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SEGA



Deluxe Version

OWNER'S MANUAL



SEGA ENTERPRISES, INC. USA

MANUAL NO. 420-6561-01

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The screenshot shows a web browser window with the address bar set to <http://www.seuservice.com/>. The browser interface includes navigation buttons (Back, Forward, Refresh, Stop, Home, Sherlock, Preferences, Larger, Smaller, Stop) and a search bar. The website content features the SegaService.com logo, a navigation menu on the left, a central graphic of a man's face with the text "Ask Dave!", and a list of site features. A visitor count of 5564 is displayed, along with contact information for Sega Enterprises Inc. and a WebSTAR 4.3 logo. At the bottom, there are links to various site sections and a requirement for software like Acrobat Reader and Microsoft Internet Explorer.

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

To maintain the safety:

To ensure the safe usage of the product, be sure to read the following before using the product. 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 nearby the product or elsewhere convenient for referring to it when necessary.

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



WARNING!

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



CAUTION!

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.

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 and or Service Manual should be referred to.

○ 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 serviceman should perform such work.

○ Be sure to turn off power before working on the machine.

To prevent electric shock, be sure to turn off power before starting the work in which the worker touches 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, however, 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 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 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 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 situation 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 w/monitor.)**

Some of the monitor (TV) parts are subject to high tension voltage. Even after running off 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 w/monitor.)**

Do not operate the product leaving on-screen flickering or blurring as it is. Using the product with the monitor 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 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 direction, 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 rating? 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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SPECIFICATIONS

Installation Space	: 1,692 mm (W) X 2,745 mm (D) (66.6 in. X 108.1 in.)
Height	: 2,290 mm (90.2 in.)
Weight	: Approx. 374 kg. (824.5 lbs.)
Power, maximum current	: 490 W 5.39 A (AC 110V 50 Hz AREA) 480 W 5.24 A (AC 110V 60 Hz AREA) 485 W 4.83 A (AC 120V 60 Hz AREA) 495 W 2.73 A (AC 220V 50 Hz AREA) 475 W 2.62 A (AC 220V 60 Hz AREA) 430 W 2.62 A (AC 230V 50 Hz AREA) 415 W 2.54 A (AC 230V 60 Hz AREA) 425 W 2.51 A (AC 240V 50 Hz AREA) 410 W 2.44 A (AC 240V 60 Hz AREA)
For TAIWAN (MITSUBISHI PROJECTION DISPLAY TYPE)	
Power, current	: 460 W 5.25 A (MAX.) 265 W 3.15 A (MIN.)
For TAIWAN (TOSHIBA PROJECTION DISPLAY TYPE)	
Power, current	: 475 W 5.50 A (MAX.) 285 W 3.25 A (MIN.)
MONITOR	: 50 TYPE PROJECTION DISPLAY

INTRODUCTION OF THE OWNERS MANUAL

This Owner's Manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electromechanicals, servicing control, spare parts, etc. as regards the product, **MARINE FISHING DX TYPE.**

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. If the product fails to function satisfactorily, non-technical personnel should under no circumstances touch the internal system. Please contact where the product was purchased from.

Use of this product is unlikely to cause physical injuries or damages to property. However, where special attention is required this is indicated by a thick line, the word "IMPORTANT" and its sign in this manual.



Indicates that mishandling the product by disregarding this display can cause the product's intrinsic performance not to be obtained, resulting in malfunctioning.

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DEFINITION OF LOCATION MAINTENANCE MAN AND SERVICEMAN



Non-technical personnel who do not have technical knowledge and expertise should refrain from performing such work that this manual requires the location's maintenance man or a serviceman to carry out, or work which is not explained in this manual. Failing to comply with this instruction can cause a severe accident such as electric shock.

Ensure that parts replacement, servicing & inspections, and troubleshooting are performed by the location's maintenance man or the serviceman. It is instructed herein that particularly hazardous work should be performed by the serviceman who has technical expertise and knowledge.

The location's maintenance man and serviceman are herein defined as follows:

"Location's Maintenance Man" :

Those who have experience in the maintenance of amusement equipment and vending machines, etc., and also participate in the servicing and control of the equipment through such routine work as equipment assembly and installation, servicing and inspections, replacement of units and consumables, etc. within the Amusement Facilities and or locations under the management of the Owner and Owner's Operators of the product.

Activities of Location's Maintenance Man :

Assembly & installation, servicing & inspections, and replacement of units & consumables as regards amusement equipment, vending machines, etc.

Serviceman :

Those who participate in the designing, manufacturing, inspections and maintenance service of the equipment at an amusement equipment manufacturer.

Those who have technical expertise equivalent to that of technical high school graduates as regards electricity, electronics and or mechanical engineering, and daily take part in the servicing & control and repair of amusement equipment.

Serviceman's Activities :

Assembly & installation and repair & adjustments of electrical, electronic and mechanical parts of amusement equipment and vending machines.

LISTED



5K92

AMUSEMENT MACHINE

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.



- Before performing work, be sure to turn power off. Performing the work without turning power off can cause an electric shock or short circuit. In the case work should be performed in the status of power on, this manual always states to that effect.
- To avoid electric shock or short circuit, do not plug in or unplug quickly.
- To avoid electric shock, do not plug in or unplug with a wet hand.
- Do not expose Power Cords and 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 electric shock or short circuit.
- To avoid causing a fire or electric shock, do not put things on or damage 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 electric shock.
- In case the power cord is damaged, ask for replacement through where the product was purchased from or the office herein stated. Using the cord as is damaged can cause fire, electric shock or leakage.
- Be sure to perform grounding appropriately. Inappropriate grounding can cause an electric shock.
- Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause a fire or 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 lookers-on, or result in injury during play.
 - SEGA shall not be held responsible for damage, compensation for damage to a third party, caused by specification changes not designated by SEGA.
- Be sure to perform periodic maintenance inspections herein stated.



- For the IC board circuit inspections, only the logic tester is allowed. The use of a multiple-purpose tester is not permitted, so be careful in this regard.
- The Projector is employed for this machine. The Projector's screen is susceptible to damage, therefore, be very careful when cleaning the screen. For details, refer to PROJECTOR.

2. PRECAUTIONS CONCERNING 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 malfunctioning.

- 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 C° to 40 C°.
Only in the case a projector is employed, the temperature range is from 5 C° to 30 C°.

LIMITATIONS OF USAGE REQUIREMENTS



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 the Breaker and Earth Mechanisms as part of the location facilities. Using them in a manner not independent can cause a fire and electric shock.
- Ensure that the indoor wiring for the power supply is rated at 15A or higher (AC single phase 100 ~ 120V area), and 7A or higher (AC 220 ~ 240V area).
Non-compliance with the Electrical Specifications can cause a fire and electric shock.
- Be sure to independently use the power supply equipped with the Earth Leakage Breaker. Using a power supply without the Earth Leakage Breaker can cause an outbreak of fire when earth leakage occurs.
- Putting many loads on one electrical outlet can cause generation of heat and a fire resulting from overload.
- When using an extension cord, ensure that the cord is rated at 15A or higher (AC 100 ~ 120V area) and 7A or higher (AC 220 ~ 240V area). Using a cord rated lower than the specified rating can cause a fire and electric shock.

OPERATION AREA



- For the operation of this machine, secure a minimum area of 2m (W) X 3m (D). In order to prevent injury resulting from the falling down accident during game play, be sure to secure the minimum area for operation.
- Be sure to provide sufficient space so as to allow this product's ventilation fan to function efficiently. To avoid machine malfunctioning and a fire, do not place any obstacles near the ventilation opening.
- SEGA shall not be held responsible for damage, compensation for damage to a third party, resulting from the failure to observe this instruction.



For transporting the machine into the location's building, the minimum necessary dimensions of the opening (of doors, etc.) are 1.2m(W) and 1.7m(H).

Electric current consumption

MAX. 5.39 A (AC 110V 50 Hz)
MAX. 5.24 A (AC 110V 60 Hz)
MAX. 4.83 A (AC 120V 60 Hz)
MAX. 2.73 A (AC 220V 50 Hz)
MAX. 2.62 A (AC 220V 60 Hz)
MAX. 2.62 A (AC 230V 50 Hz)
MAX. 2.54 A (AC 230V 60 Hz)
MAX. 2.51 A (AC 240V 50 Hz)
MAX. 2.44 A (AC 240V 60 Hz)
(For TAIWAN)
MAX. 5.25 A (MITSUBISHI PTV)
MAX. 5.50 A (TOSHIBA PTV)

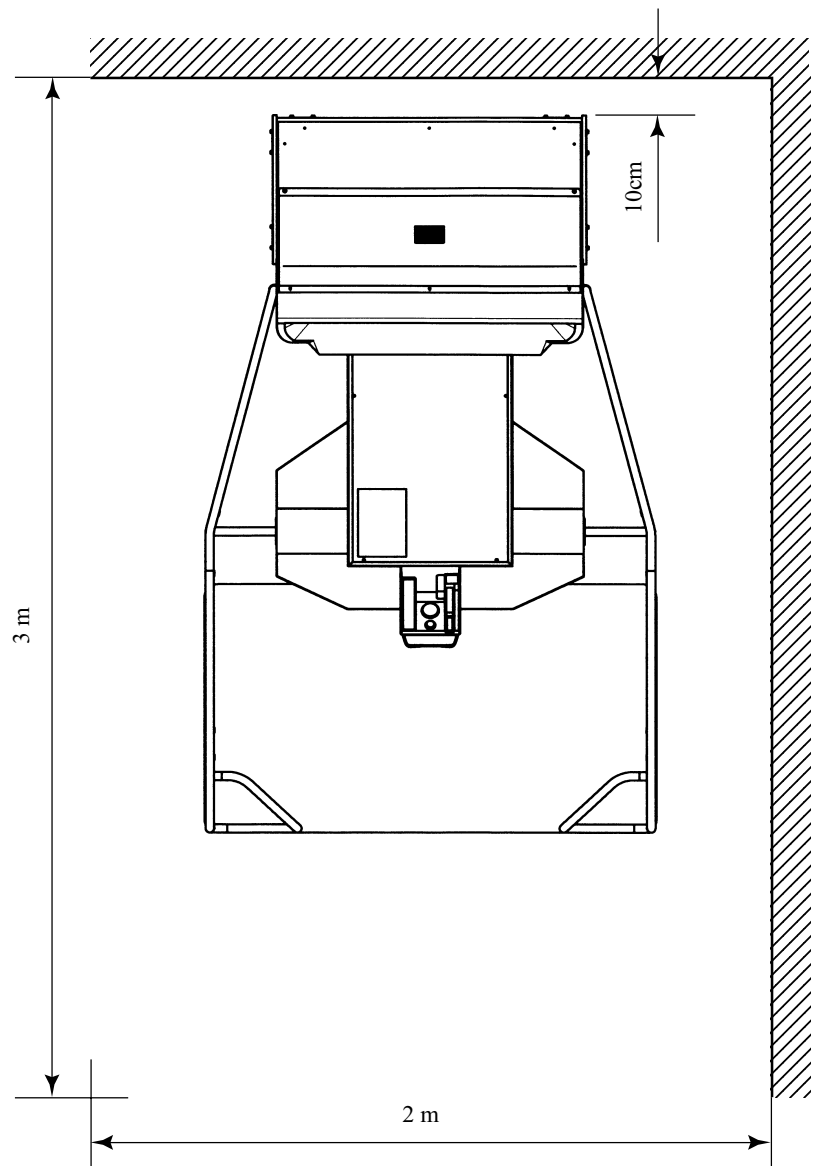


FIG. 2

3. OPERATION

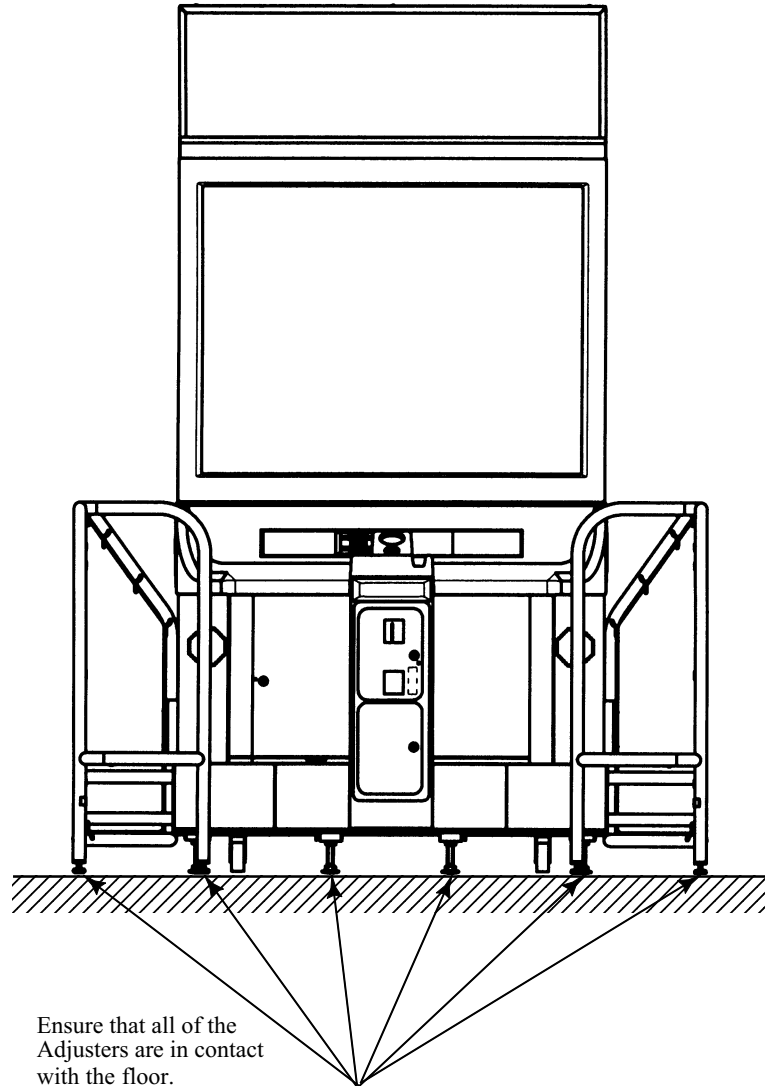
PRECAUTIONS TO BE HEEDED BEFORE STARTING THE OPERATION

To avoid injury and trouble, be sure to constantly give careful attention to the behavior and manner of the visitors and players.



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

- To ensure maximum safety for the players and the customers, ensure that where the product is operated has sufficient lighting to allow any warnings to be read. Operation under insufficient lighting can cause bodily contact with each other, hitting accident, and or trouble between customers.
- Be sure to perform appropriate adjustment of the monitor (projector). For operation of this machine, do not leave monitor's flickering or deviation as is. Failure to observe this can have a bad influence upon the players' or the customers' physical conditions.
- It is suggested to ensure a space allowing the players who feel sick while playing the game to take a rest.
- Check if all of the adjusters are in contact with the surface. If they are not, the Cabinet can move and cause an accident.

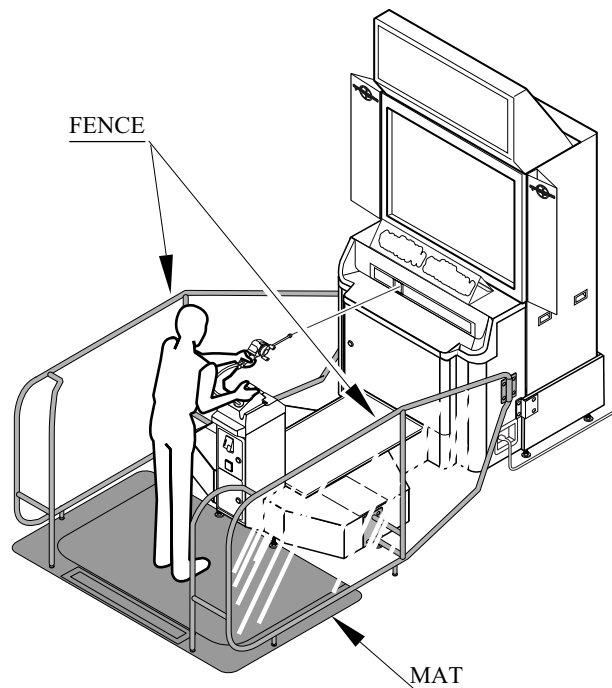




- Do not put any heavy item on this product. Placing any heavy item on the product can cause a falling down accident or parts damage.
- Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step.
- To avoid electric shock,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



- To avoid injury, be sure to provide sufficient space by considering the potentially crowded situation at the installation location. Insufficient installation space can cause making bodily contact with each other, hitting accidents, and or trouble between customers.
- Be sure to install the mat and the fence before beginning the operation. The mat and the fence are a key part to avoid accidents. Failure to observe this can cause the player to come into contact with, or hit, the others and result in injury and trouble.

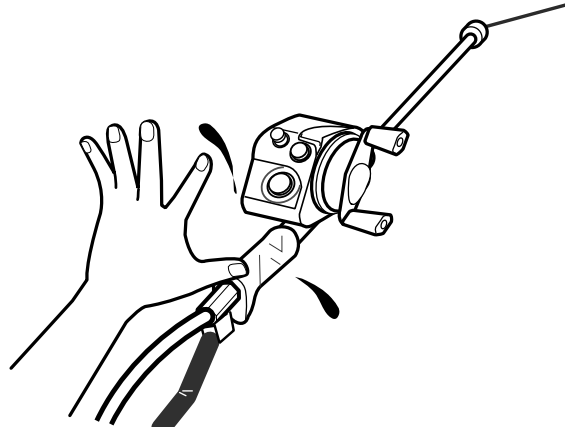


- The mat and the fence are a key part to avoid accidents. If they are damaged, immediately replace them with new ones.



CAUTION!

- Check the rod controller for scratch or damage before beginning the operation. Scratched or damaged rod controller can cause the player to be injured, or its broken pieces can cause the lookers-on to be injured. If they are scratched or damaged, therefore, immediately replace them with new ones.



IMPORTANT

- Clean the rod controller regularly as the player directly touches it. Wring the soft clothes soaked in water or diluted neutral detergent, and use them to wipe the stain off. Do not use solvent (alcohol, benzene, thinner, etc.), polisher, and bleach for cleaning because these can attack the surfaces.
- Prepare wet tissues or the alike during the operation so that the players can play comfortably.

PRECAUTIONS TO BE HEEDED DURING OPERATION (PAYING ATTENTION TO CUSTOMERS)

To avoid injury and trouble, be sure to constantly give careful attention to the behavior and manner of the visitors and players.



WARNING!

- To avoid injury and accidents, those who fall under the following categories are not allowed to play the game.
 - Those who need assistance such as the use of an apparatus when walking.
 - Those who have high blood pressure or a heart problem.
 - Those who have experienced muscle convulsion or loss of consciousness when playing video game, etc.
 - Those who have a trouble in the neck and or spinal cord.
 - Pregnant women or those who are in the likelihood of pregnancy.
 - Persons susceptible to motion sickness.
 - Persons whose act runs counter to the product's warning displays.
- A player who has never been adversely affected by light stimulus might experience dizziness or headache depending on his physical condition when playing the game. Especially, small children can be subject to those conditions. 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 resulting from falling down and electric shock due to spilled drinks, instruct the player not to place heavy items or drinks on the product.
- To avoid electric shock and short circuit, 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 falling down and injury resulting from falling down, immediately stop the customer's leaning against or climbing on the product, etc.
- To avoid electric shock and short circuit, do not allow the customers to unplug the power plug without a justifiable reason.

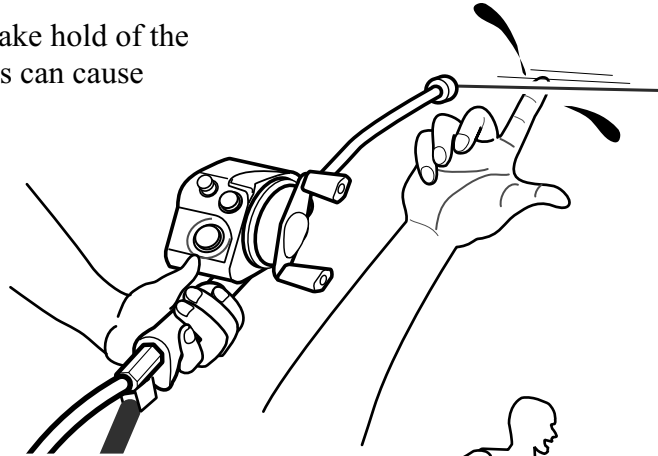


- Immediately stop such violent acts as hitting and kicking the product. Such violent acts can cause parts damage or falling down, resulting in injury due to fragments and falling down.

- Instruct those who wear high-heeled shoes to refrain from playing the game by explaining that playing game with high-heeled shoes is very likely to cause potentially hazardous situation.

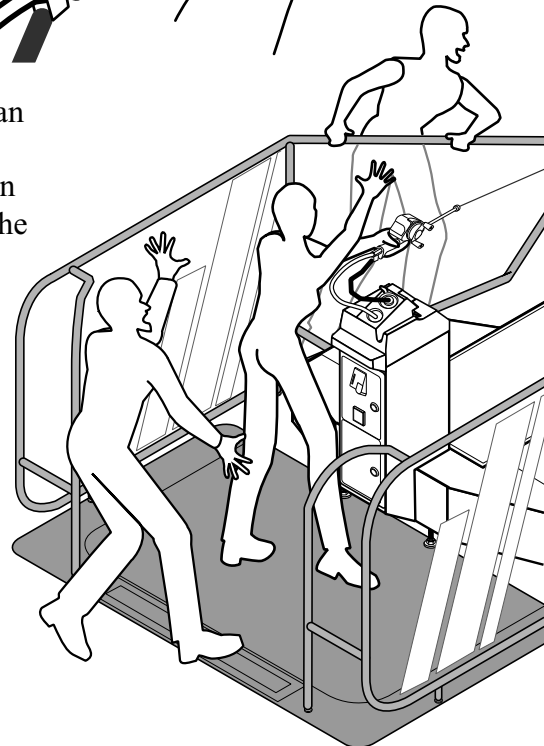


- Caution the player not to take hold of the line. Failure to observe this can cause injury.



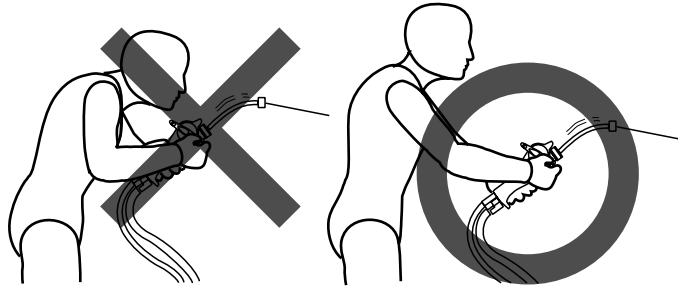
- Lookers-on are not allowed to lean over the fence or put his hand inside. Failure to observe this can cause injury or trouble between the customers.

- Use care so that the lookers-on do not enter inside the mat. Failure to observe this can cause an accident.

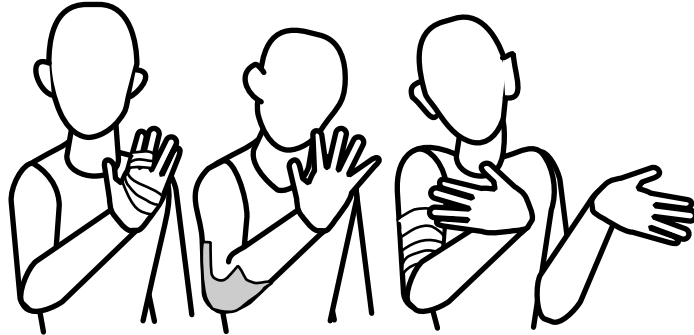




- Caution the player to keep his/her face away from the rod controller. Failure to observe this can cause injury if the line or the rod is broken.



- Instruct the person(s) who has a disorder with hands or arms to refrain from playing the game by explaining that playing the game may cause the worsening of his condition.



- Caution the player to play with holding the rod controller alone. The rod controller held by two or more players can cause them to come into contact with, or hit, each others and result in injury and trouble.
- Instruct the guardian to watch his/her children. Children cannot detect danger. Children can carelessly approach the player and come into contact with, or hit, him/her, resulting in injury and trouble. Children can carelessly touch and drop the unused rod controller, resulting in injury in the head.



4. NAME OF PARTS

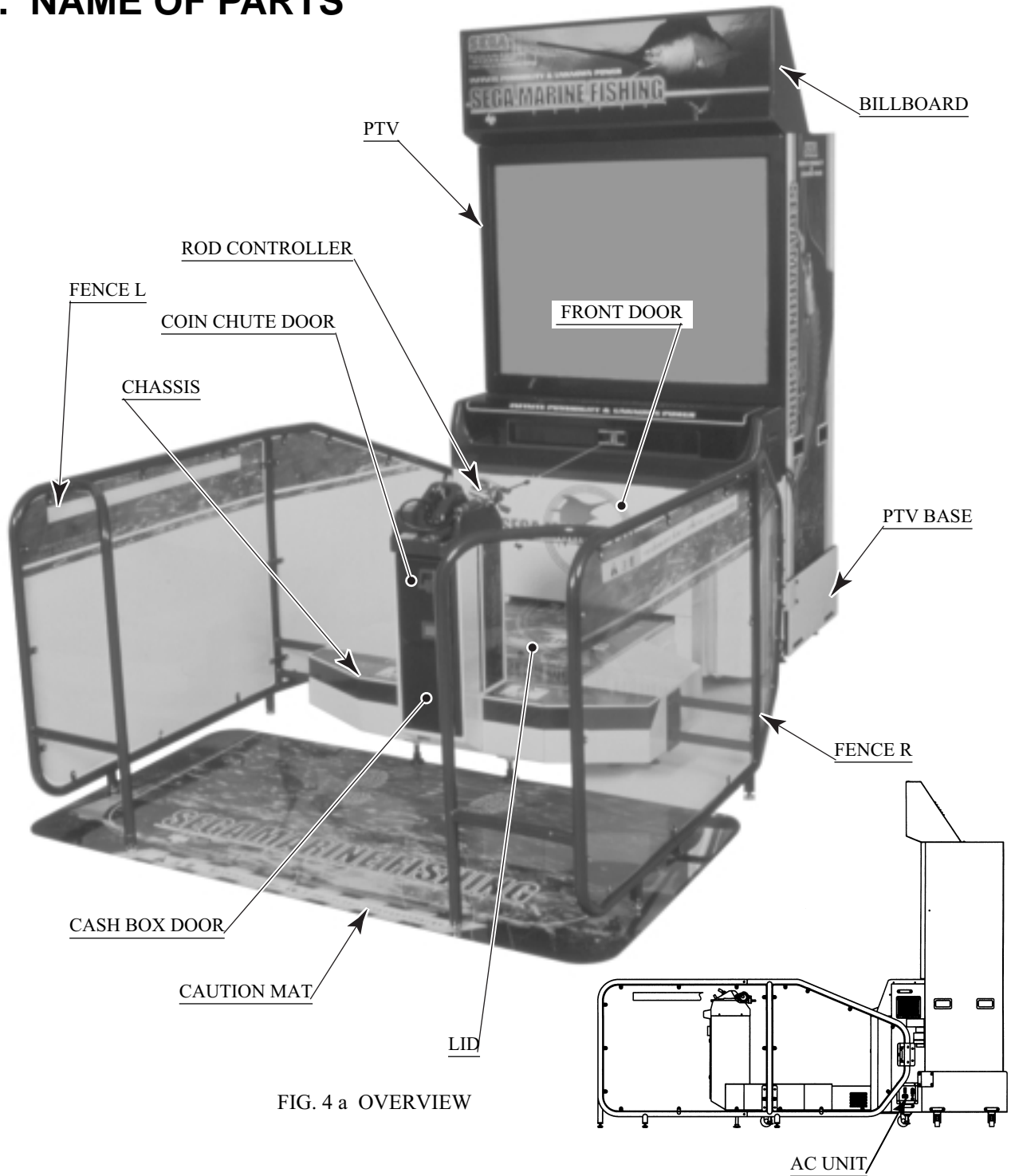


FIG. 4 a OVERVIEW

FIG. 4 b SIDE VIEW

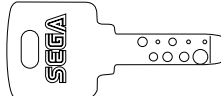
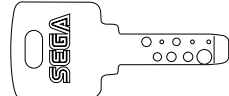
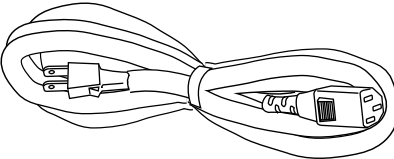
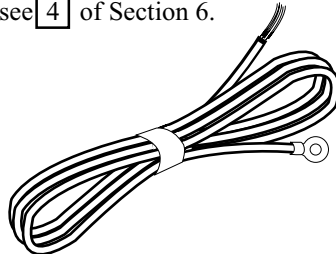
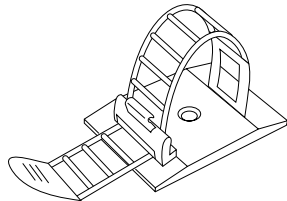
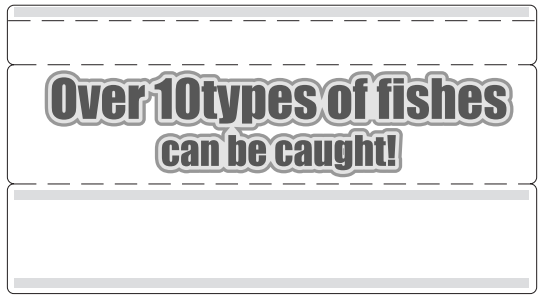
TABLE 4

	Width	X	Length	X	Height	Weight
PTV	1,140mm(W)	X	554mm(D)	X	1,672mm(H)	(TOSHIBA)110kg
						(MITSUBISHI)105kg
PTV BASE	1,172mm(W)	X	571mm(D)	X	363mm(H)	28kg
BILLBOARD	1,140mm(W)	X	400mm(D)	X	400mm(H)	19kg
FENCE	362mm(W)	X	2,122mm(D)	X	978mm(H)	24kg
CHASSIS	1,155mm(W)	X	1,481mm(D)	X	971mm(H)	169kg
When assembled	1,692mm(W)	X	2,745mm(D)	X	2,290mm(H)	374kg

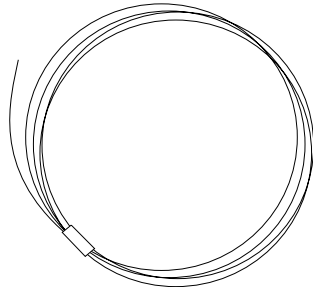
5. ACCESSORIES

When transporting the machine, make sure that the following parts are supplied.

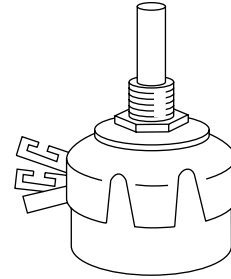
TABLE 5 ACCESSORIES

<p>DESCRIPTION OWNERS MANUAL Part No. (Qty.) 420-6561-01 (1) Note Figures If Part No. has no description, the Number has not been registered or can not be registered. Such a part may not be obtainable even if the customer desires to purchase it. Therefore, ensure that the part is in safekeeping with you.</p>	<p>KEY MASTER 220-5576 (2) For opening/closing the doors</p>	<p>KEY (2) For the CASHBOX DOOR</p>
<p>SERVICE MANUAL NAOMI ENG 420-6455-01 (1) INSTRUCTION MANUAL FOR THE GAME BOARD</p>		
<p>AC Cable (Power Cord) 600-6724 600-6729 (1) TAIWAN 600-6618 (1) OTHERS 600-6619-01 (1) HONG KONG 600-6695 (1) USA Used for installation, see 4 of Section 6.</p>	<p>WIRE HARN EARTH W/LUG M6 600-6664-02 (1) For TAIWAN. Used for installation, see 4 of Section 6.</p>	<p>CORD CLAMP 280-5009-01 (1) Used for securing the power cord. see 4 of Section 6.</p>
		
<p>POP FRONT MFS 429-0683-01 (1) see 8 of Section 6.</p>	<p>POP SIDE MFS 429-0684 (2) see 8 of Section 6.</p>	
		

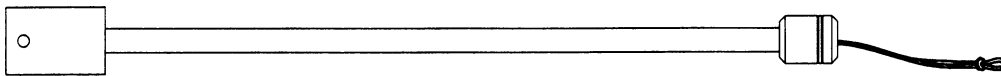
LINE
 BSS-0001 (2)
 Spare, see 10-1.



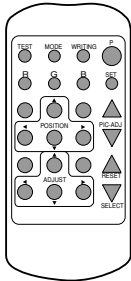
VOL CONT B-5K OHM
 220-537 (1)
 220-5484 (1)
 Spare, see 10-3.



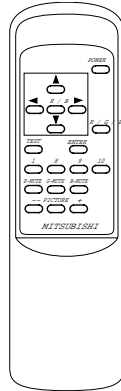
ROD
 BSS-3022Y (1)
 Spare, see 10-5.



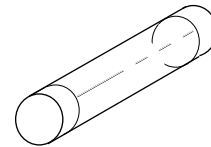
TOSHIBA
 Remote Controller used for
 adjustment of the projector.
 See Section 12.
 200-5536(1)



MITSUBISHI
 Remote Controller used for
 adjustment of the projector.
 See Section 12.
 200-5532(1)



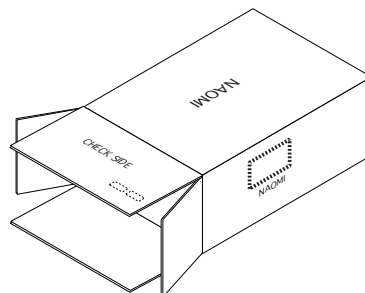
FUSE 2.5A 250V
 514-5086-2500 (1)
 Spare, see Section 15.



One of the above 2 types of
 Remote Controllers is used for the
 Projector.

The Remote Controller is attached to the Projector at the
 time of shipment.

CARTON BOX
 601-10532 (1)
 Used for transporting the
 Game Board.
 Refer to Next Page.

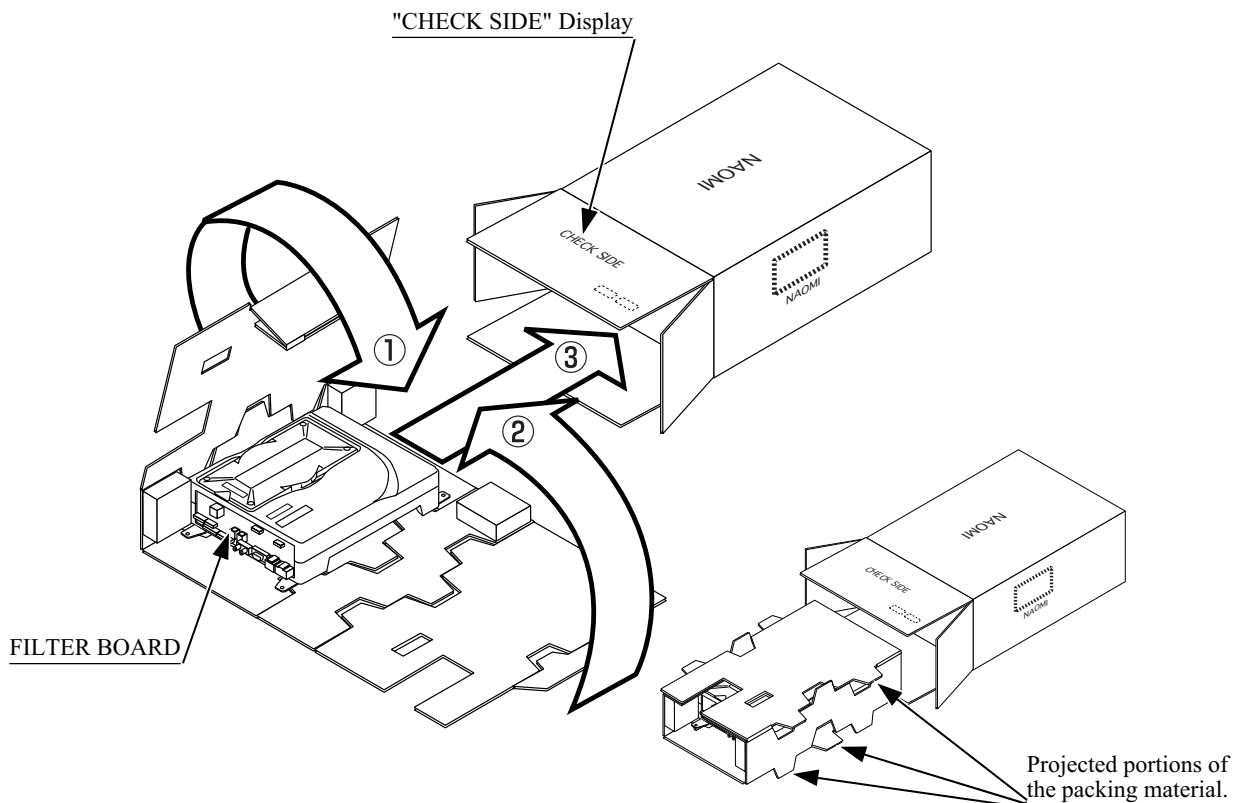


HOW TO USE THE CARTON BOX



When requesting for the replacement/repair of this product's Game Board (NAOMI BOARD), follow the instructions below. Transporting the Game Board in an undesignated status is unacceptable. An erroneous handling can cause parts damage.

- Put the Game Board in the Carton Box together with the Shield Case. Do not unnecessarily disassemble nor remove parts.
- By paying careful attention to the following Figure and the direction shown by on-Carton-Box printing, put the Shield Case in the Carton Box.
- When putting the Shield Case in the Carton Box, do not remove Leg Brackets.
- The projected portions of the packing material is intended for cushioning. Therefore, do not bend the projected portions.



Fold the packing material in the sequential order of the numbers shown in the Figure, enfold the Shield Case and put it in the Carton Box. Positioning the Shield Case upside down or packing in the manner different from what is shown in this Figure can cause the Game Board and other parts to be damaged.

6. ASSEMBLING AND PRECAUTIONS

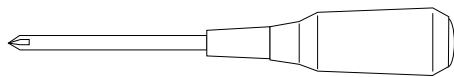


- Perform the assembly work by following the procedure herein stated. Failing to comply with the instructions can cause an electric shock.
- Assembling should be performed as per this manual. Since this is a complex machine, erroneous assembling can cause an electric shock or damage to the machine resulting in not functioning as per specified performance.
- When assembling, be sure to perform the work by plural persons. Depending on the assembly work, there are some cases in which performing the work by a single person can cause personal injury or parts damage.

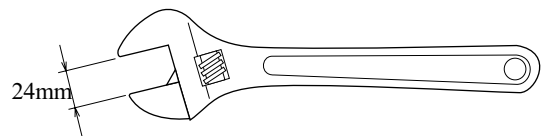
When carrying out the assembly work, follow the procedure in the following 8-item sequence:

- 1 ASSEMBLING THE PTV
- 2 ASSEMBLING THE CHASSIS
- 3 SECURING IN PLACE (ADJUSTER ADJUSTMENT)
- 4 REMOVING THE SHIPPING ROPE
- 5 POWER SUPPLY, AND EARTH CONNECTION
- 6 TURNING POWER ON
- 7 ASSEMBLING CHECK
- 8 ATTACH THE POP

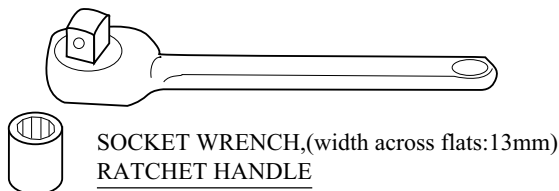
When assembling, make sure that tools such as a Phillips type screwdriver, wrench, socket wrench, ratchet handle, and the master key are available.



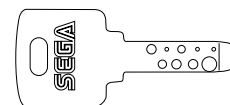
Phillips type screwdriver



WRENCH (width across flats:24mm)



SOCKET WRENCH,(width across flats:13mm)
RATCHET HANDLE



Master key

7

ASSEMBLING THE PTV



WARNING!

- Installing the Billboard by one person is difficult. Be sure to use plural persons to perform work safely and accurately.
- When mounting the PTV on the PTV Base, be sure to perform the work by 4 or more persons. Executing the work by 3 or less persons can cause injury or parts damage.



CAUTION!

To perform work safely and securely, be sure to prepare a step which is in a secure and stable condition. Using an unstable step can cause a violent falling down accidents.

- ① By using the specified screws, secure the 2 Mask Holders to the Projection Display ceiling.
- ② Insert the TV Mask from the underside as shown and secure with a total of 6 screws.
- ③ Insert the Billboard Connector to the Ceiling Terminal Board of the Projection Display.
- ④ Insert the Billboard from the front as shown and secure with 2 screws.
- ⑤ Mount the assembled PTV on the PTV Base. After mounting, bring the PTV to the rear of the PTV Base. Be sure to perform this work by 4 or more persons.
- ⑥ Secure the PTV Bracket with 4 screws.

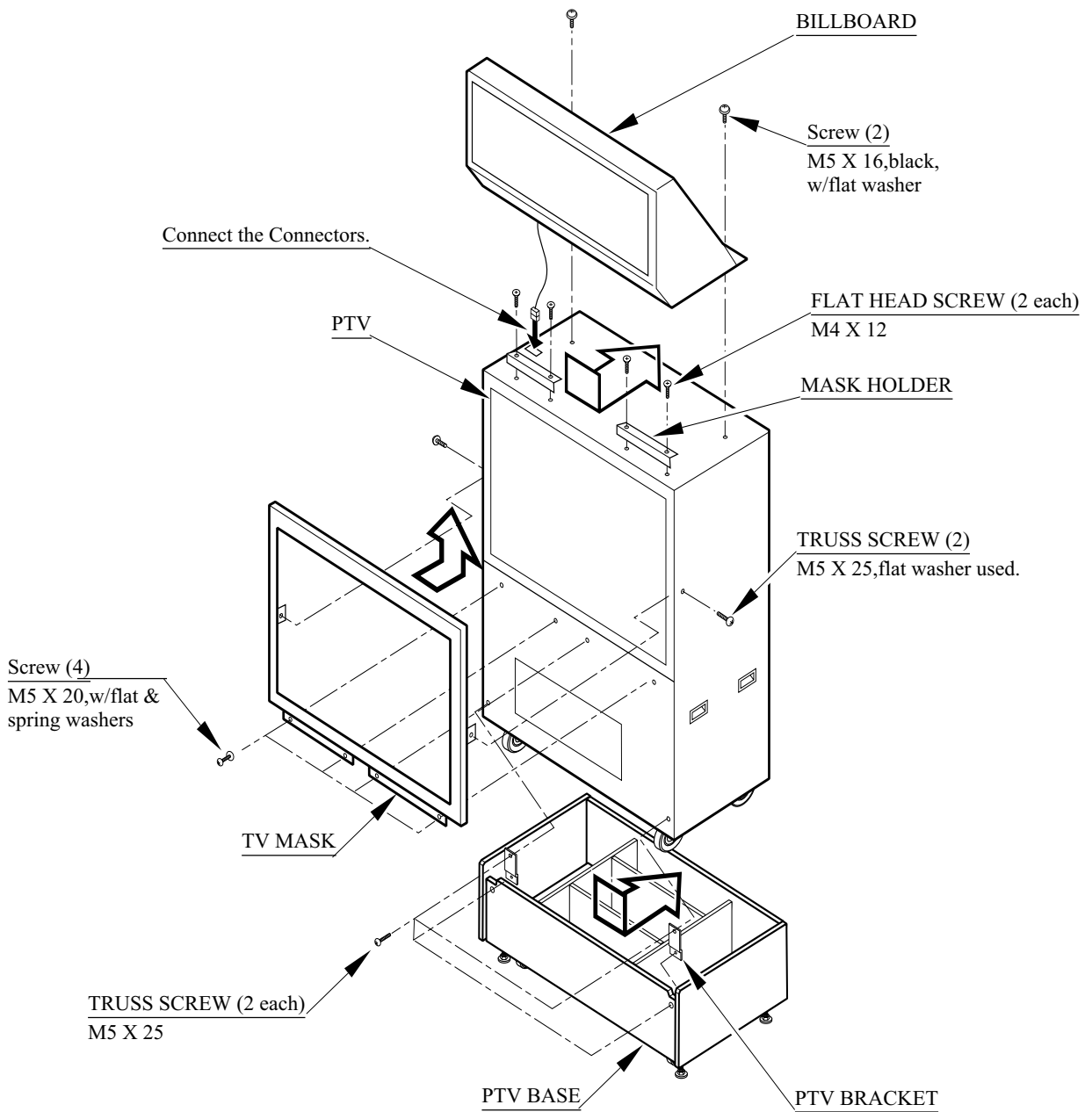
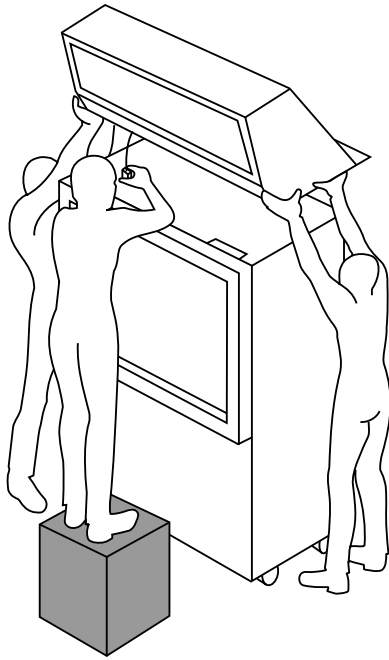
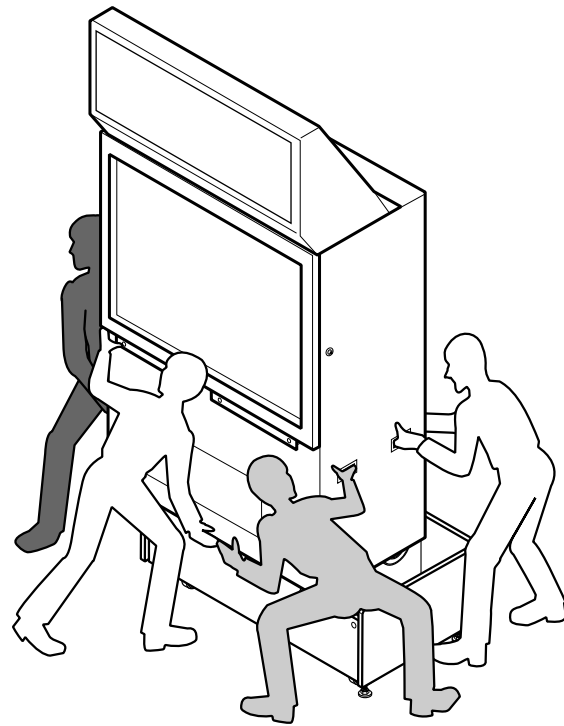


FIG. 6. 1 a



For performing work, use 3 or more workers. Be sure to prepare a step.

FIG. 6.1 b



For performing work, use 4 or more workers.

FIG. 6.1 c

2

ASSEMBLING THE CHASSIS



- Be sure to connect connectors securely. Incomplete connector connection can cause electric shock accident.
- Use care so as not to damage wirings. Damaged wiring can cause electric shock or short circuit accident.



Playing game without securing the wiring can cause the line to get tangled with the wiring. Be sure to secure the wiring with clamp.

- ① Insert the 3 connectors (2 connectors for USA) of Chassis to the corresponding 3 connectors of PTV.



- ② By using care so as not to pinch the wiring, tightly join the Chassis and PTV.



PHOTO 6.2 a

- ③ Open the Front Door with the Master Key.

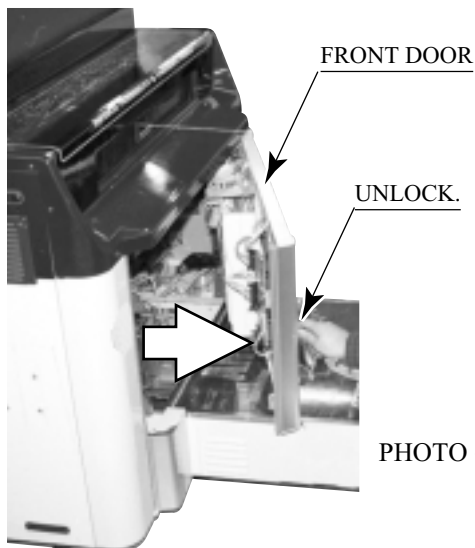
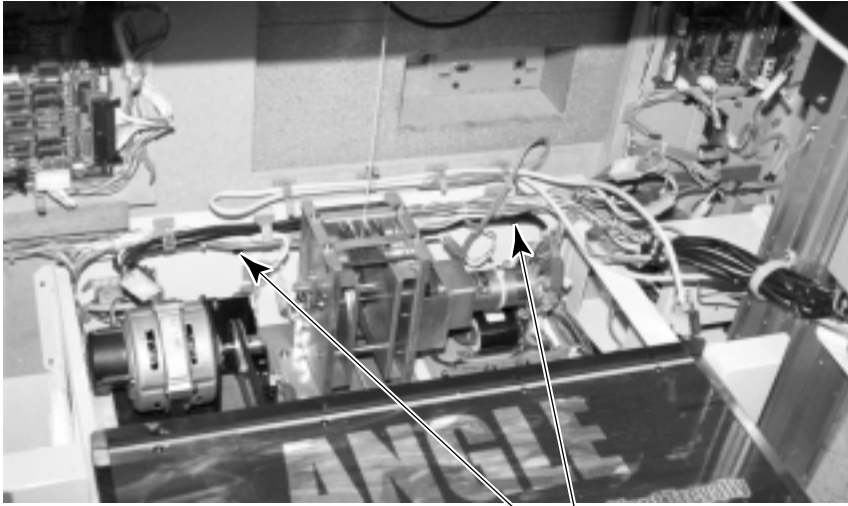


PHOTO 6.2 b

- ④ Secure with the 2 hexagon bolts by using care so as not to damage the wiring.



HEXAGON BOLT (2)
M8 X 35,
w/spring washer,flat washer used.

PHOTO 6. 2 c

- ⑤ Secure the 2 Joint Brackets with a total of 8 hexagon bolts.

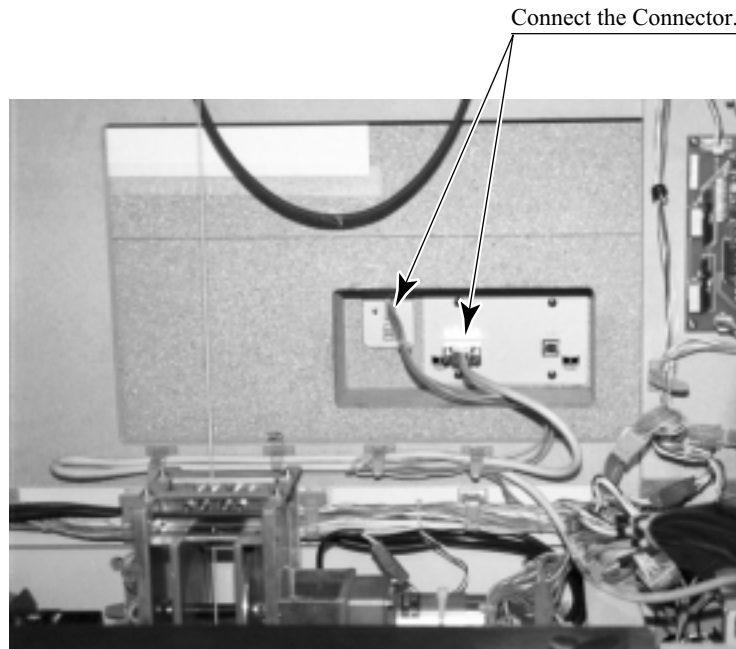


JOINT BRACKET
(both sides)

HEXAGON BOLT (4 each)
M8 X 20, w/spring washer,
flat washer used.

PHOTO 6. 2 d

- ⑥ Perform wiring between the PTV and the chassis. Insert the power cord connector and the video signal wire connector, each from the chassis, to the corresponding connectors of the connector panel located on the PTV front.
- Insertion angle for both the connectors is predetermined. Inserting the connector in a forcible manner will damage the connector. Check for the correct insertion angle and then insert the connector. The video signal wire connector is provided with the fixing screws at its both ends. Firmly tighten them after inserting the connector.



The photograph shows the Mitsubishi PTV connector panel. Connector arrangement with the Toshiba PTV may be different from this photograph.

PHOTO 6. 2 e

- ⑦ Wires may be longer than necessary to correspond to both the Mitsubishi PTV and the Toshiba PTV. After wiring, use the clamps to hold the wires. Failure to observe this can cause the line and the wires to wind around each other.

INSTALLING THE FENCE

① Take out the 4 screws and remove the lid.

TRUSS SCREW (4)
M4 X 25, flat washer used.



LID

PHOTO 6.2 f

- ② Take out the 4 screws and remove the 2 Side Lids.

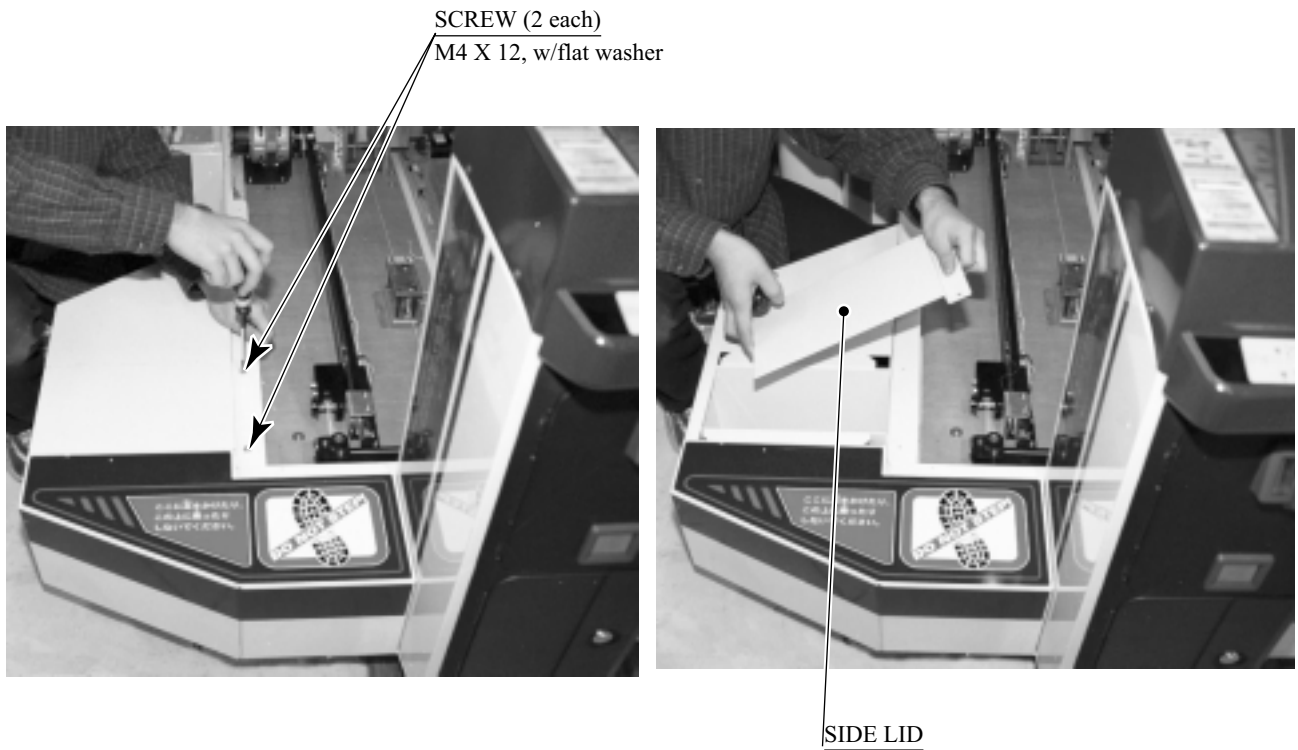


PHOTO 6. 2 g

- ③ As shown, insert the Fence onto the side of the Chassis and secure with 2 hexagon nuts and 8 hexagon bolts from outside. Similarly install to the opposite side.

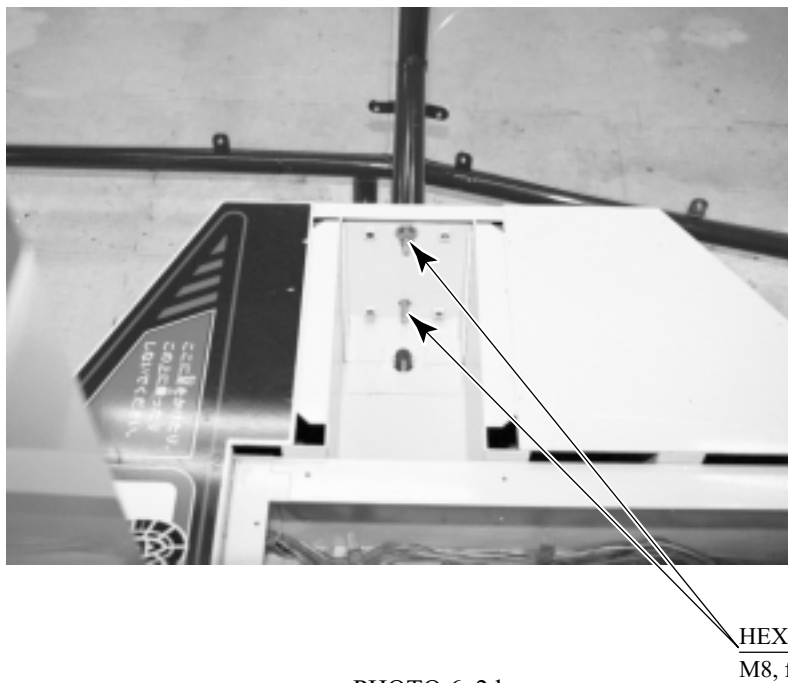


PHOTO 6. 2 h

HEXAGON BOLT (4 each)
M8 X 20, w/spring washer,
flat washer used.

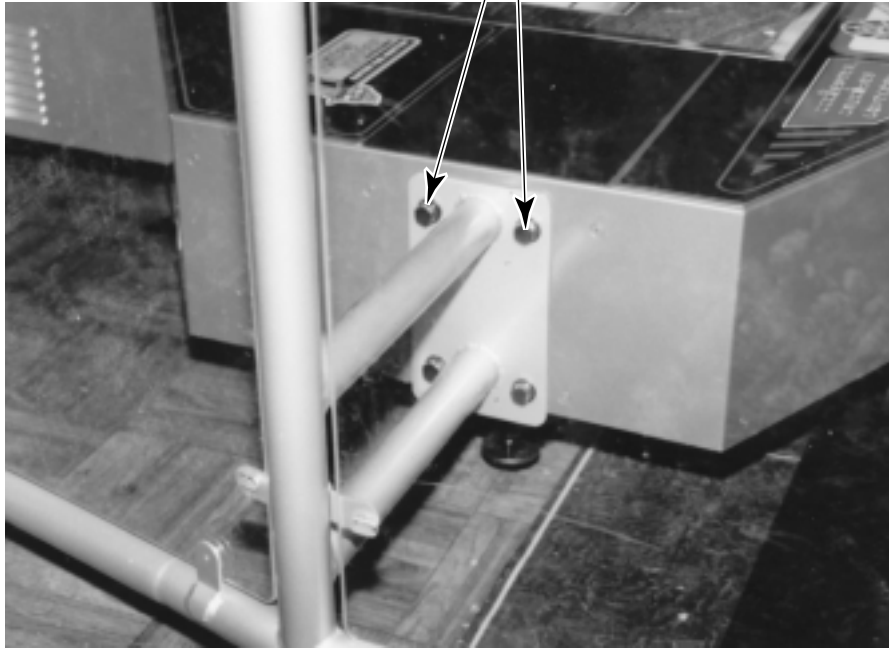


PHOTO 6.2 i



HEXAGON BOLT (4 each)
M8 X 35, w/spring washer,
flat washer used.

PHOTO 6.2 j

3

SECURING IN PLACE (ADJUSTER ADJUSTMENT)



Make sure that all of the adjusters are in contact with the floor. If they are not, the cabinet can move and cause an accident.

This product has 8 casters (4 for PTV, 4 for Chassis) and 16 Adjusters (4 for PTV, 6 for Chassis, and 6 for Fence). (FIG. 6. 3a) When the installation position is determined, cause the adjusters to come into contact with the floor directly, make adjustments in a manner so that the casters will be raised approximately 5mm. from the floor and make sure that the machine position is level.

- ① Move the machine to the installation position.
To ensure the safe operation of the product, provide sufficient space by adequately keeping the product away from wall surfaces and other cabinets.
- ② Insert the CAUTION MAT underneath the Chassis.
- ③ Lower the Adjusters for both sides of the Tower to the CAUTION MAT marks. By using a wrench, make adjustments in the height of adjusters to ensure that the machine's position is level.

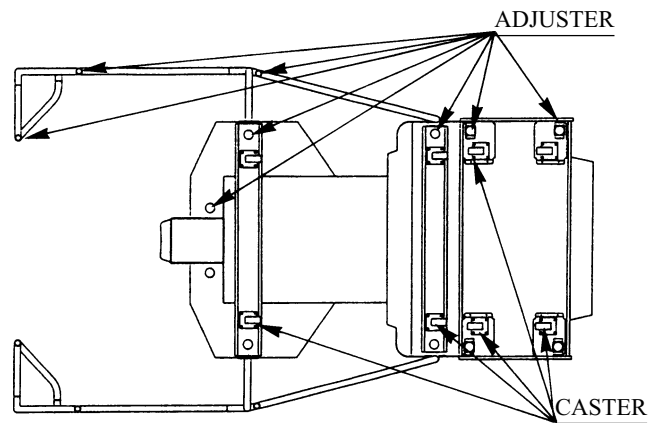


FIG. 6. 3 a BOTTOM VIEW

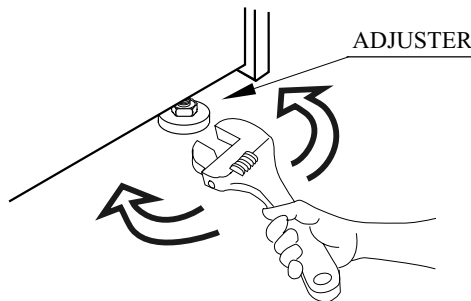


FIG. 6. 3 b ADJUSTER

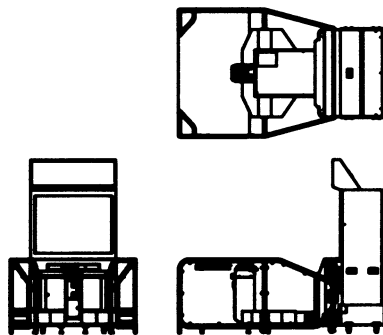
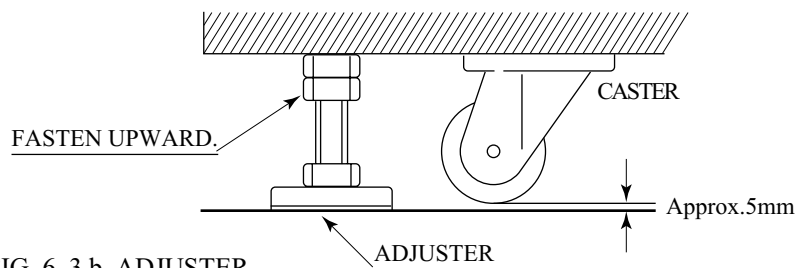


FIG. 6. 3 c

Refer to this Fig. (Scale:1/100) for the layout of the place of installation.

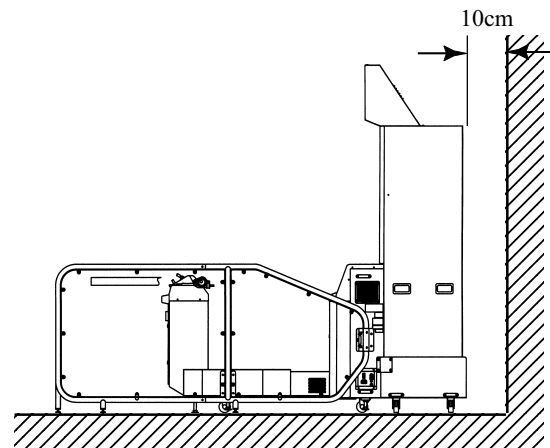


FIG. 6. 3 d

Be sure to provide space as shown between the Air Vent and the wall surface.



REMOVING THE SHIPPING ROPE



Turning power on without removing the shipping rope can cause malfunctioning.

IMPORTANT

At the time of shipment from the factory, the Chassis' internal mechanism part is secured with the shipping rope. Be sure to remove the shipping rope.

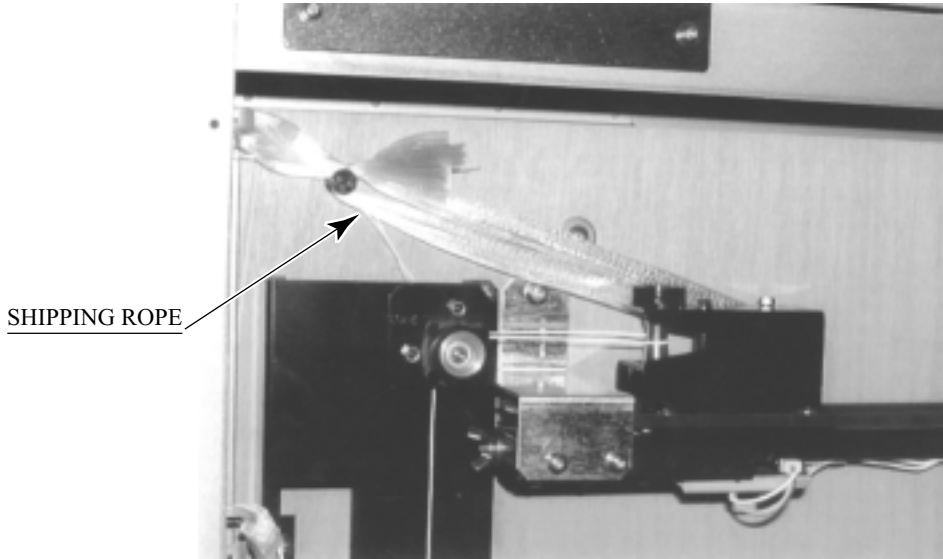


PHOTO 6.4

5

POWER SUPPLY, AND EARTH CONNECTION



- Be sure to independently use the power supply socket outlet equipped with an Earth Leakage Breaker. Using a power supply without an Earth Leakage Breaker can cause a fire when electric leakage occurs.
- Ensure that the "accurately grounded indoor earth terminal" and the earth wire cable are available (except in the case where a power cord plug with earth is used). This product is equipped with the earth terminal. Connect the earth terminal and the indoor earth terminal with the prepared cable. If the grounding work is not performed appropriately, customers can be subjected to an electric shock, and the product's functioning may not be stable.
- Ensure that the power cord and earth wire are not exposed on the surface (passage, etc.). If exposed, they can be caught and are susceptible to damage. If damaged, the cord and wire can cause electric shock and short circuit accidents. Ensure that the wiring position is not in the customer's passage way or the wiring has protective covering.
- After wiring power cord on the floor, be sure to protect the power cord. Exposed power cord is susceptible to damage and causes an electric shock accident.

The AC Unit is on the side of the Chassis. The AC Unit incorporates the Main SW, Circuit Protector, Earth Terminal, and the Inlet to which the Power Cord is connected. Securely insert the Power Cord into the product's Inlet and Plug Socket.

- ① Ensure that the Main SW is OFF.

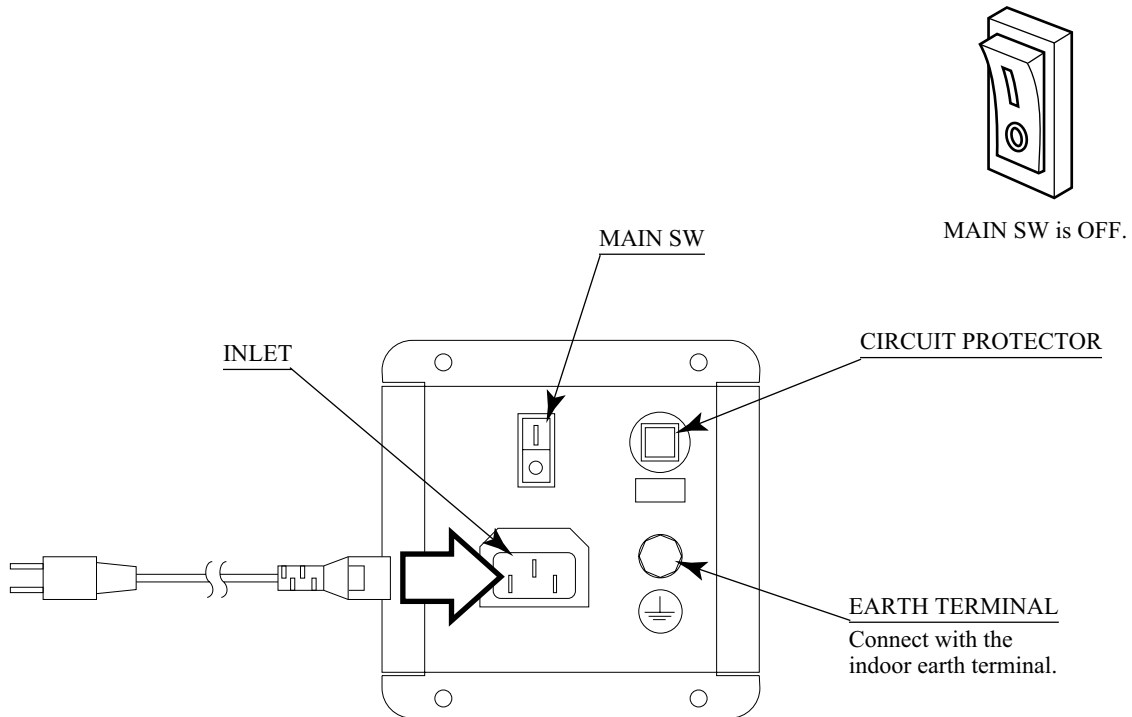


FIG. 6. 5 a AC unit

- ② Connect one end of the earth wire to the AC Unit earth terminal, and the other end to the indoor earth terminal. The AC Unit earth terminal has a Bolt and Nut combination. Take off the Nut, pass the end of earth wire through the Bolt, and fasten the Nut. Note that the Earth Wire is incorporated in the Power Cord for the Areas of AC 120V (USA) and AC 220 ~ 240V, and therefore, this procedure is not necessary.

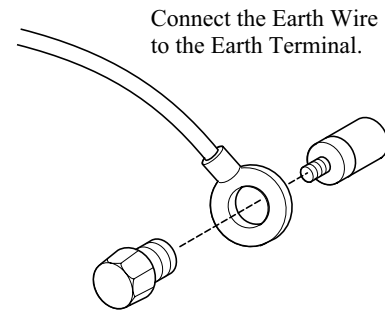


FIG. 6. 5 b Earth Wire Connection

- ③ Firmly insert the power plug into the socket outlet. Insert the opposite side of Power Cord plug to the AC Unit's connector ("INLET").
- ④ Perform wiring for the Power Cord and Earth Wire. Install protective covering for the Power Cord and Earth Wire.

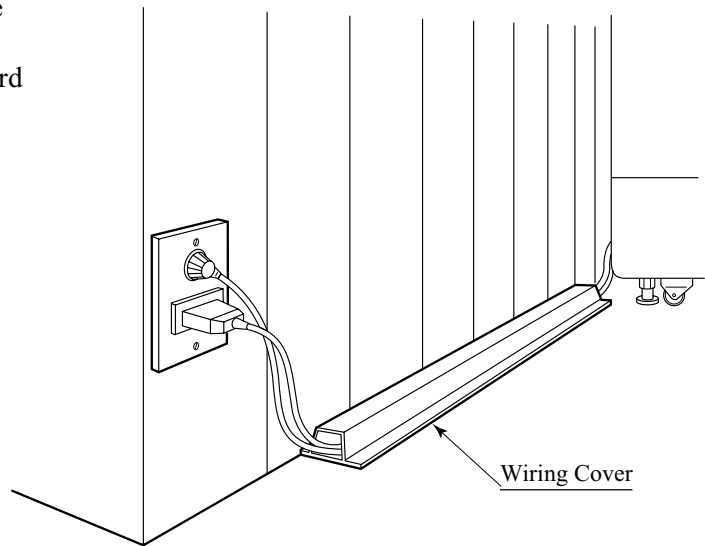
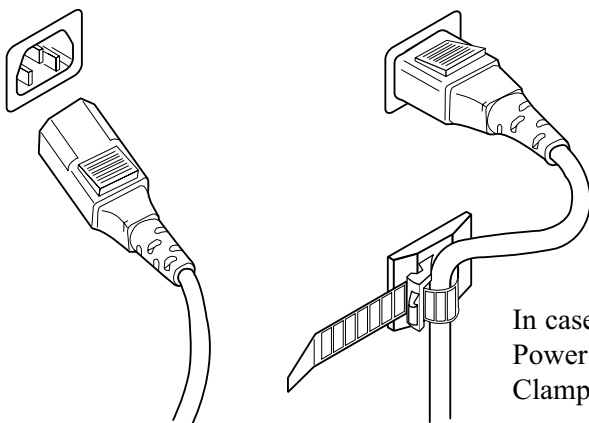


FIG. 6. 5 c Connecting Power Cord and Earth Wire



In case the Power Plug is apt to come out of place, secure the Power Cord to the periphery of the AC Unit with the Cord Clamp (an accessory).

HOW TO USE THE CORD CLAMP

6

TURNING POWER ON



- Shortly after turning power on, initialization setting movements will start. To prevent accidents, do not touch the cabinet until the initialization setting movements are complete.
- Do not operate the product if ERROR is displayed after the initialization setting movements. Failure to observe this can cause accidents.



During the initialization setting movements, do not touch the cabinet. The initialization settings are automatically finished. Touching the cabinet during the initialization setting can cause inaccurate settings and unsatisfactory functioning.

Turn the AC Unit Main SW ON to turn on the machine's power supply. At the same time the power is turned on for the power supply, the machine starts the initialization setting movements and displays the screen on which the setting is being made. Do not touch the Ride until the initialization setting movements are automatically finished.

This power-on function check is also performed when you enter a test mode.

The system saves the data such as credit numbers and ranking points even after disconnecting the power. The system does not save the data such as fractional coin numbers (number of inserted coins that is not enough for even one credit) and bonus adder account.

INITIALIZATION SETTING MOVEMENTS

- ① When the power is turned on, first the wiring check is performed at the same time with the display.
- ② The Line Pull mechanism moves back and forth by a certain distance and returns to the home position (this side of the Line Pull Rail).
- ③ The Vibration Mechanism makes a full turn.
- ④ The Swing Mechanism first moves up to the right-hand side limit, and to the left-hand side limit and then stops.
- ⑤ The Line Pull Mechanism pulls the line slightly and returns to the home position again.

After the initialization setting movements are finished, Advertise mode appears on the screen. In case an irregularity is detected during setting movements, ERROR message is displayed depending on the contents of the irregularity. Take measures by referring to the ERROR display item. The product will not satisfactorily function in the ERROR status.

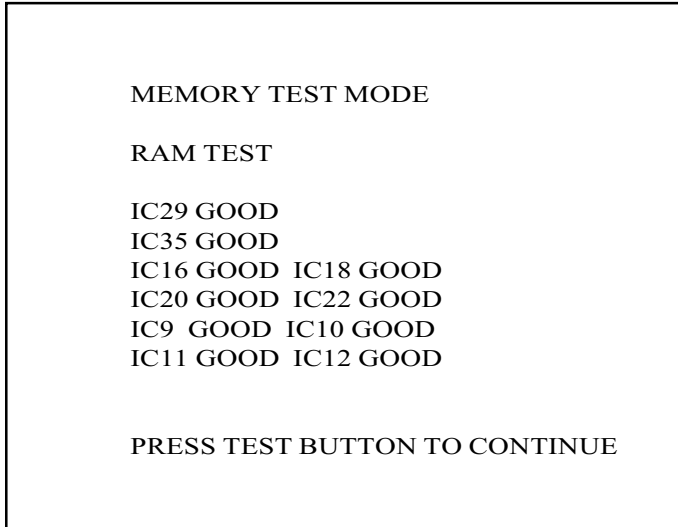


ASSEMBLING CHECK

In the TEST MODE, ascertain that the assembly has been made correctly and IC BD. is satisfactory (refer to Section 9).

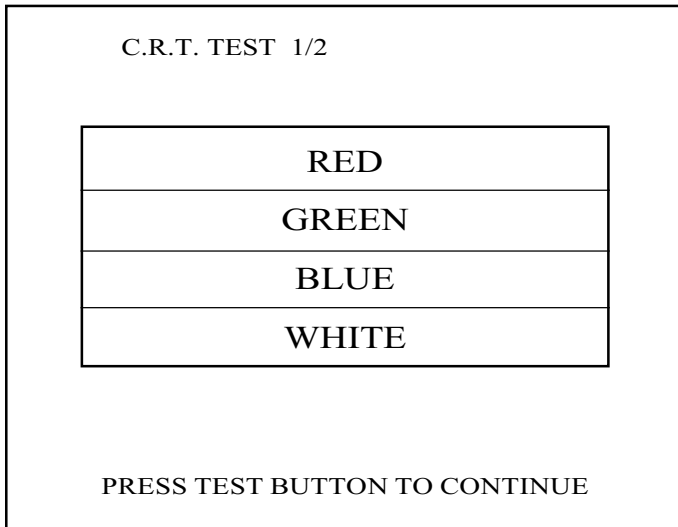
In the test mode, perform the following test:

(1) MEMORY TEST

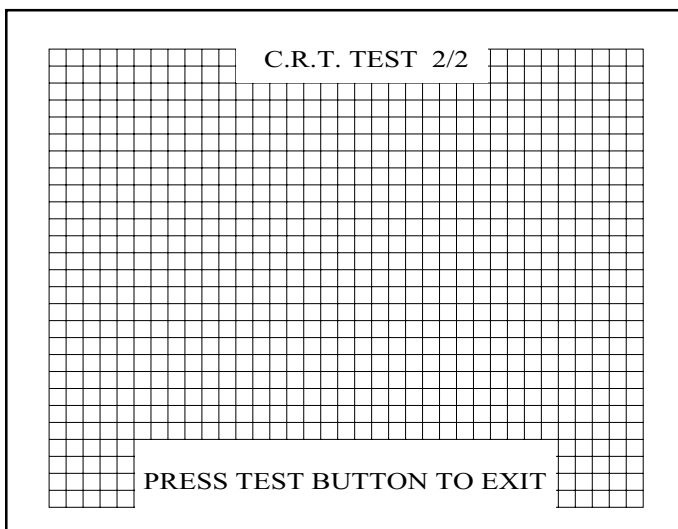


Selecting the desired RAM TEST item on the test mode menu screen causes the on-board memory to be tested automatically. The game board is satisfactory if the display beside each IC No. shows GOOD.

(2) C.R.T. TEST



In the TEST mode menu, selecting C.R.T. TEST allows the screen (on which the monitor is tested) to be displayed. Although the monitor adjustments have been made at the time of shipment from the factory, color deviation, etc., may occur due to the effect caused by geomagnetism, the location building's steel frames and other game machines in the periphery. By watching the test mode screen, make judgment as to whether an adjustment is needed. If it is necessary, adjust the monitor by referring to Section 12.



(3) INPUT TEST

```
INPUT TEST

STICK X = 7DH
STICK Y = 7DH
REEL SPEED = 80H
PULL POSITION = 5DH
SWING POSITION = 80H
TENSION = 80H
CAST = OFF
LURE = OFF
ROD UP = OFF
ROD DOWN = OFF
ROD LEFT = OFF
ROD RIGHT = OFF
TEST = OFF
SERVICE = OFF
COIN CHUTE#1 = OFF
COIN CHUTE#2 = OFF

PRESS TEST AND
SERVICE BUTTON TO EXIT
```

Selecting the INPUT TEST on the test mode menu screen causes the screen (on which each switch and V. R. are tested) to be displayed. Press each switch. For the coin switch test, insert a coin from the coin inlet with the coin chute door open. If the display beside each switch indicates "ON," the switch and wiring connections are satisfactory.

Check the display of each V.R. value.

(4) OUTPUT TEST

```
OUTPUT TEST

LINE PULL FAR
LINE PULL NEAR
SWING RIGHT
SWING LEFT
VIBE TEST
REEL BRAKE
->EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

This test mode allows each mechanism's function to be checked. Check to see if each mechanism satisfactorily functions.

(5) SOUND TEST

```
SOUND TEST

NO.000

SELECT WITH SERVICE BUTTON
PRESS TEST BUTTON TO EXIT
```

In the TEST mode, selecting SOUND TEST causes the screen (on which sound related BD and wiring connections are tested) to be displayed.

Be sure to check if the sound is satisfactorily emitted from each speaker and the sound volume is appropriate.

(6) VOLUME SETTING

VOLUME SETTING

AUTO SETTING COMPLETE

PULL POSITION : MIN(7DH) MAX(C5H)
SWING POSITION: MIN(92H) MAX(06H)
REEL : NEUTRAL(7FH)

->CONTINUE WITH SAVE
CONTINUE WITHOUT SAVE

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

Selecting the "VOLUME SETTING" allows various volume value settings to be performed. Execute volume value settings by referring to VOLUME SETTING, Section 9.

VOLUME SETTING

MANUAL SETTING

MIN NOW MAX
STICK X : 7CH - 7CH - 80H
STICK Y : 7DH - 7DH - 80H
TENSION : 10H - 50H - F0H

->EXIT WITH SAVE
EXIT WITHOUT SAVE

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

Perform the above checking at the time of monthly inspections.



ATTACH THE POP

POP advertising materials are eye-catching sign. They are not necessarily attached on the machine.

Attach the POP advertising materials on the right/left sides and front shelf of the PTV as follows:

- ① Assemble the two POP advertising side materials. Fold them into a triangular column, and join each of the two ends with a both-side adhesive tape.
- ② Attach the assembled materials on the PTV right and left sides with a both-side adhesive tape. Be careful not to attach upside down.
- ③ Assemble the POP advertising front material. Fold it into a triangular column, and join the two ends with a both-sides adhesive tape.
- ④ Attach the assembled material on the PTV front shelf with a both-sides adhesive tape.

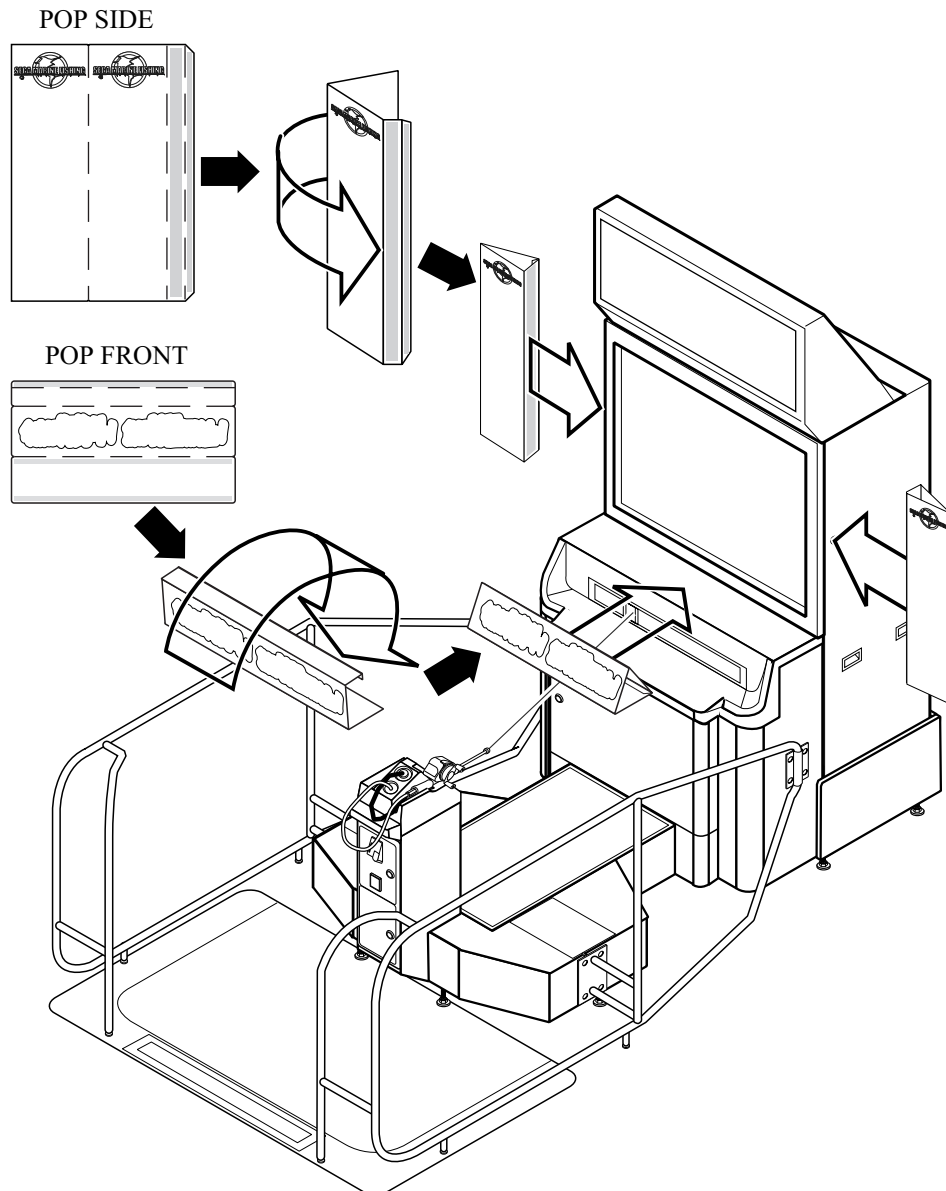


FIG. 6. 8

7. PRECAUTIONS TO BE HEEDED WHEN MOVING THE MACHINE



WARNING!

- When moving the machine, be sure to pull out the plug from the power supply. Moving the machine with the plug as is inserted can cause the power cord to be damaged, resulting in a fire and or electric shock.
- When moving the machine on the floor, retract the Adjusters and ensure that Casters make contact with the floor. During transportation, pay careful attention so that Casters do not tread power cords and earth wires. Damaging the power cords can cause an electric shock and or short circuit.
- In places where step-like grade differences exist, be sure to separate the PTV, PTV Base, and the Chassis. Inclining the PTV as is mounted on the PTV Base can cause the PTV to fall off from the Base and result in injury.
- When lifting the Chassis, be sure to hold the catch portions or bottom part. Lifting the Chassis by holding other portions can damage parts and installation portions due to the empty weight of the Chassis, and cause personal injury.
- When moving the PTV, do not push it from the rear side. Push it from sideways. Pushing the PTV from the rear side can have the PTV fall down, causing personal injury etc. In case the floor has slanted surfaces or step-like differences, be sure to move the machine by 2 or more persons.



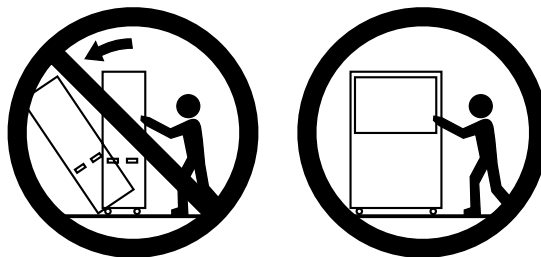
CAUTION!

Do not push the plastic made parts. Failure to observe this may damage parts and cause injury due to fragments resulting from damage.



IMPORTANT

To protect surface, do not directly apply a rope to the surfaces of product. Use protective materials to the places the rope is applied to.



Do not push PTV from the rear side. Pushing the PTV from the rear side can cause the PTV to fall down. Push it from the side.

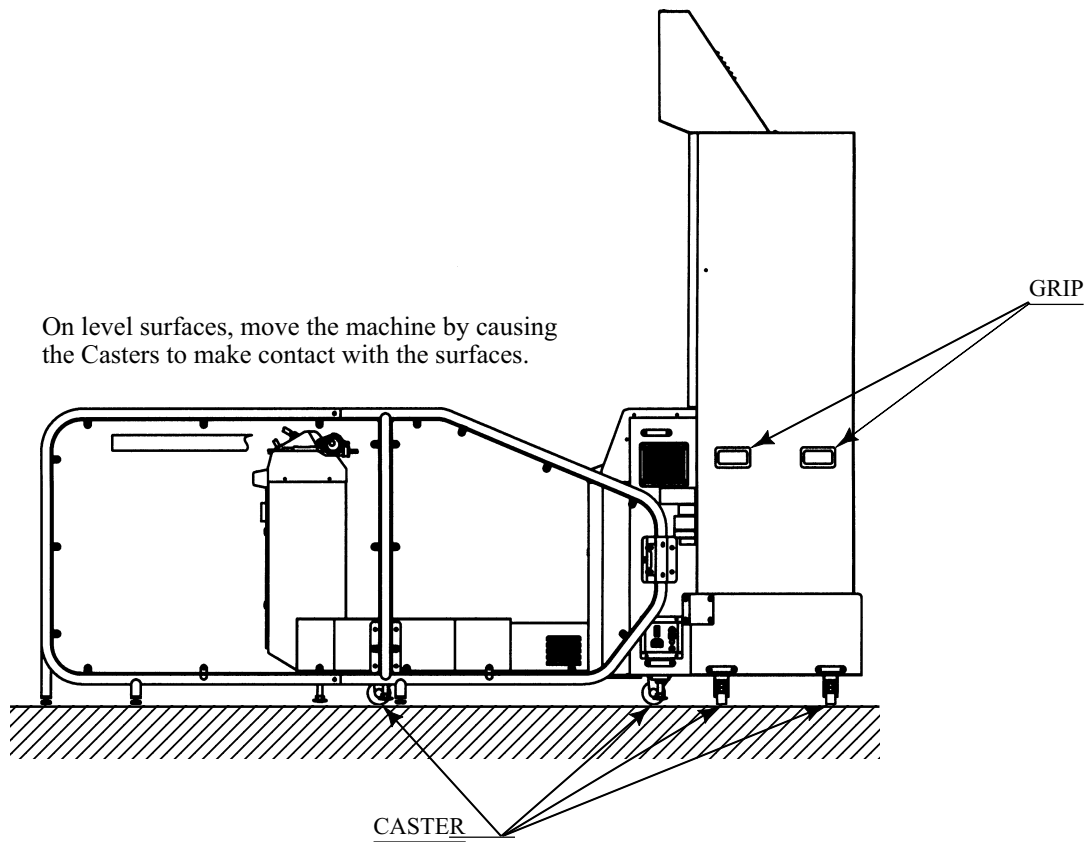


FIG. 7 a

When transporting the product in places with steps or step-like differences in grade, disassemble into each unit before transporting.

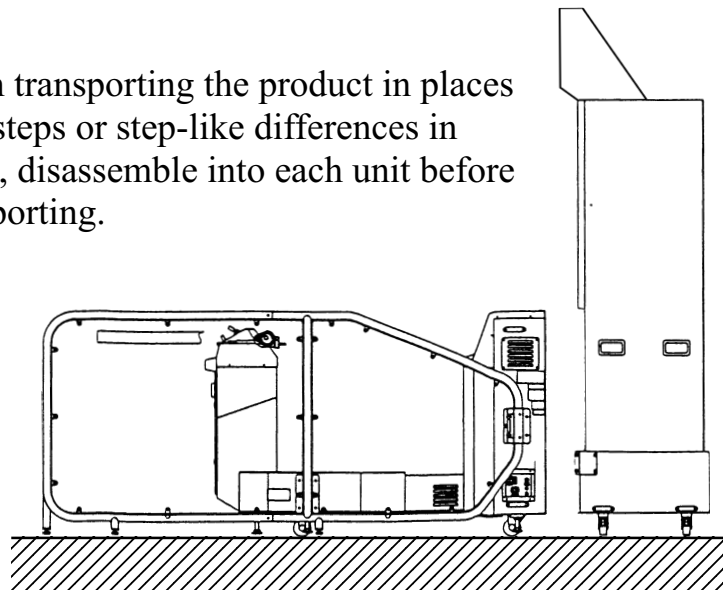


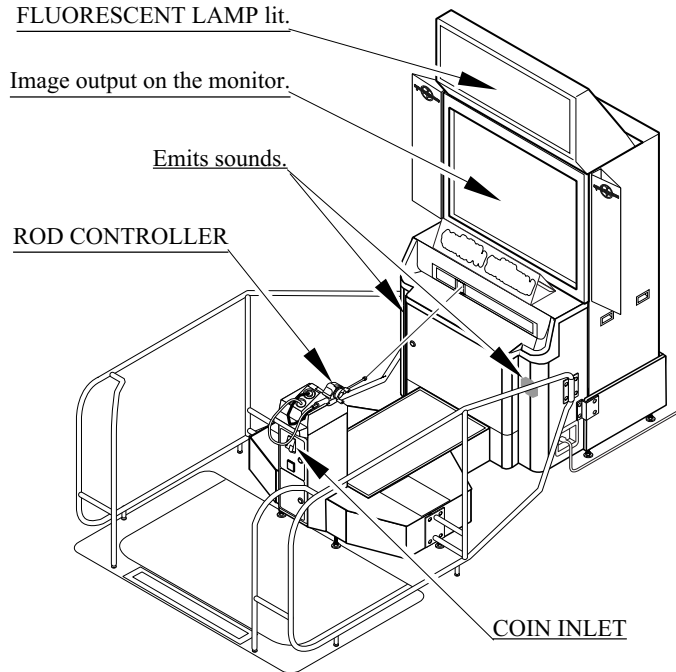
FIG. 7 b

8. CONTENTS OF GAME

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

Advertising Action of the Machine

The fluorescent light of the billboard is on while the power is connected. During advertising or waiting-a-player period, the machine screen and speaker explain how to play with this product. You can disable, however, an audible explanation function during an advertising period.

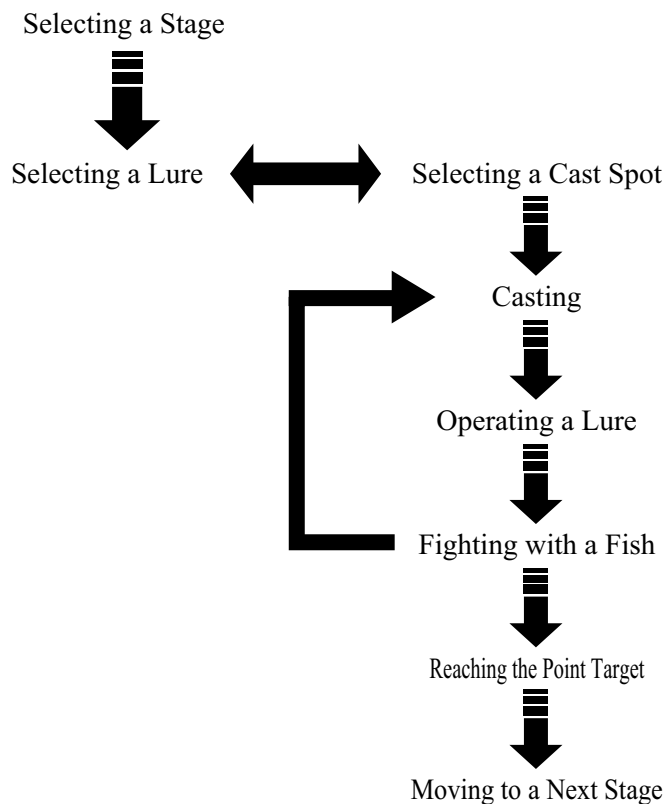


Flow of Game

Three selectable stages and one final stage are available. Fishable fishes vary from stage to stage. One stage provides 5 to 7 fishes.

Player's Goal:

Individual stage has its own point target. The player scores points each time when he/she succeeds in fishing. Points to be scored vary from fish to fish. The more difficult the fish the higher the points, of course. If the TOTAL POINT the player scored reaches the point target before the countdown time becomes 0 (zero), he/she can move to a next stage.

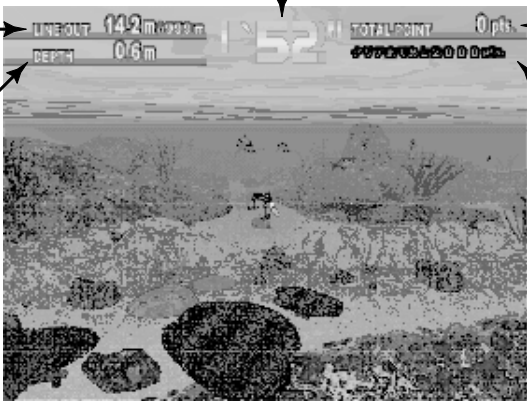


How to Play the Game

Indications on the Game Screen

LINE OUT indicates a line length.
 DEPTH indicates a water depth of the displayed sea. This depth is not necessarily related with the game itself.

The number here indicates a countdown time (minutes and seconds) given for playing a game. 0 (zero) means a game end.

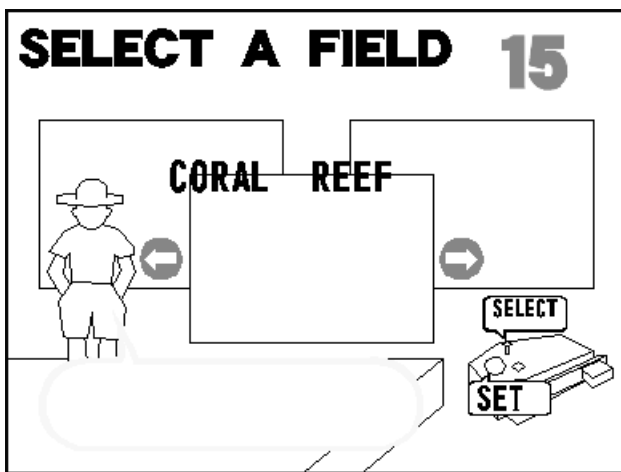


TOTAL POINT indicates the points scored by a player.
 The number here indicates the points that a player must further score to reach the point target.

Each time when you (as a player) insert coins, a credit number increases on the screen. When you have inserted coins enough to start a game, INSERT COIN(S) disappears and PRESS START BUTTON appears on the screen. Press the START/CAST button to open the SELECT A FIELD screen. Select the field or stage that you want to play.
 NOTE: On a stage-select, lure-select, or cast-spot-select screen, use the rod controller. Operate its STICK to select, or move to, the item you want; press its START/CAST button to start a game and to activate the item you selected.

Selecting a Stage (Field)

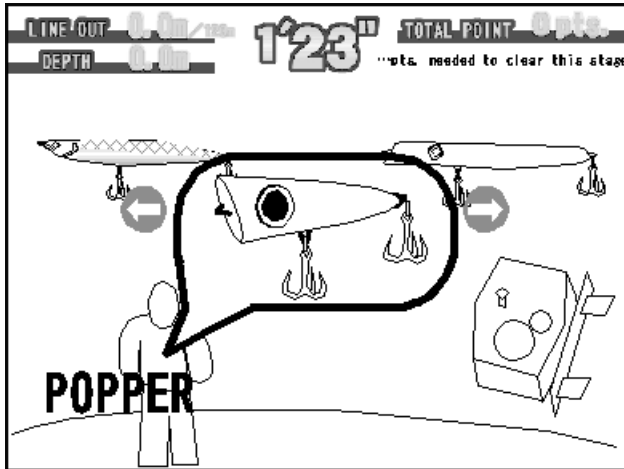
Three stages (fields) are available. When you activate a stage, the screen shows the point target.



Features of Each Stage

- CORAL REEF:**
Shows a tropical sea with extended beautiful coral reefs.
- THE OFFING:**
Shows a view of the offing with deep-sea fishes.
- SHALLOW:**
Shows a sea resort with the sand beeches.

■ Selecting a Lure



You can change a lure only when you are selecting a cast spot. Use the STICK to select a lure, and press the LURE button to activate the selected lure. Be careful in this step, because your allocated game time is decreasing.

■ Selecting a Cast Spot

Move the STICK to select a spot to which you want to cast the lure. Press the START/CAST button to activate the selected spot. Remember the spot is vertically and horizontally moving.

■ Operating a Lure

Operate the rod controller and reel to lure fishes. Your lure action is rated and a message will appear on the screen.

Easy



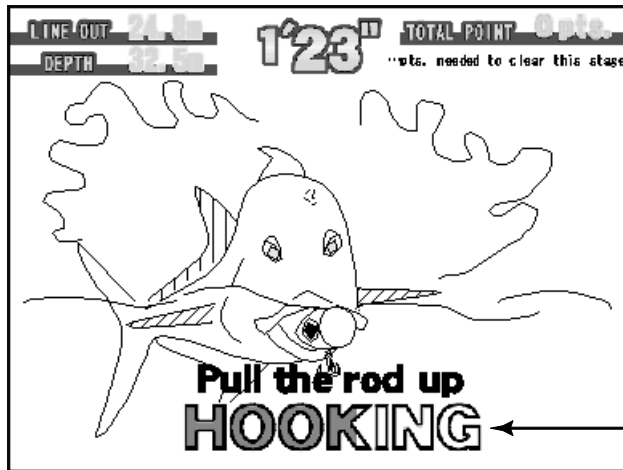
The following 4 message are available:

- Great action! (This is the most fish-taking action.)
- Good action.
- You're getting good.
- You can do better.

Definition of a good or bad action varies from lure to lure.

■ Hooking up a Fish

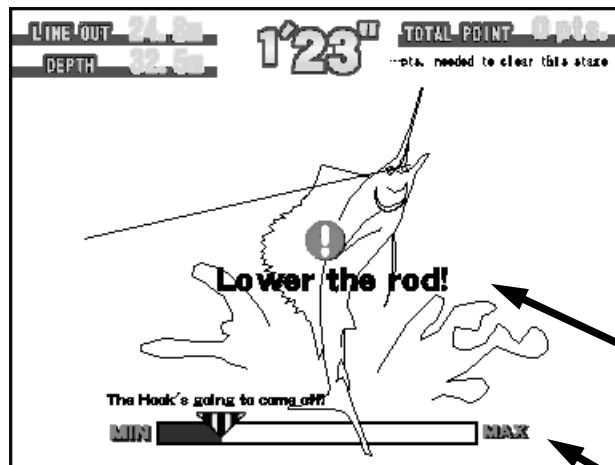
When a fish bites the lure, operate the rod and the reel to hook the fish.



Hookup Meter

Hookup meter is formed on the screen little by little whenever you successfully pull the rod or reel in. When a HOOKUP pattern is completed, you can proceed to fight with the fish. The fish may release the lure and escape if you wrongly pull the rod or reel in.

■ Fighting with a Fish

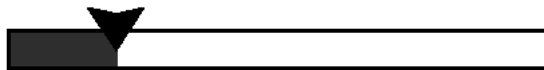


Operate the rod with your attention to the tension meter on the screen. Also move the rod oppositely in the direction that the fish is heading. Otherwise the line may be reeled out, that is, the LINE OUT number may increase on the screen.

Instruction on Direction to Move Rod
If you wrongly operate the rod, the line may be reeled out, that is, the LINE OUT number may increase on the screen.

Tension Meter

The Line's going to break!



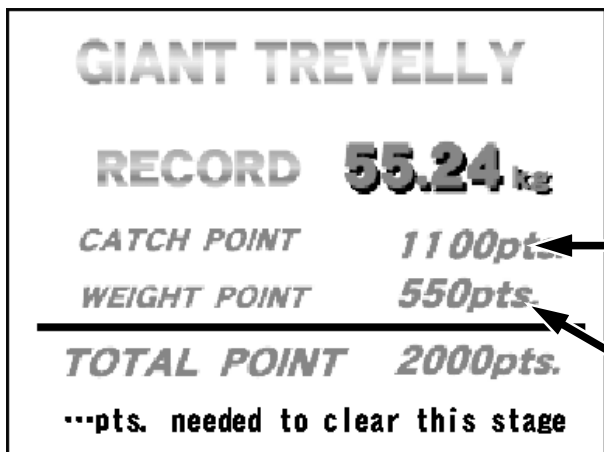
The hook may come off if the line is tensed too low.

The Hook's going to come off!



The line may break if the line is tensed too high.

■ Landing a Fish



When the LINE OUT number reaches 0 (zero), the fish is automatically landed. Then the screen shows the name and weight of the fish, as well as the catch point and weight point you scored.

Catch Point
Varies from fish to fish. The higher the difficulty level, the higher the points.

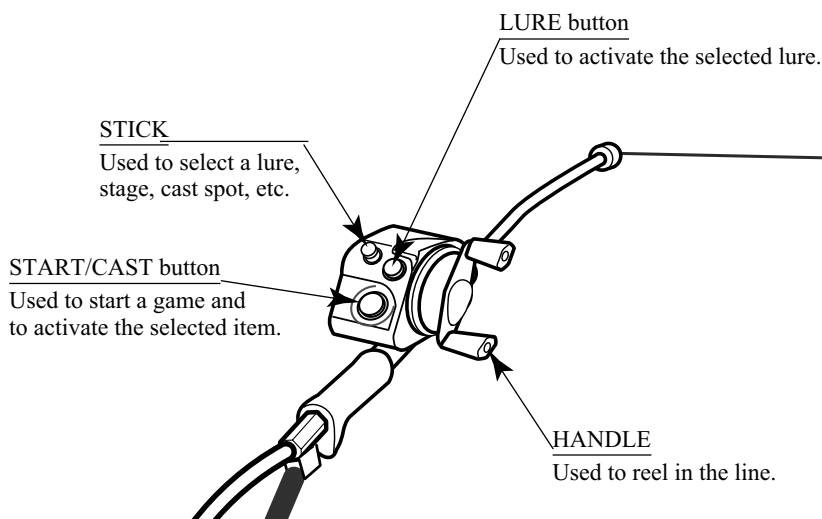
Weight Point
Depends on the fish's weight. The heavier the fish the higher the points, of course.

Repeat these procedures; and if the TOTAL POINT you gained reaches the point target before the countdown time becomes 0 (zero), you can move to a next stage.

■ Game is Continued or Over

When the countdown time becomes 0 (zero), the game is over. If you select CONTINUE on the continue screen you can resume the game just where the previous game was over. A ranking system is prepared fish by fish. If you are ranked in the system, you can register your name.

How to Operate the Rod Controller

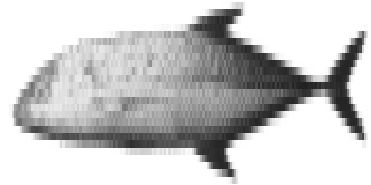


Available Fishes with Difficulty Level

Fishes of CORAL REEF



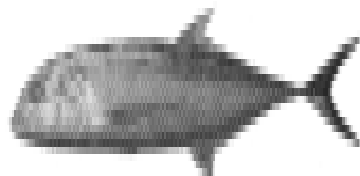
Skipjack Tuna: Easy



Bluefin Trevally: Medium



Great Barracuda: Medium

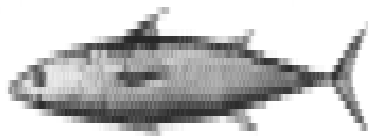


Giant Trevally: Difficult

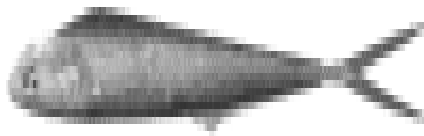


Sailfish: Very difficult

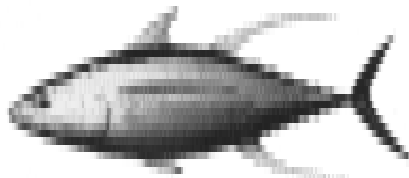
Fishes of THE OFFING



Skipjack Tuna: Easy



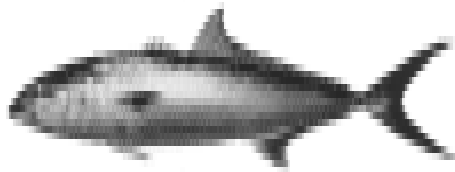
Dolphin Fish: Medium



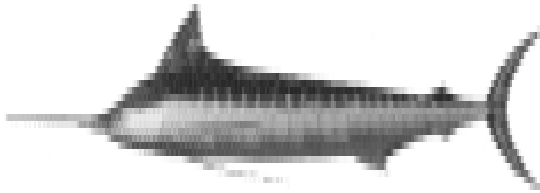
Yellowfin Tuna: Slightly difficult



Dogtooth Tuna: Difficult



Amberjack: Difficult

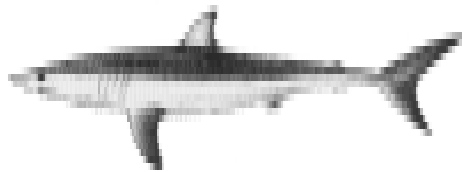


Blue Marlin: Very difficult

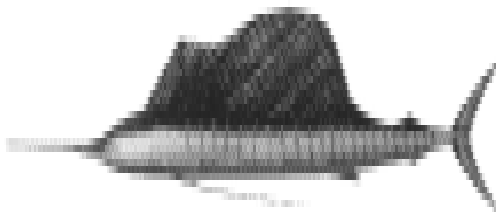
Fishes of SHALLOW



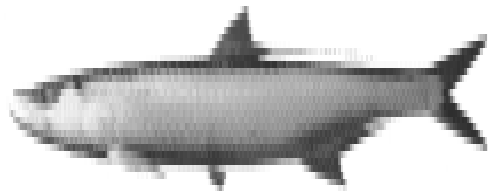
Permit: Medium



Shortfin Mako: Difficult



Sailfish: Very difficult



Tarpon: Very difficult

Fishing Hints

- Lure and action of lure to taste vary from fish to fish. Try various combinations of lure, lure action, and fish.
- Habitat varies from fish to fish. Try various cast spots to detect the habitat of each fish.
- To hook up a fish earlier, move the rod in the opposite direction that the fish is heading.
- Do not reel in the line forcibly when it is tensed tightly by the fish; reel in the line when it is loosely tensed.

Hidden Features

- You will be given a HIT bonus of 10 seconds if you can directly hit a floating coconut while casting in the SHALLOW stage. It is not effective to touch the coconut by pulling the line.
- You will be given a HIT bonus of 10 seconds if you can directly hit a floating small bottle while casting in the OFFING stage. It is not effective to touch the bottle by pulling the line.
- You will be given 10 seconds (and at the same time a UFO appears on the screen) if you can keep a spot around under a lighthouse (selected as a cast spot) for two seconds in the final BIG ONE'S HANGOUT stage.

9. EXPLANATION OF TEST AND DATA DISPLAY

By operating the switch unit, periodically perform the tests and data check. When installing the machine initially or collecting cash, or when the machine does not function correctly, perform checking in accordance with the explanations given in this section.

The following shows tests and modes that should be utilized as applicable.

NAOMI GAME BOARD is used for the product. The system of this game board allows another game to be played by replacing the ROM Board Case mounted on the NAOMI CASE. As such, the Test Mode of this system consists of the System Test Mode for the system to execute SELF-TEST, COIN ASSIGNMENTS, etc. used in common for the machines employing the NAOMI BOARD, and the Game Test Mode for the specific product to execute Input/Output test for the operation equipment, difficulty setting, etc. In this manual, explanations regarding the System Test Mode cover the settings for this product only. For the details of the System Test Mode, refer to NAOMI SERVICE MANUAL, an accessory.

TABLE 9 EXPLANATION OF TEST MODE

ITEMS	DESCRIPTION	REFERENCE SECTIONS
INSTALLATION OF MACHINE	When the machine is installed, perform the following: 1. Check to ensure each is the standard setting at shipment. 2. Check each Input equipment in the INPUT TEST mode. 3. Check each Output equipment in the OUTPUT TEST mode. 4. Test on-IC-Board IC's in the SELF-TEST mode.	SERVICE MANUAL 9-3E 9-3B 9-3C SERVICE MANUAL
MEMORY	This test is automatically executed by selecting RAM TEST, or ROM BOARD TEST in the Menu mode.	SERVICE MANUAL
PERIODIC SERVICING	Periodically perform the following: 1. MEMORY TEST 2. Ascertain each setting. 3. To test each Input equipment in the INPUT TEST mode. 4. To test each Output equipment in the OUTPUT TEST mode.	SERVICE MANUAL 9-3E 9-3B 9-3C
CONTROL SYSTEM	1. To check each Input equipment in the INPUT TEST mode. 2. Adjust or replace each Input equipment. 3. If the problem still remains unsolved, check each equipment's mechanism movements.	SERVICE MANUAL 9-3B,F 10,11
MONITOR	In the Monitor Adjustment mode, check to see if Monitor (Projector) adjustments are appropriate.	SERVICE MANUAL 12
IC BOARD	1. MEMORY TEST 2. In the SOUND TEST mode, check the sound related ROMs.	SERVICE MANUAL 9-3D
DATA CHECK	Check such data as game play time and histogram to adjust the difficulty level, etc.	SERVICE MANUAL 9-3G

9 - 1 SWITCH UNIT AND COIN METER



WARNING!

Never touch places other than those specified. Touching places not specified can cause electric shock and short circuit accidents.



IMPORTANT

- Adjust to the optimum sound volume by considering the environmental requirements of the installation location.
- If the COIN METER and the game board are electrically disconnected, game play is not possible.

SWITCH UNIT

Open the coin chute door, and the switch unit shown will appear. The functioning of each SW is as follows:

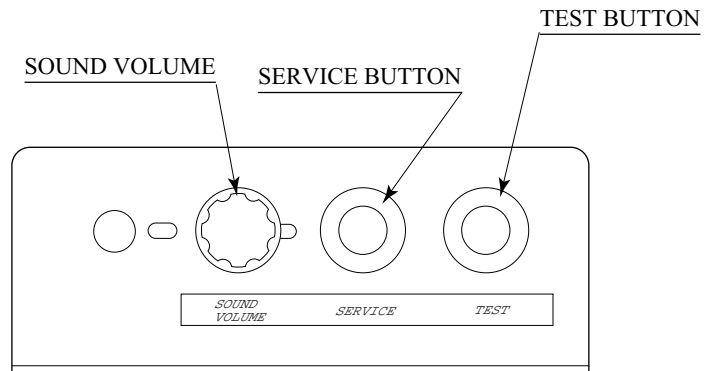


FIG. 9. 1 a SWITCH UNIT

- TEST BUTTON : For the handling of the test button, refer to the following pages.
TEST
- SERVICE BUTTON : Gives credits without registering on the coin meter.
SERVICE
- SOUND VOLUME : Adjust the Speaker Volume.
SOUND VOLUME

COIN METER

Open the Cashbox Door with the exclusively used key and the COIN METER will appear underneath the Cashbox.

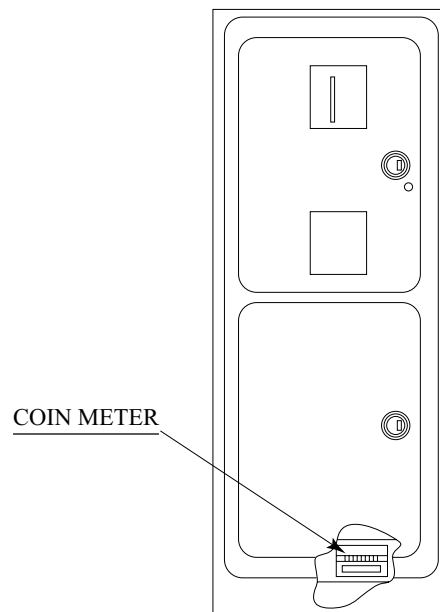


FIG. 9. 1 b COIN METER

9 - 2 SYSTEM TEST MODE



- The contents of settings changed in the TEST mode are stored when the test mode is finished from EXIT in the menu mode. If the power is turned off before the TEST mode is finished, the contents of setting change become ineffective.
- Executing "BACKUP DATA CLEAR" in the SYSTEM TEST MODE does not clear the BOOKKEEPING data in the GAME TEST mode.
- Entering the TEST mode clears fractional number of coins less than one credit and BONUS ADDER data.

The SYSTEM TEST mode mainly allows for IC Board functioning check, monitor adjustment, coin assignments, etc. For details, refer to NAOMI SERVICE MANUAL. The following assignments, however, should be as designated specifically for this product.

- CABINET TYPE: 1 PLAYER (S)
- MONITOR TYPE: HORIZONTAL
- SERVICE TYPE: COMMON
- COIN CHUTE TYPE: COMMON

Standard Factory Setting before Delivery

Speaker during Advertising Period: ON

Selected Coin/Credit Setting: SETTING #1

Sequence 1: Number of coins when starting (2)

Sequence 2: Number of coins when continuing (1)

Sequence 3 to 8: Not used.

9 - 3 GAME TEST MODE



- The system performs a power-on function check when entering a game test mode (See Section 6). Until the power-on function check is completed do not touch the cabinet to avoid an accident.
- Do not operate the product if ERROR is displayed after the initialization setting movements. Failure to observe this can cause accidents.



Always set the CABINET TYPE (of the GAME ASSIGNMENTS screen) to [DLX]. Failure to observe this can cause a deviation from the descriptions in this manual.

A. MENU MODE

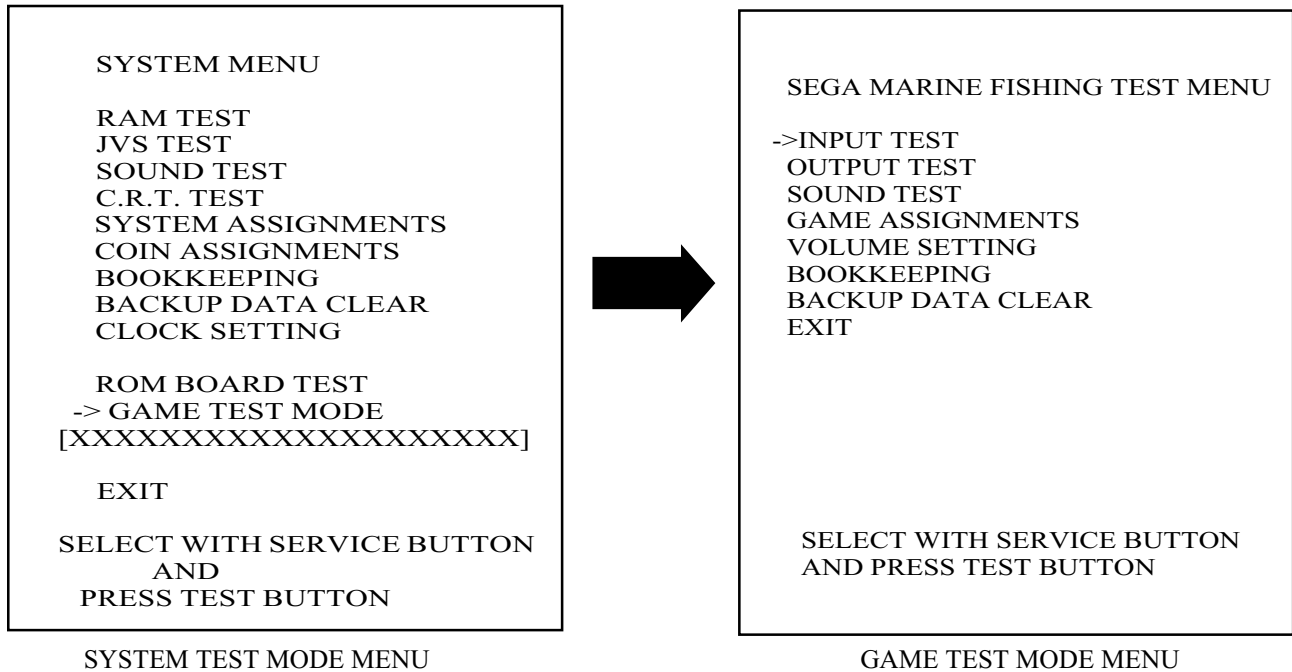


FIG. 9. 3 a MENU MODE

- Press the TEST button to display the SYSTEM TEST MODE MENU.
- By pressing the SERVICE button, move the arrow (->) to select the GAME TEST MODE.
- Press the TEST button to enter GAME TEST MODE. The screen displays the GAME TEST MODE MENU.
- A power-on function check is performed when entering a game test mode, as well as when you turn on the main switch. During the power-on function check, the screen shows PLEASE WAIT! only. If the power-on function check has been unsuccessfully completed, you cannot perform INPUT TEST, OUTPUT TEST, and VOLUME SETTING exactly because the control board cannot operate normally.
- By pressing the SERVICE button, move the arrow (->) to select the desired item . Press the TEST button to execute the selected item.
- Select EXIT and press the TEST button to exit from the GAME TEST MODE and return to the SYSTEM TEST MODE MENU. Further, select EXIT and press the TEST button to finish SYSTEM TEST MODE and return to the normal mode.

B. INPUT TEST

The INPUT TEST screen shows the status of each switch, button, and volume. Press each switch or button, and verify on the screen that the OFF of the corresponding switch or button is replaced with ON (this is normal). Operate each volume or encoder, and verify on the screen that the value of the corresponding volume or encoder is replaced with normal one.

```
INPUT TEST

STICK X = 7DH
STICK Y = 7DH
REEL SPEED = 80H
PULL POSITION = 5DH
SWING POSITION = 80H
TENSION = 80H
CAST = OFF
LURE = OFF
ROD UP = OFF
ROD DOWN = OFF
ROD LEFT = OFF
ROD RIGHT = OFF
TEST = OFF
SERVICE = OFF
COIN CHUTE#1 = OFF
COIN CHUTE#2 = OFF

PRESS TEST AND
SERVICE BUTTON TO EXIT
```

STICK:
STICK on the rod controller

REEL SPEED:
HANDLE on the rod controller

PULL POSITION:
Slide Unit

SWING POSITION:
Sensor Unit

TENSION:
Tension Unit and Line

APPROPRIATE VALUE OF TENSION VOLUME

Tension volume values are displayed in hexadecimal numerals within the range of 00H ~ FFH. If the value does not satisfy the following limitations, adjust the Volume's gear mesh so as to meet the requirements.

```
LOWER LIMIT: Over 09H
UPPER LIMIT: Under E2H
```

After you have adjusted within this normal range, upper limit value may exceed this value if you pull the rod controller excessively.

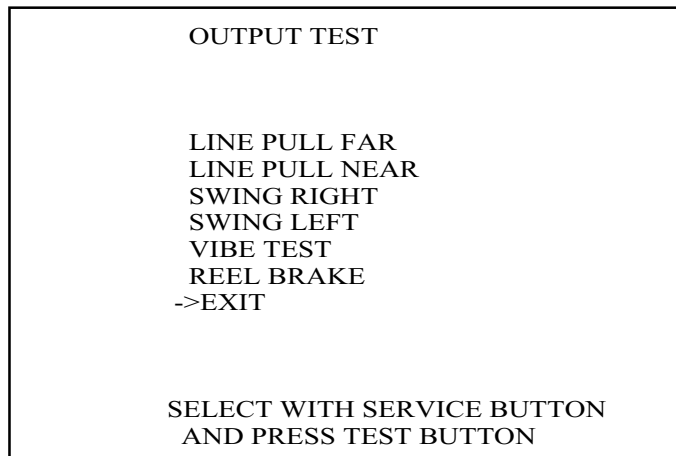
To return to the TEST MENU screen, hold down the TEST button and press the SERVICE button.

C. OUTPUT TEST

The OUTPUT TEST screen allows you to perform an output test.

Press the SERVICE button to select a testing item. Press the TEST button to perform the selected output test.

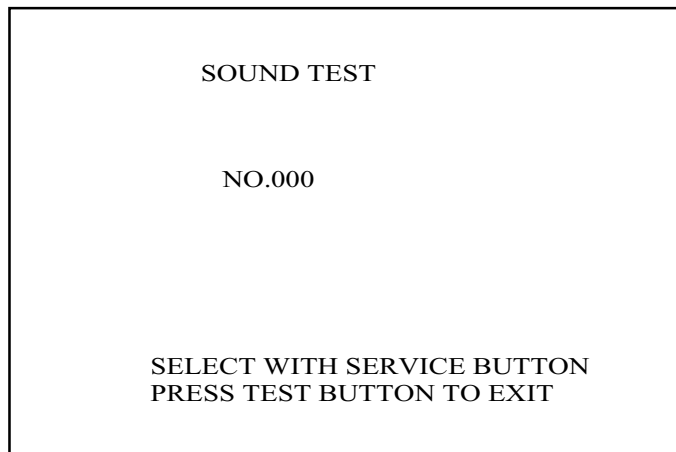
To return to the TEST MENU screen, repeat pressing the SERVICE button to select EXIT and then press the TEST button.



D. SOUND TEST

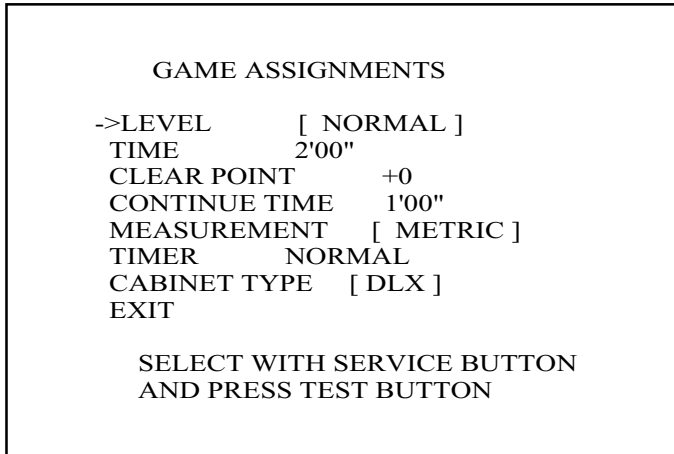
This test mode allows the sound and BGM (background music) used in the game to be checked.

Press the Service button to increase the number by one and the sound corresponding to the number will be emitted. Press the test button to return to the menu mode.



E. GAME ASSIGNMENTS

The GAME ASSIGNMENTS screen allows you to set a game level etc.



Setting Procedures

- ① Press the SERVICE button to select a setting item.
- ② Press the TEST button to change a setting (on the right of the screen).
- ③ To return to the TEST MENU screen, repeat pressing the SERVICE button to select EXIT and then press the TEST button.

- LEVEL : Sets a difficulty level of the game. Provides five levels - VERY EASY, EASY, NORMAL (an initial setting), HARD, and VERY HARD.
- TIME : Sets a playtime from 1'00 to 4'00 (an initial setting at 2'00). Pressing the TEST button changes, in a loop, the displayed setting by 10 seconds.
- CLEAR POINT : Sets a point target (clearing point) from -500 to +1000 (an initial setting at +0). Pressing the TEST button changes, in a loop, the displayed setting by 100.
- CONTINUE TIME : Sets a continued playtime from 1'00 to 4'00 (an initial setting at 1'00). Pressing the TEST button changes, in a loop, the displayed setting by 10 seconds.
- MEASUREMENT: Sets a unit system used by the game (an initial setting at METRIC) as follows:
 - METRIC: Kilogram and meter
 - EBGLISH: Pound and yard
- TIMER : Sets a time-counting speed of FAST or NORMAL (an initial setting at NORMAL).
- CABINET TYPE : This product fixes this setting to [DLX].

F. VOLUME SETTING

Settings of volumes, etc., can be executed. Volume setting has 2 categories, i. e., AUTO SETTING and MANUAL SETTING. AUTO SETTING performs the setting of the Volume of the portions that can be set automatically. MANUAL SETTING executes the setting of the Volume of the portions that can only be set manually. Selecting VOLUME SETTING causes AUTO SETTING to be executed first.

VOLUME SETTING

AUTO SETTING COMPLETE

PULL POSITION : MIN(7DH) MAX(C5H)
SWING POSITION: MIN(92H) MAX(06H)
REEL : NEUTRAL(7FH)

->CONTINUE WITH SAVE
CONTINUE WITHOUT SAVE

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

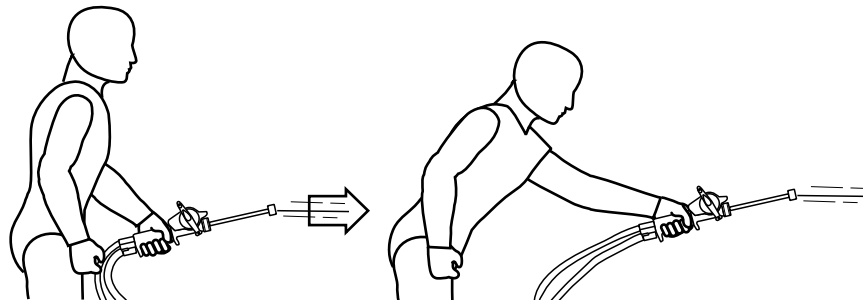
AUTO SETTING

AUTO SETTING starts of itself. By holding the rod, when the line is pulled, move the rod forward so that the line will be withdrawn up to the limit. If the line length is short, "LINE ERROR" occurs.

When "LINE ERROR" occurs, check to see if the length of the knotted portions at the both ends of the line is appropriate or not by referring to Section 10. If the "LINE ERROR" still occurs when the length of the knotted portions is appropriate, then replace the line. During setting, "AUTO SETTING NOW" is displayed. When setting is finished, "AUTO SETTING COMPLETE" and each Volume value are displayed.

By using the Service button, select CONTINUE WITH SAVE, press the Test Button to have the results stored, and proceed to the next mode.

Press the SERVICE button to select CONTINUE WITHOUT SAVE and press the TEST button. This does not save the settings and opens the VOLUME SETTING - MANUAL SETTING screen.



When the line is pulled, move the rod forward.

MANUAL SETTING



CAUTION!

Do not pull the rod controller excessively. Failure to observe this can break the line and/or damage a part. A broken part can cause the tester to be injured.

VOLUME SETTING

MANUAL SETTING

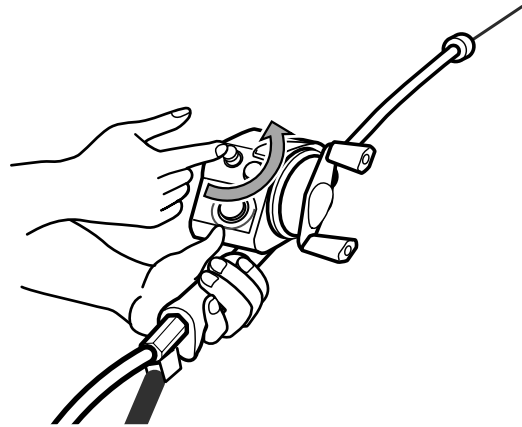
MIN NOW MAX
STICK X : 7CH - 7CH - 80H
STICK Y : 7DH - 7DH - 80H
TENSION : 10H - 50H - F0H

->EXIT WITH SAVE
EXIT WITHOUT SAVE

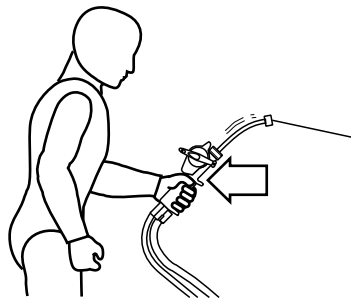
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

Perform the MANUAL SETTING as follows:

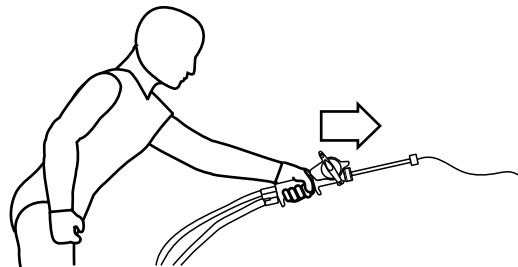
- ① Move the stick to the upper, right, lower, and left extreme ends. Thus in a circular movement, move fully within a moving range.



- ② Hold the rod controller and pull or tense the line tightly.



- ③ Move the rod controller forward to loosen the line.



Press the SERVICE button to select EXIT WITH SAVE and press the TEST button. This saves the settings and opens the TEST MENU screen.

Press the SERVICE button to select EXIT WITHOUT SAVE and press the TEST button. This does not save the settings and opens the TEST MENU screen.

G. BOOKKEEPING

The BOOKKEEPING screen consists of two pages to check the playing time data. Press the TEST button in the first page to open the second page. Press the TEST button in the second page to return to the TEST MENU screen. Use the first page to set a difficulty level.

BOOKKEEPING PAGE 1/2

NUMBER OF GAMES O
PLAY TIME -D--H--M--S
AVERAGE TIME --'--"
LONGEST TIME --'--"
SHORTEST TIME --'--"

PRESS TEST BUTTON TO CONTINUE

The second page shows the number of games played per each playing time.

BOOKKEEPING PAGE 2/2

0'00" ~ 0'29" -
0'30" ~ 0'59" -
1'00" ~ 1'29" -
1'30" ~ 1'59" -
2'00" ~ 2'29" -
2'30" ~ 2'59" -
3'00" ~ 3'29" -
3'30" ~ 3'59" -
4'00" ~ 4'29" -
4'30" ~ 4'59" -
5'00" ~ 5'29" -
5'30" ~ 5'59" -
6'00" ~ 6'29" -
6'30" ~ 6'59" -
7'00" ~ 7'29" -
7'30" ~ 7'59" -
8'00" ~ 8'29" -
8'30" ~ 8'59" -
9'00" ~ 9'29" -
9'30" ~ 9'59" -
OVER 10'00" -

PRESS TEST BUTTON TO EXIT

H. BACKUP DATA CLEAR

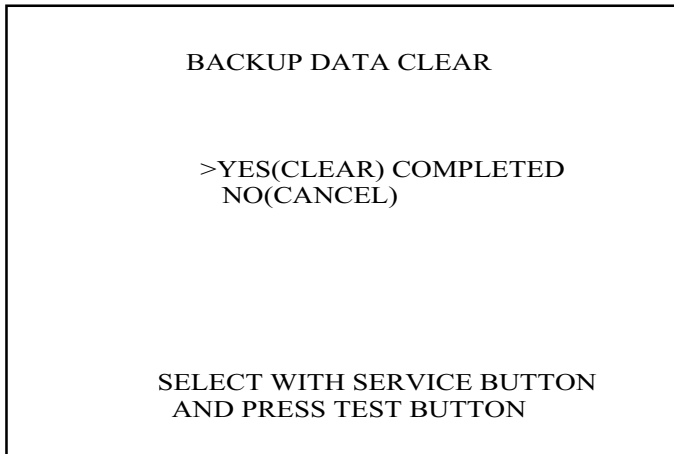
The BACKUP DATA CLEAR screen enables you to clear or erase the backup data (the bookkeeping statistics and the ranking data).

Clearing:

Press the SERVICE button to select YES (CLEAR) and press the TEST button. This clears the backup data and shows COMPLETED on the screen. Press the TEST button again to return to the TEST MENU screen.

Not Clearing:

Press the SERVICE button to select NO (CANCEL) and press the TEST button. This does not clear the backup data and returns to the TEST MENU screen.



10. MAINTENANCE OF MECHANISM UNIT



- Before starting to work, ensure that the Power SW is OFF. Failure to observe this can cause electric shock or short circuit.
- Use care so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.
- Do not touch undesignated places. Touching places not designated can cause electric shock or short circuit.
- This work should be performed by the Location's Maintenance Man or Serviceman. Performing work by non-technical personnel can cause electric shock hazard.
- Do not insert hand into the mechanism so as not to cause hand and fingers pinched in. Failure to observe this can cause a serious injury such as a fracture.
- When performing work such as parts replacement other than those specified in this manual, be sure to contact where you purchased the product from and confirm the work procedures and obtain precautions prior to performing work. Inappropriate parts replacement and/or installing with erroneous adjustment can cause an overload or the parts to come into contact, resulting in an electric shock, a short circuit, and a fire.



When fixing a plastic part, be careful not to tighten bolts and nuts excessively. Failure to observe this can break the part and as a result the broken pieces can cause injury.

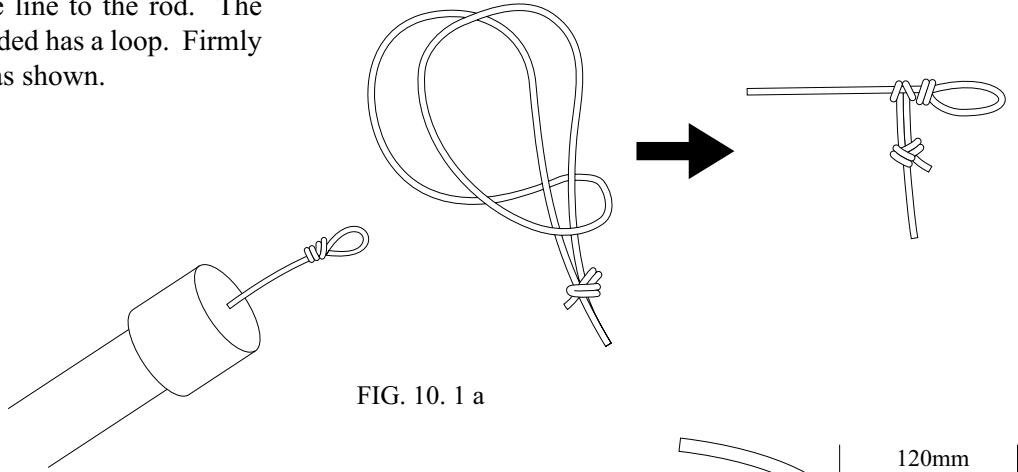


Be sure to perform Volume's move value setting in the Volume Setting in the Test Mode after replacing or adjusting the Volume.

10 - 1 LINE REPLACEMENT

To replace the line, open the Chassis Front Door and remove the lid by referring to [2], Section 6. When opening and closing the front door, be careful not to damage the wires by catching them between the door and the cabinet edges.

- 1 Install the line to the rod. The line provided has a loop. Firmly secure it as shown.



HOW TO LOOP:

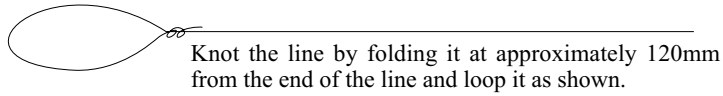
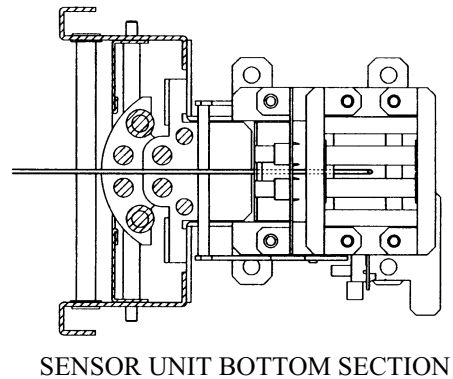
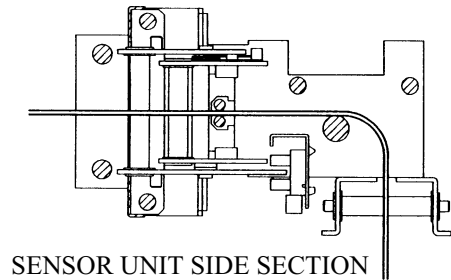


FIG. 10. 1 b

- 2 Pass the line through the Sensor Unit.



Ensure that the line passes between each Roller.

FIG. 10. 1 c

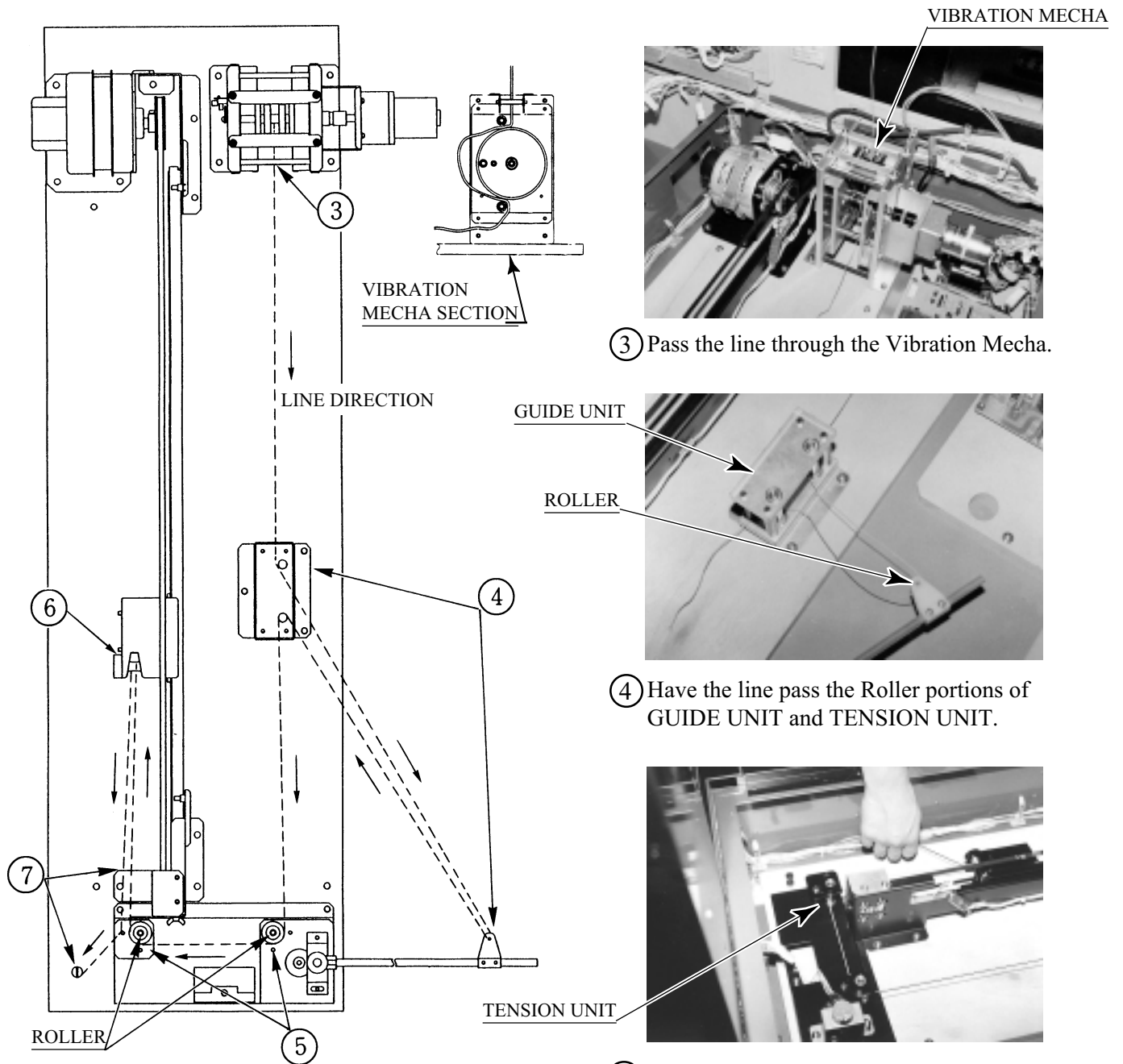
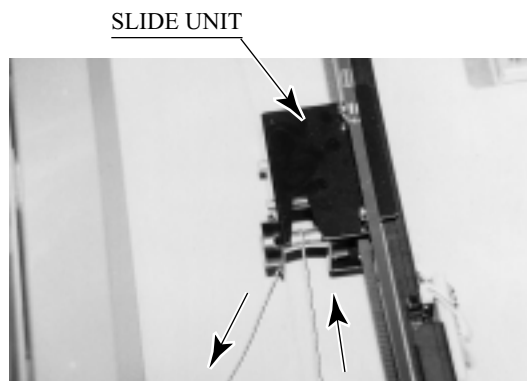


FIG. 10. 1 d

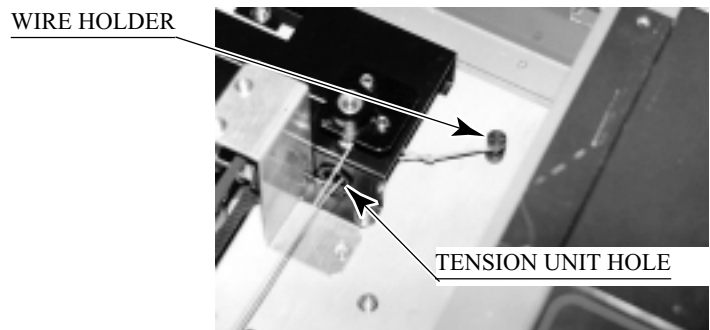
③ Pass the line through the Vibration Mecha.

④ Have the line pass the Roller portions of GUIDE UNIT and TENSION UNIT.

⑤ Have the line pass the TENSION UNIT. At this time, ensure that the line passes only the Roller.



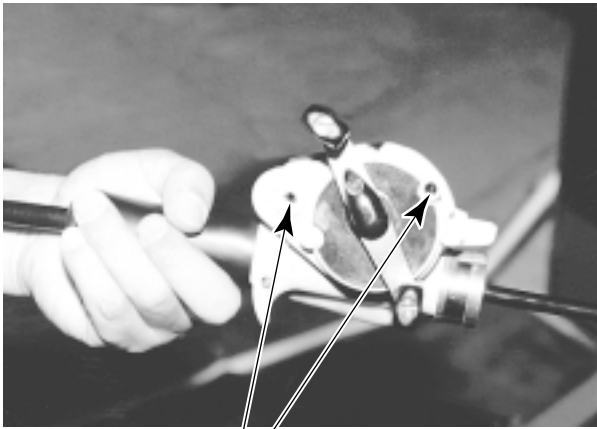
⑥ Have the line pass the SLIDE UNIT from above.



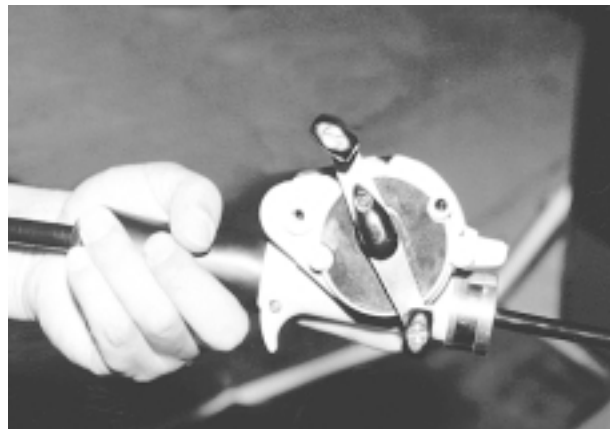
⑦ Pass the line through the hole of TENSION UNIT and loop the line as shown in FIG. 10. 1 b and secure the line to the WIRE HOLDER as in á@ above.

10 - 2 REPLACING THE REEL'S SWITCH AND VOLUME

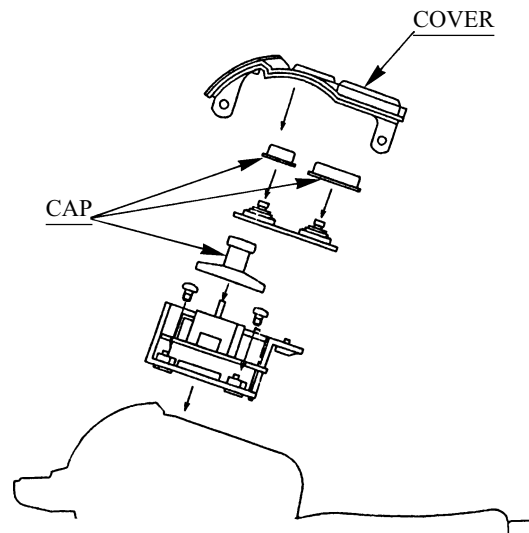
- ① Take out the 2 screws and remove the cover.



SCREW (2)
M3 X 45



- ② Remove the cap from each button.



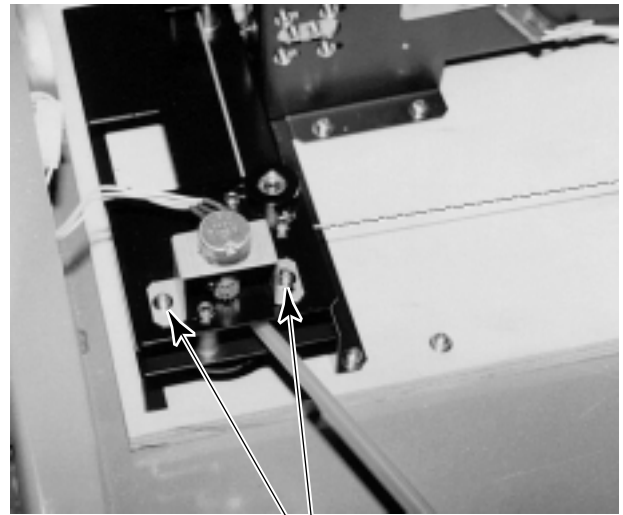
- ③ Withdraw and disconnect white 8P and 4 P connectors to replace. Being so small, the connectors can be damaged if subjected to excessive force. Use special care when connecting and disconnecting the connectors.



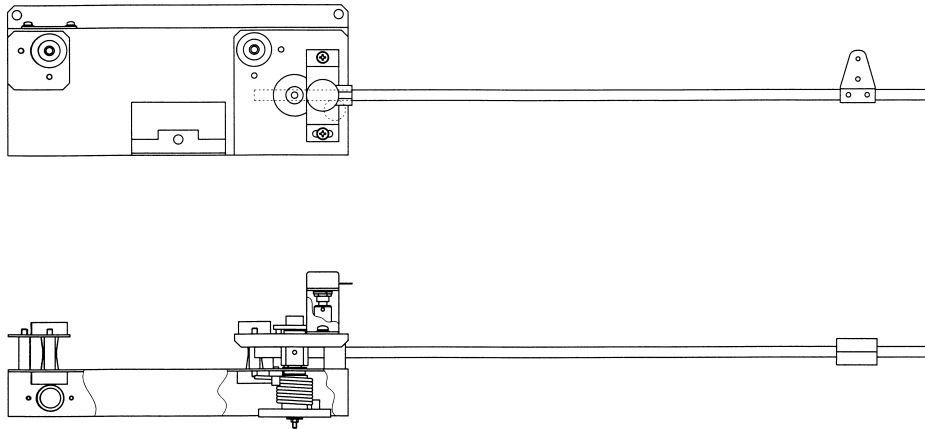
10 - 3 ADJUSTING AND REPLACING THE TENSION VOLUME

In the INPUT test, if the Tension Volume value is not in the appropriate position, adjust or replace in the following procedure.

- ① Turn power off.
- ② Open the Front Door and remove the rod.
- ③ Loosen the 2 screws and adjust gear mesh. If the Volume is malfunctioning, remove the 2 screws and replace the Volume.



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



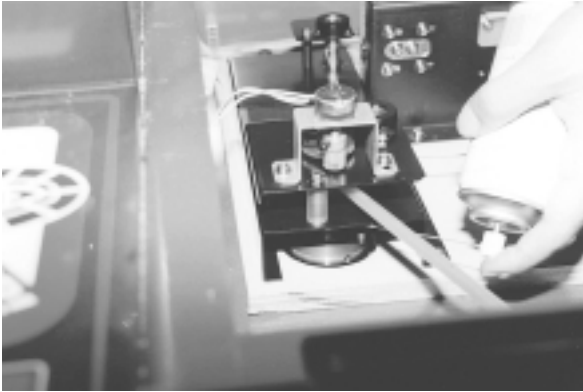
When the arm is as illustrated, the recommended tension volume is $0DH \pm 4$.

10 - 4 GREASING

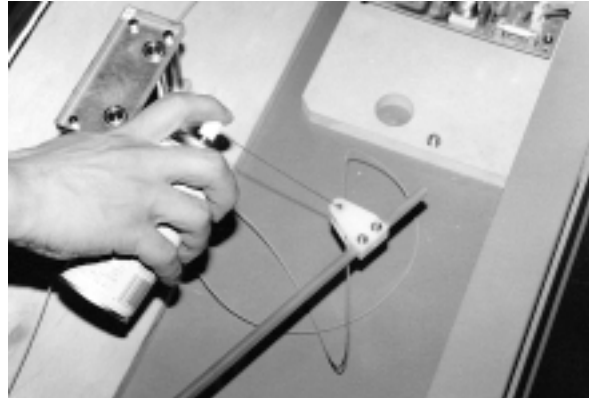


- Be sure to use the designated grease. Using undesignated grease can cause parts damage.
- Do not apply greasing to places other than those specified. Greasing to undesignated places can cause malfunctioning and the qualitative deterioration of parts.

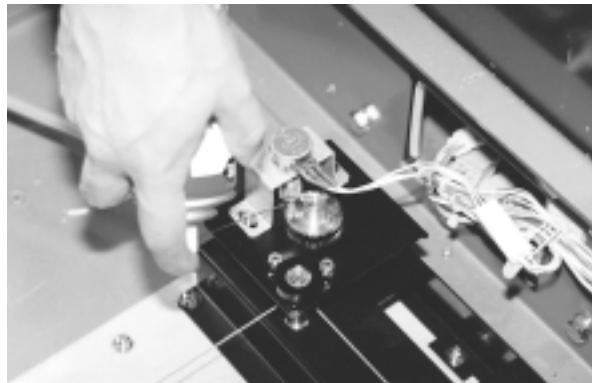
Once every 6 months, apply greasing to the following places.
For greasing, use Grease Mate (P. No. 090-0066).



SPRING PORTIONS



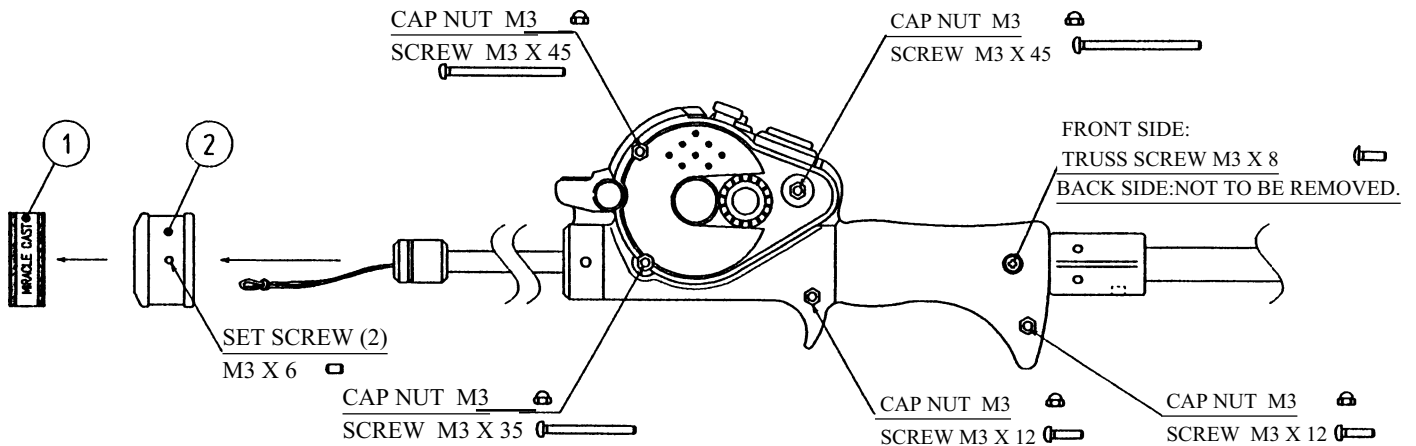
SLACK REMOVING PORTIONS
Do not apply grease to the line passing portions.



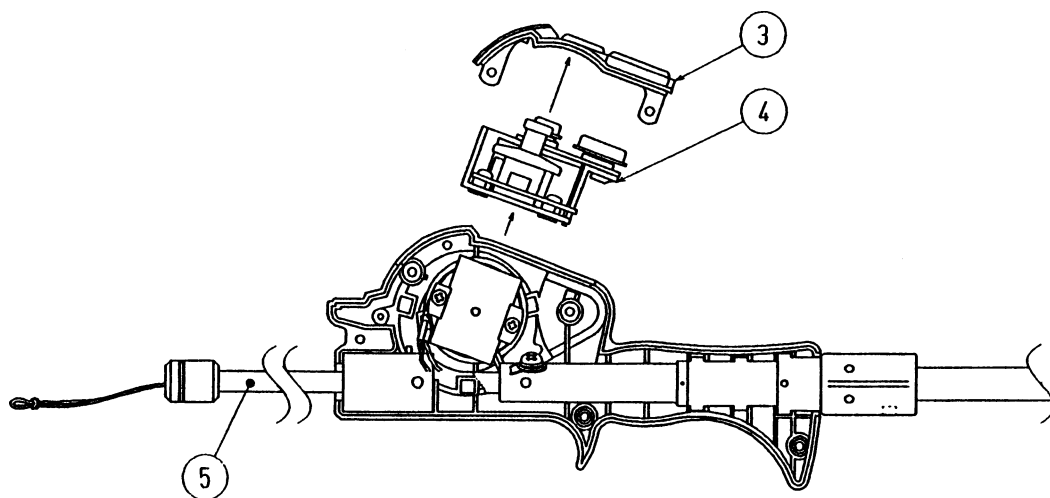
VOLUME GEAR PORTION

10 - 5 REPLACING THE ASSY ROD

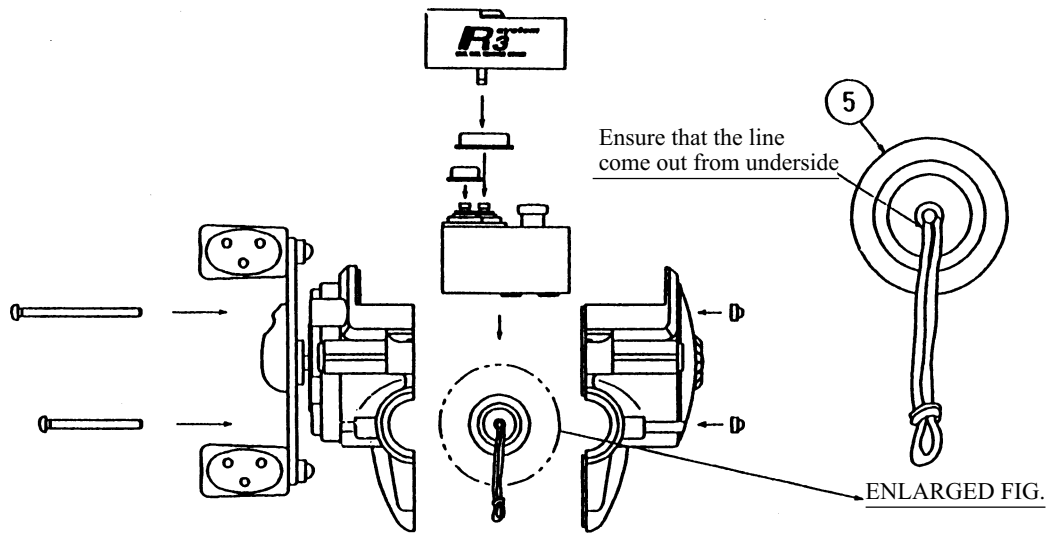
- ① Remove Part ① (BSS-3018 FRONT RING SPRING).
- ② Remove the 2 Set Screws which secure Part ② (BSS-3017Y FRONT RING).
- ③ Remove Part ② from the COVER.
- ④ Remove the 6 Screws (the side appearing is referred to as the front side). Do not remove the backside truss screw M3 X 8.



- ⑤ After removing Part ③ (BSS-3003 COVER U), separate COVER R and COVER L. At the time, Unit ④ will come off together with the connector as is connected (there is no need to remove the connector).



- ⑥ By paying attention to the installation direction so that the line will come out from underside, replace Part ⑤ (BSS-3022Y ASSY ROD). (Refer to the enlarged Figure below.)



- ⑦ Use the opposite procedure to return to the original state.

11. COIN SELECTOR

HANDLING THE COIN JAM

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

CLEANING THE COIN SELECTOR



IMPORTANT

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

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

- ① Turn the power for the machine OFF. Open the coin chute door.
- ② Open the gate and dust off by using a soft brush (made of wool, etc.).
- ③ Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then squeezed dry.
- ④ Remove the CRADLE.
When removing the retaining ring (E ring), be very careful so as not to bend the rotary shaft.
- ⑤ Remove stain from the rotary shaft and shaft receiving portions by wiping off with a soft cloth, etc.
- ⑥ After wiping off as per ⑤ above, further apply a dry cloth, etc. to cause the coin selector to dry completely.

COIN INSERTION TEST

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

- Does the Coin Meter count satisfactorily?
- Does the coin drop into the Cashbox correctly?
- Is the coin rejected when inserted while keeping the Reject Button pressed down?

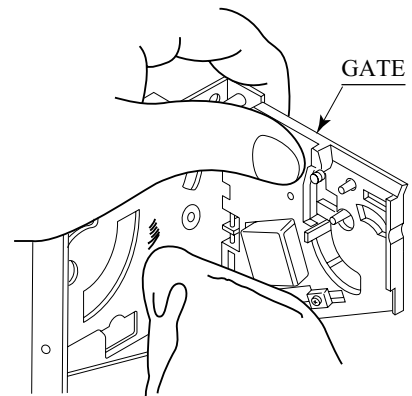


FIG. 11 a

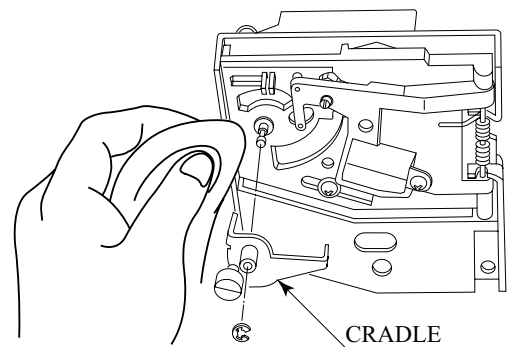


FIG. 11 b

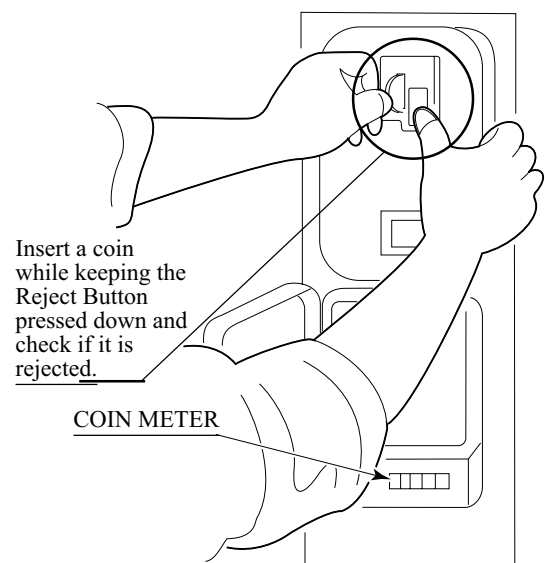
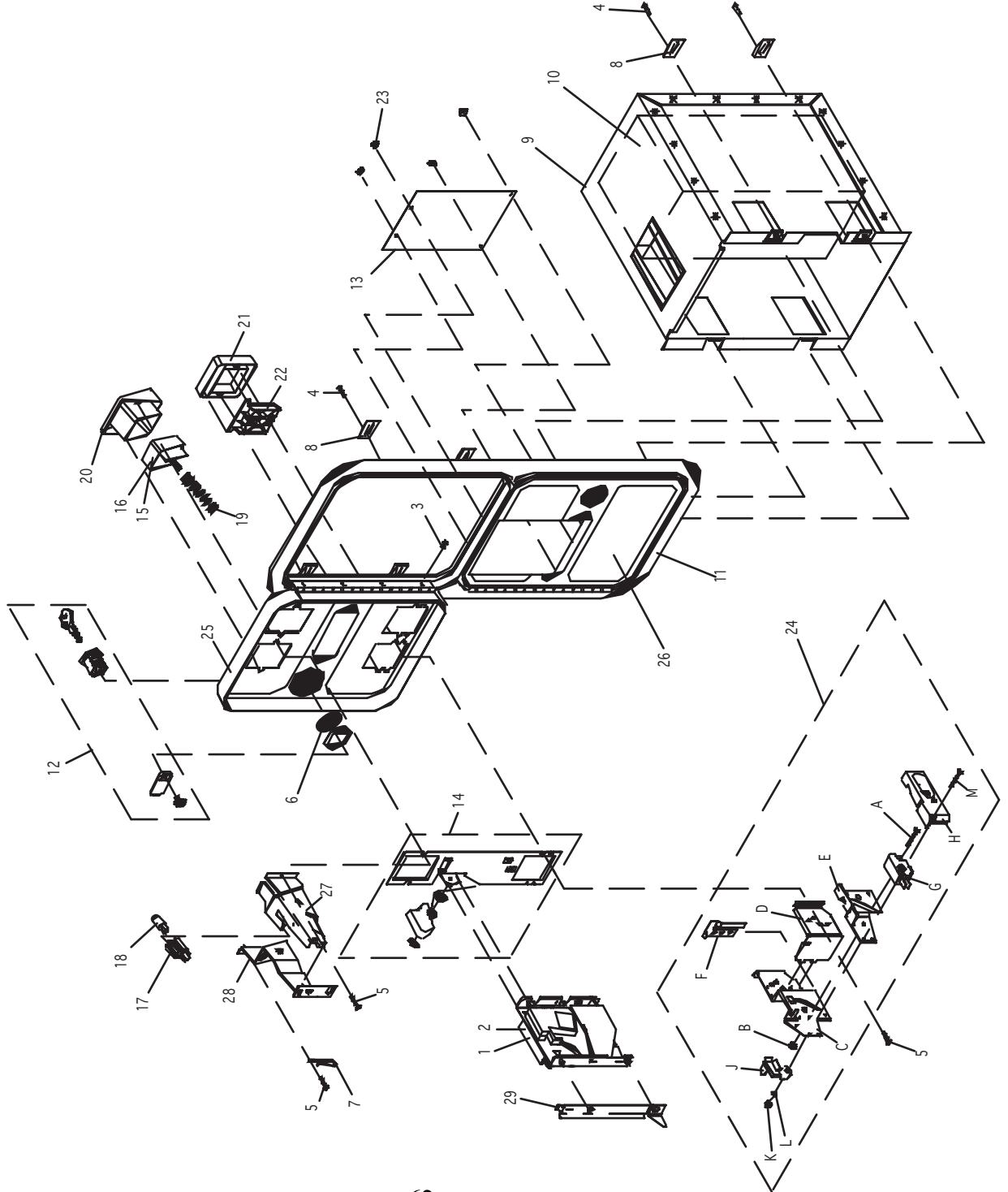


FIG. 11 c

WELLS-GARDNER
ELECTRONICS CORPORATION
2701 N. KILDARE CHICAGO, IL 60639
1-800-336-6630
WWW.WGEC.COM

WGD15-2110-01
OVER/UNDER MINI DOOR
2 ENTRIES WITH BILL
VALIDATOR BOTTOM DOOR
& SPECIAL ENCLOSURE

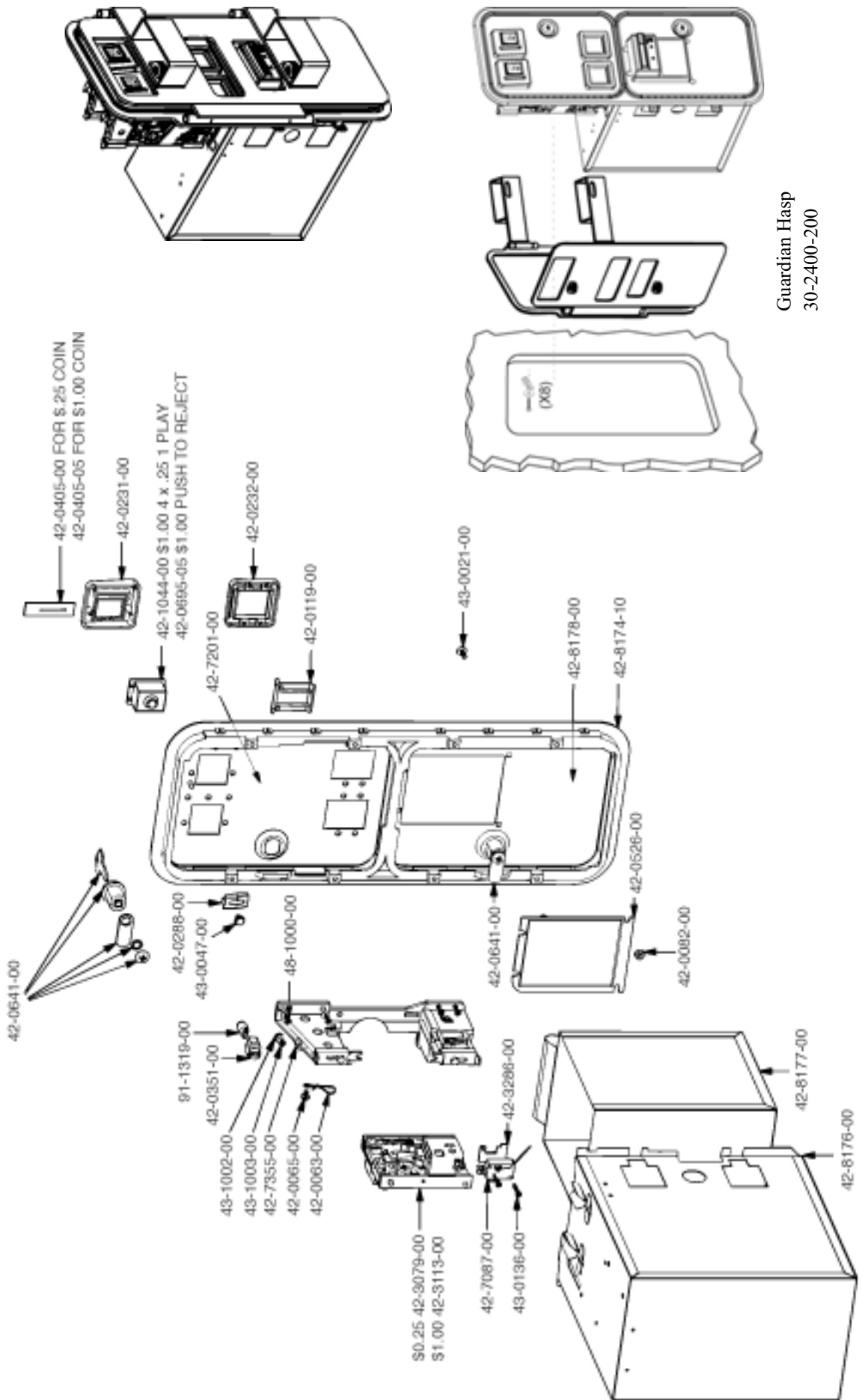


#	W.G. PART #	DESCRIPTION
1	812-4150-011	S-7 US 25c COIN MECH LEFT
2	812-4050-011	S-10 US \$1 COIN MECH RIGHT
3	890-1002-00	HINGE SCREW
4	890-1003-00	CLAMP SCREW
5	890-1017-00	SCREW TRILOBULAR
6	890-1019-00	WASHER INTERNAL TOOTH 3/4"
7	890-1300-00	KEYHOOK
8	891-0514-00	CLAMP UK 5/8" CABINET
9	025X3711-001	ENCLOSURE W/CHUTE
10	025X3712-001	METAL CASHBOX
11	891-0509-162	DOUBLE FRAME
12	891-0547-00	LOCK SINGLE BIT
13	891-0100-4016	COVER PLATE
14	891-1008-107	BASE PLATE ASSEMBLY
15	891-1113-03	E/R BUTTON US 425c \$1 LEFT
16	891-1113-011	E/R BUTTON US \$1 COIN RIGHT
17	891-1117-00	LAMP HOLDER
18	891-1118-00	LAMP WEDGE BASE 6 VOLT
19	891-1121-00	SPRING, E/R BUTTON
20	891-1311-16	BUTTON BEZEL, NYLON
21	891-1312-16	REJECT BEZEL, NYLON
22	891-1109-16	REJECT FLAP
23	020X.877-005	NUT KEPS #8-32 X 5/16 HEX
24	891-2216-16	MICROSWITCH ASSEMBLY
24A	890-1007-00	SCREW FLAT HEAD M/S
24B	890-1206-02	KEP NUT
24C	891-1105-01	REJECT CUP SIDE PLATE
24D	891-1106-00	REJECT CUP BASE PLATE
24E	891-1107-00	BRACKET, MICROSWITCH
24F	891-1110-00	ADJUSTER, COIN
24G	891-1116-16	MICROSWITCH, BLACK - MED.
24H	891-1125-00	COVER, PLASTIC
24J	892-1002-07	CLIP, SNAP-ON
24K	892-1002-08	ELASTIC SNAP NUT
24L	892-1002-09	SLEEVE, SNAP-ON
24M	892-1002-11	SCREW, PAN HEAD
25	891-0604-16	MINI DOOR 2 ENTRIES
26	891-0614-16	MINI DOOR W/DBV C/O
27	892-1002-01	BRACKET, LAMP SIDE
28	892-1002-021	BRACKET, COVER SIDE
29	892-1002-10	BRACKET, HOLD DOWN

Tom Happ
 tom.happ@happcontrols.com
 Happ Controls, 106 Garlisch Drive, Elk Grove, IL 60007
 Visit our website <http://www.happcontrols.com>

Ph: 847-593-6161 ext. 107

Fx: 847-956-2091



Guardian Hasp
 30-2400-200

OPTIONAL DOLLAR BILL ACCEPTOR

- THE COIN DOOR ASSEMBLY USED ON **MARINE FISHING DX TYPE** COMES EQUIPPED TO ACCEPT A DOLLAR BILL ACCEPTOR. ALL NEEDED WIRING CONNECTIONS ARE CONVIENENTLY LOCATED INSIDE THE GAME FOR THIS APPLICATION.

- THE COIN DOOR CAN ACCCOMMODATE THE FOLLOWING VALIDATOR(S):

FORWARD-MOST
HOLE POSITION

Mars 2000 series

**42-1155-00 MARS VALIDATOR \$1, 2, 5 300 CAP

The frame and cashbox enclosure on this coindoor has been modified to accomodate a Mars 2000 series upstacker. A 2000 series stacker can be added by simply removing the cut-out plate. This one entry door can be ordered through Happ Controls or one of Happ Controls authorized distributors. The part number is 40-6000-10EX. The Mars stacker can be obtained through an atherized Mars distibutor.

Note: Your game may have either Happ Controls Coin Door Assembly or the Wells Gardner Coin Door Assembly (not shown).

**Happ part number

Security Locking Bar/Bracket Set Part No.# 999-0966

Modified Cash Box (For use when DBA installed)
Part No. # 999-1106

Plastic Cash Box - Full Size Part No. # 999-1177

12. PROJECTOR



Since the Projector has been adjusted at the time of shipment, avoid making further adjustments without good reason.



The Projector is subject to color deviation due to Convergence deviation caused by the geomagnetism at the installation location and peripheral magnetic field. After the installation of machine, and before commencing operation, check for Convergence deviation and if deviated, make adjustments.

Projector adjustments are stored. Due to distortion or color deviation in the TEST mode, if an adjustment is necessary, use the Remote Control to make adjustments. There are two Projector Makers (Toshiba and Mitsubishi) and the adjustment method varies depending on the specific maker.

12 - 1 CLEANING THE SCREEN



Since the Projector screen is susceptible to damage, pay careful attention to its handling. When cleaning, refrain from using water or volatile chemicals.

When the screen surface becomes dirty with dust, etc., clean it by using a soft cloth such as gauze. When water, and volatile chemicals such as benzene, thinner, etc., spill on the screen surface, it may be subject to damage, therefore, do not use them. Also, since the surfaces are susceptible to damage, refrain from rubbing them with a hard material or using a duster.

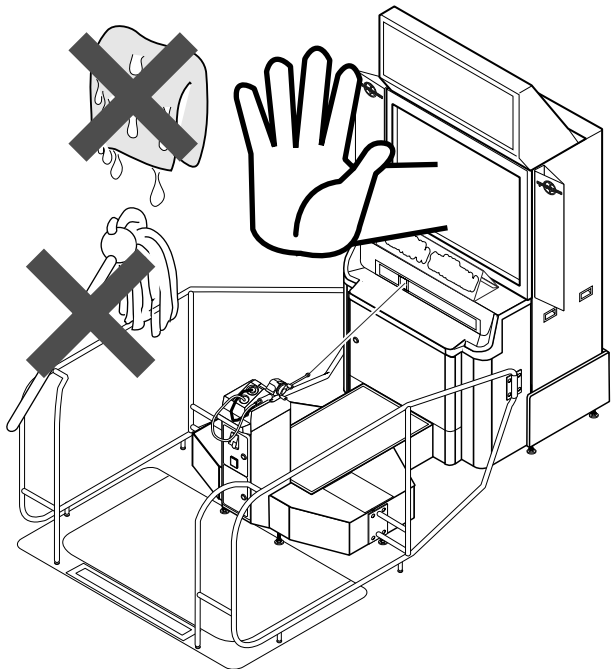


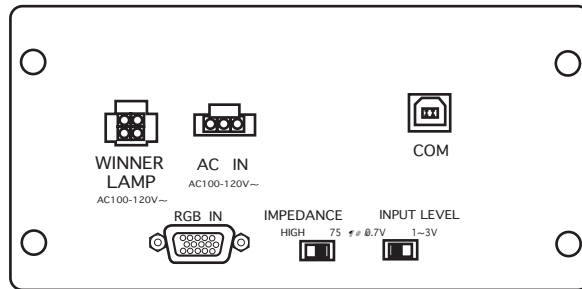
FIG. 12. 1

SETTING THE INTERFACE



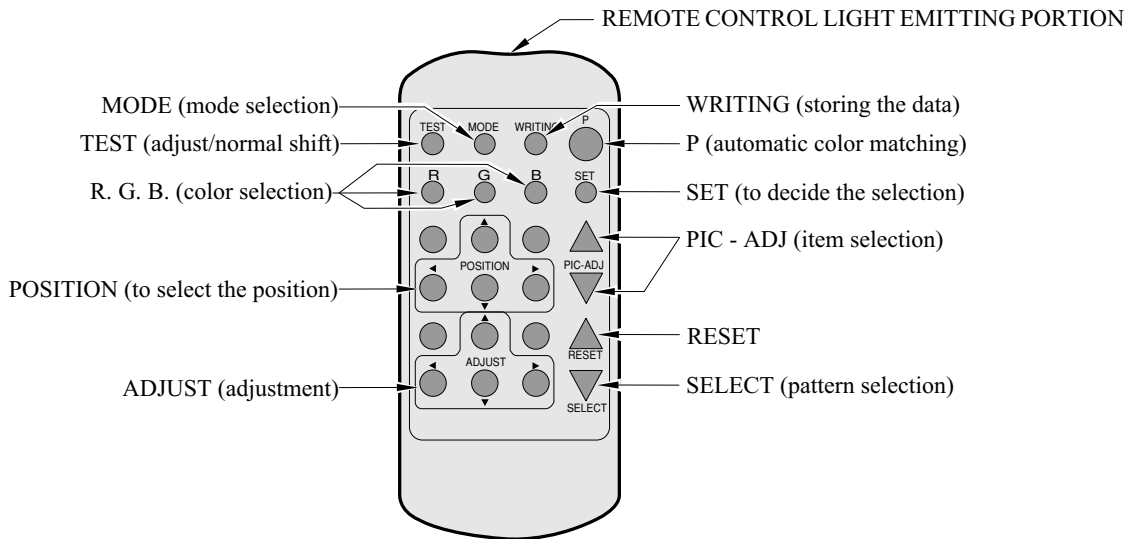
In this product, set to INPUT LEVEL: 0.7V and IMPEDANCE: 75 Ω. Failure to observe this can cause CRT membrane to burn or Shutdown device to function resulting in power off.

The Projector's Connector Panel contains the Interface setting SW.



REMOTE CONTROL BUTTONS

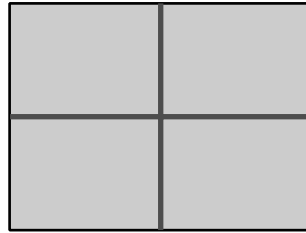
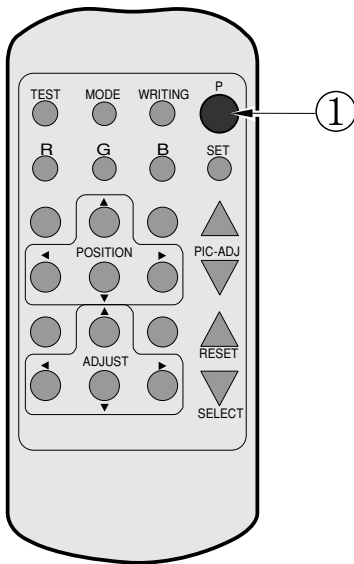
When adjusting the Projector, direct the Remote Control's light emitting portion towards the Projector Screen.



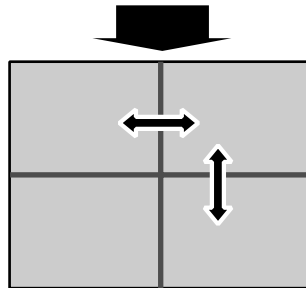
AUTOMATIC COLOR MATCHING

The Projector may be subject to color deviations affected by earth magnetism, the building steel frames, etc. When the Projector is initially installed or the Projector's installation position is changed, have the color matching performed automatically.

- ① Keep pressing the P button (red) for approximately 3 seconds to have the ensuing movements performed automatically.



The Projector will shift to the color deviation correction mode from the game mode, with the green cross pattern appearing on the screen.



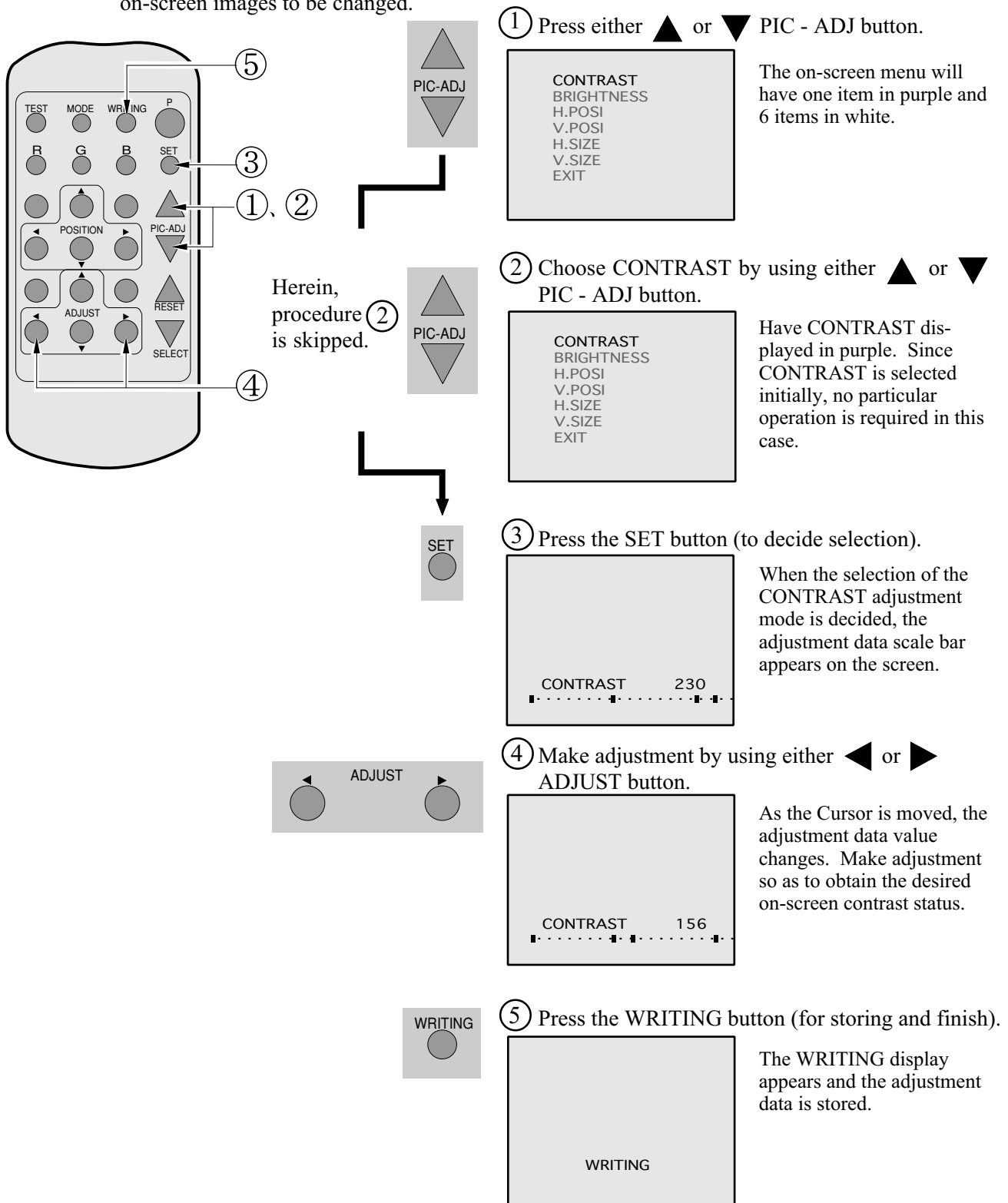
The cross pattern moves up/down and right/left to start the movement of searching the correct screen position and inclination.

When the green cross pattern movements are finished, similar detection is performed sequentially in order of red and then blue cross movements. After detecting by green, red and blue cross movements, the game mode returns with the color deviation status being corrected.

- Although very rarely, the TRY AGAIN error display in red may appear. At this time, press the P button (red) for approximately 3 seconds. Even after the above operation is repeated, if the error condition still exists, then the display shifts to PLEASE ADJ. In this case, the auto color matching function can not be used. Contact the place of contact herein stated or where the product was purchased from.
- If the automatic color matching indicates an error, color matching can manually be performed. Refer to CONVERGENCE ADJUSTMENT (manual color matching).

ADJUSTING THE ON-SCREEN CONTRAST

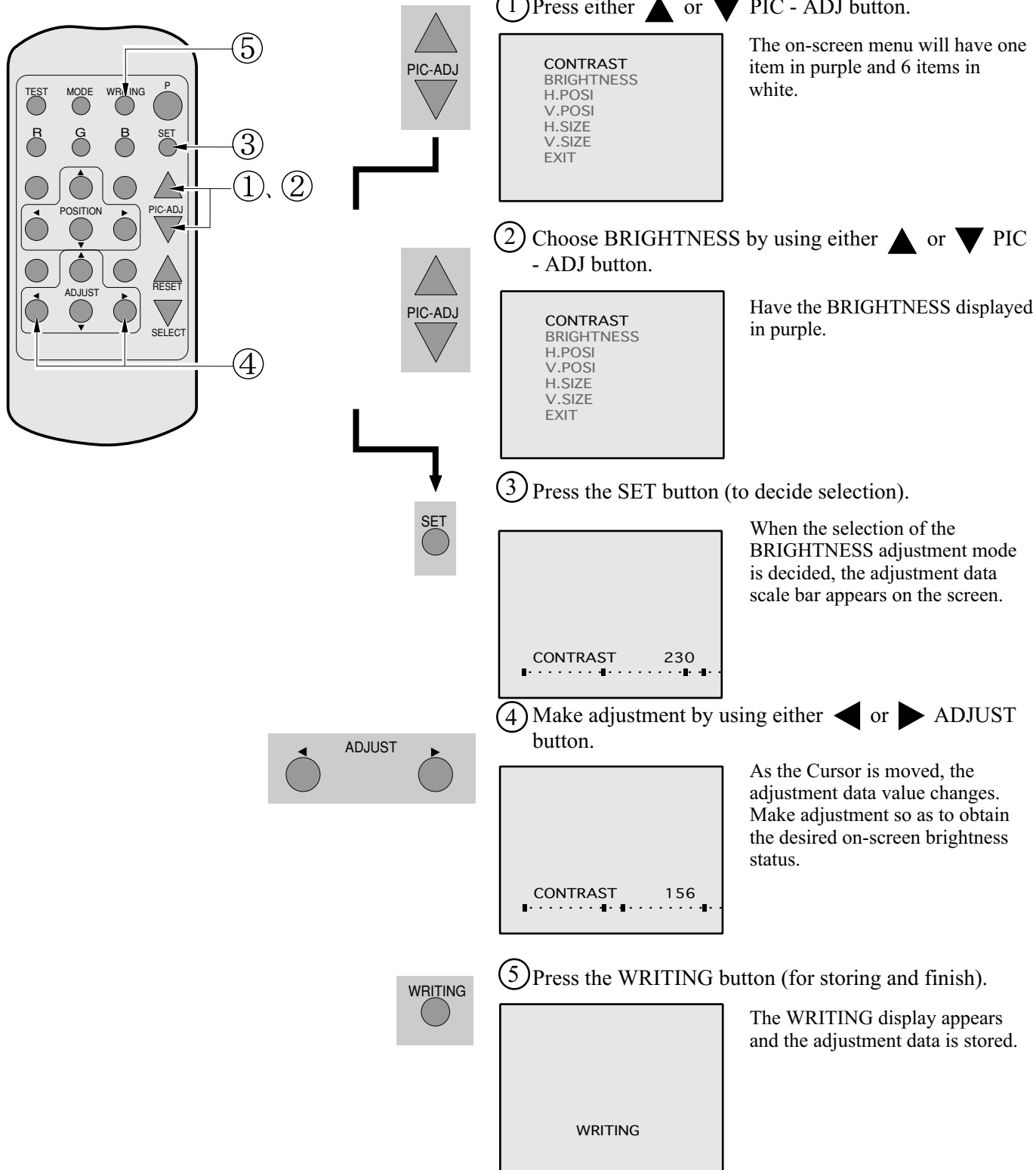
Although the on-screen picture quality has been adjusted at the time of shipment from the factory, the on-screen contrast can be readjusted if desired. When the Game Board is replaced, readjustment may be necessary. Changing the CONTRAST causes the light and shade of the on-screen images to be changed.



- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ② ~ ④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off and the pre-adjustment status will remain when the power is turned on next time.

ADJUSTING THE SCREEN BRIGHTNESS

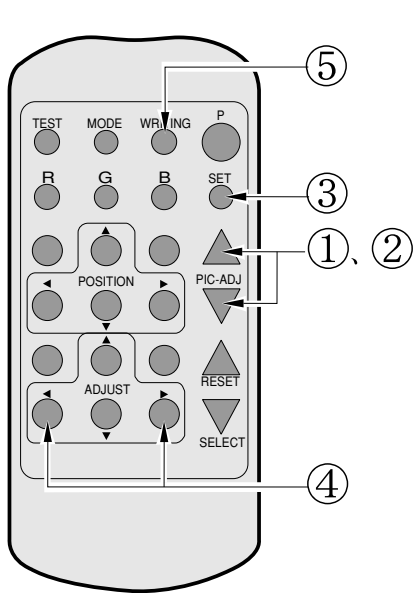
Although the on-screen picture quality has been adjusted at the time of shipment from the factory, readjustment can be made if desired. When the Game Board is replaced, readjustment may be necessary. Changing the BRIGHTNESS causes the brightness of the on-screen images of black portions to be changed.



- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ② ~ ④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off and the pre-adjustment status will remain when the power is turned on next time.

ADJUSTING THE ON-SCREEN DISPLAY POSITION

Although the on-screen display position (H. POSI, V. POSI) has been adjusted at the time of shipment from the factory, readjustment can be made if desired. When the Game Board is replaced, readjustments may be necessary.



① Press either ▲ or ▼ PIC - ADJ button.

The on-screen menu will have one item in purple and 6 items in white.

```

CONTRAST
BRIGHTNESS
H.POSI
V.POSI
H.SIZE
V.SIZE
EXIT
    
```

② Choose H. POSI or V. POSI by using either ▲ or ▼ PIC ADJ button.

Have the H. POSI or V. POSI displayed in purple. The Figure shows the status in which H. POSI is selected.

```

CONTRAST
BRIGHTNESS
H.POSI
V.POSI
H.SIZE
V.SIZE
EXIT
    
```

③ Press the SET button (to decide selection).

When the selection of the H. POSI or V. POSI is decided, the adjustment data scale bar appears on the screen.

```

H.POSI 128
┌───────────┴───────────┐
└───────────┬───────────┘
    
```

④ Make adjustment by using either ◀ or ▶ ADJUST button.

As the Cursor is moved, the adjustment data value changes. Make adjustment so as to obtain the desired on-screen position status.

```

H.POSI 156
┌───────────┴───────────┐
└───────────┬───────────┘
    
```

When making adjustments in vertical directions, also use either ◀ or ▶ ADJUST button.

⑤ Press the WRITING button (for storing and finish).

The WRITING display appears and the adjustment data is stored.

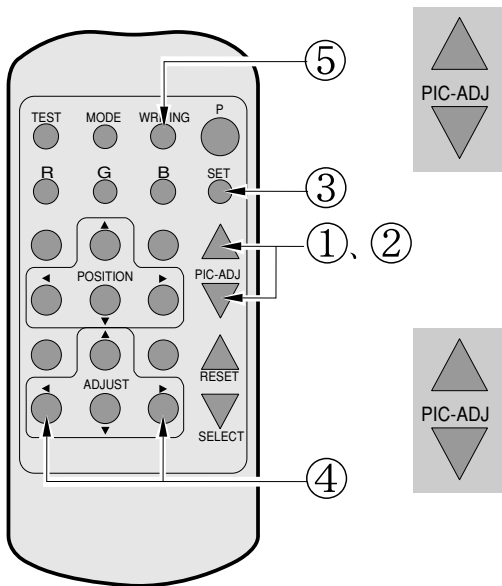
```

WRITING
    
```

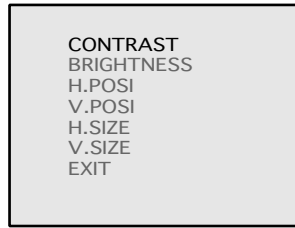
- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ② ~ ④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off and the pre-adjustment status will remain when the power is turned on next time.

ADJUSTING THE SCREEN SIZE

Although the on-screen size (H. SIZE, V. SIZE) has been adjusted at the time of shipment from the factory, readjustment can be made if desired. When the Game Board is replaced, readjustments may be necessary.

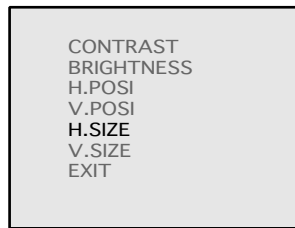


① Press either ▲ or ▼ PIC - ADJ button.



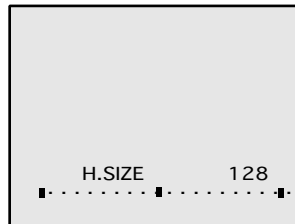
The on-screen menu will have one item in purple and 6 items in white.

② Choose H. SIZE or V. SIZE by using either ▲ or ▼ PIC - ADJ button.



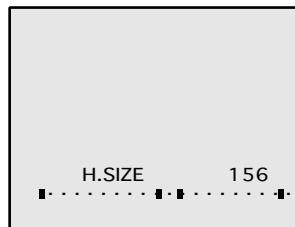
Have the H. SIZE or V. SIZE displayed in purple. The Figure shows the status in which H. SIZE is selected.

③ Press the SET button (to decide selection).



When the selection of the H. SIZE or V. SIZE adjustment mode is decided, the adjustment data scale bar appears on the screen.

④ Make adjustment by using either ◀ or ▶ ADJUST button.

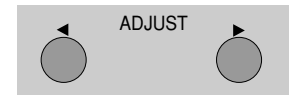


As the Cursor is moved, the adjustment data value changes. Make adjustment so as to obtain the desired on-screen position status.

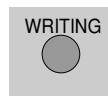
⑤ Press the WRITING button (for storing and finish).



The WRITING display appears and the adjustment data is stored.



When making adjustments in vertical directions, also use either ◀ or ▶ button.



- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ②~④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off and the pre-adjustment status will remain when the power is turned on next time.

CONVERGENCE ADJUSTMENT (manual color matching)



CAUTION!

To avoid circuitry malfunctioning due to electrical load increase, never utilize CONVERGENCE ADJUSTMENT (Line Convergence Adjustment in particular) for adjusting screen size changes.

There is no means to restore the Convergence Adjustment data once stored, to its original state. To avoid changing the screen size by erroneously using convergence adjustment, do not perform the green Line Convergence Adjustment.

As such, be sure to perform the adjustment work from this page onward by the Technical staff and the location's Maintenance Personnel who are well versed in such adjustment work. In the Static Convergence Adjustments, if satisfactory adjustments can not be performed, do not make another convergence adjustments inadvertently. Contact the office herein stated or where the product was purchased from.

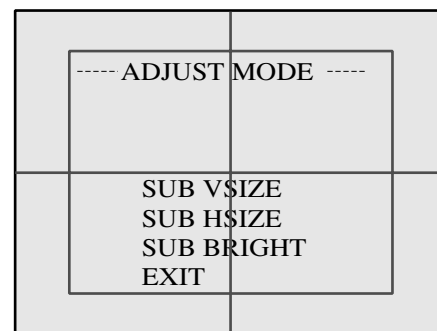


IMPORTANT

- To avoid making the adjustment work ineffective, do not press the RESET button during adjustment.
- To discontinue adjustment work, keep pressing the TEST button for approximately 3 seconds at the stage before storing the adjustment data by pressing the WRITING button.
- Should the screen be abnormally disturbed by noise due to static electricity, etc., turn the power off without storing the adjustment data.
- Pressing the ▼ or ▲ PIC - ADJ button in the Convergence Adjustment mode status will display the Adjustment Menu shown right. Do not utilize this Adjustment Menu as this is the one applied at the factory.

Adjusting this menu causes the Customer's adjustment range to be deviated.

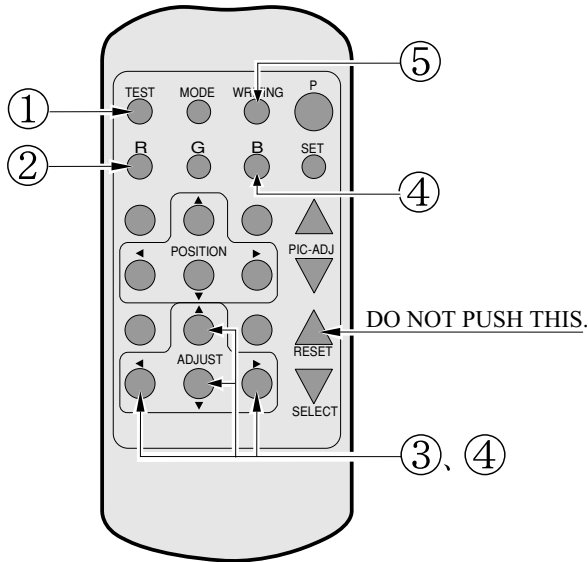
Should the menu shown right be displayed by mistake, first choose EXIT by using either ▼ or ▲ PIC - ADJ button and then press the SET button.



Adjustment menu used in the factory.

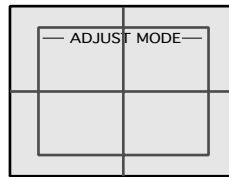
STATIC CONVERGENCE ADJUSTMENT

In the static convergence adjustment, each of red and blue images is comprehensively moved to and superimposed on the green color. If automatic color matching function is not sufficiently satisfactory, perform this adjustment. Be sure to perform automatic color matching before starting the above adjustment.



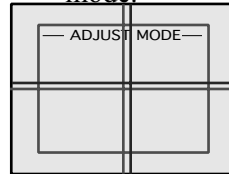
When either of (2) (4) COLOR SELECT buttons (R, B) is pressed, if the color desired to be adjusted disappears, press that particular button again. For example, if the red color needs to be adjusted again at the stage of (4), the R button need to be pressed twice.

- (1) Keep pressing the TEST button for approximately 3 seconds.



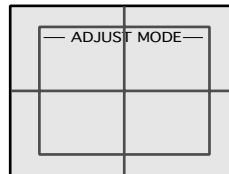
The screen will change to ADJUST mode from the Game mode to cause the green test pattern to be displayed on the screen.

- (2) Press the R button to have the red adjustment mode.



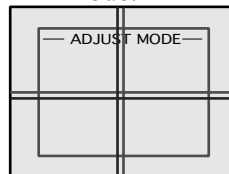
The red test pattern is added to the display. The frame color turns red and this signifies the red adjustment mode.

- (3) Make adjustment by using the ▲ ▼ ◀ ▶ ADJUST buttons.



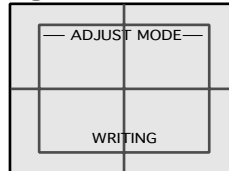
Make adjustment so as to have red superimposed on green. When red is superimposed on green, the color becomes yellow.

- (4) Press the B button to have the blue adjustment mode.



Similarly as in the case of red, adjust the blue color. When green, red, and blue are superimposed, the color becomes white.

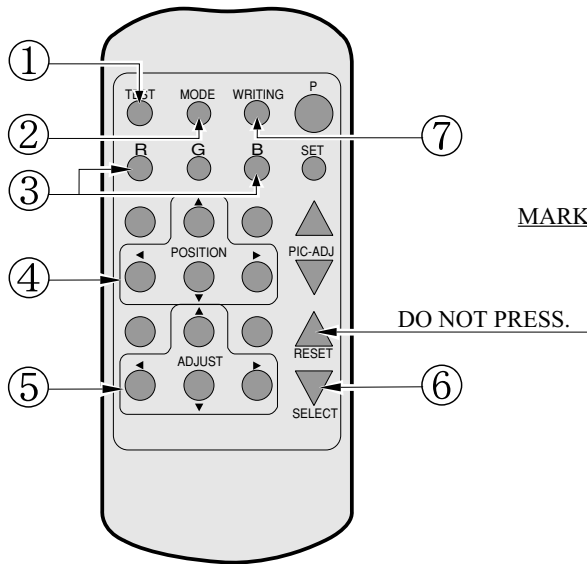
- (5) Press the WRITING button (for storing and finish).



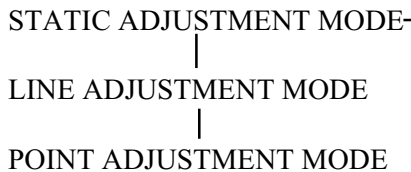
The WRITING display appears and the adjustment data is stored. After the data is stored, the Game mode returns.

POINT CONVERGENCE ADJUSTMENT

In the POINT CONVERGENCE adjustment, each of red, green and blue images is partially moved for color matching. The adjustment may be necessary when the Game Board is replaced or changed, or screen size is changed. Be sure to perform automatic color matching before starting the adjustment.



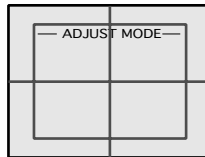
Note 1 When the MODE button is repeatedly pressed, the adjustment modes will circulate as follows:



Note 2 When either of the COLOR SELECT buttons (R, B) is pressed, if the desired color to be adjusted disappears, press that particular button again.

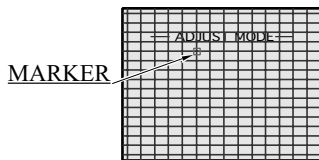
Note 3 By repeatedly pressing the SELECT button, only the Projector's TEST pattern screen and the screen superimposing the Game Board Test pattern can be alternately displayed.

① Keep pressing the TEST button for approximately 3 seconds.



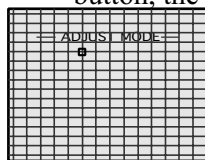
The screen changes to ADJUST mode from the Game mode and displays the green test pattern.

② Press the MODE button twice to have the POINT ADJUSTMENT mode. Note 1



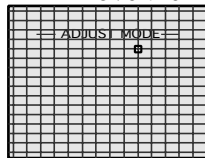
The crosshatch test pattern appears and the MARKER indicating the adjustment point is displayed.

③ Using either R or B button, select the desired color to be adjusted. Note 2 By using the G button, the green color can also be selected.



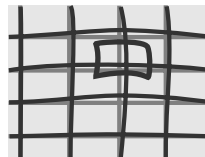
The selected color is displayed by superimposing on green. The MARKER will be in the color selected.

④ By using the ▲ ▼ ◀ ▶ ADJUST buttons, move the MARKER to the position to be adjusted.



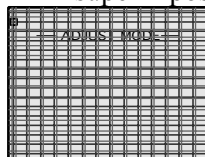
The MARKER moves in the direction of the button's arrow. However, the movable point is predetermined.

⑤ Make adjustment by using the ▲ ▼ ◀ ▶ ADJUST buttons.



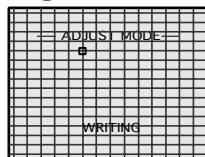
Although the direct vicinity of the MARKER's center moves most conspicuously, make adjustment by paying attention to the periphery area also. Shown left is the magnified MARKER periphery.

⑥ Press the SELECT button as necessary to superimpose Game Board images. Note 3



If the test pattern is not displayed in the periphery of the screen, adjustments can be made by pressing the SELECT button to superimpose the test pattern and the Game Board's CRT test screen.

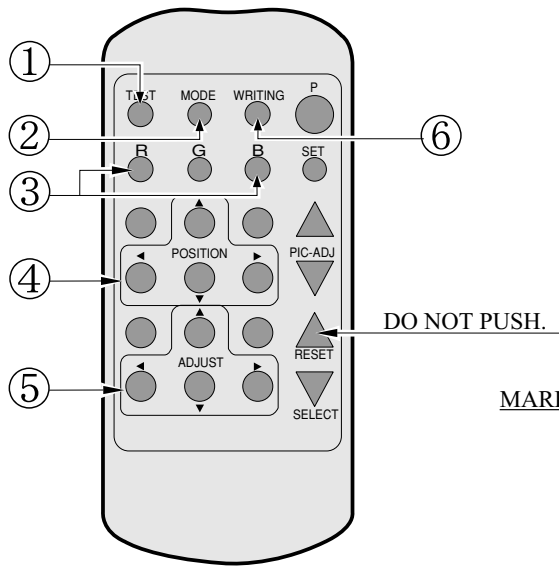
⑦ Press the WRITING button (for storing and finish).



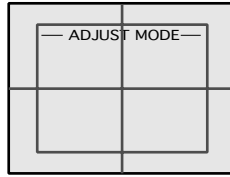
WRITING is displayed and the adjustment data is stored. After the data is stored, the Game Board screen returns.

LINE CONVERGENCE ADJUSTMENT

In the LINE CONVERGENCE ADJUSTMENT, the adjustment point of the column line (vertical) or row line (horizontal) is comprehensively moved for color matching. It is convenient to utilize this adjustment when the color of the column line or row line is uniformly deviated.

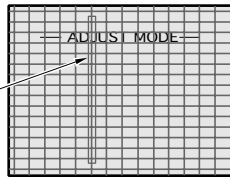


① Keep pressing the TEST button for approximately 3 seconds.



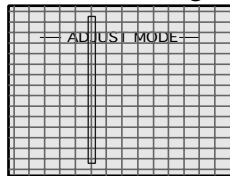
The screen changes to ADJUST mode from the Game Board mode and displays the green test pattern.

② Press the MODE button once to have the POINT ADJUSTMENT mode. Note 1



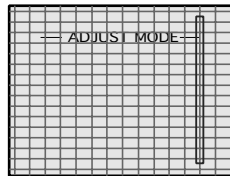
The crosshatch test pattern appears and the vertically long MARKER is shown.

③ Using either R or B button, select the desired color to be adjusted. Note 2 Although the green color can also be selected by using the G button, to avoid the screen size change adjustment, do not choose green.

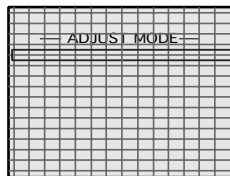


The selected color is displayed by superimposing on green. The MARKER will be in the color selected.

④ By using the ▲ ▼ ◀ ▶ POSITION buttons, move the MARKER to the position to be adjusted.

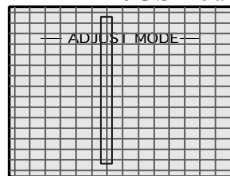


Use the ◀ ▶ buttons to select the column line, and the MARKER moves in the right/left direction. However, the movable range is predetermined.



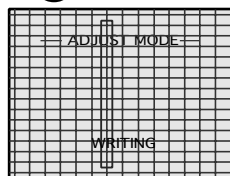
Use the ▲ ▼ buttons to select the row line and the MARKER moves in the up/down direction. However, the movable range is predetermined.

⑤ Make adjustment by using the ▲ ▼ ◀ ▶ ADJUST buttons.



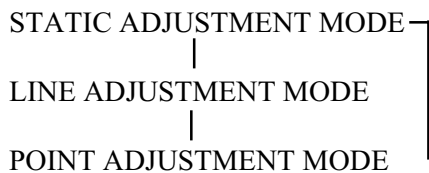
The selected column line or row line (shown left is the column line) can be moved in the desired up/down or right/left directions as applicable.

⑥ Press the WRITING button (for storing and finish).



WRITING is displayed and the adjustment data is stored. After the data is stored, the Game Board screen returns.

Note 1 When the MODE button is repeatedly pressed, the adjustment modes will circulate as follows:

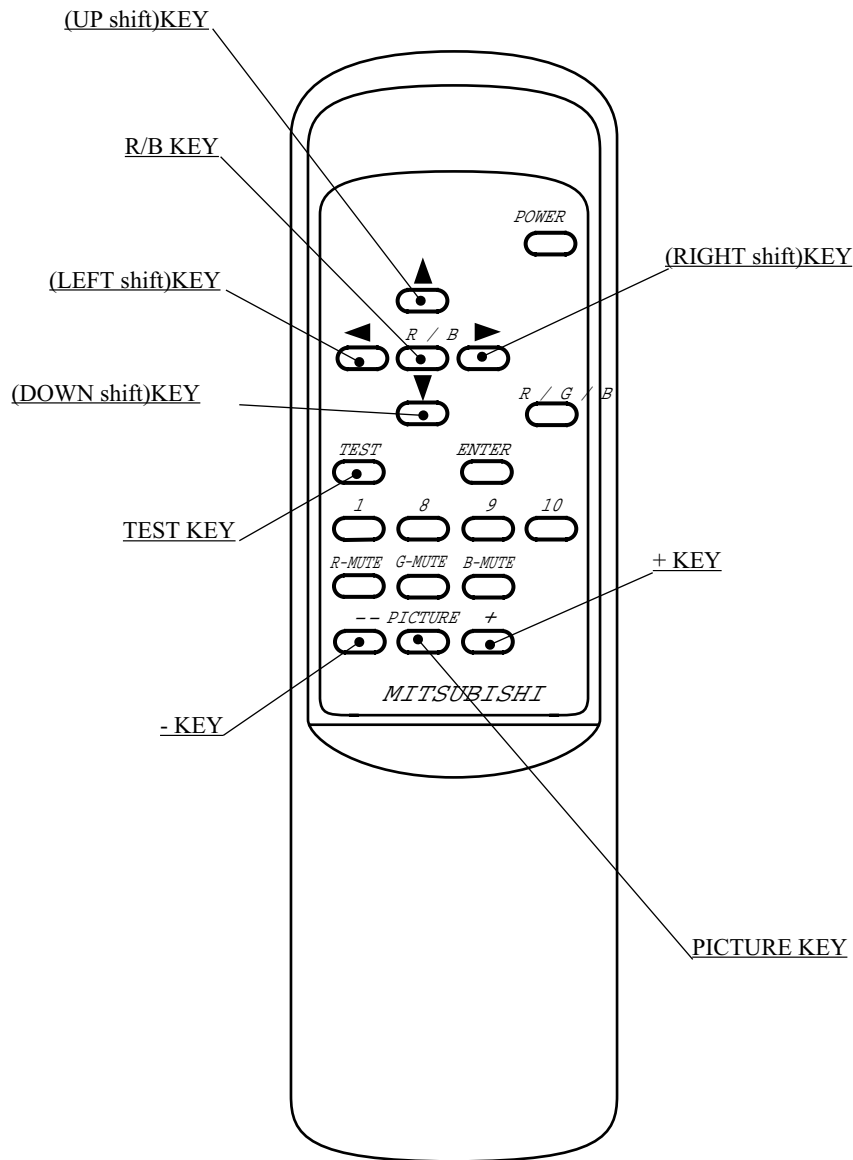


Note 2 When either of the COLOR SELECT buttons (R, B) is pressed, if the desired color to be adjusted disappears, press that particular button again.

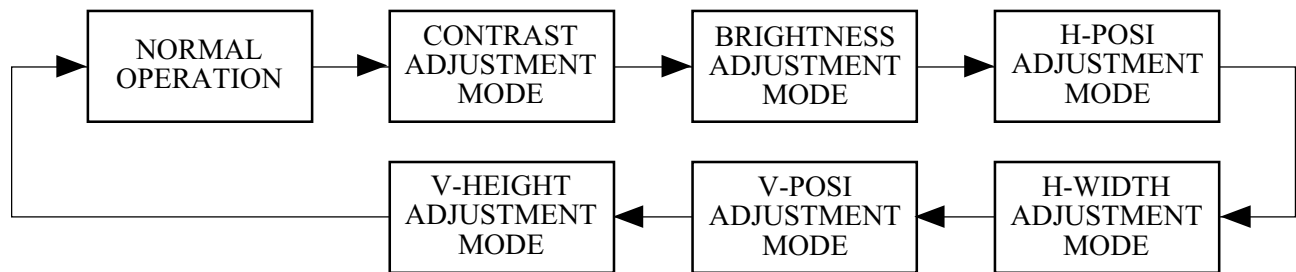


- For the operation of Remote Control, use only the Keys of R/B, ▲ (UP shift), ◁ (LEFT shift), ▼ (DOWN shift), ▷ (RIGHT shift), TEST, -, +, and PICTURE. Do not press keys other than those explained in this manual.
- When operating the Remote Control, have it point the screen.

The Projector has DYNAMIC CONVERGENCE adjustment functions. This manual does not refer to the functions as the adjustment of DYNAMIC CONVERGENCE is very troublesome and in addition, visual effects are negligible.



- POWER KEY This does not have power ON/OFF function. Does not function even if it is pressed.
- R/B KEY Used to select "R" for red adjustment or "B" for blue adjustment in the STATIC CONVERGENCE ADJUSTMENT mode.
- ▲ (UP shift) KEY Used to move the test cross upward in the STATIC CONVERGENCE ADJUSTMENT mode.
- ◁ (LEFT shift) KEY Used to move the test cross to the left in the STATIC CONVERGENCE ADJUSTMENT mode.
- ▼ (DOWN shift)..... Used to move the test cross downward in the STATIC CONVERGENCE ADJUSTMENT mode.
- ▷ (RIGHT shift) KEY Used to move the test cross to the right in the STATIC CONVERGENCE ADJUSTMENT mode.
- TEST KEY This is the ON/OFF key in the STATIC CONVERGENCE ADJUSTMENT mode. In the ON status of this key, the test cross pattern appears in the approximately on-screen center.
- ENTER KEY Used for DYNAMIC CONVERGENCE.
- - KEY Used to decrease the adjustment data in the adjustment mode of CONTRAST, BRIGHTNESS, HORIZONTAL/VERTICAL POSITIONS and WIDTH.
- + KEY Used to increase the adjustment data in the adjustment mode of CONTRAST, BRIGHTNESS, HORIZONTAL/VERTICAL POSITIONS and WIDTH.
- PICTURE KEY Used for the ADJUSTMENT mode of CONTRAST, BRIGHTNESS, HORIZONTAL/VERTICAL POSITIONS and WIDTH. Every time this key is pressed, the ADJUSTMENT mode proceeds as follows:

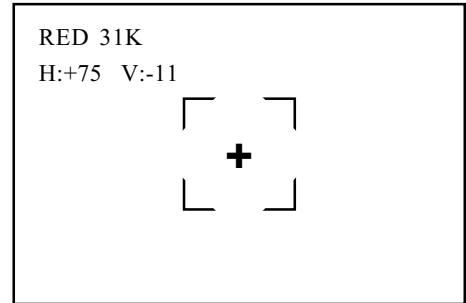


EXPLANATIONS OF ADJUSTMENT MODES

- CONTRAST Used to vary image contrast. Use + and - keys to adjust.
- BRIGHTNESS Used to change image brightness. Use + and - keys to adjust.
- H-POSI Used to move the image position in the horizontal direction. Use + and - keys to adjust.
- H-WIDTH Used to change the horizontal width of image. Use + and - keys to adjust.
- V-POSI Used to move the image position in the vertical direction. Use + and - keys to adjust.
- V-HEIGHT Used to change the vertical width of image. Use + and - keys to adjust.

STATIC CONVERGENCE ADJUSTMENT

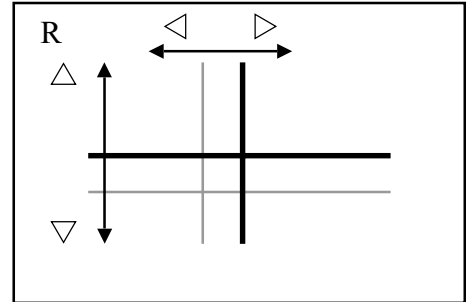
Press the TEST KEY to change the screen to Red Line Adjustment mode.



Superimpose the red line on the green line.
When the red line is superimposed on the green line, the green line turns to yellow or white.

To MOVE RED LINE:

- Use ◀ key to move it left.
- Use ▶ key to move it right.
- Use ▲ key to move it upward.
- Use ▼ key to move it downward.

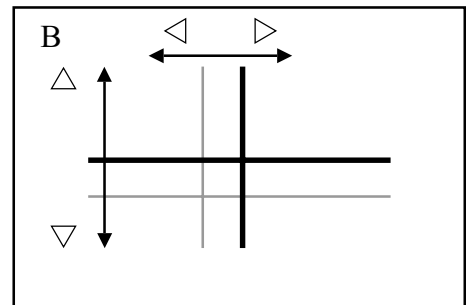


Press the R/B KEY.
Changes to the Blue Line Adjustment screen.
Every time the key is pressed, "from red to blue" and "from blue to red" are alternated.

SUPERIMPOSING BLUE LINE ON GREEN LINE:
Superimposing blue line on green line causes the green line to turn to white.

TO MOVE BLUE LINE:

- Use ◀ key to move it left.
- Use ▶ key to move it right.
- Use ▲ key to move it upward.
- Use ▼ key to move it downward.



Press the TEST KEY.
Adjustment is finished.

AUTOMATIC CANCELLATION OF ADJUSTMENT MODE

In each adjustment mode, only in the case where an effective key input (variation of values and images) is not performed within the time limit indicated below, the adjustment mode is automatically cancelled and finished, shifting to on-screen normal images.

Approximately 6 seconds CONTRAST
 BRIGHTNESS
 H-POSI
 H-WIDTH
 V-POSI
 V-HEIGHT

Approximately 5 min. STATIC CONVERGENCE

13. REPLACEMENT OF FLUORESCENT LAMP



- When performing work, be sure to turn power off. Working with power on can cause electric shock and short circuit hazards.
- The Fluorescent Lamp, when it gets hot, can cause burn. Be very careful when replacing the Fluorescent Lamp.
- Be sure to use lamps of the designated rating. Using lamps of undesignated rating can cause a fire or malfunctioning.



- To perform work safely and securely, be sure to prepare a step which is in a secure and stable condition. Performing work without using the step can cause violent falling down accidents.
- Be careful when handling the plastic made parts. Failure to observe this may cause injury due to damage or fragments resulting from damage.

Remove the billboard holder, slide up the billboard, and replace the fluorescent tube.

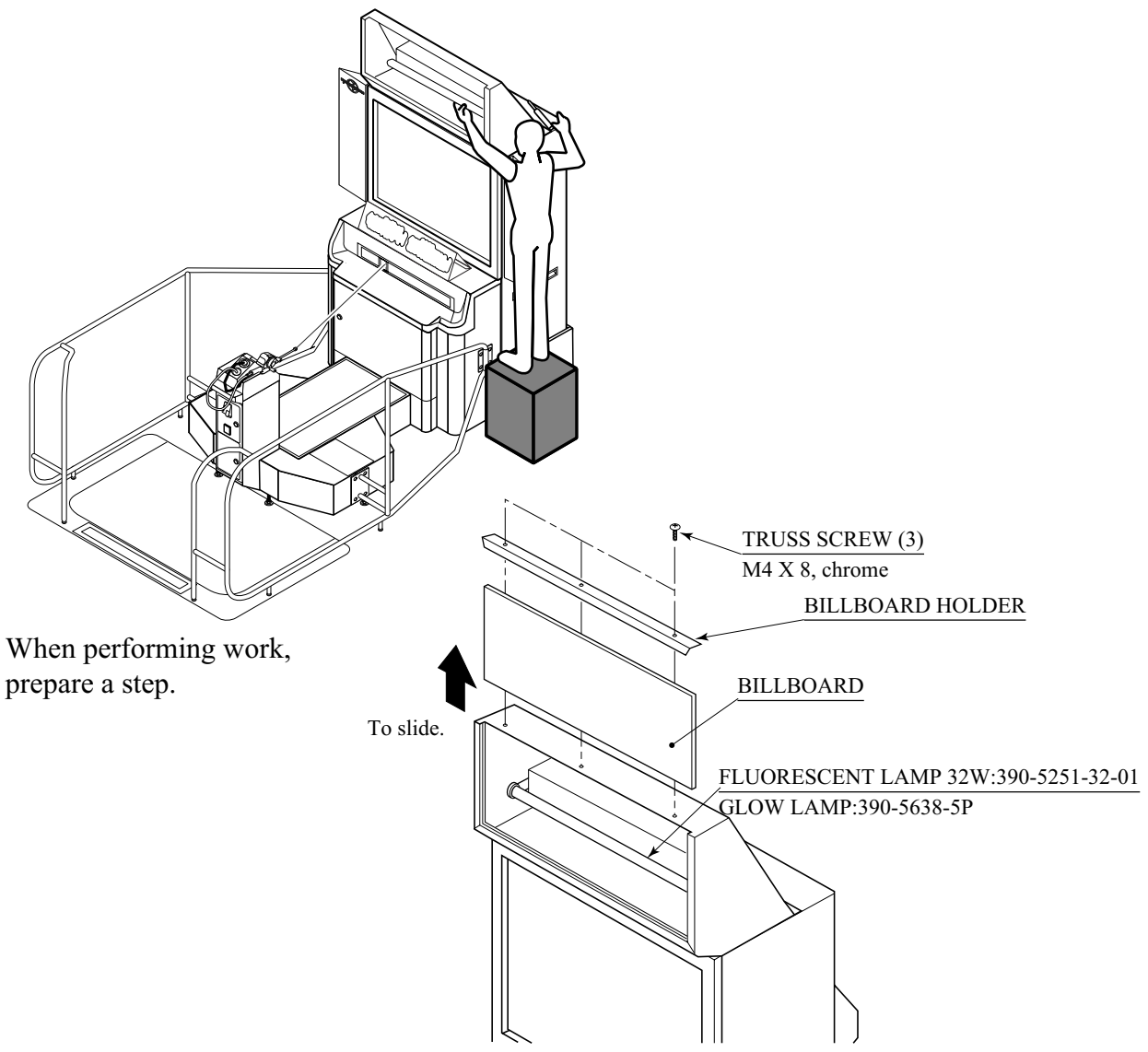


FIG. 13

14. PERIODIC INSPECTION TABLE

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 if Power Cords are damaged, the plug is securely inserted, dust is accumulated between the Socket Outlet and the Power Plug, etc. Using the product with dust as is accumulated can cause fire and electric shock hazards.
- Periodically once a year, request the place of contact herein stated or the Distributor, etc. where the product was purchased from, as regards the internal cleaning. Using the product with dust as is accumulated in the interior without cleaning can cause a fire or accident. Note that cleaning the interior parts can be performed on a pay-basis.

Table 14 PERIODIC INSPECTION TABLE

ITEMS	DESCRIPTIONS	PERIOD	REFERENCE
GAME BD	Memory test.	Monthly	NAOMI SERVICE MANUAL
	Setting check	Monthly	9
Chassis	Volume (V.R.) inspection	Monthly	9
	Greasing to gears & pillows	Semi-annually	10 - 4
Rod Controller	SW Volume inspection	Monthly	9
	Line inspection	Monthly	See below.
	Line replacement	Semi-annually	10 - 1
Coin Chute Tower	Coin SW inspection	Monthly	9
	Coin insertion test	Monthly	11
	Coin Selector cleaning	Tri-monthly	11
PROJECTOR	Adjustment check	Monthly	9, 12
	Screen cleaning	Weekly	12 - 1
Power Plug	Inspection and cleaning	Annually	As above
Internal	cleaning		

CLEANING THE CABINET SURFACES

When the cabinet surfaces are badly soiled, remove stains with a soft cloth dipped in water or diluted (with water) chemical detergent and squeezed dry. To avoid damaging surface finish, do not use such solvents as thinner, benzene, etc. other than ethyl alcohol, or abrasives, bleaching agent and chemical dustcloth.

15. TROUBLESHOOTING

In case a problem occurs, first check wiring connector connections.



- In order to prevent electric shock and short circuit, be sure to turn power off before performing work.
- Be careful so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.
- After removing the cause of the functioning of the Circuit Protector, reinstate the Circuit Protector. Depending on the cause of the functioning, using the Circuit Protector as is without removing the cause can cause generation of heat and fire hazard.
- This work should be performed by the Location's Maintenance Man or Serviceman. Performing work by non-technical personnel can cause electric shock hazard.
- When performing work such as parts replacement other than those specified in this manual, be sure to contact where you purchased the product from and confirm the work procedures and obtain precautions prior to performing work. Inappropriate parts replacement and/or installing with erroneous adjustment can cause an overload or the parts to come into contact, resulting in an electric shock, a short circuit, and a fire.

TABLE 15 a

PROBLEMS	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine is not activated.	The power is not ON.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	The CIRCUIT PROTECTOR functioned due to momentary overcurrent.	Remove the cause of overload to reset the circuit protector (See Section 6 / FIG. 15).
Fluorescent Lamp does not light up.	Connection failure of connectors within Billboard.	Connect connectors accurately. (See Section 6)
	Fluorescent tube and/or glow lamp is dead.	Replace fluorescent tube and/or glow lamp with a new one. (See Section 13)
Sound is not emitted.	Incorrect volume adjustment.	Adjust Switch Unit Volume Adjustment V. R. (See Section 9).
	Connection failure at the connectors.	Firmly reconnect the connector between every two of game board, amplifier, speaker, and volume.
	Board and/or amplifier failed.	Perform a sound test. (See Section 9)

CIRCUIT PROTECTOR

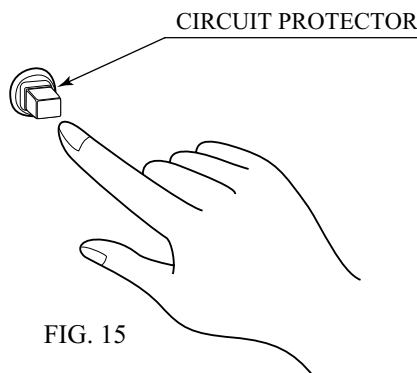


FIG. 15

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

TABLE 15 b

PROBLEMS	CAUSE	COUNTERMEASURES
Although sound is emitted, PTV screen is blackened and Fluorescent lamp does not light up.	Poor connection of connector between Chassis and PTV.	Check for connection of 3p white connector.(See Section 6)
Although sound is emitted and the fluorescent lamp comes on, the PTV screen is blackened.	Poor connection of connector between Chassis and PTV.	Firmly reconnect the video signal wire connector. (See Section 6)
The color on the PTV screen is not correct.	Connection failure at the video signal wire connectors. Screen adjustment is not appropriate.	Firmly reconnect the connector of video-signal wire and retighten the fixing screws. (See Section 6) Make adjustment appropriately. (See Section 12)
PTV screen has a color deviation.	Affected by the periphery, such as other machines, location building's steel frames, etc.	Make convergence adjustments. (See Section 12) Change installation direction/ position. Move the other machines which cause the problem.
No output to the motor, or abnormal input from limit switch and/or reel.	Malfunction of the control board. Connection failure at the connectors. Failure of the control board.	Disconnect and reconnect the power, and verify that a power-on function check is normally completed. (See Section 6) Firmly reconnect the connectors between the I/O board and the control board. Verify that the power is connected to the control board. Contact where you purchased the product from.
Rod controller (line mechanism) functions or responds abnormally.	Failure of a power-on function check. Line length is inadequate or line is broken. Belt and roller are incorrectly installed. Tension Volume setting failure. Failure of the tension volume.	Disconnect and reconnect the power, and verify that a power-on function check is normally completed. (See Section 6) Use the line with a specified length. Reinstall the belt and roller correctly. Reset the tension volume correctly in a test mode. (See Section 9) Replace the tension volume. (See Section 10)
Rod controller (line mechanism) does not respond.	Connection failure at the connectors. Tripping of the servo driver's thermal relay. Fuse of the servo driver blown due to an instantaneous overloading.	Firmly reconnect the connectors between the servo driver and the servomotor. Will be automatically reset after the relay is cooled down to less than 70°C. Contact your dealer or distributor.

TABLE 15 c

PROBLEMS	CAUSE	COUNTERMEASURES
Stick of the rod controller does not function normally.	Connection failure at the connectors. Incorrect setting of the tension volume. Failure of the stick control board.	Firmly reconnect the connectors between the I/O board and the control board. Reset the tension volume correctly in a test mode. (See Section 9) Replace the stick control board. (See Section 10)
Reel handle does not function normally.	Connection failure at the connectors. Failure of the encoder.	Firmly reconnect the connectors between the control board and the rod controller. Replace the encoder.
Reel handle receives no load.	Connection failure at the connectors. Fuse of the motor drive board blown due to an instantaneous overloading. Failure of the brake.	Firmly reconnect the connectors between the motor drive board and the rod controller. Replace the fuse. (See PHOTO 15) 514-5086-2500 FUSE S.B. 2500MA 250V HBC CE Replace the powder brake.
Swing mechanism does not function.	Connection failure at the connectors. Motor overheated.	Firmly reconnect the connectors between the motor drive board and the AC motor/capacitor. Replace the motor drive board and/or AC motor.
Vibrative mechanism does not function.	Connection failure at the connectors. Fuse of the motor drive board blown due to an instantaneous overloading.	Firmly reconnect the connectors between the motor drive board and the DC motor. Replace the fuse. (See PHOTO 15) 514-5086-2500 FUSE S.B. 2500MA 250V HBC CE

INDICATION OF TROUBLES

The system performs a power-on function check when you turn on the main switch or when you enter a test mode. If this is the case, do not touch any mechanical part with placing the rod controller on its specified location. Failure to observe this may indicate a trouble on the screen even though actually there is no troubles.

If you continue to use the machine without taking any countermeasures against a trouble, a secondary trouble may occur. When the screen has shown a trouble (error), therefore, take appropriate countermeasures referring to the table below. If you cannot solve the problem, contact your dealer or distributor immediately.

Name of error, as well as its code number in the brackets, is displayed on the center of the screen during a power-on function check while on the bottom right of the screen when playing a game.

ROM ERROR (E0)

ROM ERROR (E0)

Error Indication	Troubled Components	Causes and Countermeasures
ROM ERROR (E0) RAM ERROR (E1) EEPROM ERROR (E2)	ROM RAM EEPROM	Failure of the control board. Replace the control board.
SLIDE RIGHT ERROR (E3) SLIDE LEFT ERROR (E4)	Swing mechanism (right unit) Swing mechanism (left unit)	Contamination or failure of the swing mechanism limit sensor. Clean the sensor and check in the input test. If the problem is still reproduced, replace the sensor.
SLIDE ENCODE ERROR (E5)	Swing mechanism (encoder)	Failure of the swing mechanism encoder. Disconnect and reconnect the power. If the problem is still reproduced, replace the encoder.
PULL FRONT ERROR (E6) PULL BACK ERROR (E7)	Line pull mechanism (front side limit sensor) Line pull mechanism (back side limit sensor)	Contamination or failure of the line pull mechanism limit sensor. Clean the sensor and check in the input test. If the problem is still reproduced, replace the sensor.
SERVO ENCODE ERROR (E8)	Servo motor (encoder)	Failure of the servo motor encoder. Replace the servo motor and/or motor driver.
SERVO SYSTEM ERROR (E9)	Servo motor (system)	Overloading of the servomotor. Disconnect the power, and reconnect the power 10 minutes later. If the problem is still reproduced then, replace the servo motor and/or motor driver.
LINE SENCER ERROR (EA)	Line outlet sensor	Contamination or failure of the line outlet sensor. Disconnect and reconnect the power. If the problem is still reproduced, replace the sensor.
LINE FREE ERROR (EB)	Slack removing mechanism	Failure of the tension volume of the slack removing mechanism. Check in the input test.
VIBE ERROR (EC)	Vibrative mechanism	Failure of the vibrative mechanism's rotation. Check the home position sensor and the motor.
SYSTEM ERROR (EE)	System	Error of the control board system. Disconnect and reconnect the power. If the problem is still reproduced, replace the control board.
ERROR!! Check Network	Network	Failure of the control board's responses. Firmly reconnect the control board and the I/O board with each other, or replace the control board.

Troubles are classified into the two categories as follows:

Troubles where you can continue to play a game:

Be careful about the trouble even though you can play a game.

Troubles where you cannot continue to play a game:

Game is suspended. Error is displayed instead.

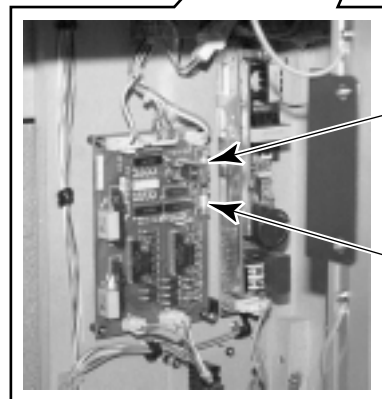
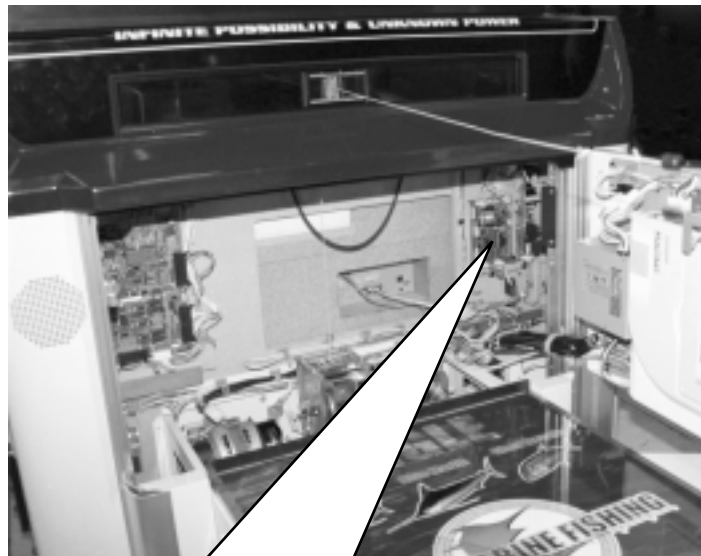
REPLACEMENT OF FUSE



- Fuse replacements other than those specified can cause accidents and are strictly forbidden. In case fuse replacements other than those stated in this manual are necessary, contact where you purchased the product from for inquiries regarding this matter.
- In order to prevent an electric shock, be sure to turn power off and unplug from the socket outlet before performing work by touching the internal parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause electric shock and short circuit accidents.
- Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause fire and electric shock accidents.
- After eliminating the cause of the blowing of fuse, replace the fuse. Depending on the cause of fuse blowing, continued use with the fuse as is blown can cause generation of heat and fire hazard.

Open the Chassis Front Door to have fuse appear (see Section 6).

When opening and closing the front door, be careful not to damage the wires by catching them between the door and the cabinet.



FUSE 2.5A
514-5086-2500
for Brake

FUSE 2.5A
514-5086-2500
for Vibration Mecha

PHOTO 15

16. GAME BOARD



WARNING!

- In order to prevent electric shock and short circuit hazards, be sure to turn power off before performing work.
- Be careful so as not to damage wirings. Damaged wiring can cause fire, electric shock or short circuit.
- Do not expose the Game BD, etc. without a good reason. Failure to observe this can cause electric shock hazard or malfunctioning.



CAUTION!

In this product, setting changes are made during the test mode. The Game BD need not be operated. Use the Game BD, etc. as is with the same setting made at the time of shipment so as not to cause electric shock and malfunctioning.

16 - 1 REMOVING THE BOARD

This machine uses a NAOMI board as a game board. To submit the NAOMI board to a repairing or replacement, take out it as follows:

- ① Turn power off.
- ② Unlock the front door to open. Inside surface of the front door provides an ASSY GAME BD that contains the NAOMI board on its wooden base. When opening and closing the front door, be careful not to damage the wires by catching them between the door and the cabinet edges.



PHOTO 16. 1 a

- ③ Loosen the cord/wire clamps that hold tightly the cords/wires.
- ④ Remove all the connectors from the NAOMI filter board.

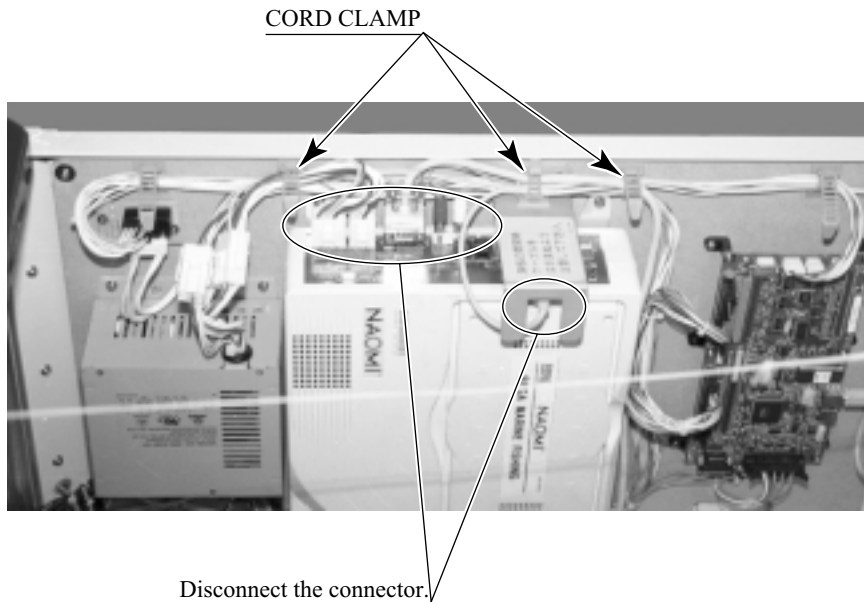


PHOTO 16. 1 b

- ⑤ Remove the 4 M4 screws, and take out the NAOMI board from the wooden base.

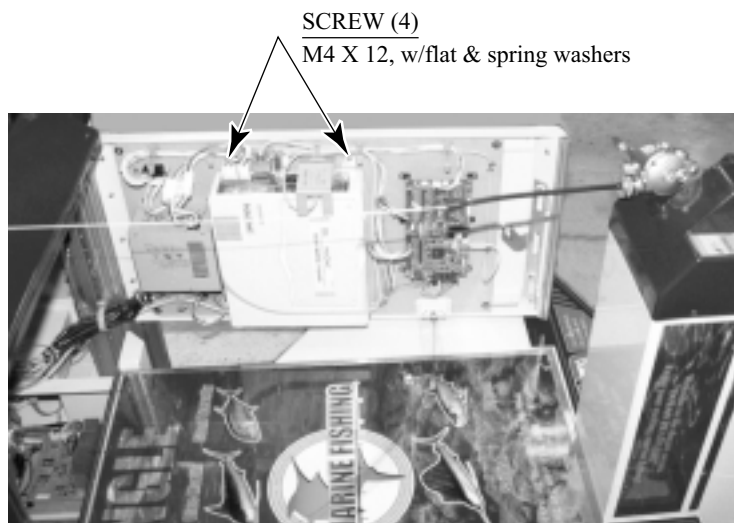


PHOTO 16. 1 c

To submit the ROM board to a repairing or replacement, remove the 4 M4 screws, and take out the ROM board from the NAOMI board.

Wrap the NAOMI board or the ROM board with protective packing materials, and put into a carton box for shipping.

16 - 2 COMPOSITION OF GAME BOARD



IMPORTANT

Ensure that the DIP SW setting is performed as designated. Failure to observe this may cause functioning not suitable for the actual operation, or malfunctioning.

- ASSY CASE NAO MFS USA (840-0027D-01):USA
- ASSY CASE NAO MFS EXP (840-0027D-02):OTHERS
- ASSY CASE NAO MFS KOR (840-0027D-03):KOREA
- ASSY CASE NAO MFS AUS (840-0027D-04):AUSTRALIA

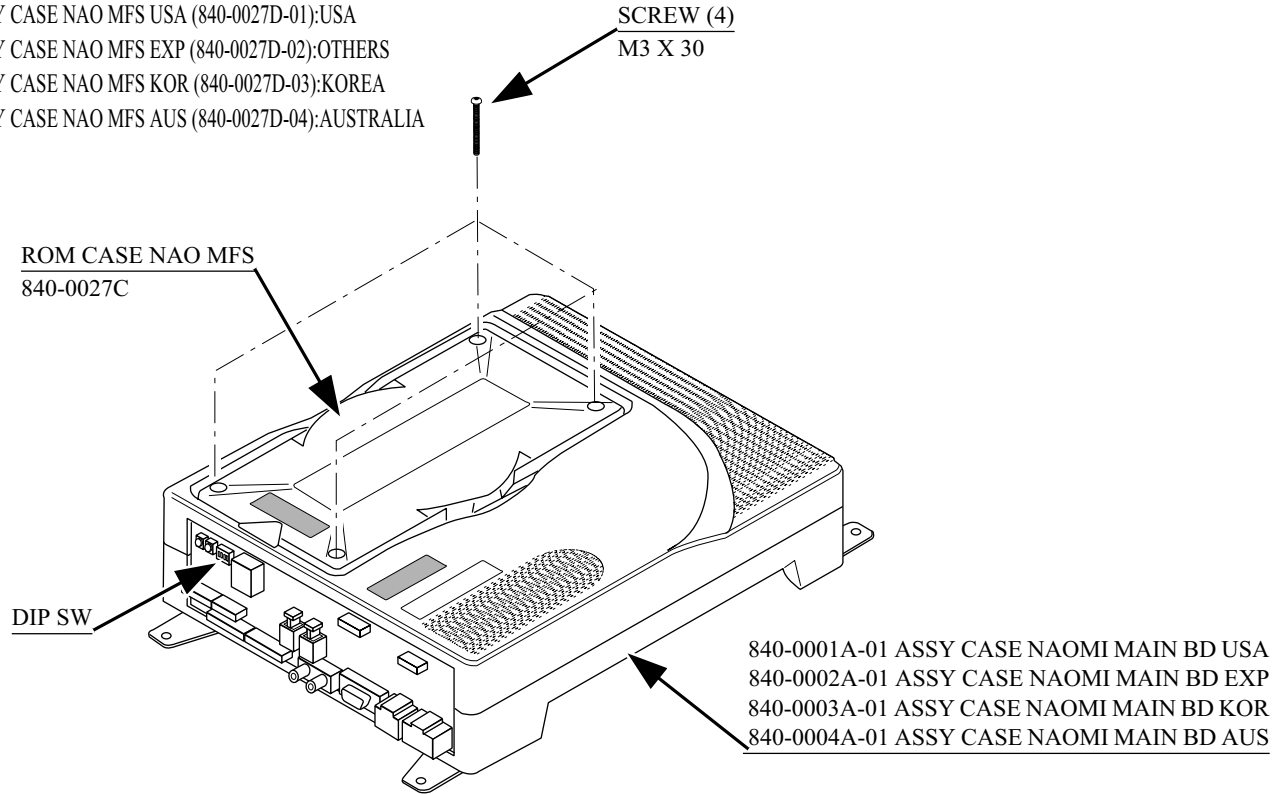


FIG. 16. 2 a

DIP SW SETTING

Be sure to set all of the DIP SWes to OFF.

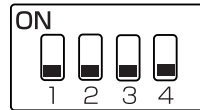


FIG. 16. 2 b

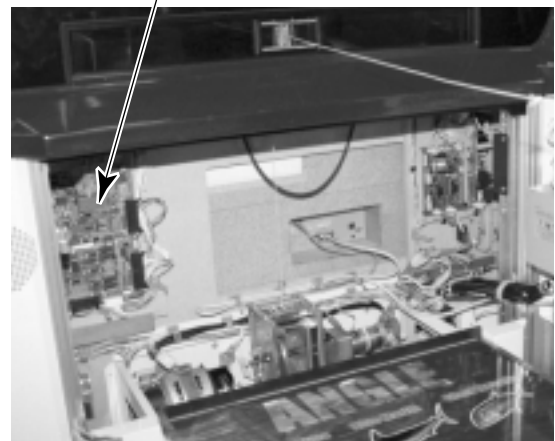
Standard Factory Settings of the DIP Switches on the Control Board

Control board is located at the upper left corner of the inside surface of the front door. Two DIP switches are mounted on the Control board. The factory has set them to OFF as in the following table. Do not change these settings.

SW1	8	7	6	5	4	3	2	1
	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
SW2	8	7	6	5	4	3	2	1
	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

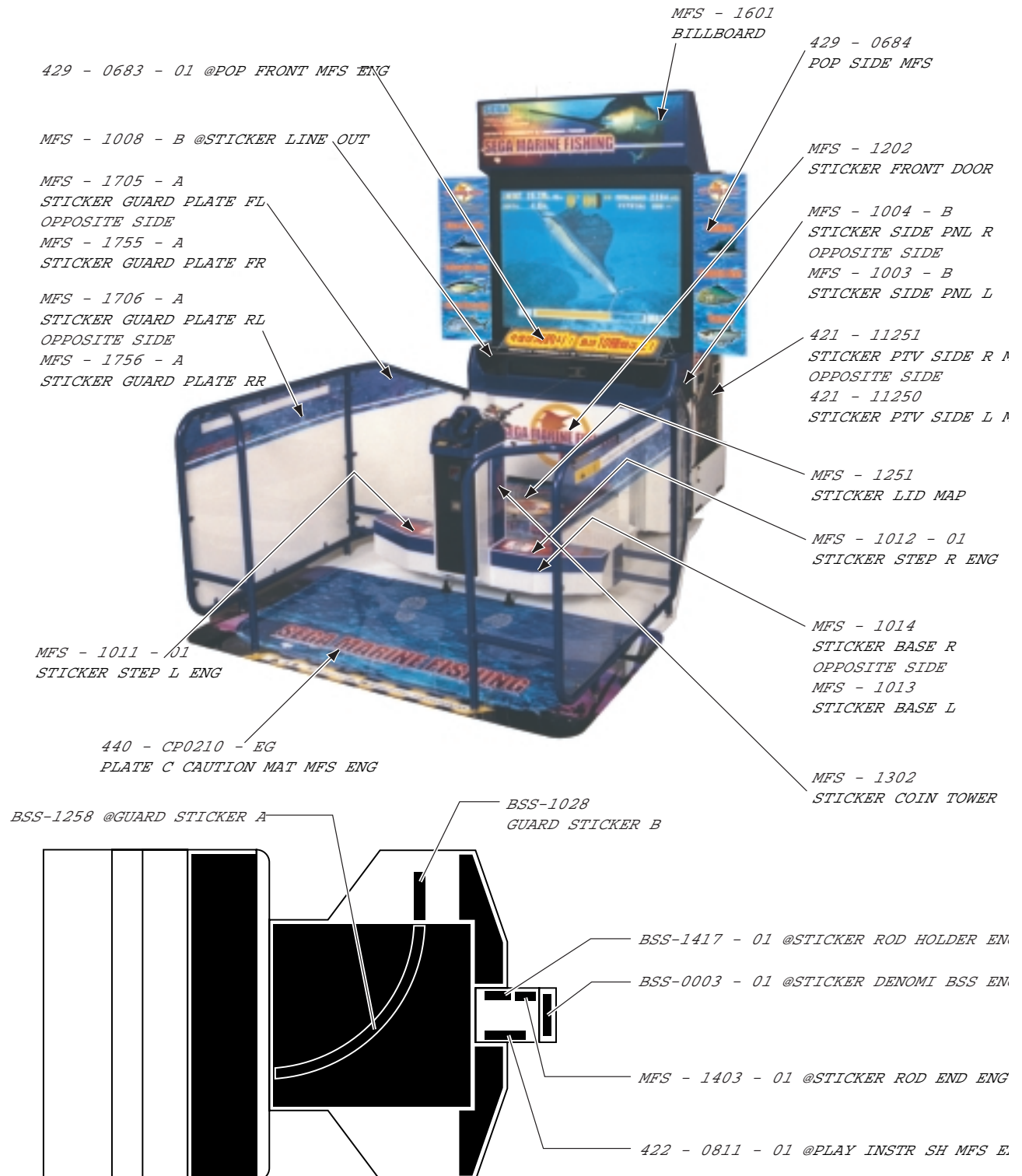
CONTROL BD

PHOTO 16. 2

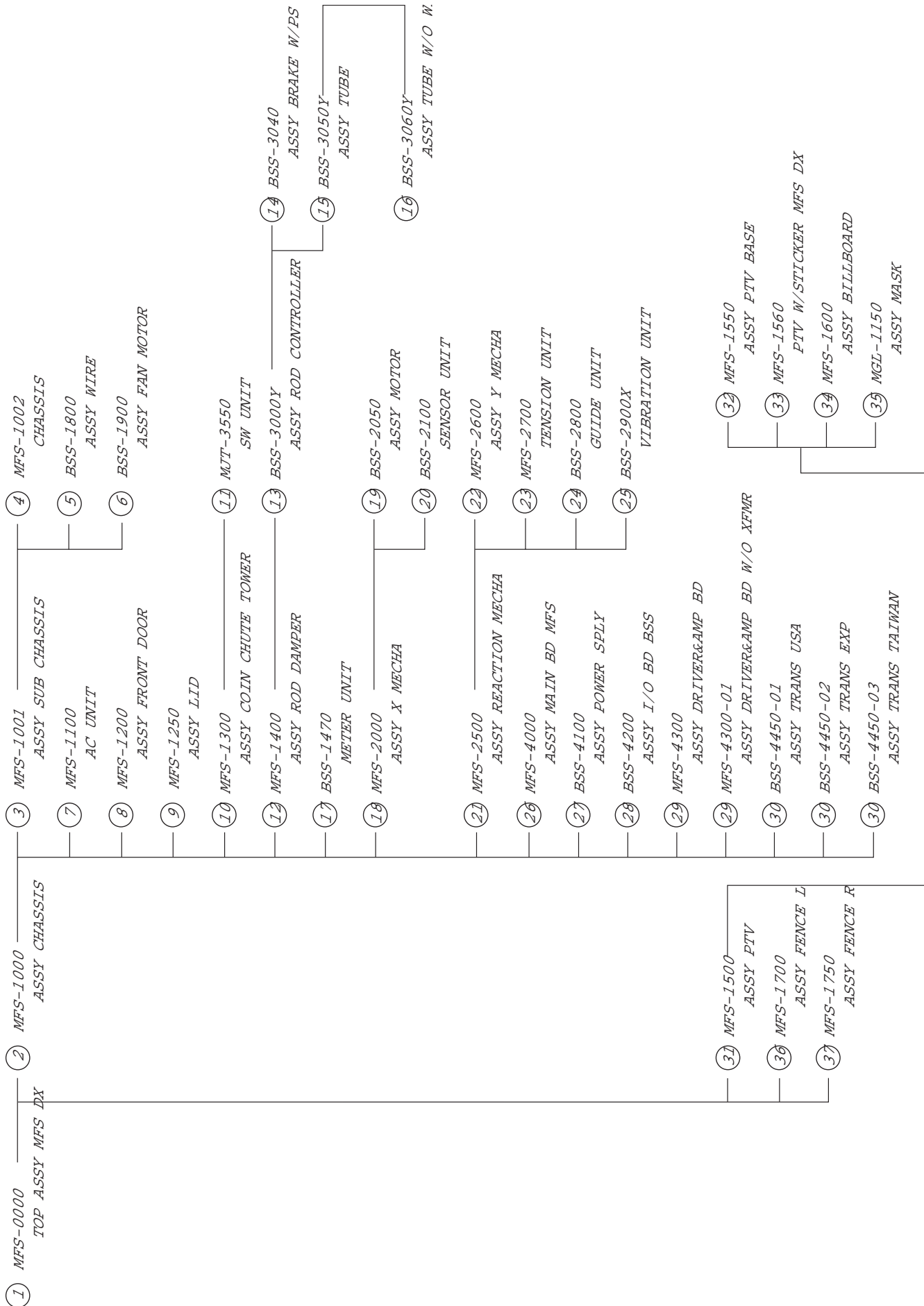


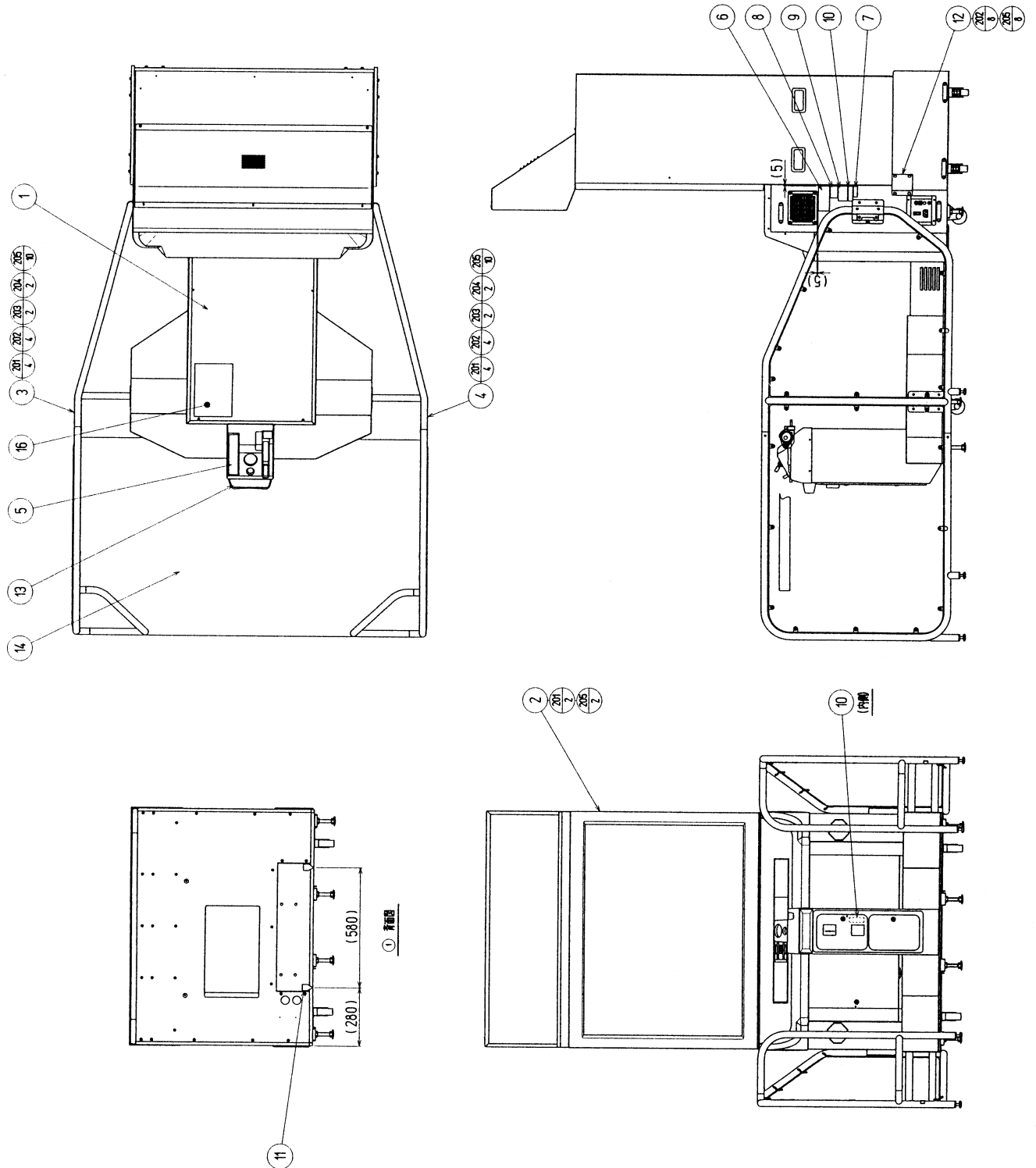
17. DESIGN RELATED PARTS

For the Warning Display stickers, refer to Section 1.



18. PARTS LIST

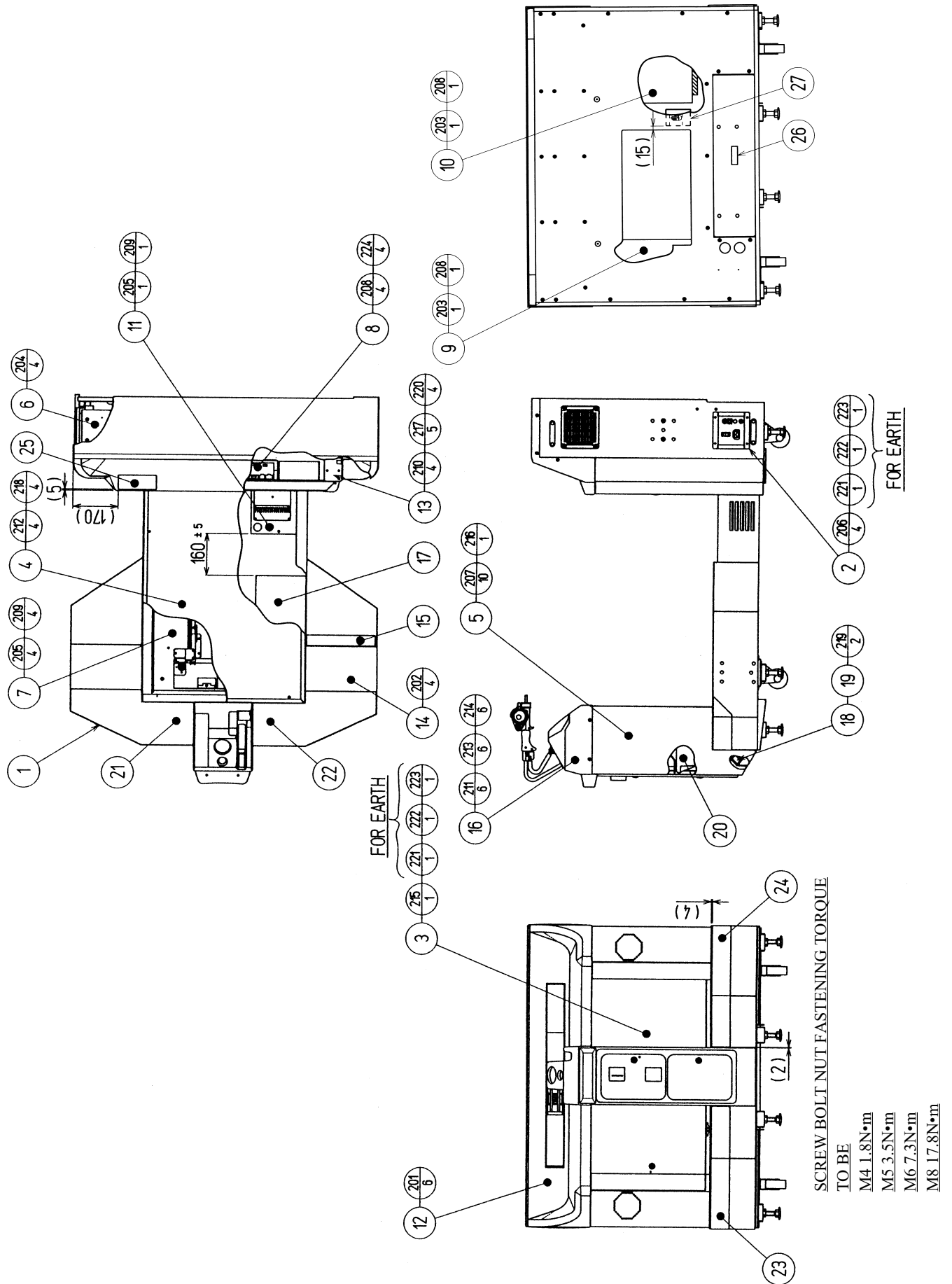




① TOP ASSY MFS DX

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1000	ASSY CHASSIS	
2	MFS-1500	ASSY PTV	
3	MFS-1700	ASSY FENCE L	
4	MFS-1750	ASSY FENCE R	
5	422-0811-01	PLAY INSTR SH MFS ENG	
11	421-8885	STICKER CAUTION FORK	
12	MFS-0001	JOINT BRKT	
13	BSS-0003-01	STICKER DENOMI BSS ENG	
14	440-CP0210-EG	PLATE C CAUTION MAT MFS ENG	
15	SGM-4357	POLY COVER 1600 X 1300 X 1050	
16	421-9755	CAUTION INSTR BSS	
17	429-0683-01	POP FRONT MFS ENG	
18	429-0684	SIDE POP MFS	
201	030-000835-SB	HEX BLT BLK W/S M8 X 35	
202	030-000820-SB	HEX BLT W/S BLK M8 X 20	
203	050-H00800	HEX NUT M8	
204	060-S00800	SPR WSHR M8	
205	060-F00800-0B	FLT WSHR BLK M8	
401	601-6604-70	CARTON BOX 70	
402	420-6561-01	OWNERS MNL MFS DX ENG	
403	SGM-2675	POLYETHYLENE BAG, 240 X 370	
404	220-5576	KEY MASTER FOR 220-5575	
405	SGM-4111	KEY BAG (SGB-1035X)	
406	600-6618	AC CABLE CONNECT TYPE FOR EXP	OTHERS
	600-6619-01	AC CABLE CONNECT TYPE FOR UK	HONG KONG
	600-6695	AC CABLE CONNECT TYPE USA 15A	USA
	600-6729	AC CABLE CONNECT TYPE 15A	TAIWAN
	600-6724	AC CABLE CONNECT TYPE 15A	TAIWAN
407	600-6664-02	WIRE HARN EARTH W/LUG M6	TAIWAN
		NOT USED	OTHERS
408	220-5373	VOL CONT B-5K	
	220-5484	VOL CONT B-5K OHM	
409	BSS-0001	LINE BSS	
411	514-5086-2500	FUSE S.B 2500MA 250V HBC CE	
412	BSS-3022Y	ASSY ROD	
413	420-6455-01	SERVICE MANUAL NAOMI ENG	
414	280-5009-01	CORD CLAMP 21	
/	GPD-0002X	SHIPPING BRKT	
/	BSS-0004	SHIPPING BRKT	
/	030-000820-S	HEX BLT W/S M8 X 20	
/	060-F00800	FLT WSHR M8	
/	421-8740	CAUTION INSTR COP U/R	
/	421-9768	CAUTION INSTR CARDBOARD	
/	421-6690-01	STICKER 120V	AC 120V AREA
/	421-6690-03	STICKER 220V	AC 220V AREA
/	421-6690-05	STICKER 240V	AC 240V AREA
/	421-6690-06	STICKER 110V	AC 110V AREA
/	421-9710- ~	STICKER DENOMI ~	
/	421-6119-91	STICKER FCC	
/	421-6120-92	STICKER SEGA USA	USA



② ASSY CHASSIS (MFS-1000)

(D-2/3)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1001	ASSY SUB CHASSIS	
2	MFS-1100	AC UNIT	
3	MFS-1200	ASSY FRONT DOOR	
4	MFS-1250	ASSY LID	
5	MFS-1300	ASSY COIN CHUTE TOWER	
6	BSS-2000	ASSY X MECHA	
7	MFS-2500	ASSY REACTION MECHA	
8	MFS-4000	ASSY MAIN BD MFS	
9	BSS-4100	ASSY POWER SPLY	
10	BSS-4200	ASSY I/O BD BSS	
11	MFS-4300	ASSY DRIVER& BD	USA
	MFS-4300-01	ASSY DRIVER& BD W/O XFMR	OTHERS
12	MFS-1008	X MECHA COVER	
13	BSS-1017Y	HINGE MEMBER UP	
14	MFS-1010	SIDE LID A	
15	BSS-1028	GUARD STICKER B	
16	MFS-1400	ASSY ROD DAMPER	
18	BSS-1470	METER UNIT	
19	BSS-1472	METER HOLE LID	OTHERS
		Locally supplied.	USA
20	253-5366	CASH BOX	
21	MFS-1011-01	STICKER STEP L ENG	
22	MFS-1012-01	STICKER STEP R ENG	
23	MFS-1013	STICKER BASE L	
24	MFS-1014	STICKER BASE R	
25	440-CS0175-EG	STICKER C EPILEPSY ENG	
27	440-WS0002XEG	STICKER W POWER OFF ENG	
101	280-5124-24	NYLON CLAMP NK24	
102	280-5275-SR10	CORD CLAMP SR10	
201	000-T00412-0B	M SCR TH BLK M4 X 12	
202	000-P00412-W	M SCR PH W/FS M4 X 12	
203	000-P00430-S	M SCR PH W/S M4 X 30	
204	000-P00510-W	M SCR PH W/FS M5 X 10	
205	000-P00525-S	M SCR PH W/S M5 X 25	
206	000-T00416-0B	M SCR TH BLK M4 X 16	
207	030-000816-S	HEX BLT W/S M8 X 16	
208	068-441616	FLT WSHR 4.4-16 X 1.6	
209	068-552016	FLT WSHR 5.5-20 X 1.6	
210	030-000612-S	HEX BLT W/S M6 X 12	
211	060-F00600-0B	FLT WSHR BLK M6	
212	000-T00425-0C	M SCR TH CRM M4 X 25	
213	050-H00600	HEX NUT M6	
214	060-S00600	SPR WSHR M6	

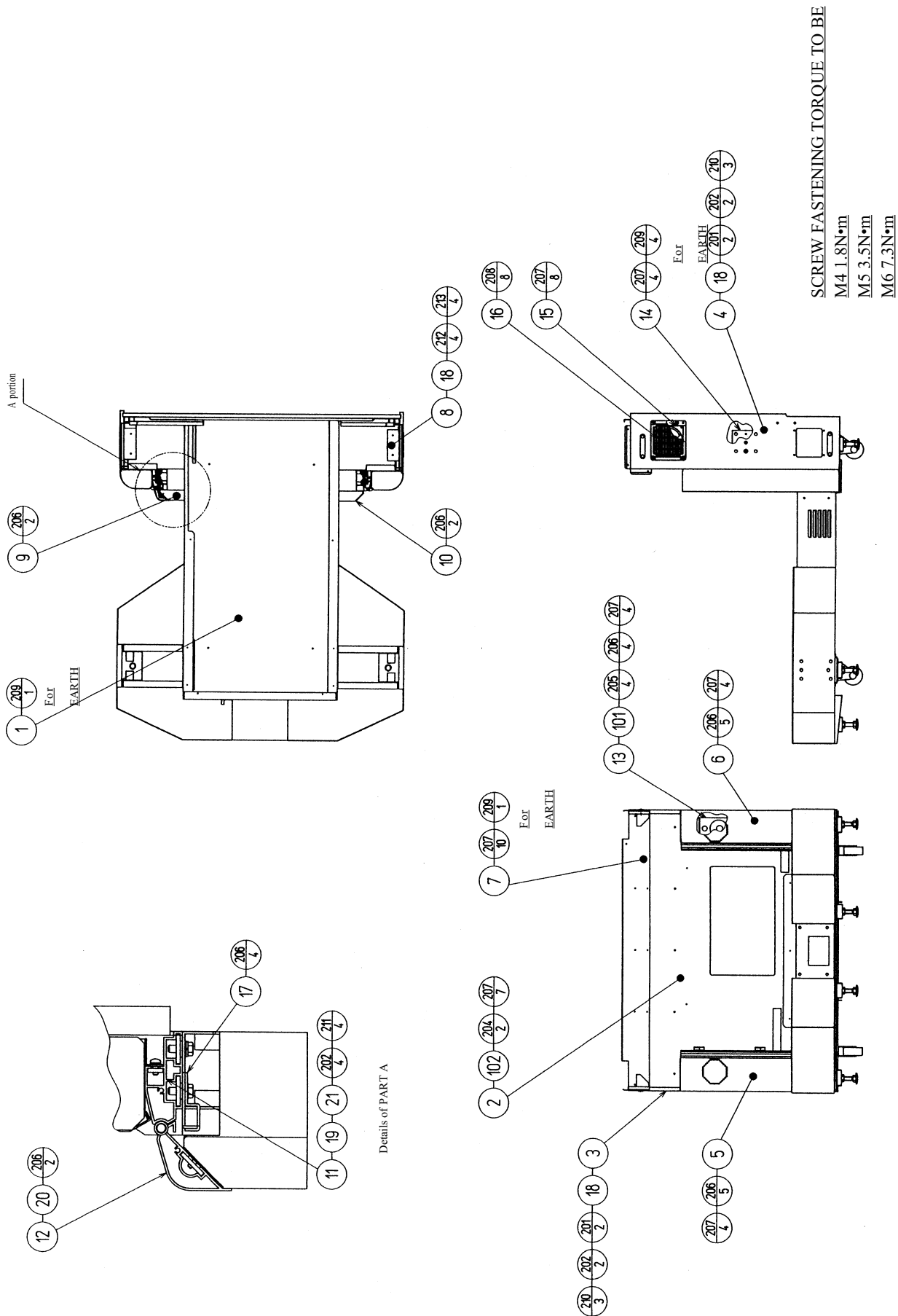
② ASSY CHASSIS (MFS-1000)

(D-3/3)

ITEM NO.	PART NO.	DESCRIPTION
215	008-T00408-0C	TMP PRF SCR TH CRM M4 X 8
216	008-T00412-0B	TMP PRF SCR TH BLK M4 X 12
217	000-P00516-W	M SCR PH W/FS M5 X 16
218	068-441616-0C	FLT WSHR CRM 4.4-16 X 1.6
219	000-P00408-W	M SCR PH W/FS M4 X 8
220	068-652016	FLT WSHR 6.5-20 X 1.6
221	050-H00400	HEX NUT M4
222	060-S00400	SPR WSHR M4
223	060-F00400	FLT WSHR M4
224	000-P00425-S	M SCR PH W/S M4 X 25
301	600-6972-0500	WIRE HARN EARTH ID5 0500MM

3 ASSY SUB CHASSIS (MFS-1001)

(D-1/2)

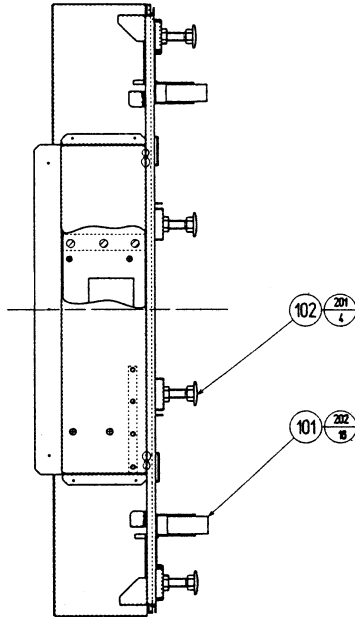


③ ASSY SUB CHASSIS (MFS-1001)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1002	CHASSIS	
2	BSS-1003X	BACK BOARD	
3	MFS-1003	SIDE PNL L	
4	MFS-1004	SIDE PNL R	
5	MFS-1005	SIDE TUBE L	
6	MFS-1006	SIDE TUBE R	
7	BSS-1008	MECHA COVER BRKT	
8	BSS-1009	X MECHA HOLDER	
9	MFS-1007	DUMY FRAME L	
10	MFS-1009	DUMY FRAME R	
11	BSS-1012	NUT PLATE	
12	BSS-1013	NUT PLATE DUMY	
13	BSS-1014	SPEAKER BRKT	
14	BSS-1015	FENCE MOUNT PLATE	
15	BSS-1900	ASSY FAN MOTOR	
16	253-5460-01	AIR VENT BLACK	
17	BSS-1027X	HOOK BRKT	
18	117-5284	PLATE 6-80 BLACK	
19	105-5272-633	FRONT FRAME 633	
20	105-5273-91-200	DOOR FRAME 200	
21	BSS-1020	NUT PLATE TUBE	
101	130-5124	SPEAKER MINI BOX 4OHM 10W	
102	270-5022-01	NOISE FILTER 20A	OTHERS
	270-5120	N.F 10A CE	AUSTRALIA
103	280-5009-01	CORD CLAMP 21	
104	280-5277	CORD CLAMP 18	
105	280-0419	HARNES LUG	
106	280-5275-SR10	CORD CLAMP SR10	
201	030-000630-SB	HEX BLT BLK W/S M6 X 30	
202	060-F00600-0B	FLT WSHR BLK M6	
203	011-F00310	TAP SCR FH 3 X 10	
204	011-T03512	TAP SCR TH 3.5 X 12	
205	000-P00510-W	M SCR PH W/FS M5 X 10	
206	000-P00412-W	M SCR PH W/FS M4 X 12	
207	000-P00416-W	M SCR PH W/FS M4 X 16	
208	000-T00416-0B	M SCR TH BLK M4 X 16	
209	000-P00408-W	M SCR PH W/FS M4 X 8	
210	000-P00430-W	M SCR PH W/FS M4 X 30	
211	030-000612-S	HEX BLT W/S M6 X 12	
212	031-000630-0B	CRG BLT BLK M6 X 30	
213	050-F00600	FLG NUT M6	
301	BSS-1800	ASSY WIRE	
302	600-6957-003	WIRE HARN NOISE FILTER IN	
303	600-6957-004	WIRE HARN NOISE FILTER OUT	
304	MFS-60008	WIRE HARN SERVO EXT	
305	MFS-60009	WIRE HARN SERVO DATA EXT	
306	600-6972-0200	WIRE HARN EARTH ID5 0200MM	
307	600-6972-0250	WIRE HARN EARTH ID5 0250MM	
308	600-6972-0550	WIRE HARN EARTH ID5 0550MM	
/	600-6957-081	WIRE HARN AMP AC EXT	
/	600-6957-076	WIRE HARN EARTH NOISE FILTER	AUSTRALIA

④ CHASSIS (MFS-1002)



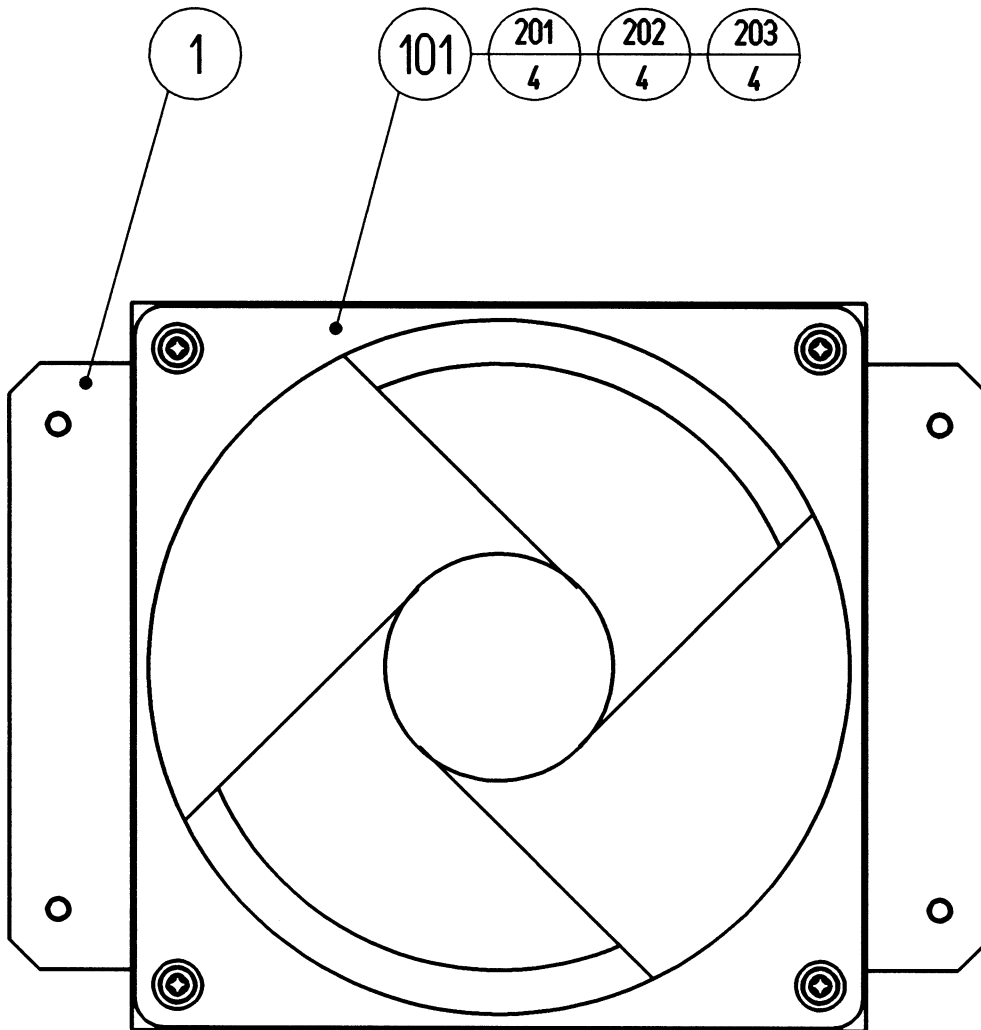
ITEM NO.	PART NO.	DESCRIPTION
101	601-9377	CASTER FAI=75
102	601-5699X	LEG ADJUSTER BOLT M16 X 75
201	050-H01600-0B	HEX NUT BLK M16
202	030-000812-S	HEX BLT W/S M8 X 12

⑤ ASSY WIRE (BSS-1800)

ASSY WIRE (BSS-1800) is comprised of the following wire harnesses.
An ASSY DRG. is unavailable.

ITEM NO.	PART NO.	DESCRIPTION
101	601-0460	PLASTIC TIE BELT 100 MM
301	600-6957-011	WIRE HARN DC EXT
302	600-6957-012	WIRE HARN CONT EXT
303	600-6957-013	WIRE HARN MODE EXT
304	600-6957-014	WIRE HARN DATA EXT
305	600-6957-015	WIRE HARN SOUND EXT
306	600-6957-017-91	WIRE HARN AC EXT B
307	600-6957-019	WIRE HARN DC MOTOR EXT
308	600-6957-021-91	WIRE HARN SPEAKER EXT
309	600-6957-024-92	WIRE HARN ROD CONT EXT
310	600-6957-025	WIRE HARN VOL EXT
311	600-6957-026	WIRE HARN COIN EXT
312	600-6957-027	WIRE HARN SERVO CONT EXT
313	600-6957-028	WIRE HARN REACTION EXT
314	600-6957-020	WIRE HARN MOTOR CONT EXT
315	600-6957-005	WIRE HARN AC EXT A

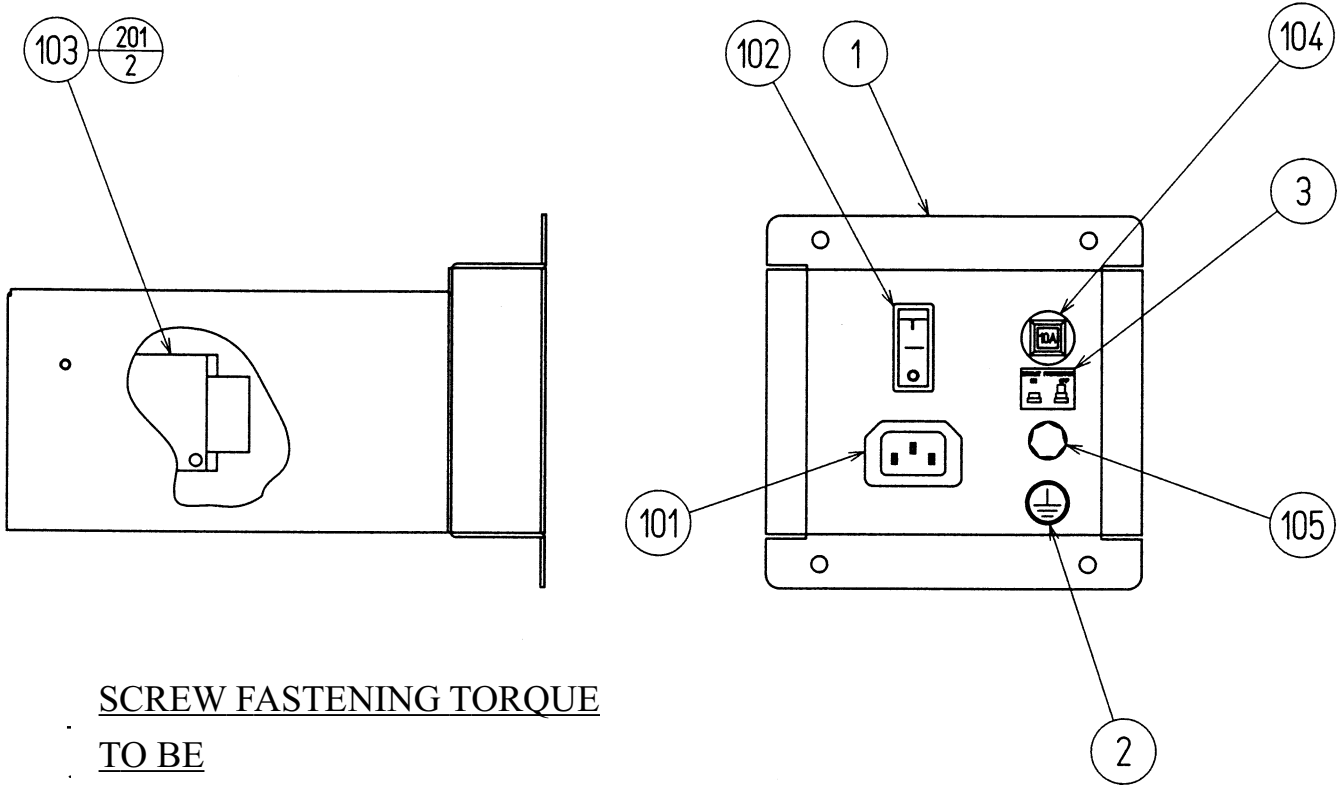
⑥ ASSY FAN MOTOR (BSS-1900)



SCREW FASTENING TORQUE TO BE
M3 0.8 N•m

ITEM NO.	PART NO.	DESCRIPTION
1	TCW-3071	FAN BRKT
101	260-0011-02	AXIAL FLOW FAN AC100V 50-60HZ
102	280-5275-SR10	CORD CLAMP SR10
201	000-P00345	M SCR PH M3 X 45
202	060-F00300	FLT WSHR M3
203	060-S00300	SPR WSHR M3
301	600-6957-018	WIRE HARN FAN MOTOR

⑦ AC UNIT (MFS-1100)

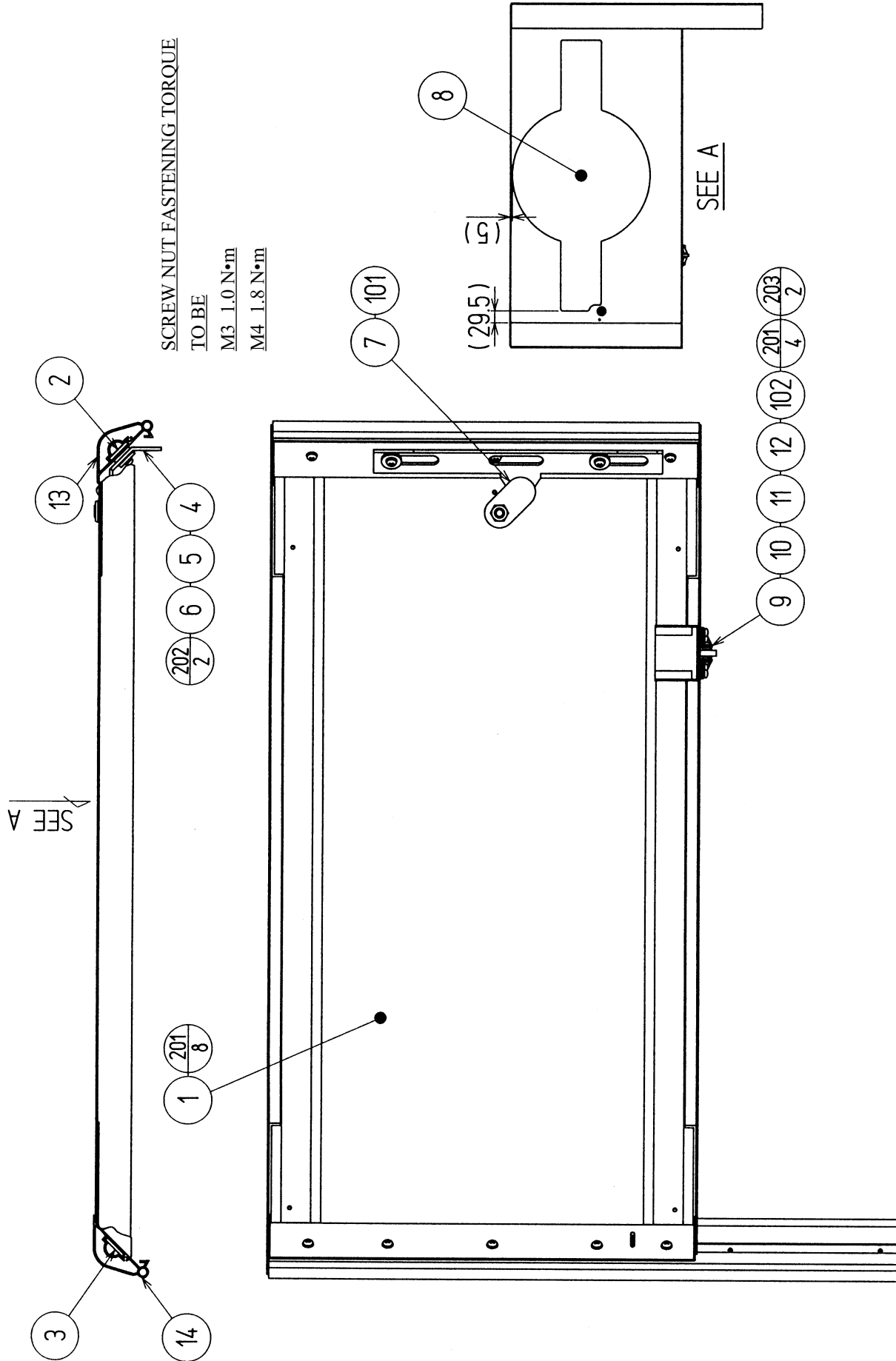


SCREW FASTENING TORQUE

TO BE

M4 1.8 N•m

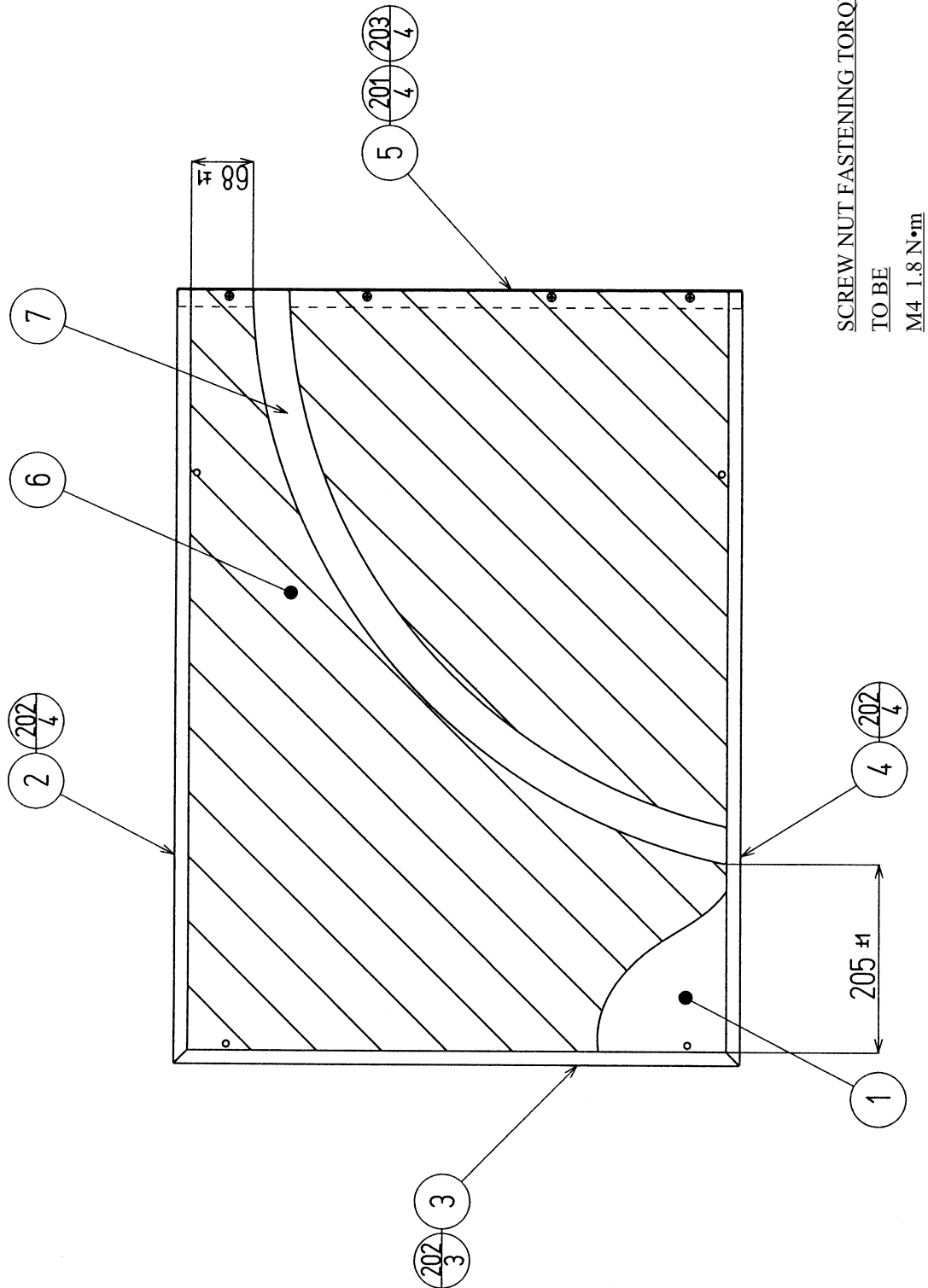
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1101	AC BRKT	
2	421-8202	SW ROCKER J8 V-B	
3	421-7468-01	STICKER C.P W/PIC	
101	214-0202	AC INLET PANEL TYPE	
102	509-5453-91-V-B	SW ROCKER J8 V-B	
103	450-5126	MAGNET CONTACT S-NIOCX	TAIWAN
	450-5135	MAGNET CONTACT S-NIOCX AC 120V	USA
	450-5133	MAGNET CONTACT S-NIOCX AC 200V	KOREA
	450-5134	MAGNET CONTACT S-NIOCX AC 230V	OTHERS
104	512-5046-10000	C.P 10000MA CE UL	AC 100 ~ 120V AREA
	512-5046-5000	C.P 5000MA CE UL	AC 220 ~ 240V AREA
105	280-0417	TERMINAL BINDING POST BLACK	TAIWAN
		NOT USED	OTHERS
106	280-5275-SR10	CORD CLAMP SR10	
201	000-P00416-W	M SCR PH W/FS M4 X 16	
301	600-6957-001	WIRE HARN AC UNIT IN	
302	600-6957-002	WIRE HARN AC UNIT OUT	



⑧ ASSY FRONT DOOR (MFS-1200)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	MFS-1201	FRONT DOOR
2	BSS-1202	NUT PLATE DOOR L
3	BSS-1203	NUT PLATE DOOR R
4	BSS-1204	HOOK
5	ARM-1105	SPACER
6	ARM-1106	WASHER
7	ARM-1107	LINK TNG
8	MFS-1202	STICKER FRONT DOOR
9	BSS-1206	SHAFT
10	BSS-1207	SHAFT BRKT L
11	BSS-1208	SHAFT BRKT R
12	BSS-1209	COLLAR
13	105-5273-91-429	DOOR FRAME 429
14	105-5273-91-631	DOOR FRAME 631
101	220-5575	CAM LOCK MASTER W/O KEY
102	100-5301	BEARING 6
201	000-P00412-W	M SCR PH W/FS M4 X 12
202	000-P00420-W	M SCR PH W/FS M4 X 20
203	000-P00306-W	M SCR PH W/FS M3 X 6

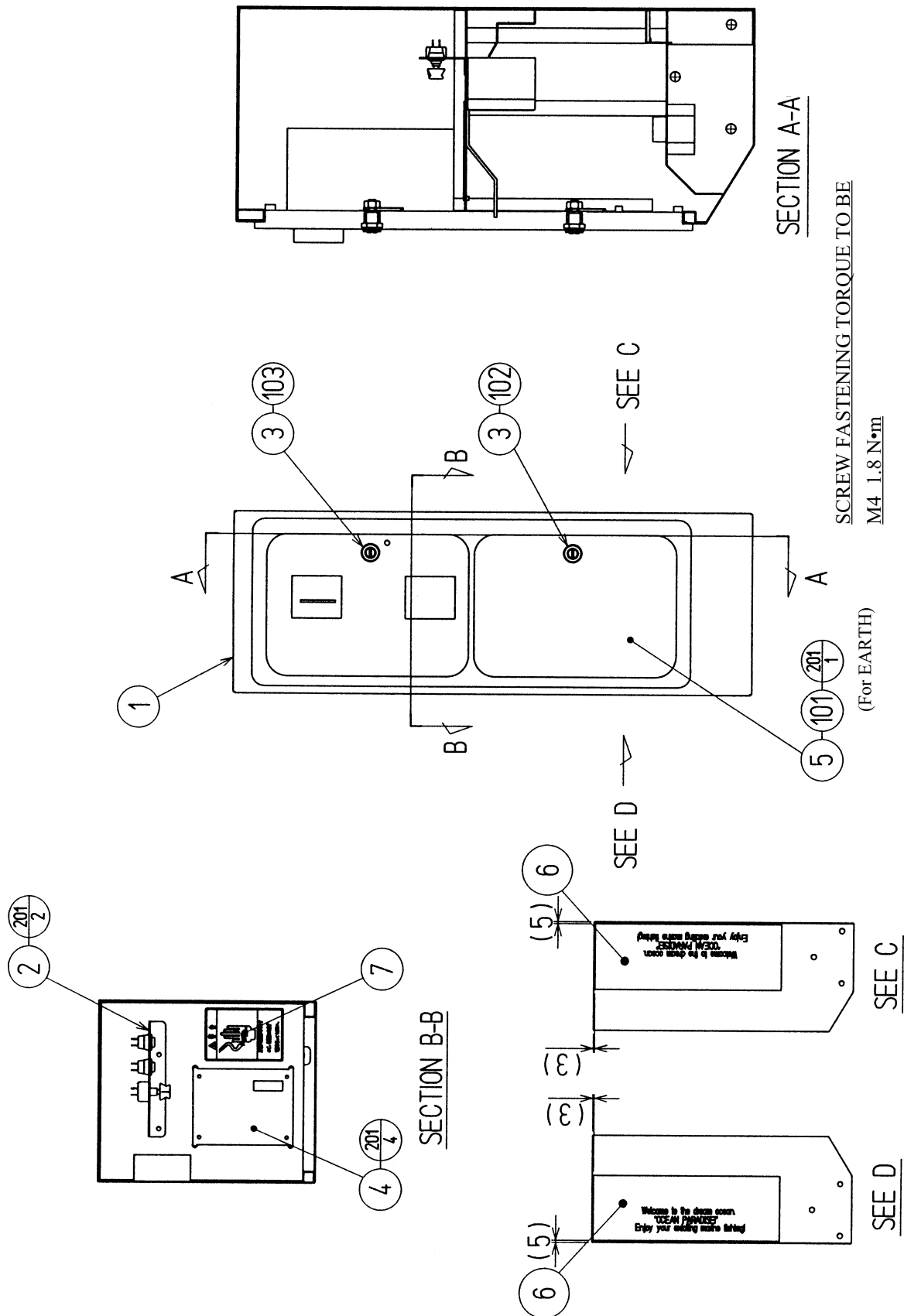


SCREW NUT FASTENING TORQUE
TO BE
M4 1.8 N•m

⑨ ASSY LID (MFS-1250)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-1251	LID
2	BSS-1252	SASH LL
3	BSS-1253	SASH S
4	BSS-1254	SASH LR
5	BSS-1255	DOOR MASK
6	MFS-1251	STICKER LID MAP
7	BSS-1258	GUARD STICKER A
201	000-T00420-0B	M SCR TH BLK M4 X 20
202	050-F00400	FLG NUT M4
203	068-441616-0B	FLT WSHR BLK 4.4-16 X 1.6

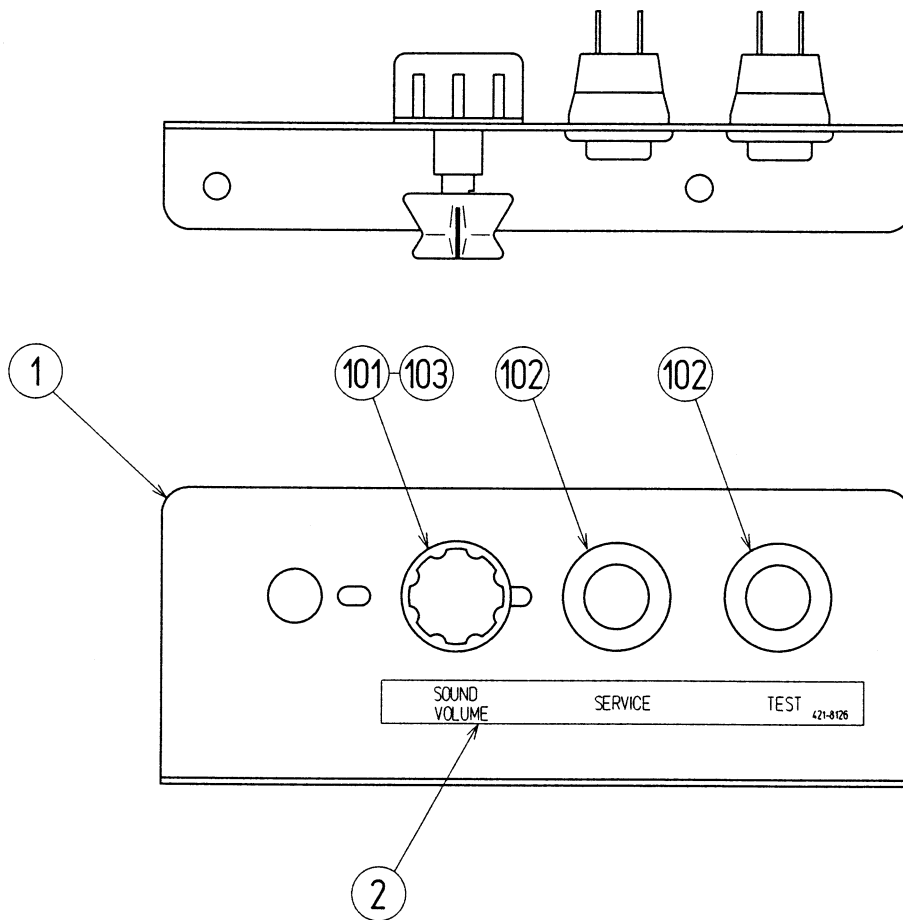


⑩ ASSY COIN CHUTE TOWER (MFS-1300)

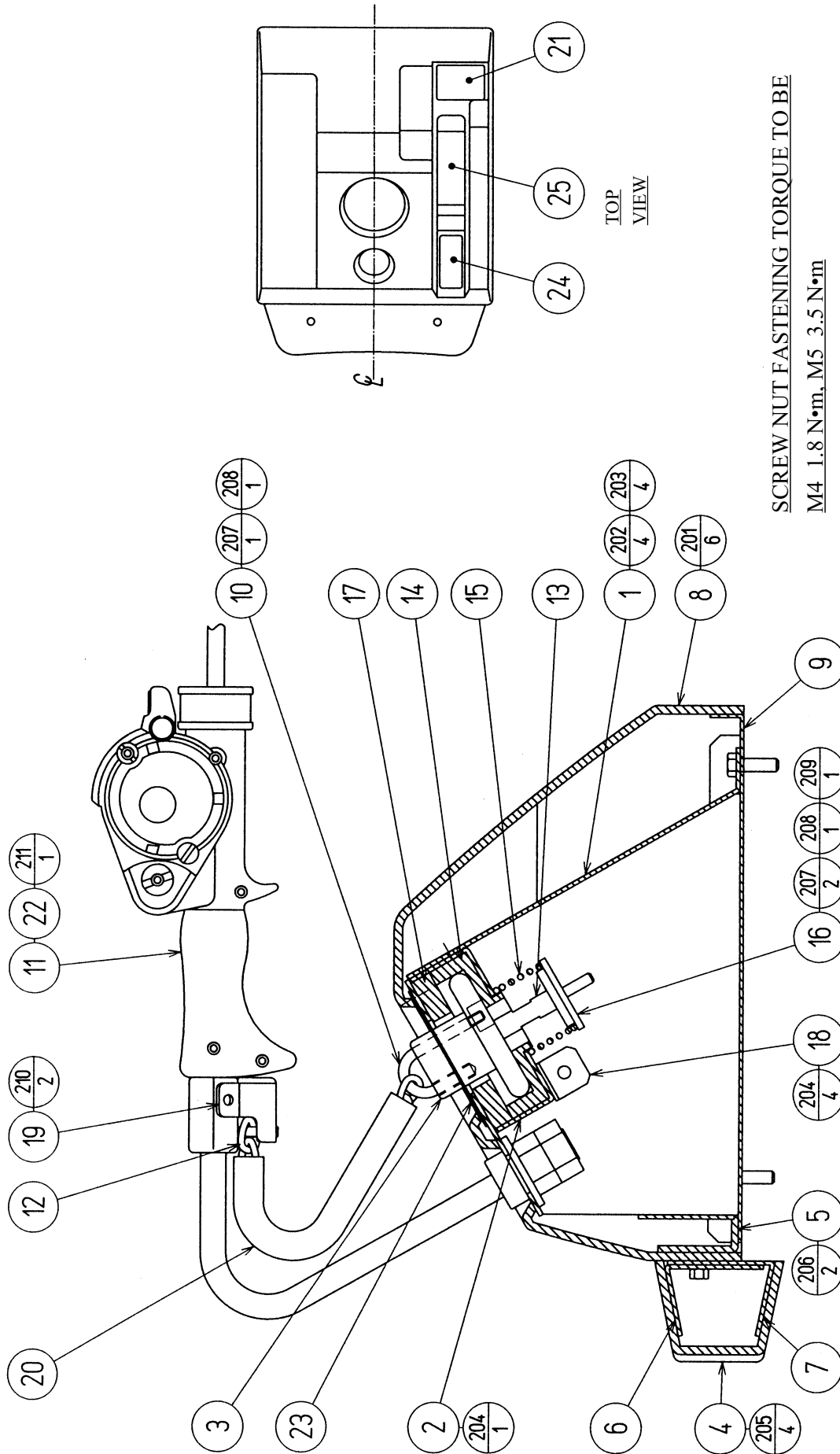
(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1301	COIN CHUTE TOWER	
2	MJT-3550	SW UNIT	
3	DP-1167	TNG LKG Locally supplied.	OTHERS USA
4	105-5171	CHUTE PLATE SINGLE	OTHERS
	105-5172	CHUTE PLATE DOUBLE	USA
5	421-7501-02	STICKER 6.3V 0.15A Locally supplied.	OTHERS USA
6	MFS-1302	STICKER COIN TOWER	
7	440-WS0002XEG	STICKER W POWER OFF ENG	
101	220-5482-91- ~ 220-5237-92- ~	ASSY C.C 2DR ~ ASSY C.C 2DR ~ Locally supplied.	HONG KONG,KOREA,TAIWAN OTHERS USA
102	220-5574	CAM LOCK W/KEYS Locally supplied.	OTHERS USA
103	220-5575	CAM LOCK MASTER W/O KEY Locally supplied.	OTHERS USA
104	280-5277	CORD CLAMP 18	
105	280-5275-SR10	CORD CLAMP SR10	
106	310-5029-F20	SUMITUBE F F 20MM Locally supplied.	OTHERS USA
107	601-0460	PLASTIC TIE BELT 100 MM	
201	000-P00408-W	M SCR PH W/FS M4 X 8	
301	600-6455-02 600-7134	WIRE HARN C.C DOOR SINGLE WIRE HARN COIN CHUTE 2	OTHERS USA
302	600-6957-059-91	WIRE HARN COIN CHUTE TOWER A	
303	600-6957-060-91	WIRE HARN COIN CHUTE TOWER B	
304	600-6972-0200	WIRE HARN EARTH ID5 0200MM	
305	600-6957-062	WIRE HARN COIN CHUTE TOWER C	
306	600-6957-077	WIRE HARN EARTH ROD	

⑪ SW UNIT (MJT-3550)



ITEM NO.	PART NO.	DESCRIPTION
1	INY-1181	SW BRKT
2	421-8126	STICKER SWITCH PANEL
101	220-5179	VOL CONT B-5K OHM
102	509-5028	SW PB 1M
103	601-0042	KNOB 22 MM
104	310-5029-D20	SUMITUBE F D 20 MM
105	601-0460	PLASTIC TIE BELT 100 MM
301	600-6609-32	WIRE HARN TEST & SERVICE
302	600-6609-33	WIRE HARN VOLUME A



TOP VIEW

SECTION at C.L.

SCREW NUT FASTENING TORQUE TO BE
 M4 1.8 N•m, M5 3.5 N•m
 M5NUT 6.0 N•m
 M6NUT 9.0 N•m
 M20NUT 110 N•m

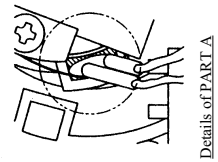
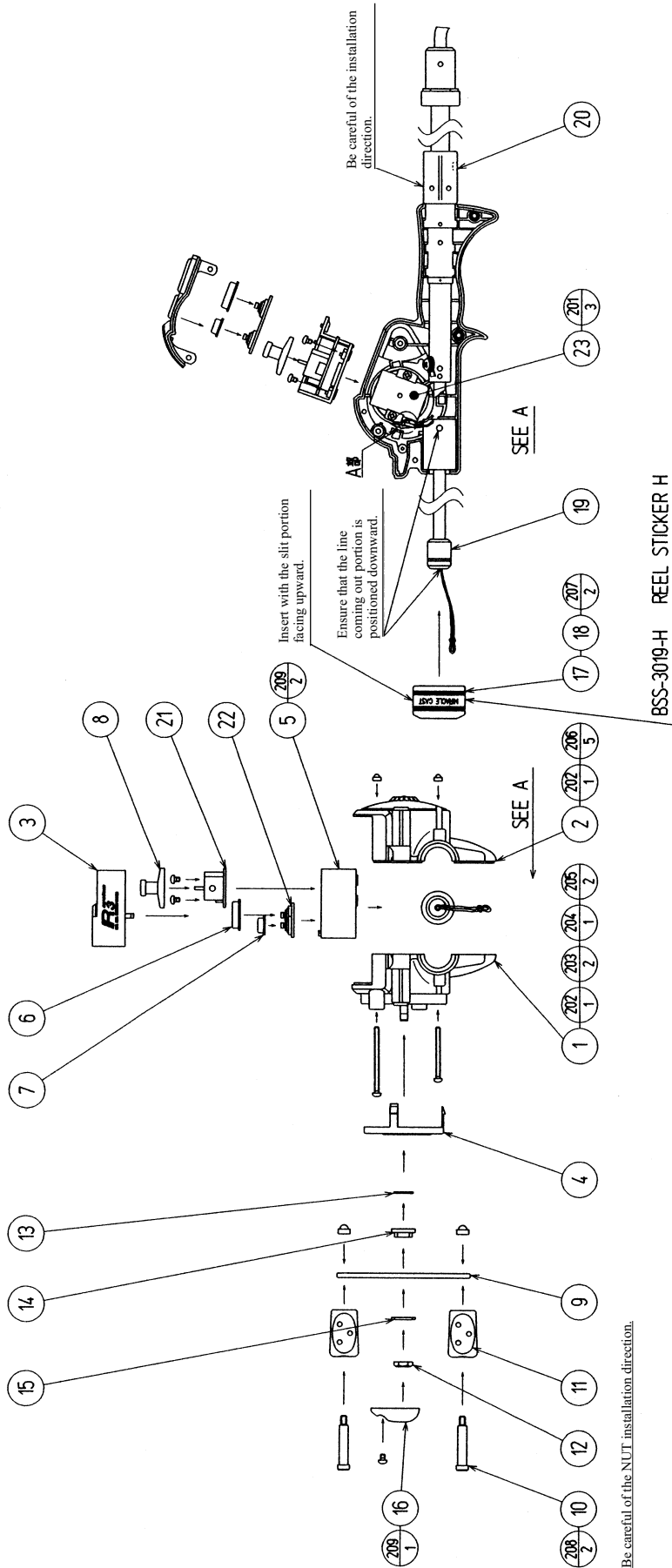
⑫ ASSY ROD DAMPER (MFS-1400)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-1401X	BASE HOLDER
2	BSS-1402	MECHA BASE
3	BSS-1403	DAMPER BOSS
4	MFS-1401	FRONT COVER
5	BSS-1405	FRONT COVER BASE
6	BSS-1406	FRONT COVER BRKT A
7	BSS-1407	FRONT COVER BRKT B
8	MFS-1402	TOWER COVER
9	BSS-1409	COVER BASE
10	BSS-1411	CHAIN HOLDER
11	BSS-3000Y	ASSY ROD CONTROLLER
12	BSS-3057	SUPPORT CHAINS BSS
13	BSS-1412	SPRING SHAFT
14	BSS-1413	BOSS HOLDER
15	AIN-2206	COM SPRING
16	BSS-1414	SPRING HOLDER
17	BSS-1415	DAMPER RING
18	BSS-1416	L BRKT
19	BSS-3056	STOPPER BRKT BSS
20	BSS-3058	TUBE FOR CHAINS
21	BSS-1417-01	STICKER ROD HOLDER ENG
22	BSS-1418	SPECIAL NUT M20
23	BSS-1419	SLIDE PLATE
24	BSS-1420	RUBBER SHEET
25	MFS-1403	STICKER ROD END
201	000-T00412-0B	M SCR TH BLK M4 X 12
202	050-H00600	HEX NUT M6
203	060-S00600	SPR WSHR M6
204	000-P00510-W	M SCR PH W/FS M5 X 10
205	047-PA3204-4	RVT OPEN TYPE AL 3.2 X 4.4
206	000-P00520-W	M SCR PH W/FS M5 X 20
207	050-H00500	HEX NUT M5
208	060-S00500	SPR WSHR M5
209	068-552016	FLT WSHR 5.5-20 X 1.6
210	000-T00408-0C	M SCR TH CRM M4 X 8
211	FAS-600012	FLT WSHR BLK M20

13 ASSY ROD CONTROLLER (BSS-3000Y)

(D-1/2)



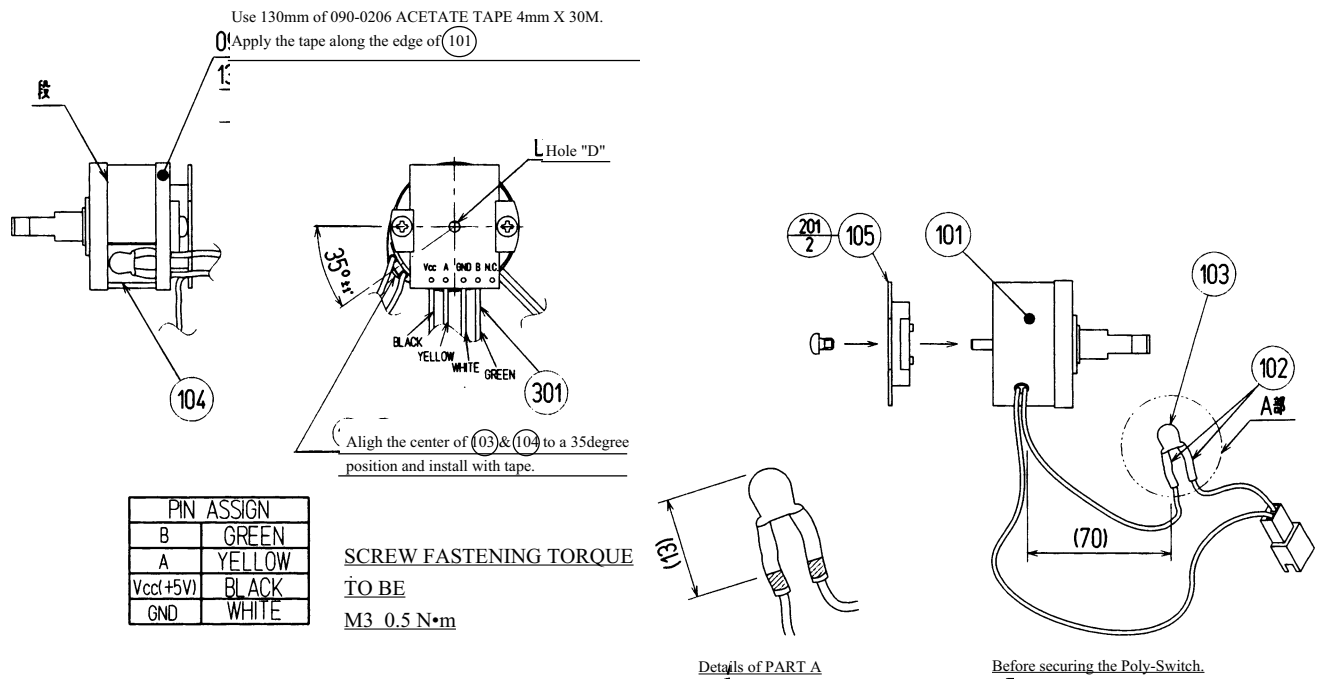
SCREW FASTENING TORQUE TO BE
M3 0.8 N•m M4 CAP NUT 2.5 N•m

⑬ ASSY ROD CONTROLLER (BSS-3000Y)

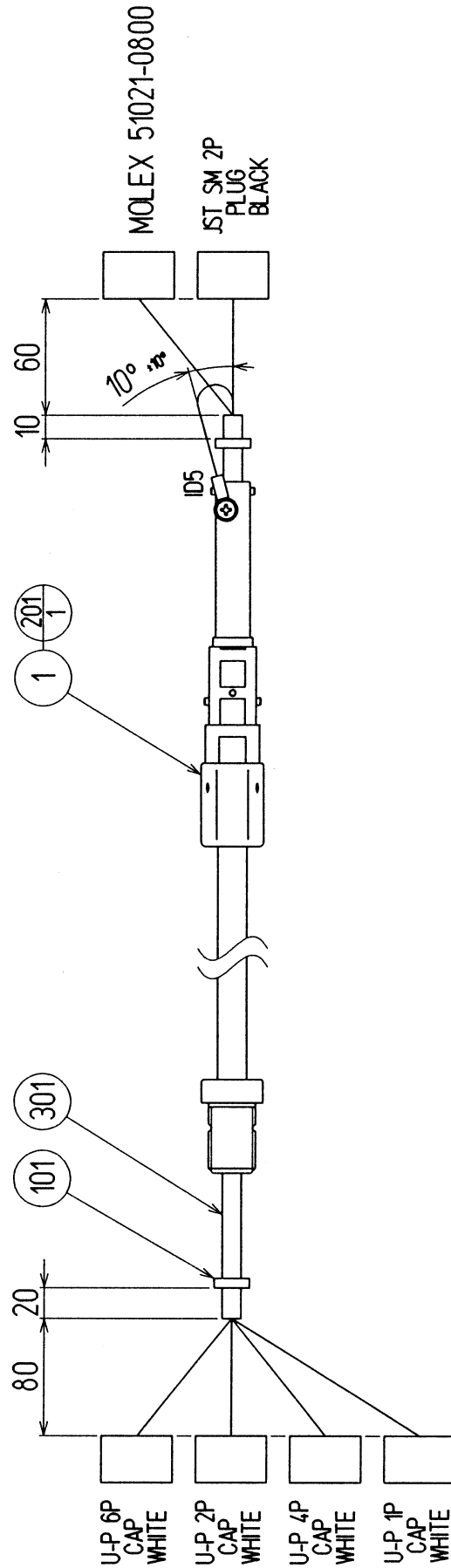
(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-3001XX	COVER R
2	BSS-3002XX	COVER L
3	BSS-3003	COVER U
4	BSS-3004	COVER S
5	BSS-3005	BD HOLDER
6	BSS-3006	CAST SW CAP
7	BSS-3007	SELECT SW CAP
8	BSS-3008	JOY STICK CAP
9	BSS-3009	HANDLE BAR
10	BSS-3010	HANDLE PIN
11	BSS-3011	HANDLE GRIP
12	BSS-3012	ORIGINAL NUT M8
13	BSS-3013	SPACER A
14	BSS-3014	SPACER B
15	BSS-3015	SPACER C
16	BSS-3016Y	HANDLE CAP
17	BSS-3017Y	FRONT RING
18	BSS-3018	FRONT RING SPRING
19	BSS-3022Y	ASSY ROD
20	BSS-3050Y	ASSY TUBE
21	839-1003	STICK CONT BD
22	839-1004	REEL SW BD
23	BSS-3040	ASSY BRAKE W/PS
101	090-0054	SILICON SEAL SHINETSU KE45-100
102	601-0460	PLASTIC TIE BELT 100 MM
201	000-T00306-0U	M SCR TH UCRM M3 X 6
202	000-T00308-0B	M SCR TH BLK M3 X 8
203	000-P00312-0B	M SCR PH BLK M3 X 12
204	FAS-000037	M SCR PH BLK M3 X 35
205	FAS-000038	M SCR PH BLK M3 X 45
206	FAS-500006	CAP NUT TYPE 3 BLK M3
207	028-A00306-P	SET SCR HEX SKT CUP P M3 X 6
208	050-C00400-3C	CAP NUT TYPE3 CRM M4
209	000-P00304-0B	M SCR PH BLK M3 X 4
210	FAS-000045	M SCR PH W/S BLK M3 X 6
301	600-6957-067	WIRE HARN REEL A

14 ASSY BRAKE W/PS (BSS-3040)



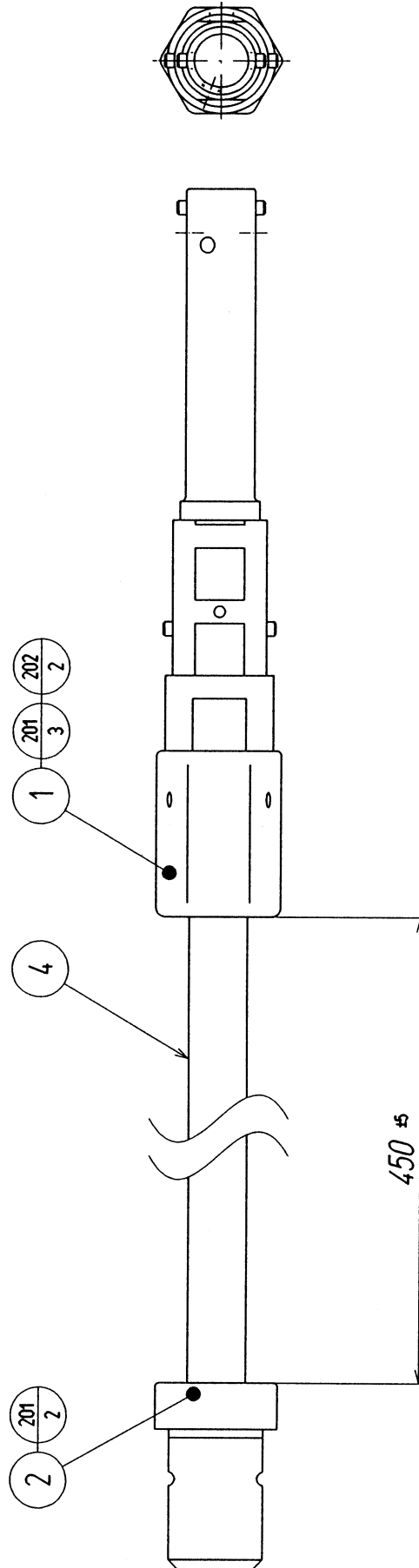
ITEM NO.	PART NO.	DESCRIPTION
101	601-9942	POWDER BRAKE 0.1NM MITSUBISHI
102	310-5029-C20	SUMITUBE F C 20MM
103	512-5052-017	POLYSWITCH RXE017
104	310-5376	SILICONE SHEET
105	370-5165-01-91	ENCODER 100PULSE W/O CONN
106	090-0206	ACETATE TAPE 4MMX 30M
107	601-0460	PLASTIC TIE BELT 100 MM
201	000-P00304-0B	M SCR PH BLK M3 X 4
301	600-6957-068	WIRE HARN REEL B



⑮ ASSY TUBE (BSS-3050Y)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-3060Y	ASSY TUBE W/O WIRE
101	601-0460	PLASTIC TIE BELT 100 MM
201	000-P00406-W	M SCR PH W/FS M4 X 6
301	600-6957-066-92	WIRE HARN FLEX TUBE

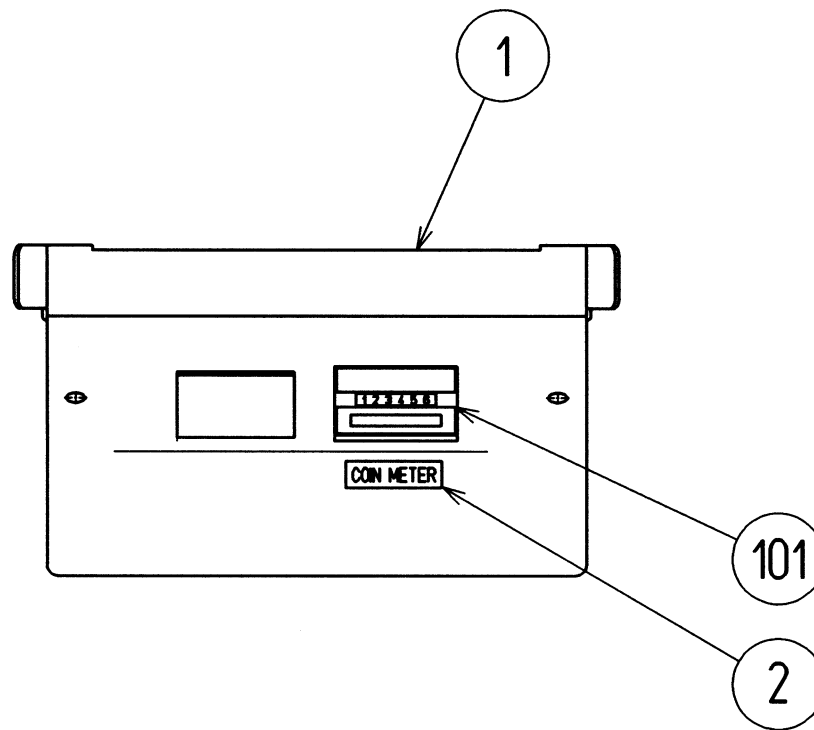


①6 ASSY TUBE W/O WIRE (BSS-3060Y)

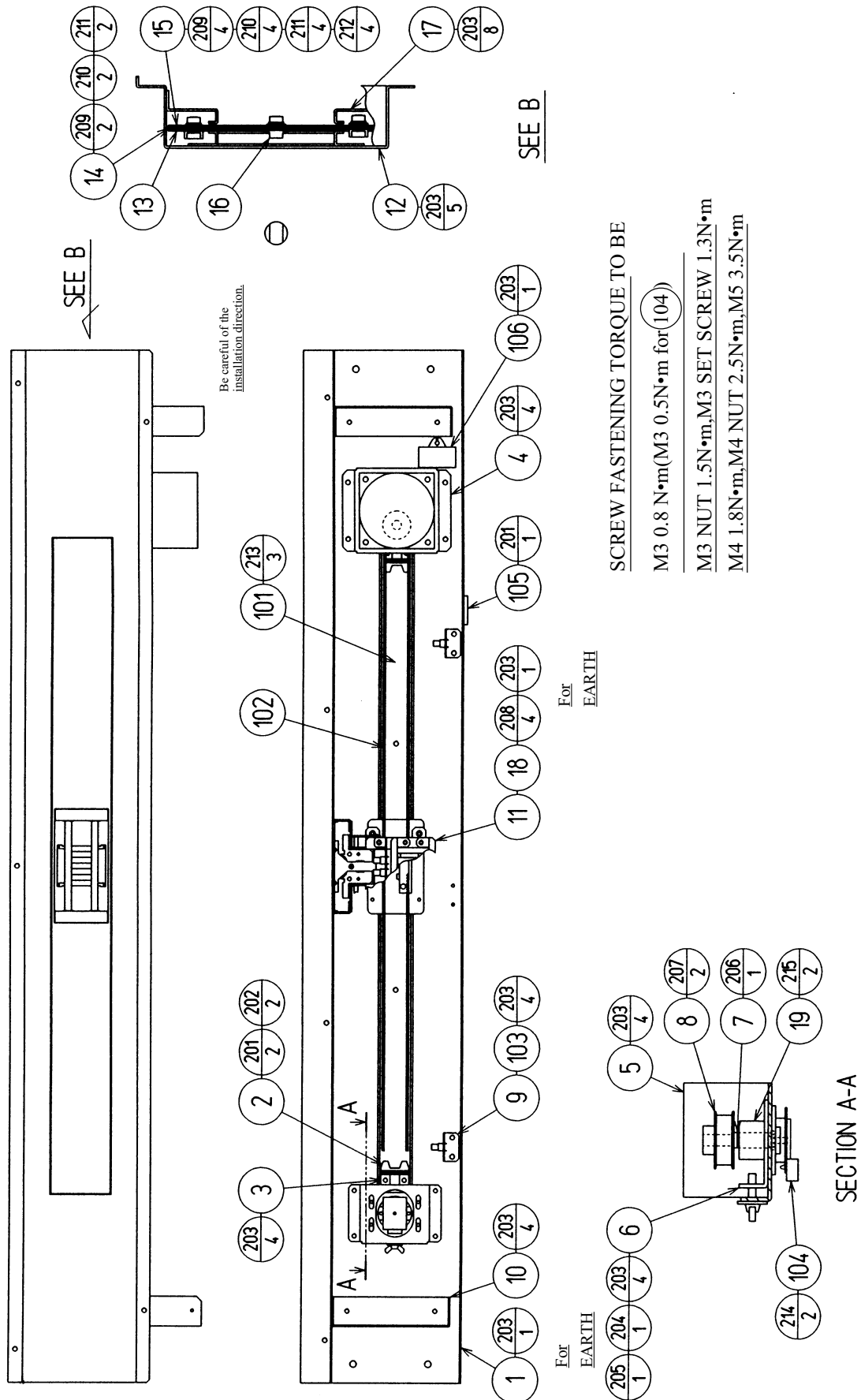
(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-3051Y	TUBE HOLDER FRONT
2	BSS-3052	TUBE HOLDER REAR
4	BSS-3055X	TKK TUBE
201	028-A00404-P	SET SCR HEX SKT CUP P M4 X 4
202	028-0001	SET SCR HEX SKT CP UNBR M3 X 4

①⑦ METER UNIT (BSS-1470)

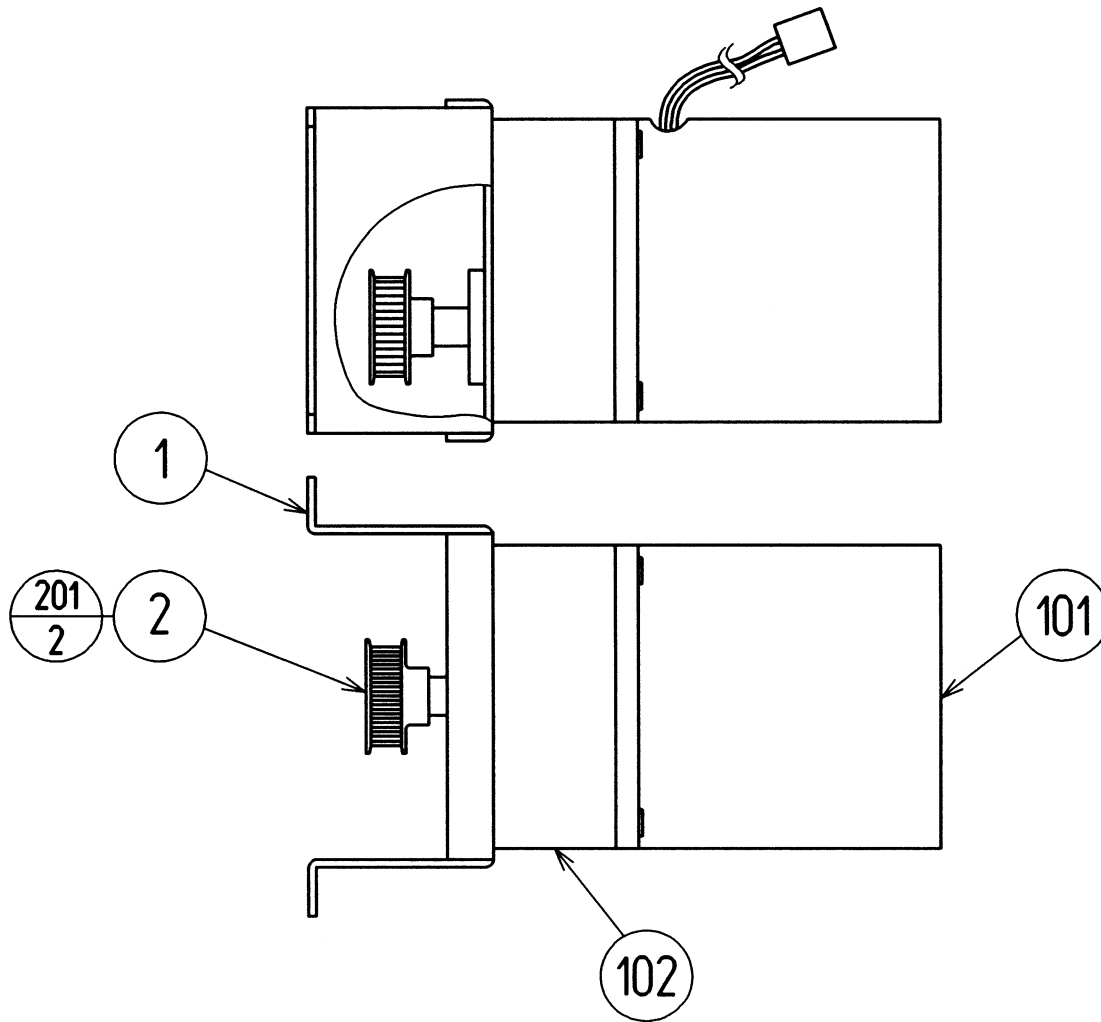


ITEM NO.	PART NO.	DESCRIPTION
1	BSS-1471	METER BRKT
2	421-6591-01	STICKER COIN METER
101	220-5617-01	MAG CNTR DC5V W/CONN 6P WH
102	280-5277	CORD CLAMP 18
/	220-5617-02	MAG CNTR DC5V W/CONN 6P YE



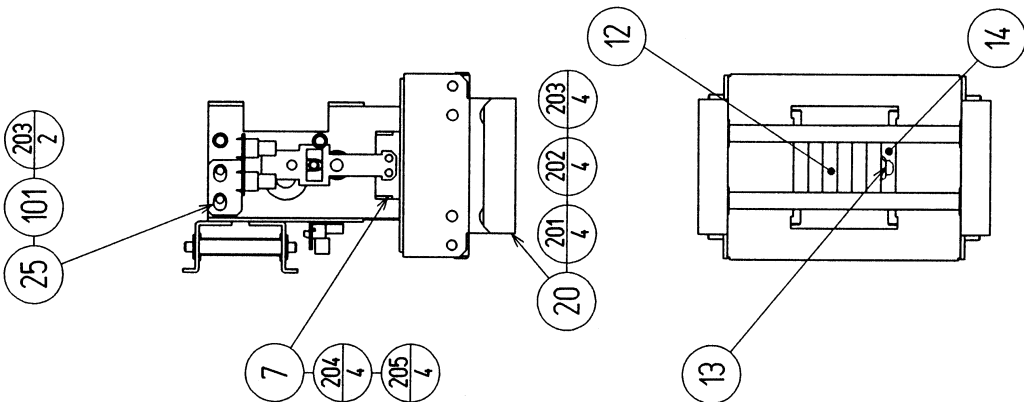
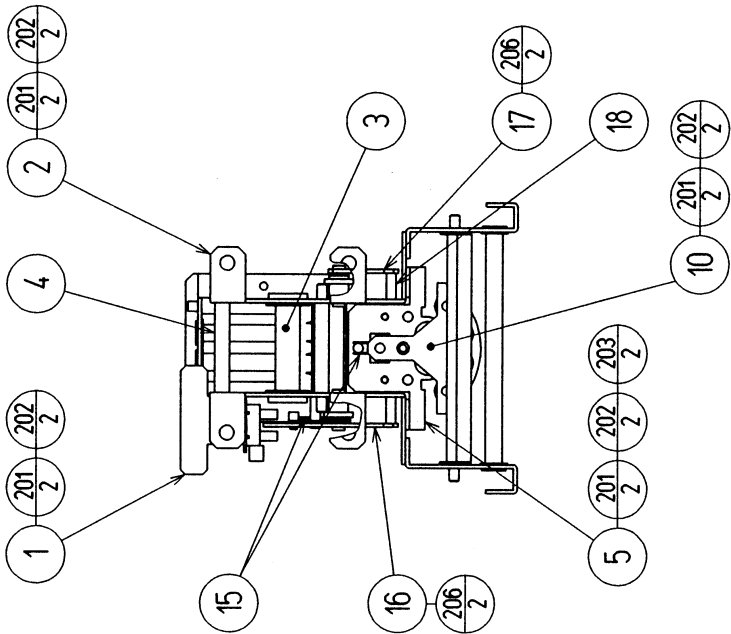
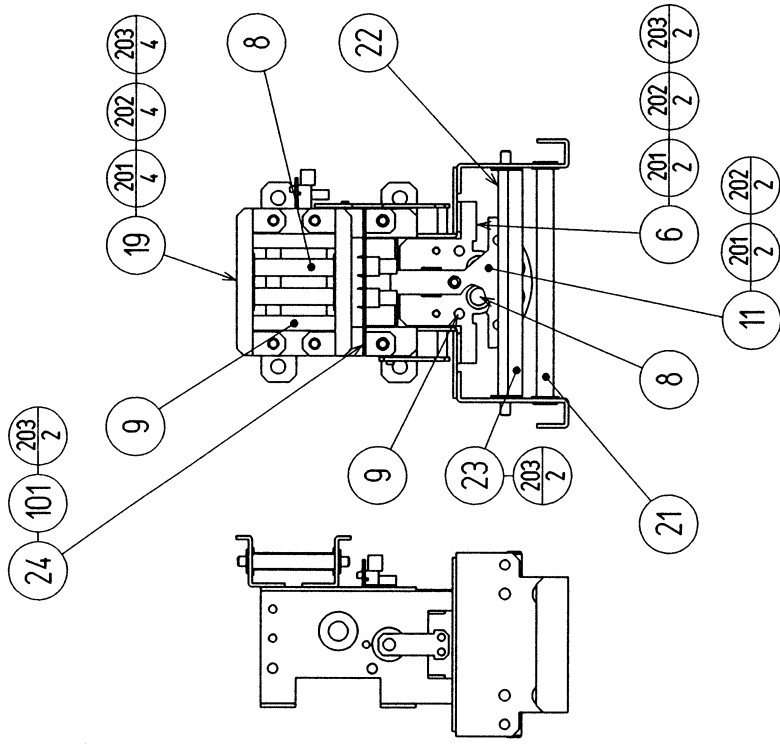
ITEM NO.	PART NO.	DESCRIPTION
1	BSS-2001	RAIL FRAME
2	BSS-2002	RAIL STOPPER
3	BSS-2003	STOPPER BRKT
4	BSS-2050	ASSY MOTOR
5	BSS-2005	PULLEY BASE X
6	BSS-2006	PULLEY BRKT X
7	BSS-2007	PULLEY SHAFT
8	601-7053	PULLEY A FOR 610-0270X
9	BSS-2008	SENSOR BRKT X
10	BSS-2009	FRAME STAY
11	BSS-2100	SENSOR UNIT
12	BSS-2010	SLIT BASE
13	BSS-2011X	SLIDE PLATE A
14	BSS-2012X	SLIDE PLATE B
15	BSS-2013X	SLIDE PLATE C
16	BSS-2014	SLIDE PIN
17	BSS-2015	SLIDE PLATE HOLDER
18	BSS-0001	LINE BSS
19	BSS-2004	PULLEY BOSS X
101	610-6687	SLIDE PACK L=783
102	601-9973	TIMING BELT L=1512
103	370-5161	PHOTO INTERRUPTER GP1A71A
104	370-5165-91	ENCODER 100PULSE
105	280-5277	CORD CLAMP 18
106	152-0231	CAP FILM MOPC9.5M20
108	280-5275-SR10	CORD CLAMP SR10
201	000-F00312	M SCR FH M3 X 12
202	050-H00300	HEX NUT M3
203	000-P00410-W	M SCR PH W/FS M4 X 10
204	032-000416	WING BLT M4 X 16
205	068-441616	FLT WSHR 4.4-16 X 1.6
206	FAS-650010	STP RING BLK OZ S8
207	028-P00310-P	SET SCR PH CUP P M3 X 10
208	000-P00510-W	M SCR PH W/FS M5 X 10
209	050-H00400	HEX NUT M4
210	060-S00400	SPR WSHR M4
211	060-F00400	FLT WSHR M4
212	060-F00500	FLT WSHR M5
213	000-P00408-S	M SCR PH W/S M4 X 8
214	000-P00308-S	M SCR PH W/S M3 X 8
215	000-P00406-S	M SCR PH W/S M4 X 6
301	600-6957-048	WIRE HARN X MECHCA EXT
302	600-6957-049	WIRE HARN X TTP LEFT
303	600-6957-050	WIRE HARN X TTP RIGHT
304	600-6957-051	WIRE HARN X MECHA FLEX
305	600-6957-052	WIRE HARN X ENCODER
306	600-6957-053	WIRE HARN AC MOTOR EXT

①9 ASSY MOTOR (BSS-2050)



SCREW FASTENING TORQUE TO BE
M4 1.8 N•m
M4 SET SCREW 2.5 N•m

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-2051	MOTOR BASE AC
2	601-9974	PULLEY P28 10
101	350-5517	MOTOR AC100V 25W 1/5 UL
102	350-5520	GEAR HEAD M8GA5M
104	280-5275-SR10	CORD CLAMP SR10
201	028-P00310-P	SET SCR PH CUP P M3 X 10



SCREW FASTENING TORQUE TO BE

M3	0.8 N•m
M4	1.8 N•m

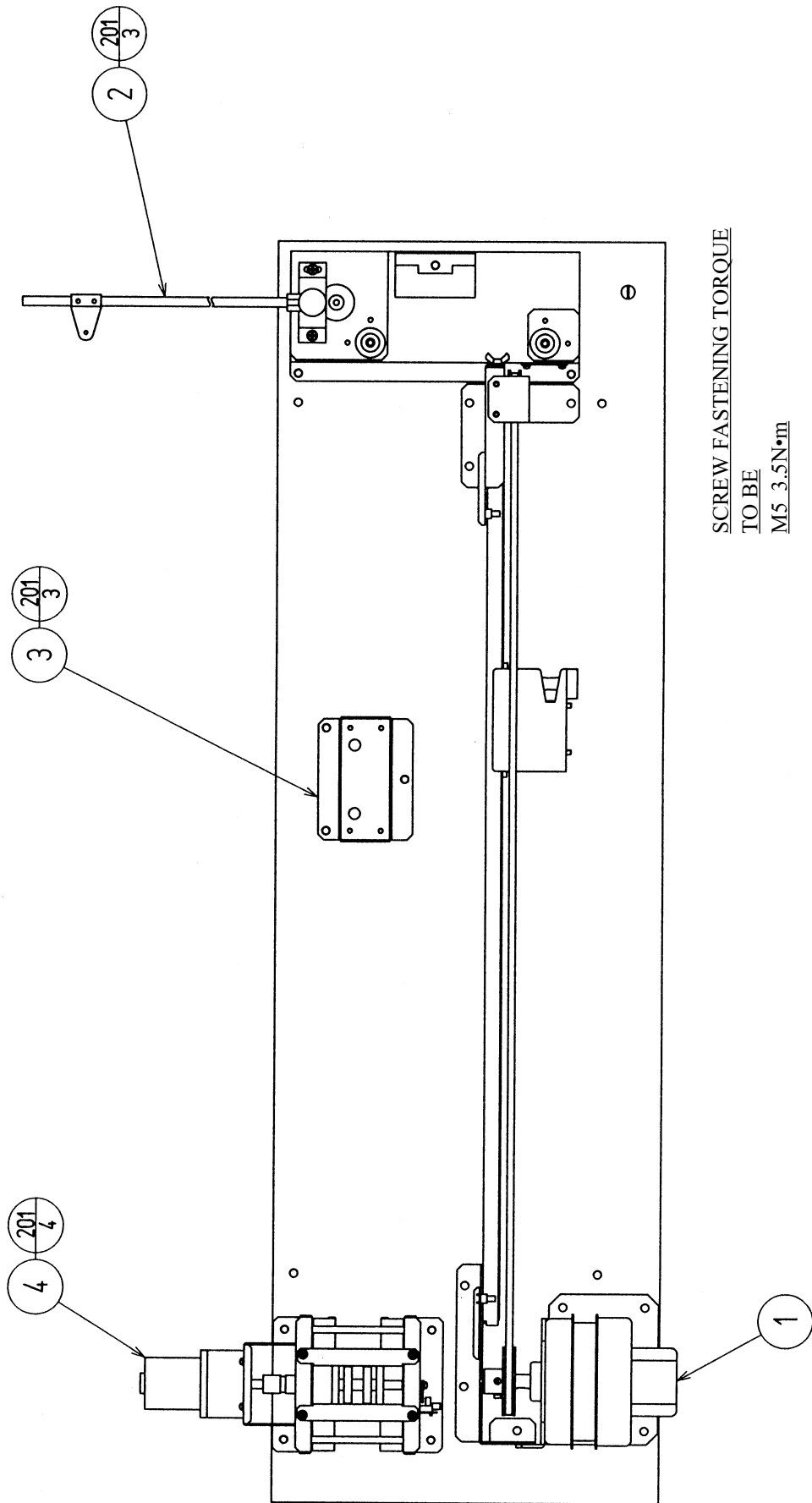
NUT FASTENING TORQUE TO BE

M3	1.5 N•m
M4	2.5 N•m

②0 SENSOR UNIT (BSS-2100)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-2101	SUX BASE L
2	BSS-2102	SUX BASE R
3	BSS-2103	ROLLER SUY
4	BSS-2104	STAY SUY
5	BSS-2105	CUX BASE UPPER
6	BSS-2106	CUX BASE LOWER
7	BSS-2107	STOPPER CUY
8	BSS-2108	ROLLER CUX BASE
9	BSS-2109	STAY CUX BASE
10	BSS-2110	CUX BRKT UPPER
11	BSS-2111	CUX BRKT LOWER
12	BSS-2112	ROLLER CUX
13	BSS-2113	STAY CUX
14	BSS-2114	STOPPER CUX
15	BSS-2115	TORSION SPRING SU
16	BSS-2116	CUY BRKT L
17	BSS-2117	CUY BRKT R
18	BSS-2118	SHAFT CUY
19	BSS-2119	ROLLER BRKT SUX
20	BSS-2120	ROLLER BRKT SUY
21	BSS-2121	ROLLER CUY
22	BSS-2122	STAY CUY
23	BSS-2123	BLIND BRKT
24	BSS-2124	SENSOR BRKT CUX
25	BSS-2125	SENSOR BRKT CUY
101	370-5161	PHOTO INTERRUPTER GP1A71A
102	280-0419	HARNESS LUG
201	050-H00400	HEX NUT M4
202	060-S00400	SPR WSHR M4
203	000-P00408-W	M SCR PH W/FS M4 X 8
204	000-F00308	M SCR FH M3 X 8
205	050-F00300	FLG NUT M3
206	000-P00306-S	M SCR PH W/S M3 X 6

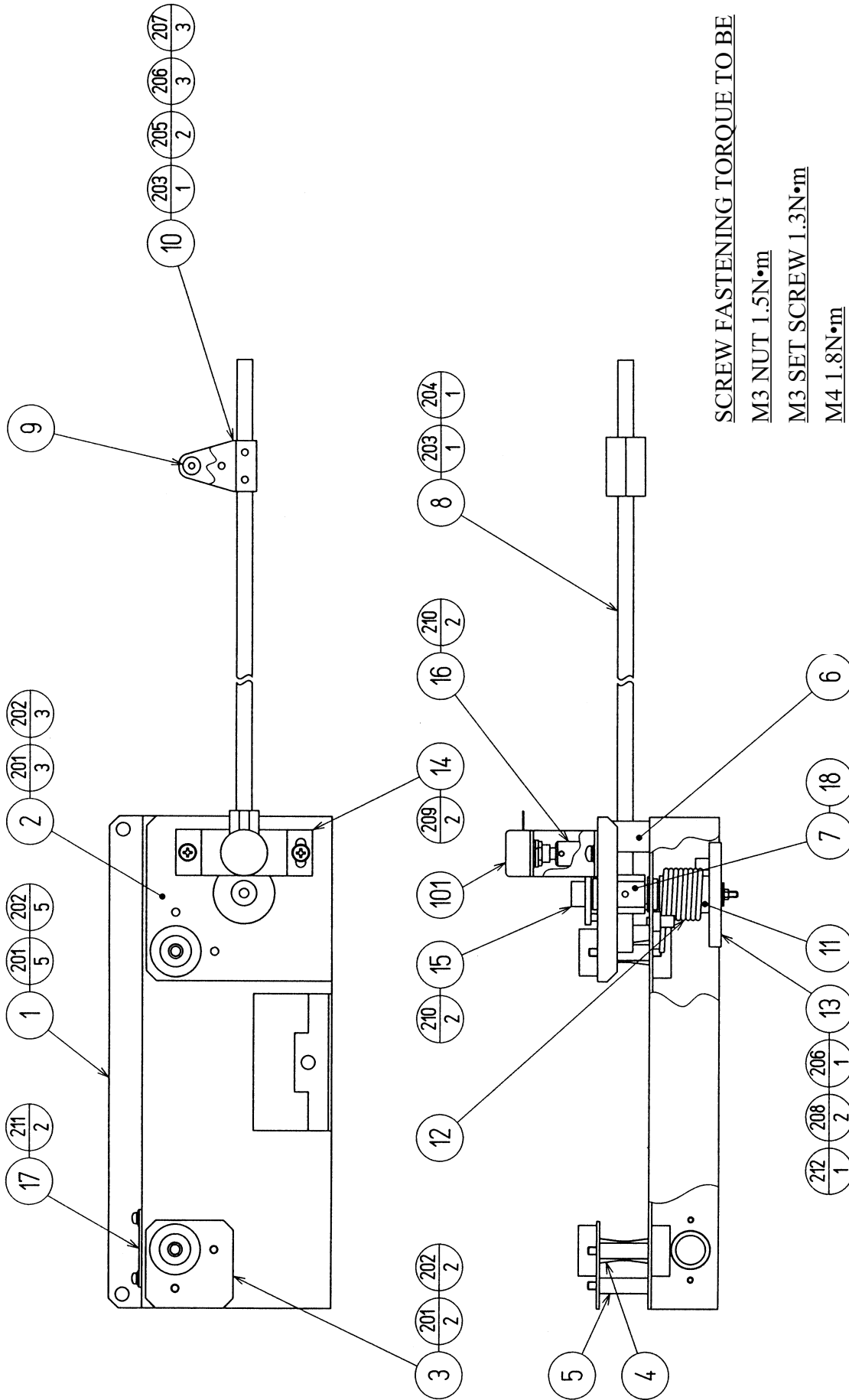


②1 ASSY REACTION MECHA (MFS-2500)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	MFS-2600	ASSY Y MECHA
2	MFS-2700	TENSION UNIT
3	BSS-2800	GUIDE UNIT
4	BSS-2900X	VIBRATION UNIT
201	000-P00516-W	M SCR PH W/FS M5 X 16

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-2601	WOODEN MECHA BASE
2	BSS-2602	ROLLER BASE A
3	BSS-2603	ROLLER BASE B
4	BSS-2604	ROLLER YM
5	BSS-2605	STAY YM
6	BSS-2606	MOTOR BASE SERVO
7	BSS-2607X	RAIL HOLDER
8	BSS-2608	PULLEY BRKT Y
9	BSS-2609	PULLEY BOSS Y
10	BSS-2002	RAIL STOPPER
11	BSS-2610	SENSOR BRKT Y
12	BSS-2611X	RAIL COVER
13	BSS-2612	WIRE HOLDER
14	601-10939	PULLEY P60
15	601-9976	PULLEY P44
16	MFS-2601	KEY 4 X 4 X 24
101	350-5512-01	SERVO MOTOR STW
102	610-0608	SLIDE PACK L=783
103	601-9977	TIMING BELT L=1872
104	370-5161	PHOTO INTERRUPTER GP1A71A
105	280-5277	CORD CLAMP 18
106	280-5275-SR10	CORD CLAMP SR10
107	601-6231-B050	EDGING NEW TYPE
108	270-5117	FERRITE CORE TDK
201	050-H00400	HEX NUT M4
202	060-S00400	SPR WSHR M4
203	000-P00510-W	M SCR PH W/FS M5 X 10
204	000-P00516-W	M SCR PH W/FS M5 X 16
205	000-P00410-W	M SCR PH W/FS M4 X 10
206	032-000416	WING BLT M4 X 16
207	068-441616	FLT WSHR 4.4-16 X 1.6
208	000-F00312	M SCR FH M3 X 12
209	050-F00300	FLG NUT M3
210	028-C00410-P	SET SCR CH CUP P M4 X 10
211	FAS-650010	STP RING BLK OZ S8
212	000-P00408-S	M SCR PH W/S M4 X 8
213	065-S012S0-Z	STP RING BLK OZ S12
301	600-6957-054	WIRE HARN Y MECHA EXT
302	600-6957-056	WIRE HARN Y TTP FAR
303	600-6957-057	WIRE HARN Y TTP NEAR



SCREW FASTENING TORQUE TO BE

M3 NUT 1.5N•m

M3 SET SCREW 1.3N•m

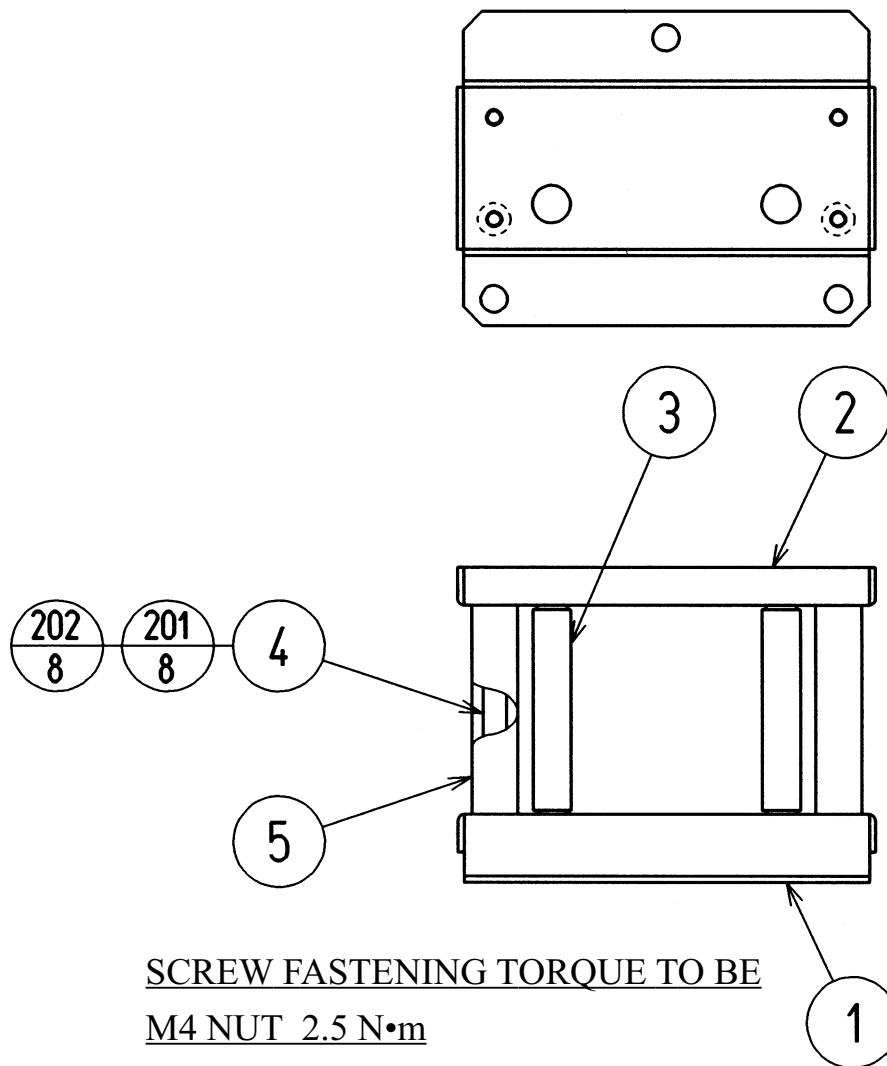
M4 1.8N•m

M4 NUT 2.5N•m

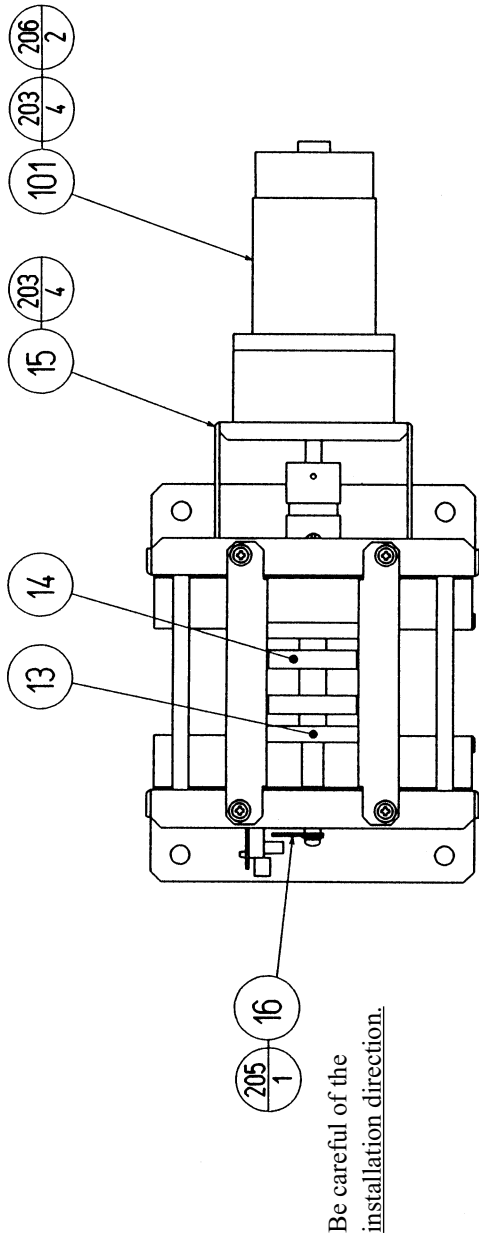
M4 SET SCREW 2.5N•m

ITEM NO.	PART NO.	DESCRIPTION
1	MFS-2701	TU BASE A
2	BSS-2702	TU BASE B
3	BSS-2703	TU BASE C
4	BSS-2604	ROLLER YM
5	BSS-2605	STAY YM
6	MFS-2706	STOPPER TU
7	MFS-2702	SHAFT TU
8	BSS-2706	TU ARM
9	BSS-2707X	TU GUIDE
10	BSS-2708X	TU GUIDE HOLDER
11	MFS-2705	SHAFT TU
12	BSS-2710	TORSION SPRING TU
13	MFS-2703	TORSION HOLDER
14	BSS-2712	VOL BRKT
15	601-9978	GEAR 40
16	601-7944	GEAR 15
17	MFS-2704	GUIDE COLLAR
18	BSS-2907	KEY 3 X 3 X 8
101	220-5373	VOL CONT B-5K
	220-5484	VOL CONT B-5K OHM
102	310-5029-F20	SUMITUBE F F 20MM
103	280-5275-SR10	CORD CLAMP SR10
201	050-H00400	HEX NUT M4
202	060-S00400	SPR WSHR M4
203	000-P00325-W	M SCR PH W/FS M3 X 25
204	050-F00300	FLG NUT M3
205	000-P00320-W	M SCR PH W/FS M3 X 20
206	050-U00300	U NUT M3
207	060-F00300	FLT WSHR M3
208	FAS-280004	SET SCR HEX SKT CUP P M3 X 12
209	000-P00408-W	M SCR PH W/FS M4 X 8
210	028-P00306-P	SET SCR PH CUP P M3 X 6
211	000-P00308-W	M SCR PH W/FS M3 X 8
212	250-5421	FLT WSHR 3.5-12 T=1.0
301	600-6957-058	WIRE HARN TENSION

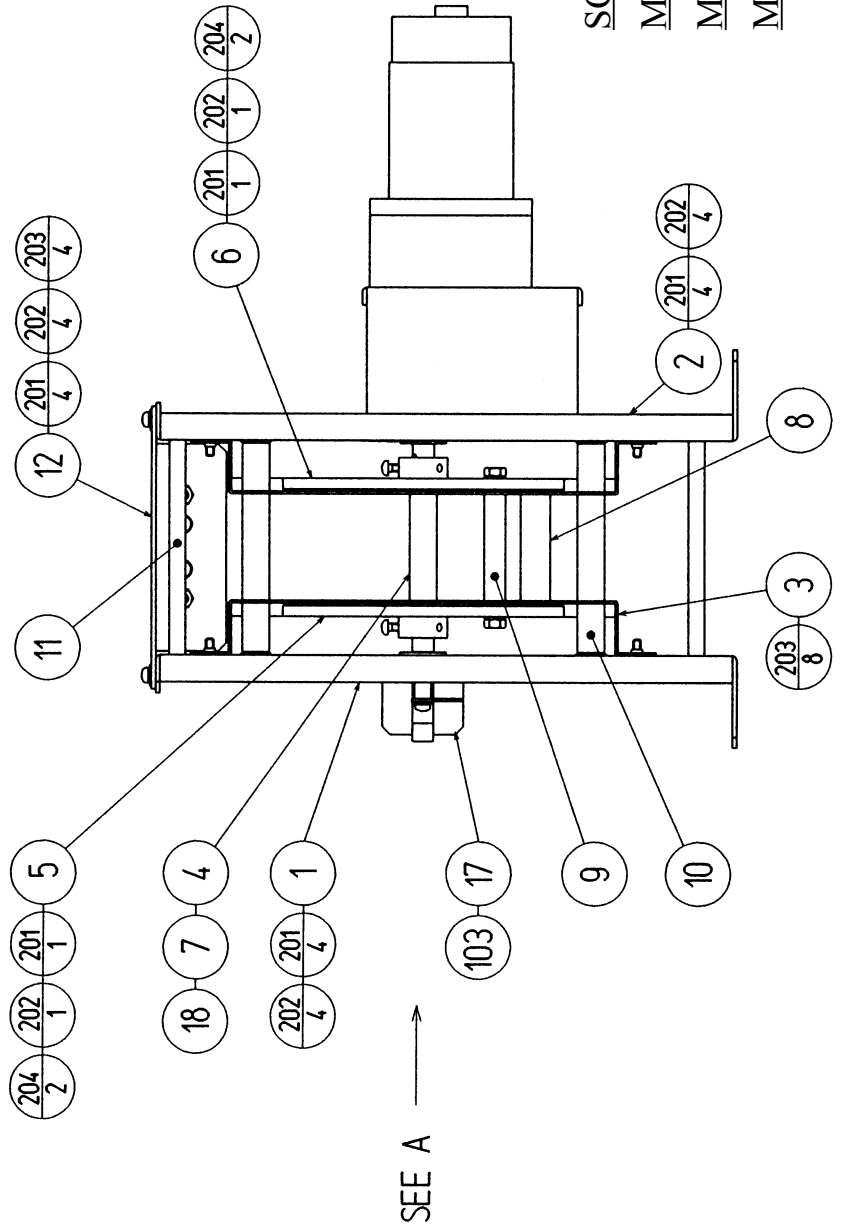
②④ GUIDE UNIT (BSS-2800)



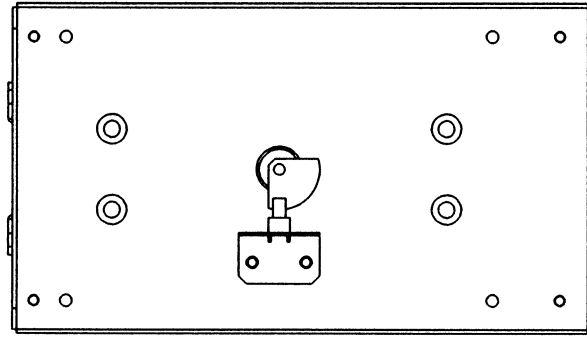
ITEM NO.	PART NO.	DESCRIPTION
1	BSS-2801	GU BASE A
2	BSS-2802	GU BASE B
3	BSS-2803	ROLLER GU
4	BSS-2804	STAY GU
5	BSS-2805	STOPPER GU
201	050-H00400	HEX NUT M4
202	060-S00400	SPR WSHR M4



Be careful of the installation direction.



SEE A →

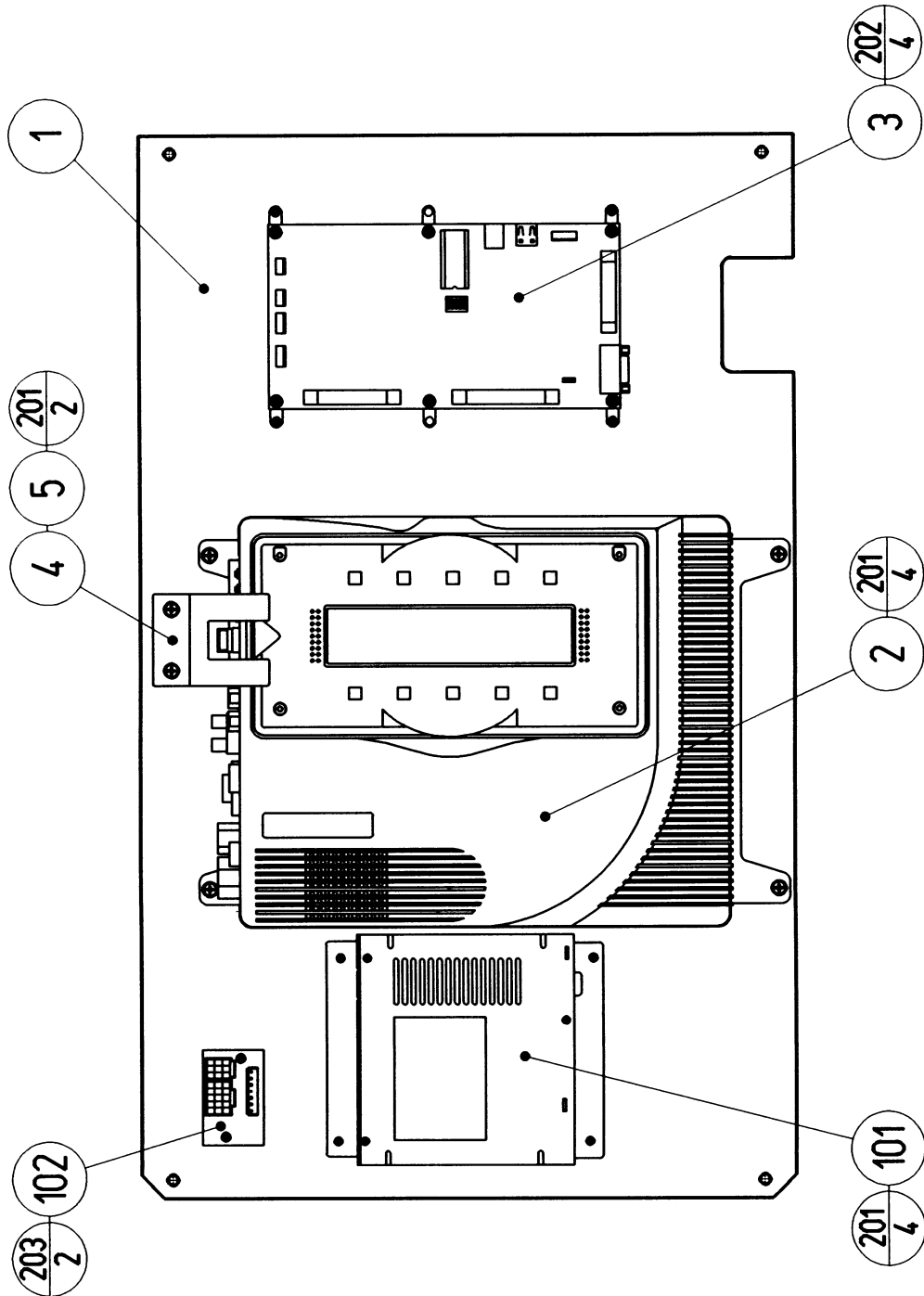


SCREW FASTENING TORQUE TO BE
M3 SET SCREW 1.3 N•m
M4 1.8 N•m
M4 NUT 2.5 N•m

25) VIBRATION UNIT (BSS-2900X)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-2901	VU BASE L
2	BSS-2902	VU BASE R
3	BSS-2903	VU GUIDE BRKT
4	BSS-2904-01	SHAFT VU W KEY
5	BSS-2905	CLANK BASE L
6	BSS-2906	CLANK BASE R
7	BSS-2907	KEY 3 X 3 X 8
8	BSS-2908	ROLLER CLANK
9	BSS-2909	STAY CLANK
10	BSS-2910	ROLLER VU
11	BSS-2911	STAY VU
12	BSS-2912	ROLLER BRKT VU
13	BSS-2109	STAY CUX BASE
14	BSS-2108	ROLLER CUX BASE
15	BSS-2913	MOTOR BASE VU
16	BSS-2914	INT BRKT VU
17	BSS-2915	SENSOR BRKT VU
18	BSS-2916	KEY 2 X 2 X 6
101	350-5518-01	MOTOR DC24V W COUPLING
103	370-5161	PHOTO INTERRUPTER GP1A71A
104	280-5275-SR10	CORD CLAMP SR10
201	050-H00400	HEX NUT M4
202	060-S00400	SPR WSHR M4
203	000-P00410-W	M SCR PH W/FS M4 X 10
204	028-P00310-P	SET SCR PH CUP P M3 X10
205	000-P00306-W	M SCR PH W/FS M3 X 6
206	028-C00410-P	SET SCR CH CUP P M4 X 10
301	600-6957-055	WIRE HARN VIBRATION HP

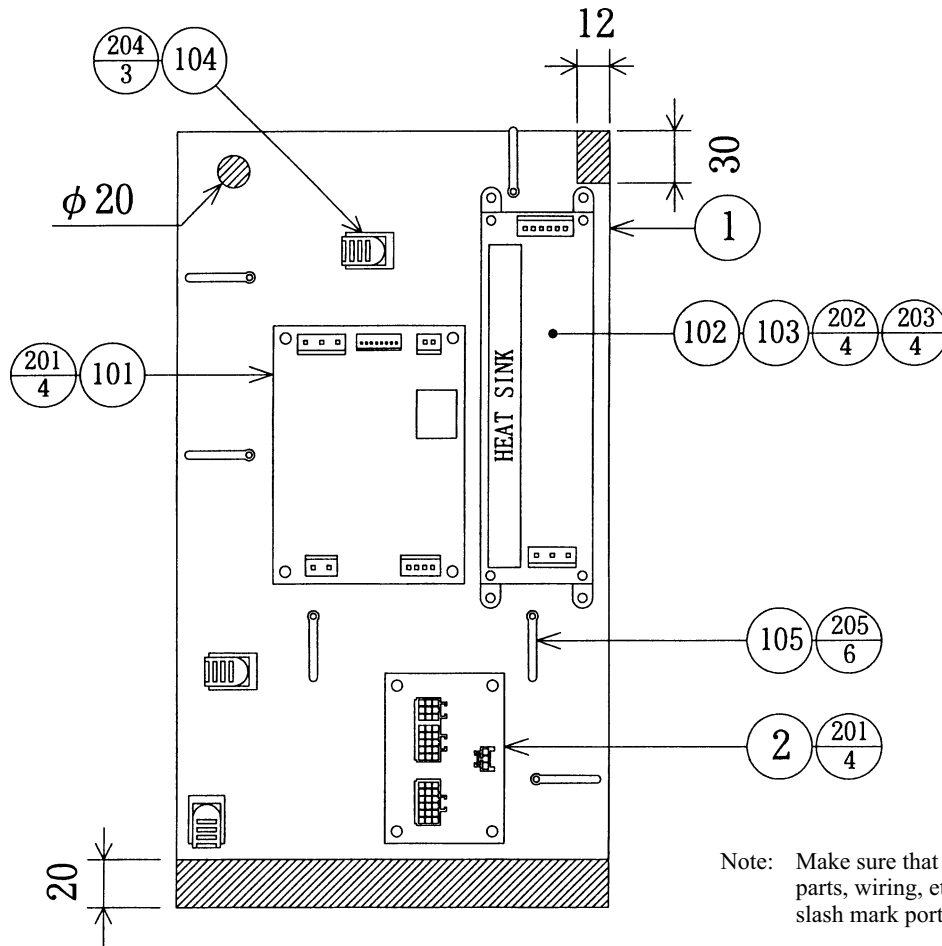


②6 ASSY MAIN BD MFS (MFS-4000)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-4001	WOODEN BASE MAIN BD	
2	840-0027D-01	ASSY CASE NAO MFS USA	USA
	840-0027D-02	ASSY CASE NAO MFS EXP	OTHERS
	840-0027D-03	ASSY CASE NAO MFS KOR	KOREA
	840-0027D-04	ASSY CASE NAO MFS AUS	AUSTRALIA
3	837-13844	I/O CONTROL BD 2 FOR JVS FRI	
4	MFS-4002	LID STOPPER BRKT	
5	421-11259-01	STICKER LID STOPPER ENG	
101	400-5397-01	SW REGU FOR JVS VA	
102	838-11856-UL	CONNECT BD UL	
103	280-5009-01	CORD CLAMP 21	
104	280-0419	HARNESS LUG	
105	601-0460	PLASTIC TIE BELT 100 MM	
106	601-0459	TIE-BELT 150MM	
107	280-5275-SR10	CORD CLAMP SR10	
201	000-P00416-W	M SCR PH W/FS M4 X 16	
202	011-T03520	TAP SCR TH 3.5 X 20	
203	011-P00325	TAP SCR PH 3 X 25	
204	011-F00310	TAP SCR FH 3 X 10	
205	011-T03512	TAP SCR TH 3.5 X 12	
301	MFS-60001	WIRE HARN AC SW REGU IN	
302	MFS-60002	WIRE HARN DC SW REGU OUT	
303	MFS-60003	WIRE HARN DC CONN BD OUT	
304	MFS-60004	WIRE HARN IO BD	
305	MFS-60005	WIRE HARN FLT BD SOUND OUT	
306	600-7159-020	WIRE HARN JVS PWR 020CM	
307	600-7009-2500	ASSY RGB CA D-SUB 15P 2500MM	
308	600-7141-100	CABLE JVS TYPE A-B 100CM	

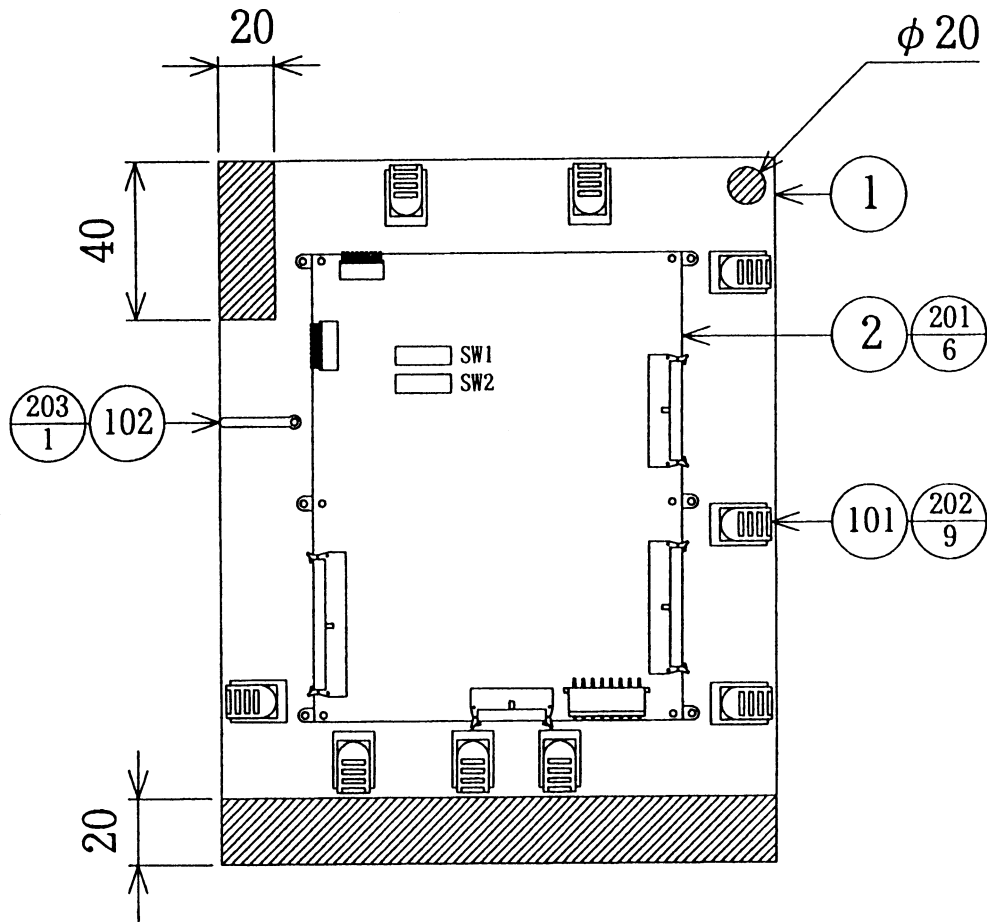
27 ASSY POWER SPLY (BSS-4100)



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

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4101	WOODEN BASE PWR SPLY
2	839-0976	CONN BD
101	838-13282-91	MOTOR DRV BD BSS
102	400-5368-07524	SW REGU LCA75S-24
103	601-7467	L-LOCK BK
104	280-5277	CORD CLAMP 18
105	280-0419	HARNESS LUG
106	601-0460	PLASTIC TIE BELT 100 MM
201	011-P00325	TAP SCR PH 3 X 25
202	011-T03520	TAP SCR TH 3.5 X 20
203	000-P00312-W	M SCR PH W/FS M3 X 12
204	011-F00310	TAP SCR FH 3 X 10
205	011-T03512	TAP SCR TH 3.5 X 12
301	600-6957-033-91	WIRE HARN AC CONN BD IN
302	600-6957-034	WIRE HARN SW REGU OUT
303	600-6957-035	WIRE HARN AC CONN BD OUT
304	600-6957-036	WIRE HARN DC MOTOR OUT
305	600-6957-065	WIRE HARN MOTOR CONT IN
306	600-6957-038	WIRE HARN AC MOTOR CONT

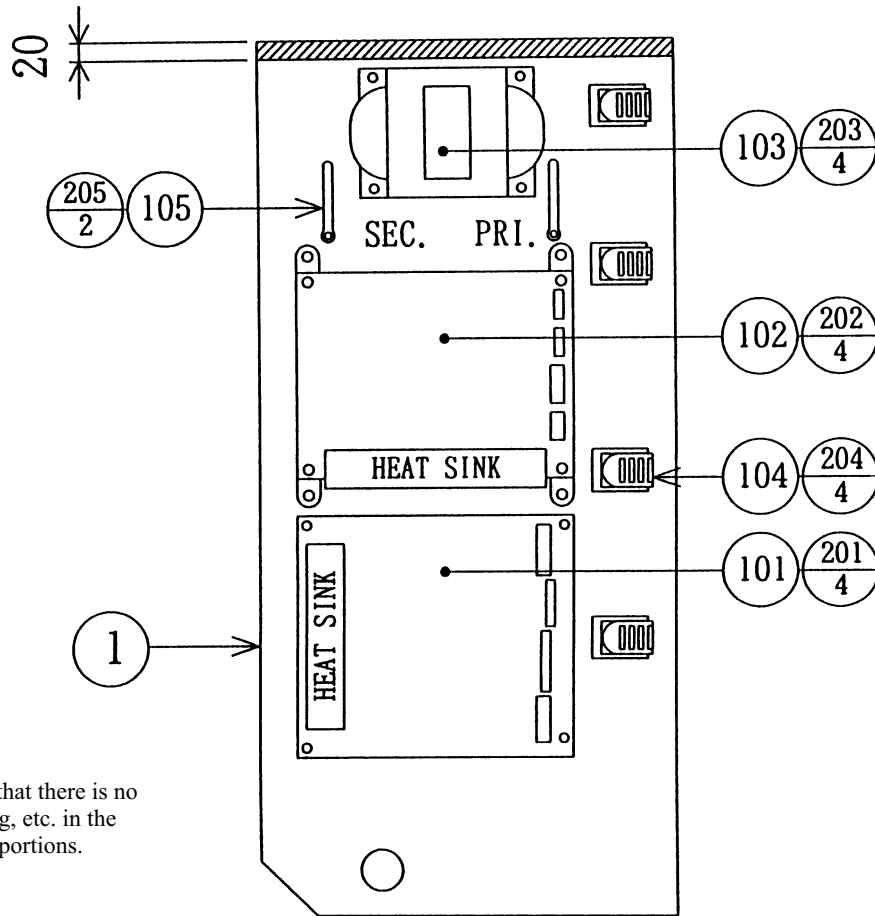
②⑧ ASSY I/O BD BSS (BSS-4200)



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

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4201	WOODEN BASE I/O BD
2	837-13283-01	GET BASS MEC CONT BD
101	280-5277	CORD CLAMP 18
102	280-0419	HARNESS LUG
103	601-0460	PLASTIC TIE BELT 100 MM
201	011-T03520	TAP SCR TH 3.5 X 20
202	011-F00310	TAP SCR FH 3 X 10
203	011-T03512	TAP SCR TH 3.5 X 12
301	600-6957-030	WIRE HARN I/O BD DC IN
302	600-6957-031	WIRE HARN I/O BD A
303	600-6957-032-91	WIRE HARN I/O BD B
304	600-6957-069	WIRE HARN CONT EXT W/RES

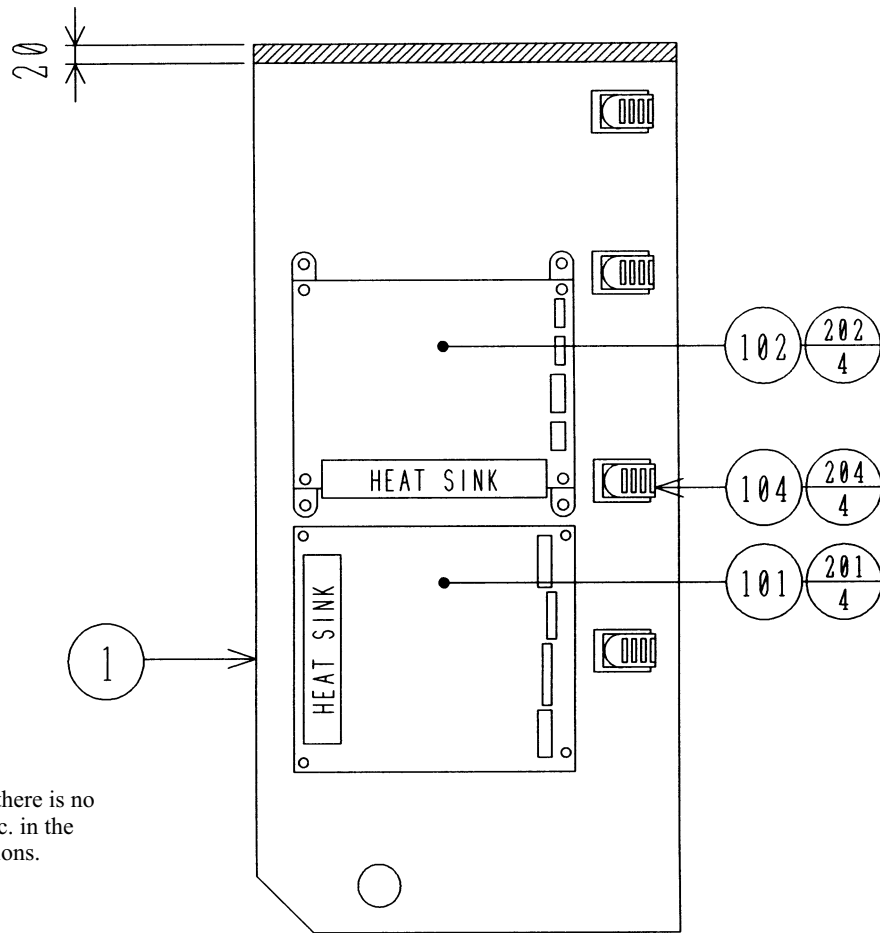
29 ASSY DRIVER & AMP BD (MFS-4300)



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

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4301	WOODEN BASE DRIVER BD
101	838-13276-01	SERVO DRIVER BD STW
102	838-12796-01	PWR AMP FOR M3
103	560-5339-91	XFMR 18-0-18V 2.4A
104	280-5277	CORD CLAMP 18
105	280-0419	HARNES LUG
106	601-0460	PLASTIC TIE BELT 100 MM
201	011-P00325	TAP SCR PH 3 X 25
202	011-T03520	TAP SCR TH 3.5 X 20
203	000-P00416-W	M SCR PH W/FS M4 X 16
204	011-F00310	TAP SCR FH 3 X 10
205	011-T03512	TAP SCR TH 3.5 X 12
301	600-6957-039	WIRE HARN SOUND AMP IN
302	MFS-60010	WIRE HARN AC XFMR IN
303	600-6957-041	WIRE HARN AC AMP IN
304	600-6957-042	WIRE HARN SERVO CONT IN
305	600-6957-043	WIRE HARN SPEAKER AMP OUT
306	600-6957-044	WIRE HARN VOL AMP IN
307	MFS-60006	WIRE HARN SERVO OUT
308	MFS-60007	WIRE HARN SERVO DATA IN

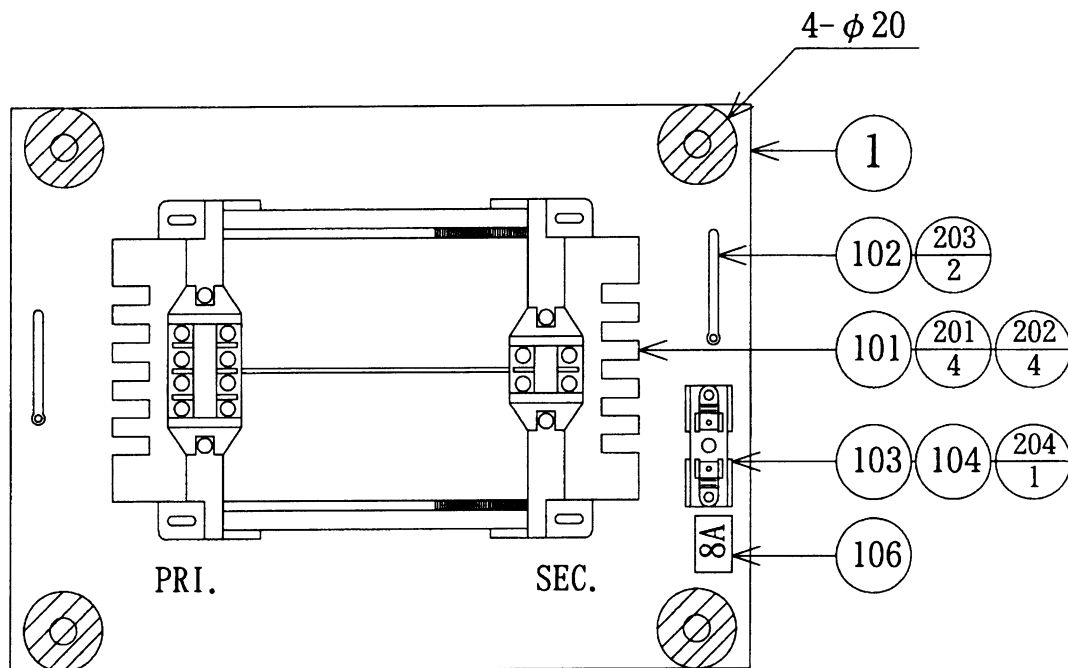
29) ASSY DRIVER & AMP BD W/O XFMR (MFS-4300-01)



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

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4301	WOODEN BASE DRIVER BD
101	838-13276-01	SERVO DRIVER BD STW
102	838-12796-01	PWR AMP FOR M3
104	280-5277	CORD CLAMP 18
106	601-0460	PLASTIC TIE BELT 100 MM
201	011-P00325	TAP SCR PH 3 X 25
202	011-T03520	TAP SCR TH 3.5 X 20
204	011-F00310	TAP SCR FH 3 X 10
301	600-6957-039	WIRE HARN SOUND AMP IN
302	MFS-60010	WIRE HARN AC XFMR IN
303	600-6957-041	WIRE HARN AC AMP IN
304	600-6957-042	WIRE HARN SERVO CONT IN
305	600-6957-043	WIRE HARN SPEAKER AMP OUT
306	600-6957-044	WIRE HARN VOL AMP IN
307	MFS-60006	WIRE HARN SERVO OUT
308	MFS-60007	WIRE HARN SERVO DATA IN

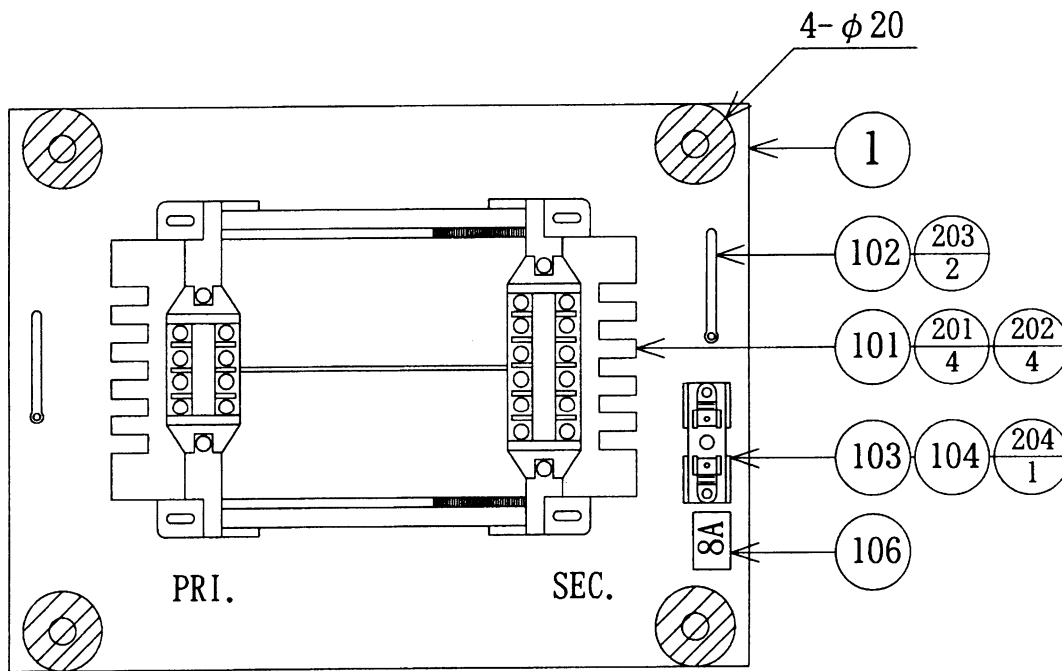
30) ASSY TRANS USA (BSS-4450-01)



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

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4451	WOODEN TRANS BASE 1KVA
101	560-5384	XFMR 100-120V 100V 10A WB
102	280-0419	HARNESS LUG
103	514-5095-8000	FUSE S.B 8000MA 250V HBC
104	514-5093	FUSE HLDR F-64AB COVER
105	310-5029-F20	SUMITUBE F F 20MM
106	421-6595-07	STICKER 8A
107	601-0460	PLASTIC TIE BELT 100 MM
201	000-P00416-W	M SCR PH W/FS M4 X 16
202	068-441616	FLT WSHR 4.4-16 X 1.6
203	011-T03512	TAP SCR TH 3.5 X 12
204	011-P00316	TAP SCR #1 PH 3 X 16
301	600-6957-084	WIRE HARN EXP XFMR IN
302	600-6957-085	WIRE HARN EXP XFMR 100V OUT

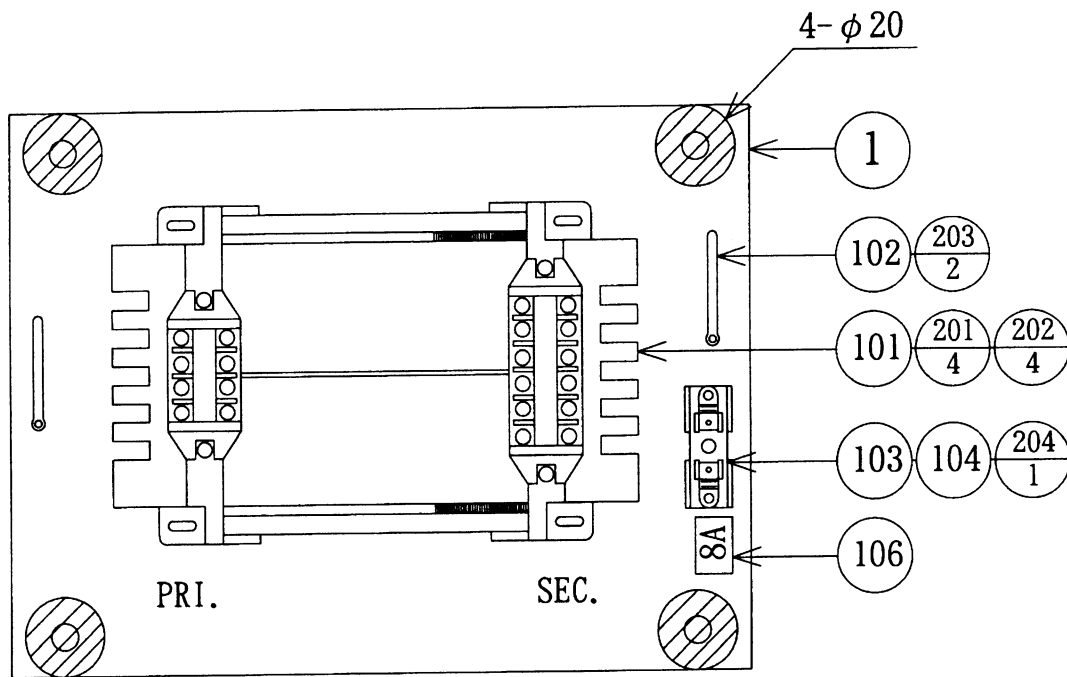
30 ASSY TRANS EXP (BSS-4450-02)



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

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4451	WOODEN TRANS BASE 1KVA
101	560-5382	XFMR 220-240V 100V 18-0-18V WB
102	280-0419	HARNESS LUG
103	514-5095-8000	FUSE S.B 8000MA 250V HBC
104	514-5093	FUSE HLDR F-64AB COVER
105	310-5029-F20	SUMITUBE F F 20MM
106	421-6595-07	STICKER 8A
107	601-0460	PLASTIC TIE BELT 100 MM
201	000-P00416-W	M SCR PH W/FS M4 X 16
202	068-441616	FLT WSHR 4.4-16 X 1.6
203	011-T03512	TAP SCR TH 3.5 X 12
204	011-P00316	TAP SCR #1 PH 3 X 16
301	600-6957-084	WIRE HARN EXP XFMR IN
302	600-6957-085	WIRE HARN EXP XFMR 100V OUT
303	600-6957-086	WIRE HARN EXP XFMR AMP OUT

③0 ASSY TRANS TAIWAN (BSS-4450-03)

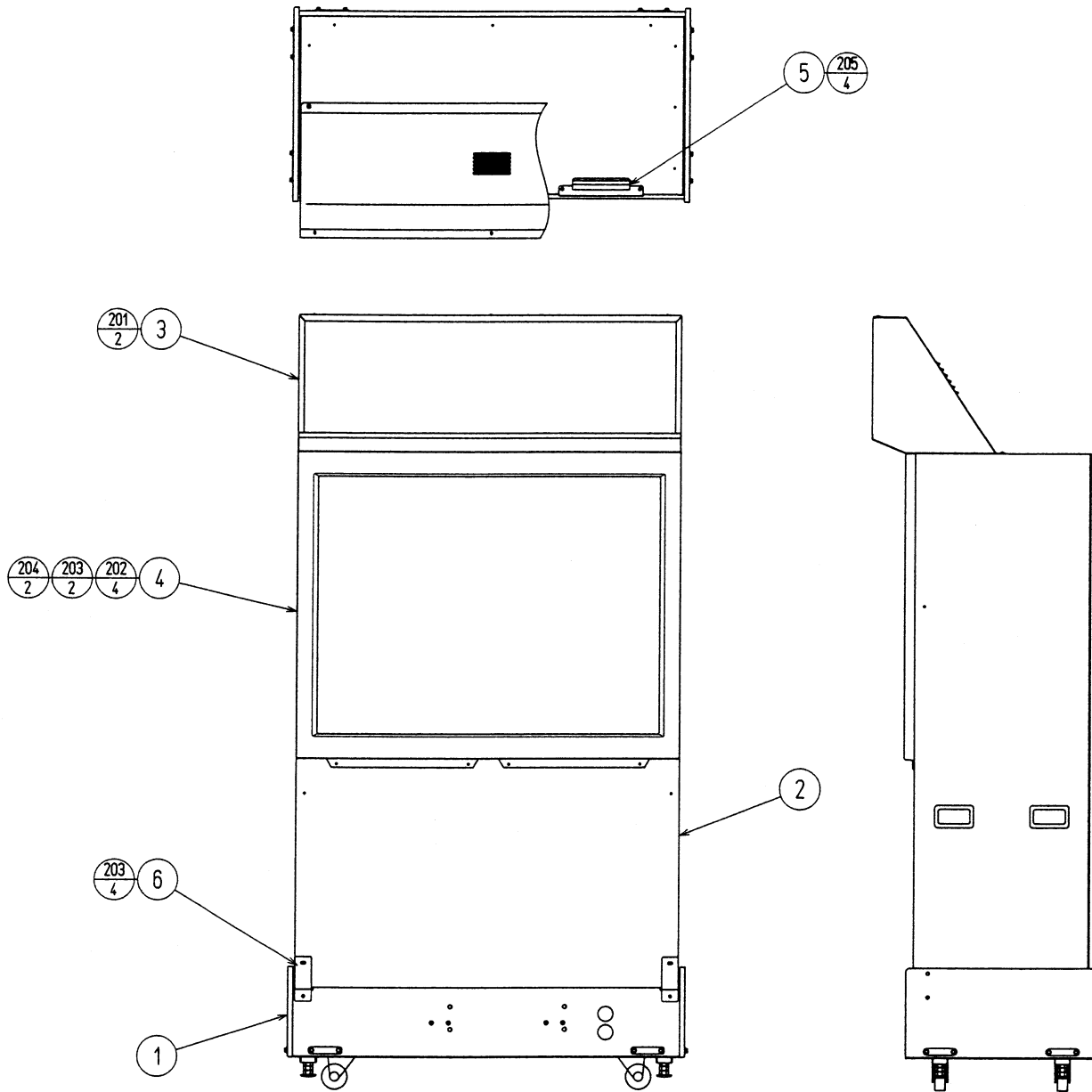


Note: Make sure that there is no parts, wiring, etc. in the slash mark portions.

ITEM NO.	PART NO.	DESCRIPTION
1	BSS-4451	WOODEN TRANS BASE 1KVA
101	560-5383	XFMR 100-120V 100V 18-0-18V WB
102	280-0419	HARNESS LUG
103	514-5095-8000	FUSE S.B 8000MA 250V HBC
104	514-5093	FUSE HLDR F-64AB COVER
105	310-5029-F20	SUMITUBE F F 20MM
106	421-6595-07	STICKER 8A
107	601-0460	PLASTIC TIE BELT 100 MM
201	000-P00416-W	M SCR PH W/FS M4 X 16
202	068-441616	FLT WSHR 4.4-16 X 1.6
203	011-T03512	TAP SCR TH 3.5 X 12
204	011-P00316	TAP SCR #1 PH 3 X 16
301	600-6957-084	WIRE HARN EXP XFMR IN
302	600-6957-085	WIRE HARN EXP XFMR 100V OUT
303	600-6957-086	WIRE HARN EXP XFMR AMP OUT

31 ASSY PTV (MFS-1500)

(D-1/2)



③1 ASSY PTV (MFS-1500)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1550	ASSY PTV BASE	
2	MFS-1560	PTV W/STICKER MFS DX	
3	MFS-1600	ASSY BILLBOARD	
4	MGL-1150	ASSY MASK	
5	RAL-0501	MASK HOLDER	
6	BSS-1502	PTV BRKT	
201	000-P00516-WB	M SCR PH W/FS BLK M5 X 16	
202	000-P00520-W	M SCR PH W/FS M5 X 20	
203	000-T00525-0C	M SCR TH CRM M5 X 25	
204	068-552016-0C	FLT WSHR CRM 5.5-20 X 1.6	
205	000-F00412	M SCR FH M4 X 12	
/	000-P00430-W	M SCR PH W/FS M4 X 30	
/	068-441616	FLT WSHR 4.4-16 X 1.6	
/	600-6957-082	WIRE HARN EXP XFMR IN EXT	
/	600-6957-083	WIRE HARN EXP XFMR OUT EXT	
/	280-5277	CORD CLAMP 18	
/	011-F00310	TAP SCR FH 3 X 10	
/	601-0460	PLASTIC TIE BELT 100 MM	
/	BSS-4450-01	ASSY TRANS USA	AC 120V AREA
/	BSS-4450-02	ASSY TRANS EXP	AC 220 ~ 240V AREA
/	BSS-4450-03	ASSY TRANS TAIWAN	AC 110V AREA
/	600-6957-087	WIRE HARN AMP AC EXT B	

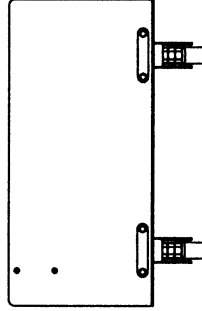
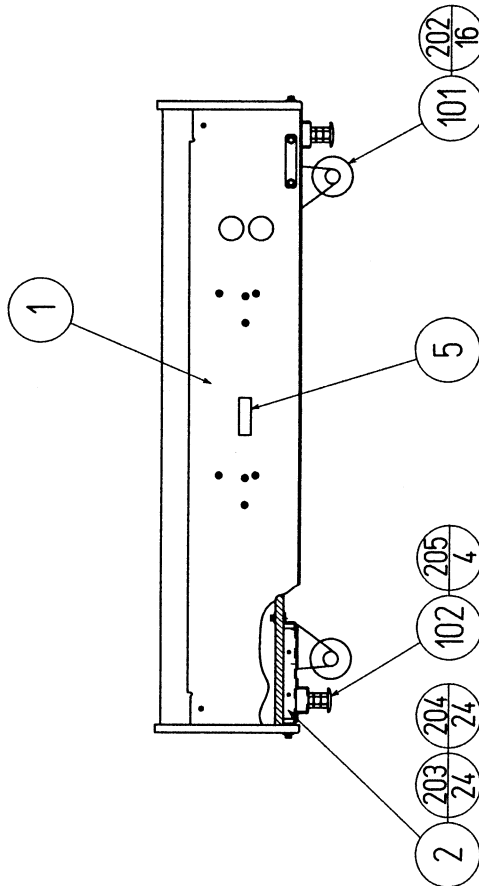
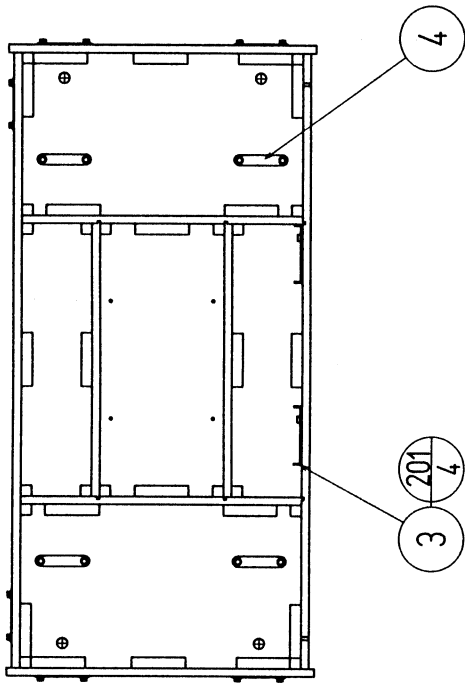
32 ASSY PTV BASE (MFS-1550)

(D-1/2)

SCREW BOLT NUT FASTENING TORQUE TO BE

M4 1.8N•m

M6 7.3N•m

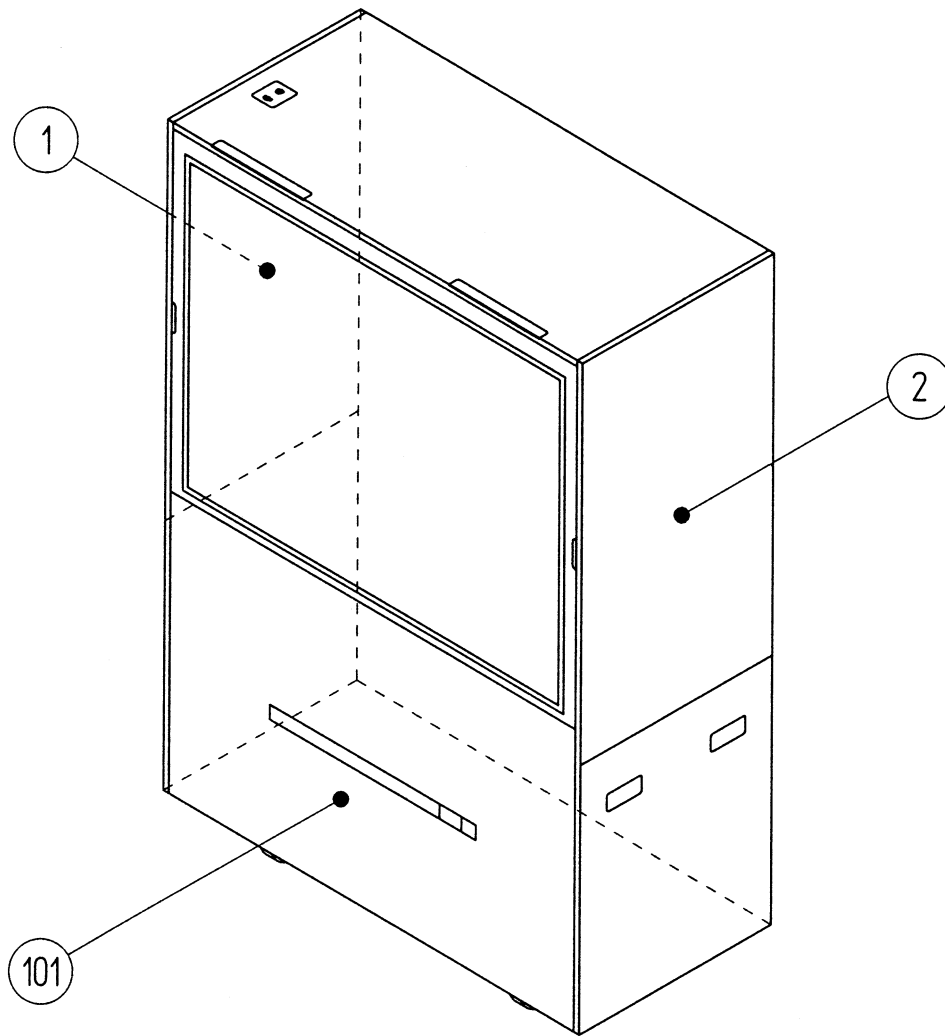


③2 ASSY PTV BASE (MFS-1550)

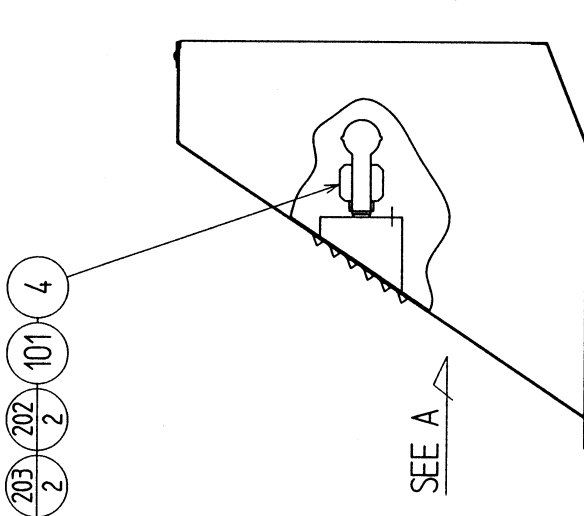
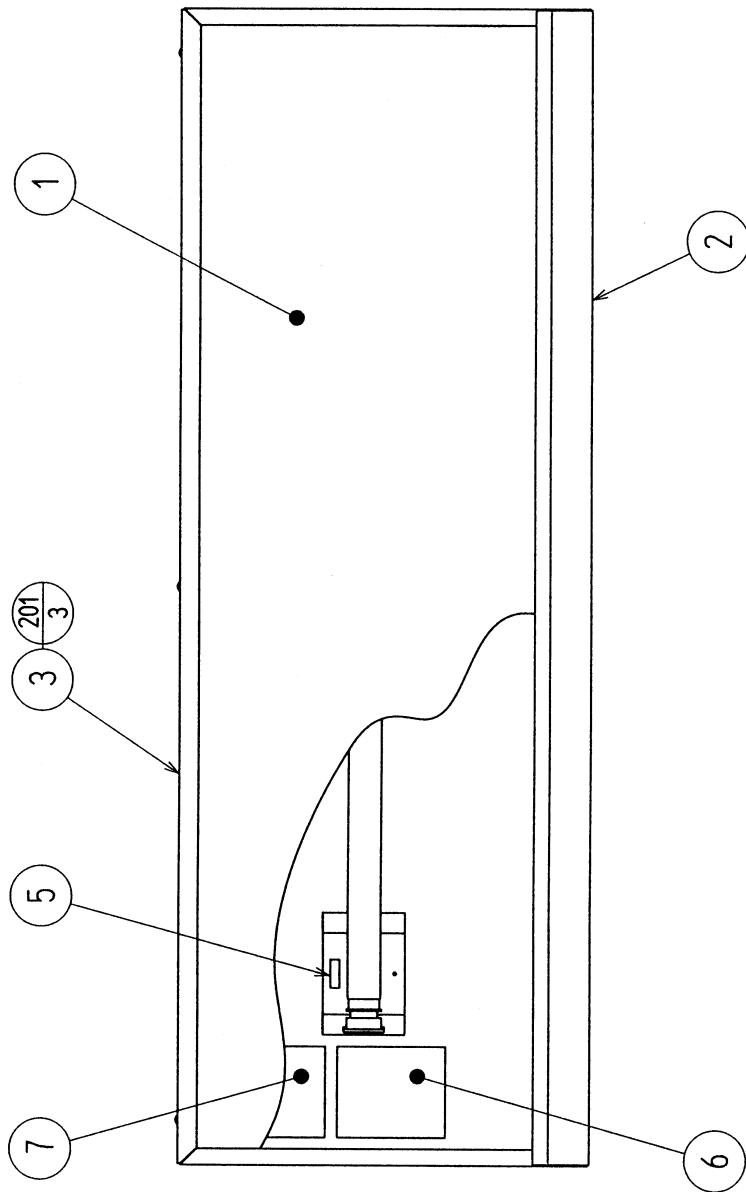
(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	MFS-1551	PTV BASE
2	BSS-1552	LEG CASTER BRKT
3	BSS-1553	JOINT PLATE
4	117-5284	PLATE 6-80 BLACK
101	601-9377	CASTER FAI=75
102	601-5699X	LEG ADJUSTER BOLT M16 X 75
201	000-P00416-W	M SCR PH W/FS M4 X 16
202	030-000812-S	HEX BLT W/S M8 X 12
203	030-000630-SB	HEX BLT BLK W/S M6 X 30
204	060-F00600-0B	FLT WSHR BLK M6
205	050-H01600-0B	HEX NUT BLK M16

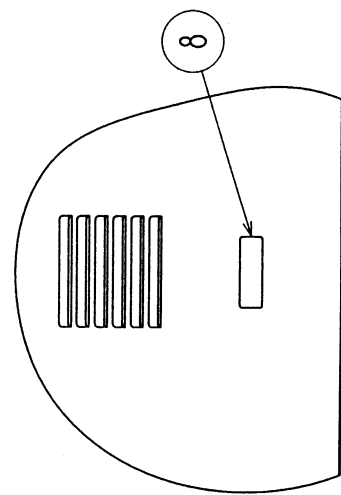
33 PTV W/STICKER MFS DX (MFS-1560)



ITEM NO.	PART NO.	DESCRIPTION
1	421-11250	STICKER PTV SIDE L MFS
2	421-11251	STICKER PTV SIDE R MFS
101	200-5799-31	PROJECTION DSPL M 50TYPE 31K
	200-5788-31	PROJECTION DSPL T 50TYPE 31K



SEE A



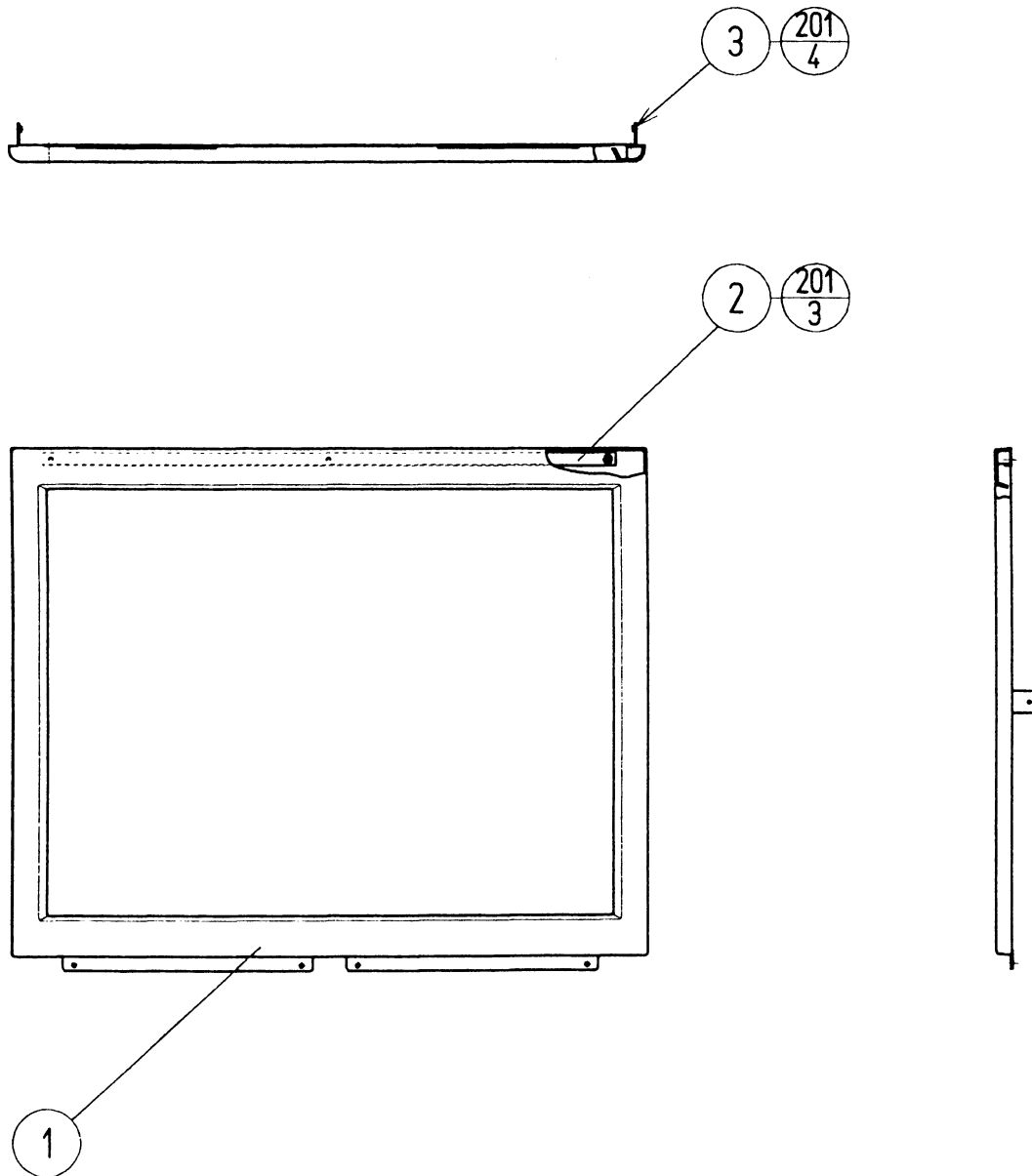
SEE A

34 ASSY BILLBOARD (MFS-1600)

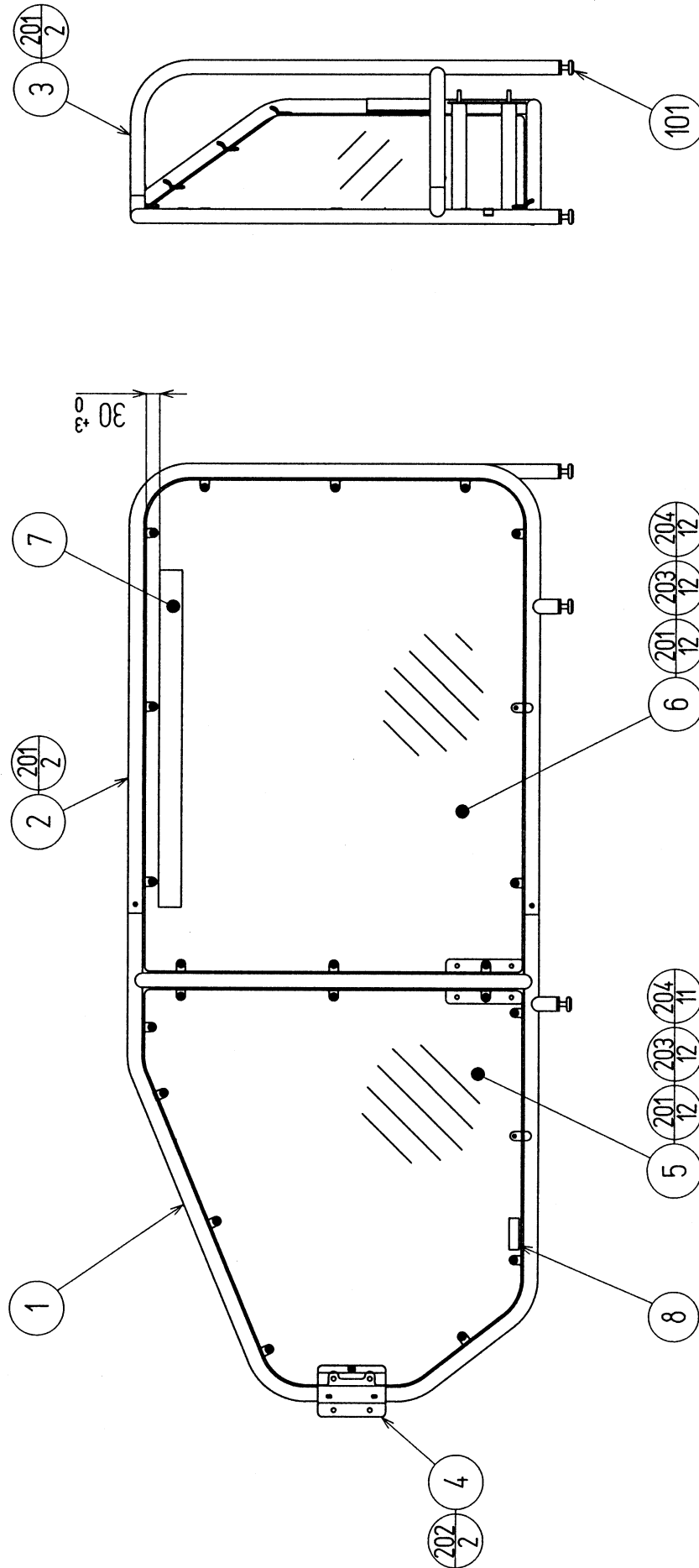
(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	MFS-1601	BILLBOARD	
2	MFS-1602	BILLBOARD BOX	
3	MFS-1603	BILLBOARD HOLDER	
4	253-5457	FL HOLDER Locally supplied.	OTHERS USA
5	421-7501-18	STICKER FL32W Locally supplied.	OTHERS USA
6	440-WS0002XEG	STICKER W POWER OFF ENG	
7	440-WS0012XEG	STICKER W HIGH TEMP ENG	
101	390-6659-32EX	ASSY FL32W EX W/CONN HIGH S CE Locally supplied.	OTHERS USA
102	280-5275-SR10	CORD CLAMP SR10	
201	000-T00408-0C	M SCR TH CRM M4 X 8	
202	000-P00430-S	M SCR PH W/S M4 X 30 Locally supplied.	OTHERS USA
203	068-441616	FLT WSHR 4.4-16 X 1.6 Locally supplied.	OTHERS USA
301	600-7117-010	WIRE HARN FL	

③⑤ ASSY MASK (MGL-1150)



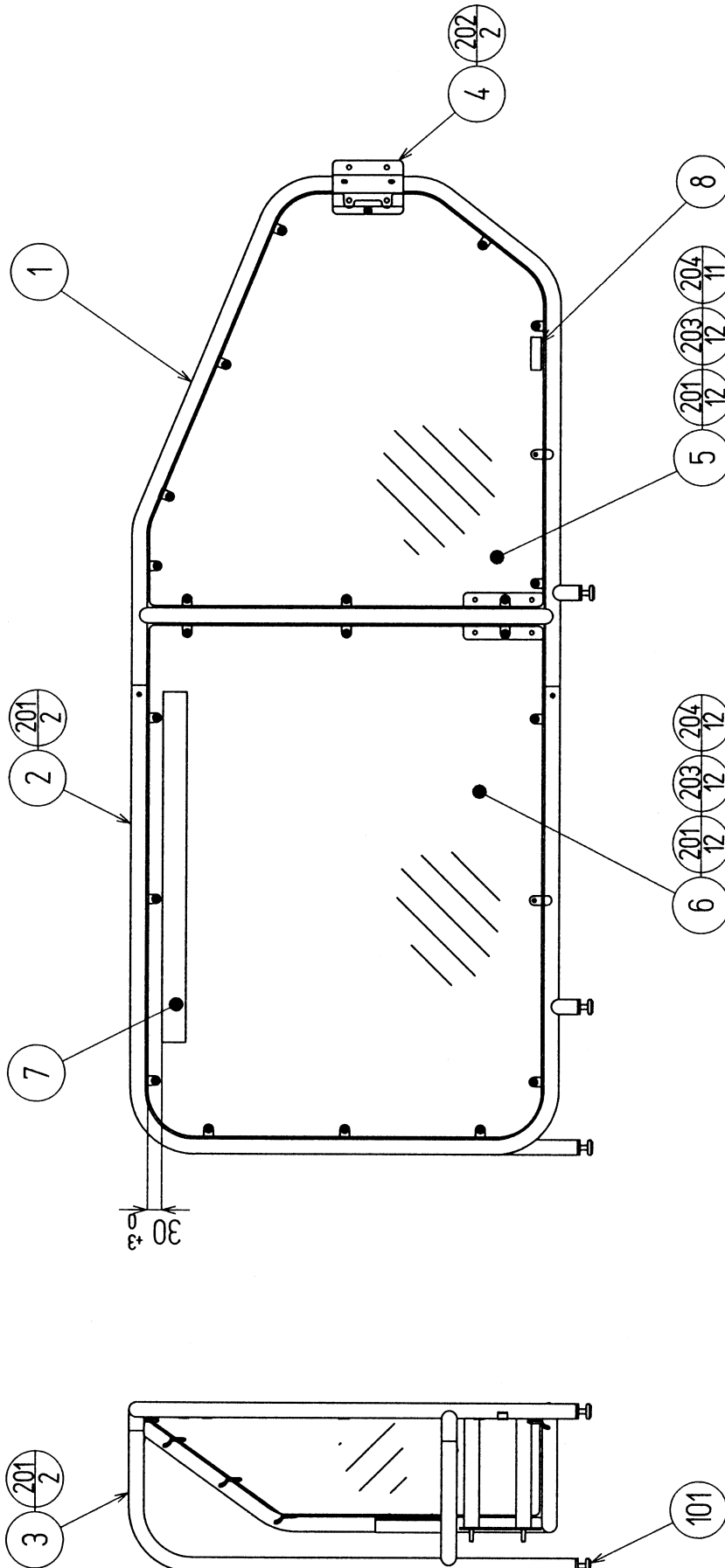
ITEM NO.	PART NO.	DESCRIPTION
1	MGL-1102	TV MASK
2	MGL-1151	SLIT PLATE
3	MGL-1152	MASK SIDE HOLDER
201	012-F00408-0B	TAP SCR #2 FH BLK 4 X 8
202	000-F00410	M SCR FH M4 X 10



36 ASSY FENCE L (MFS-1700)

(D-1/2)

ITEM NO.	PART NO.	DESCRIPTION
1	MFS-1701	BASE PIPE L
2	MFS-1702	PIPE FL
3	MFS-1703	PIPE RL
4	MFS-1704	FENCE BRKT
5	MFS-1705	GUARD PLATE FL
6	MFS-1706	GUARD PLATE RL
7	440-CS0122-EG	STICKER C FENCE ENG
101	601-6076	LEG ADJUSTER 32
201	000-T00412-0C	M SCR TH CRM M4 X 12
202	000-T00512-0C	M SCR TH CRM M5 X 12
203	068-441616-0C	FLT WSHR CRM 4.4-16 X 1.6
204	050-C00400-3C	CAP NUT TYPE3 CRM M4



SCREW NUT FASTENING TORQUE TO BE

M4 1.8N•m

M5 2.5N•m

37 ASSY FENCE R (MFS-1750)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION
1	MFS-1751	BASE PIPE R
2	MFS-1752	PIPE FR
3	MFS-1753	PIPE RR
4	MFS-1704	FENCE BRKT
5	MFS-1755	GUARD PLATE FR
6	MFS-1756	GUARD PLATE RR
7	440-CS0122-EG	STICKER C FENCE ENG
102	601-6076	LEG ADJUSTER 32
201	000-T00412-0C	M SCR TH CRM M4 X 12
202	000-T00512-0C	M SCR TH CRM M5 X 12
203	068-441616-0C	FLT WSHR CRM 4.4-16 X 1.6
204	050-C00400-3C	CAP NUT TYPE3 CRM M4

19. WIRE COLOR CODE TABLE

THE WIRE COLOR CODE is as follow:

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

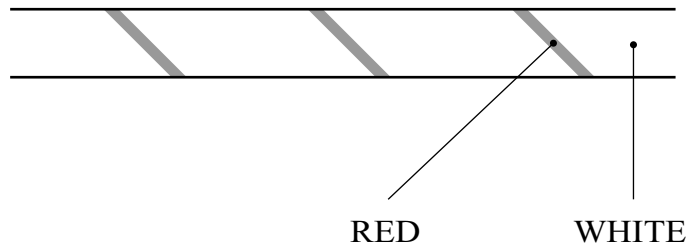
Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

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

<Example> 51 WHITE / RED



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

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

Warranty

Your new Sega Product is covered for a period of 90 days from the date of shipment. This certifies that the Printed Circuit Boards, Power Supplies and Monitor are to be free of defects in workmanship or materials under normal operating conditions. This also certifies that all Interactive Control Assemblies are to be free from defects in workmanship and materials under normal operating conditions. No other product in this machine is hereby covered.

Sellers sole liability in the event a warranted part described above fails shall be, at its option, to replace or repair the defective part during the warranty period. For Warranty claims, contact your Sega Distributor.

Should the Seller determine, by inspection that the product was caused by Accident, Misuse, Neglect, Alteration, Improper Repair, Installation or Testing, the warranty offered will be null and void.

Under no circumstances is the Seller responsible for any loss of profits, loss of use, or other damages.

This shall be the exclusive written Warranty of the original purchaser expressed in lieu of all other warranties expressed or implied. Under no circumstance shall it extend beyond the period of time listed above.



SEGA ENTERPRISES, INC. (USA)

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