screws are for the top and another 4 screws are for the side. These two categories of truss screws differ in length.



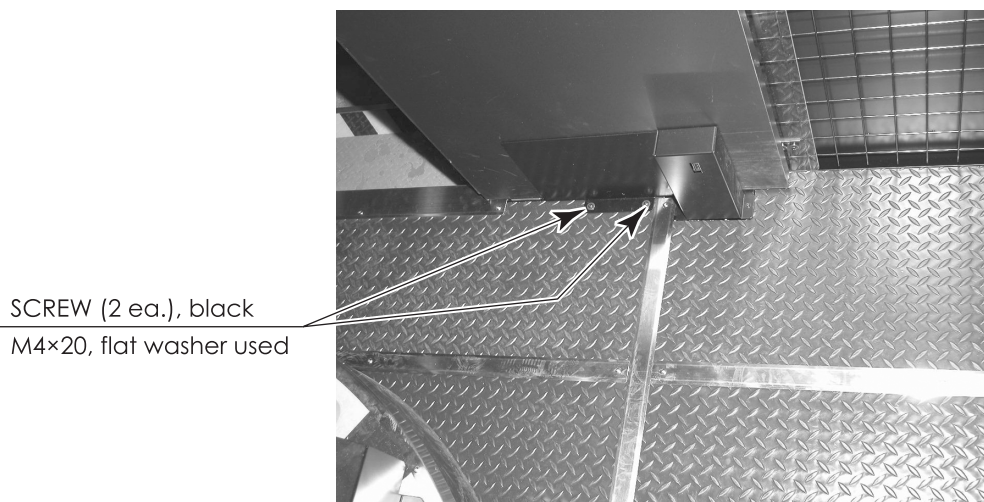
**11** At the junctions of the front base, middle base and rear base, place 4 sashes. These sashes are different from the sashes attached when the unit was brought in. Fasten each sash with 3 truss screws.

**12** Fasten each of the 4 corners of floorboard with 2 truss screws. Use flat washers with the truss screws.



**FIG. 6-19**

**13** Attach bracket to prevent door from jamming. Attach at the bottom of both doors. Fasten each bracket with 2 screws. Use flat washer with these screws.



**PHOTO 6-19h**

20 DISPLAY OF RESTRICTIONS

**⚠ WARNING**

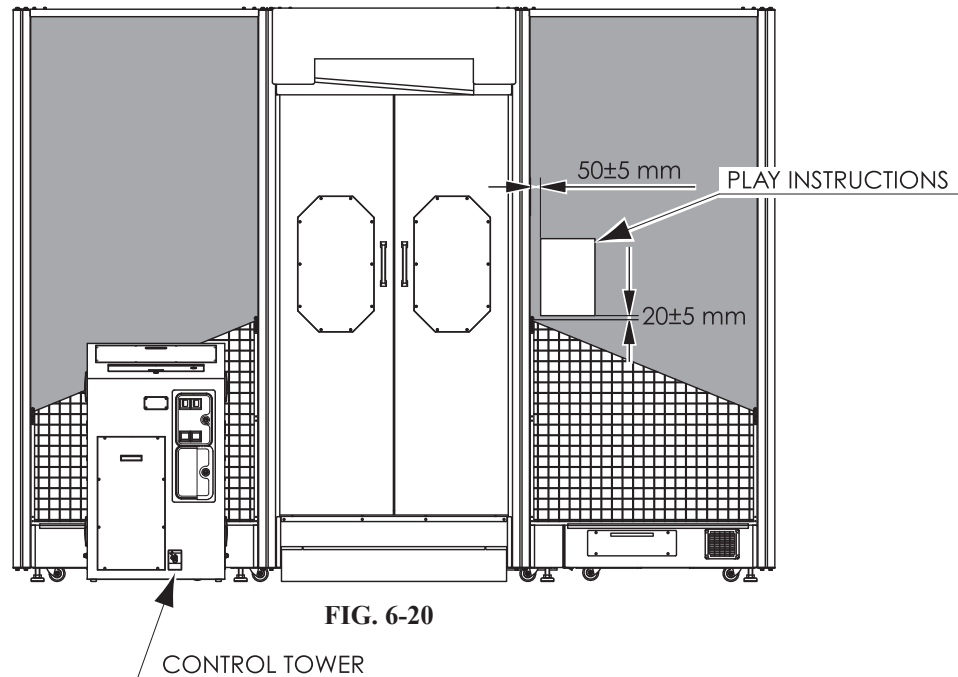
For safe operation, be sure to always have “Player Restrictions” on display. To prevent needless trouble with customers, these restrictions must also be made known to customers in advance.

To ensure safe operation, those players whose physical condition inhibits safety equipment functions must play in the mode in which the ride (seat) does not rotate.

To prevent needless trouble with customers, display the “Player Restrictions” where they can be read before the customer takes a seat.

The product comes with a height sticker, play instructions and two types (large and small) of notices on which “How to Play” and “Player Restrictions” have been printed.

- 1 Display notices at a location where customers can read “Player Restrictions” before inserting a coin or purchasing a ticket.
- 2 Attach the play instructions onto the curtain by the door on the side opposite of where the control tower is installed.



- 3 Attach the height sticker at a location where the attendant can visually check the customer’s height.

## 7 POWER SUPPLY ENGAGEMENT

### WARNING

- Have work performed by site maintenance personnel or other qualified individuals. Do not allow people without proper knowledge and technical expertise to work on the product. Otherwise there could be an electric shock or other serious accident. Also, customers could be injured while operating the product.
- The ride (seat) rotates during initialization. It is very dangerous if someone is in the cabinet at this time. Before starting initialization, make sure that all procedures related to initialization will be carried out by one person and that there is no one inside the cabinet.
- Proceed with checks and tasks as indicated in these instructions. If instructions are not followed, or if tasks and/or checks are neglected, an electric shock or other very serious accident, even fatal accident, can occur. Also, the customer could be injured while operating the product.
- To ensure safe operation, inspect all product parts and confirm proper operation by each before engaging the power. If there are any abnormalities, take corrective action immediately. Never operate the product if there is an abnormality.

### STOP IMPORTANT

- After starting initialization, wait until the ride stops and the customer welcome screen appears or until an error message is displayed, indicating that an abnormality has been detected. Careless manipulation of switches, for instance, at this time could result in product breakdown or damage to parts.
- Before engaging the power again, wait for about 30 minutes if possible, at least until the projector lamp cools down. Engaging power before the projector lamp has cooled adequately can cause the lamp to deteriorate.

## 7-1 CONTROL TOWER PANEL

This product's power is turned on by manipulating control tower switch. Have the master key available so that the lid of the control tower panel can be opened.

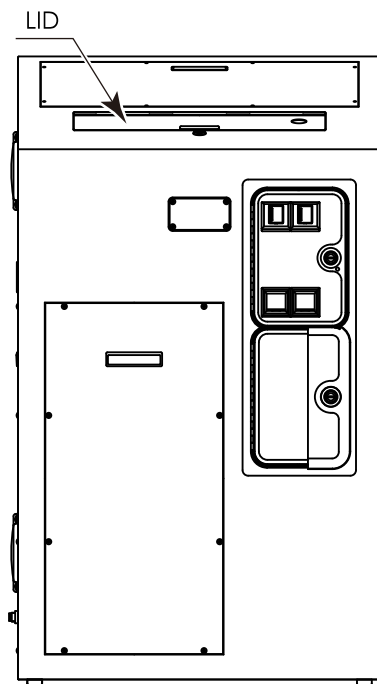


FIG. 7-1a Control tower front view

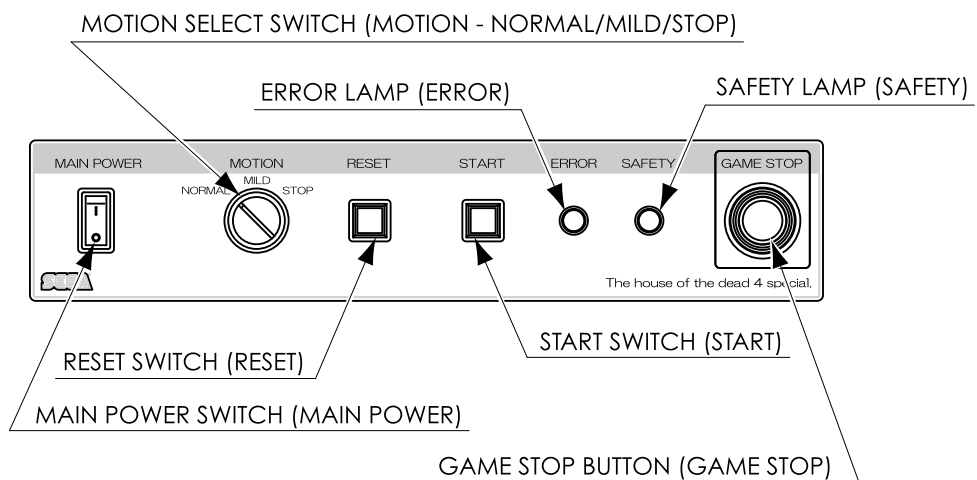


FIG. 7-1b CONTROL PANEL

See the service manual for instructions on how to manipulate each switch on the panel.

Coin Meter

**STOP** IMPORTANT

If the coin meter circuit is removed, play cannot be executed.

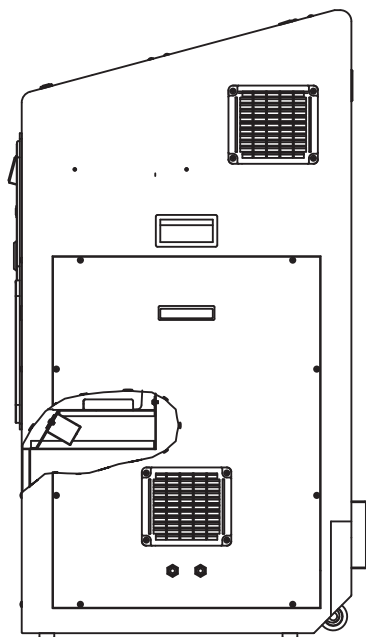


FIG. 7-1c COIN METER

## 7-2 STEPS FOR ENGAGING POWER

Inspect each part in the sequence given below and engage the power. Initialization takes place when the power is engaged.

During initialization, the ride rotates. Wait for the ride to stop and the customer welcome screen to appear.

It takes about one minute from the start of initialization to the display of the customer welcome screen.

If an abnormality is detected during initialization, an error message is displayed. For details, read the service manual.

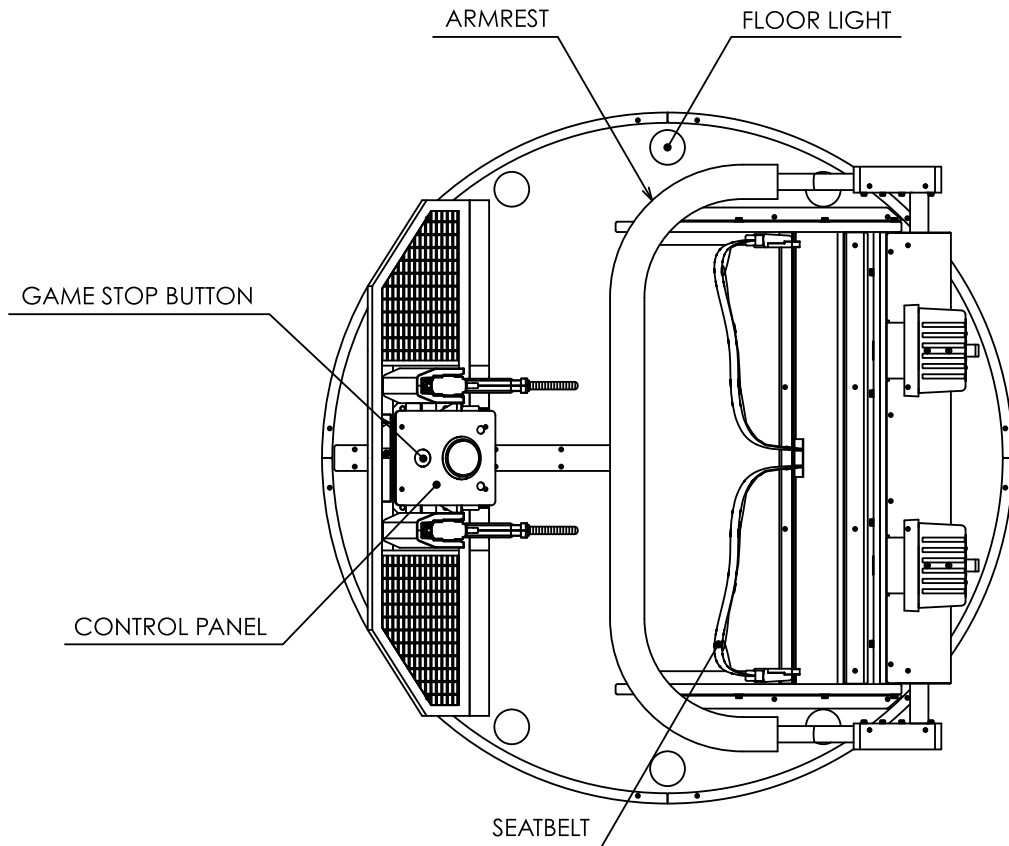
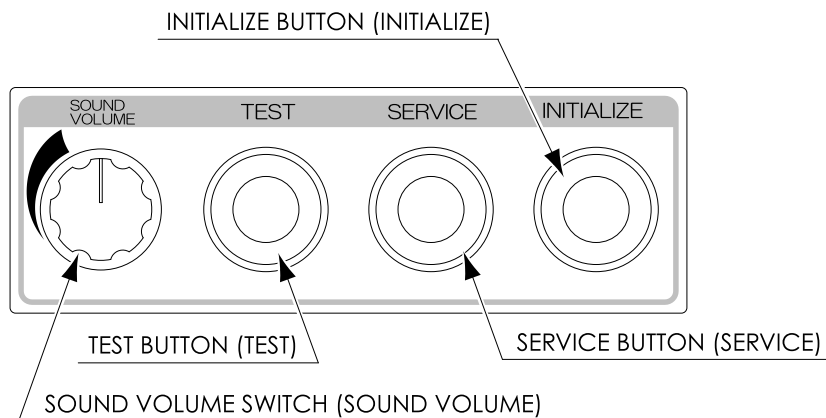


FIG. 7-2a Ride

- 1** Confirm that all the adjusters contact the floor and that no objects have been placed in the spaces for evacuation and for smoke exhaust that were reserved when the product was installed.
- 2** Confirm that the compressor drain tube is connected to the drainage container or drainage port. If there is a lot of drainage in the container, empty it.
- 3** Confirm that all the breakers (switches) of the indoor power supply for this product are at ON. If any breakers are at OFF, turn them all to ON.
- 4** Unlock and open the lid of the control panel in the control tower. Turn the MAIN POWER switch to ON.
- 5** When the power is engaged, the GAME STOP Button on the ride and the reset switch on the control tower both blink.
- 6** The game board begins to read the program. It takes several minutes to read the program through. When reading is completed, communication (connection) between game board and control board is checked automatically.

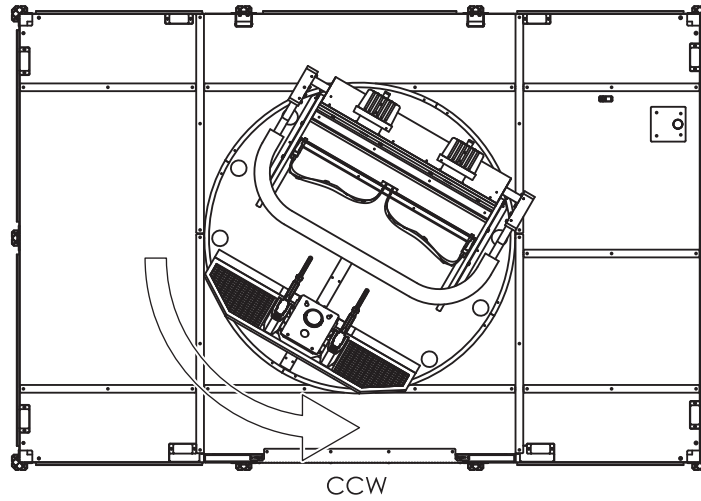
- 7** Upon completion of communication check, the spot light inside the cabinet lights up and the floor lights blink. The GAME STOP Button and reset switch go out. The billboard blinks green and the following is displayed on the screen: “The ride will be reset to its default settings. Once confirming that there are no obstacles in the way and that the room is secure, please lower the armrest, buckle the seatbelts, and press the INITIALIZE button.”
- 8** Enter the cabinet and inspect it for abnormalities.
- 9** Lower armrest and lock seatbelts (for both player 1 and 2).
- 10** Unlock and open the ride control panel, and then press the INITIALIZE Button. The spot light inside the cabinet switches from glowing to blinking and the GAME STOP Button of the ride blinks.



**FIG. 7-2b RIDE SWITCH UNIT**

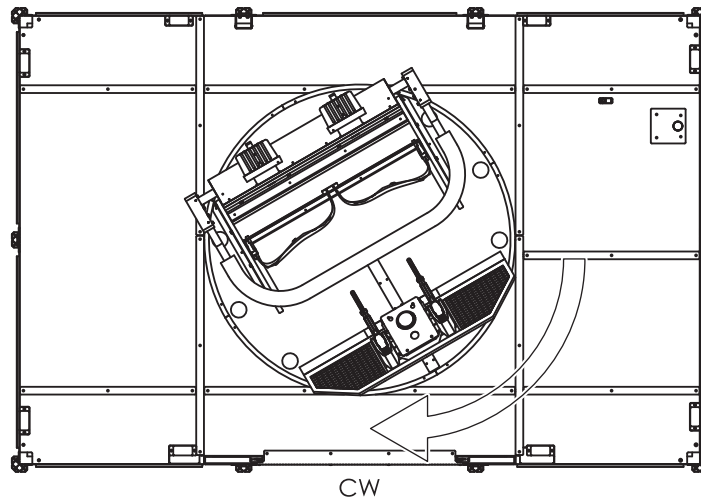
- 11** When the armrest is lowered, the seatbelts are locked and the foot sensor is not blocked, the start switch on the control tower blinks. The following is displayed on the screen: “Press the START button to reset the ride to its default settings. Do not touch the ride until all movement has stopped.”
- 12** Confirm that no one is inside the cabinet, that there are no foreign objects on the ride, and that nothing is blocking the foot sensor.
- 13** When the start switch on the control tower is pressed, the ride rotates and initialization begins. The spot light, start switch and GAME STOP Button all switch from blinking to glowing. The following is displayed on the screen: “The ride is resetting to its default settings. Please do not touch the ride.”
- 14** If, during operation, the armrest rises, the seatbelt is unfastened, or the foot sensor becomes blocked, operation will stop. Operation stops even if the GAME STOP Button on the ride or the control tower is pressed.
- 15** If operation is stopped during the initialization, an error message is displayed. Check the cabinet interior for safety, reengage the power and execute initialization again.

**16** When initialization has been started, the ride rotates to the CCW limit sensor.



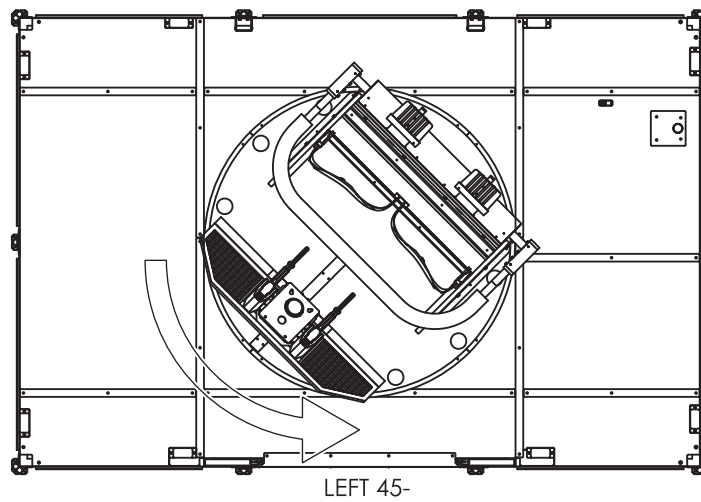
**FIG. 7-2c Ride rotates to CCW limit sensor.**

**17** Ride rotates to CW limit sensor.



**FIG. 7-2d Ride rotates to CW limit sensor.**

**18** Ride rotates to 45 degrees left from front position.

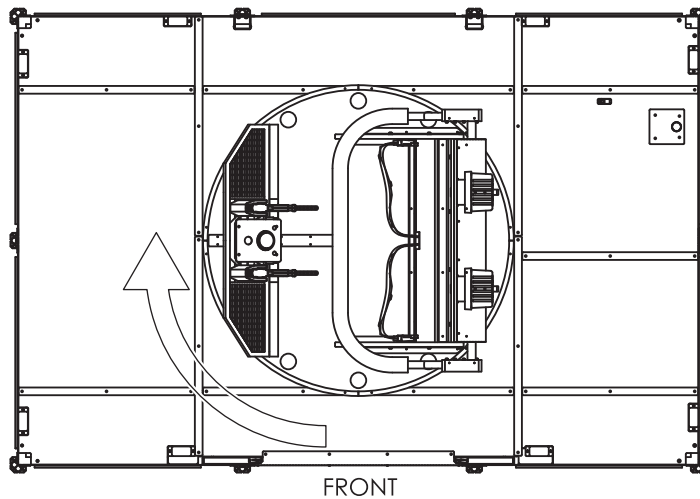


**FIG. 7-2e Ride rotates to 45 degrees left from front position.**



---

**19** Ride rotates to front position and all lights go out except the safety lamp.



**FIG. 7-2f Ride rotates to front position.**

---

**20** The customer welcome screen appears.

### **How to Disengage Power When Store is Closed**

Even when the power supply to this product has been cut off, settings such as for credits or level of game difficulty and bookkeeping information are preserved.

---

**1** Turn the MAIN POWER switch of the control tower to OFF.

---

**2** Set indoor power supply breakers to OFF.

## 8 PRECAUTIONS WHEN MOVING THE MACHINE

### WARNING

- As used in these instructions, the term “moving” refers to moving of the product within the same building, store or facility. These instructions do not cover moving between different buildings, areas, stores or facilities, since diverse factors are involved, not only packaging but also loading onto transport vehicles, and securing the product in place during transport. To transport the product to a different building or store, contact the vendor where the product was purchased or the office indicated in these instructions. Or request that moving be done for you.

This product is made up of parts that are of large size and heavy weight. Unless work is entrusted to someone with expertise in packaging and transport of such parts, a serious accident might occur.

- Even when the product is to be moved within the same building, store or facility, contact the point of purchase or the office indicated in these instructions if there will be level differences or narrow or low level entrances while moving. Or request that moving be done for you. Never disassemble the product in any way not covered in these instructions. Otherwise there could be a fire, electric shock and/or short circuit.
- 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.
- A qualified electrician is required for moving product parts within a store and for changing indoor wiring. Do not have work performed by anyone who is not qualified. Otherwise there could be electric shock.
- Have work performed by site maintenance personnel or other qualified individuals. Do not allow people without proper knowledge and technical expertise to work on the product. Otherwise there could be an electric shock or other serious accident. Also, customers could be injured while operating the product.
- Never move the product after it has been assembled. Always remove the control tower and step. If the product is moved as assembled, abnormalities can be produced at junctions, resulting in electric shock, short circuit and/or fire.
- Because it is structurally difficult for exterior lighting to enter the cabinet, have auxiliary lighting available. Working within a dark environment can lead to accidents.
- To separate control tower and step, refer to chapter 6 in these instructions. If instructions are not followed, the situation could be very dangerous, resulting in electric shock.
- Be sure to always perform air bleeding. If this is not done, compressed air could suddenly burst out, and drainage from the drain could be scattered, resulting in an accident. Also, parts could be permanently damaged.

## WARNING

- Proceed with checks and tasks as indicated in these instructions. If instructions are not followed, or if tasks and/or checks are neglected, an electric shock or other very serious accident, even fatal accident, can occur. Also, customers could be injured while operating the product.
- Be careful not to damage wiring. Before separating parts that have wiring connections, disconnect the wiring connections, unravel wire bundles and undo fastenings. Only after that, remove fasteners (screws, nuts, etc.). If wiring becomes damaged, there could be an electric shock, short circuit or fire.
- When inserting or removing a connector, always hold it by its main part. If you hold it by anything else while doing so, the connections between wire and connector terminal fixtures could be damaged; and there could be a short circuit or fire. There could also be poor connectivity.
- Do not move unit with the adjusters in contact with the floor. Otherwise parts might be damaged or deformed and there might be accidents.
- After the floorboard has been removed, be careful not to stand on the rectangular pipe of the base. If your foot slipped on this pipe, causing you to fall, you could hit your head against something or suffer other serious injury.
- Whenever any fasteners (e.g. screws, nuts) have been lost, always use replacement fasteners with proper dimensions as specified in this document. If fasteners of any other dimensions are used, it could cause damage and/or separation of parts that result in secondary accidents.
- Check surroundings carefully while moving the unit. If you should get caught between the unit and a wall, for instance, there could be a serious accident.

## CAUTION

- When attaching or removing floorboard, be careful that fingers or hands do not get caught in anything.
- Hold pillar and base parts made of metal plate and push to move unit. Do not hold or push parts such as the side fence while moving the unit. Otherwise there could be accidents resulting in injury. There could also be deviations in parts' positions, or damage and deformation to parts.
- Do not push or pull on the curtain. Otherwise the curtain could be damaged, causing someone to fall down and suffer a contusion or some other accident.

## STOP IMPORTANT

- The curtain can be damaged easily and damage to it is conspicuous. If there is not ample space to move the product, be sure to remove the curtain.
- If the unit is moved over floor surfaces where there is carpet, decorative panel, etc., there might be friction or soiling.
- Movement by casters can damage the floor, depending on the floor material. Have a mat or thin plate available for moving casters. If rugs, for instance, have been laid out, remove them before moving.
- Be careful not to damage the surfaces of parts. Support and push strong parts made of metal.
- Do not apply rope directly to the product's surface. Use protective material at locations where rope is applied.
- Before moving, insert oil pin into the oil cap over the gearbox inside the middle base. Otherwise oil might leak out. (See Chapter 6 **1**.)

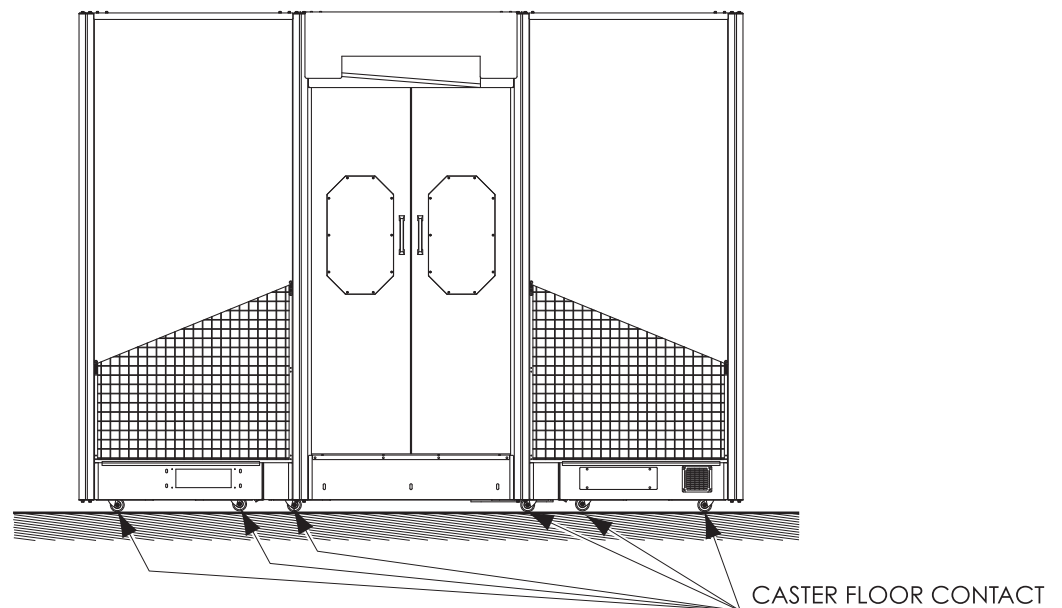
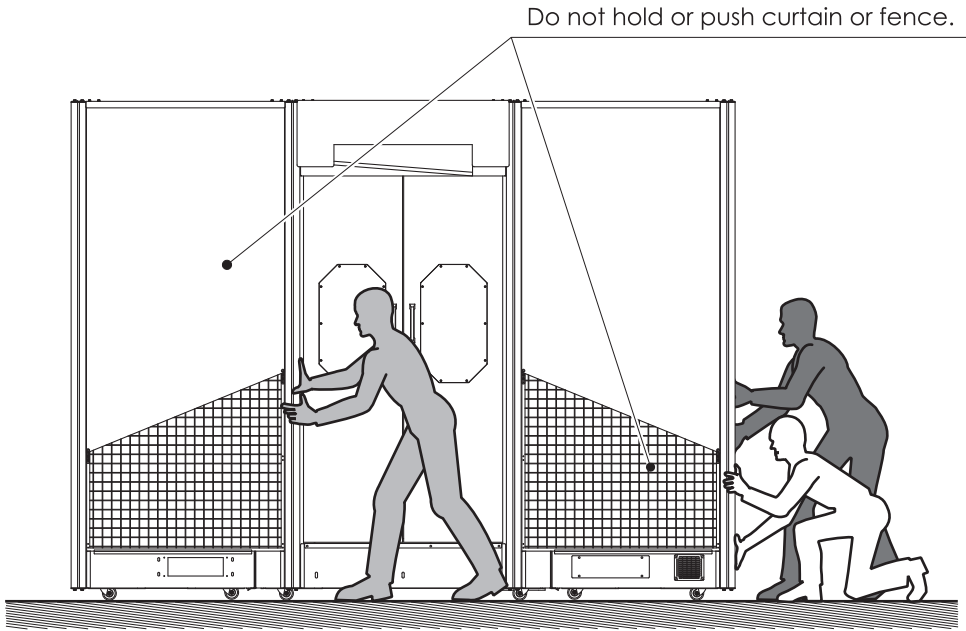


FIG. 8a



To move, hold pillar and base metal part and push.

FIG. 8b

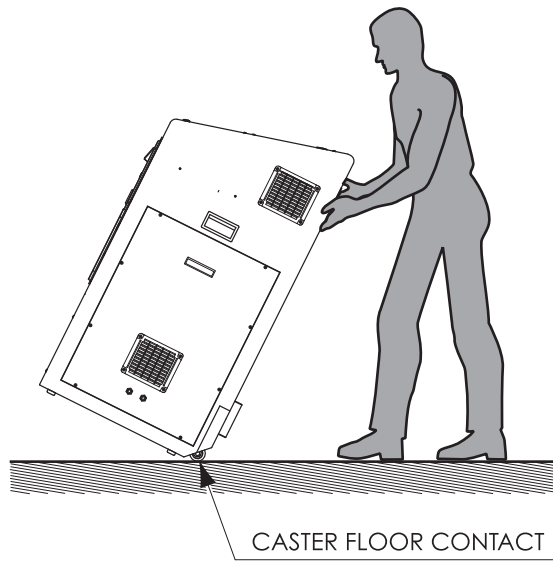


FIG. 8c Moving the control tower

What follows is an explanation of the procedure for separating the control tower and step and moving them. For further disassembly, read Chapter 6.

- 1** Turn the MAIN POWER switch of the control tower to OFF.
- 2** Turn all switchboard breakers of the indoor power supply to OFF.
- 3** Bleed air. If a drainage container is used, make sure that the drain tube does not come out from the container. (See Chapter 9.)
- 4** Remove the tower lid top of the control tower. (See Chapter 6 [17](#).)
- 5** Remove breaker cover.
- 6** Remove screws that fasten power cable and earth wire terminals to breaker terminals.
- 7** Pull out power cable and earth wire from control tower.
- 8** If they interfere with movement, remove power cable and earth wire wiring and drain tube piping.
- 9** Remove floorboard near the door. In addition to screws fastening sash, there are two screws at each corner.
- 10** Remove all 4 connectors that connect the base inner side to the control tower rear panel. (See Chapter 6 [15](#).)
- 11** Remove earth wire secured to control tower rear panel.
- 12** Remove air tube from air joint on control tower rear panel.
- 13** Remove 4 hexagon bolts that hold down the control tower.
- 14** Separate control tower from base.
- 15** From the base inner side, remove 3 hexagon bolts that hold down the step. (See Chapter 6 [14](#).)
- 16** Separate step from base.
- 17** Pull up adjusters and allow casters to contact floor. If adjuster is to be pulled up from inside the base, remove floor base on top of adjuster. (See Chapter 6 [12](#).)
- 18** Hold at pillar and base metal part, and then push to move.

## 9 COMPRESSOR (AIR SYSTEM)

### WARNING

- Cut off power before working. Otherwise there could be an electric shock or short circuit. If the power is not cut off, the compressor could suddenly start running, which would be very dangerous.
- If drainage is collected in a container, check the container every day. If the container falls over, if drainage leaks from the container, or if the drain tube comes out, there could be an electric shock, short circuit and/or water leakage.
- If drainage is collected in a container, secure the drain tube so it will not come out of the container while draining water from the filter or air tank. If drainage scatters, there could be an electric shock, short circuit and/or water leakage.
- While draining water, be careful not to interrupt drainage by bending or stepping on the drain tube for instance. The tube could separate from air joint, causing water to scatter.

### CAUTION

The compressor reaches a high temperature while running. Cut off power and wait for the compressor to cool down before beginning work. Otherwise there could be burns.

### STOP IMPORTANT

- When water collects in the filter or air tank, the compressor load increases, making it difficult to increase pressure and accelerating wear and tear of parts. Drain water from filter and air tank once per week. Drainage can be drained into the sewage system.
- If water will not come out when draining the filter and air tank, tighten the drain nozzle screw and the drain cock. When all compressed air has been bled out, water drainage will not take place on one side.

Drain water from compressor filter and tank once per week.

If the filter is an auto drain type, it drains water even when no steps to drain water have been taken. If drainage is collected into a container, inspect the container daily.

## 9-1 PRECAUTIONS BEFORE WORK

Compressed air is used in such things as the reaction mechanism of the Control Unit (Gun). If the air tube is removed, there is danger that compressed air will burst out. Before beginning work involving the air tube, perform the following tasks and bleed out compressed air from the air tank.

- 1 Unlock and open the control panel lid of the control tower and turn the MAIN POWER switch to OFF.



PHOTO 9-1a

- 2 Wait for the compressor to cool down.

- 3 Remove the front lid of the control tower. Remove 8 truss screws.

TRUSS SCREW (8), black  
M4×8



PHOTO 9-1b



- 
- 4** Slowly loosen screw of drain nozzle at the bottom of the filter. Filter water and compressed air come out simultaneously. Note that if the air tube for drainage connected to the filter drain nozzle is not securely fastened at this time, water might spray out.



**PHOTO 9-1c**

- 
- 5** Wait until air stops coming out of the drain nozzle.

- 
- 6** Tighten loosened screws.

- 
- 7** Dispose of drainage. It can be put into sewage.

- 
- 8** Restore front lid to its original position.

- 
- 9** Begin each procedure.

## 9-2 FILTER WATER DRAINAGE

Drain the filter of water once per week. If a drainage container is being used, do not neglect to inspect the container as water can easily accumulate when humidity is high.

Following the steps given in 9-1, disengage power and drain water.

When water no longer comes out, tighten drain nozzle screw.

If a drainage container is used, fasten the air tube for drainage inside the container securely so it will not come out, since water comes out together with compressed air.

## 9-3 AIR TANK WATER DRAINAGE

Drain water from air tank once per week.

- 1** Unlock and open the lid of the control panel in the control tower and set the MAIN POWER switch to OFF.
- 2** Remove the control tower front lid. Remove 8 truss screws. (See 9-1.)
- 3** Slowly open the drain cock on the air tank.  
For visibility, the side lid in the photo has been removed. However, the side lid does not have to be removed.



PHOTO 9-3

- 4** Compressed air comes out together with water in the air tank.  
Note that if the tip of the drainage air tube coming from the tank drain nozzle is not securely fastened at this time, water might spray out.
- 5** Wait until water stops coming out of the tank drain nozzle.
- 6** Tighten the loosened drain cock.
- 7** Dispose of drainage. It can be put into sewage.
- 8** Restore front lid to its original position.

## 9-4 AIR REGULATOR

Use air regulator to keep compressed air in the air tank at a constant pressure. Check the pressure setting once every two months.

When the front lid is removed, the air regulator is immediately in front of you. Check pressure with the air regulator pressure gauge. If pressure inside the compressor is inadequate, however, the pressure gauge will not show the required reading. Check after the power has been engaged and the compressor has stopped running. The pressure setting is 0.25MPa.

If the reading is other than the required pressure, take the following steps to adjust the pressure.

For safety, work should not begin until after the power has been cut off. If, however, the pressure inside the compressor is inadequate, pressure cannot be properly adjusted. Engage the power and, when the compressor stops running, cut off the power and begin work.

- 1 Unlock and open the lid of the control panel in the control tower and set the MAIN POWER switch to ON.
- 2 The compressor starts running. Wait for it to stop.
- 3 Turn the MAIN POWER switch to OFF.
- 4 Remove the front lid. Remove 8 truss screws. After the front lid has been removed, the air regulator is immediately in front of you. (See 9-1.)
- 5 Use the air regulator pressure gauge to check the air pressure.
- 6 Pull the air regulator adjustment knob until you hear a click sound.
- 7 Turn the adjustment knob to set it at the required pressure.
- 8 When it reaches the correct pressure setting, push down on the adjustment knob until you hear a click sound.
- 9 After this adjustment, engage the power and play the game. Then, check the air regulator pressure gauge once again.

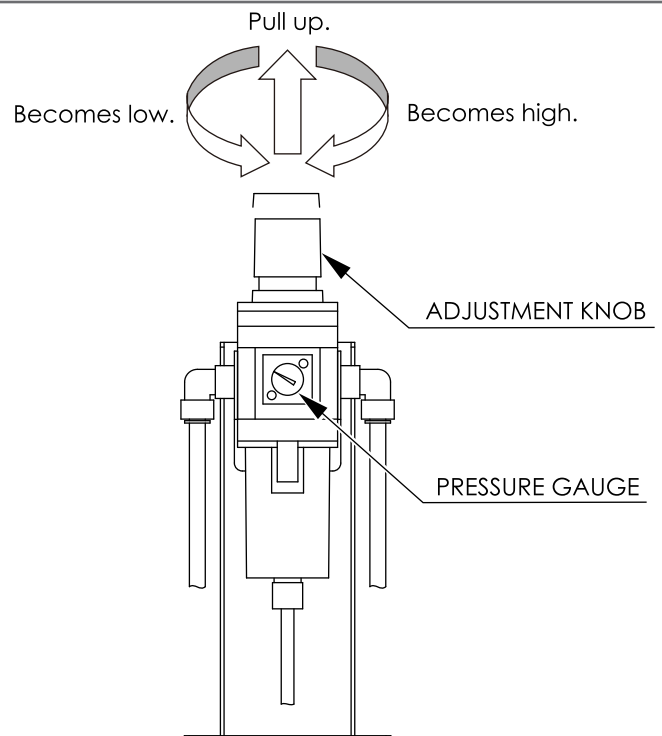


FIG. 9-4 AIR REGULATOR

## 10 PROJECTOR

### 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 apply or suspend loads from the projector or projector base. Doing so could cause an accident.

### CAUTION

- Be careful when handling all plastic parts. Improper handling may cause the parts to break, which can cause injury due to cracks, or fragments.
- Work will be done on a projector that has been installed at a high location. Make sure that tools and screws or other parts that have been removed will not fall down.

### IMPORTANT

- For instructions on how to operate the projector and replace lights, read the manual included in the product package. To avoid duplication of content and considering changes in projector specifications, etc., these instructions contain descriptions of the projector only as relevant to parts of this product.
- Before engaging the power again, wait for about 30 minutes if possible, at least until the projector lamp cools down. Engaging power before the projector lamp has cooled adequately can cause the light to deteriorate.

## 10-1 PROJECTOR-RELATED PRECAUTIONS

### **STOP** IMPORTANT

- Before engaging the power again, wait for about five minutes for the projector lamp to cool down. The light might not go on. It takes several minutes after the power has been engaged for an image to be projected. If possible, wait for 30 minutes. Engaging the power before the projector lamp has been allowed to cool down adequately can cause the light to deteriorate.
- The mean service life of the high pressure mercury light, which has already been attached at the time of shipment, is approximately 2,000 hours. This service life is the average number of hours for a 50% survival rate. Service life at 2,000 hours does not necessarily mean that the light will be good for 2,000 hours. Actual service life varies depending on conditions of use, etc. If replaced with a long-life light, service life is 4,000 hours.
- When the light attached at the time of shipment has been used for 1,800 hours, the light monitor on the projector main unit lights up even in standby status. In addition, a message is displayed for about 30 seconds after powering up, urging you to replace the light. If this message is displayed, replace the light. If the light is replaced with a long-life light, the same message is displayed after 3,800 hours of use.
- If you continue to use the light with the message displayed, the projector power will be cut off after about 10 minutes, even if the power has been re-engaged, and standby mode will be assumed.
- The light is a consumable item. After it has been used for a long time, the image may become darkened or the light might no longer go on. These are characteristics of the light and they do not indicate malfunction.
- Light should be replaced whenever “Replace Light” appears on the screen. If you continue to use the projector without replacing the light, the projector power will cut off automatically after about 10 minutes even if you engage the power, and standby mode will be assumed.
- If the light goes out, there are no more images on the screen and the product can no longer be operated. After you have replaced the light, immediately order another light to serve as a spare so that a light is always available for replacement.

For safe operation of the projector, be sure to read the handling instructions included in the projector package. The projector provides a host of functions and can be given diverse settings. The settings required for using this product have already been made, and, under typical conditions, they will not need to be changed.

## 10-2 SCREEN CLEANING

STOP

### IMPORTANT

- To clean, wipe away dirt with a soft cloth. Do not rub the screen surface with an abrasive pad, brush or other rough object. Do not strike the screen with a duster.
- Apply water or neutral cleaning agent diluted with water to soft cloth, wring the cloth tightly and then wipe screen gently.
- Do not use chemicals, solvents, bleaches, etc., as they could damage the screen surface. Also do not use chemical wipes, etc.
- After cleaning with water or neutral cleaning agent diluted with water, make sure that the screen dries.

Clean the screen once per week. At the top and bottom of the screen there are a total of 10 LED boards for detecting the aim of the Control Unit (Gun). Be sure to also clean the plastic part surface at the front of LED boards.

## 10-3 FILTER CLEANING

### **STOP** IMPORTANT

- If too much dust collects on the filter, the projector interior will become very hot and the projector power supply will be cut off automatically.
- Be careful that filter material (sponge part) does not get sucked up in vacuum cleaner.
- Filter is to be inserted from a preset direction. Filter material (sponge part) is at projector side surface.
- Always have the filter attached before using. If it is not attached, dust can get sucked in, causing malfunction.

Clean the filter once per week. Understand that one week serves only as a guide. In some installation environments, dust can accumulate very easily.

To service the projector, remove the projector cover.

---

**1** Turn the MAIN POWER switch of the control tower to OFF.

---

**2** Remove the two front legs of the projector.



PHOTO 10-3a



- 
- 3** Remove 2 screws that fasten the side surface of one side of the projector cover.

SCREW (4), black  
M4×8, w/flat & spring washers

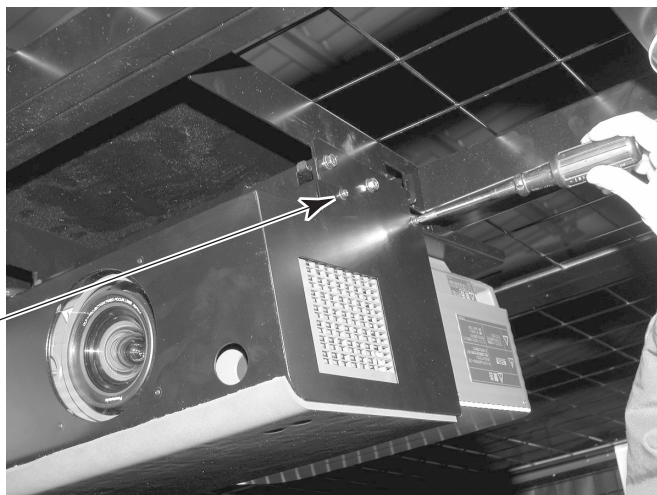


PHOTO 10-3b

- 
- 4** Remove projector cover hook, and then remove projector cover.

HOOK



PHOTO 10-3c

- 
- 5** Remove filter. Pull out filter from projector main unit by pulling on the filter bill with your fingers.

FILTER

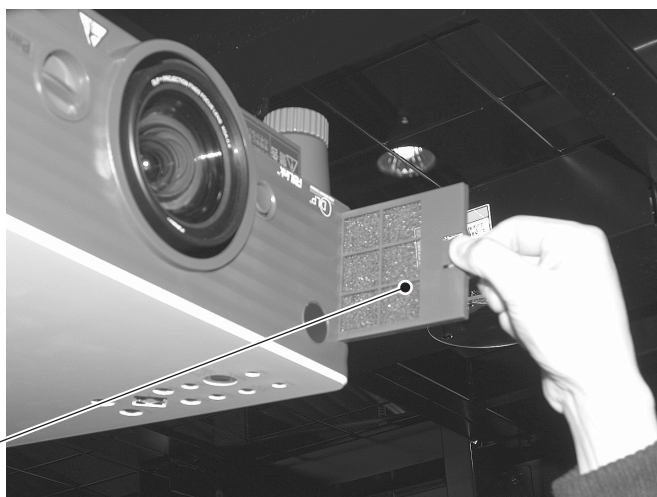
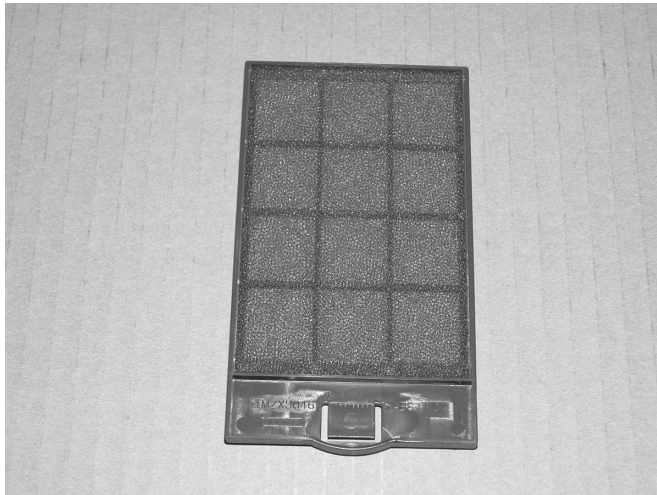


PHOTO 10-3d

- 
- 6** Clean filter. Remove dust accumulation with a vacuum cleaner. Be careful that filter material does not get sucked up in vacuum cleaner.



**PHOTO 10-3e**

- 
- 7** Attach cleaned filter to projector. Be careful to attach in the correct direction.

- 
- 8** If dust cannot be cleaned from the filter, replace the filter.

## 10-4 PROJECTOR MAIN UNIT CLEANING

STOP

### IMPORTANT

- Wipe the main unit with a soft, dry cloth. If dirt is excessive, take a cloth that has been soaked in a neutral cleaning agent diluted with water, wring it tightly and wipe surfaces gently. Then wipe off moisture with dry cloth.
- To use a chemical wipe, follow the product's instructions.
- Do not wipe the lens surface with a dusty cloth or cloth that has a rough nap. If dust or dirt gets on the lens, it will be magnified and projected on the screen. Wipe lens with a clean, soft cloth.
- Never use benzene, thinner or other chemicals or solvents. They can cause deformation, discoloration or coatings to fade out.

Images on the screen are influenced by the accumulation of dust or dirt on the projector main unit, especially on the lens. Clean the lens and projector main unit once per month.

Understand that one month serves only as a guide. In some installation environments, dust can accumulate very easily. To service the projector, remove the projector cover. (See 10-3.)

## 10-5 LIGHT REPLACEMENT

### WARNING

- Replace lights only with lights specifically designed for projectors. If other lights are used, there could be fires or other very serious accidents.
- Lights are very hot immediately after they have been used. Do not touch them. Otherwise you could get burnt. Wait for at least one hour for the light to cool down adequately before replacing it.

### CAUTION

- The light is a glass product. Do not touch the glass surface with your bare hand, expose it to strong impact, or scratch it. Dirt, impacts or scratches can cause the glass to crack, which could result in a serious injury.
- Light internal pressure is high. If light is exposed to an impact, it could burst. Handle lights carefully.
- If an old, removed light is not handled properly, it could also burst.
- If the light should crack, handle it carefully so that there are no injuries, etc., from glass fragments.
- A light might burst if it has been used beyond its replacement period. If it bursts inside the projector, contact the office cited in these instructions or the point of purchase.

### STOP IMPORTANT

- When a light has been replaced, reset the “Light Hours” setting. For directions on how to reset, read the projector handling instructions or the instructions included in the light package.
- Entrust light disposals to an industrial waste treatment facility.

Since the filter included in the package is also replaced when replacing a light, remove the projector cover. (See 10-3.)

# 11 COIN SELECTOR

## Removing a Jammed Coin

When the coin return button fails to refund coins, open the coin chute door and open the selector gate. Once the jammed coin is removed, insert a standard coin to ensure that the selector is working properly.

## Cleaning the Coin Selector

### STOP IMPORTANT

- Remove and clean smears using a soft cloth dipped in water or diluted chemical detergent which is then wrung dry.
- Never apply machine oil, etc. to the coin selector.
- After cleaning the coin selector, properly insert a standard coin to ensure that the selector functions correctly.

The coin selector should be cleaned once every 3 months. When cleaning, follow the procedures below:

- 1 Turn off game unit power supply. Open coin chute door.
- 2 Remove coin selector from coin chute door.
- 3 Open gate and wipe away dirt with animal hairbrush or other soft brush.

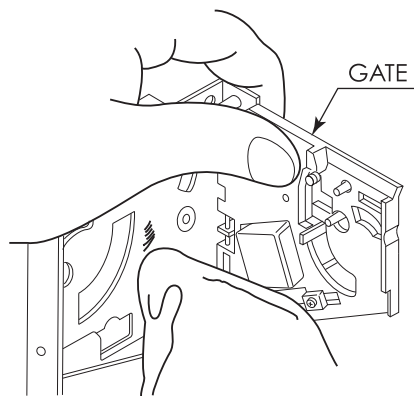
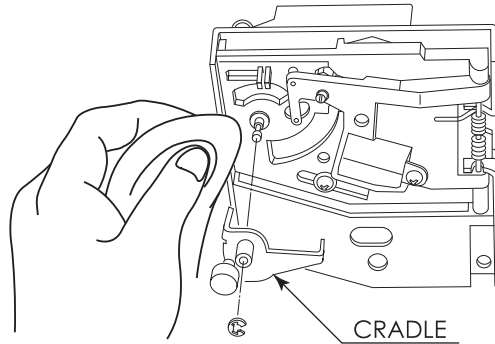


FIG. 11a

- 4** Soak a soft cloth in water or in a neutral cleaning agent diluted with water, wring it tightly and wipe away dirt.
- 5** Remove cradle.  
When removing the retaining ring (E ring), be careful not to bend the rotary shaft.



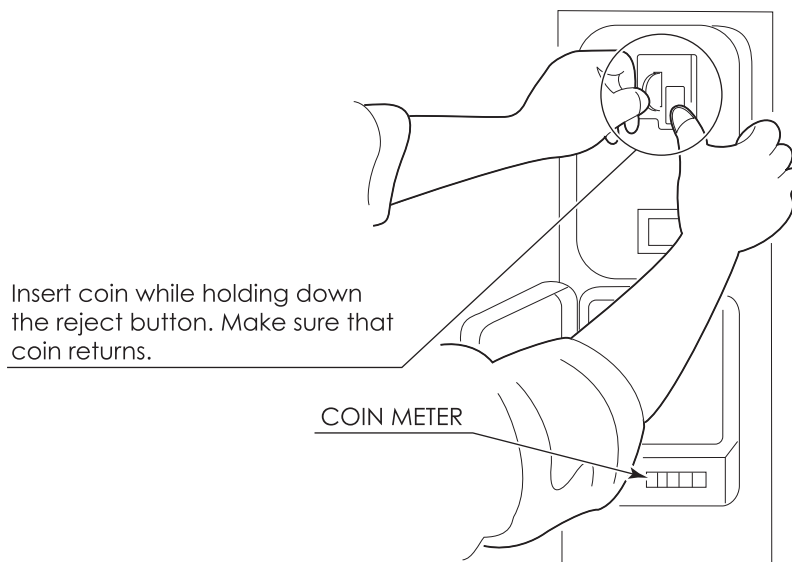
**FIG. 11b**

- 6** Use soft cloth to wipe dirt from rotary shaft and bearing.
- 7** After wiping off dirt, wipe away moisture with a dry cloth and make sure that the coin selector is completely dry.

**Coin Insertion Test**

Carry out a coin insertion test once per month. At the same time, check the following points:

- Does the Coin Meter count properly?
- Do coins drop into the Cashbox correctly?
- Are coins rejected when inserted while holding down the Reject Button?



**FIG. 11c**

## 12 CONTROL UNIT (GUN)

### 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.
- Compressed air blows out from the Control Unit (Gun). Do not disassemble the Control Unit (Gun) without bleeding air. There is the danger that air could shoot out suddenly.
- Use the TEST Mode to check after parts have been replaced. Check everything carefully before using the TEST Mode. Make sure that no one is near the ride and that there are no foreign objects.
- Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.
- Exercise due caution in performing soldering work. If soldering iron is handled carelessly, there could be fires or burns.

### CAUTION

- When fastening plastic parts, be careful not to tighten screws or nuts excessively. If these are tightened to excess, parts could be damaged, resulting in injuries from fragments, etc.
- After the unit has been disassembled and reassembled again, check carefully to be sure that there are no gaps or rattling at the junctions and that the trigger and buttons can be operated smoothly. If there are gaps or rattling, or if operation is not satisfactory, the players could get fingers or hands caught, resulting in injury.
- Be sure to inspect Control Unit (Gun) surfaces for cracks and damage. Players could be injured if they play when the unit is cracked or damaged.
- Assemble so that there is no gap between cover L and R. If there is a gap or rattling, the players could get fingers or hands caught, resulting in injury.

## **STOP** IMPORTANT

- Do not cut the band that holds down bundled wire inside the Control Unit (Gun). If the band is cut, it can cause connector connections in the unit to become faulty. If the band has to be cut to facilitate other work such as replacing wire, use band to fasten wire again to its original position.
- Once the product has been disassembled, use slack preventive agent (product No. : 090-0012). Coat screws with suitable amounts of this agent and then tighten them. If this agent is not used, the product might start rattling or come apart.
- Use the slack preventive agent prescribed in these instructions. If any other agent is used, there could be chemical changes that inhibit the use of screws and part surfaces could be damaged.
- Be careful not to damage or lose small parts or screws.
- When a part has been replaced, be sure to always make adjustments and check conditions in TEST Mode.

If the Control Unit (Gun) does not operate satisfactory and adjustments in TEST Mode are ineffective, it could be that parts inside the Control Unit (Gun) have been damaged.

Follow the steps given below to remove the Control Unit (Gun), then take it apart and replace parts.

To replace parts in the Control Unit (Gun), detach the L and R covers of the outer part.

Because internal parts are inserted on the cover R side, work with cover R facing downward.

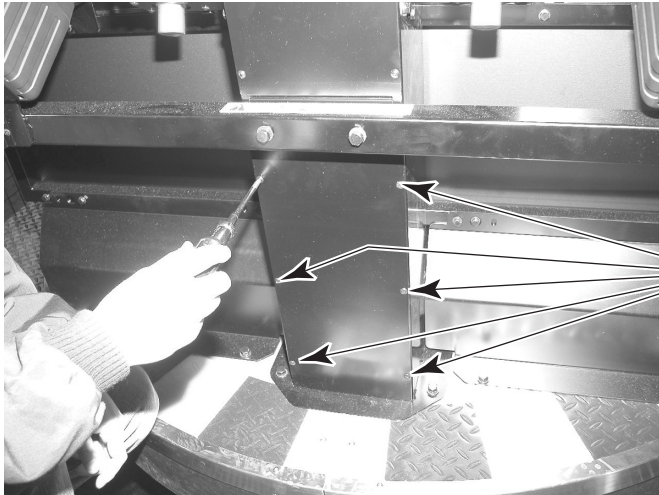
### **How to Remove Control Unit (Gun)**

Inside the Control Unit (Gun) there are microswitches for the trigger and the hand grenade button.

- 1** Disengage the power. Set the MAIN POWER switch of the control tower to OFF.
- 2** Set the indoor power supply breakers to OFF.
- 3** Perform air bleeding. (See 9-1.)

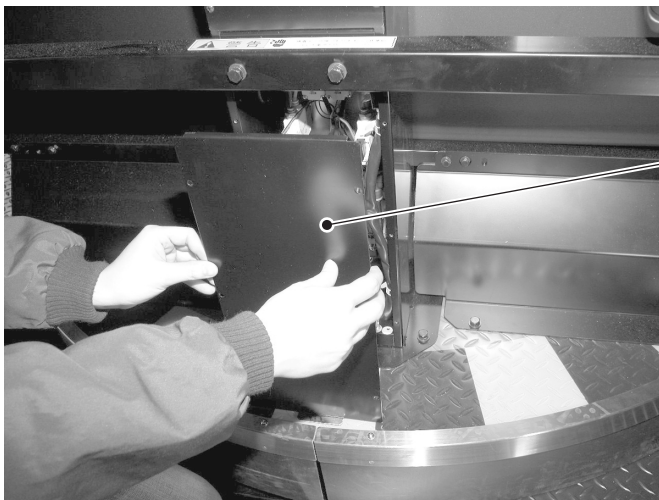


**4** Remove stand lid lower in front of ride. Remove 6 truss screws.



TRUSS SCREW (6), black  
M4x8

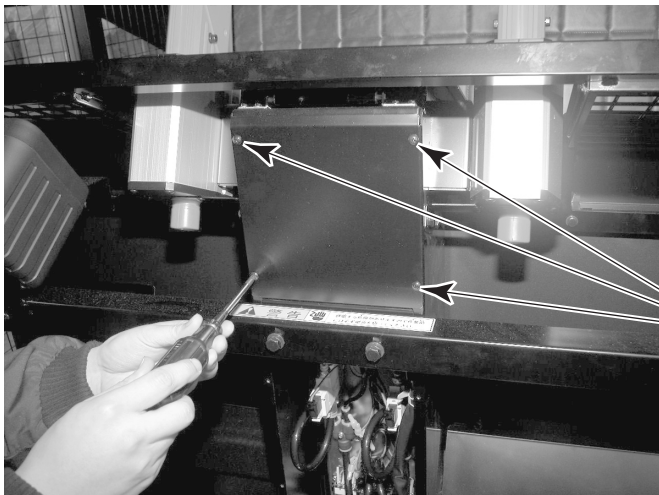
**PHOTO 12-1a**



STAND LID LOWER

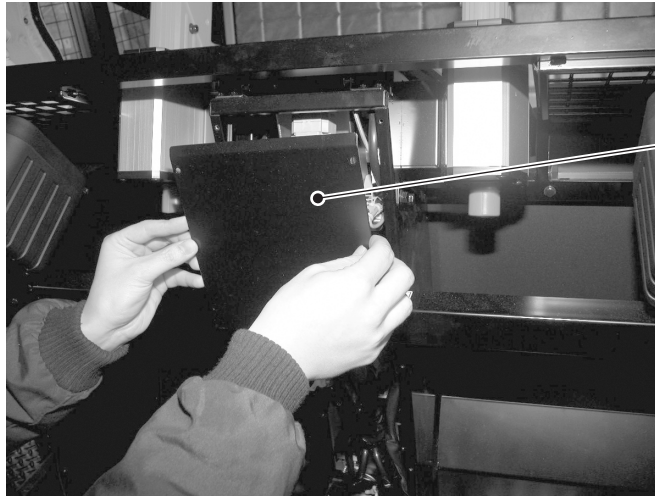
**PHOTO 12-1b**

**5** Remove stand lid upper in front of the Control Unit (Gun) holder. Remove 4 truss screws.



TRUSS SCREW (4), black  
M4x8

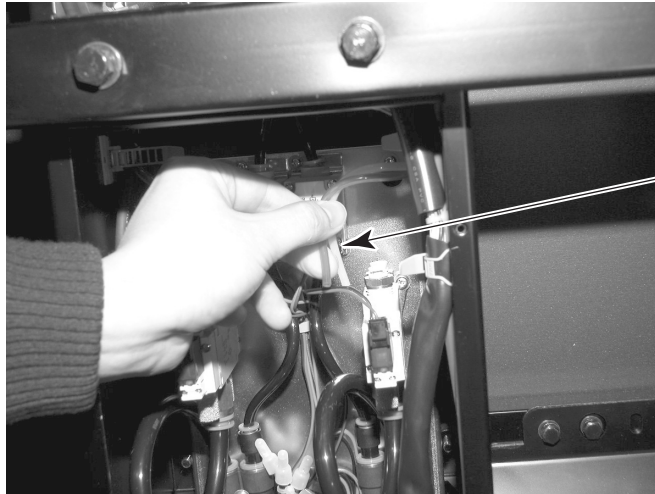
**PHOTO 12-1c**



STAND LID UPPER

PHOTO 12-1d

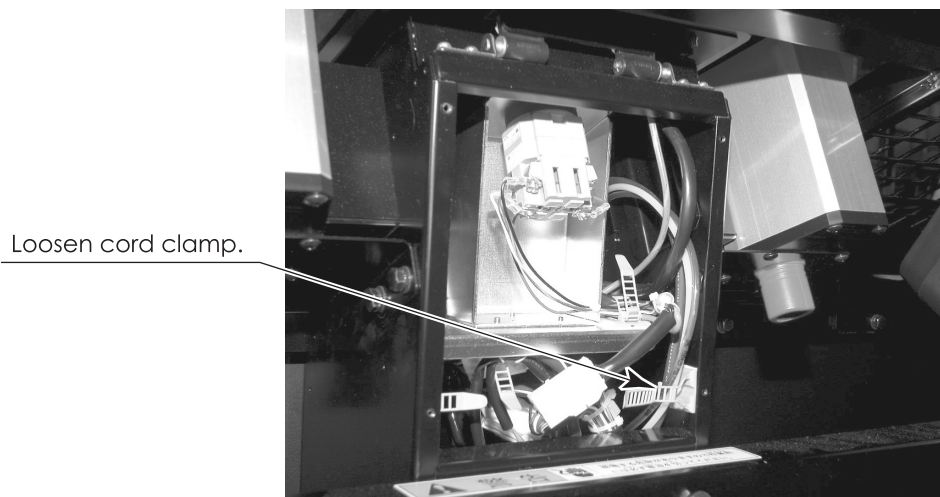
6 Pull out red and yellow tube in lid from joints.



Pull out red and yellow tube.

PHOTO 12-1e

7 Wire and air tube in lid are fastened by cord clamp. Loosen cord clamp.

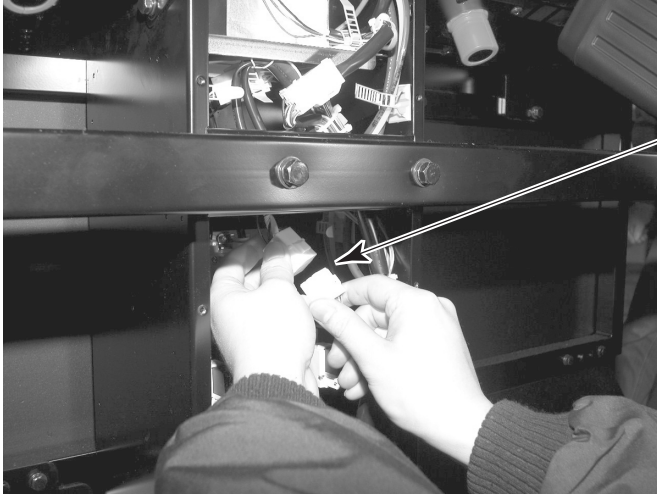


Loosen cord clamp.

PHOTO 12-1f

---

**8** Remove connector connected to Control Unit (Gun).

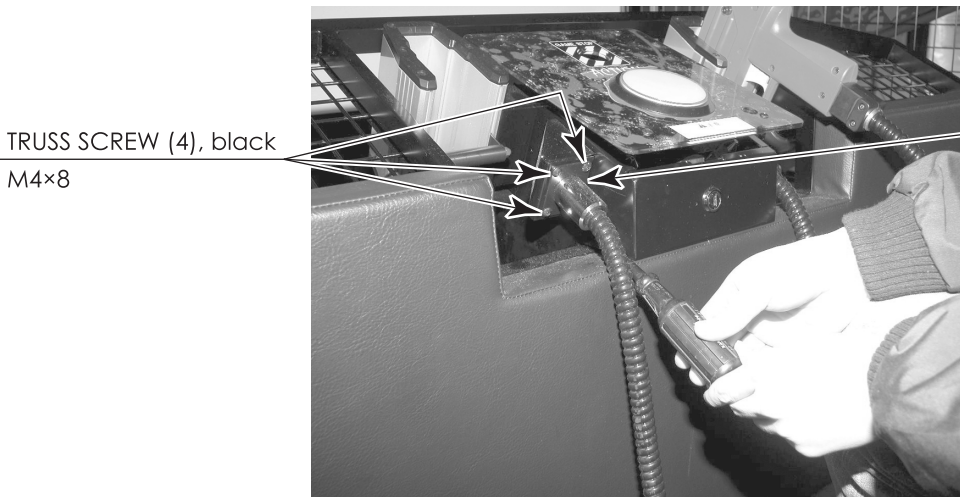


Remove connector.  
YL12P

**PHOTO 12-1g**

---

**9** Remove socket plate. Remove 4 truss screws.



TRUSS SCREW (4), black  
M4×8

SOCKET PLATE

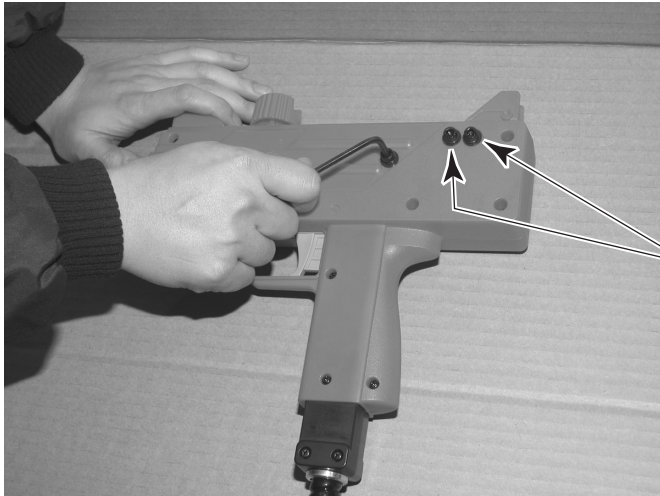
**PHOTO 12-1h**

---

**10** Remove socket plate and pull out wire and air tube. Be careful not to damage wire or air tube.

**Microswitch Replacement**

- Two types of screw are used to fasten the L and R covers. Remove 3 screws with hexagon holes. Use screwdriver or hexagon bar wrench measuring 4 mm to opposite side.



SCREW WITH HEXAGON HOLE (3), black  
M5×10, flat & spring washers used

PHOTO 12-1i

- Remove a total of 9 screws.

SCREW (9), black  
M3×12, w/small flat & spring washers

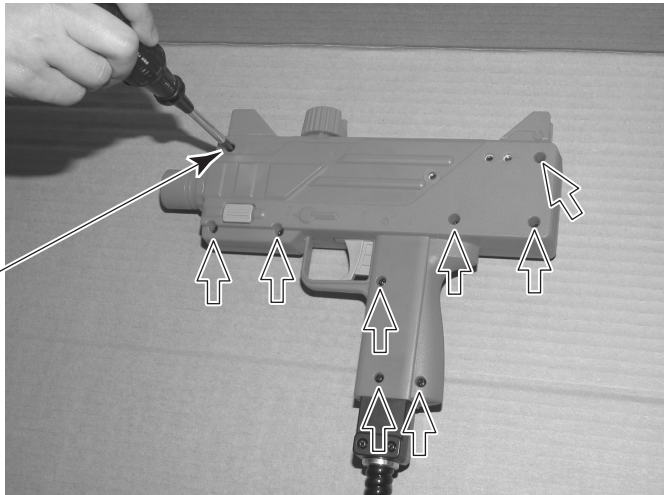


PHOTO 12-1j

- Place unit with cover R facing downward and slowly lift cover L directly upward.

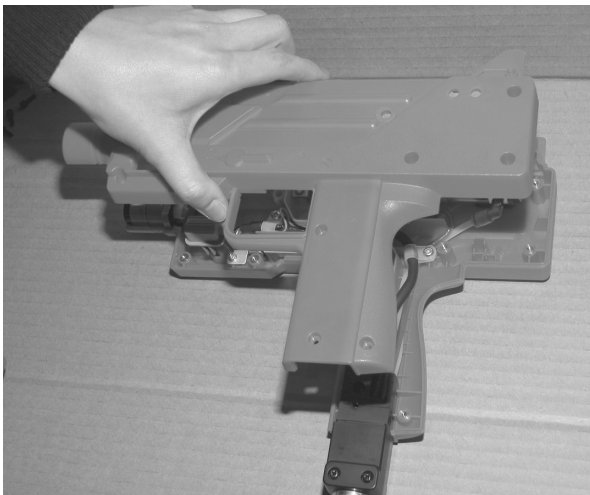


PHOTO 12-1k

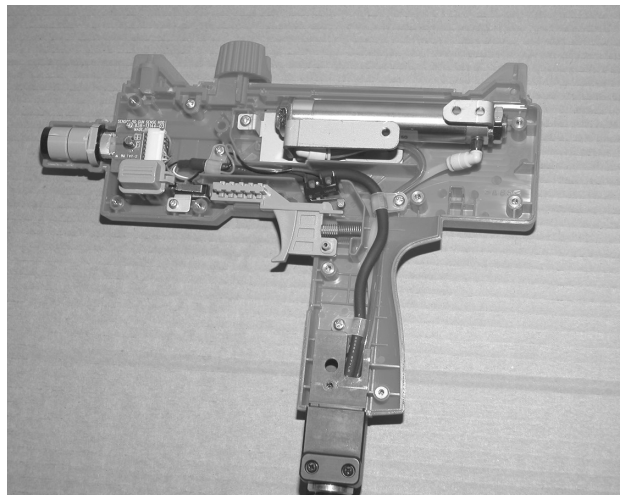


PHOTO 12-1l

**4** Pull off microswitch for trigger from cover R.

MICROSWITCH  
509-5080

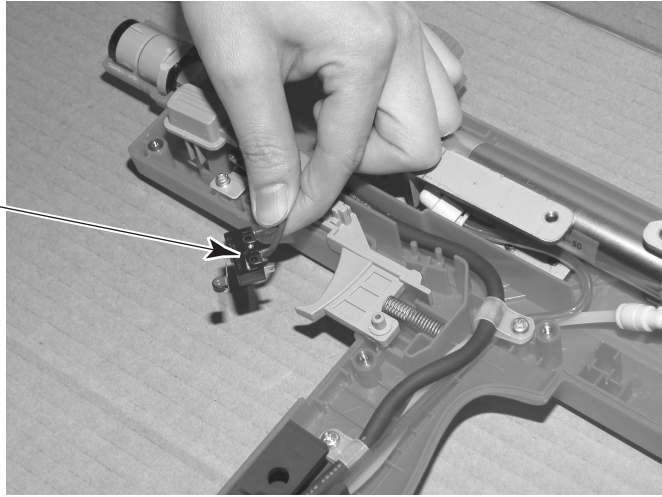


PHOTO 12-1m

**5** Detach soldered part, and then remove microswitch.

**6** The microswitch for hand grenade button is below the hand grenade button.  
Pull off the hand grenade button from cover R.

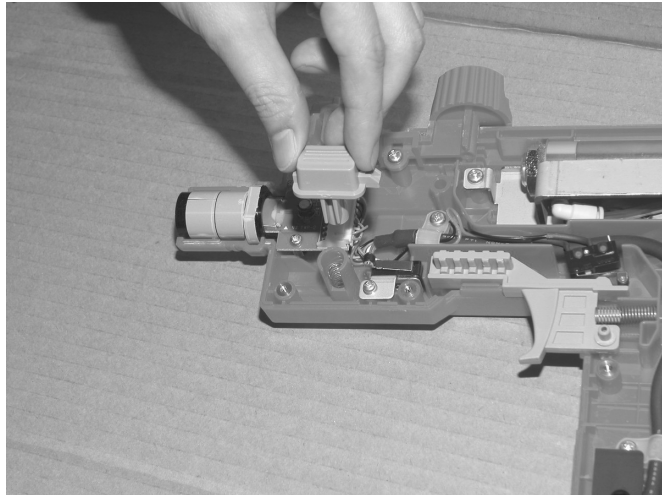


PHOTO 12-1n

**7** Remove 1 screw holding down bracket.

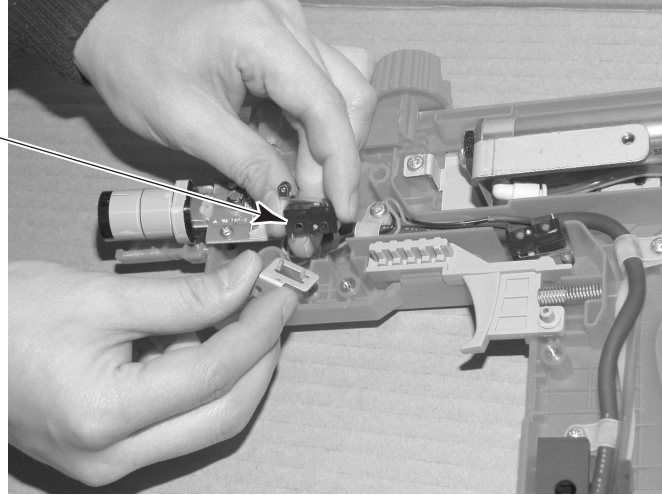
SCREW (1)  
M3×6, w/spring washer



PHOTO 12-1o

- 
- 8** Remove microswitch from cover R. Remove microswitch from bracket and separate soldered part.

MICROSWITCH  
509-5080



**PHOTO 12-1p**

- 
- 9** Apply solder to new microswitches, then assemble the Control Unit (Gun). At this time, manipulate trigger and each button to confirm that the microswitches go ON/OFF properly, then attach cover L to cover R. Be careful not to tighten screws excessively.

- 
- 10** Refer to the service manual and perform input test.

## Sensor Unit Replacement

- 1 Remove Control Unit (Gun).
- 2 Remove cover L in the same manner as when replacing microswitch.
- 3 Detach connector and remove sensor unit.

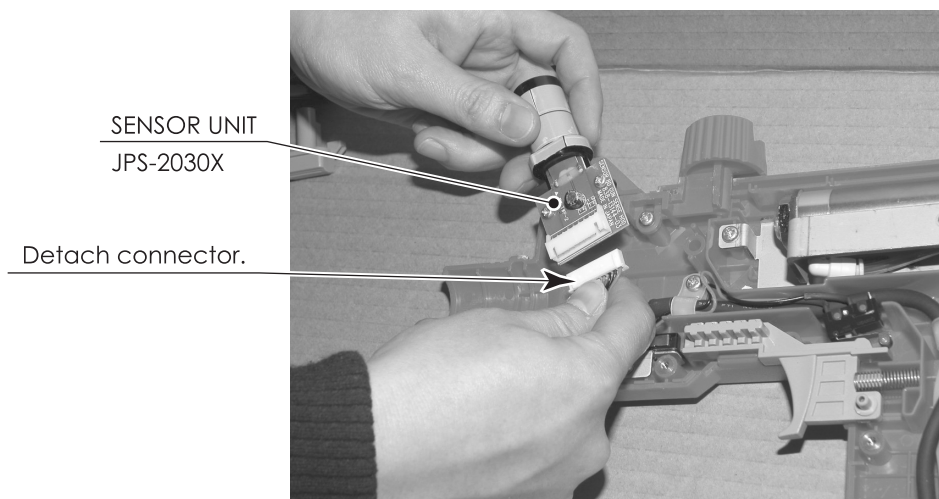


PHOTO 12-1q

- 4 After replacing the sensor unit, assemble the Control Unit (Gun).  
At this time, manipulate trigger and each button to confirm that the microswitch goes ON/OFF properly, then attach cover L to cover R.
- 5 Refer to the service manual and adjust and check aiming.

## 13 LAMP REPLACEMENT

### ⚠ WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- There is danger that hot lamps can cause burns. Exercise due caution when replacing lamps.
- Use lamps of the specified ratings. Using lamps with different ratings may cause fires or damage.
- Watch your step while working. There is a step leading to the ride inside the cabinet. You could stumble and fall.
- Such things as deteriorated insulation in lighting fixtures can cause a short circuit and/or smoke. Make sure there are no abnormalities. For example, check if you can smell anything burning, if any sockets have been discolored and if the lamp has to be replaced frequently.

### ⚠ CAUTION

- There is a top fence (ceiling) and upper beam. When using a stepladder inside the cabinet, be careful not to hit your head against anything.
- Be careful when handling parts made of plastic or glass. For example, be careful not to tighten screws excessively. If such parts are damaged, injuries could be caused by fragments, cracks, etc.

**1** Disengage the power. Set the MAIN POWER switch of the control tower to OFF.

**2** Remove lamp cover plate. Remove 4 truss screws.

TRUSS SCREW (4), chrome  
M4×8



PHOTO 13a



- 3** Replace the halogen lamp. Be careful at this time not to touch the glass at the front of the lamp. There is danger that oil from your finger will be burnt, resulting in damage.

HALOGEN LAMP 110 V, 40 W  
390-6732-40W



**PHOTO 13b**

## 14 PERIODIC INSPECTION

The items listed below require periodic check and maintenance to retain the performance of this machine and to ensure safe business operation.

### WARNING

- Be sure to check once a year to see whether Power Cords are damaged, the plug is securely inserted, dust has accumulated between the Socket Outlet and the Power Plug, etc. Using the product with accumulated dust can cause fire and electric shock.
- Never use a water jet, etc. to clean inside and outside the cabinet. If the machine gets wet for any reason, do not use it until it has completely dried.
- Periodically, around once a year, get in touch with the place of contact herein stated or the Distributor, etc. where the product was purchased from, regarding internal cleaning. Using the product with accumulated dust in the interior can cause a fire or accident. Note that professional cleaning will require a fee.
- 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.
- To have the compressor filter replaced, to have the drive part of the ride greased up, or to change oil, request service from the point of purchase or the office indicated in these instructions. Professional knowledge and specialized tools are required for such work. If work is performed by someone without expertise, serious accidents could occur. This could cause malfunction and/or poor operation.

TABLE 14 PERIODIC INSPECTION TABLE

ITEMS	DESCRIPTION	PERIOD	REFERENCE
CABINET PERIPHERY	Check space for evacuation and exhaust	Daily	2, 3, 6, 7
CABINET	Confirm that adjusters contact floor	Daily	3, 6, 7
	Trial run	Daily	3, 7
	Check safety devices	Daily	3, 7
	Check door opening/closing	Daily	3, 7
	Input/output test	Monthly	Service Manual
	Retighten all bolts and nuts	Every 6 months	6
DRAINAGE CONTAINER	Check and remove fluid	Daily	3, 9
COMPRESSOR	Drain water from filter	Weekly	9-2
	Drain water from air tank	Weekly	9-3
	Check for required pressure	Every 2 months	9-4
	Replace filter	Every 6 months	Previous page
PROJECTOR	Screen cleaning	Weekly	10-2
	Filter cleaning	Weekly	10-3
	Projector main unit cleaning	Monthly	10-4
	Check screen adjustment	Monthly	Projector handling instructions
	Lamp, filter replacement	Upon message display	10-5
CONTROL UNIT	Cleaning, Inspection	Daily	3
	Switch testing, aiming check	Monthly	Service Manual
COIN SELECTOR	Coin insertion test	Monthly	11
	Cleaning	Every 3 months	11
LAMP	Inspection of lighting fixtures	As appropriate	13
ELECTRICAL/ ELECTRONIC PARTS	Inspection	As appropriate	Previous page
RIDE DRIVE PART	Grease up, Oil replacement	6 months after installation, 1 year after operation	Previous page
CABINET INTERIOR	Cleaning	1 year	Previous page
POWER CABLE	Inspection, Cleaning	1 year	Previous page
CABINET SURFACES	Cleaning	As appropriate	See below

### 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.

## 15 TROUBLESHOOTING

### 15-1 TROUBLESHOOTING TABLE

#### WARNING

- The work described below should be carried out by the site maintenance personnel or other qualified professional. Work carried out by personnel without the necessary skill or technology can cause accident.
- If no improvements can be noted even after the following measures have been taken, disengage the power and contact the point of purchase or the office indicated in these instructions. If the power is left on while there is an abnormality, a fire, electric shock or other serious accident can occur.
- If a problem arises and the ride (seat) will not rotate, make sure that no one is near the ride before taking countermeasures. If someone is nearby and the ride suddenly starts to rotate, serious injury could result.
- Do not expose the internal system needlessly when there are no problems. Otherwise there could be an electric shock and/or short circuit.
- Once the reason that the breaker or circuit protector activated has been removed, restore the breaker or circuit protector to its original condition. If the product is used while the reason for activation has not yet been removed, heat and/or fire could be generated.

When an abnormality is detected in this product, an error message is displayed. For countermeasures when an error message is displayed, refer to the service manual.

If it appears that problems or malfunctions have occurred, check the following.

**Is there an abnormality with parts connecting wires?**

Inspect the connections of wiring connectors. Loose connectors, faulty connections between wiring and metal fixtures inside connectors, or other problems with the connection of wiring are the first thing to consider.

**Is there any foreign matter on an IC board?**

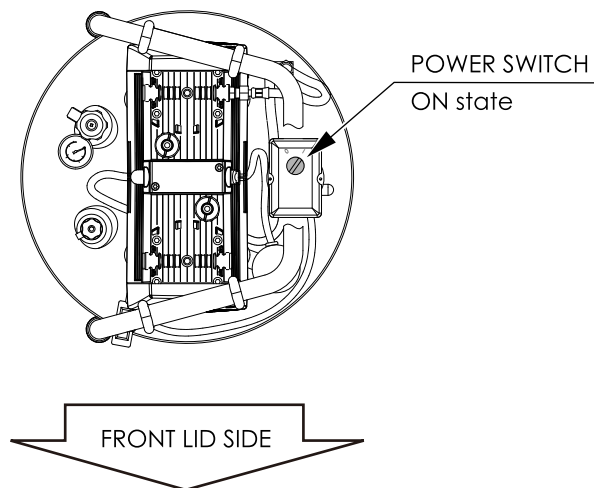
The second thing to consider is abnormalities with IC boards (e.g., game board). Even if there is nothing wrong with the board itself, faulty operations or malfunctions can be caused by screws, dust or other foreign matter.

**TABLE 15-1a**

<b>PROBLEMS</b>	<b>CAUSE</b>	<b>COUNTERMEASURES</b>
Reset switch and GAME STOP Button do not blink and fan does not turn even if the MAIN POWER switch is ON.	The breaker in the control tower has been activated by a momentary overload or current leakage.	After the cause of overload or current leakage has been removed, set the breaker to ON. <See Chapter 6 [17].>
	Faulty wiring connection.	Check wiring connections between control tower and rear base. <See Chapter 6 [1], [15].>
The start switch does not blink and, even when it is pressed, the game will not start.	If the motion select switch is not in STILL Mode, the safety sensor responds.	If the control tower safety lamp blinks, check again to see if the door is opened, if there is an obstruction at the foot sensor, if the armrest is raised, and if the seat belt is unfastened.
	In the case of coin operation setting, there are not enough credits to enable game start.	Insert coins until there are enough credits to enable game start and establish the start standby condition. Establish coin/credit setting in TEST Mode.
	In the case of ticket operation setting, the start standby condition is not established.	Open and close the door or trigger the foot sensor and establish the start standby condition.
	In the start standby condition, there is no reaction from safety sensor for 3 minutes or longer.	Press down on the GAME STOP Button of the ride for at least 2 seconds so that the start standby condition is restored.
	A seatbelt is not unfastened after the game has been completed.	Whenever a game has been completed, be sure to always unfasten the seatbelts of both player 1 and player 2.
No sound is generated from the speaker.	Faulty adjustment of sound volume.	Adjust the sound volume. <See 3-1 of the Service Manual.>
	Faulty wiring connection.	Check with speaker test in TEST Mode. Then check connections of speakers that do not produce sound. <See the LINDBERGH Service Manual.>
Ride will not rotate during game.	The motion select switch is in STILL Mode.	Change the motion select switch to NORMAL Mode or MILD Mode, and then start game.
	The foot sensor activates.	Remove obstacles that cause the foot sensor to respond.
	The armrest is raised.	Lower armrest.

**TABLE 15-1b**

PROBLEMS	CAUSE	COUNTERMEASURES
Compressor will not start.	The circuit protector for compressor inside the control tower has been activated by a momentary overload.	After the cause of overload has been removed, set the circuit protector to ON. <See Chapter 9.>
	The compressor power switch is off.	Set the power switch on the compressor to ON. <See Fig 15-1.>
	Air pressure in tank is adequate.	If the Control Unit (Gun) is manipulated and compressed air is used, the compressor starts automatically.
	Power supply voltage is inadequate.	Provide the rated power supply voltage.
	Power supply frequency is different.	Confirm that the power supply frequency is suitable for the compressor used.
There is no reaction of the Control Unit (Gun) during game play and no blowing.	The compressor tank air cock is shut.	Open the air cock completely. <See Chapter 9.>
	Faulty adjustment of air regulator.	Adjust the air regulator. <See 9-4.>
	The compressor tank drain cock is open.	Shut the drain cock completely. <See Chapter 9.>
	Faulty connection of air tube.	Check air tube connections. <See Chapter 6 <span style="border: 1px solid black; padding: 0 2px;">15</span> .>



**FIG. 15-1 COMPRESSOR POWER SWITCH**

**TABLE 15-1c**

<b>PROBLEMS</b>	<b>CAUSE</b>	<b>COUNTERMEASURES</b>
Projector does not project images.	Projector power switches are at OFF.	Set projector power switch to ON at two locations. <See Chapter 6 [8], [19].>
	Faulty wiring connection.	Confirm that the projector power cable and video cable are connected properly. <See Chapter 6 [8].>
	Faulty projector setting.	Establish projector settings properly. <See Chapter 10.>
	Unit restarted immediately after the power was cut off.	The projector lamp starts to glow after several tens of seconds. For restart, however, wait for at least 5 minutes.
	Projector lamp service life has elapsed.	Replace the projector lamp. <See 10-5.>
Projector images for front and rear screens are reversed.	Faulty wiring connection.	Confirm that the display on the video cable connected to the projector reads as “VIDEO0” for front projection and “VIDEO1” for rear projection. <See Chapter 6 [8].>
Color of projected images is strange.	Faulty wiring connection.	Confirm that the connector for video cable connected to the projector is connected properly in terms of R/G/B. <See Chapter 6 [8].>
Spot light does not go on.	The spot light does not go on in a scene it should.	Confirm that the spot light goes on during output test in TEST Mode. <See Service Manual.>
	Faulty lamp contact.	Attach the halogen lamp properly. <See Chapter 6 [16].>
	Lamp service life has elapsed.	Replace halogen lamp. <See Chapter 13.>
Control unit aim is not aligned properly.	Faulty adjustment of aim.	Set in the TEST Mode gun calibration setting. <See Service Manual.>
	Faulty screen sensor LED board.	Replace sensor LED board. <See 15-2.>
	Faulty Control Unit (Gun) sensor board.	Replace sensor board. <See Chapter 12.>
	Faulty wiring connection.	Check the wiring connections between screen sensor LED boards. <See Chapter 6 [6].>
	Light from the sensor LED board is interrupted.	Remove reflective objects and/or obstructions that could interrupt light.

**TABLE 15-1d**

<b>PROBLEMS</b>	<b>CAUSE</b>	<b>COUNTERMEASURES</b>
Operability of Control Unit (Gun) trigger and/or button is unsatisfactory.	Microswitch malfunction.	Replace microswitch. <See Chapter 12.>
	Deformation of trigger or button; age deterioration of spring.	Replace part. <See Chapter 12.>
	Control unit screw has been tightened excessively.	Adjust to appropriate tightening.
At ride turn test in TEST Mode, the gun calibration setting is not assumed.	Ride has not completed initialization.	Enter TEST Mode after initialization is completed. <See Chapter 7.>
	Ride does not face front position.	Enter TEST Mode with the ride facing the front position.
TEST Mode cannot be entered.	The ride is currently operating or might operate under current situation.	Enter TEST Mode after the customer welcome screen has appeared.
	A safety device has activated so that the game stops.	Enter TEST Mode after rectifying the game stop condition.
Ride does not rotate for ride turn test in TEST Mode with the gun calibration setting.	Safety sensor has been activated.	Rotate ride under conditions in which safety sensor does not activate.
	Safety device activated while ride was rotating.	Exit TEST Mode, and then rectify game stop condition.
There are items that cannot be tested by input/output test in TEST Mode.	Game mode and control board communication check are not completed.	Enter TEST Mode after communication check has been completed.



## 15-2 SENSOR LED BOARD REPLACEMENT

### WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.
- Use the TEST Mode for checks after replacements. Before using TEST Mode, however, make sure that no one is near the ride and that there are no obstructions.

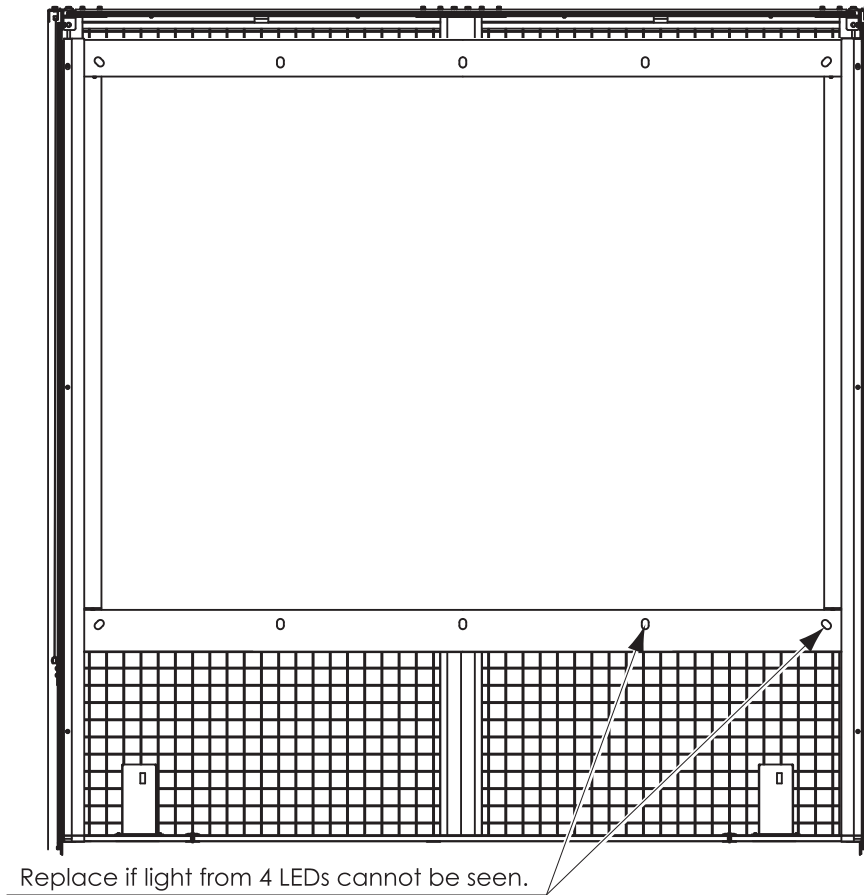
### CAUTION

- Use two people to replace sensor LED board of screen sensor lower: one person to hold the screen sensor lower and another to do the replacement work. If screen sensor lower is suspended while working, there could be an accident if it ever detached and fell down.
- To replace sensor LED board of screen sensor upper, first remove screen sensor upper. It is very difficult to work while the screen sensor upper is suspended and there could be an accident if it ever detached and fell down.

### STOP IMPORTANT

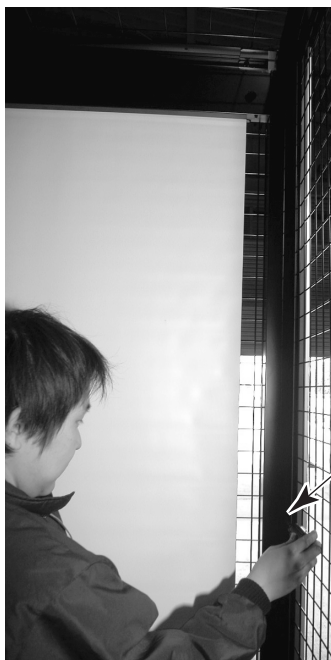
- Be careful not to lose any flat washers or plastic washers that fasten sensor LED board.
- Be careful of the direction in which sensor LED board is attached.

There are a total of 10 sensor LED boards as aim sensors at the top and bottom of the screen. There could be a defect or malfunction whenever light from 4 of the LEDs on each sensor LED board cannot be seen. Replace in the sequence given below. Follow the same sequence to wipe away dirt from surfaces.



**FIG. 15-2a**

- 1** Disengage the power. Set the MAIN POWER switch of the control tower to OFF.
- 2** Remove wire cover screen L and R. Remove 3 screws from each screen. Screws with flat and spring washers are used.



**PHOTO 15-2a**

SCREW (3 ea.), black  
M4×8, w/flat & spring washers



**PHOTO 15-2b**

**3** To replace sensor LED board on the side of the screen sensor lower, remove 2 screws from the top of the screen sensor lower. Screws with flat and spring washers are used.

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



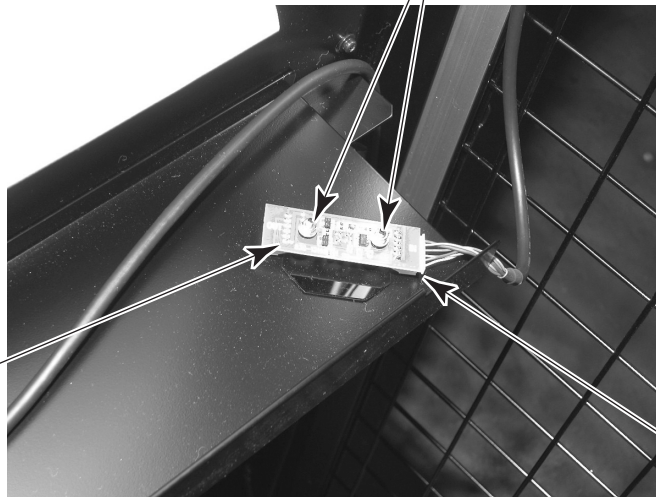
PHOTO 15-2c

**4** Open so that the upper side of screen sensor lower comes down toward you. The screen sensor lower is suspended. Be sure to hold it firmly while working since it is not securely fastened.

**5** Detach connector connected to the sensor LED board to be replaced, remove two U-nuts used for fastening, and replace board. Regarding sensor LED board on the right edge as you face the screen, connectors are connected only on one side.

U-NUT (2)  
M3, flat & plastic washers used

SENSOR LED BOARD  
838-13145R01



Detach connector.

PHOTO 15-2d

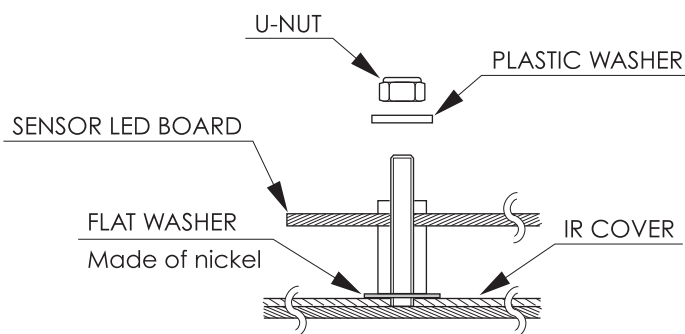


FIG. 15-2b

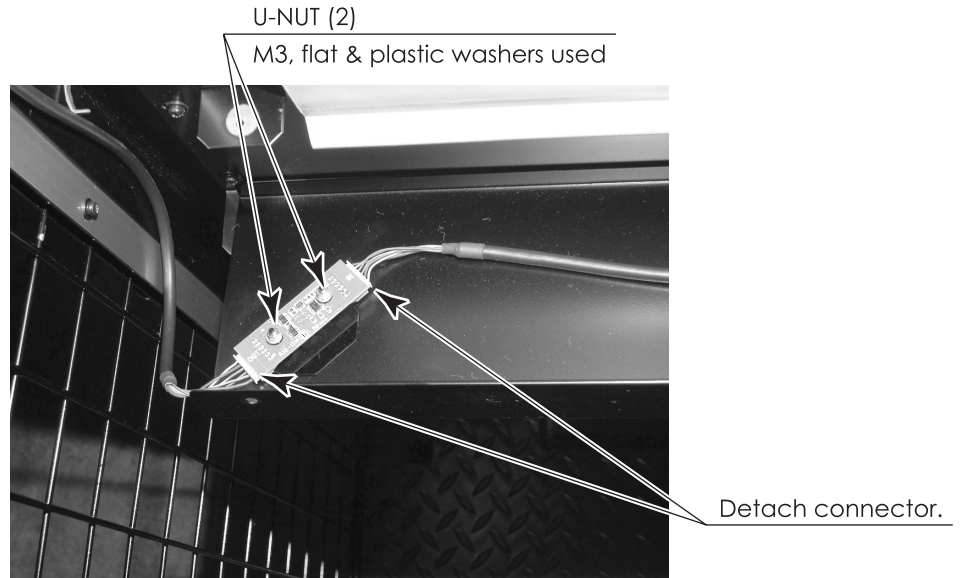


PHOTO 15-2e

- 6** To replace sensor LED board on the side of the screen sensor upper, remove 2 screws from the bottom of the screen sensor upper. Screws with flat and spring washers are used.

SCREW (2), black  
M4×8, w/flat & spring washers



PHOTO 15-2f

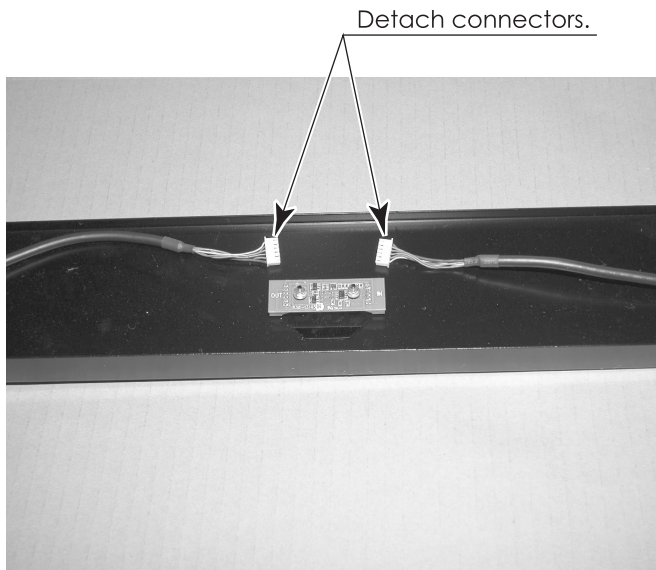
- 7** Open so that the underside of the screen sensor upper goes up toward you. The screen sensor upper is suspended. Be sure to hold it firmly while working since it is not securely fastened.



PHOTO 15-2g

**8** Detach connectors connected to sensor LED board on both edges of screen sensor upper, and then remove screen sensor upper.

**9** Detach connectors connected to the sensor LED board to be replaced.

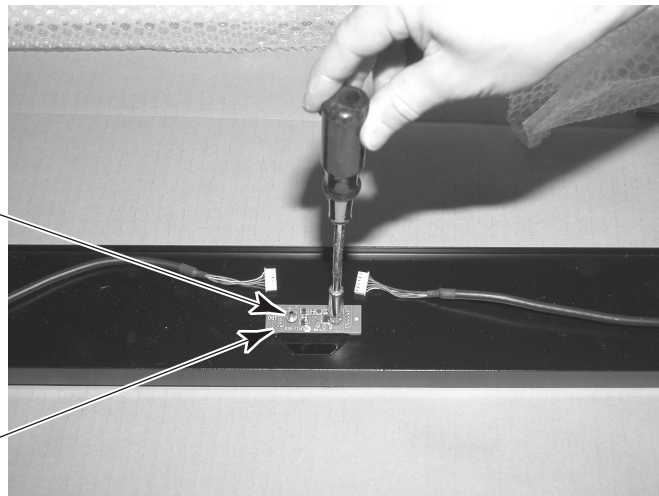


**PHOTO 15-2h**

**10** Remove 2 U-nuts and replace sensor LED board. Be sure to attach sensor LED board so that the directions of IN and OUT are the same as before replacement.

U-NUT (2)  
M3, flat & plastic washers used

SENSOR LED BOARD  
838-13145R01



**PHOTO 15-2i**

**11** When attaching parts after a replacement, be careful not to damage wire or sensor LED board.

**12** Refer to the service manual and adjust aim.

## 16 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.
- Have work pertaining to electric circuitry such as with the game board done by the site maintenance personnel or other qualified professional. Otherwise there could be an electric shock or other serious accident. If no one with proper knowledge and skills is available, request work from the point of purchase or the office indicated in these instructions.
- Watch your step while working. There is a step leading to the ride inside the cabinet. You could stumble and fall.
- Have auxiliary lighting made available. The cabinet structure makes it difficult for external lighting to reach inside the cabinet and floorboards are removed. Working in an environment without proper illumination can result in accidents. It can also cause damage to parts or wiring, resulting in 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 expose the game board, etc. for any reason. Doing so may cause electric shock or malfunctioning.
- No connectors other than those connected on the game board when first delivered can be used by this product. Do not connect any other wires to any of the unused connectors. This may lead to the generation of heat, smoke or burn outs.
- When replacing or repairing the game board and then returning it to the cabinet, be sure to reconnect all the connectors correctly. Improper connection may cause electric shock, short circuit or fire.
- When connecting the connectors, be sure to attach them correctly. There is only one correct way in which they must be connected. Attempting to connect them incorrectly may cause damage to the pins on the connectors, and cause electric shock, short circuit or fire.

### 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.
- The chip parts on IC boards can be damaged by electrostatic discharge from the human body. Before handling an IC board, always neutralize any static charge in the body by touching a grounded metal surface.
- When attaching or removing floorboard, be careful that fingers or hands do not get caught in anything.

## STOP IMPORTANT

- When exchanging the game board place and post off the damaged board in the new board's special packaging. If you do not have the packaging or it is damaged order one using the following product number/name <601-11691: CARTON BOX LBG>.
- When sending a board for repairs or do not dismantle the board in any way prior to sending it away. It may not be possible to meet your request if any parts are missing.
- Send a game board in for repair with the key chip still inserted.

### 16-1 REMOVING THE GAME BOARD

The game board (LINDBERGH) and other boards are underneath the MAIN BD of the rear base floorboard.

**1** Disengage the power. Set MAIN POWER switch of control tower to OFF.

**2** Remove a total of 4 sashes on the MAIN BD of the floorboard. Remove 3 truss screws from each sash.

TRUSS SCREW (3 ea.), chrome  
M4×25

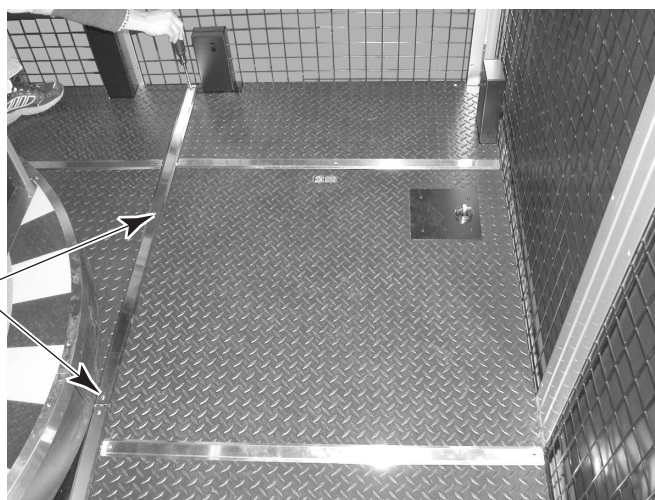


PHOTO 16-1a

**3** Remove floorboard MAIN BD. Unlock with master key.

Unlock.

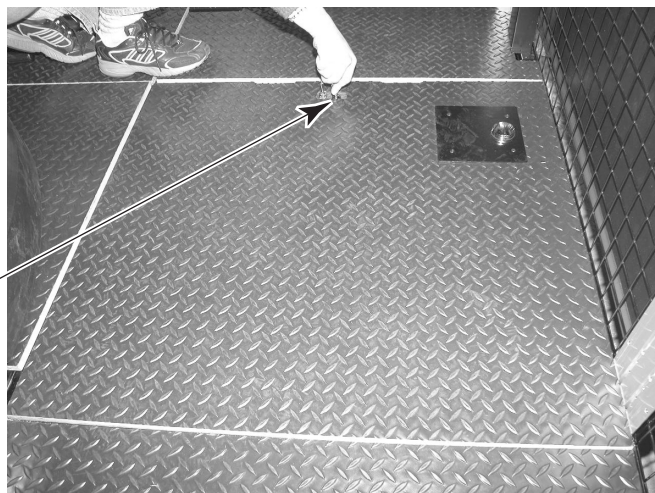


PHOTO 16-1b

- 
- 4** Detach all connectors connected to the LINDBERGH. For connectors that have screws at both ends, remove these connectors using a Philips screwdriver to loosen their screws.

Detach connector.

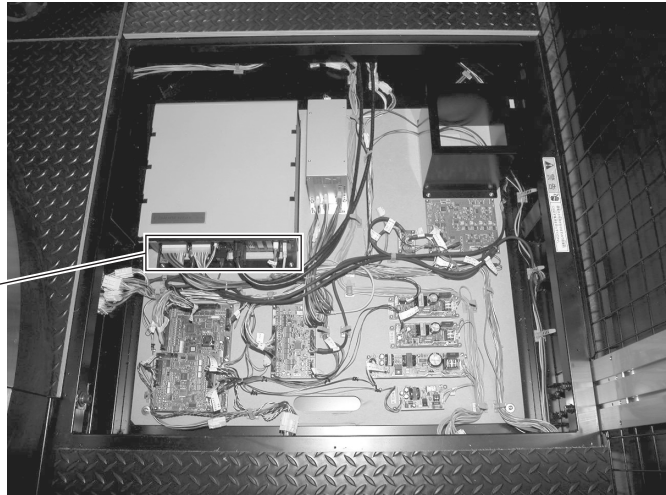


PHOTO 16-1c

- 
- 5** Remove LINDBERGH. Remove 4 screws that fasten LINDBERGH.

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

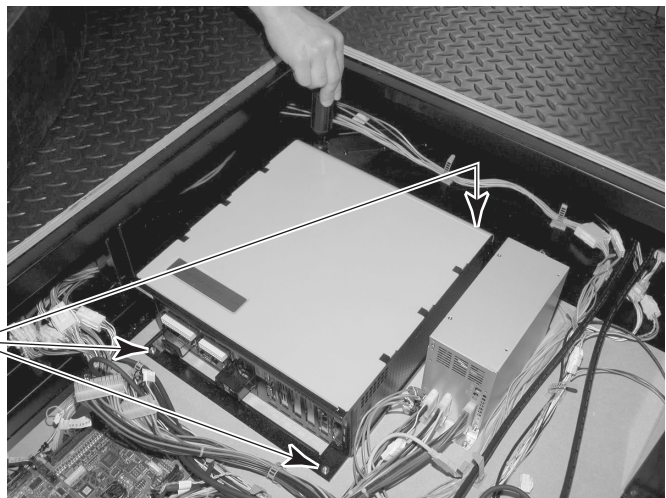


PHOTO 16-1d

- 
- 6** Submit for repairs with the key chip on the LINDBERGH connector side still attached.

KEY CHIP



PHOTO 16-1e



## 16-2 COMPOSITION OF THE GAME BOARD

### STOP IMPORTANT

- The game board becomes the game board for this product once the key chip is inserted.
- The DIP SW (dip switches) on the board must be set as specified below. If set incorrectly for this product, an error will be displayed and the game will not run.

ASSY CASE LBG L 1GB HSP EXP (844-0005D-02)

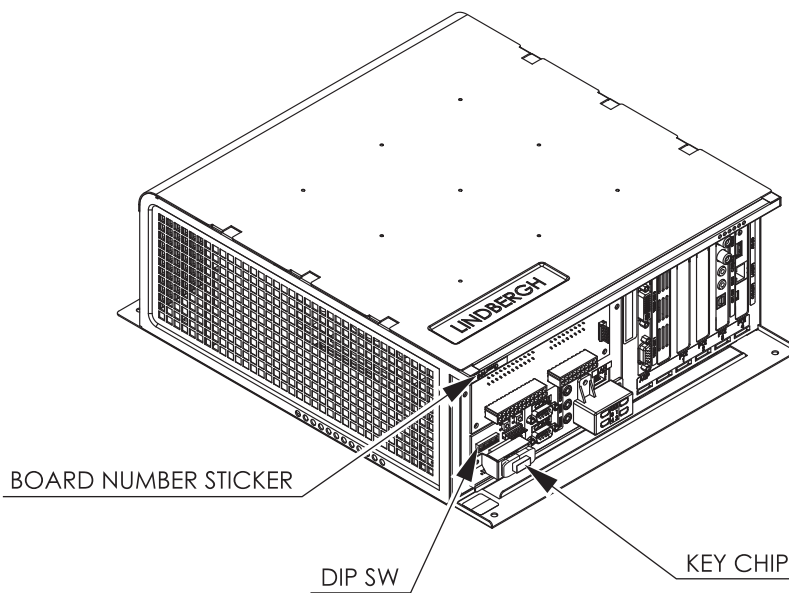


FIG. 16-2a

### DIP SW Setting

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

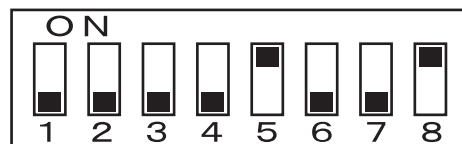


FIG. 16-2b

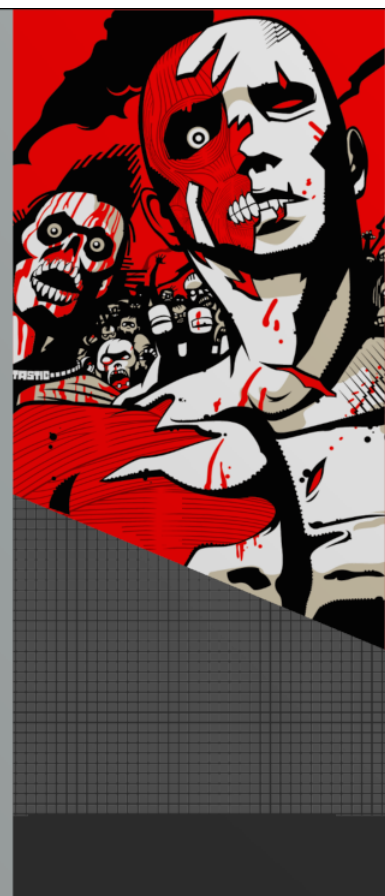
## 17 DESIGN-RELATED PARTS

For the warning display stickers, refer to Section 1.

STICKER DOOR L  
HSP-1407



STICKER DOOR R  
HSP-1453



STICKER SEAT L  
HSP-3621



STICKER SEAT R  
HSP-3622



## 18 OPTION FENCE

### WARNING

- A separate breaker and earth system apart from the breaker and earth system used with this product are required for optional use at the installation site. Unless this separate breaker and earth system are used independently, there could be a fire, electric shock or other accident.
- Use AC 100 V single phase of 7 amperes or more for the indoor wiring for power supply. Applying electrical specifications that do not satisfy designated specifications can cause a fire or electric shock. It can also result in faulty operations.
- 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.
- Have a power outlet equipped with an “earth terminal that is securely grounded” available for power supply. The power cord has an earth wire built in. Without proper grounding, a customer could suffer electric shock, parts could be damaged and there could be faulty operations.
- If there is no “power outlet with earth terminal”, when supplying power using a conversion adapter on the market, always connect an “earth terminal that is securely grounded” to the earth terminal on the AC unit, using an earth wire. Without proper grounding, a customer could suffer an electric shock, parts could be damaged and there could be faulty operations.
- Do not leave power cord or earth wire exposed. If left exposed, these wires could be easily damaged if, for example, customers should stumble on them. And if they are damaged, there could be an electric shock or short circuit. Either cover the wires or place them at locations where they will not interfere with customer passage.
- 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.

## 18-1 OPTION FENCE

The option fence is in a kit sold separately. One kit is used with one product unit.  
Have a separate kit available for cases in which 2 units are installed with rear and front surfaces adhered together.  
Order the appropriate number of kits, based on the number of unit installations, from the point of purchase.  
The zombie requires a separate indoor power supply and earth system apart from the product.

### For 1 unit

**<Including product>**

Required area:	3,820 mm (width) × 5,030 mm (length)
Height:	2,800 mm
Consumption power, Max. current:	15 W, 0.15 A (AC 220 V, 50 Hz Area)
	15 W, 0.15 A (AC 220 V, 60 Hz Area)
	16 W, 0.15 A (AC 240 V, 50 Hz Area)

**<Not including product>**

Required area:	3,820 mm (width) × 2,710 mm (length)
Height:	2,800 mm

### For 2 units

**<Including product>**

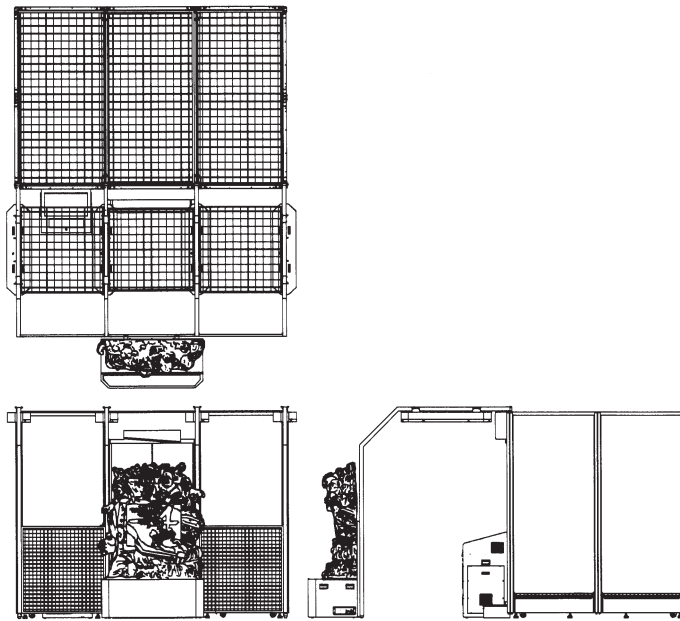
Required area:	7,200 mm (width) × 5,030 mm (length)
Height:	2,800 mm
Consumption power, Max. current:	15 W, 0.15 A (AC 220 V, 50 Hz Area)
	15 W, 0.15 A (AC 220 V, 60 Hz Area)
	16 W, 0.15 A (AC 240 V, 50 Hz Area)

**<Not including product>**

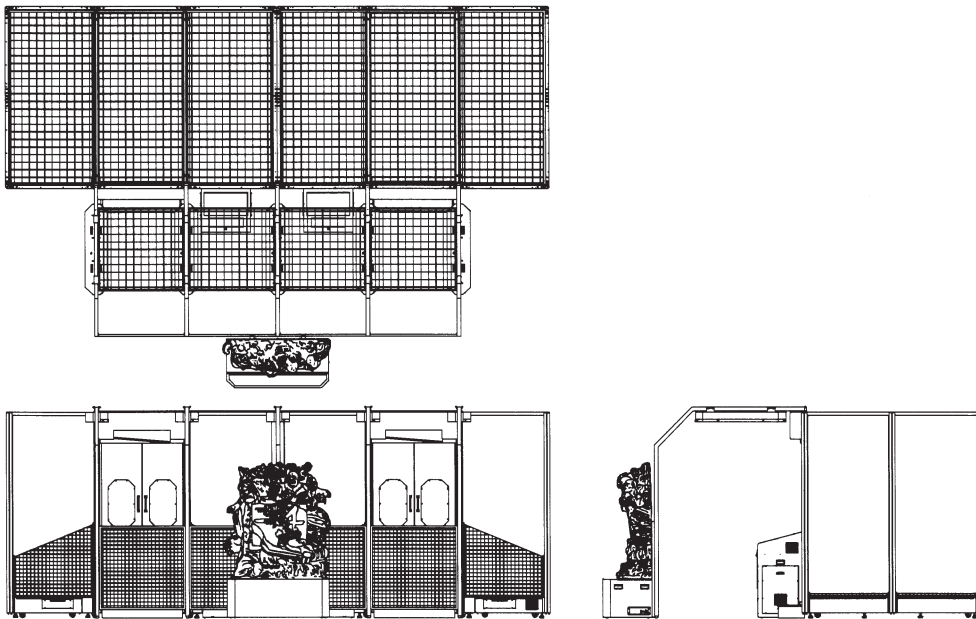
Required area:	5,100 mm (width) × 2,710 mm (length)
Height:	2,800 mm

The aforesaid electrical specifications are for the zombie only.

When option fence is attached, consumption power and maximum current of the product itself at the single phase AC 200V side increase to 300 W and 1.5 A.



**FIG. 18-1a**  
Product illustration reduced to 1/100 scale.  
Use as reference for layout at installation site.



**FIG. 18-1b**  
Product illustration reduced to 1/100 scale.  
Use as reference for layout at installation site.

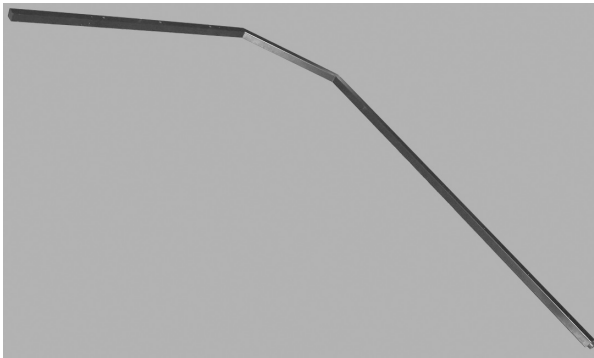
## 18-2 TABLE OF OPTIONAL MATERIALS

The option fence has the following parts. Make sure that all parts listed in the following table are at hand before starting to assemble. Table entries are as indicated below. Part name is the part name used in explanations for assembly.

- Part name
- Part number (quantity)
- Illustration or photo of part exterior

TABLE 18-2a (XKT-1544- ~ : For 1 unit)

FENCE FRAME  
HSP-0220 (4)

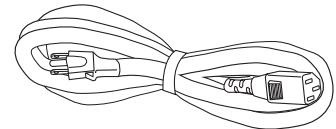


HALOGEN LAMP  
390-6732-40W (10)



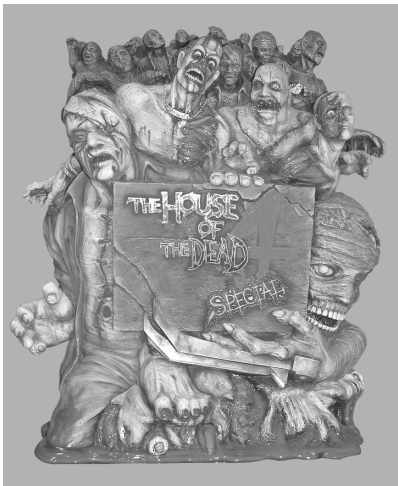
2 halogen lamps used with each lamp box.  
Shipped in a separate package.  
Two lamps are provided as spares.  
See 18-4.

LAMP BOX  
HSP-0230- ~ (4)



POWER CORD

ZOMBIE  
HSP-0300- ~ (1)



ZOMBIE



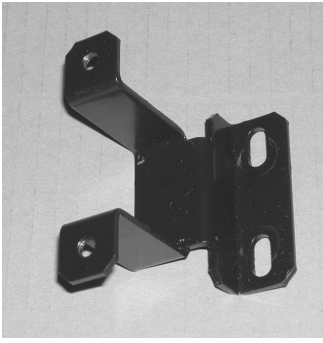
ZOMBIE PILLAR



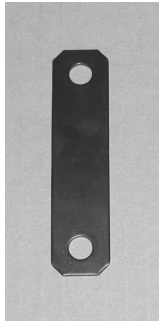
ZOMBIE BASE

Zombie, zombie base, 2 zombie pillars and power cord are packed separately for shipment.

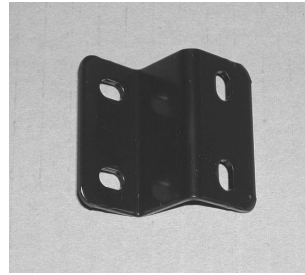
FRAME HOLDER  
HSP-0202 (4)



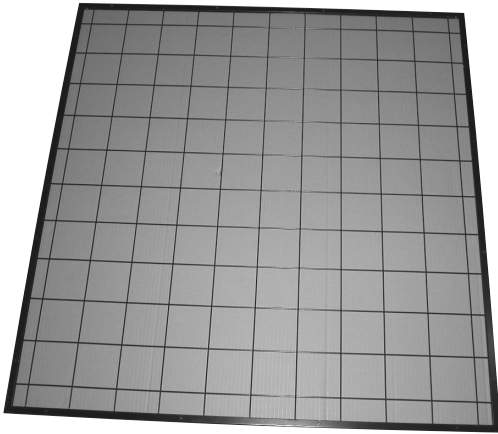
FRAME HOLDER PLATE  
HSP-0203 (4)



LAMP BOX BRACKET  
HSP-0204 (8)

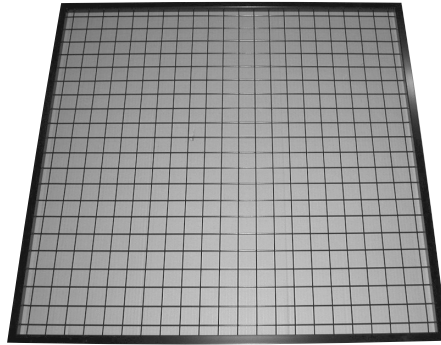


FENCE TOP  
HSP-0205 (3)



1 frame length and width 100 mm

FENCE FRONT  
HSP-0206 (3)

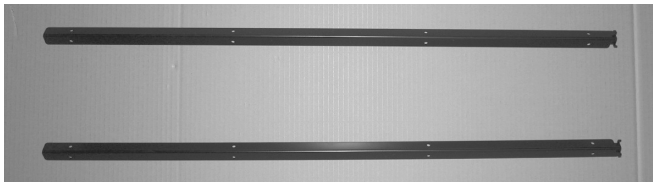


1 frame length and width 50 mm

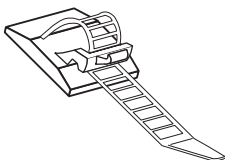
FENCE BRACKET L  
HSP-0207 (3)  
<Upper side of photo>

FENCE BRACKET R  
HSP-0208 (3)  
<Lower side of photo>

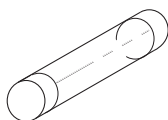
ZOMBIE BASE BRACKET  
HSP-0209 (4)



CORD CLAMP  
280-5169 (24)



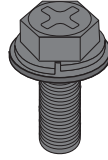
FUSE 2 A  
514-5143-2000 (1)  
Spare, See 18-4.



SCREW  
000-P00408-WB (136)



HEXAGON BOLT WITH CROSS HOLE  
FAS-300046 (8)



EARTH SCREW  
000-P00408 (8)



EARTH SPRING WASHER  
060-S00400 (8)



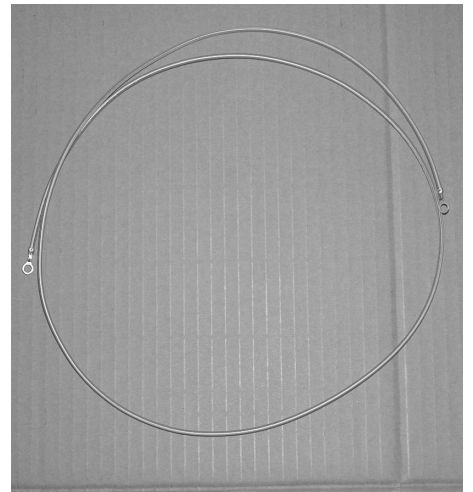
EARTH FLAT WASHER  
060-F00400 (8)



LAMP WIRE  
HSP-63001 (1)



EARTH WIRE  
600-6972-1200 (4)





In the kits for 1 unit and 2 units, parts vary in quantity except for zombie and zombie base bracket. Lamp wires are also different.

**TABLE 18-1b (XKT-1545- ~ : For 2 units)**

<b>Part name</b>	<b>Part number (quantity)</b>
FENCE FRAME	HSP-0220 (5)
LAMP BOX	HSP-0230- ~ (5)
ZOMBIE	HSP-0300- ~ (1)
FRAME HOLDER	HSP-0202 (5)
FRAME HOLDER PLATE	HSP-0203 (5)
LAMP BOX BRACKET	HSP-0204 (10)
FENCE TOP	HSP-0205 (4)
FENCE FRONT	HSP-0206 (4)
FENCE BRACKET L	HSP-0207 (4)
FENCE BRACKET R	HSP-0208 (4)
ZOMBIE BASE BRACKET	HSP-0209 (4)
CORD CLAMP	280-5169 (31)
SCREW	000-P00408-WB (172)
HEXAGON BOLT WITH CROSS HOLE	FAS-300046 (10)
EARTH SCREW	000-P00408 (10)
EARTH SPRING WASHER	060-S00400 (10)
EARTH FLAT WASHER	060-F00400 (10)
LAMP 2 WIRE	HSP-63002X (1)
LAMP 3 WIRE	HSP-63003X (1)
EARTH WIRE	600-6972-1200 (5)
FUSE 2 A	514-5143-2000 (1)

### 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.

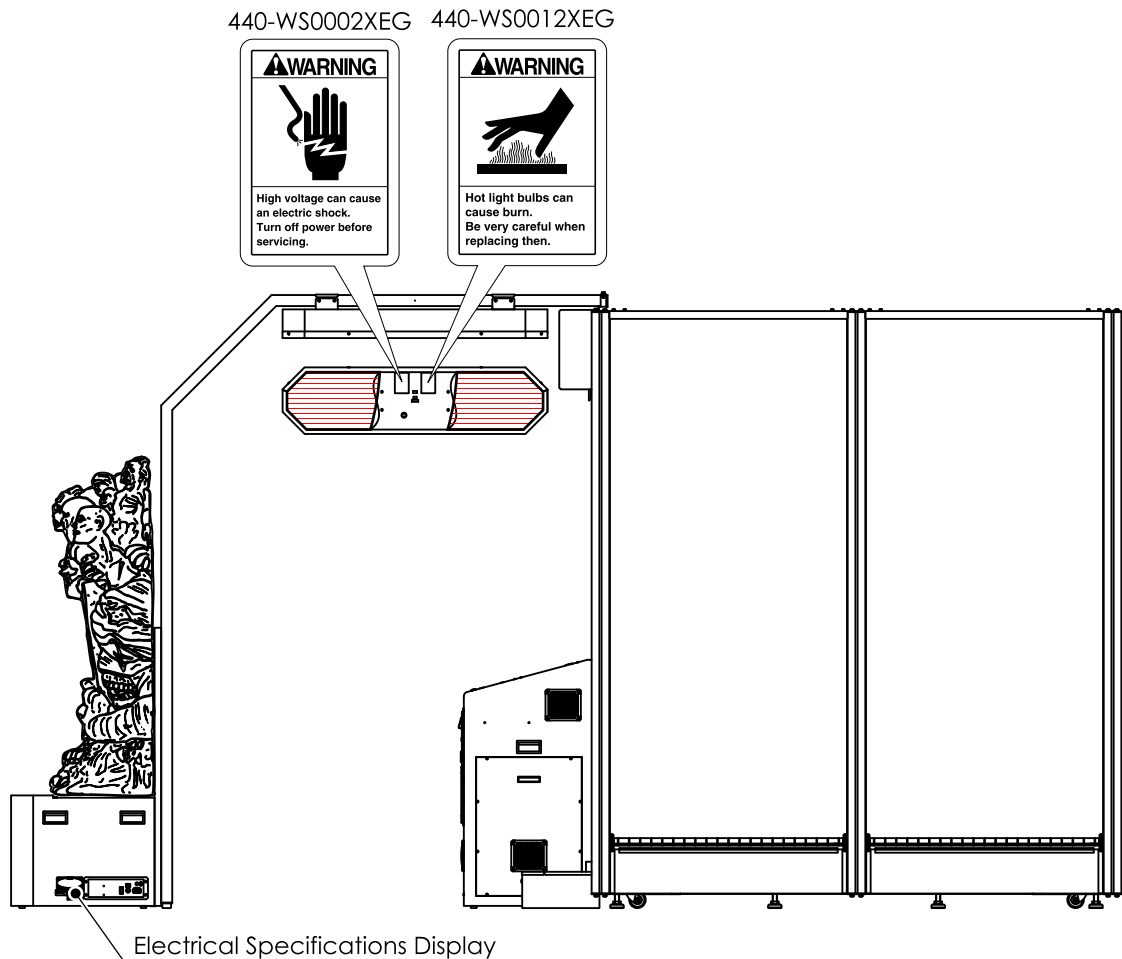
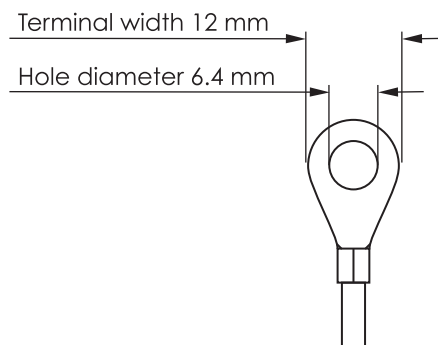


FIG. 18-2

### **⚠ WARNING**

- To prevent accidents, do not begin to assemble the option fence until after you have assembled and installed the product. If you attach the option fence while assembling the product, you could block passage for other workers, for instance, which could cause an accident.
- Always disengage the power before beginning work. Otherwise there could be an electric shock or short circuit.
- Always have at least two workers when using a stepladder: one to work on the stepladder and another to hand up parts, etc. from below.
- Use 3 workers to attach fence frame: 1 person to work on a stepladder and 2 people below to hold up the fence. Use of fewer than 3 people could result in an accident.
- Check the permissible load of each stepladder. Never have 2 or more workers on a ladder at the same time. Otherwise there could be an accidental fall.
- In attaching parts at high locations, make sure that bolts and other items do not fall down. Even if items are small, if they fall down from a high place, there can be accidents.
- When using the earth terminal of the AC unit for this product, use an earth wire with round terminal as shown in the illustration to establish secure grounding. Avoid improper grounding. For example, do not use wire whose cover has been peeled off.



- Be careful not to damage wiring. While working on wiring, be careful not to pull on wire carelessly and do not apply loads. If wire is damaged, there could be an electric shock, short circuit or fire.
- It is extremely difficult to assemble the zombie and move it by human power alone. Ample use of labor saving and transport equipment is recommended.

**⚠ CAUTION**

- While hauling fence frame, be careful not to hit it against people or parts, walls or ceilings.
- Be careful not to get your hands or fingers caught in anything while attaching or removing parts.
- Be careful when handling plastic parts. If screws are tightened excessively, parts could be damaged and injuries could be caused by fragments, etc.
- Be careful not to apply loads or impacts to plastic parts. Otherwise parts could be damaged and injuries could be caused by fragments, etc. Also, make sure that parts are set in place properly. Otherwise there could be deformations or damages due to the product's own weight.

**STOP IMPORTANT**

- Check shape and number of parts before making attachments. Different parts should be attached at left and right, and at top and bottom.
- Always use a flat washer and spring washer with the screws for holding down earth terminal.
- When attaching option fence for 2 units, install the 2 units so that rear and front surfaces adhere.
- When grounding has been established with earth wire inside the power cord, do not establish grounding with the AC unit earth terminal. Conversely, when the AC unit earth terminal has been used to establish grounding, do not use the earth wire in the power cord for establishing grounding. Otherwise there could be faulty operations or malfunctions.

---

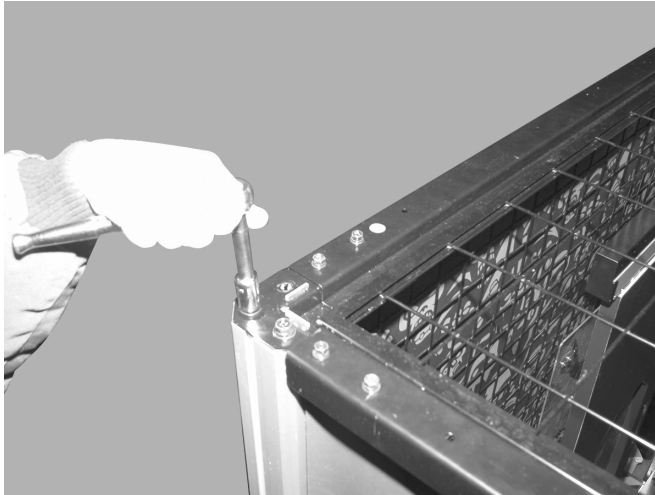
**1** Confirm that the product power supply has been disengaged. Thereafter, do not engage the power under any conditions until assembly work is completed.

---

**2** The kit has 4 frame holders (5 frame holders for 2 product units) that are attached to the top of each of 4 pillars (5 pillars for 2 product units). Attach frame holder to each pillar one at a time. If all bolts atop pillar are detached at once, positions where parts are to be fastened could slip.

---

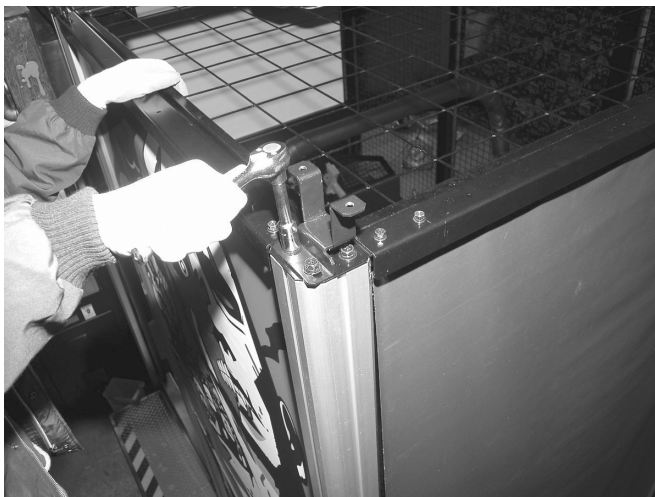
**a** Remove each 2 hexagon bolts with cross hole from product pillars A, E and F atop pillar A on the door side. Kit for 2 units can be used as is, since nothing is attached to pillar A at either front or rear side end where product units have been aligned.



**PHOTO 18-3aa**

---

**b** Attach frame holder atop pillar. For each holder, use 2 hexagon bolts with cross hole that have been previously removed. Be careful of the direction of attachment.



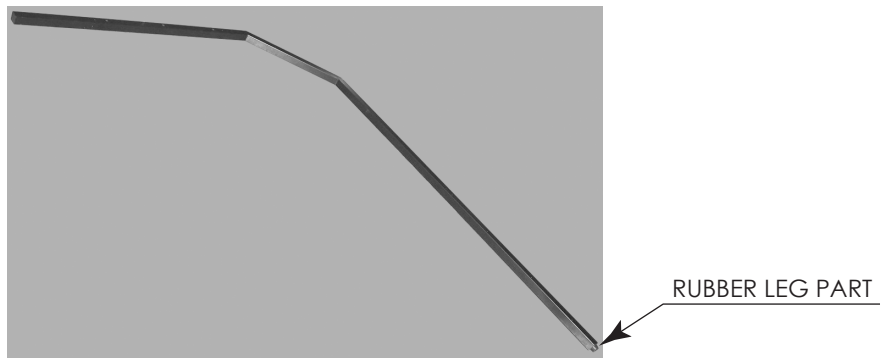
**PHOTO 18-3ab**

With a kit for 2 units, attach fence holder so that pillar A of the front and rear side, where the 2 product units have adhered, link together. The photo was taken with a product absent on one side.



**PHOTO 18-3ac**

- 3** Attach the kit fence frame. Rubber legs are attached to the edge of the fence frame that contacts the floor. Have one worker wait on stepladder at the fence holder side and two other workers lift up the fence frame.



**PHOTO 18-3ba**

- a** Insert the end opposite the side where fence frame contacts floor into fence holder. Hitch portion that protrudes from the fence frame end to the frame holder.



**PHOTO 18-3bb**

- 
- b** Use hexagon bolt with cross hole and kit frame holder plate. Fasten fence frame by attaching frame holder plate to frame holder. However, tighten hexagon bolt with cross hole only provisionally.

FRAME HOLDER PLATE

HEXAGON BOLT WITH CROSS HOLE (2 ea.), black  
M8×18, w/flat & spring washers

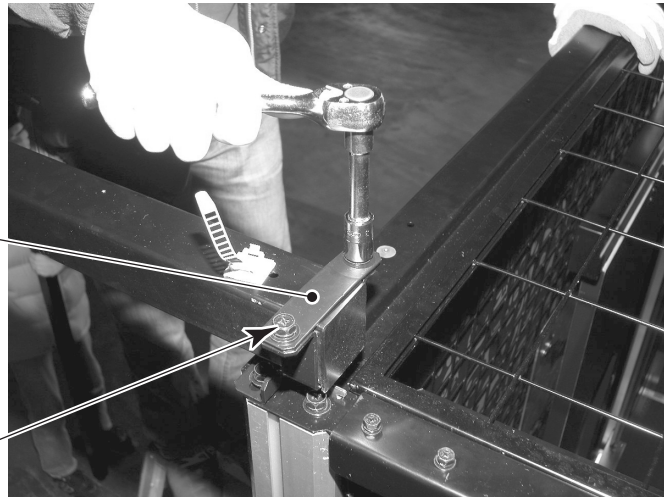


PHOTO 18-3bc

- 
- c** Confirm that the area of the attached fence frame that contacts the floor is parallel to the side of the product and is aligned in a straight line.

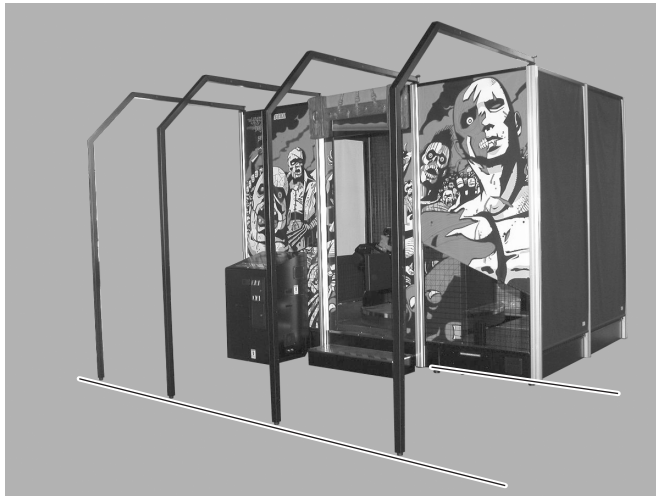


PHOTO 18-3bd

- 
- d** Tighten hexagon bolts with cross hole fully.

- 4** Attach kit fence brackets L and R to the side of the fence frame. Use kit screws. Check part shape and printed number of part carefully before attaching.  
Facing the product, attach fence bracket L to the right side of the fence frame and fence bracket R to the left side of the fence frame.  
However, attach the end of fence frame to the side where there is a separate fence frame.

- a** There is a hole on the side of fence frame. Hitch fence bracket hook to this hole and fasten each with 4 screws.



PHOTO 18-3ca

- b** Where there is fence frame on both sides, attach fence bracket to both right and left sides of fence frame. Attach the end of fence frame only to the side where there is a separate fence frame.

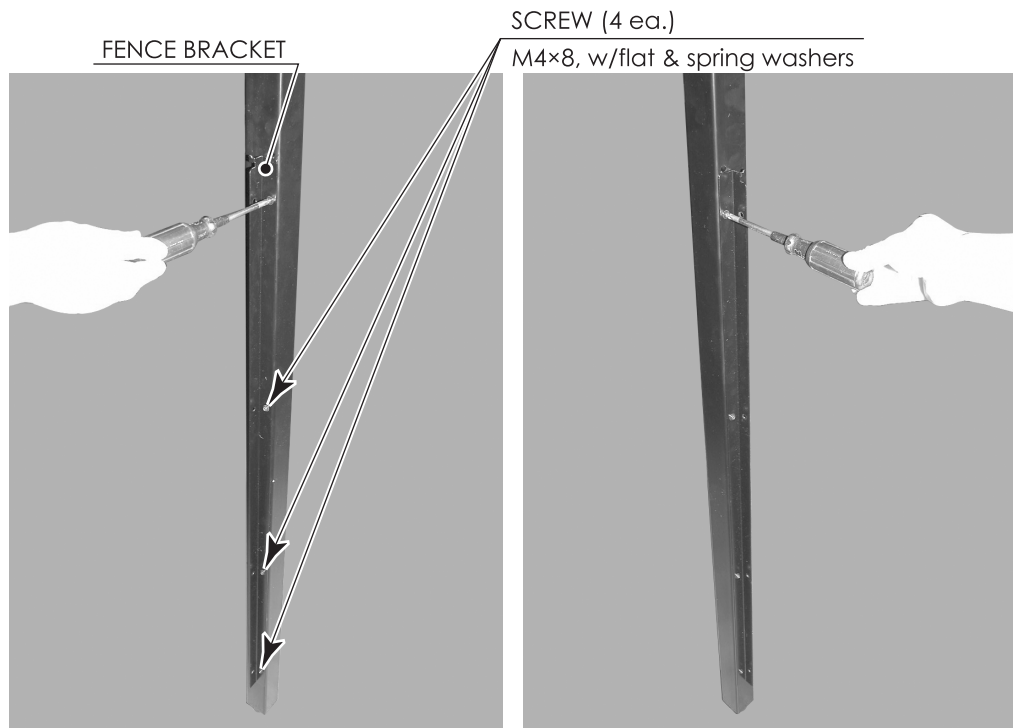


PHOTO 18-3cb



- 
- 5** Provisionally tighten the kit fence front. Use kit screws.
- Fence front dimensions differ in height and length but they are rectangular in shape. With kit for 1 unit, fence is attached with longer length between pillars E and F and with shorter length between pillars A and E and pillars A and F.
- With kit for 2 units, fences are all attached with the longer length.
- 

- a** Hitch hole of fence front frame on hook facing upward on fence bracket.



PHOTO 18-3da

- 
- b** Tighten 8 screws provisionally.

SCREW (8 ea.), black  
M4×8, w/flat & spring washers

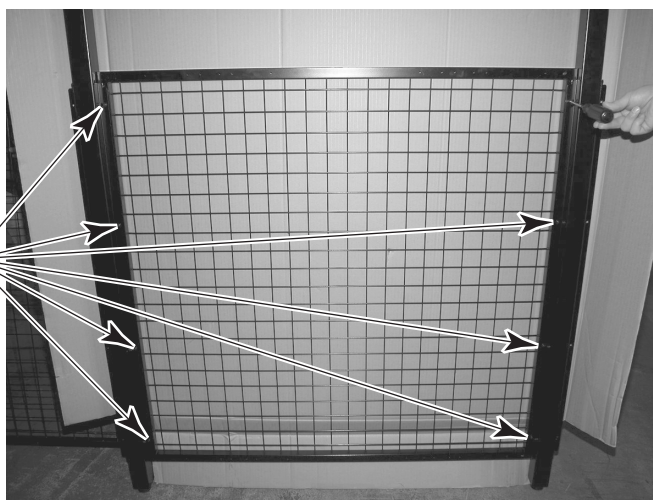
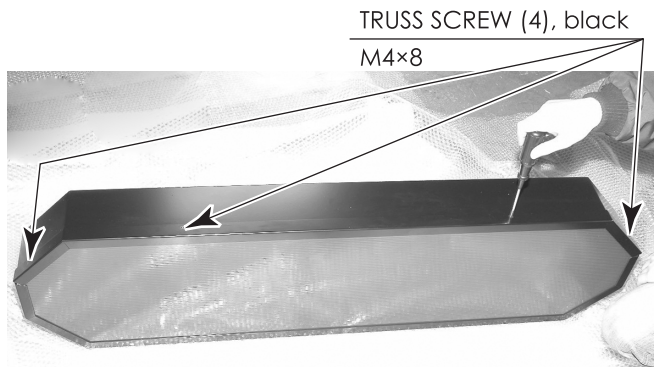


PHOTO 18-3db

Tighten screws fully after attaching fence top.

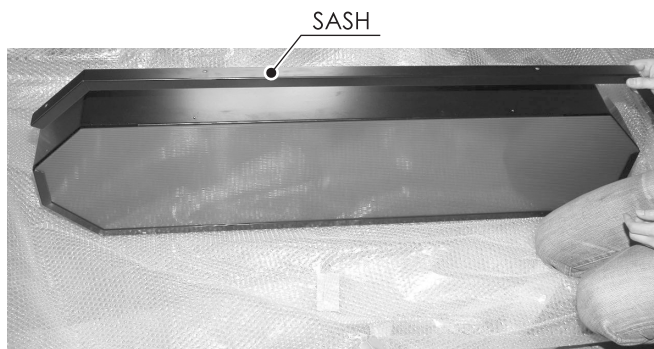
- 6** Attach kit lamp box to fence frame. Use kit screws, lamp box bracket, lamp wire, earth wire, earth wire screws, flat and spring washers.  
Lamp box wire of option fence has already been laid out in the product's projector base.

- a** Remove sash on one side of lamp box. Remove 4 truss screws.



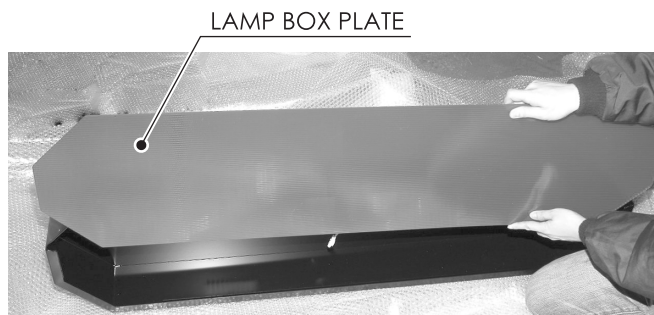
**PHOTO 18-3ea**

- b** Remove sash.



**PHOTO18-3eb**

- c** Remove lamp box plate. Pull out straight to remove it. If it is pulled out carelessly, your hand could be cut on part end surface, the part could be damaged, or some other accident could occur.



**PHOTO 18-3ec**

**d** Hitch the two hooks of the lamp box to fence frame.



PHOTO 18-3ed

**e** Fasten each lamp box hook with 2 screws.



SCREW (2 ea.), black  
M4×8, w/flat & spring washers

PHOTO 18-3ee

**f** Attach lamp box brackets. Fasten each with 2 screws on the side opposite hook.



SCREW (2 ea.), black  
M4×8, w/flat & spring washers

PHOTO 18-3ef

**g**

Each lamp box bracket is also fastened with 2 screws from inside the lamp box.

SCREW (2 ea.), black  
M4×8, w/flat & spring washers

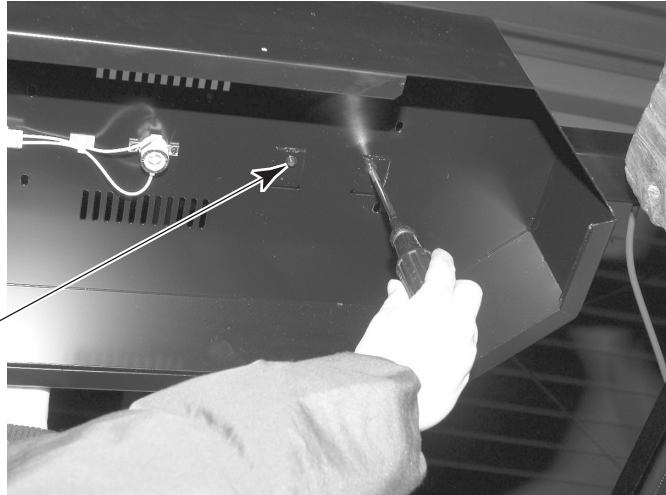


PHOTO 18-3eg

**h**

Remove wire cover at door and front side of the projector base. Remove 2 screws.

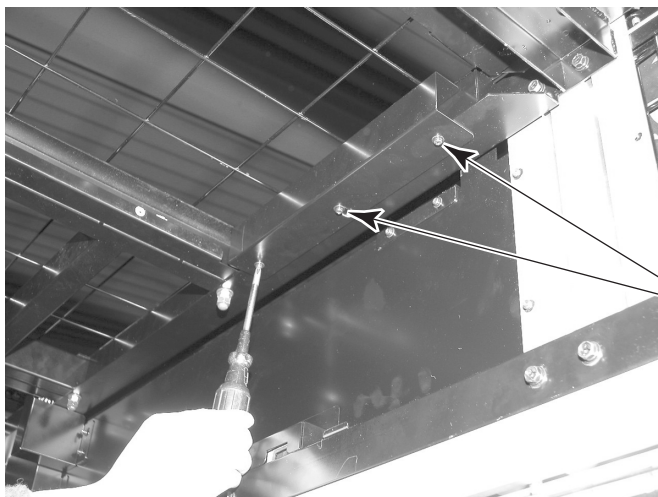


SCREW (2), black  
M4×8, w/flat & spring washers

PHOTO 18-3eh

**i**

Remove wire cover for option fence. Remove 3 screws at bottom of part.



SCREW (3), black  
M4×8, w/flat & spring washers

PHOTO 18-3ei

**j** Connect lamp wire to wire for option fence in projector base.

Connector connection  
VL4P



PHOTO 18-3ej

**k** From the projector base, pass lamp wire through the “area where option fence wire cover had been attached”, and then lay it so that it goes out to the top of pillar E.



PHOTO 18-3ek

**l** Attach wire covers that had been removed at two locations to their original positions. Be careful that wire does not get caught in anything.

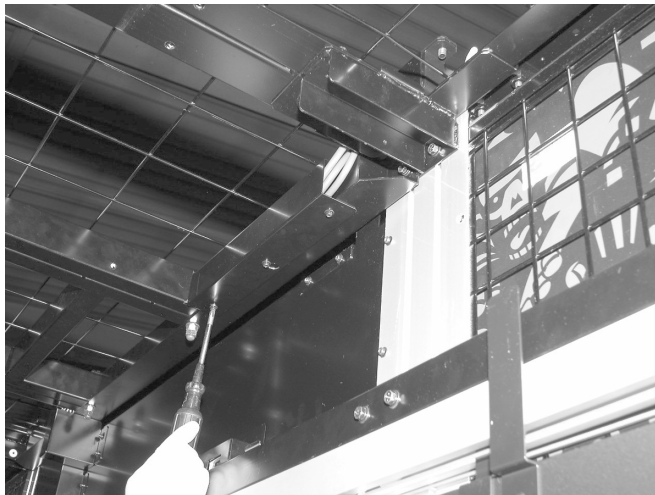


PHOTO 18-3el

**m**

Lay out lamp wire to each lamp box. Fasten wire with cord clamp affixed to fence frame and upper beam.

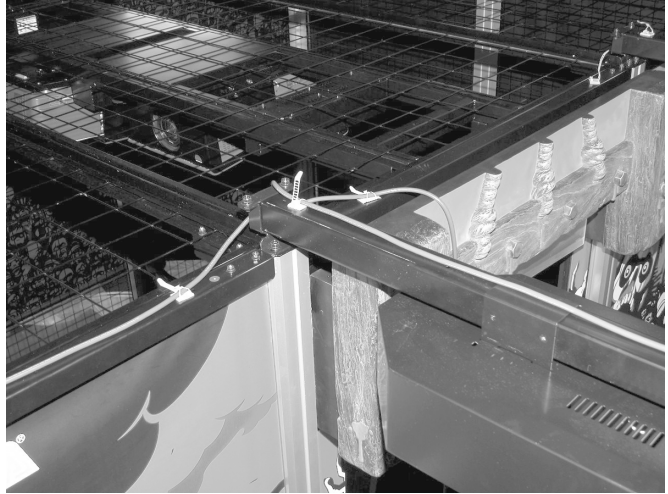


PHOTO 18-3em

**n**

Fasten round terminal of earth wire to fence frame with screw. There are screw holes on both sides over the spot where lamp box was attached. Terminal can be attached to either of these holes. Use flat and spring washer with screw. Use cord clamp to fasten earth wire together with lamp wire.

Fasten with cord clamp.

EARTH WIRE

SCREW (1)  
M4×8, flat & spring washers used

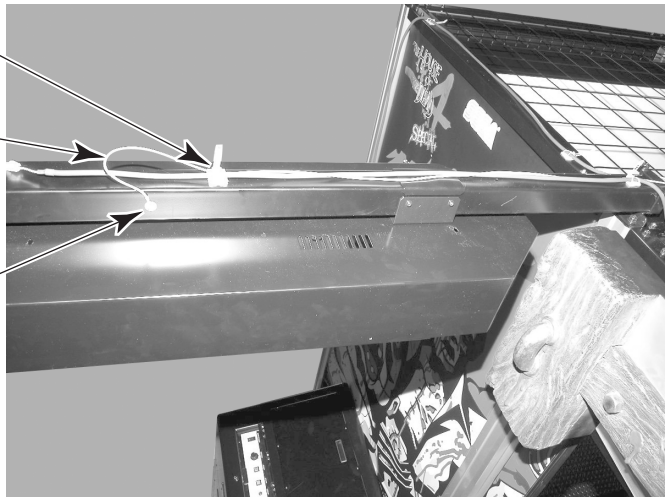


PHOTO 18-3en

**o**

Use screw to fasten round terminal on opposite side of earth wire to upper beam. Use flat and spring washer with screw.

SCREW (1)  
M4×8, flat & spring washers used

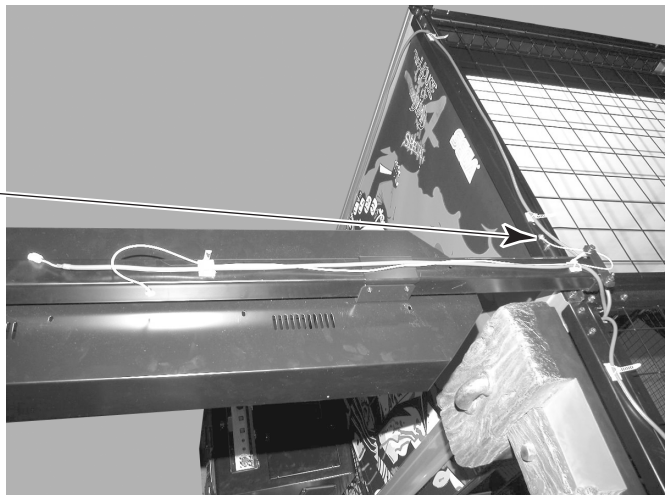


PHOTO 18-3eo

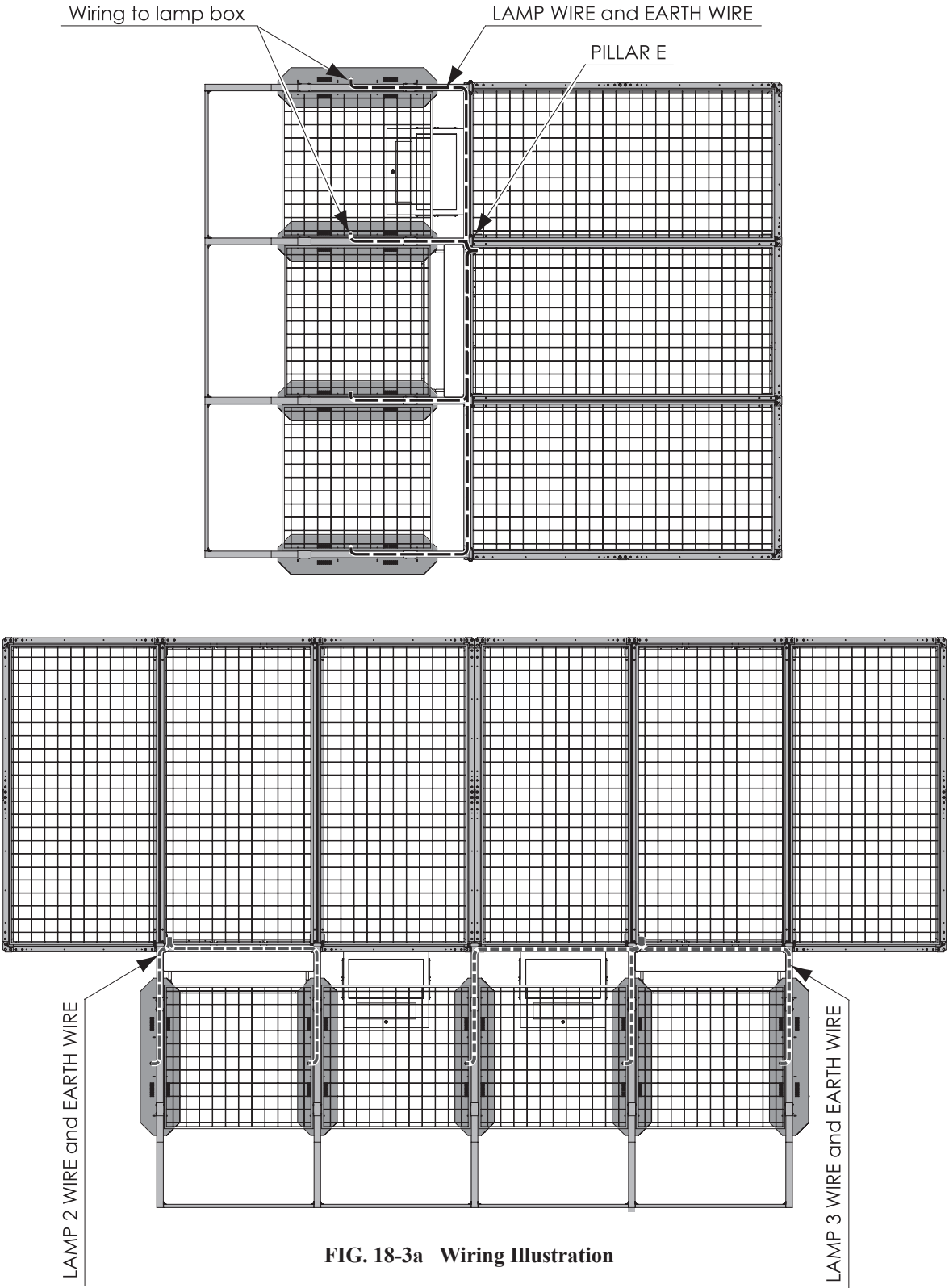


FIG. 18-3a Wiring Illustration

- 7** Attach kit fence tops. Use kit screws. In contrast to the fence front, directions of attachment are all the same for fence tops.  
After tightening all fence top screws provisionally, tighten them fully together with screws for fence front.

- a** Place fence top so that it forms a bridge between adjacent lamp boxes. Place so that the side with screw holes for fence top outer frame faces downward.



**PHOTO 18-3fa**

- b** Pass screws from lamp box interior and provisionally fasten fence top. Use 8 screws for each fence top.

SCREW (8), black  
M4×8, w/flat & spring washers



**PHOTO 18-3fb**

- c** Confirm that all screws have been tightened provisionally.

- d** Fully tighten screws that fasten fence top, together with screws that provisionally fastened fence front.



---

**8** Assemble lamp box.

---

**a** Pass lamp wire wired to each lamp box through lamp box interior. Pass through rubber grommet hole.

RUBBER GROMMET

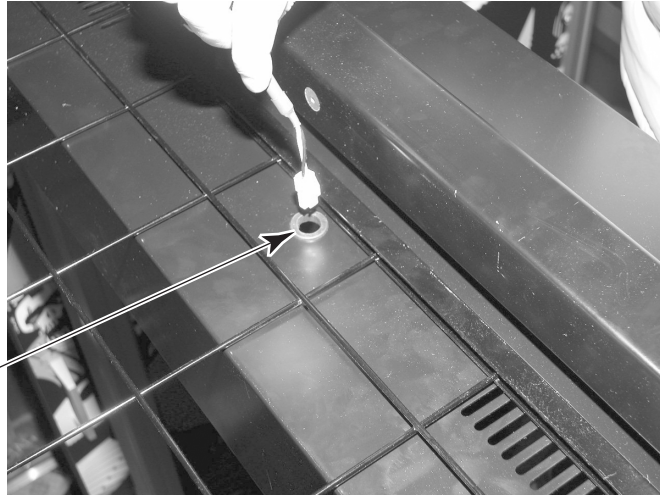


PHOTO 18-3ga

---

**b** Connect to connector of wire inside lamp box.

Connector connection  
YL2P

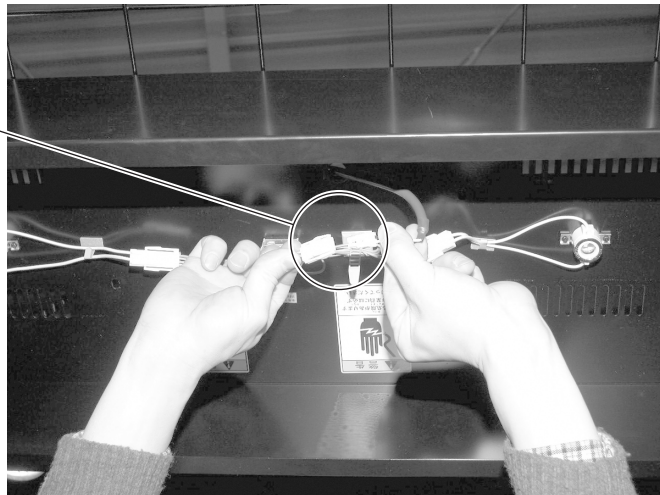


PHOTO 18-3gb

---

**c** Attach halogen lamp to socket. Be careful not to touch the glass of lamp front. Oil from your finger could be burnt, resulting in damage.



PHOTO 18-3gc

**d** Make sure there is no danger of wire contacting halogen lamp. If there is danger of contact, amend wire fastening with cord clamp.

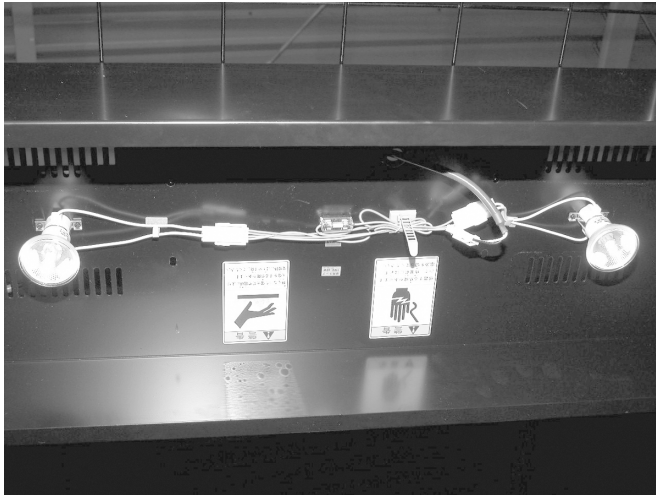


PHOTO 18-3gd

**e** Attach lamp box plate. Set the rough surface of the plate inside the lamp box and insert plate straight forward.



PHOTO 18-3ge

**f** Attach sash and fasten it with 4 truss screws.

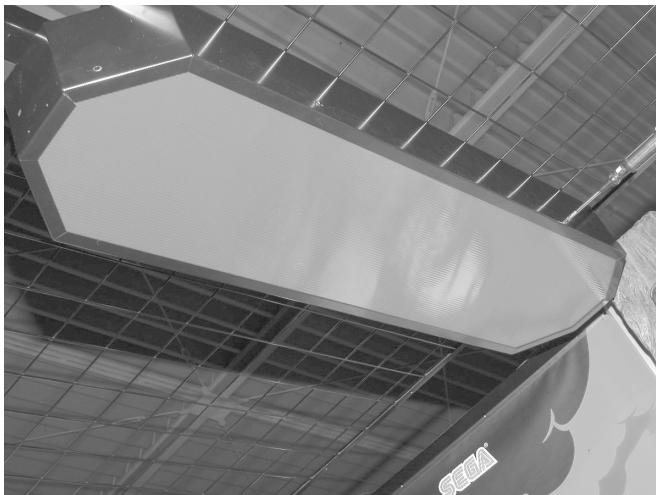


PHOTO 18-3gf

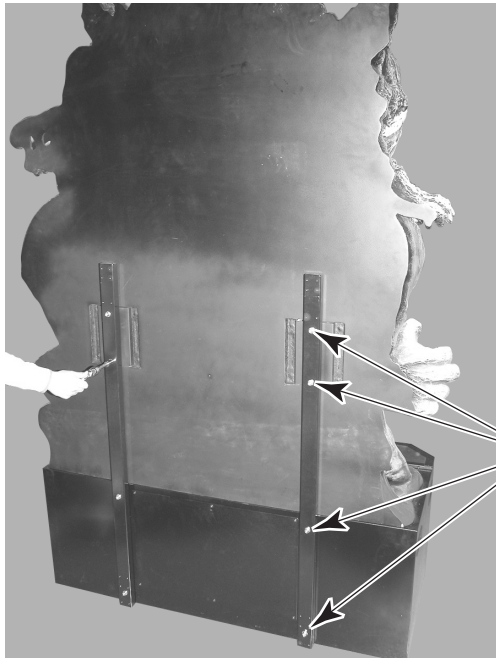
**9** Assemble the zombie.

**a** Place zombie on zombie base. Have at least 4 people hold the zombie by its bottom surface and place it on the zombie base. Be careful that hands or fingers do not get caught in anything.



PHOTO 18-3ha

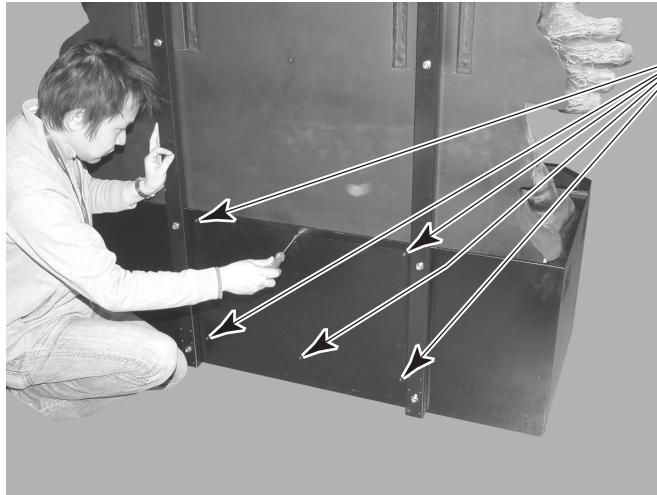
**b** Attach 2 zombie pillars to zombie back surface and fasten each pillar with 4 hexagon bolts. Use flat washer with hexagon bolts.



HEXAGON BOLT (4 ea.), black  
M8×55, w/flat & spring washers, flat washer used

PHOTO 18-3hb

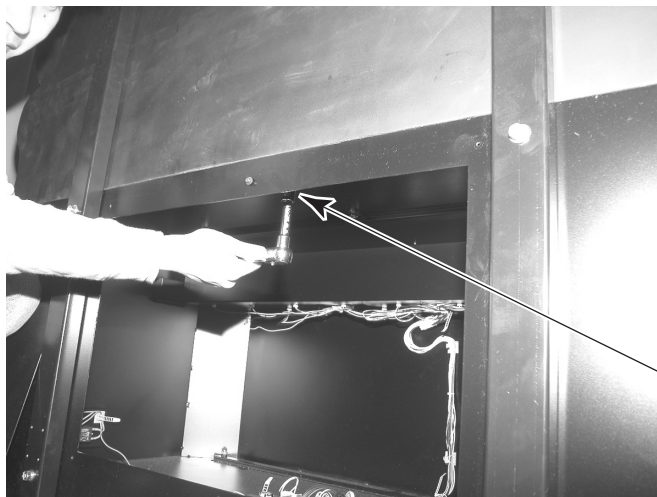
**c** Remove lid at back surface of zombie base. Remove 6 truss screws.



TRUSS SCREW (6), black  
M4×8

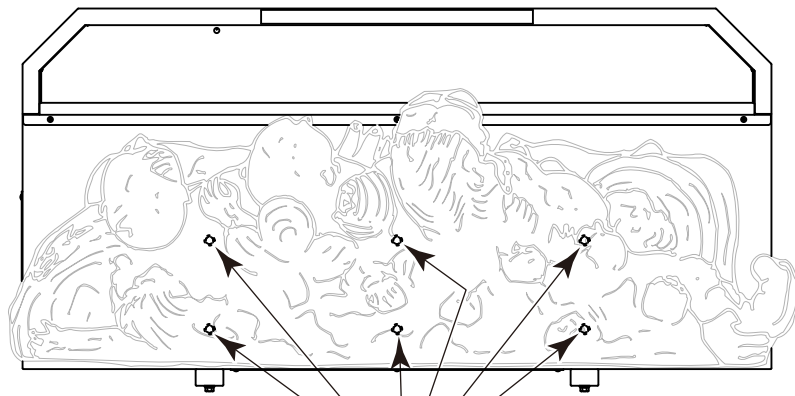
PHOTO 18-3hc

**d** Fasten bottom of zombie from lid interior. Use 6 hexagon bolts.



HEXAGON BOLT (6), black  
M8×18, w/flat & spring washers

PHOTO 18-3hd



HEXAGON BOLT (6), black  
M8×18, w/flat & spring washers

FIG. 18-3b

**e** Attach lid to back of zombie base and fasten it with 6 truss screws.

**10** Move zombie to prescribed location.

**11** Fasten zombie to fence front. Attach 2 zombie base brackets to each zombie pillar. Fasten each zombie base bracket with 4 screws.  
Attach zombie base bracket and fasten so that fence can be inserted from top or bottom.

ZOMBIE BASE BRACKET

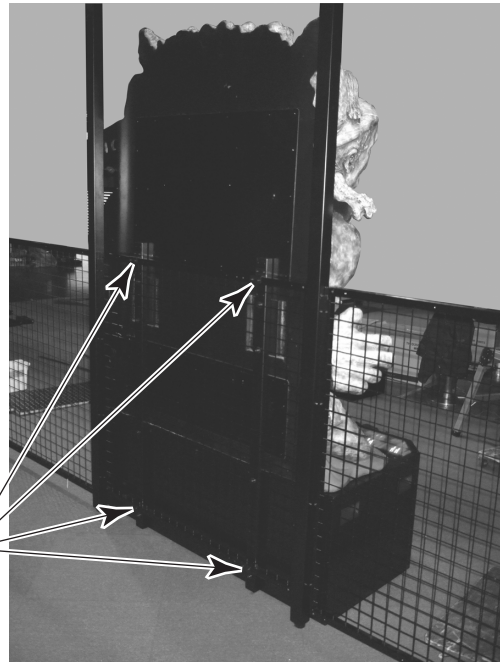


PHOTO 18-3ia

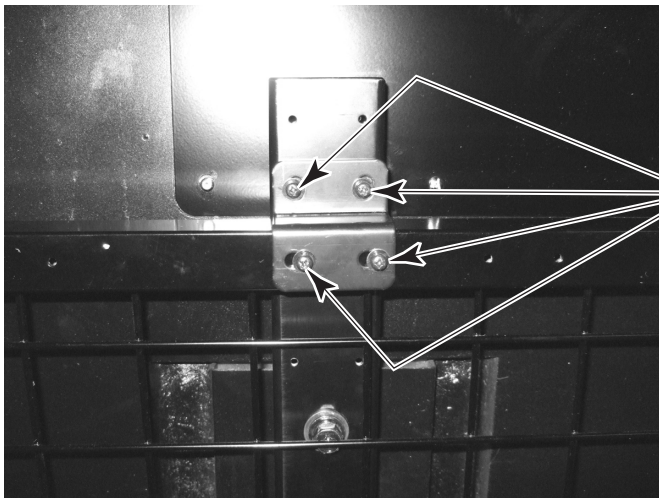


PHOTO 18-3ib

SCREW (4 ea.), black  
M4x8, w/flat & spring washers

SCREW (4 ea.), black  
M4x8, w/flat & spring washers

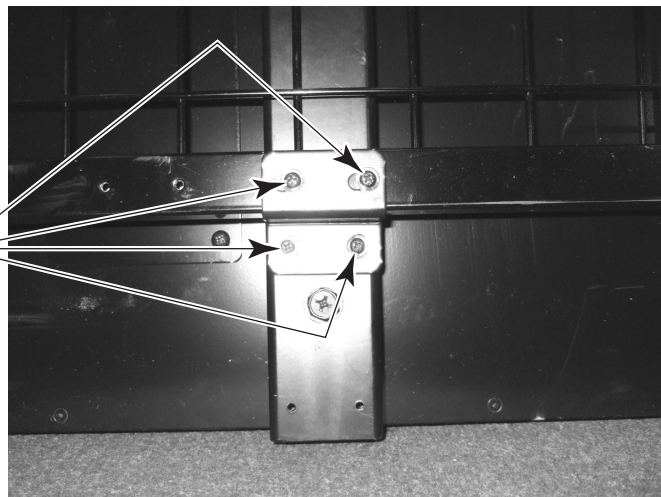


PHOTO 18-3ic

## 12 Connect power supply and earth.

- a** The AC unit at the zombie base side contains the following items. Make sure that the main switch is OFF.
- MAIN SWITCH
  - INLET FOR CONNECTING POWER CORD
  - EARTH TERMINAL <For Taiwan>
  - CIRCUIT PROTECTOR

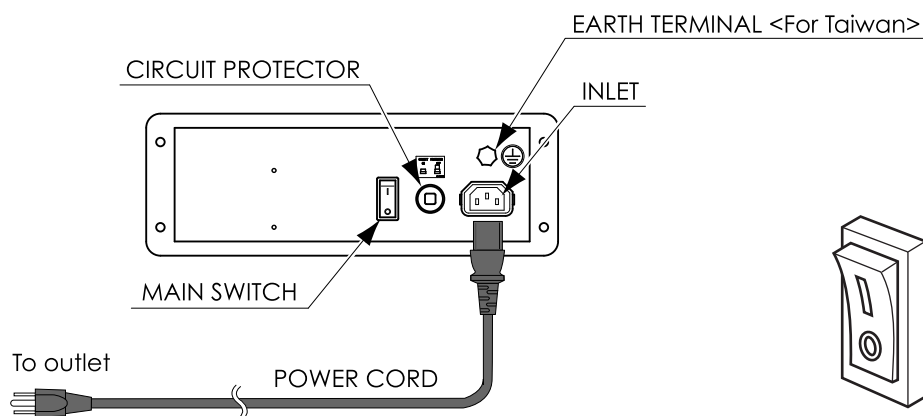


FIG. 18-3ca

FIG. 18-3cb Main switch OFF

- b** The accessory power cord contains earth wire.  
Connect power cord to AC unit inlet, and then insert power cord plug into “power outlet with earth terminal”. If there is no “power outlet with earth terminal”, be sure to always establish grounding by some means; for example, by connecting the AC unit earth terminal to the earth system with an earth wire set aside for that purpose. When using a conversion adapter sold on the market to provide power, connect the adaptor’s earth wire terminal to an “earth terminal that is securely grounded”.

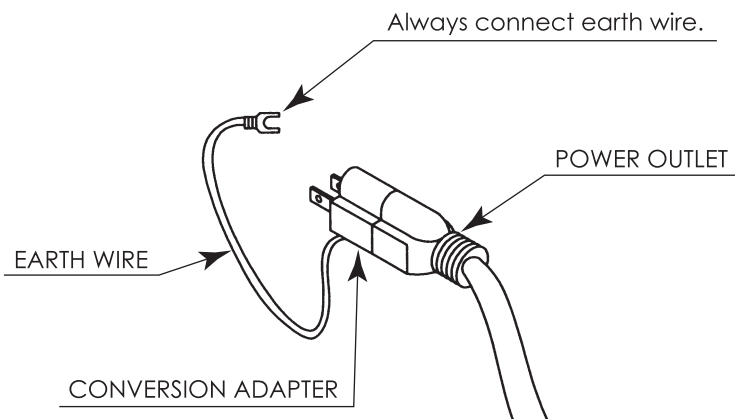
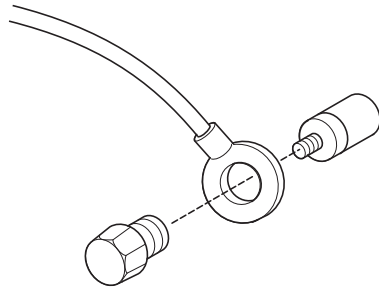


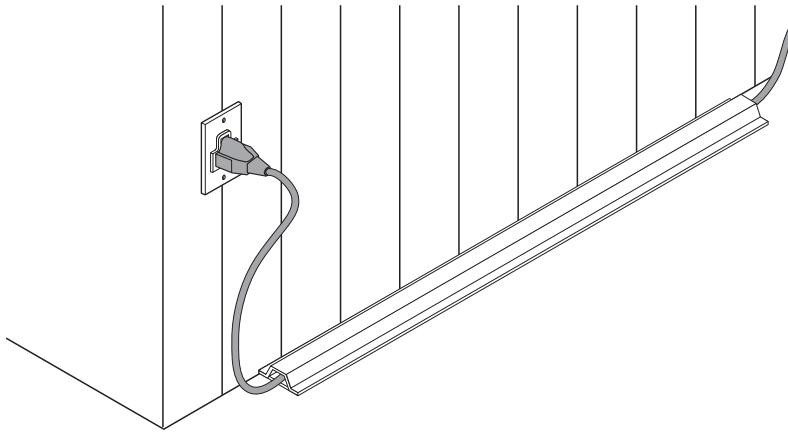
FIG. 18-3cc <For Taiwan>

- 
- c** When using an earth wire set aside separately, connect one end of the earth wire to AC unit earth terminal and the opposite end to indoor earth terminal. The AC unit earth terminal uses a bolt and nut combination. Remove the nut, pass the earth terminal through the bolt, and then tighten the nut.



**FIG. 18-3cd <For Taiwan>**

- 
- d** Lay out power cord indoors. Attach power cord cover to protect the cord. If grounding is established by using an earth wire set aside separately, lay out this earth wire and protect it at the same time.



**FIG. 18-3ce**

## 18-4 LAMP AND FUSE REPLACEMENT

### **⚠ WARNING**

- Cut off power before working. Otherwise there could be an electric shock or short circuit.
- There is danger that hot lamps can cause burns. Exercise due caution when replacing lamps.
- Use lamp of prescribed rating. Use of a lamp of a different rating could cause fire or breakdown.

### **⚠ CAUTION**

- Have available a stepladder that is reliably stable so work can be done safely and thoroughly. An unstable stepladder can topple over, resulting in falls.
- Be careful in handling plastic parts. Careless handling can lead to damages and to serious injury from fragments, cracks, etc.
- When fastening plastic parts, be careful not to tighten screws and nuts excessively. Otherwise, parts could be damaged and injuries could be caused by fragments, etc.
- When attaching or removing parts, be careful that your fingers do not get caught in anything and that you do not cut yourself on part edges.

The option fence halogen lamp has a protective fuse. If the 2 halogen lamps in the lamp box will not light up concurrently, it could be that the fuse has melted.

If the fuse has melted, be sure to eliminate the cause of overloading before you replace the fuse.

**1** Disengage product power supply.

**2** Remove sash of lamp box containing lamp to be replaced. Remove 4 truss screws.

TRUSS SCREW (4), black  
M4×8

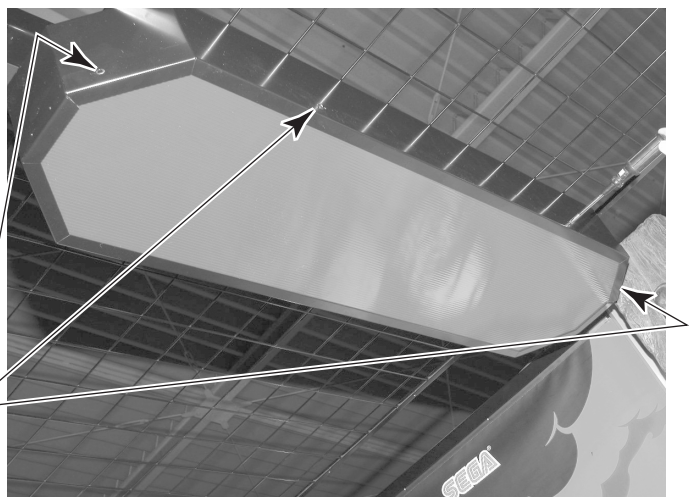


PHOTO 18-4a



- 
- 3** Remove lamp box plate. Pull out straight to remove it.  
Careless handling can cause you to cut your hand on part edges, to damage parts, or to experience other accidents.



PHOTO 18-4b

- 
- 4** Replace halogen lamp in lamp box. Also replace central fuse.

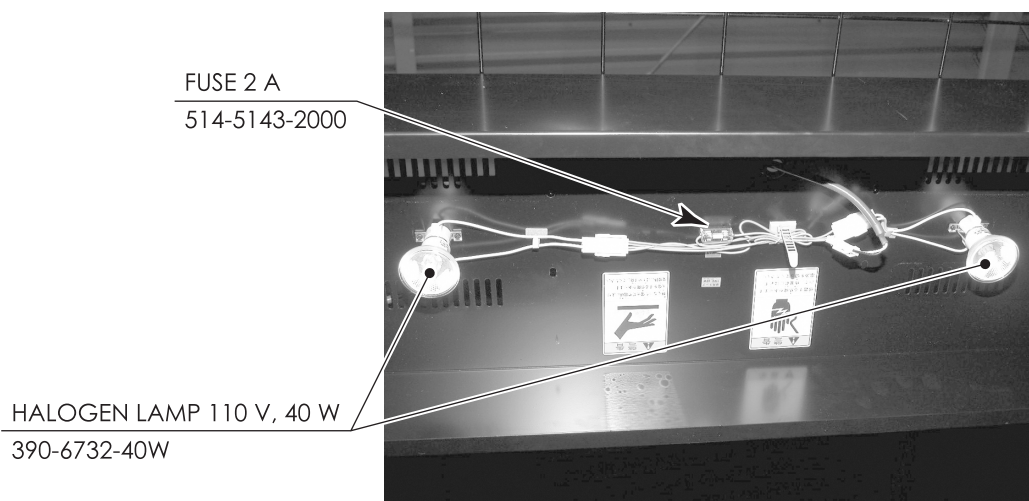


PHOTO 18-4c

- 
- 5** When attaching the lamp box plate after a replacement, set the rough surface of the plate inside the lamp box and insert plate straight forward.

# 19 WIRE COLOR CODE TABLE

## ⚠ WARNING

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

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

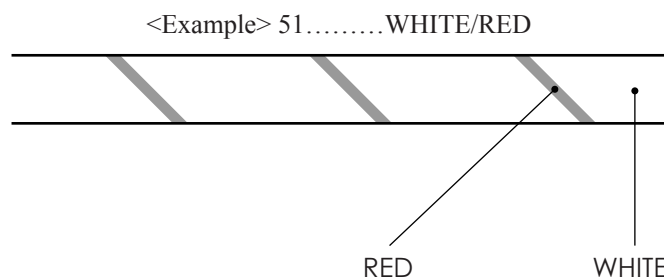
A	PINK
B	SKY BLUE
C	BROWN
D	PURPLE
E	LIGHT GREEN

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

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

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

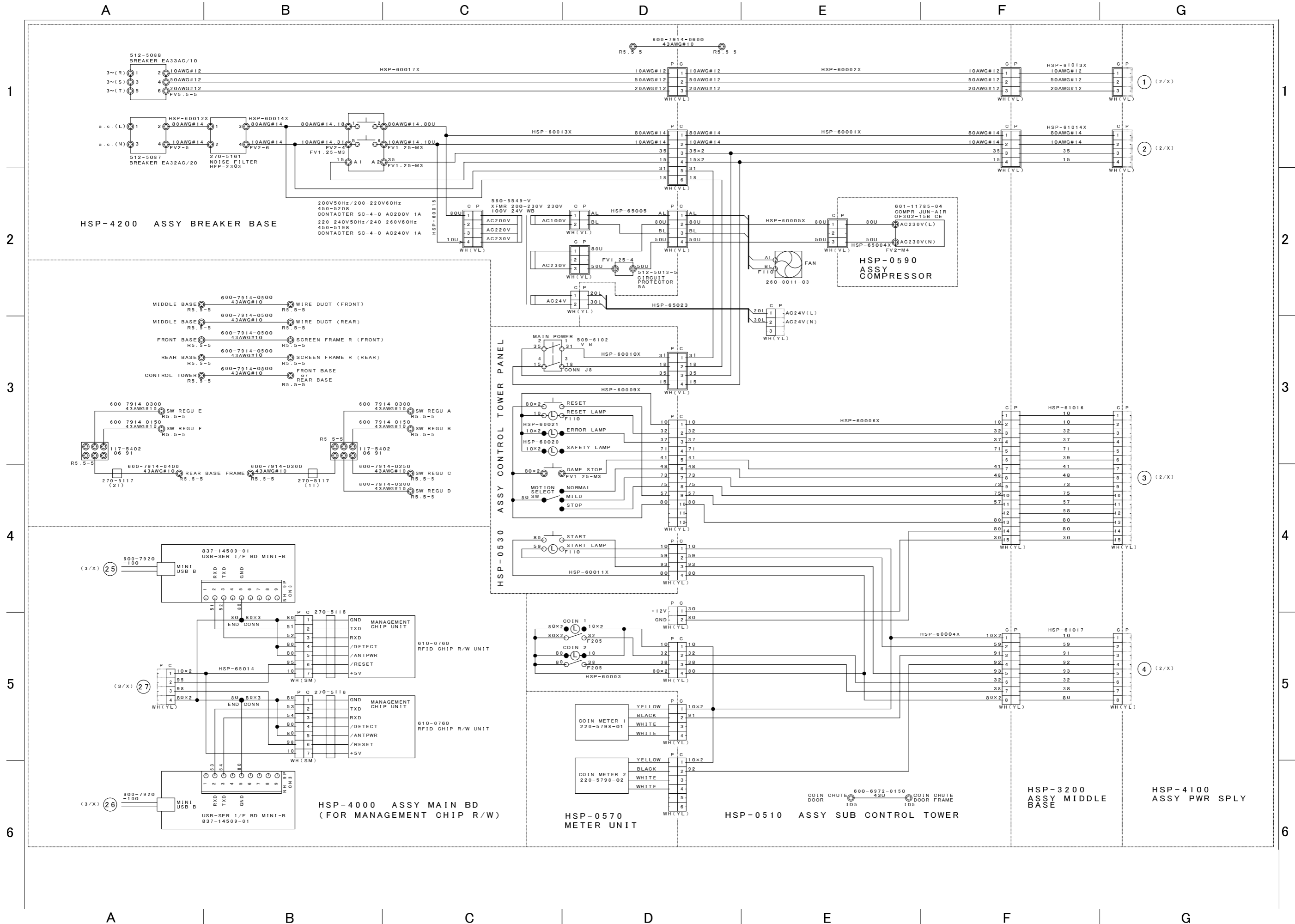
Note 1: If the right-hand side numeral is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.

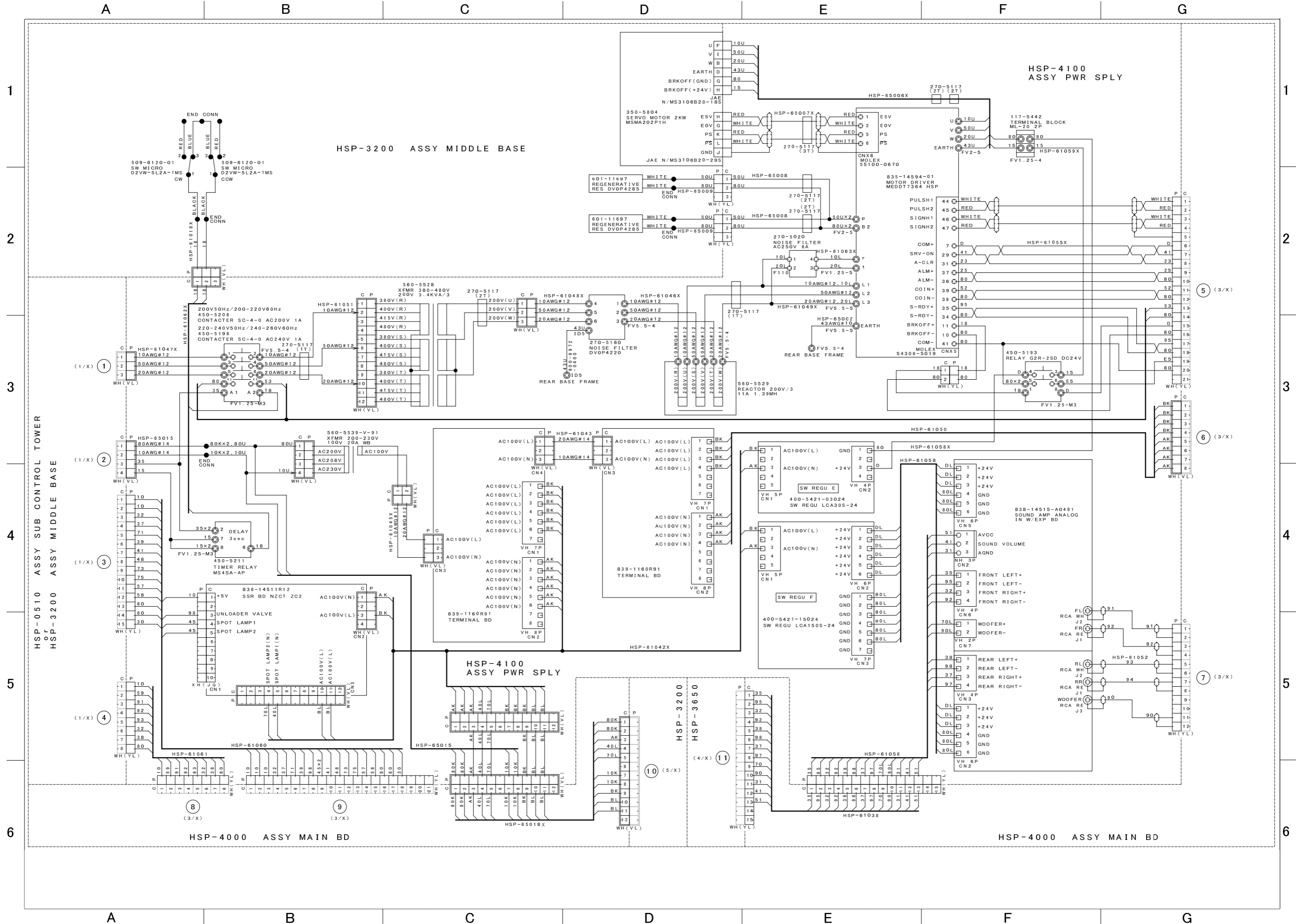


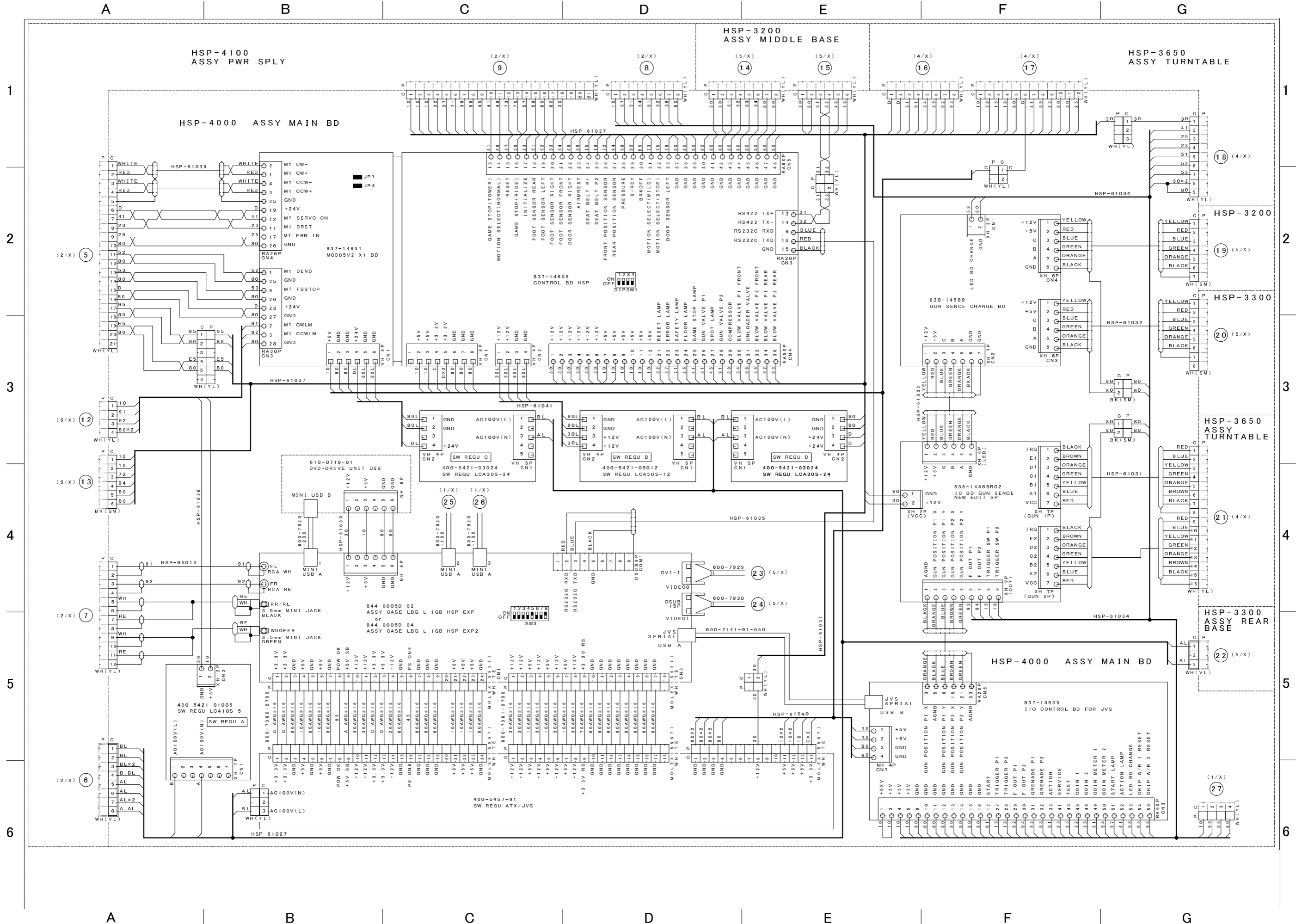
Note 2: The character following the wire color code indicates the size of the wire.

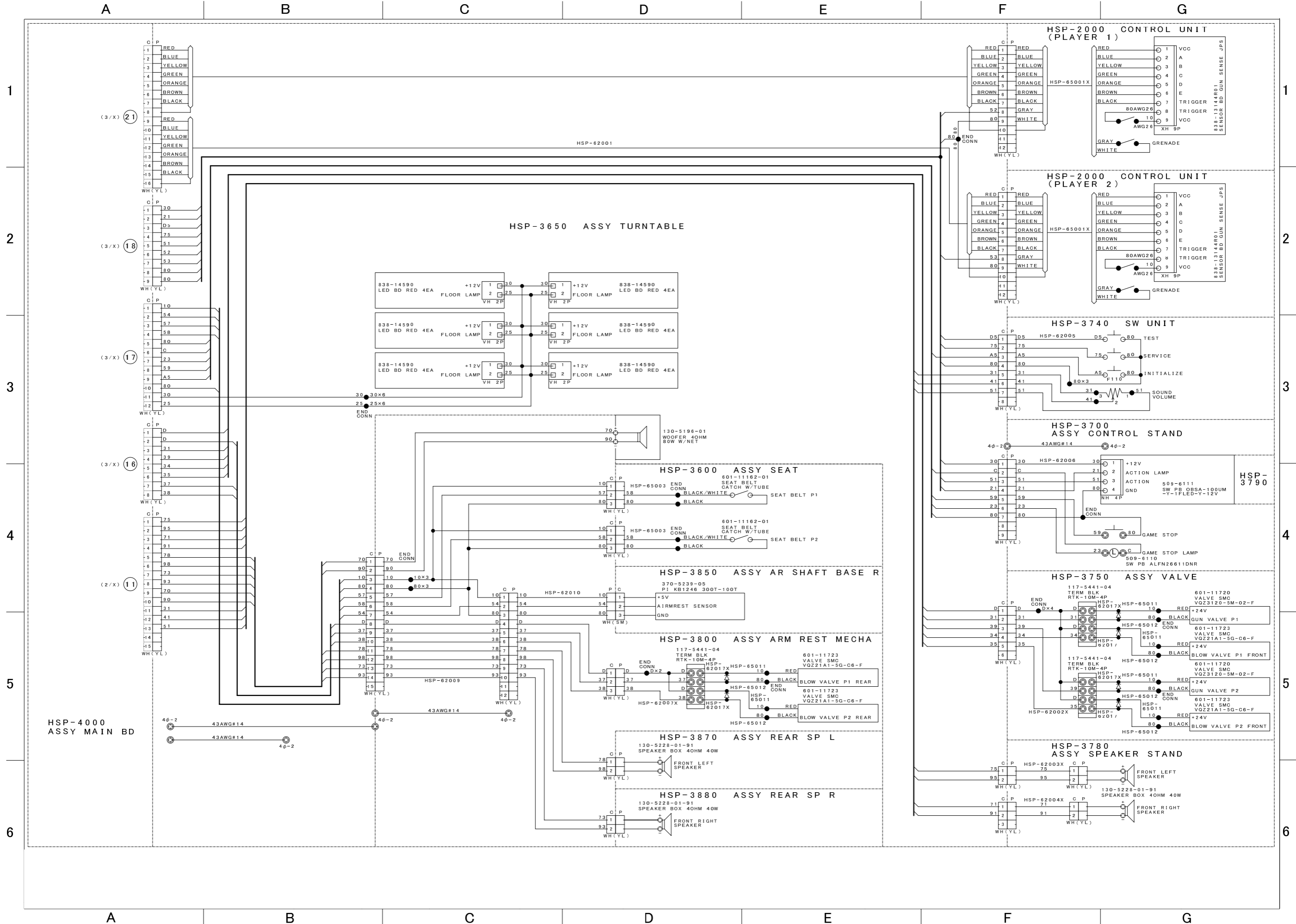
U:	AWG16
K:	AWG18
L:	AWG20
None:	AWG22

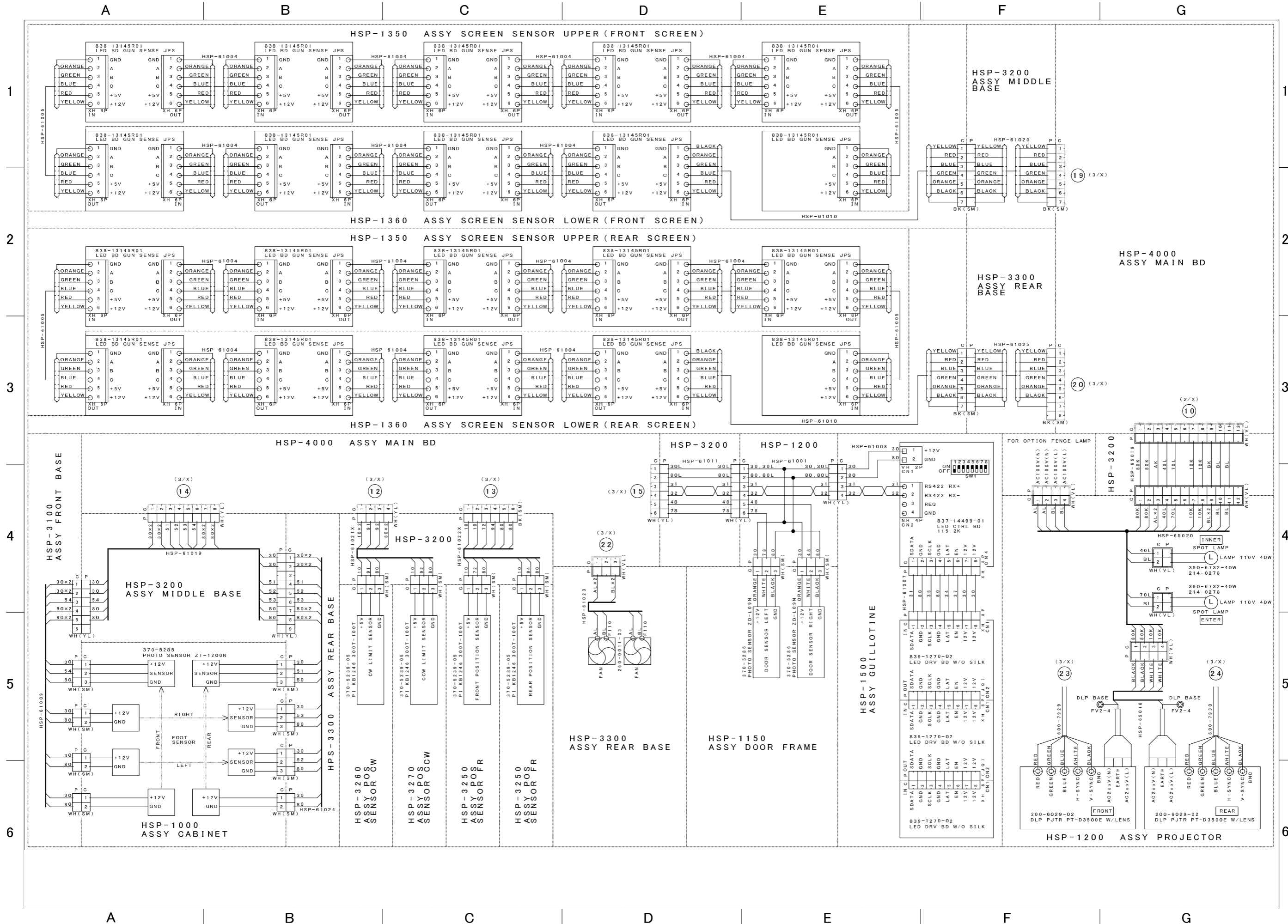
# 20 WIRING DIAGRAM (D-1/5)

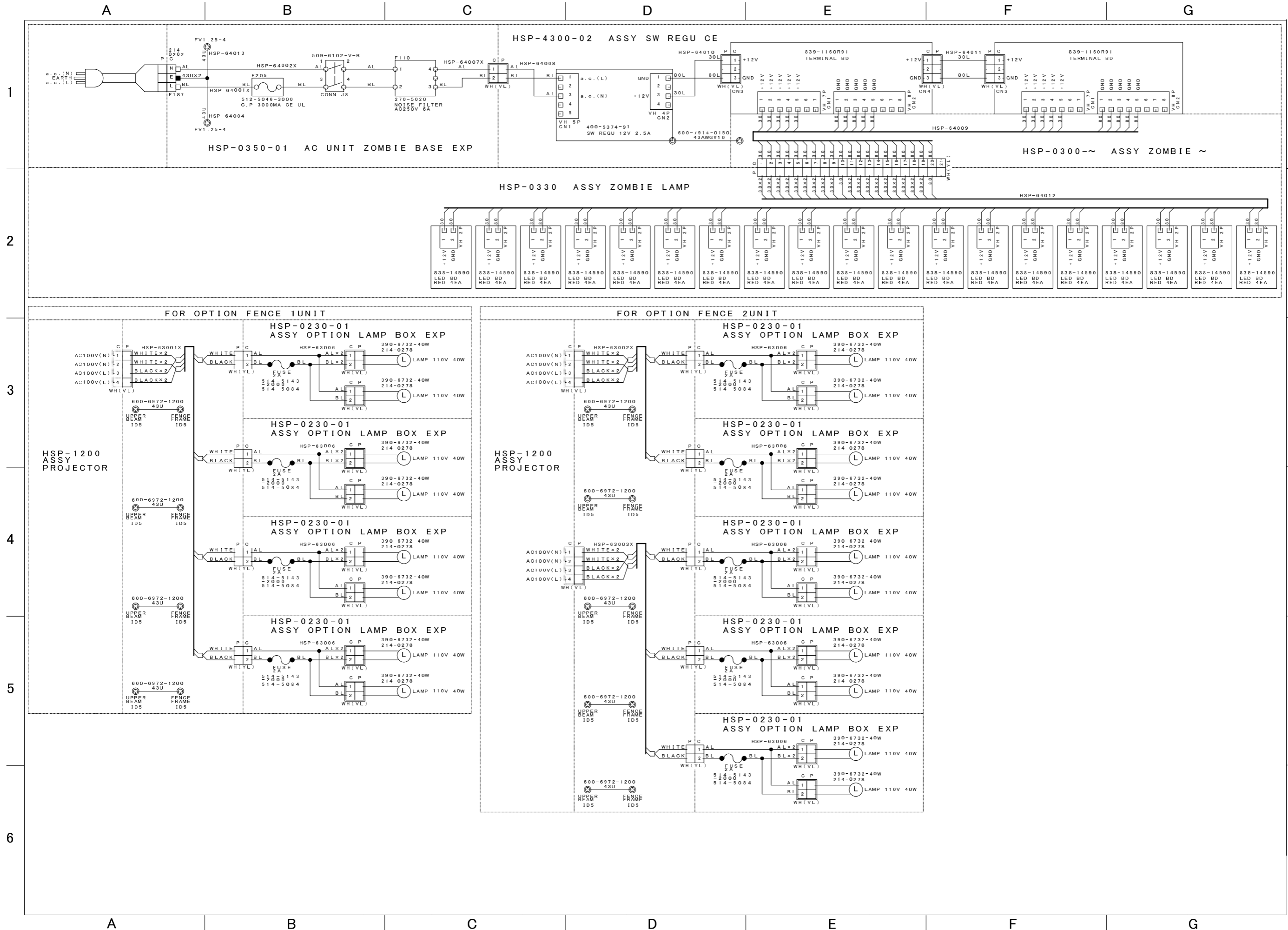














# 21 PIPING DIAGRAM

TUBE COLOR	TUBE COLOR CODE	TUBE COLOR CODE
00-00	(mm)	B BLACK
0000	TUBE LENGTH (mm)	R RED
		Y YELLOW

