1ST PRINTING - JN

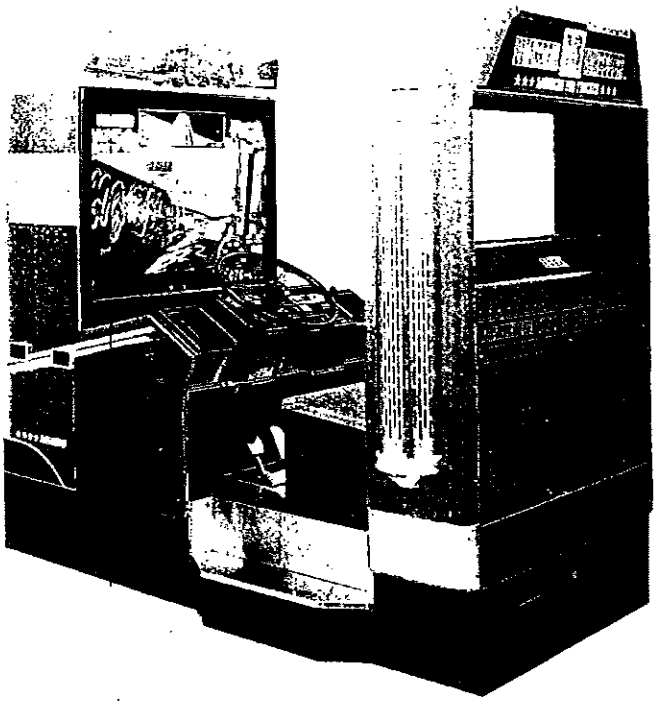
SEGA™

DEITH LEISURE SPARES
ML0359

EIGHTEEN 18 WHEELER™

AMERICAN PRO TRUCKER

OWNER'S MANUAL



STOP
IMPORTANT

- Before using this product, read this OWNER'S MANUAL carefully to understand the contents herein stated.
- After reading this manual, be sure to keep it available nearby the product or elsewhere convenient for referring to it anytime when necessary.

SEGA ENTERPRISES, LTD.

MANUAL NO. 420 - 6545 - 01

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 DANGER, WARNING, CAUTION, etc. are used. Be sure to understand the contents of the displays before reading the text.

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

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

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.

Indicates a "Protective Earth Terminal." Before operating the equipment, be sure to connect it to the Ground.

- **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 turning 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?

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.

IMPORTANT

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

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.

SPECIFICATIONS

Installation space	:	1,580 mm (W) × 2,460 mm (D) (62.2 in. × 96.9 in.)
Height	:	2,230 mm (1045.0 in.)
Weight	:	Approx. 474 kg. (743.0 lbs.)
Power, maximum current	:	680 W 7.63 A (AC 110V 50 Hz AREA) 660 W 7.39 A (AC 110V 60 Hz AREA) 650 W 6.79 A (AC 120V 60 Hz AREA) 700 W 3.90 A (AC 220V 50 Hz AREA) 690 W 3.89 A (AC 220V 60 Hz AREA) 720 W 3.94 A (AC 230V 50 Hz AREA) 700 W 3.80 A (AC 230V 60 Hz AREA) 690 W 3.61 A (AC 240V 50 Hz AREA) 660 W 3.44 A (AC 240V 60 Hz AREA)
For TAIWAN (MITSUBISHI PROJECTION DISPLAY TYPE)		
Power, current	:	680 W 8.00 A (MAX.) 300 W 3.40 A (MIN.)
For TAIWAN (TOSHIBA PROJECTION DISPLAY TYPE)		
Power, current	:	705 W 8.10 A (MAX.) 310 W 3.60 A (MIN.)
MONITOR	:	50 TYPE PROJECTION DISPLAY

INTRODUCTION OF THE OWNER'S 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, **EIGHTEEN WHEELER.**
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.

IMPORTANT

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

SEGA ENTERPRISES, INC. (U.S.A.)/CUSTOMER SERVICE
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Phone : (415) 701-6580
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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℃ to 40℃. Only in the case a projector is employed, the temperature range is from 5℃ to 30℃.

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

WARNING

- For the operation of this machine, secure a minimum area of 2.905m (W)× 2.56m (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.

STOP IMPORTANT

For transporting the machine into the location's building, the minimum necessary dimensions of the opening (of doors, etc.) are 1.6m(W) and 1.7m(H).

Electric current consumption

MAX. 7.63 A (AC 110V 50 Hz)
MAX. 7.39 A (AC 110V 60 Hz)
MAX. 6.79 A (AC 120V 60 Hz)
MAX. 3.90 A (AC 220V 50 Hz)
MAX. 3.89 A (AC 220V 60 Hz)
MAX. 3.94 A (AC 230V 50 Hz)
MAX. 3.80 A (AC 230V 60 Hz)
MAX. 3.61 A (AC 240V 50 Hz)
MAX. 3.44 A (AC 240V 60 Hz)
MAX. 8.00 A (For TAIWAN, MITSUBISHI projection display)
MAX. 8.10 A (For TAIWAN, TOSHIBA projection display)

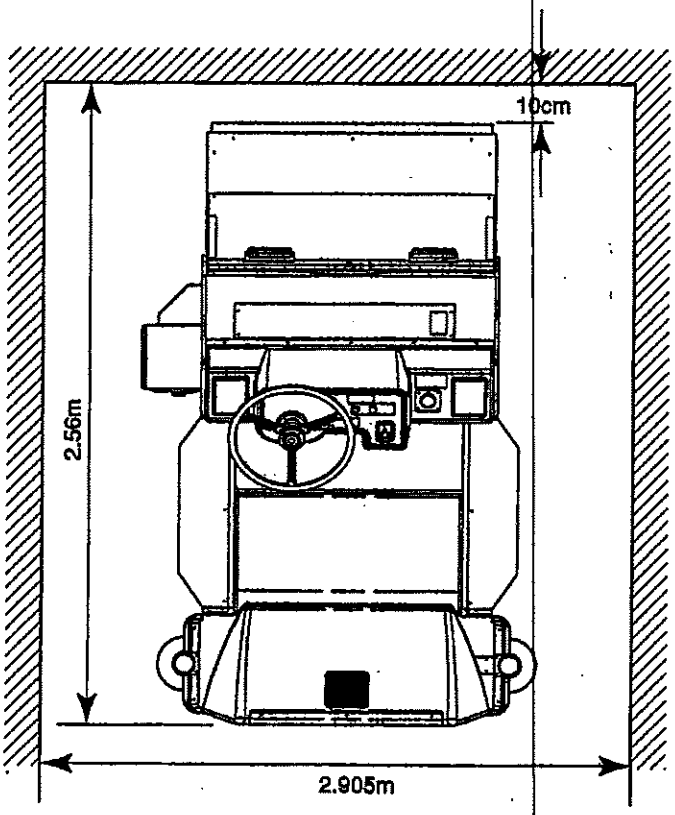


FIG. 2

3. OPERATION

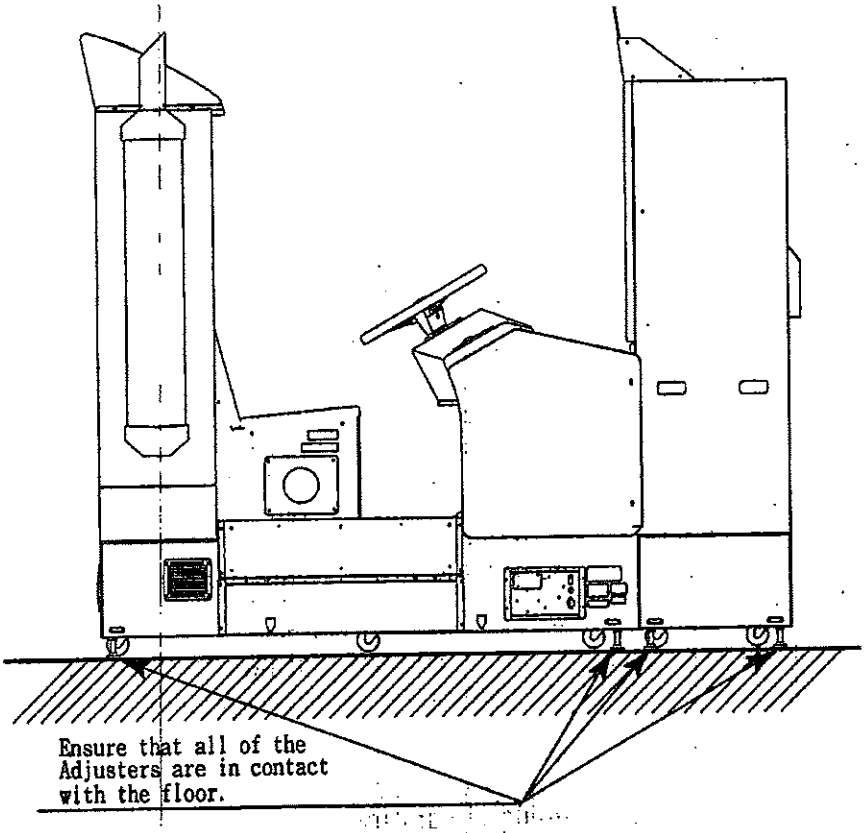
PRECAUTIONS TO BE HEEDED BEFORE STARTING THE OPERATION

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

WARNING

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

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



WARNING

- Do not put any heavy item on this product. Placing any heavy item on the product can cause a falling down accident or parts damage.
- Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step.
- 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.

CAUTION

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

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.

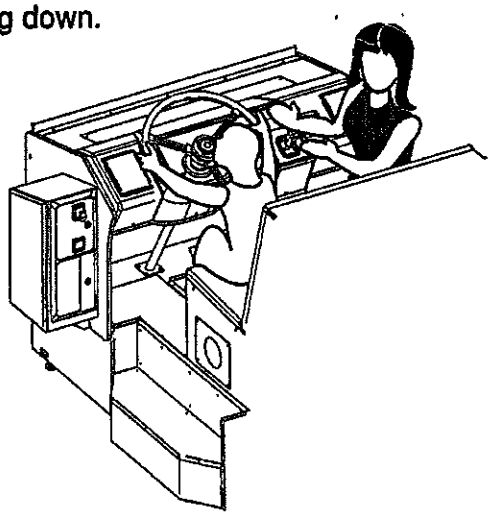
WARNING

- 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.
  - Intoxicated persons.
  - 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.

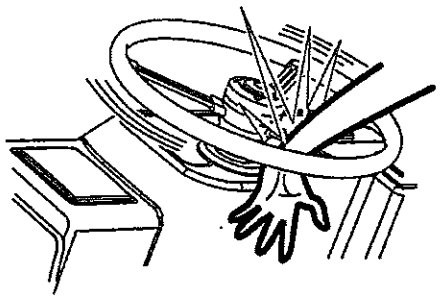
CAUTION

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

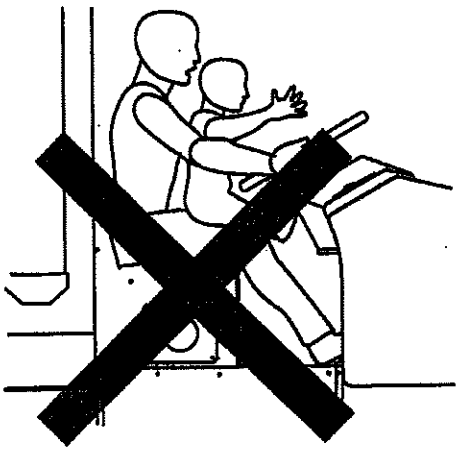
- Children should be accompanied by their guardians for playing the game.



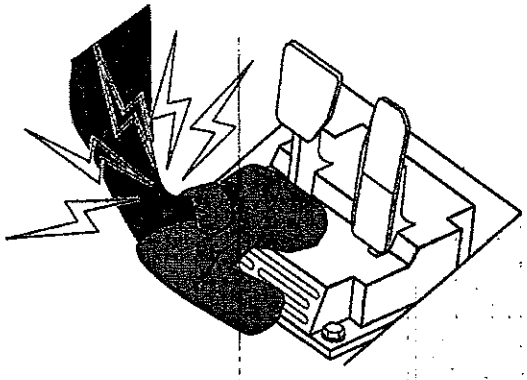
- The steering wheel has reaction mechanism. Caution the guardians of children so as not to insert hands or arms in between the spokes. Failure to observe this can cause injury due to a sudden move of the steering wheel.



- Caution the player so as not to hold a child in his/her lap to play. Failure to observe this may cause injuries resulting from a falling accident.



- Instruct those who wear high-heel or thick-sole shoes to refrain from playing the game. Failure to observe this can cause a sprain.



4. NAME OF PARTS

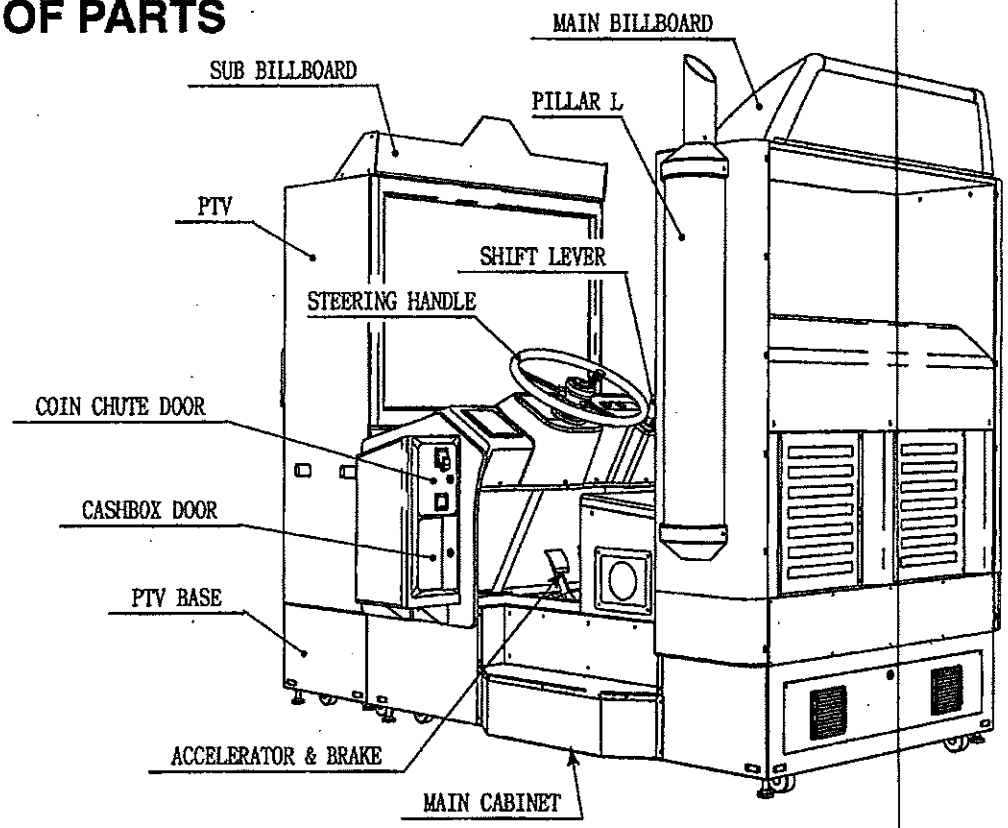


FIG. 4 a OVERVIEW

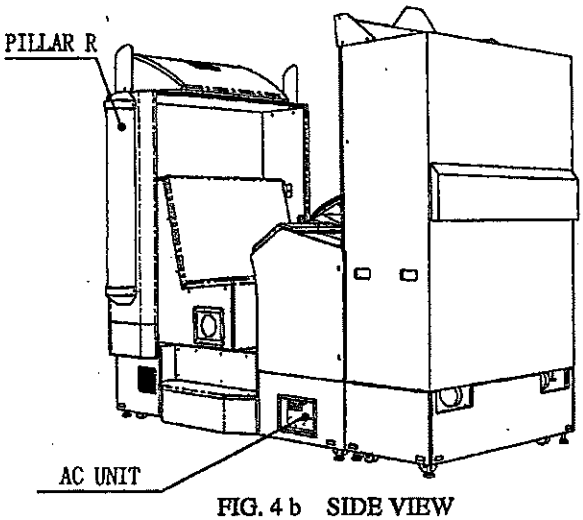


FIG. 4 b SIDE VIEW

TABLE 4

	Width × Length × Height	Weight
PTV	1,140 mm × 554 mm × 1,670 mm	110 kg
PTV BASE	1,165 mm × 644 mm × 387 mm	24 kg
MAIN CABINET	1,580 mm × 1,880 mm × 1,410 mm	291 kg
MAIN BILLBOARD	1,252 mm × 492 mm × 330 mm	16 kg
SUB BILLBOARD	1,145 mm × 335 mm × 260 mm	9 kg
PILLAR R	170 mm × 400 mm × 1,503 mm	12 kg
PILLAR L	170 mm × 400 mm × 1,503 mm	12 kg
When assembled	1,580 mm × 2,460 mm × 2,230 mm	Approx. 479 kg

5. ACCESSORIES

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

TABLE 5 ACCESSORIES

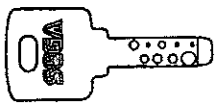
DESCRIPTION
Part No. (Qty.)
Note

OWNERS MANUAL
420-6545-01 (1)

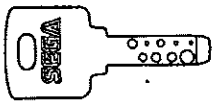
Figures

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.

KEY MASTER
220-5576 (2)
For opening/closing the doors



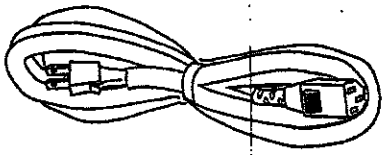
KEY
(2)
For the CASHBOX DOOR



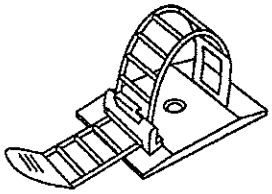
The Keys are inside the Coin Chute Door at the time of shipment from the factory.

SERVICE MANUAL NAOMI ENG
420-6455-01 (1)
INSTRUCTION MANUAL FOR THE GAME BOARD

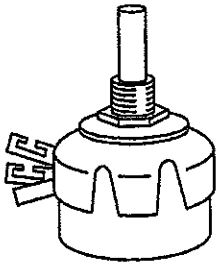
AC Cable (Power Cord)
600-6729 (1) AC 110V AREA
600-6695 (1) AC 120V AREA
600-6618 (1) AC 220~240V AREA
Used for installation, see [5] of Section 6.



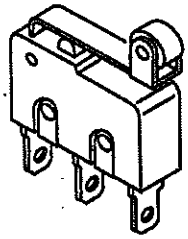
CORD CLAMP
280-5009-01 (1)
Used for securing the power cord.
see [5] of Section 6.



VOL CONT B-5K OHM
220-5373 (1)
220-5484
Spare, see Section 10, 12.



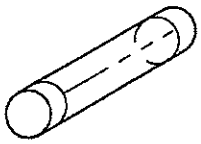
SW MICRO TYPE
509-5636 (1)
Spare, refer to Section 11.



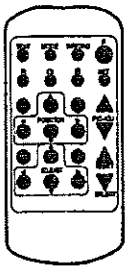
LAMP 14V 3.8W
390-6677-038 (1)
Spare, refer to Section 15.

FUSE 6.3A 125V
514-5086-6300 (1)

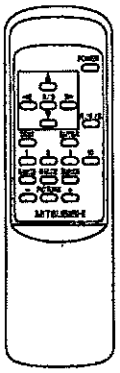
Spare, see Section 17.



TOSHIBA
Remote Controller used for adjustment of the projector.
See Section 14.
200-5536(1)



MITSUBISHI
Remote Controller used for adjustment of the projector.
See Section 14.
200-5532(1)

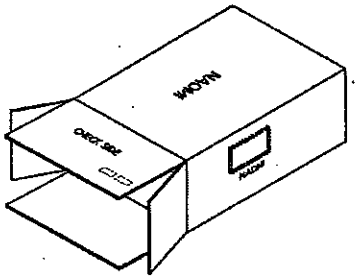


One of the above 2 types of Remote Controllers is used for the Projector.

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.

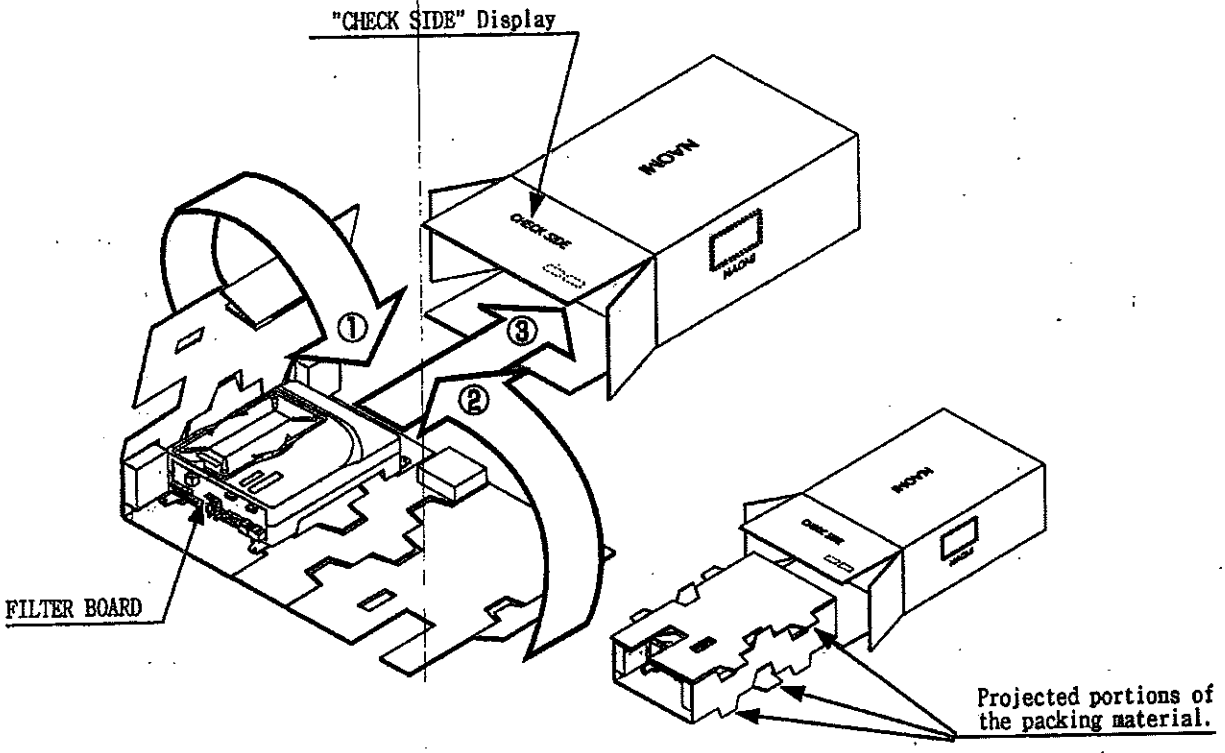


HOW TO USE THE CARTON BOX

STOP
IMPORTANT

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 INSTALLATION

WARNING

- Perform assembly work by following the procedure herein stated. Failing to comply with the instructions can cause electric shock hazard.
- Perform assembling as per this manual. Since this is a complex machine, erroneous assembling can cause an electric shock, machine damage and or not functioning as per specified performance.
- When assembling, be sure to use plural persons. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.
- Ensure that connectors are accurately connected. Incomplete connections can cause electric shock hazard.
- Be careful so as not to damage wirings. Damaged wiring can cause electric shock and short circuit hazards.
- Do not carelessly push the PTV. Pushing the PTV carelessly can cause the PTV to fall down.
- This work should be performed by the Location's Maintenance Man or Serviceman. Performing work by non-technical personnel can cause a severe accident such as electric shock. Failing to comply with this instruction can cause a severe accident such as electric shock to the player during operation.
- Provide sufficient space so that assembling can be performed. Performing work in places with narrow space or low ceiling may cause an accident and assembly work to be difficult.

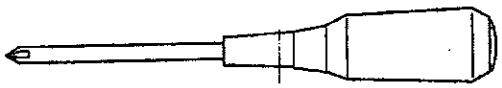
CAUTION

- When handling plastic parts, use care. Do not give a shock or apply excessive load to the fluorescent lamps and plastic parts. Failure to observe this can cause parts damage, resulting in injury due to fragments, cracks and broken pieces.
- 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.
- The PTV screen is susceptible to damage. Use care when handling the PTV. If damaged, repair can not be performed.

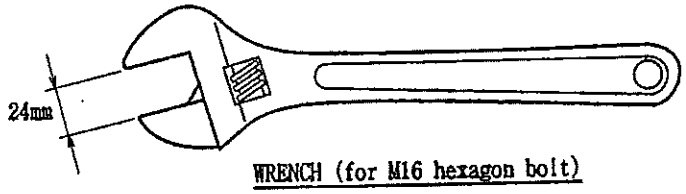
When carrying out the assembly work, follow the procedure in the following 7-item sequence:

1. ASSEMBLING THE PTV
2. INSTALLING THE MAIN BILLBOARD, PILLAR L, AND PILLAR R
3. INSTALLING THE PTV
4. SECURING IN PLACE (ADJUSTER ADJUSTMENT)
5. POWER SUPPLY, AND EARTH CONNECTION
6. TURNING POWER ON
7. ASSEMBLY CHECK

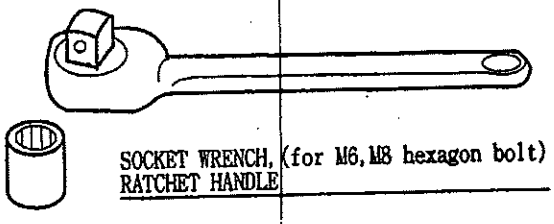
When assembling, make sure that tools such as a Phillips type screwdriver, wrench (for M16 hexagon bolt), socket wrench (M6, M8 hexagon bolt), ratchet handle, and the master key are available.



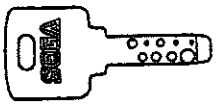
Phillips type screwdriver



WRENCH (for M16 hexagon bolt)



SOCKET WRENCH, (for M6, M8 hexagon bolt)
RATCHET HANDLE



KEY MASTER

1 ASSEMBLING THE PTV

① Secure the 2 Mask Holders to the PTV ceiling with the 2 Flat Head screws for each.

② Secure the Mask to the PTV with a total of 6 screws.

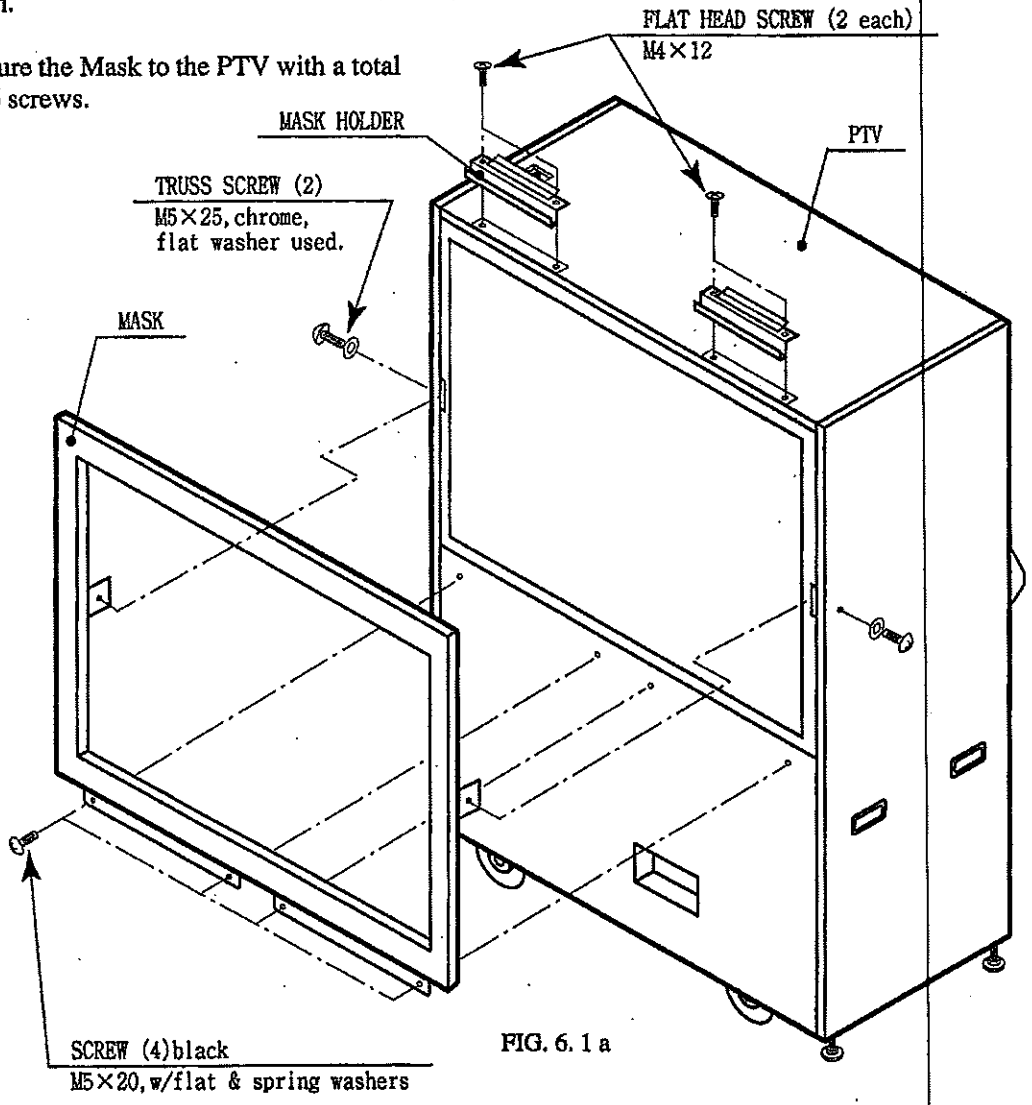


FIG. 6. 1 a

③ Secure the 2 PTV Holders to the PTV front with the 2 screws for each.

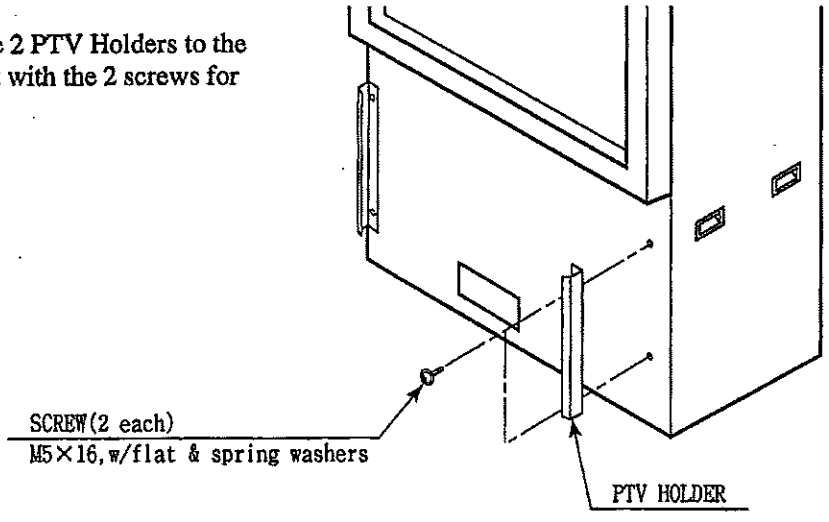


FIG. 6. 1 b

2 INSTALLING THE MAIN BILLBOARD, PILLAR L, AND PILLAR R

① Take out the 7 truss screws to remove the BACK PANEL COVER from the back of main cabinet.

② Take out the 2 hexagon bolts to remove the BACK PANEL from the back of main cabinet.

③ Take out the 2 truss screws, unlock the lock, and remove the BACK LID.

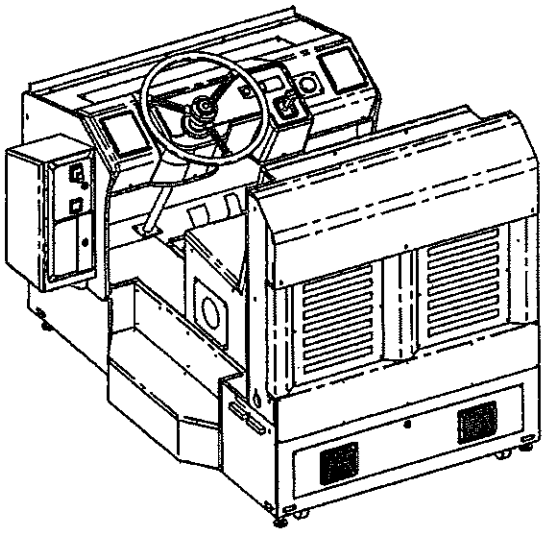


FIG. 6. 2 a

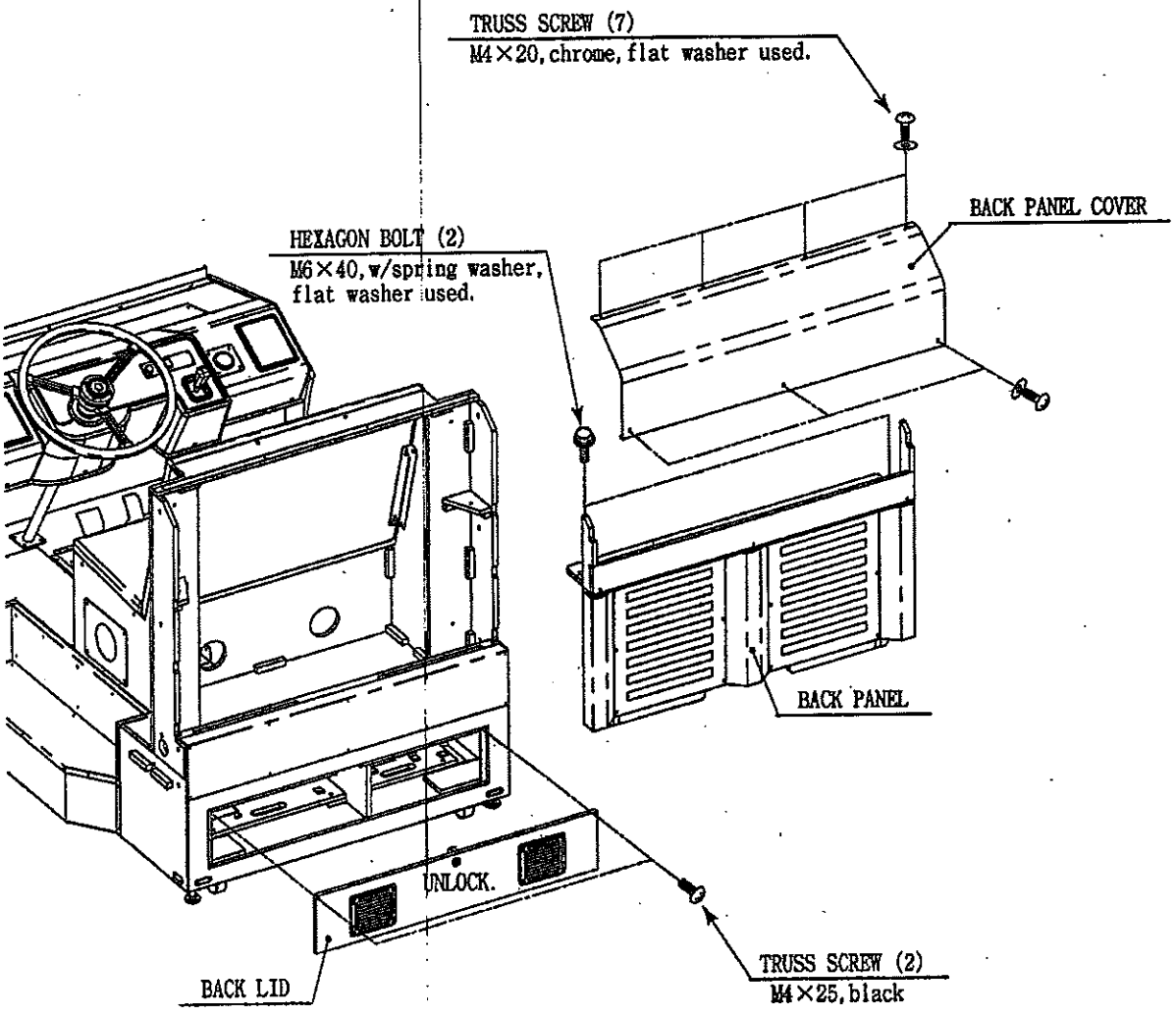


FIG. 6. 2 b

④ Install the PILLAR L and PILLAR R to the left & right sides of main cabinet and secure with the 6 hexagon bolts for each. Fasten the 2 bolts from inside the BACK LID.
The PILLAR R has wiring. Check with the connector portion. Install the PILLAR L to the left side and the PILLAR R to the right-hand side of main cabinet when facing from the PTV screen. Fasten the bolts while another person supporting the PILLAR.

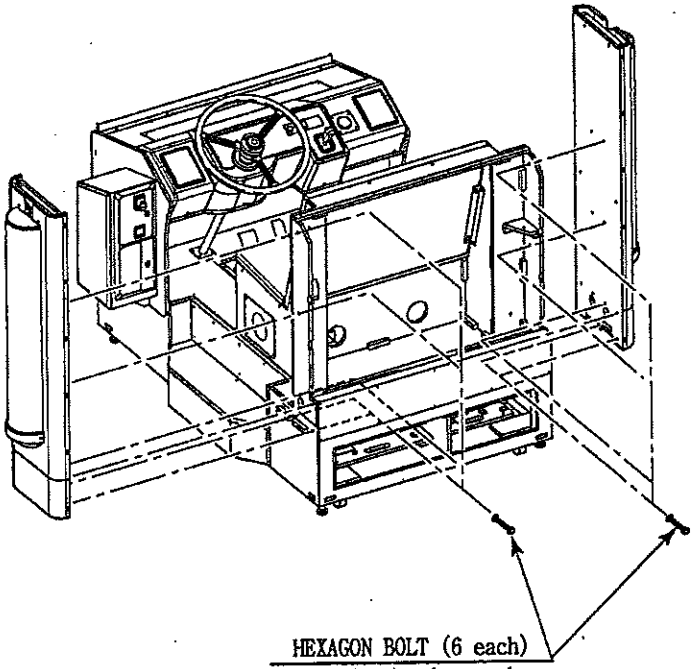


FIG. 6. 2 c

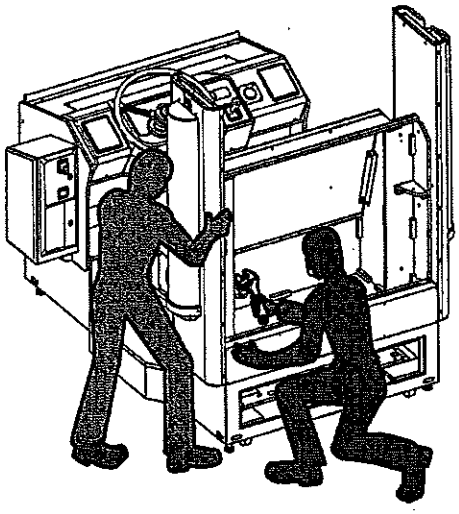


FIG. 6. 2 d

⑤ To secure the PILLAR, install the L-shaped Bracket from the seat side. Secure the PILLAR CABI BRACKET UPPER with the 3 truss screws and the PILLAR CABI BRACKET LOWER with the 4 truss screws. Perform this on the both sides.

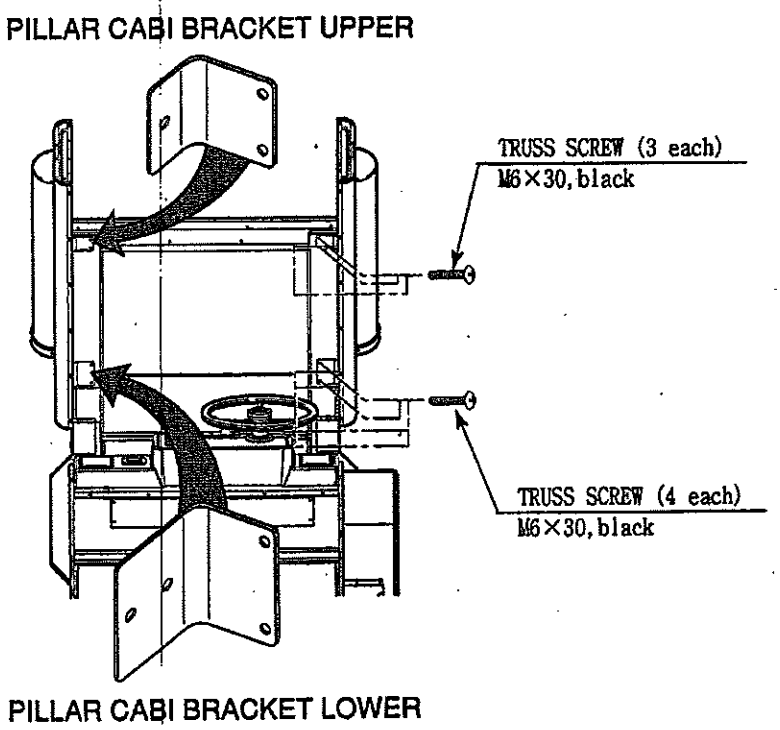


FIG. 6. 2 e

⑥ Connect the PILLAR R's wire connector to the main cabinet's connector.

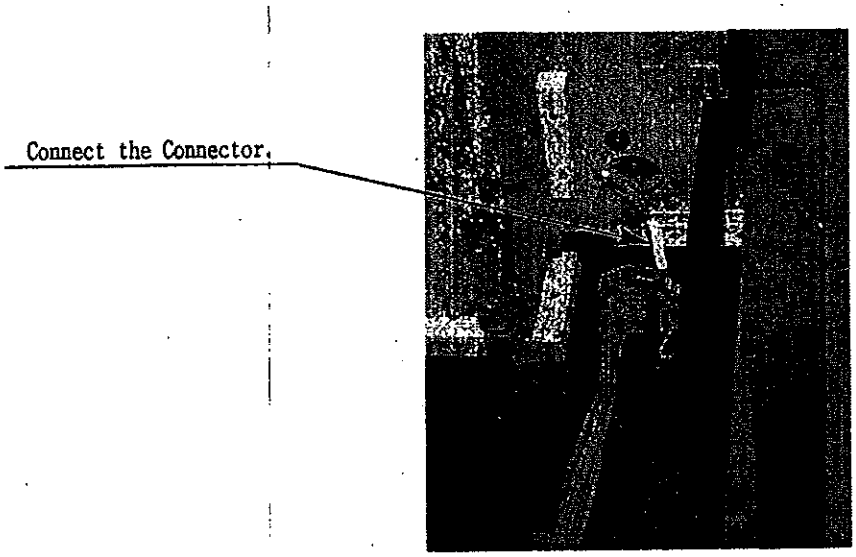


PHOTO 6. 2 a

⑦ Install the BACK PANEL, the BACK PANEL COVER, and the BACK LID to the main cabinet back.

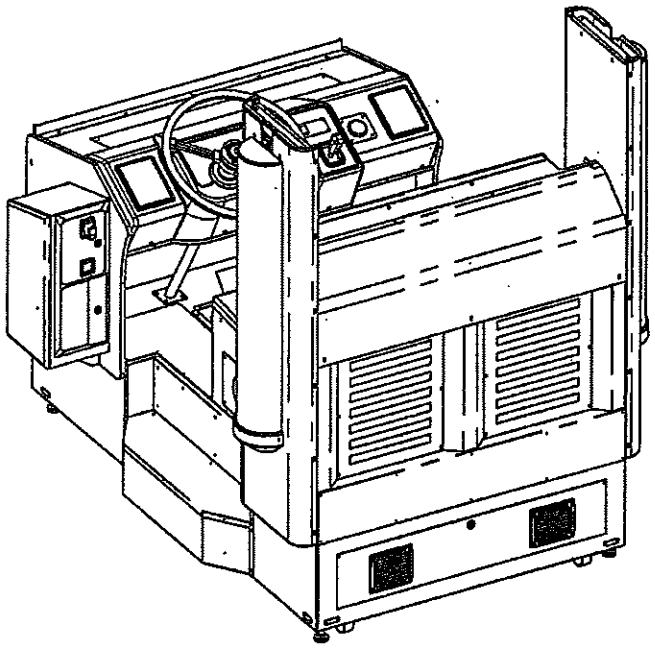
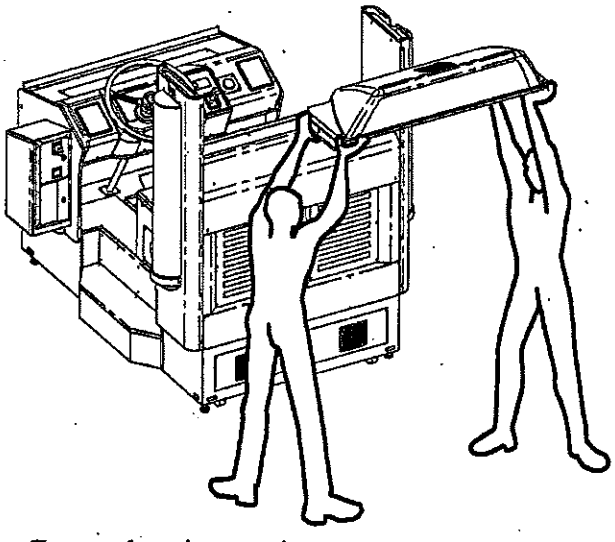


FIG. 6. 2 f

⑧ Lift the MAIN BILLBOARD onto the 2 PILLARs by 2 persons. Use care so as not to pinch hands or damage wire.



For performing work, use 2 or more workers.

FIG. 6. 2 g

⑨ By using a total of 4 truss screws from inside the 2 PILLARs, secure the MAIN BILLBOARD.

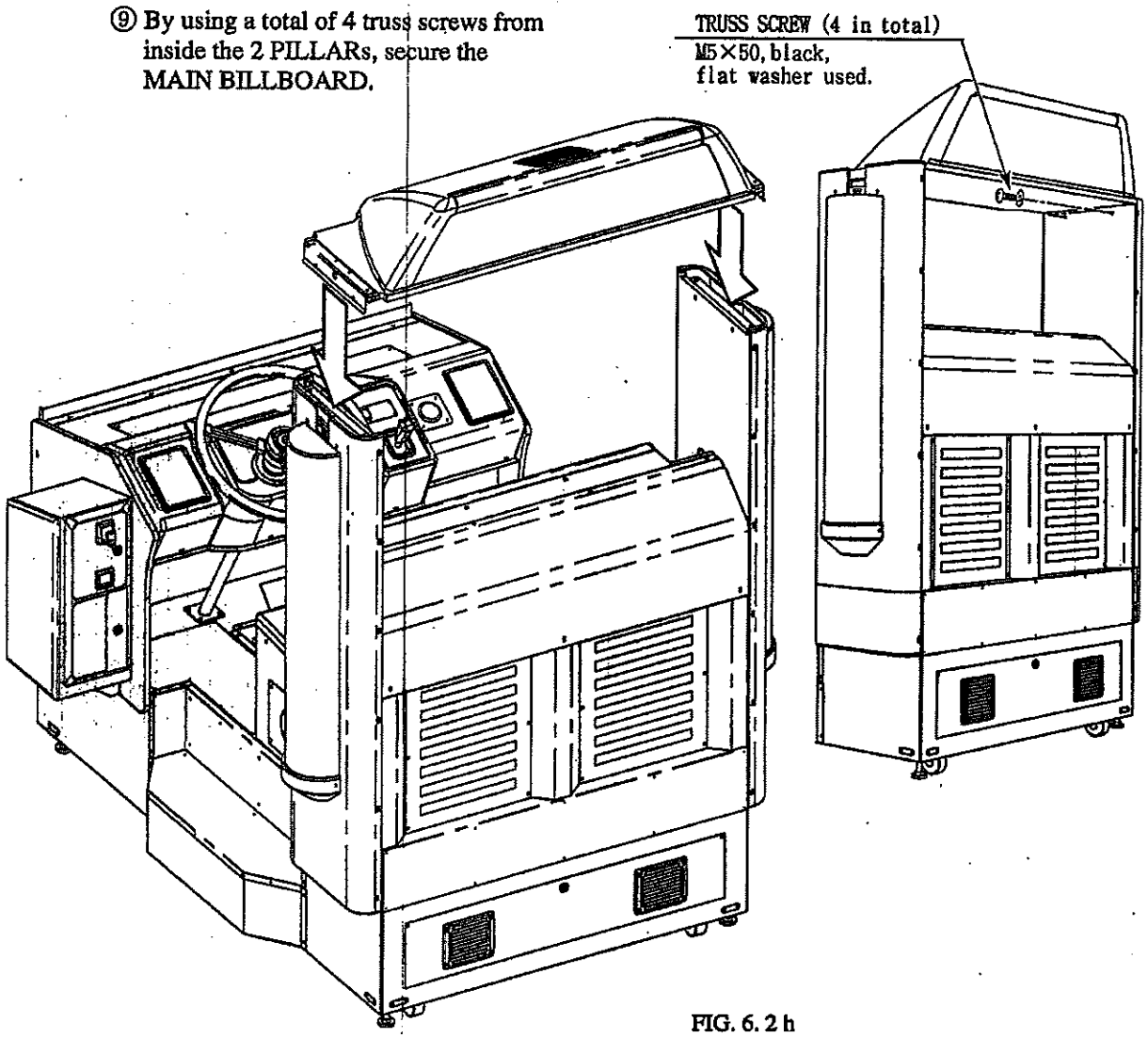
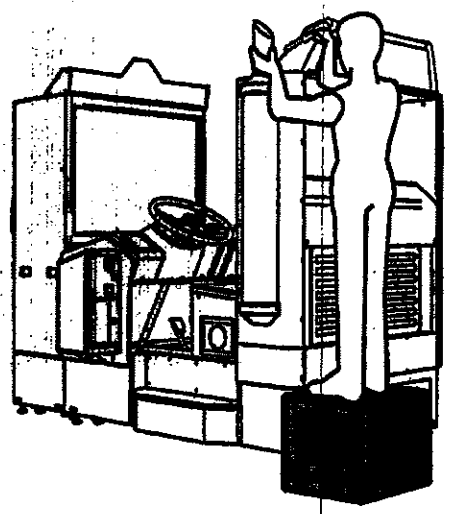


FIG. 6. 2 h



When performing work, be sure to use a step.

⑩ Secure the END CAP BRACKET to the PILLAR with the 2 screws. Perform this on the both sides.

⑪ Connect the wire connector of the MAIN BILLBOARD to the connector of the PILLAR R.

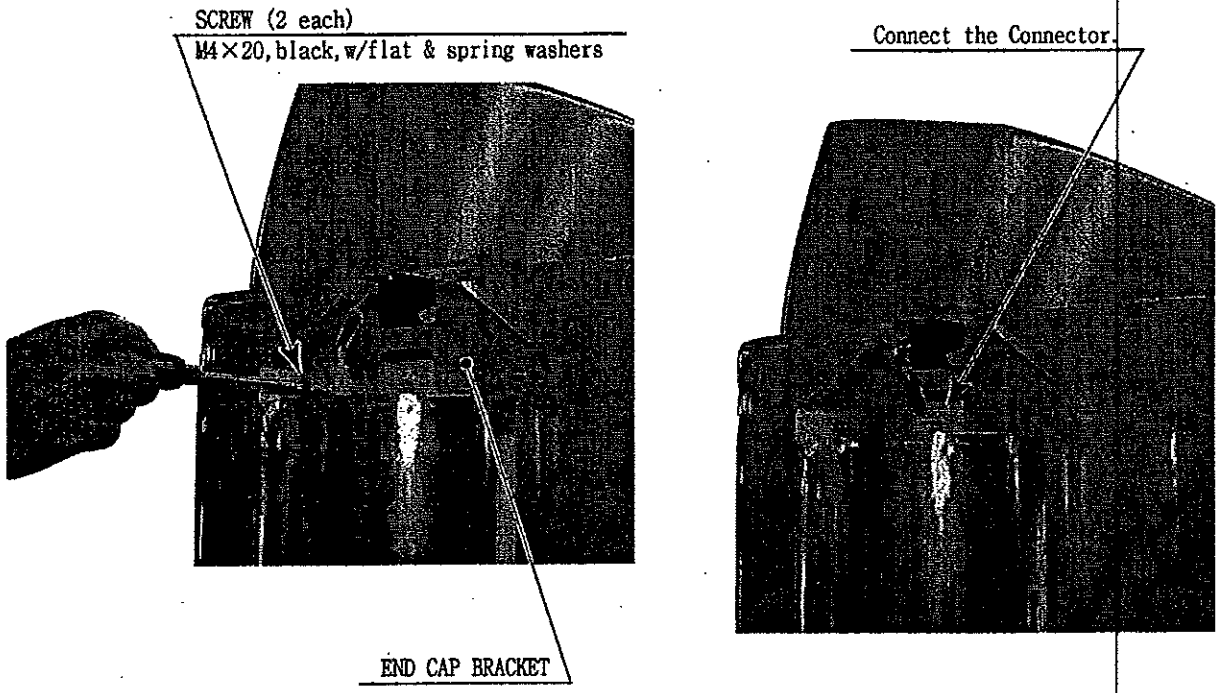


PHOTO 6. 2 b

⑫ By using the 3 truss screws, install the END CAP to the END CAP BRACKET. Perform this on the both sides.

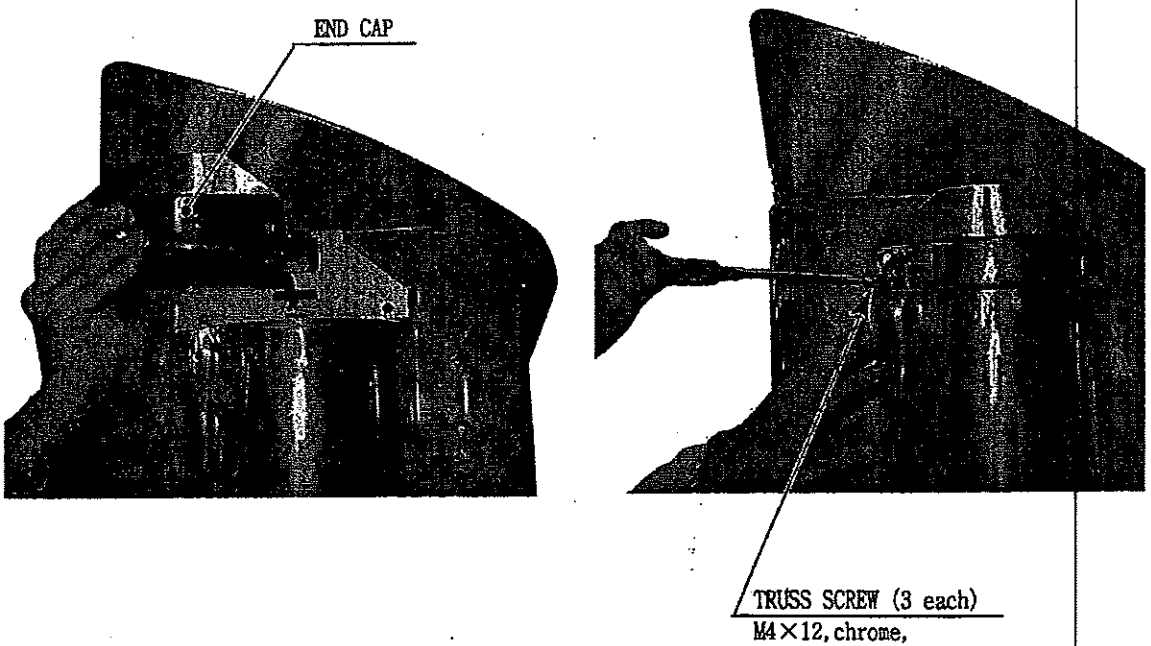
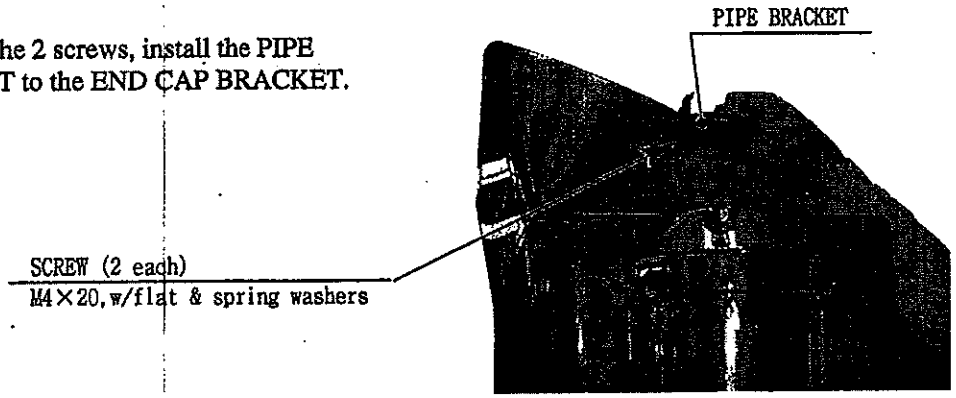


PHOTO 6. 2 c

⑬ By using the 2 screws, install the PIPE BRACKET to the END CAP BRACKET.



⑭ Install the PIPE SAFETY on to the PIPE BRACKET with the 2 truss screws. Perform this on the both sides.

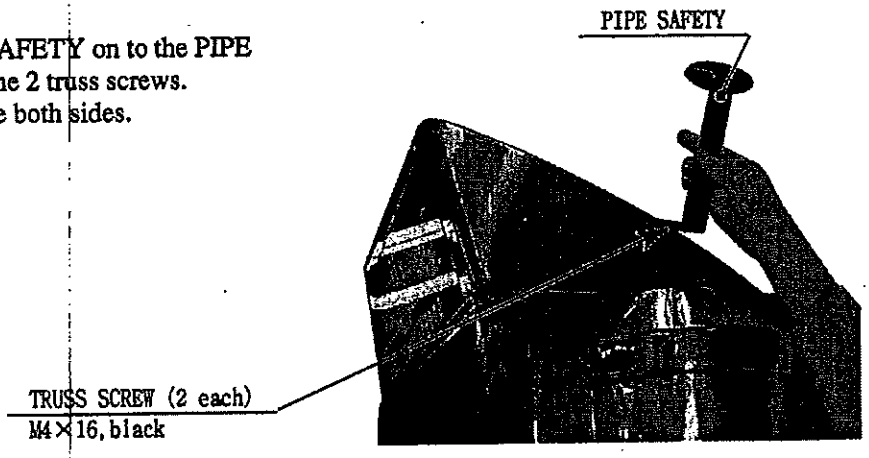


PHOTO 6. 2 d

⑮ By using the 4 truss screws, secure the PIPE to the PIPE BRACKET. Perform this on the both sides.

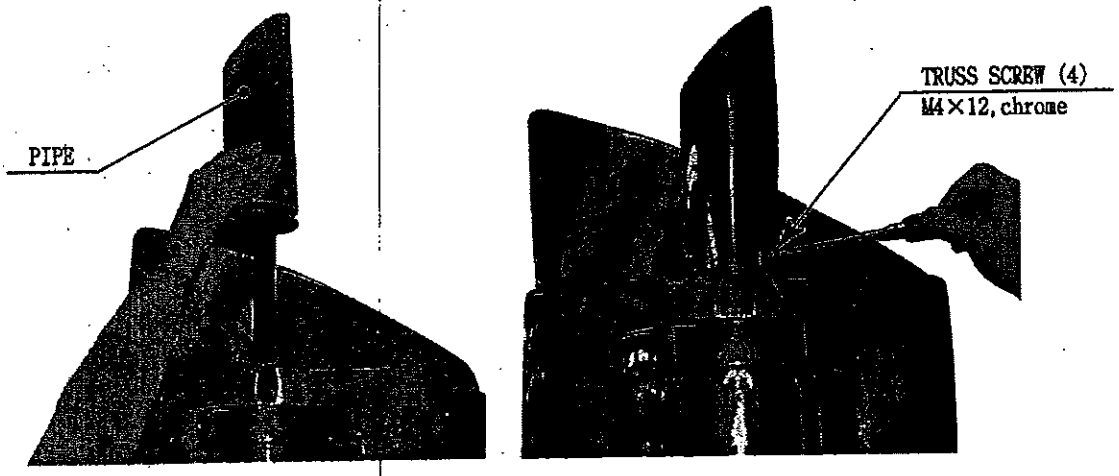


PHOTO 6. 2 e

3 INSTALLING THE PTV

① Fit the PTV BASE and the main cabinet. The surface of PTV BASE fitting to the main cabinet is predetermined.

② Secure the PTV BASE and the main cabinet with a total of 6 hexagon bolts.

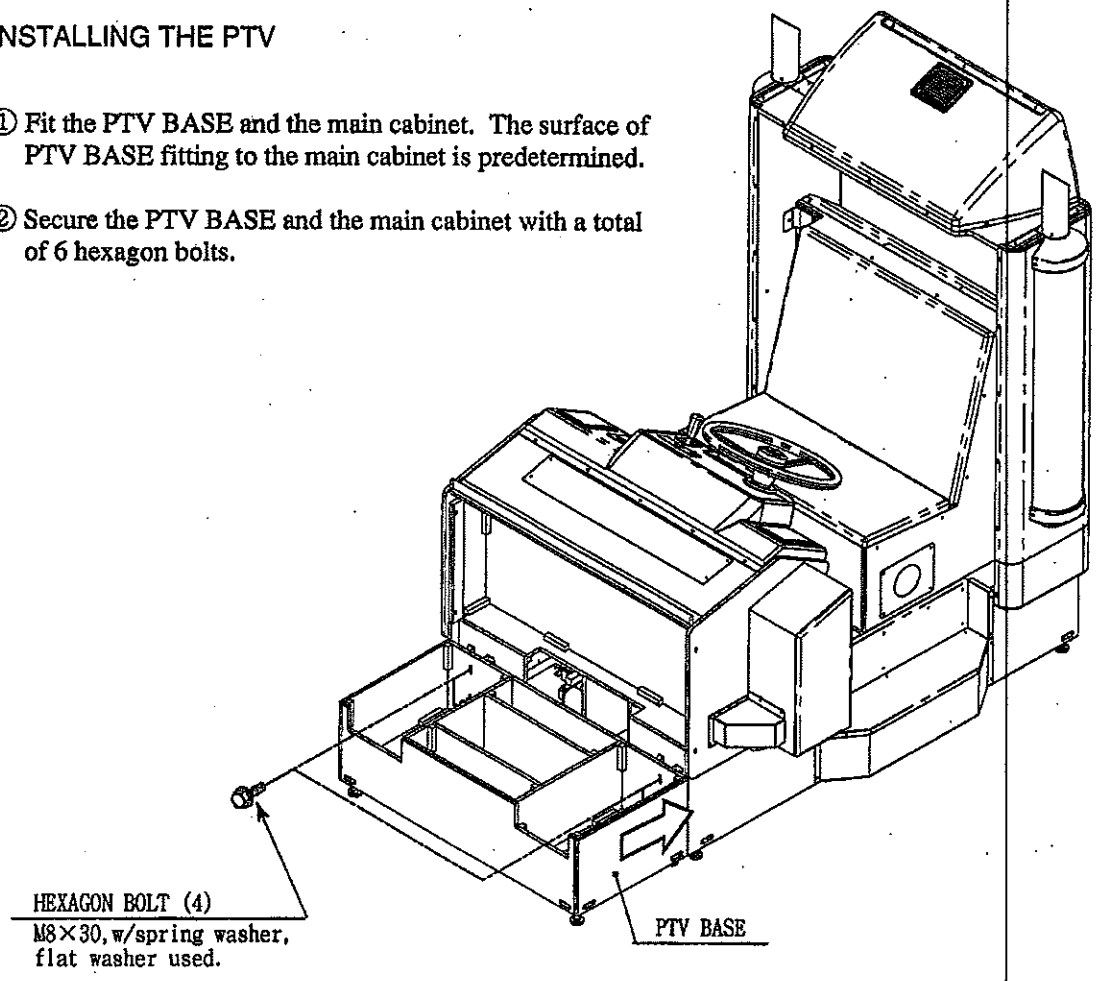


FIG. 6. 3 a

③ Mount the PTV halfway onto the PTV BASE by 3 or more persons. At this time, be sure to use another person to support the main cabinet or cause the adjusters to come into contact with the floor.

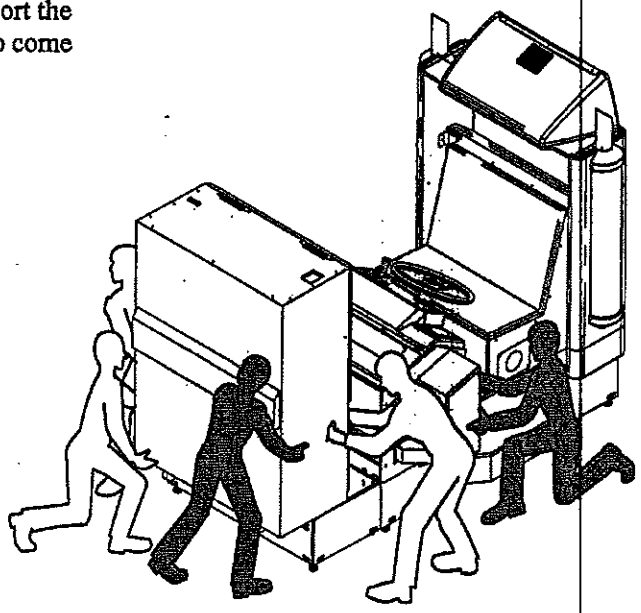


FIG. 6. 3 b

④ Connect the 2 wire connectors from the main cabinet to the PTV Connector Panel. The signal connector has the securing screws at the both ends. Fasten the 2 screws tightly after having connected the connector. At this time, use 3 persons to support the PTV.

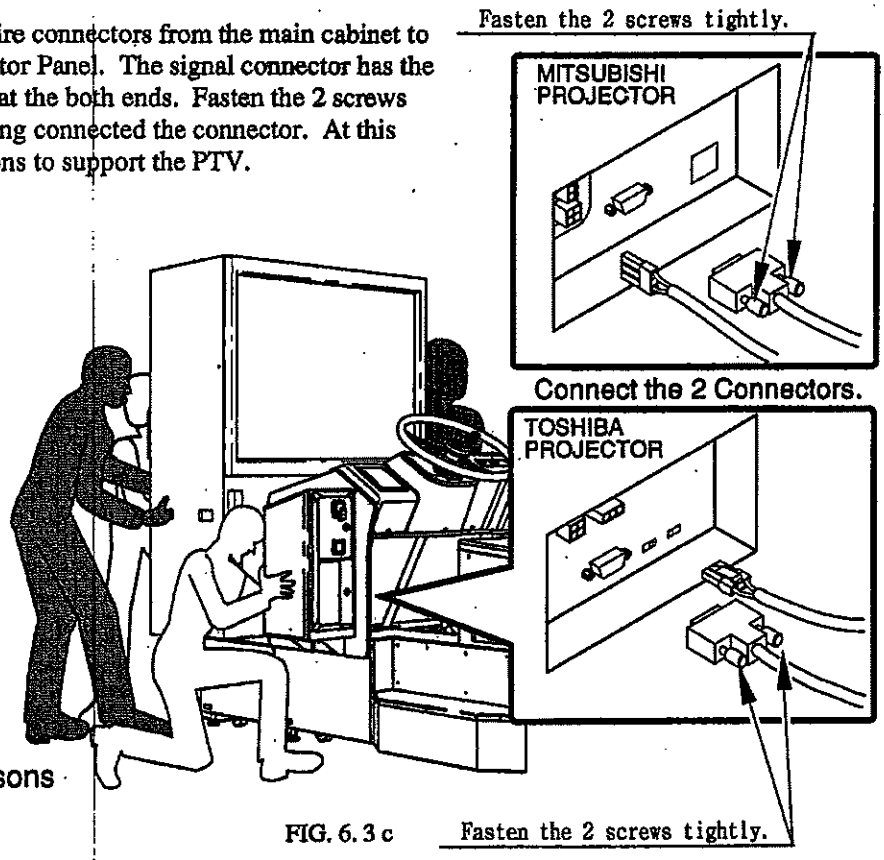


FIG. 6. 3 c

⑤ Fit the PTV to the main cabinet. Use care so as not to damage wiring at this time.

⑥ Secure the joining portion of the PTV and the main cabinet with a total of 4 screws.

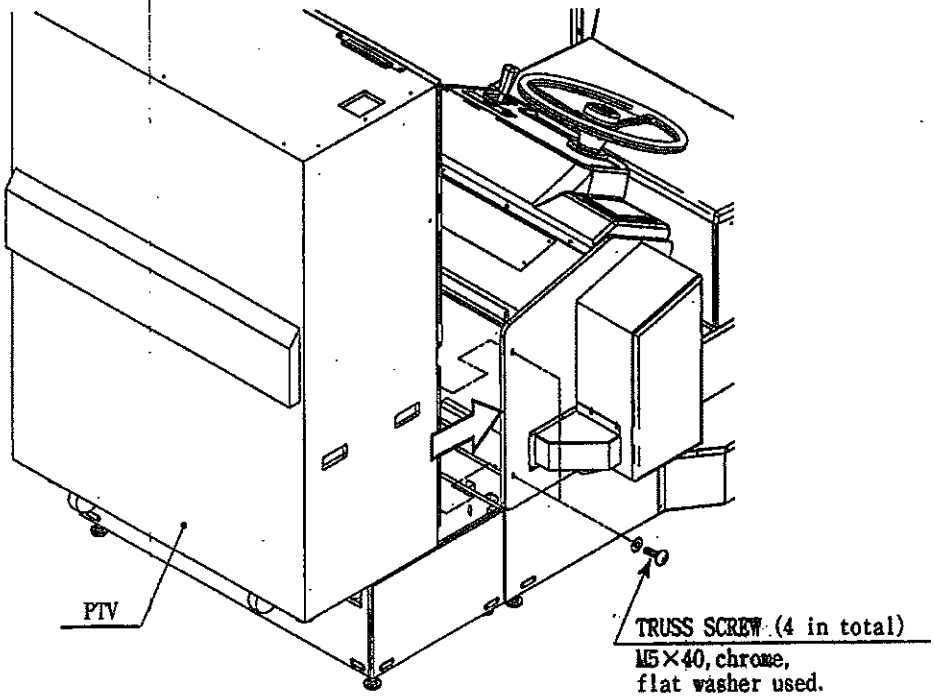


FIG. 6. 3 d

⑦ Install the SUB BILLBOARD to the PTV ceiling. Insert the SUB BILLBOARD to the 2 Mask Holders on the PTV ceiling and secure with the 2 truss screws. To perform work safely and securely, be sure to use a step. Do not step on the PTV or the main cabinet to perform work.

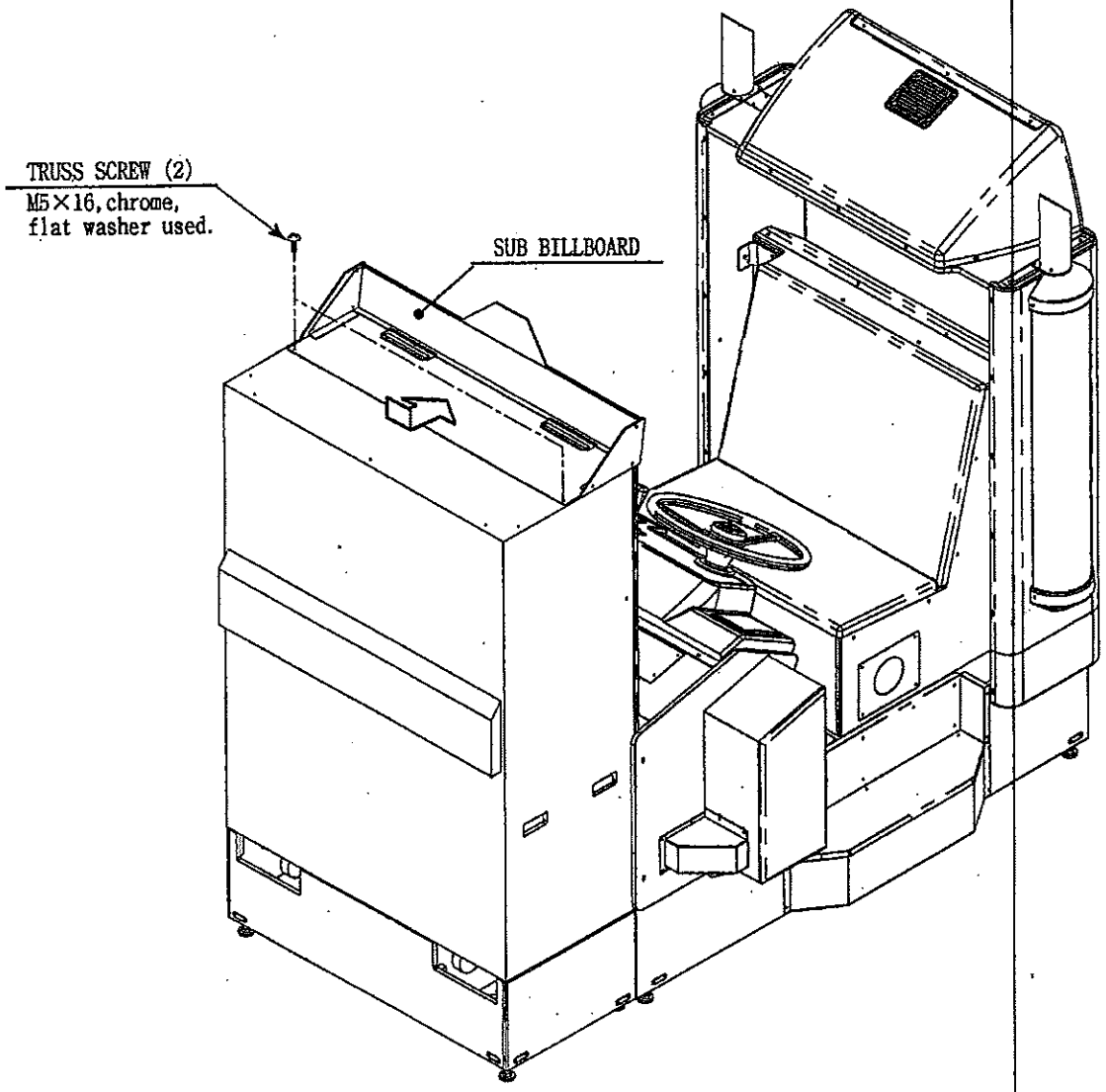
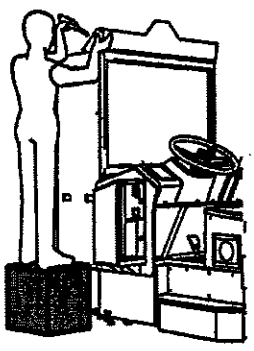


FIG. 6. 3 e



When performing work, be sure to use a step.

4 SECURING IN PLACE (ADJUSTER ADJUSTMENT)

WARNING

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 BASE, 4 for MAIN CABINET) and 8 Adjusters (4 for PTV BASE, 4 for MAIN CABINET). (FIG. 6. 4 a) 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 Transport the product to the installation position. Be sure to provide adequate space allowing the player to get on and off.

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

③ After making adjustment, fasten the Adjuster Nut upward and secure the height of Adjuster (FIG. 6. 3 b).

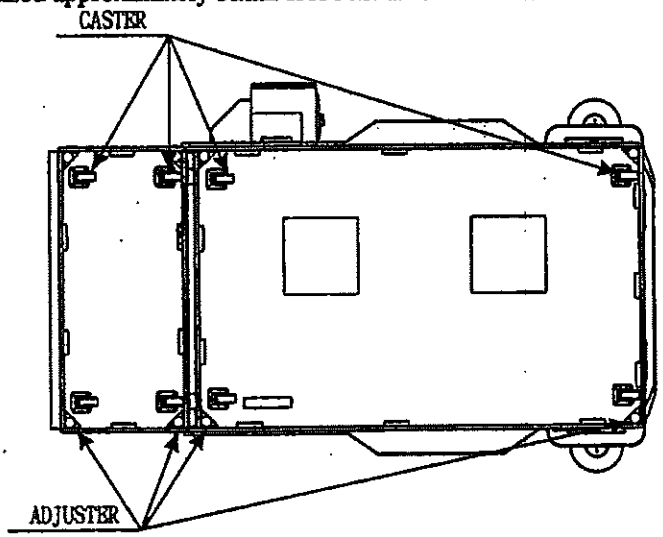
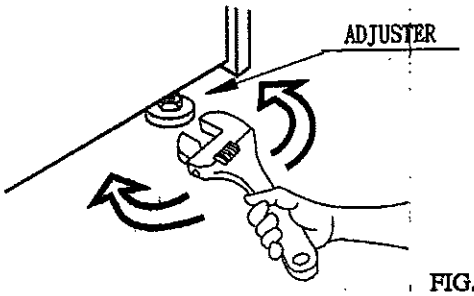


FIG. 6. 4 a BOTTOM VIEW



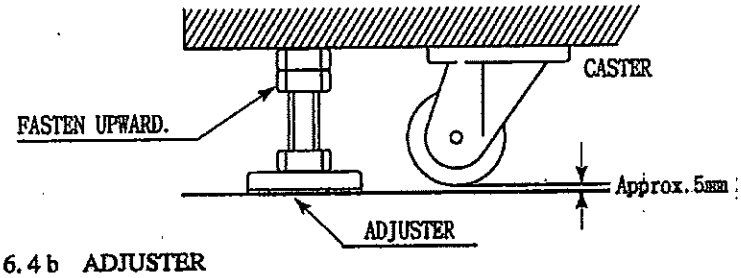


FIG. 6. 4 b ADJUSTER

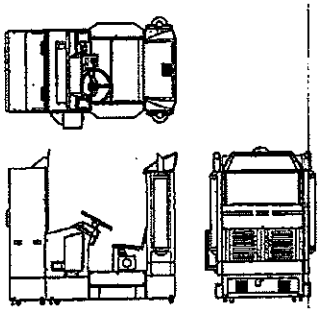


FIG. 6. 4 c

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

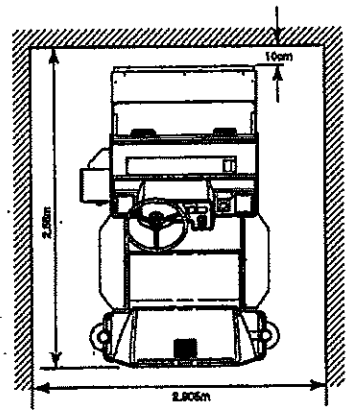


FIG. 6. 4 d

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

5 POWER SUPPLY, AND EARTH CONNECTION

WARNING

- 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 mounted on the left side of the machine. The AC Unit has Main SW, Circuit Protector and the Inlet which connects the Power Cord.

① Ensure that the Main SW is OFF.

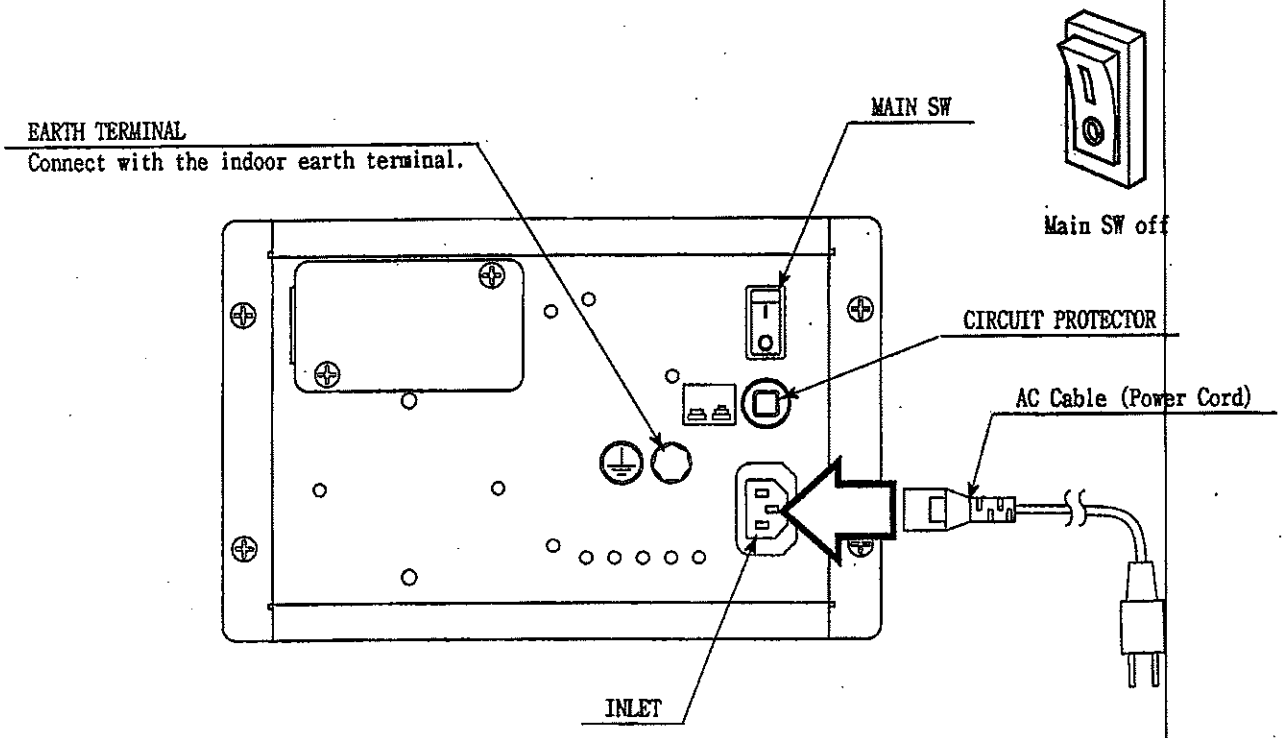


FIG. 6. 5 a AC unit

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.

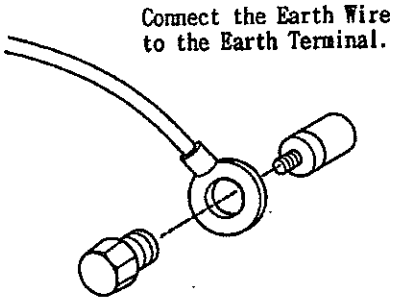


FIG. 6. 5 b Earth Wire Connection

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.

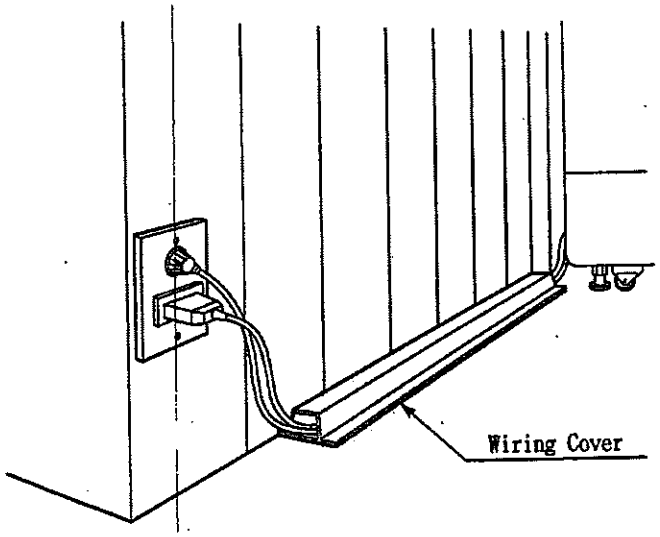
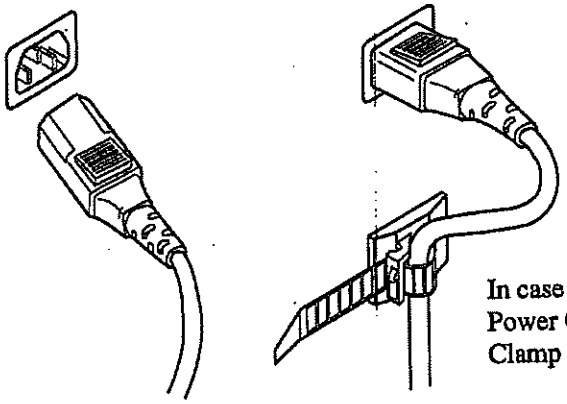


FIG. 6. 5 c Connecting Power Cord and Earth Wire

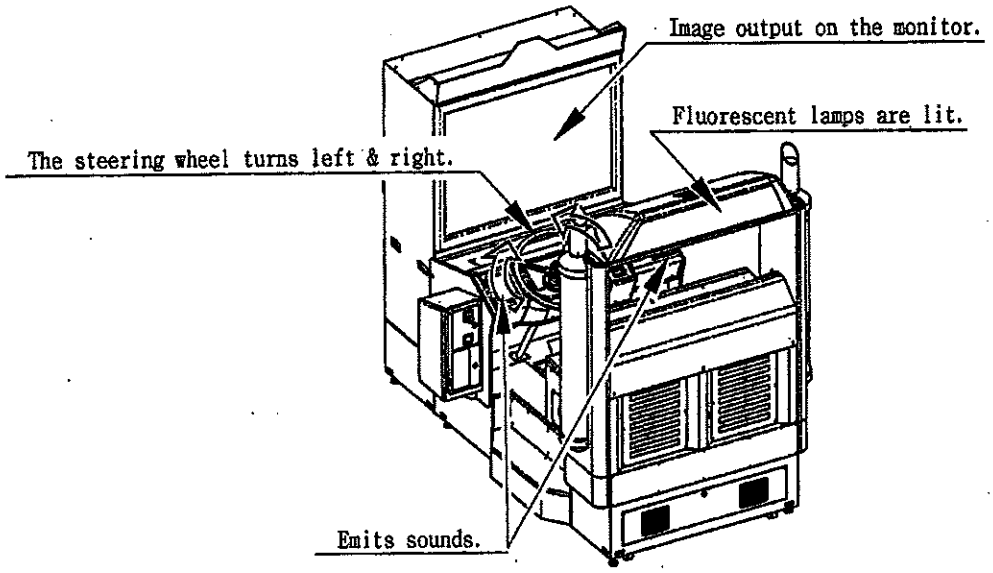


In case the Power Plug is apt to come out of place, secure the Power Cord to the periphery of the AC Unit with the Cord Clamp (an accessory).

HOW TO USE THE CORD CLAMP

6 TURNING POWER ON

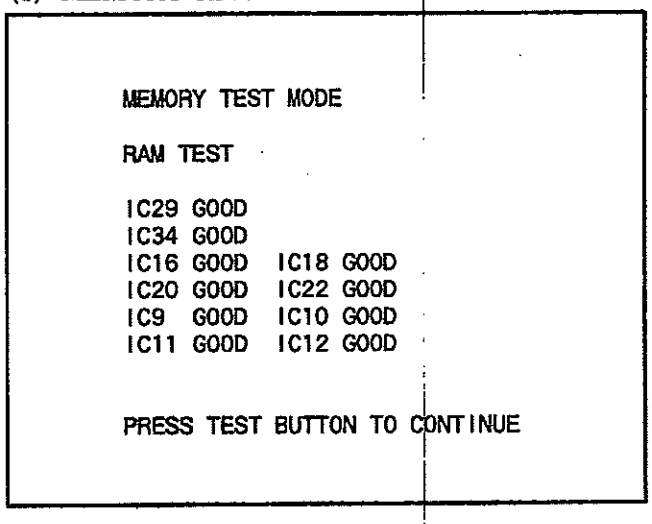
Turn the AC Unit's main switch on to supply power.
When power is turned on, the fluorescent lamp inside the MAIN BILLBOARD lights up. The monitor displays NAOMI SYSTEM boot up and then proceeds to the advertise mode. During this time, the initialization setting is automatically performed. Do not touch the machine until the advertise mode is displayed on the monitor after finishing the initialization setting. While initializing, the steering wheel turns left & right and stops at the centering position. In the initialization setting, the values of V.R. inside the control panel are corrected. Until the initialization is finished (the steering wheel stops automatically), do not touch the steering wheel or play the game. If you do, the steering wheel reaction during the game (reaction at the time of a course-out or crashing) can not be obtained correctly. In case of an abnormal reaction during the game, turn the power on again from the beginning and complete the initialization setting.
In this product, once the power is turned off, the data of inserted coins less than one credit and BONUS ADDER is cleared. In the advertise mode, sound is emitted from the 2 speakers. Sound is not emitted if set to NO SOUND OUTPUT in the test mode.



7 ASSEMBLING CHECK

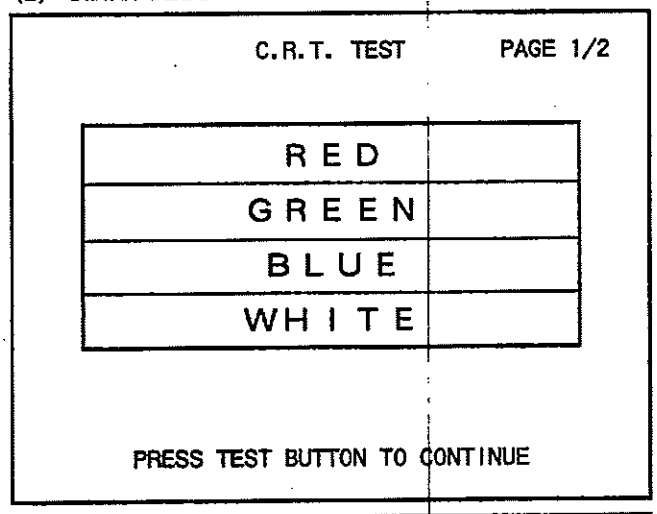
In the TEST MODE, ascertain that the assembly has been made correctly and IC BD. is satisfactory (refer to Section 9).
In the test mode, perform the following test:

(1) MEMORY TEST

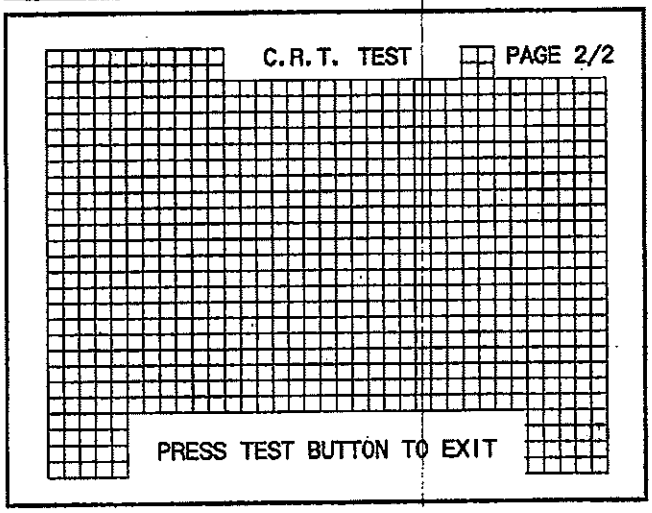


Selecting the desired RAM TEST item on the test mode menu screen causes the on-board memory to be tested automatically. The game board is satisfactory if the display beside each IC No. shows GOOD.

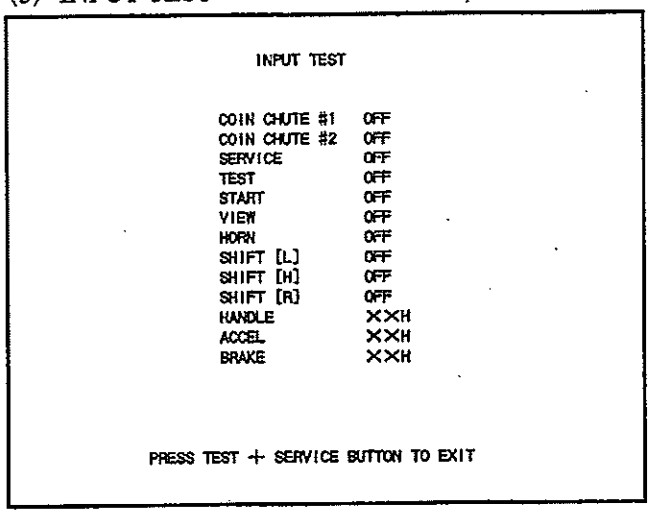
(2) C.R.T. TEST



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 14.

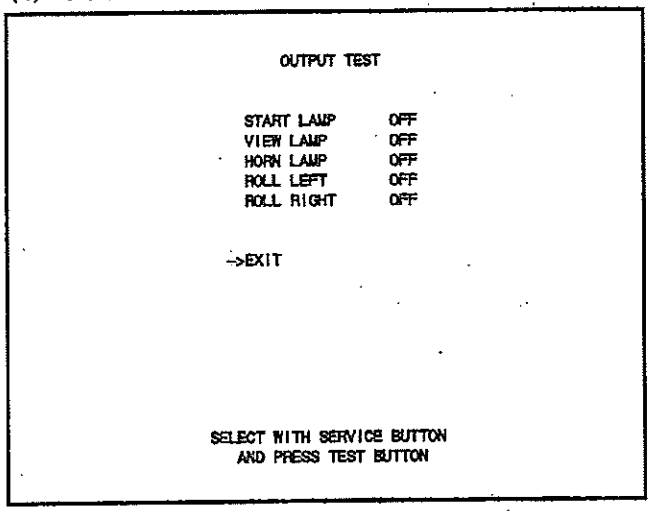


(3) INPUT TEST



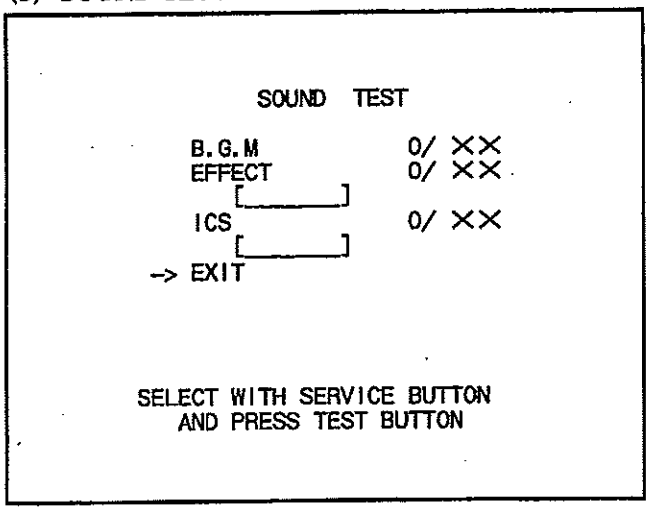
Selecting the INPUT TEST on the test mode menu screen causes the screen (on which each switch is tested) to be displayed. Press each switch. For the coin switch test, insert a coin from the coin inlet with the coin chute door open. If the display beside each switch indicates "ON," the switch and wiring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

(4) OUTPUT TEST



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

(5) SOUND TEST



In the TEST mode, selecting SOUND TEST causes the screen (on which sound related BD and wiring connections are tested) to be displayed.
Check if the sound is satisfactorily emitted from each speaker and the sound volume is appropriate.

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

7. PRECAUTIONS TO BE HEEDED WHEN MOVING THE MACHINE

WARNING!

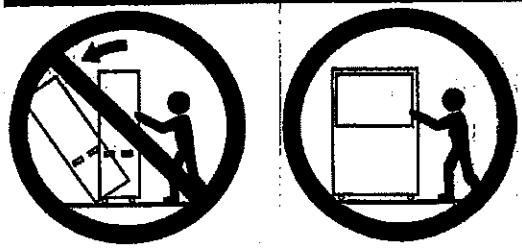
- When moving the machine, be sure to unplug the power plug. Moving the machine with the plug as is inserted can damage the power cord and cause fire and electric shock hazards.
- When moving the machine on the floor, retract the Adjusters and ensure that Casters make contact with the floor. During transportation, pay careful attention so that Casters do not tread power cords and earth wires. Damaging the power cords can cause electric shock and short circuit hazards.
- When lifting the cabinet, be sure to hold the grip portions or bottom part. Lifting the cabinet by holding other portions can damage parts and installation portions due to the empty weight of the cabinet, and cause personal injury.
- When transporting the product in places with step-like differences in grade, disassemble into each unit before transporting. Lifting up the product in an attempt to cross the step-like differences in an as is assembled condition may damage the unit's joining portions and cause a personal injury resulting from damage.
- 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.
- Do not insert the fork to places other than designated when using a Forklift to transport the machine.
  Failure to observe this could cause falling down and injury resulting from falling down.

CAUTION

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

STOP
IMPORTANT

- When transporting the product in places with steps, disassemble into each unit before transporting. Inclining the product in an as is assembled condition or placing the cabinet in places with steps can damage the unit's joining portions.
- 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 back. Pushing the PTV from the back can cause the PTV to fall down. Push it from the side.

⑭ Take out the 4 screws to remove the LID TOP FRONT.

⑮ Disconnect the 2 wire connectors of the motor inside the LID TOP FRONT.

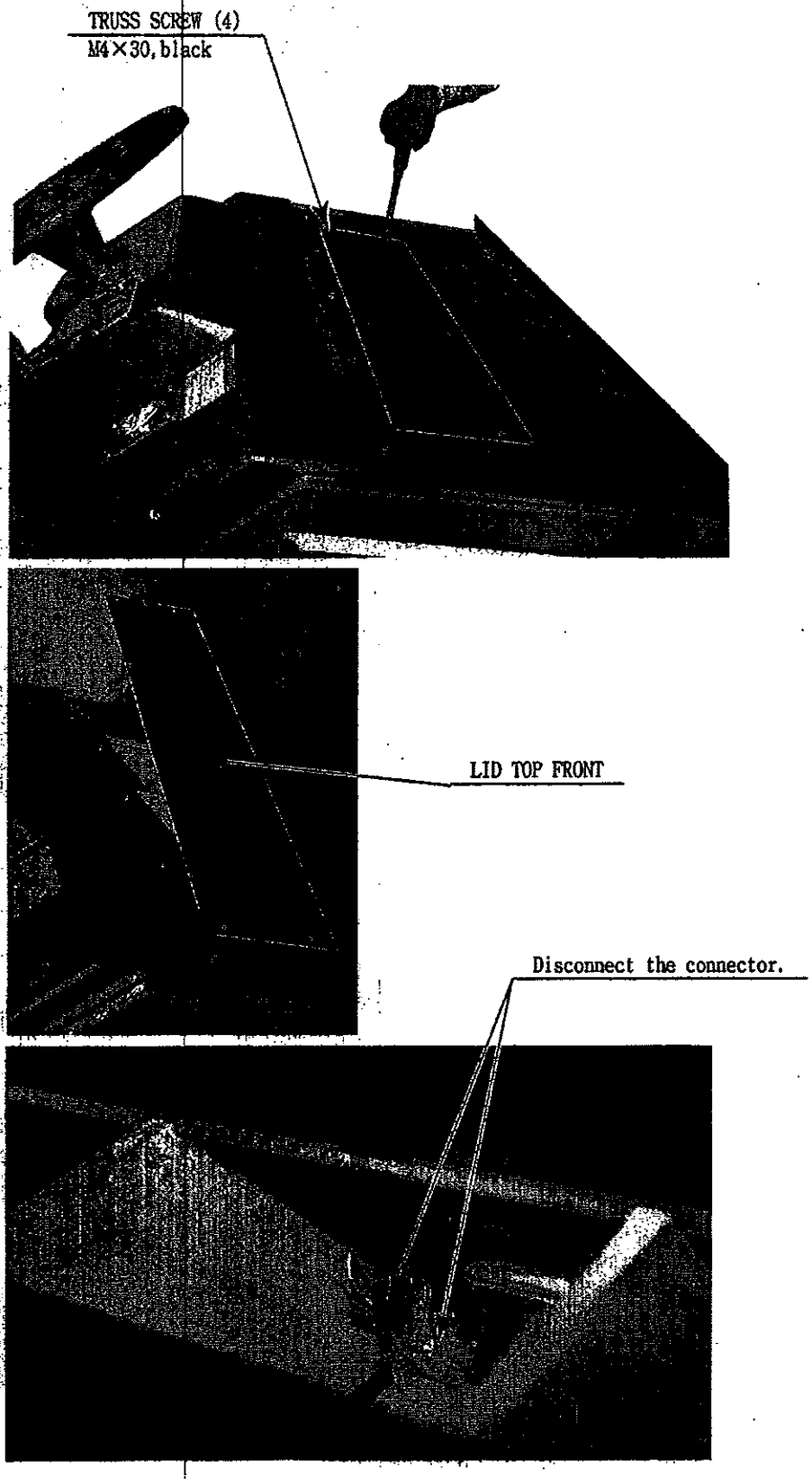


PHOTO 10. 1 c

⑯ Take out a total of 6 screws and the 2 hexagon bolts which secure the HANDLE MECHA.

HOXAGON BOLT (2)
M6×25, w/spring washer,
flat washer used.

SCREW (6 in total)
M5×16, w/flat & spring washers

PHOTO 10. 1 d

⑰ Remove the HANDLE MECHA.
Use care when performing work.

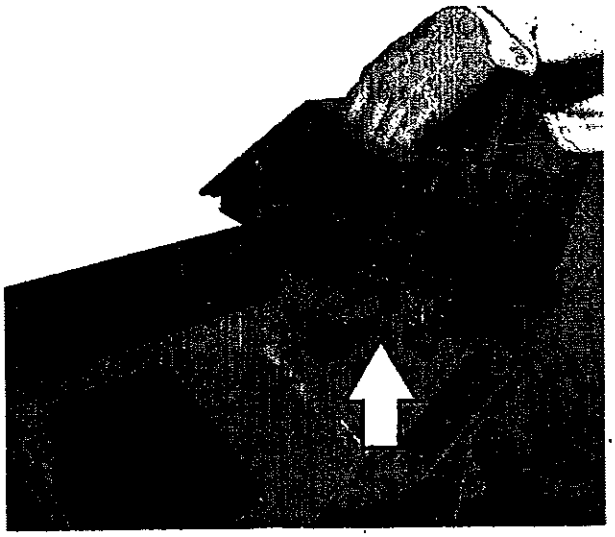


PHOTO 10. 1 e

⑱ When putting the HANDLE MECHA, be sure to have the gear and the sensor portions face upper. Failure to observe this may damage the parts due to its own weight.

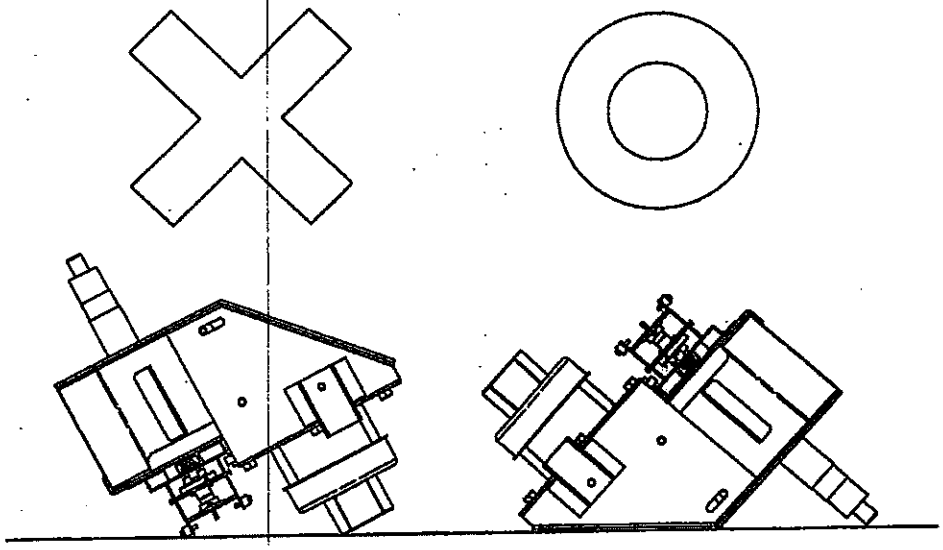


FIG. 10. 1 c

10 — 2 VOLUME ADJUSTMENT/REPLACEMENT

Volume adjustment/replacement should be performed after the HANDLE MECHA has been removed as per 10-1.

ADJUSTMENT

① In order to turn the HANDLE SHAFT, insert the STEERING HANDLE to the HANDLE SHAFT.

② Secure the HANDLE at the centering position.

③ Loosen the 2 screws which secure the VOLUME BRACKET to push the gear out of mesh.

④ With the HANDLE SHAFT being at the centering position, bring the gear into mesh so that the status of the volume's shaft is as shown in the Fig.

⑤ Fasten the screws securing the VOLUME BRACKET.

⑥ After work is finished, perform volume setting in the Test mode.

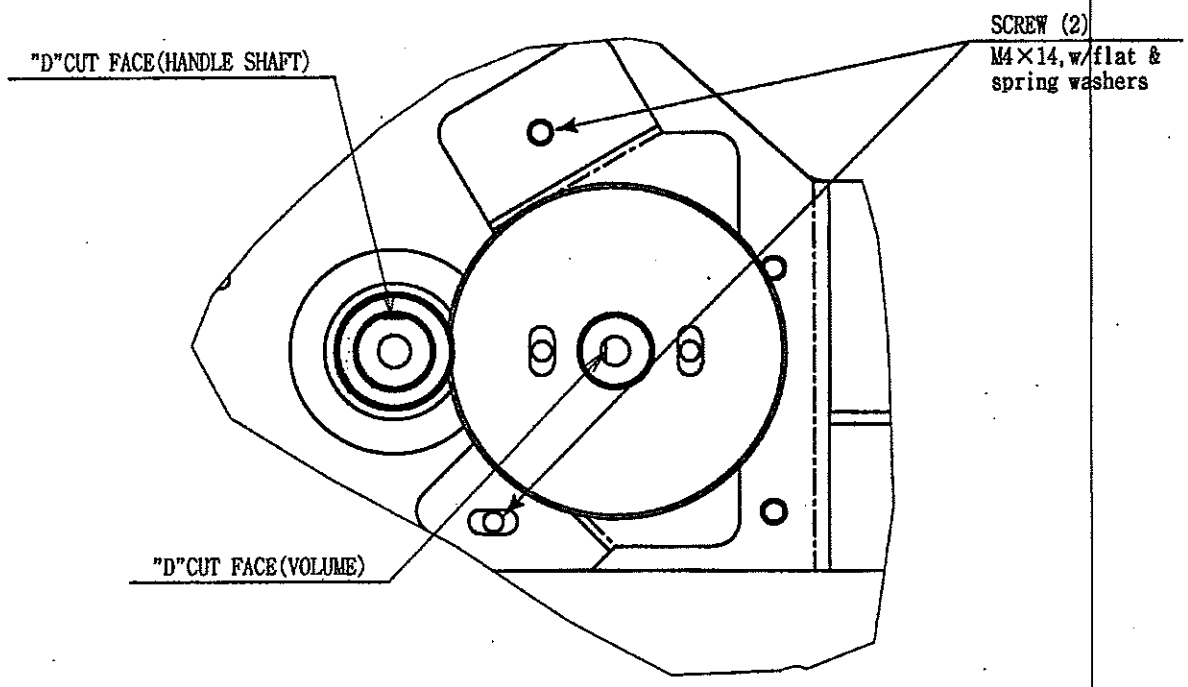


FIG. 10. 2 a

REPLACEMENT

① Disconnect the volume's wire connector.

② Take out the 2 screws which secure the VOLUME BRACKET to remove the BRACKET together with the volume.

③ Take out the 2 screws, remove the VOLUME GEAR, and replace the VOLUME.

④ With the HANDLE SHAFT being at the centering position, bring the gear into mesh so that the status of the volume's shaft is as shown in the Fig.

⑤ Fasten the screws securing the VOLUME BRACKET.

⑥ After work is finished, perform volume setting in the Test mode.

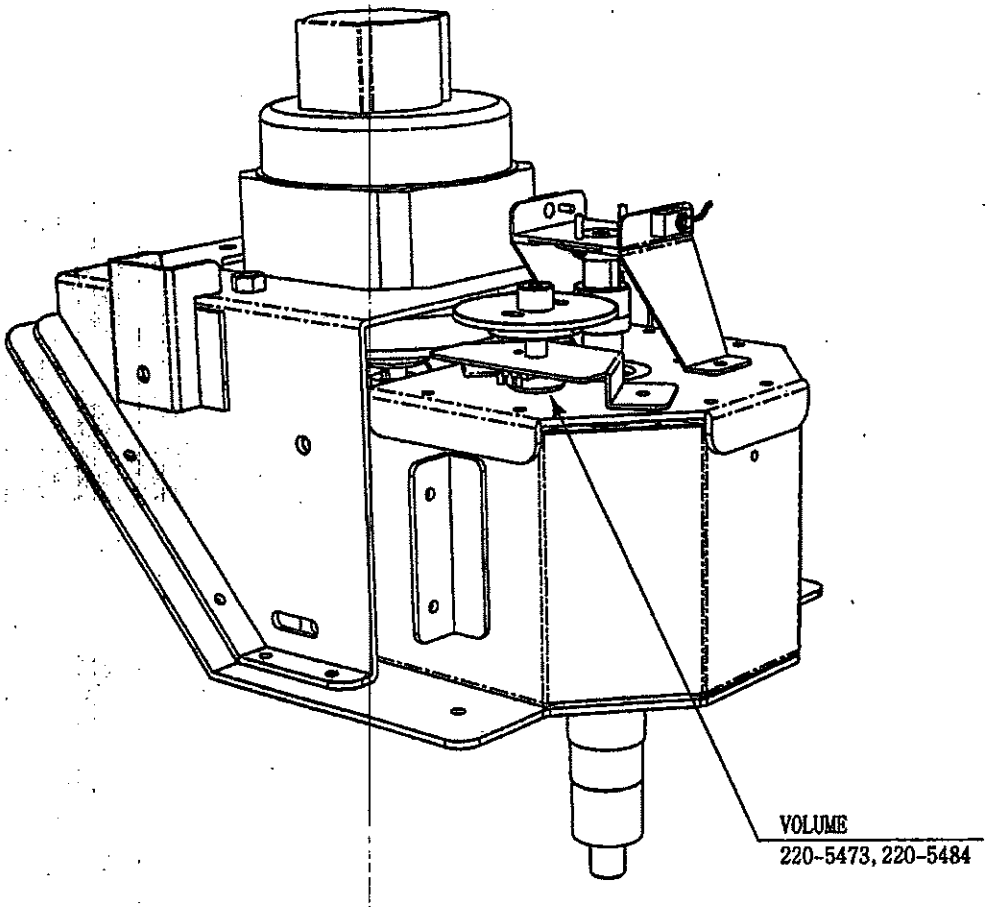


FIG. 10. 2 b

11. SHIFT LEVER

WARNING

- 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.

If the Shift Lever operation is not satisfactory, remove the Shift Lever in the following procedure and replace the microswitch.

11 — 1 REMOVING THE SHIFT LEVER

① By following "10-1 REMOVING THE HANDLE MECHA", turn power off, remove the STEERING HANDLE, and remove the CONTROL PANEL COVER.

② Take out the 4 Hexagon Bolts.

PHOTO 11. 1 a

③ Remove the SHIFT LEVER. The SHIFT LEVER has wiring connector. Pull up the SHIFT LEVER slowly until the 2 connectors can be seen.

④ Disconnect the 2 connectors.

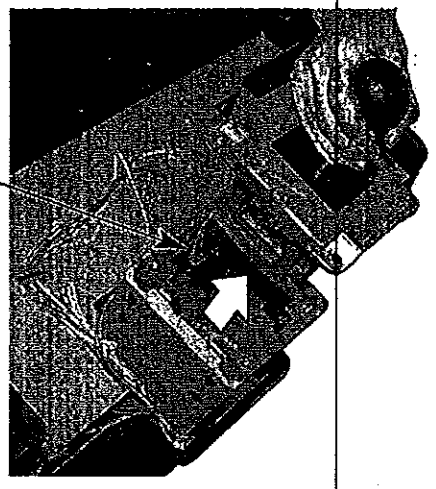


PHOTO 11. 1 b

11 — 2 SWITCH REPLACEMENT

Each Microswitch is secured with 2 screws. Remove the 2 screws and replace the Microswitch.

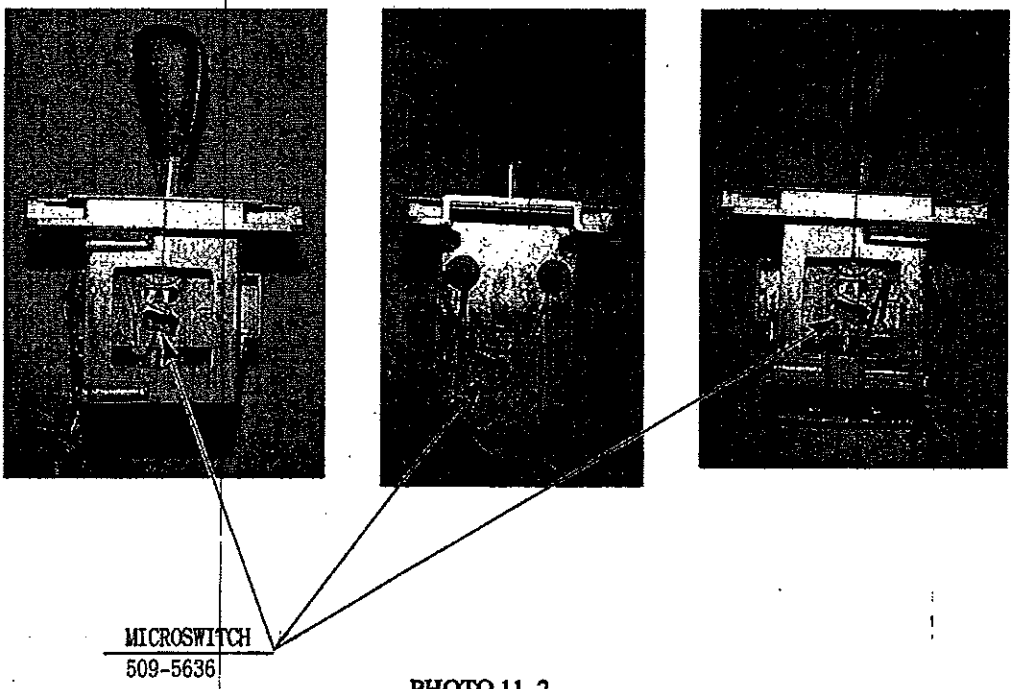


PHOTO 11. 2

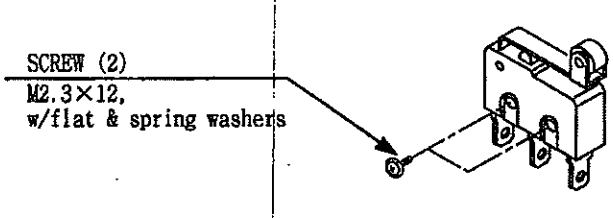


FIG. 11. 2

After replacing the Switch, check to see if the switch is inputted as per Shift Lever operation in the Test Mode.

12. ACCELERATOR & BRAKE

WARNING

- 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.
- When performing work such as parts replacement other than those specified in this manual, be sure to contact where you purchased the product from. Confirm the work procedures and obtain precautions from where you purchased the product prior to performing work. Inappropriate parts replacement and/or installation 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.

STOP
IMPORTANT

After having performed adjustment or replacement of the volume, be sure to check the variation of the volume value in the INPUT TEST in the test mode.

If Accel. and Brake operation is not satisfactory, adjustment of volume installation position or volume replacement is needed. Also, be sure to apply greasing to the gear mesh portion once every 3 months.

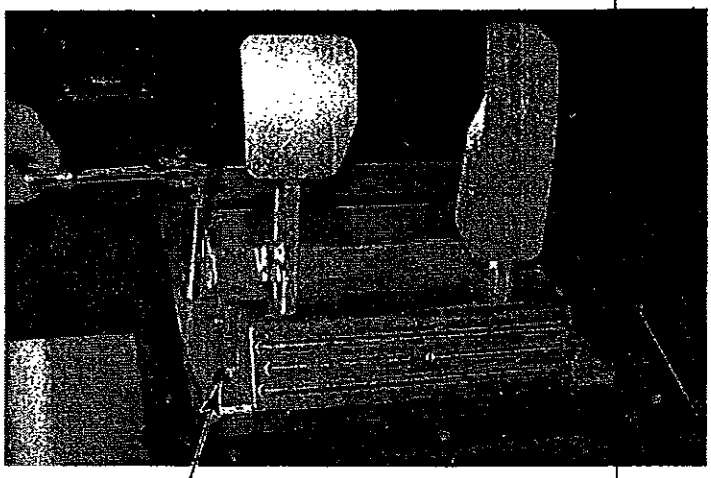
12－1 REMOVING THE ACCELERATOR AND THE BRAKE

Remove the accelerator and the brake to perform maintenance. To remove the accelerator and the brake, a socket wrench for M6 Hexagon bolts and an extension tool are necessary. The wiring connector is inside the accelerator and the brake. When removing, use care so as not to damage wiring.

① Turn power off.

② Apply the extension tool to the socket wrench. Remove the 4 Hexagon bolts which secure the accelerator and the brake.

③ The 2 wire connectors are connected to the accelerator and the brake. Disconnect the connectors, and the accelerator and the brake can be removed. Since work is performed inside the energized cabinet, be very careful so as not to touch undesignated portions.



HEXAGON BOLT (4)
M6×25, black, w/spring washer

PHOTO 12. 1

12 — 2 ADJUSTING OR REPLACING THE VOLUME

The appropriate value for both ACCEL. Volume and Brake Volume is under 30H when released and over C0H when stepped on. Check Volume values in the TEST mode. Since work is performed inside the energized cabinet, be very careful so as not to touch undesignated places. Touching places not specified can cause electric shock or short circuit.

ADJUSTMENT

① Take out the 2 truss screws and remove the Front Cover from the Accel. & Brake Unit (FIG. 12. 2 a).

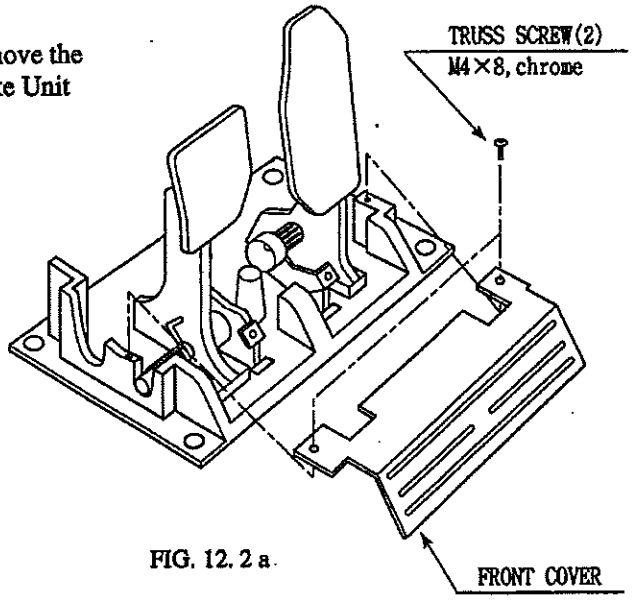


FIG. 12. 2 a

② Loosen the screw which secure the Potentiobase, and adjust the Volume value by moving the Base. (FIG. 12. 2 b)

③ Secure the Potentiobase.

④ In the INPUT TEST screen, check to see if the volume value varies in accordance with operation of the pedal.

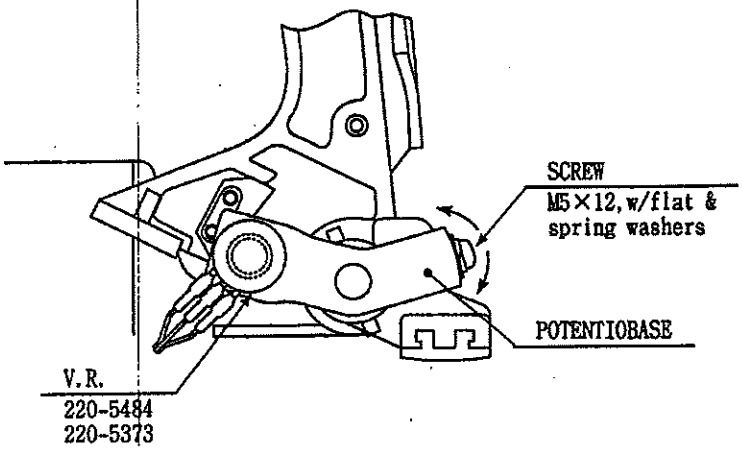


FIG. 12. 2 b

REPLACEMENT

① Turn the power off.

② Take out the 2 screws and remove the Potentiocover (FIG. 12. 2 c).

③ Disconnect the connector of the volume to be replaced.

④ Remove the screw which secures the Potentiobase (FIG. 12. 2 b).

⑤ Remove the Potentiobase together with the volume as is attached. (FIG. 12. 2 c)

⑥ Remove the base and the gear to replace the volume.

⑦ After replacing, check to see if the volume values varies in accordance with operation of the pedal.

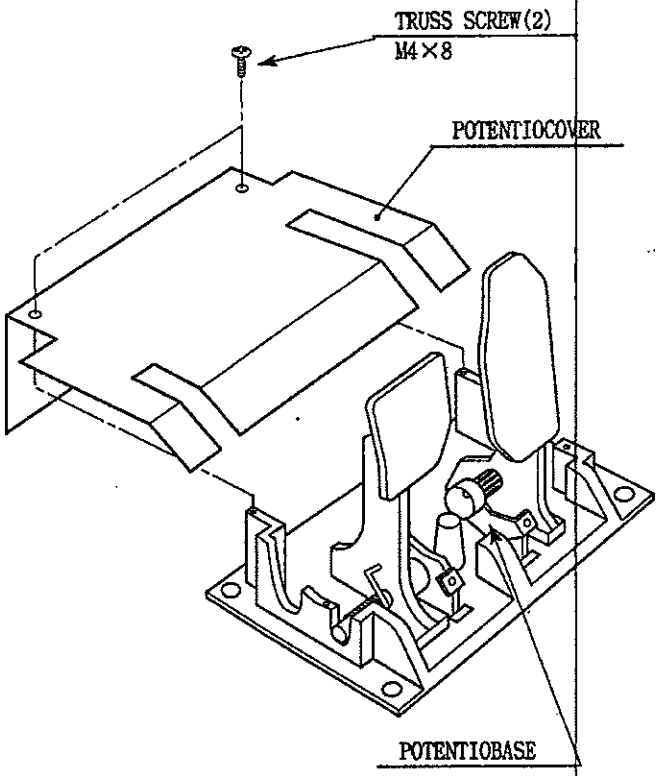


FIG. 12. 2 c

12 — 3 GREASING

STOP
IMPORTANT

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

Once every 3 months, apply greasing to the Spring and gear mesh portion. For spray greasing, use GREASE MATE (PART No. 090-0066).

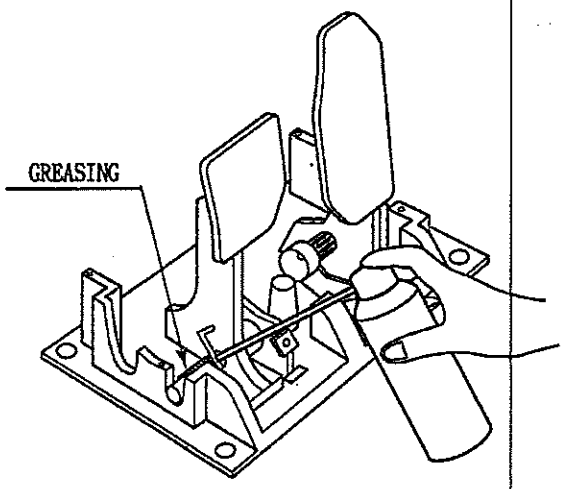


FIG. 12. 3

13. COIN SELECTOR

HANDLING THE COIN JAM

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

CLEANING THE COIN SELECTOR

STOP
IMPORTANT

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

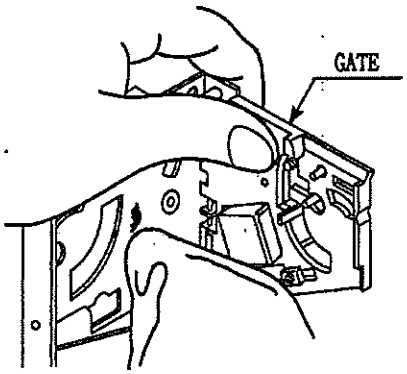


FIG. 13 a

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.

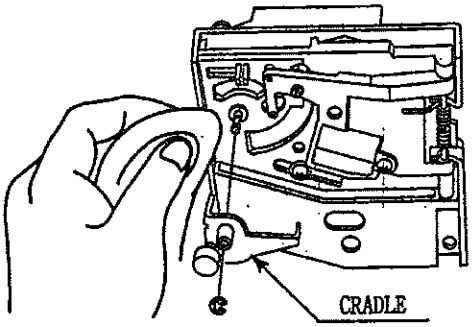


FIG. 13 b

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?

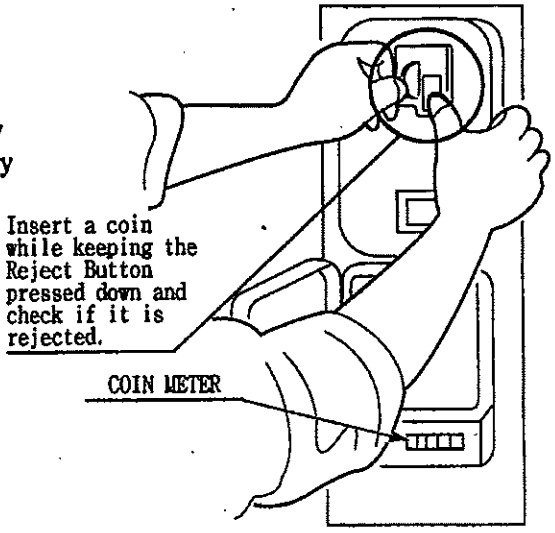


FIG. 13 c

14. PROJECTOR

CAUTION

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

IMPORTANT

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.

14—1 CLEANING THE SCREEN

CAUTION

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 benzine, 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.

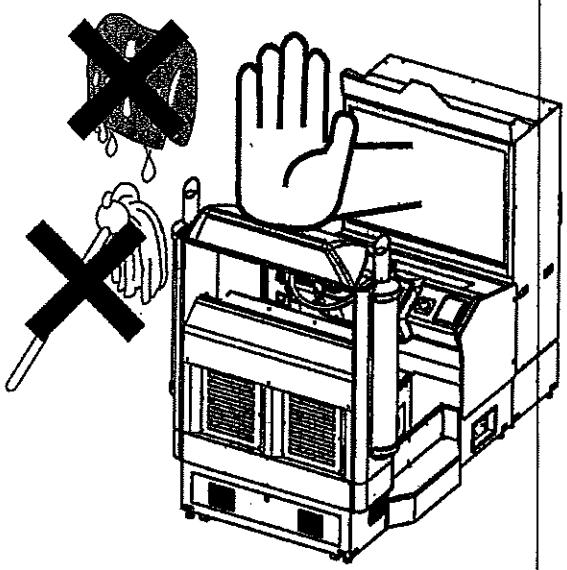


FIG. 14. 1

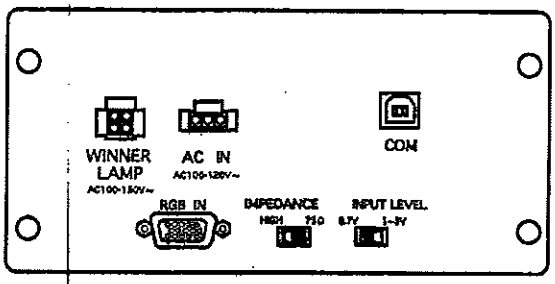
14—2 ADJUSTMENT OF TOSHIBA PROJECTOR

SETTING THE INTERFACE

STOP
IMPORTANT

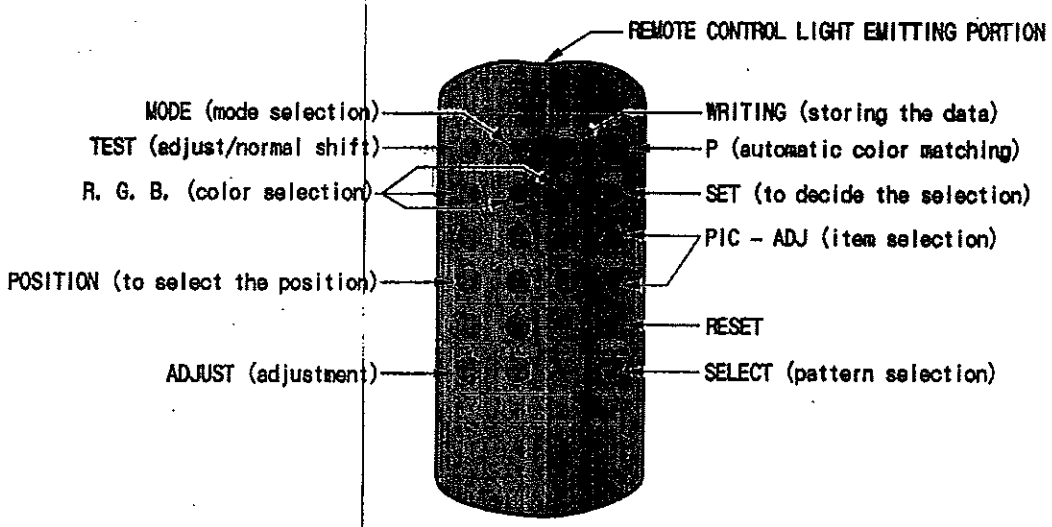
In this product, set to INPUT LEVEL: 0.7V and IMPEDANCE: 75Ω. Failure to observe this can cause CRT membrane to burn or Shutdown device to function resulting in power off.

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



REMOTE CONTROL BUTTONS

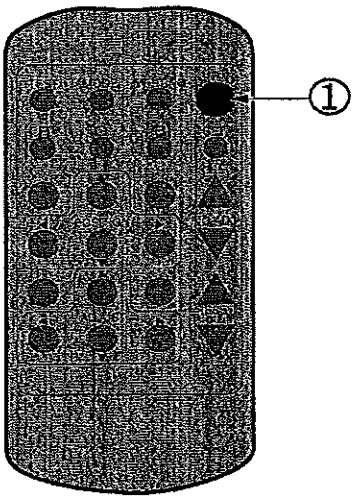
When adjusting the Projector, direct the Remote Control's light emitting portion towards the Projector Screen.

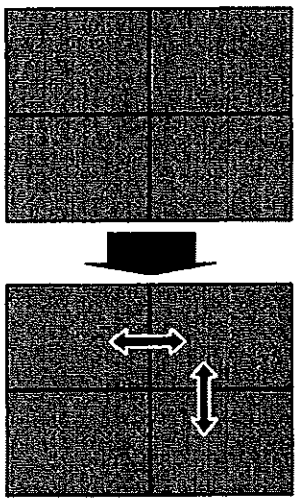


AUTOMATIC COLOR MATCHING

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.

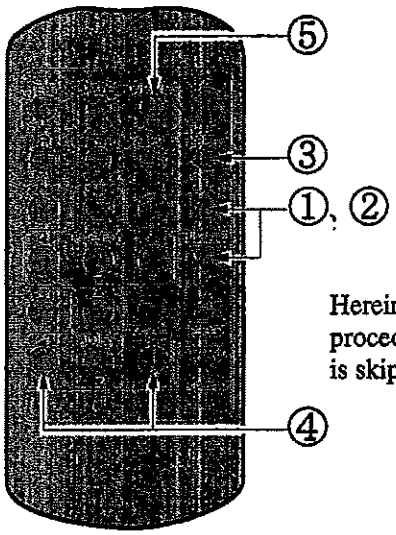
When the green cross pattern movements are finished, similar detection is performed sequentially in order of red and then blue cross movements. After detecting by green, red and blue cross movements, the game mode returns with the color deviation status being corrected.

- 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.

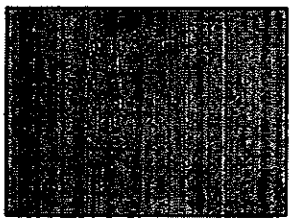
- If the automatic color matching indicates an error, color matching can manually be performed. Refer to CONVERGENCE ADJUSTMENT (manual color matching).

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.



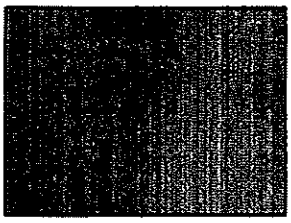
① Press either ▲ or ▼ PIC - ADJ button.



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

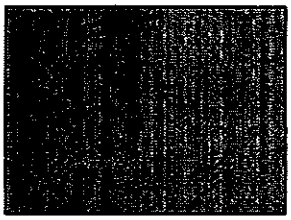
Herein, procedure ② is skipped.

② Choose CONTRAST by using either ▲ or ▼ PIC - ADJ button.



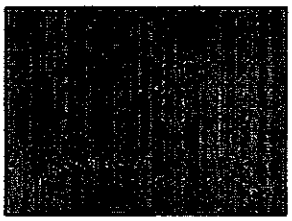
Have CONTRAST displayed in purple. Since CONTRAST is selected initially, no particular operation is required in this case.

③ Press the SET button (to decide selection).



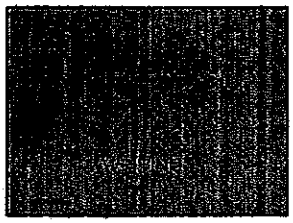
When the selection of the CONTRAST adjustment mode is decided, the adjustment data scale bar appears on the screen.

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 contrast status.

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

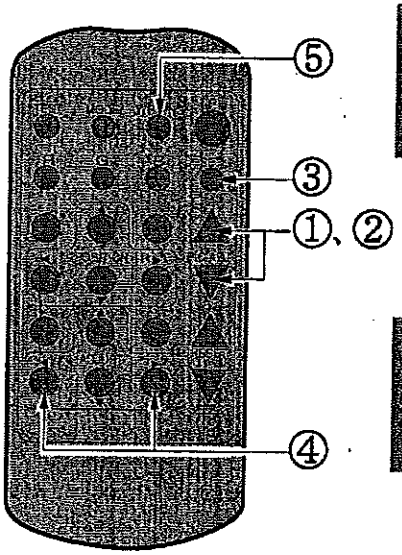


The WRITING display appears and the adjustment data is stored.

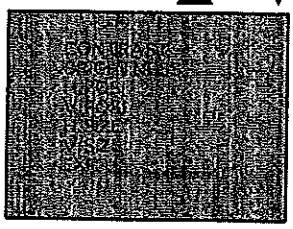
- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ②~④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off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

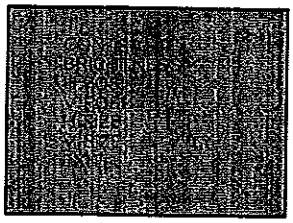


① Press either ▲ or ▼ PIC - ADJ button.



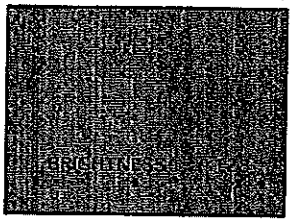
The on-screen menu will have one item in purple and 6 items in white.

② Choose BRIGHTNESS by using either ▲ or ▼ PIC - ADJ button.



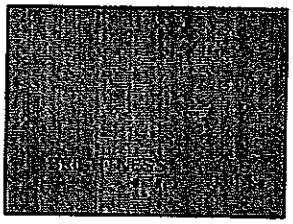
Have the BRIGHTNESS displayed in purple.

③ Press the SET button (to decide selection).



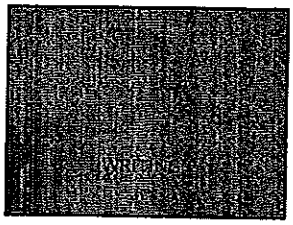
When the selection of the BRIGHTNESS adjustment mode is decided, the adjustment data scale bar appears on the screen.

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 brightness status.

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

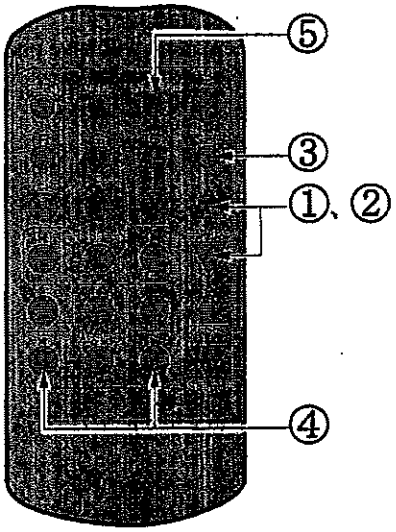


The WRITING display appears and the adjustment data is stored.

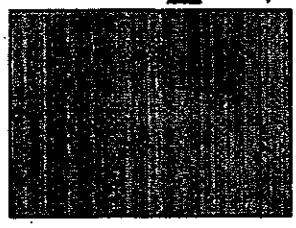
- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ②~④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off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

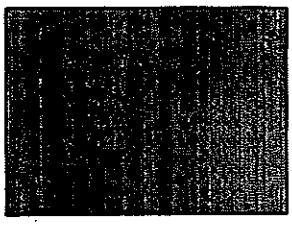


① Press either ▲ or ▼ PIC - ADJ button.



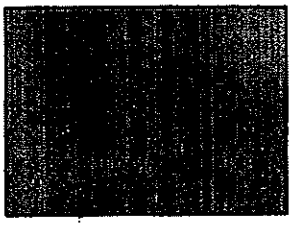
The on-screen menu will have one item in purple and 6 items in white.

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

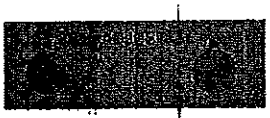


Have the H. POSI or V. POSI displayed in purple. The Figure shows the status in which H. POSI is selected.

③ Press the SET button (to decide selection).

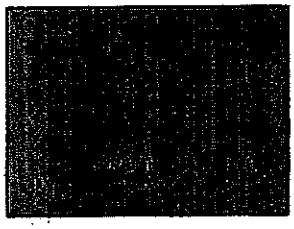


When the selection of the H. POSI or V. POSI is decided, the adjustment data scale bar appears on the screen.



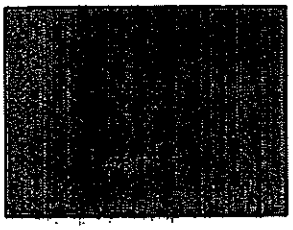
When making adjustments in vertical directions, also use either ◀ or ▶ ADJUST button.

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).

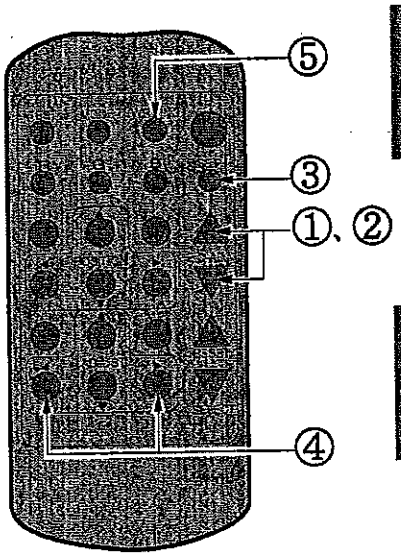


The WRITING display appears and the adjustment data is stored.

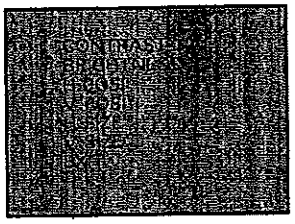
- When discontinuing the adjustment, choose EXIT from the menu at the stage of procedure ② and press the SET button.
- To continue adjusting other menu items, repeat procedure ②~④.
- Unless the adjustment data is stored, the data in the adjusted status will be erased at the time the power is turned off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

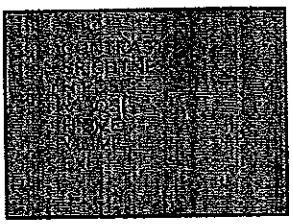


① Press either ▲ or ▼ PIC - ADJ button.



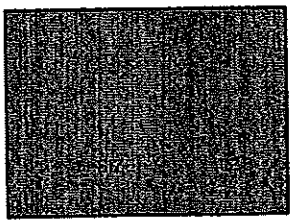
The on-screen menu will have one item in purple and 6 items in white.

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.

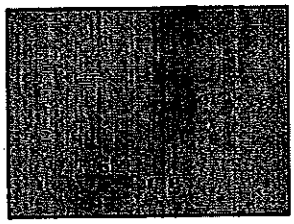
③ Press the SET button (to decide selection).



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

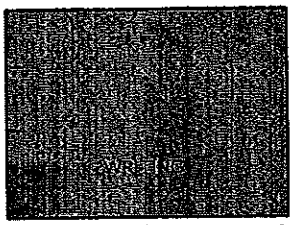
When making adjustments in vertical directions, also use either ◀ or ▶ button.

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 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.

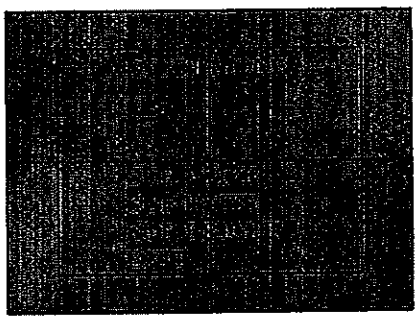
STOP

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.

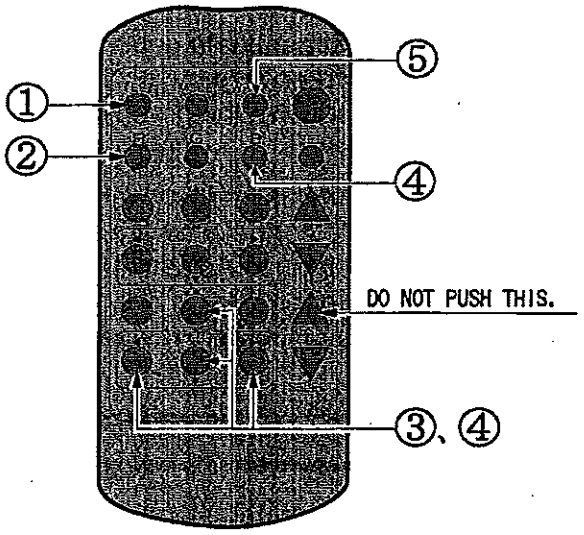
  Should the menu shown right be displayed by mistake, first choose EXIT by using either ▲ or ▼ PIC - ADJ button and then press the SET button.



Adjustment menu used in the factory.

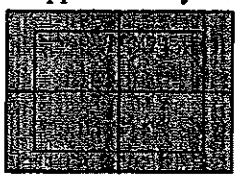
STATIC CONVERGENCE ADJUSTMENT

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.



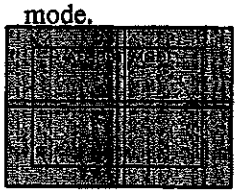
When either of ② ④ COLOR SELECT buttons (R, B) is pressed, if the color desired to be adjusted disappears, press that particular button again. For example, if the red color needs to be adjusted again at the stage of ④, the R button need to be pressed twice.

① Keep pressing the TEST button for approximately 3 seconds.



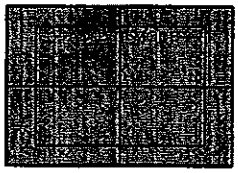
The screen will change to ADJUST mode from the Game mode to cause the green test pattern to be displayed on the screen.

② Press the R button to have the red adjustment mode.



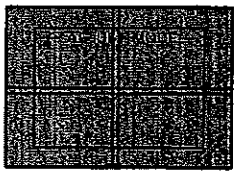
The red test pattern is added to the display. The frame color turns red and this signifies the red adjustment mode.

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



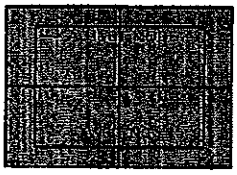
Make adjustment so as to have red superimposed on green. When red is superimposed on green, the color becomes yellow.

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.

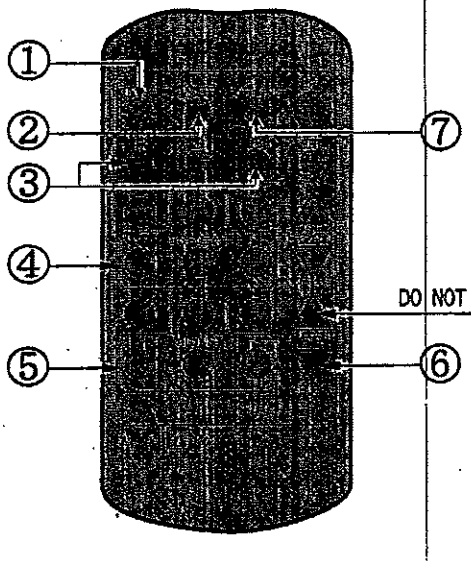
⑤ Press the WRITING button (for storing and finish).



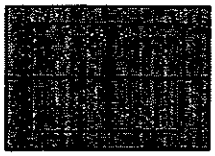
The WRITING display appears and the adjustment data is stored. After the data is stored, the Game mode returns.

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.



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.

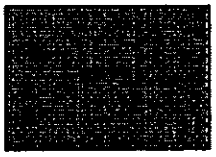
② Press the MODE button twice to have the POINT ADJUSTMENT mode. Note 1

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.

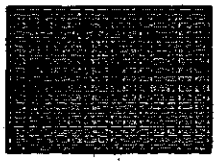


The MARKER moves in the direction of the button's arrow. However, the movable point is predetermined.

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

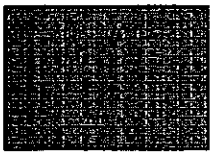
Although the direct vicinity of the MARKER's center moves most conspicuously, make adjustment by paying attention to the periphery area also. Shown left is the magnified MARKER periphery.

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.

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

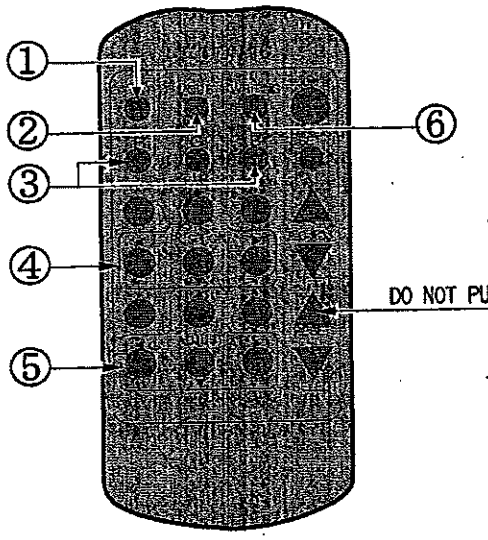
STATIC ADJUSTMENT MODE
↓
LINE ADJUSTMENT MODE
↓
POINT ADJUSTMENT MODE

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.

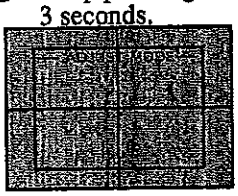
Note 3 By repeatedly pressing the SELECT button, only the Projector's TEST pattern screen and the screen superimposing the Game Board Test pattern can be alternately displayed.

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.

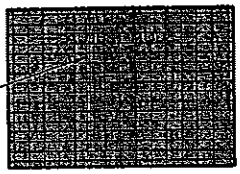


① Keep pressing the TEST button for approximately 3 seconds.



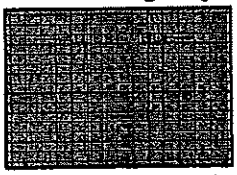
The screen changes to ADJUST mode from the Game Board mode and displays the green test pattern.

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



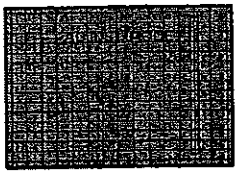
The crosshatch test pattern appears and the vertically long MARKER is shown.

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.

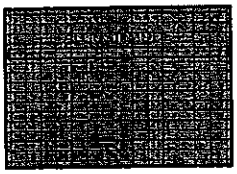


The selected color is displayed by superimposing on green. The MARKER will be in the color selected.

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.

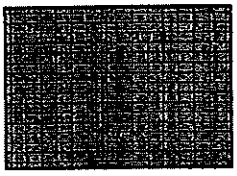


Use the ▲ ▼ buttons to select the row line and the MARKER moves in the up/down direction. However, the movable range is predetermined.

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:

STATIC ADJUSTMENT MODE
↓
LINE ADJUSTMENT MODE
↓
POINT ADJUSTMENT MODE

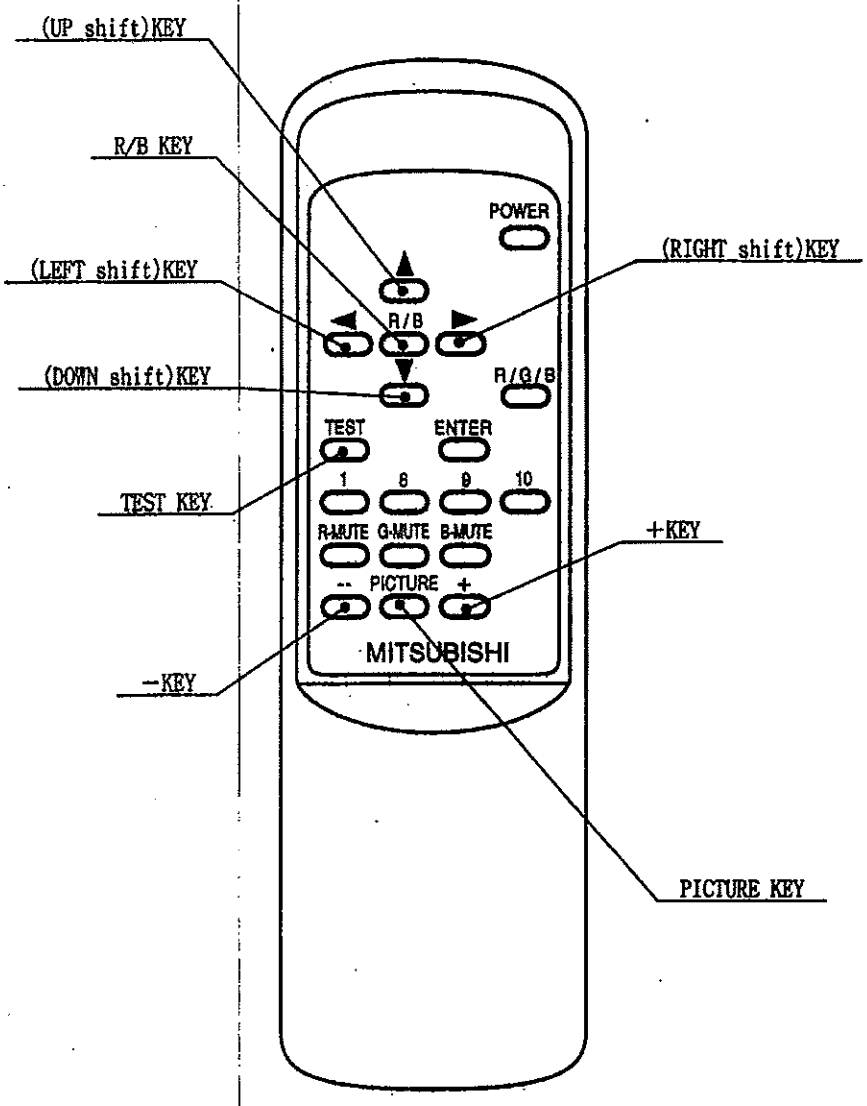
Note 2 When either of the COLOR SELECT buttons (R, B) is pressed, if the desired color to be adjusted disappears, press that particular button again.

14—3 ADJUSTMENT OF MITSUBISHI PROJECTOR

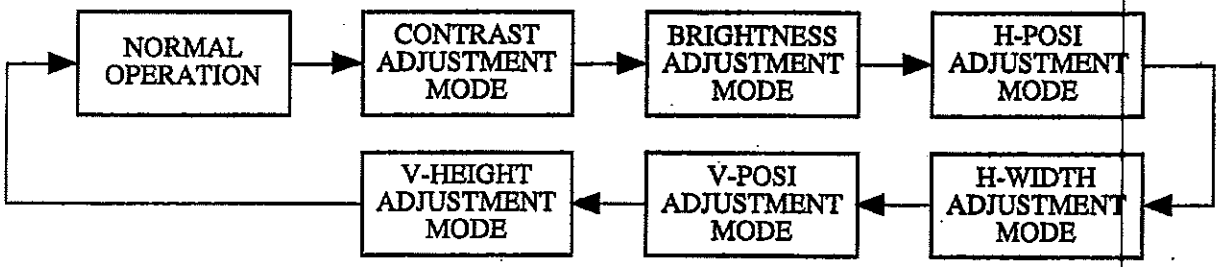
STOP
IMPORTANT

- 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:

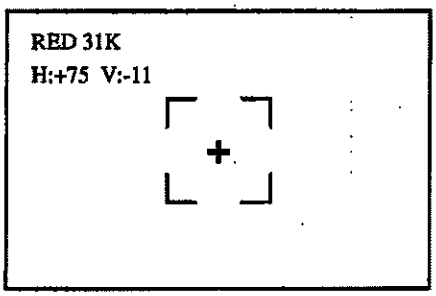


EXPLANATIONS OF ADJUSTMENT MODES

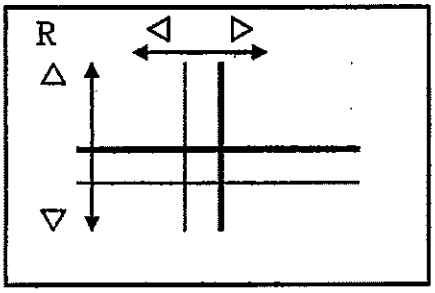
- CONTRAST ..... Used to vary image contrast. Use + and - keys to adjust.
- BRIGHTNESS ..... Used to change image brightness. Use + and - keys to adjust.
- H-POSI ..... Used to move the image position in the horizontal direction. Use + and - keys to adjust.
- H-WIDTH ..... Used to change the horizontal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

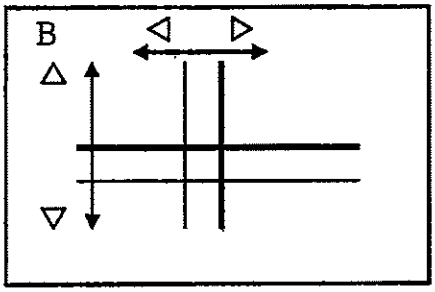


To MOVE RED LINE:

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

15. REPLACING THE FLUORESCENT LAMP, AND LAMPS

WARNING

- 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.

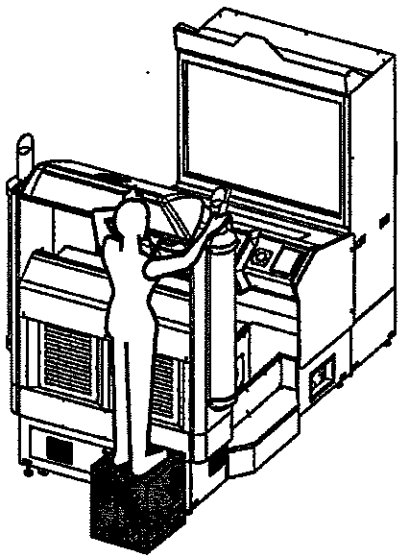
CAUTION

- 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.

THE FLUORESCENT LAMP INSIDE THE MAIN BILLBOARD

① Turn off power.

② Take out the 3 screws to remove the SASH.



When performing work, be sure to use a step.

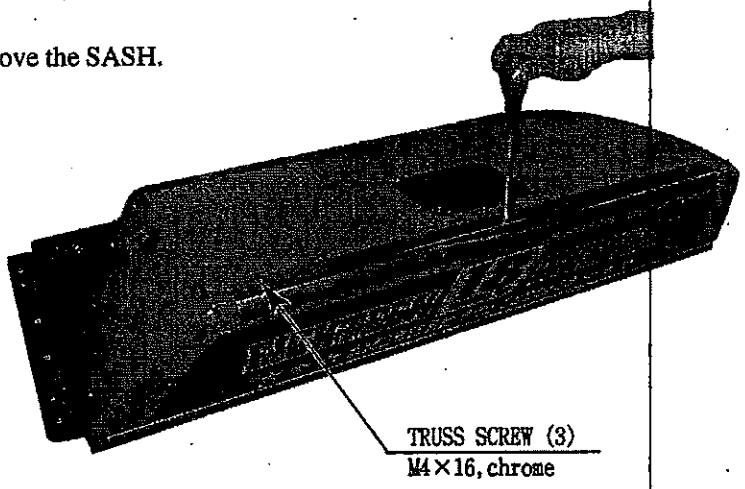


PHOTO 15 a

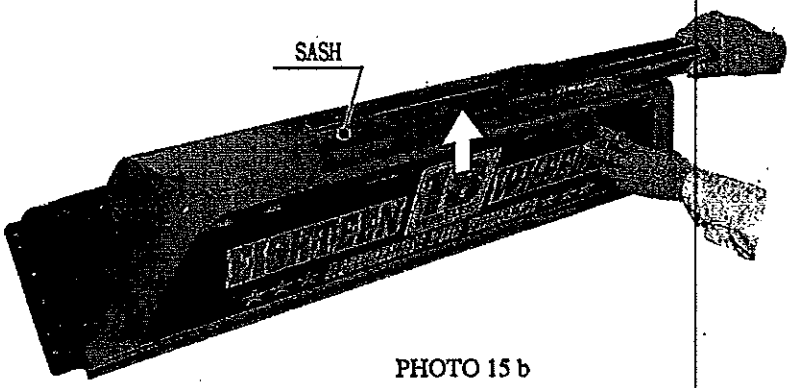


PHOTO 15 b

③ Remove the MAIN BILLBOARD PLATE.

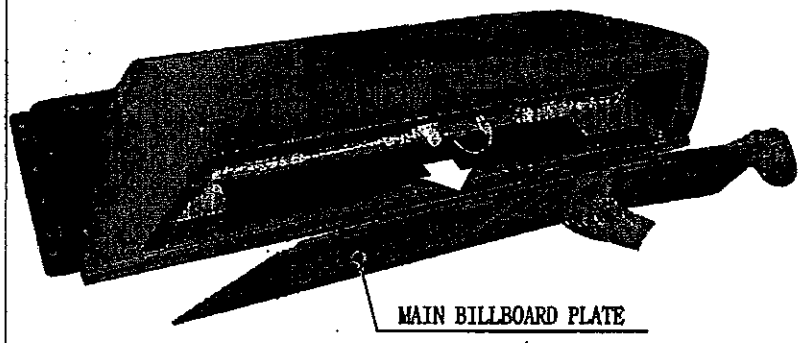


PHOTO 15 c

④ Replace the fluorescent lamp inside the BILLBOARD.

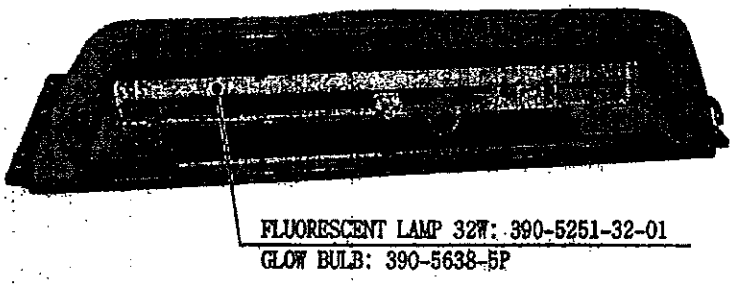


PHOTO 15 d

THE BUTTON FOR THE HORN IN THE ASSISTANT DRIVER'S SEAT

A wiring connection is inside the horn button. When removing, use care so as not to damage wiring.

① Turn power off.

② Remove the 4 screws.

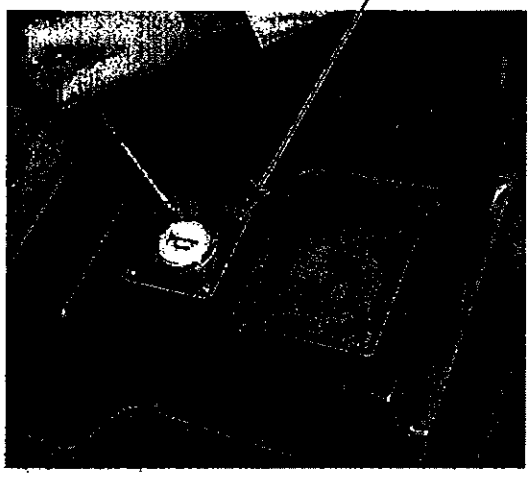
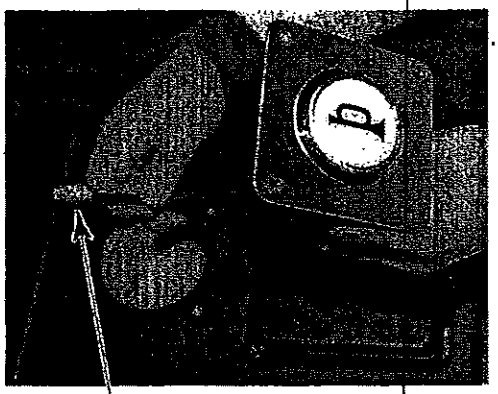


PHOTO 15 e

③ A wire connector is connected to the horn button. Disconnect the connector, and the horn button can be removed.



Disconnect the connector.

PHOTO 15 f

④ Firmly pinch the switch portion at the bottom of the button and pull it out of the button portion.

⑤ Pull out the lamp vertically and replace. Do not turn the lamp at this time.

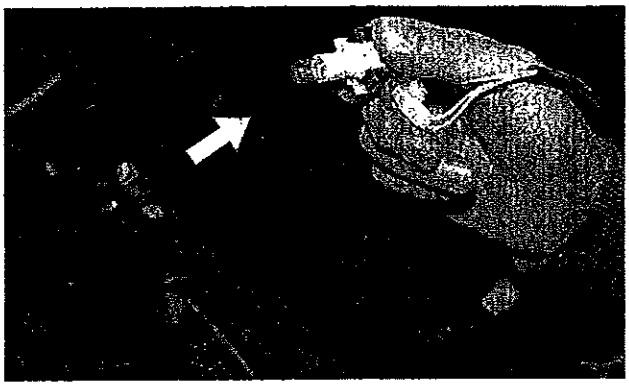


PHOTO 15 g

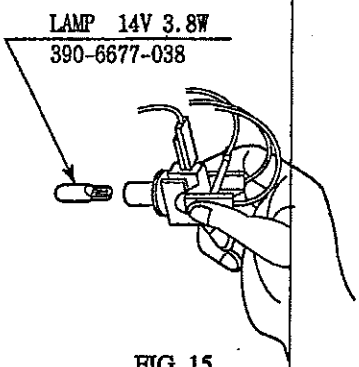


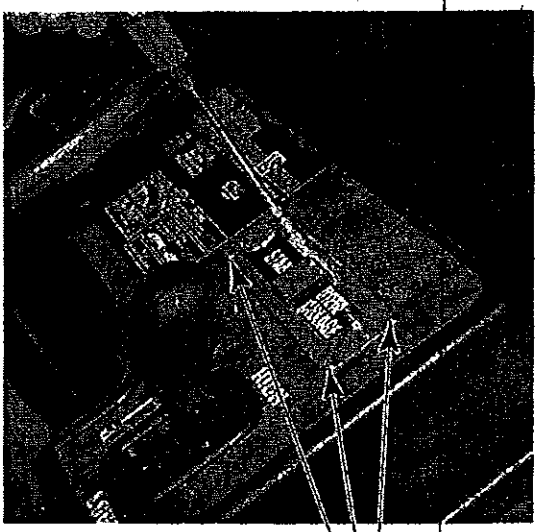
FIG. 15

START BUTTON & VIEW CHANGE BUTTON

A wiring connection is inside the start button and the view change button. When removing, use care so as not to damage wiring.

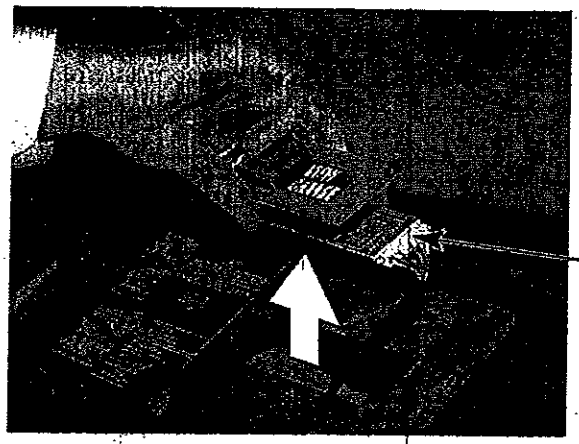
① Turn power off.

② Take out the 4 screws.



TRUSS SCREW (4)
M4×16, chrome

PHOTO 15 h



③ A connector is connected to the start button and the view change button. Disconnect the connector, and the ASSY VR BUTTON START & VIEW 1 can be removed.

PHOTO 15 i

④ The lamp is on the PCB side. Turn the metallic parts of the 2 buttons, unlock and remove the PCB from the buttons.

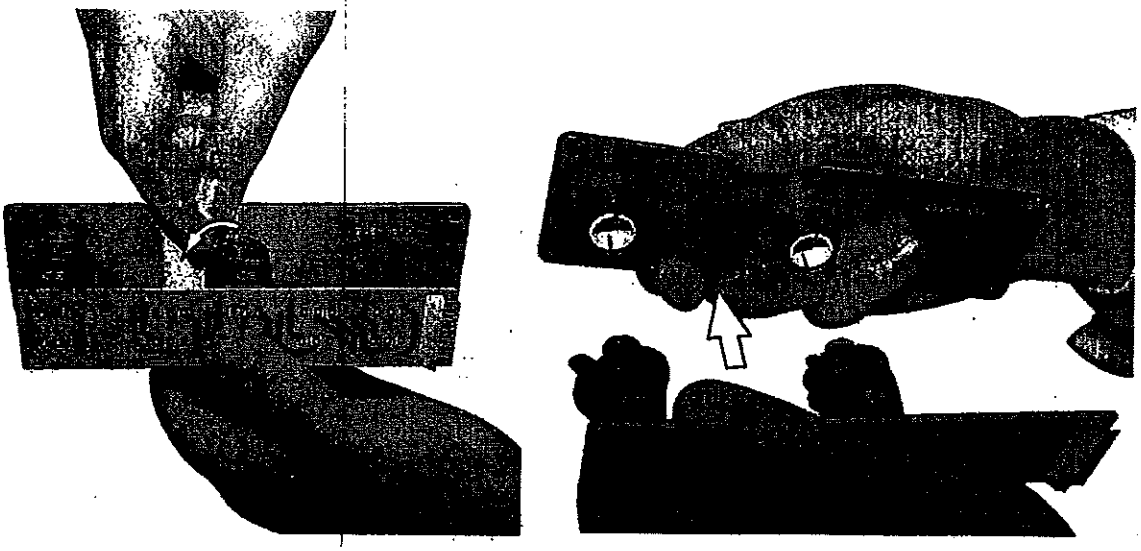


PHOTO 15 j

⑤ With the lamp pressed down, turn it counterclockwise to remove.

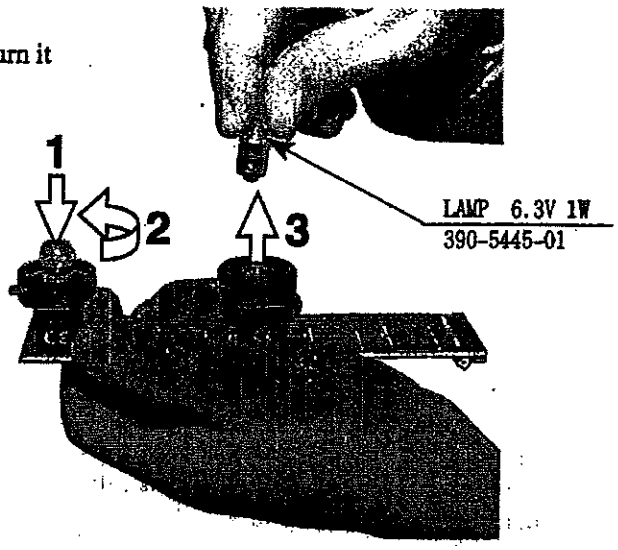


PHOTO 15 k

16. 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 16

	Item	Interval	Reference
CABINET	Check Adjusters' contact with surface.	Daily	3
HANDLE MECHA	Check lamp.	Monthly	9
	Check VOLUME VALUE.	Monthly	9
	Check ADJUST GEAR engagement.	Trimonthly	10-2
ACCEL. & BRAKE	Check VOLUME value.	Monthly	6,9
	Check ADJUST GEAR engagement.	Trimonthly	12-2
	Gear and Spring portion greasing.	Trimonthly	12-3
SHIFT LEVER	Check SW.	Monthly	6,9
COIN CHUTE TOWER	Check COIN SW.	Monthly	9
	Coin insertion test.	Monthly	13
	Cleaning of COIN SELECTOR.	Trimonthly	13
PROJECTOR	SCREEN cleaning.	Weekly	14-1
	Check adjustments.	Monthly	6,9,14
GAME BD	MEMORY TEST.	Monthly	9
	Check settings.	Monthly	9
Cabinet surfaces	Cleaning	As necessary.	See below.
INTERIOR	Cleaning	Annually	See above.
POWER SUPPLY PLUG	Inspection and 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, benzine, etc. other than ethyl alcohol, or abrasives, bleaching agent and chemical dustcloth.

17. TROUBLESHOOTING

WARNING

- In order to prevent electric shock and short circuit, be sure to turn power off before performing work.
- Be careful so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.
- After removing the cause of the functioning of the Circuit Protector, reinstate the Circuit Protector. Depending on the cause of the functioning, using the Circuit Protector as is without removing the cause can cause generation of heat and fire hazard.

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

TABLE 17 a

PROBLEMS	CAUSE	COUNTERMEASURES
With Main SW ON, no activation.	Power is not supplied.	Securely insert the power plug into the plug socket.
	Power supply/voltage is not correct.	Make sure that power supply/voltage is correct.
	The Circuit Protector functioned due to the momentary overload.	After eliminating the cause of overload, reinstate the AC Unit's Circuit Protector (see [5], Section 6, Refer to the following).
The color on PTV screen is incorrect.	Image adjustment is inappropriate.	Adjust appropriately (see Sec.14).
Color deviation on PTV screen.	Affected by peripheral machines or the building's steel frames.	Perform convergence adjustment (see Sec. 14).
		Change installation direction or position.
		Move the machine which causes the problem.

CIRCUIT PROTECTOR

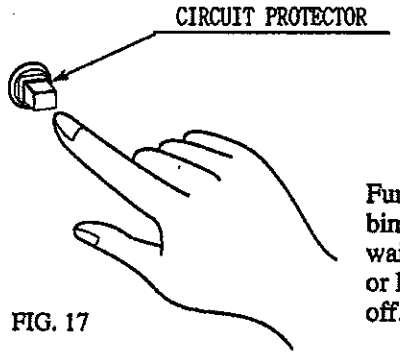


FIG. 17

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 17 b

PROBLEMS	CAUSE	COUNTERMEASURES
No sound is emitted.	Sound volume adjustment is not appropriate. Board and Amplifier malfunctioning.	Adjust sound volume (see Sec. 9). Perform the sound test and confirm (see Sec. 9).
Operation of Super Woofer and Base Shaker are not satisfactory.	The fuse on the AMP BASE is blown.	Replace fuse. (see Fig.17b)
Steering Wheel reaction strength is incorrect. Deviation of Center.	Power ON check not performed correctly. V.R. position deviated. V.R. malfunctioning.	Turn off power and then turn it back on again. Complete the power on check. Adjust V. R. value in the test mode (see Sec. 9). Replace V.R. (see Sec. 10).
Steering Wheel reaction strength is insufficient.	Reaction Mecha's secular change.	Change the setting in the Test Mode (see Sec. 9).
No Steering Wheel Reaction.	Connector Connection is incorrect.	Check the connector's connection inside the LID TOP FRONT. (see 10-1)
SHIFT LEVER doesn't operate satisfactorily.	Switch malfunctioning.	Replace the Switch (see Sec. 11).
Operation of Accel. and Brake Pedals are not satisfactory.	V.R. malfunctioning. ADJUST GEAR's engagement is not correct.	Replace the V.R. (see Sec. 12). Adjust the engagement of ADJUST GEAR (see Sec. 12).
The Fluorescent lamp does not light up.	Connector connection fault. The Fluorescent tube is burnt out.	Check connector connection (see Sec 6). Replace the Fluorescent tube (see Sec. 15).

REPLACMENT OF FUSE

WARNING

- 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 pf 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.

① Turn power off.

② Take out the 2 truss screws, unlock and remove the BACK LID from the main cabinet.

③ The fuse is provided at the right-hand side of the BACK LID inside.

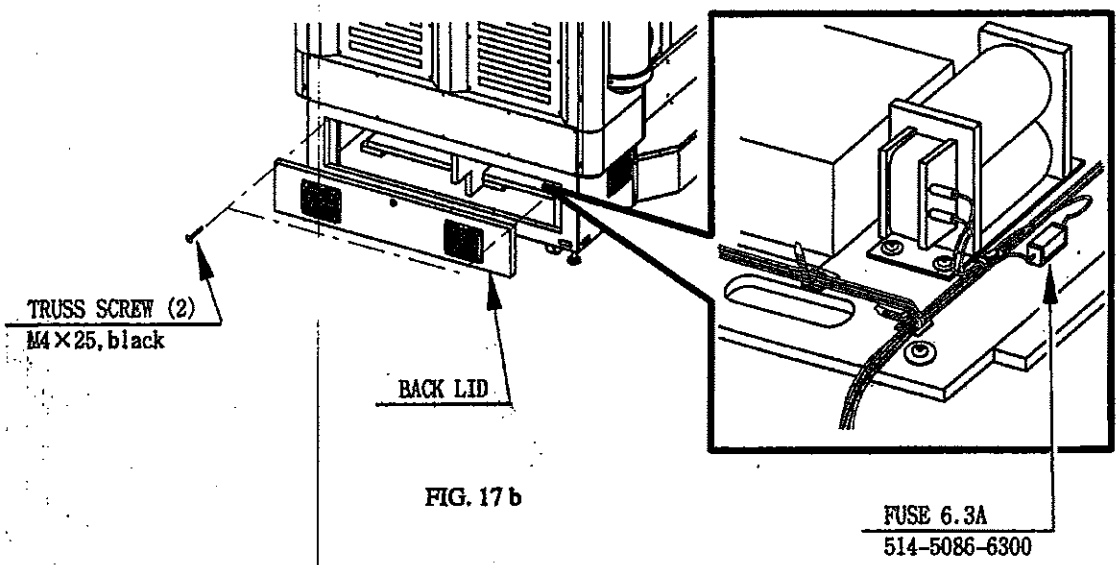


FIG. 17 b

18. 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.

18 — 1 REMOVING THE BOARD

① Turn power off.

② Take out the 2 truss screws, unlock and remove the BACK LID from the main cabinet.

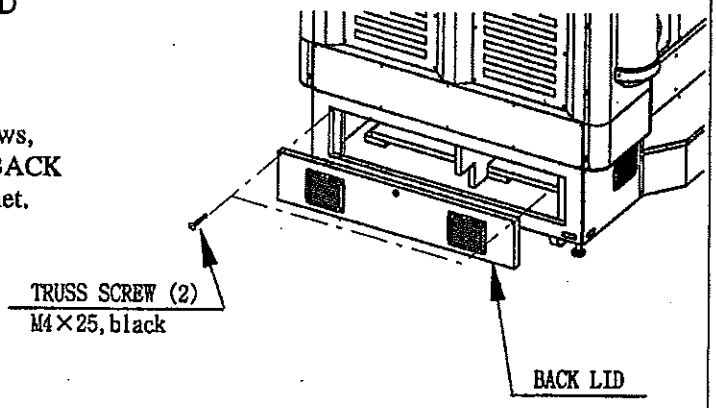
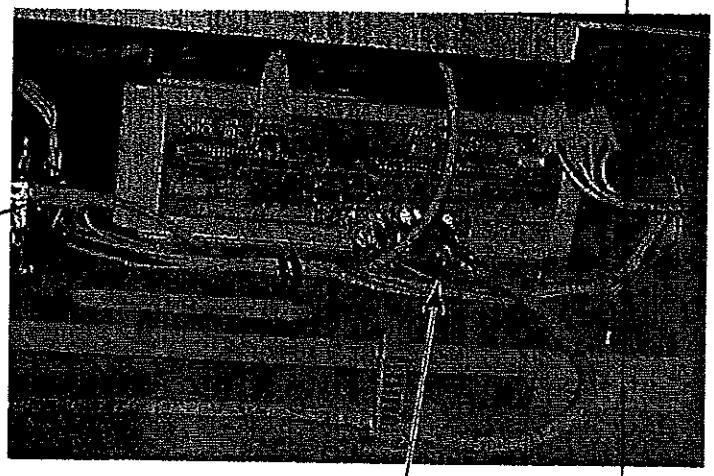


FIG. 18. 1

③ Disconnect all connectors connected to the NAOMI GAME BOARD.



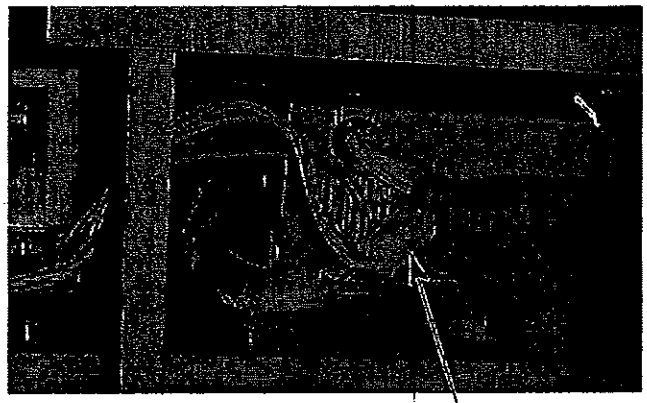
600-7141-0250

600-7141-0250

PHOTO 18. 1 a

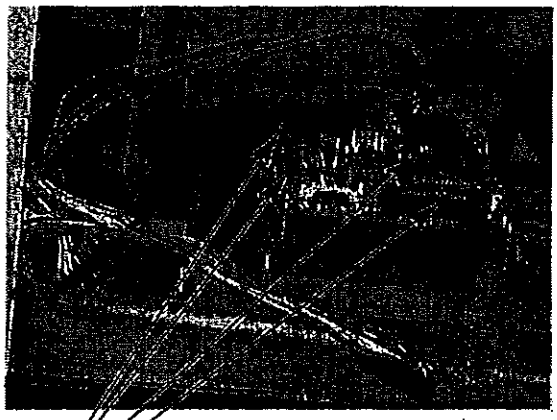
④ Disconnect the 4 connectors connected to the IC BOARD next to the NAOMI GAME BOARD. It is not necessary to disconnect the leftmost 2 connectors out of the 3 connectors on the IC BD.

⑤ Pull out the 8P connector at the AMP BD side.



Disconnect the connector

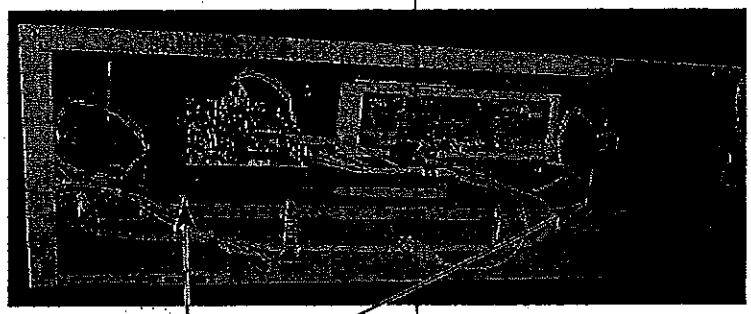
PHOTO 18. 1 c



Disconnect the connector

PHOTO 18. 1 b

⑥ Untie cord clamps and harness lugs which secure wiring.



SCREW (2)
M4×25, w/flat & spring washers

PHOTO 18. 1 d

⑦ Take out the 2 screws which secure the wooden base carrying the NAOMI GAME BOARD.

⑧ Pull the base with the NAOMI GAME BOARD on it out of the main cabinet. At this time, use care so as not to damage wiring.

⑨ Take out the 4 screws to remove the NAOMI GAME BOARD from the base.

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

PHOTO 18. 1 e

STOP
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 PTR USA(840-0023D-01):USA
ASSY CASE NAO PTR EXP(840-0023D-02):OTHERS
ASSY CASE NAO PTR KOR(840-0023D-03):KOREA
ASSY CASE NAO PTR AUS(840-0023D-04):AUSTRALIA

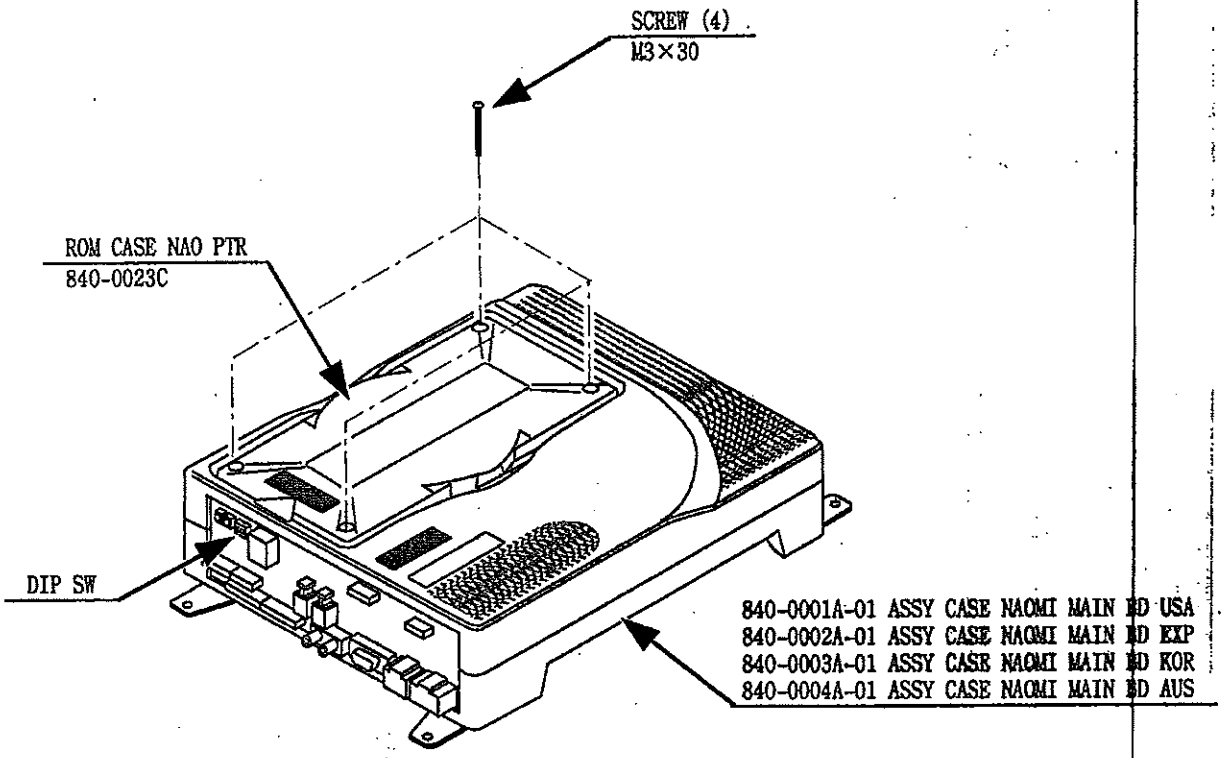


FIG. 18. 2 a

DIP SW設定

In this product, set the DIP SW to OFF. There is another DIP SW on the IC BOARD (other than NAOMI GAME BOARD). Set this DIP SW to OFF as well.

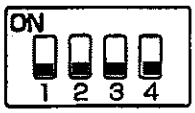


FIG. 18. 2 b

18 — 3 ERROR DISPLAY (DRIVE CONTROL BOARD)

WARNING

- Be careful so as not to damage wirings. Damaged wiring can cause electric shock and short circuit hazards.
- Do not touch undesignated places. Touching places not specified can cause electric shock and short circuit hazards.

Inside the LID TOP FRONT is the Drive Control Board. If an irregularity occurs in the Drive Control Board, the ERROR message is shown on the screen and the 7-SEG display on the Drive Control Board. Take countermeasures in the manner corresponding to the ERROR message. Note that even in the case an error occurs, game is playable.

Errors can be classified roughly into 2 types, such as communication related errors between Drive Control Board & Game Board and the others.
If an error relating to communication occurs, "MOTOR NETWORK ERROR IN: XX OUT: XX" is displayed on the monitor. "MOTOR TROUBLE CODE: XX" is displayed when an error relating to other than communication occurs.
For communication error display, the value outputted by NAOMI Board and the value corresponding to the NAOMI's value outputted by Drive Control Board are displayed. Under normal operation, these values are identical. However, if an irregularity occurs, the values are not identical and the results are displayed on the monitor.
If an irregularity relating to other than communication occurs, an error code is displayed. On-screen ERROR display differs from 7-SEG display on the Drive Control Board. For an error code and its countermeasures, refer to Table 18.3.

Table 18. 3 ERROR DISPLAY

On-screen ERROR display	7-SEG display on Drive Control BD.	ERROR	CAUSE/COUNTERMEASURES
e7	Er 01	ROM ERROR	Malfunctioning of Drive Control Board. Replace Drive Control Board.
e6	Er 02	RAM ERROR	
e0	Er 20	Initialization setting irregularity of motor	Irregularity during initialization setting movement. Finish initialization setting movement by turning power off and then on. Note that when ERROR is displayed,the malfunctioning relates to the Motor System (Motor, Drive Control BD which controls the Motor, Drive BD., wirings in between, etc.)
e9	Er 22	Steering Wheel's centering error	Malfunctioning during initial setting movement. Finish initialization setting movement by turning power off and then on. Note that when ERROR is displayed, the malfunctioning relates to the Steering Wheel Volume system.
e1	Er 23	ERROR of the Encoder incorporated in the motor.	Malfunctioning which occurs during operation. First turn the power off and after 10 min., turn it back on again. Note that when this Error is displayed, the malfunctioning relates to the Motor System.
e2	Er 24	Overcurrent ERROR	
e3	Er 25	Overheat Overload	
ea	Er 30	VOLUME ERROR	Malfunctioning which occurs during operation. Check the variation of the volume value in the test mode.

Among the ERROR display as per Table 18.3, each of Er 01, 02, 20 and 22 (Error Code e7, 6, 0 and 9) is displayed before the Advertise mode is displayed if an irregularity is found during initialization setting movements when power is turned on.

From among error displays as per Table 18.3, Er 23, 24, 25, and 30 (Error Code e1, 2, 3 and a) indicate On-Board 7-SEG error display when an irregularity is found during game and ADVERTISE mode. If an irregularity is found during game, game play can be continued without Steering Wheel reaction.

If Error display is shown on the screen, remove LID TOP FRONT **without turning power off** to check the 7-SEG display on the Drive Control Board. At this time, if the power is turned off, each of Er 23, 24, 25 and 30 (Error Code e1, 2, 3 and a) which could have occurred during operation may not be displayed.

Perform the DIP SW setting on the DRIVE CONTROL BOARD as shown below.

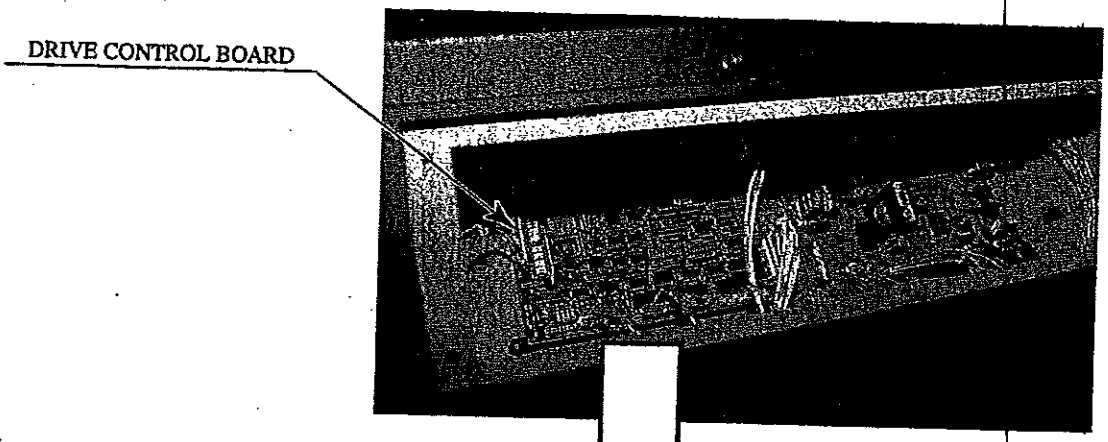


PHOTO 18. 3

DIP SW #1

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

DIP SW #2

1	2	3	4	5	6	7	8
ON	ON	ON	ON	ON	OFF	ON	OFF

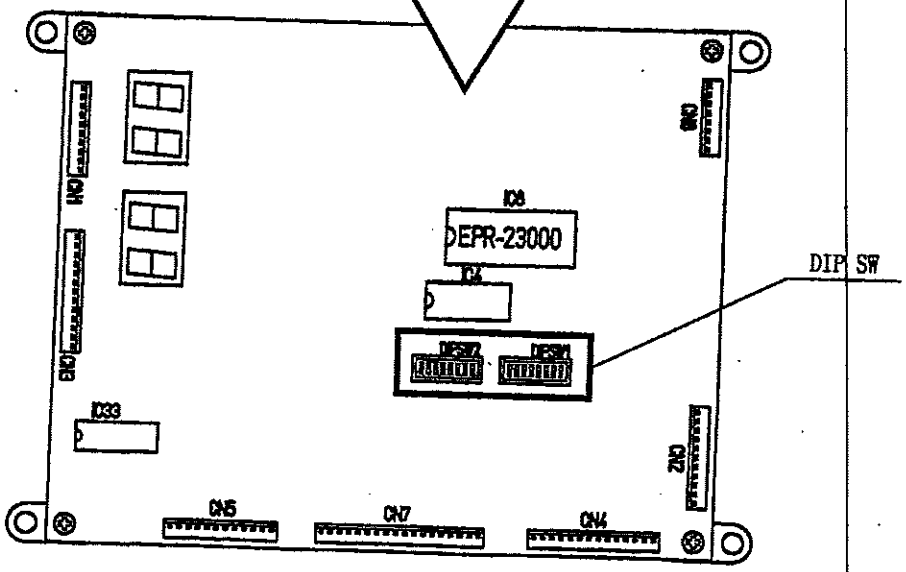
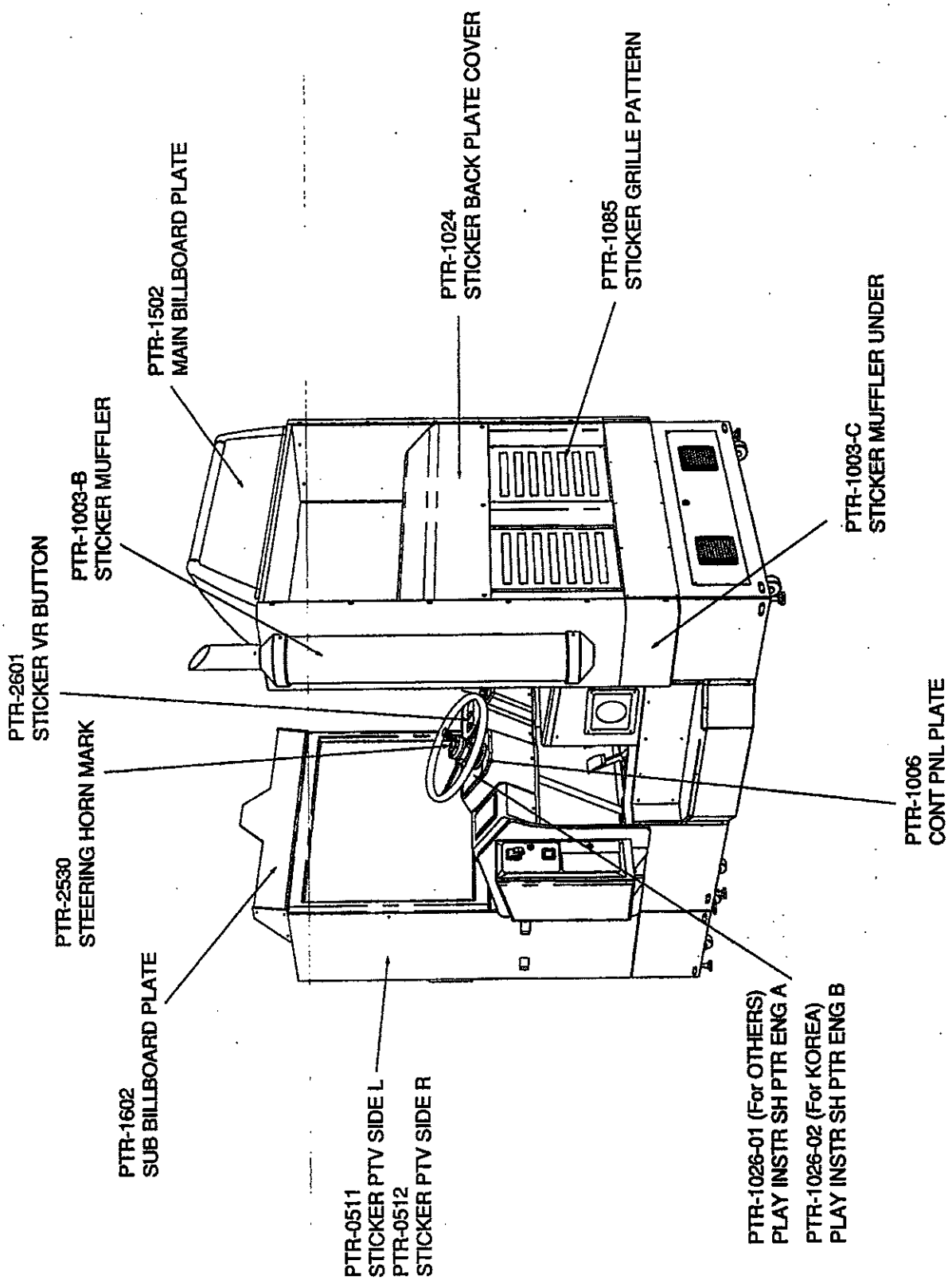
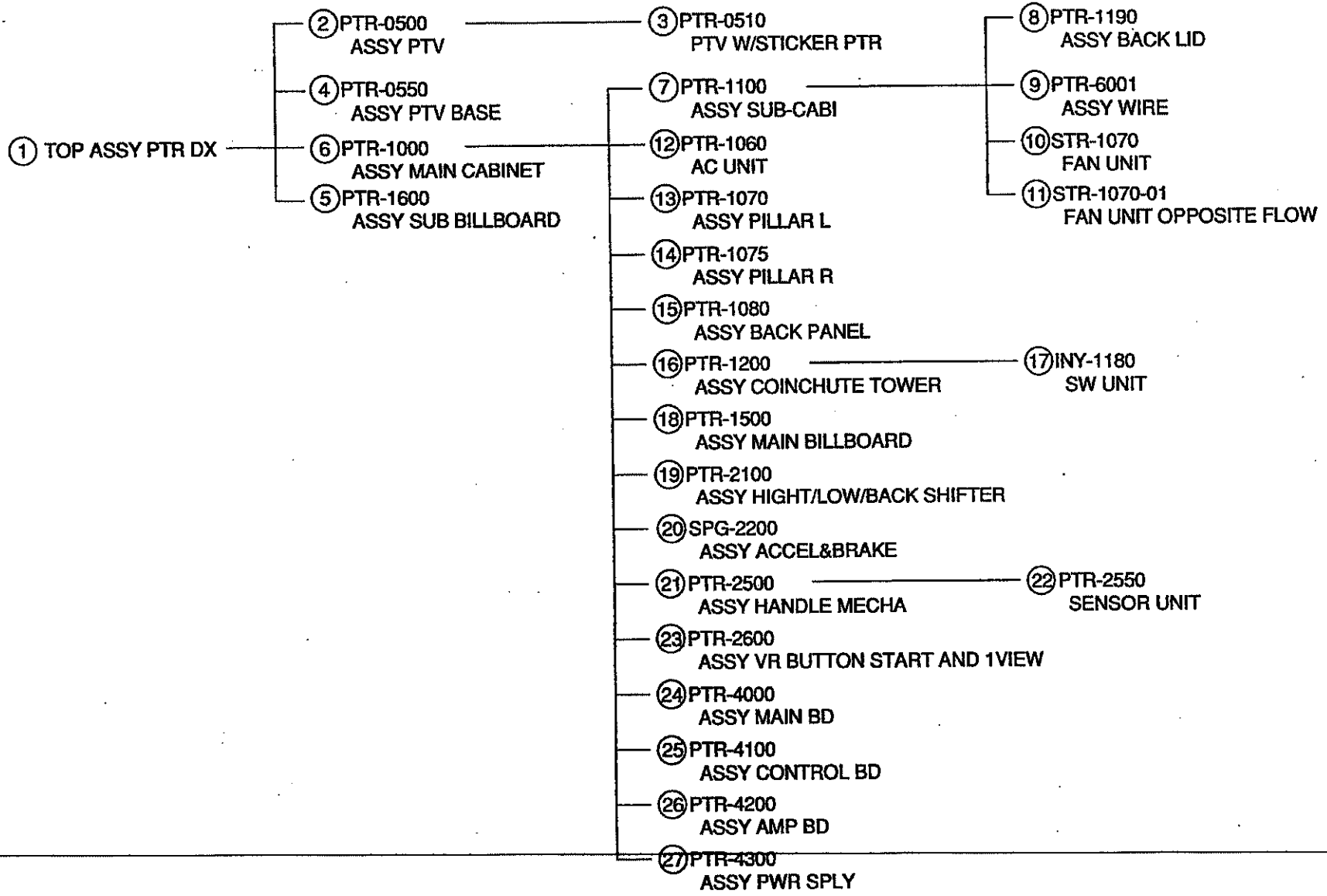


FIG. 18. 3

19. DESIGN RELATED PARTS

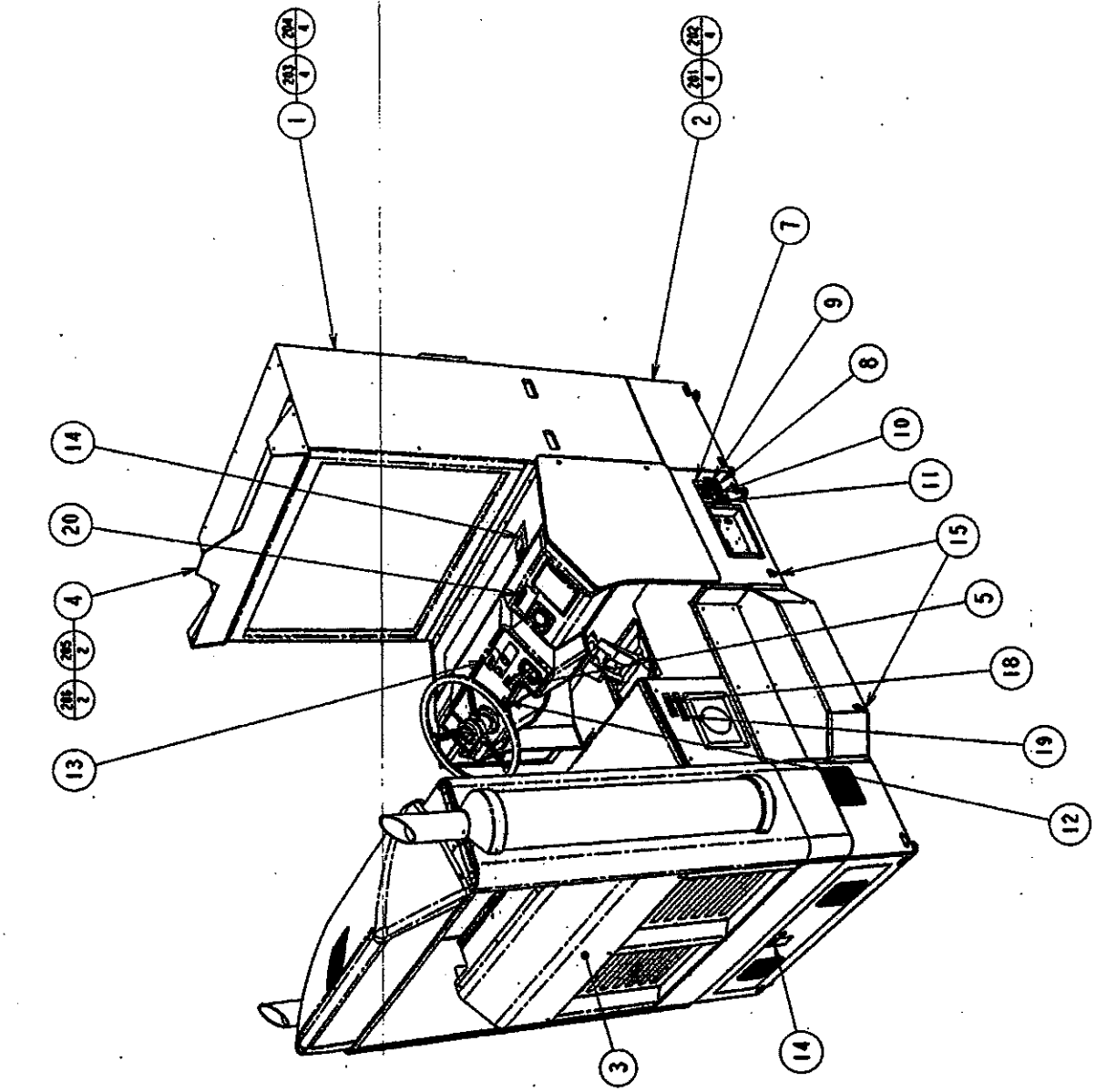
For the Warning Display stickers, refer to Section 1.

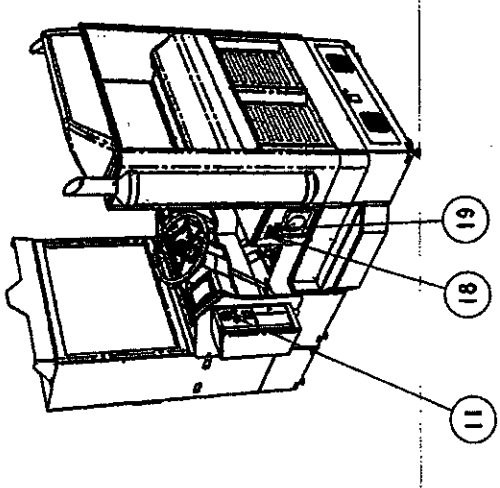


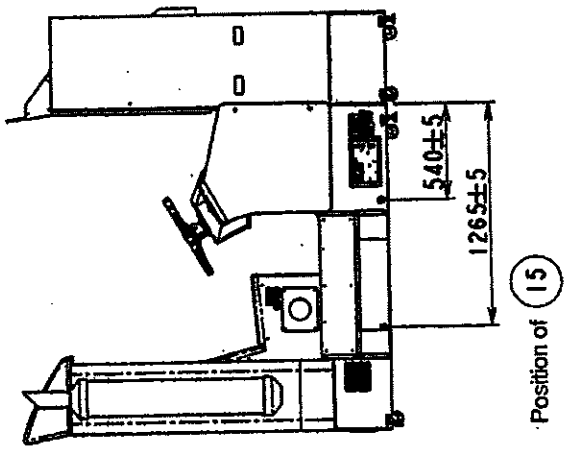

1 TOP ASSY PTR DX
2 PTR-0500 ASSY PTV
3 PTR-0510 PTV W/STICKER PTR
4 PTR-0550 ASSY PTV BASE
5 PTR-1600 ASSY SUB BILLBOARD
6 PTR-1000 ASSY MAIN CABINET
7 PTR-1100 ASSY SUB-CABI
8 PTR-1190 ASSY BACK LID
9 PTR-6001 ASSY WIRE
10 STR-1070 FAN UNIT
11 STR-1070-01 FAN UNIT OPPOSITE FLOW
12 PTR-1060 AC UNIT
13 PTR-1070 ASSY PILLAR L
14 PTR-1075 ASSY PILLAR R
15 PTR-1080 ASSY BACK PANEL
16 PTR-1200 ASSY COINCHUTE TOWER
17 INY-1180 SW UNIT
18 PTR-1500 ASSY MAIN BILLBOARD
19 PTR-2100 ASSY HIGHT/LOW/BACK SHIFTER
20 SPG-2200 ASSY ACCEL&BRAKE
21 PTR-2500 ASSY HANDLE MECHA
22 PTR-2550 SENSOR UNIT
23 PTR-2600 ASSY VR BUTTON START AND 1VIEW
24 PTR-4000 ASSY MAIN BD
25 PTR-4100 ASSY CONTROL BD
26 PTR-4200 ASSY AMP BD
27 PTR-4300 ASSY PWR SPLY

① TOP ASSY PTR DX

(D-1/2)





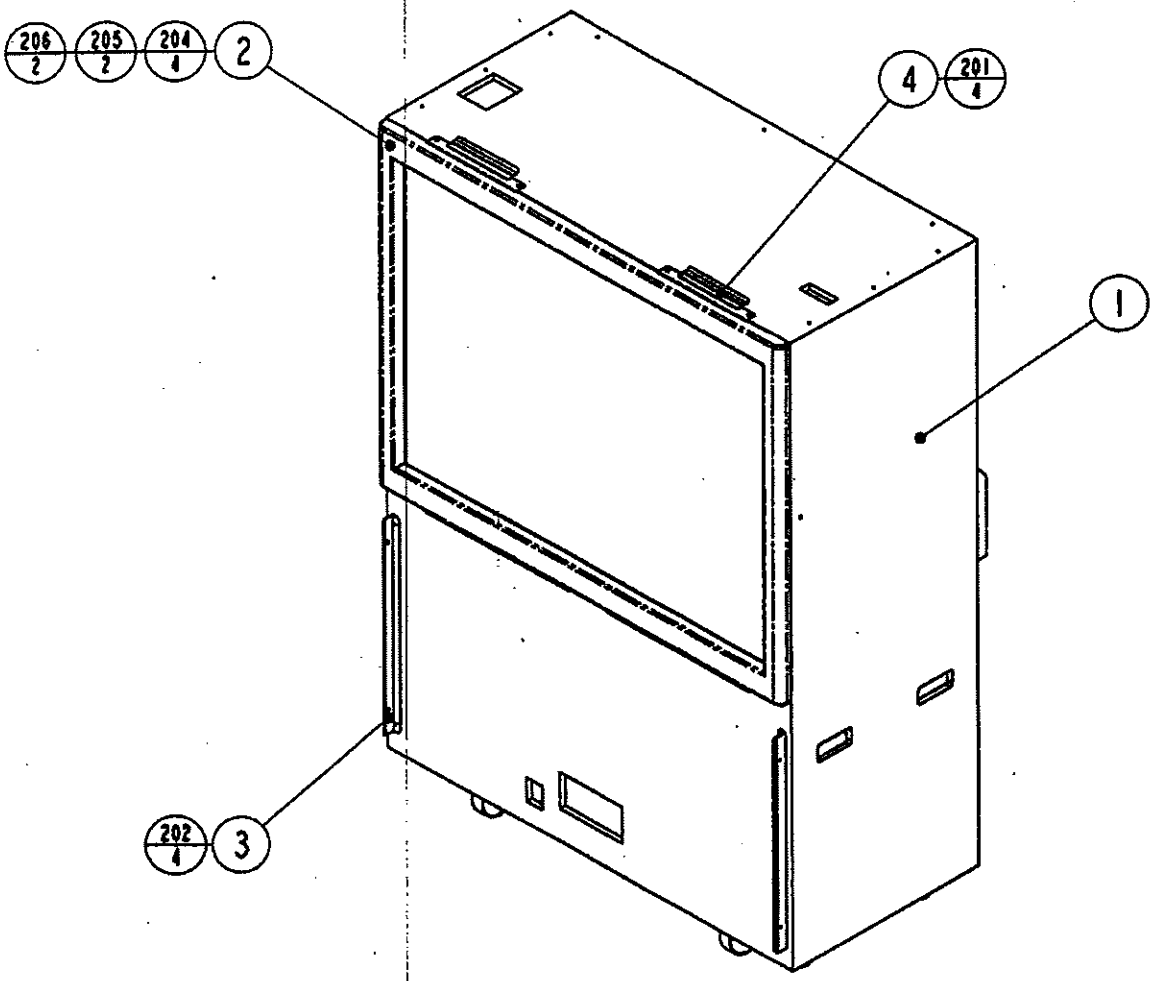


① TOP ASSY PTR DX

(D-2/2)

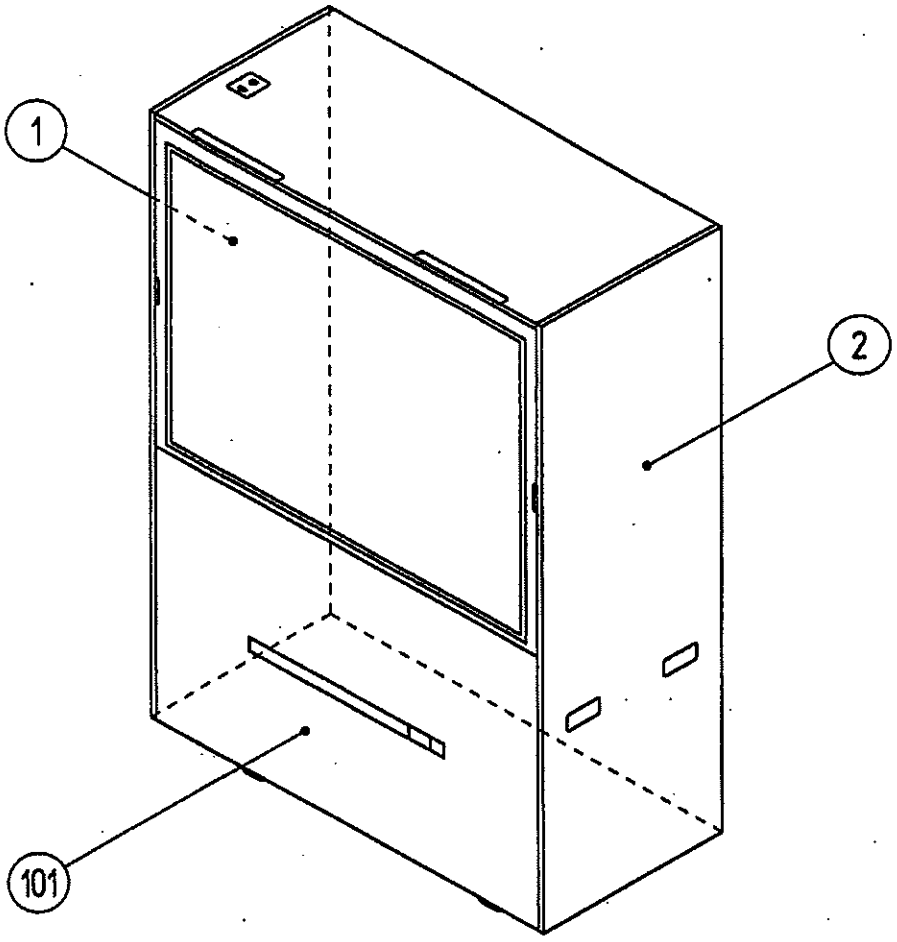
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-0500	ASSY PTV	
2	PTR-0550	ASSY PTV BASE	
3	PTR-1000	ASSY MAIN CABINET	
4	PTR-1600	ASSY SUB BILLBOARD	
5	421-7308- ~	DENOMI SH 1GAME, ~	
13	440-CS0186-EG	STICKER C EPILEPSY 40 ENG	
14	440-WS0002XEG	STICKER W POWER OFF ENG	
15	421-7020	STICKER CAUTION FORK	
16	421-8479-01	STICKER INSTR SUNLIGHT ENG	
17	SGM-4365	POLY COVER 1700 × 2200 × 1700	
18	421-11245-01	STICKER CAPACITY 2 SEATS ENG	
19	440-CS0205-EG	STICKER C PTR FOR CHILD ENG	
20	440-CS0206-EG	STICKER C PTR FOR PROTECTOR EG	
201	030-000830-S	HEX BLT W/S M8 × 30	
202	068-852216	FLT WSHR 8.5-22 × 1.6	
203	000-T00540-0C	M SCR TH CRM M5 × 40	
204	068-552016-0C	FLT WSHR CRM 5.5-20 × 1.6	
205	000-T00516-0C	M SCR TH CRM M5 × 16	
206	068-552016-0C	FLT WSHR CRM 5.5-20 × 1.6	
207	008-T00412-0B	TMP PRF SCR TH BLK M4 × 12	
401	601-6604-70	CARTON BOX 70	
402	SGM-2675	POLYETHYLENE BAG, 240 × 370	
403	420-6545-01	OWNERS MNL PTR DX ENG	
405	390-6677-038	LAMP WB 14V 3.8W (194)	
406	600-6729	AC CABLE CONNECT TYPE 15A	AC 110V AREA
	600-6618	AC CABLE CONNECT TYPE FOR EXP	AC 220 ~ 240V AREA
	600-6695	AC CABLE CONNECT TYPE USA 15A	AC 120V AREA
407	SGM-4111	KEY BAG (SGB-1035X)	
408	220-5576	KEY MASTER FOR 220-5575	
410	514-5086-6300	FUSE S.B 6300MA 250V HBC CE	
411	280-5009-01	CORD CLAMP 21	
412	420-6455-01	SERVICE MANUAL NAOMI ENG	
413	509-5636	SW MICRO TYPE SS-5GL2T	
414	220-5484	VOL CONT B-5K OHM	
	220-5373	VOL CONT B-5K	
/	105-5356	SHIPPING BRKT	
/	421-8740	CAUTION INSTR COP U/R	
/	421-6690-03	STICKER 220V	AC 220V AREA
/	421-6690-05	STICKER 240V	AC 240V AREA
/	421-6690-06	STICKER 110V	AC 110V AREA
/	421-6690-01	STICKER 120V	AC 120V AREA
/	421-6119-91	STICKER FCC	USA
/	421-6120-92	STICKER SEGA USA	USA

(2) ASSY PTV (PTR-0500)



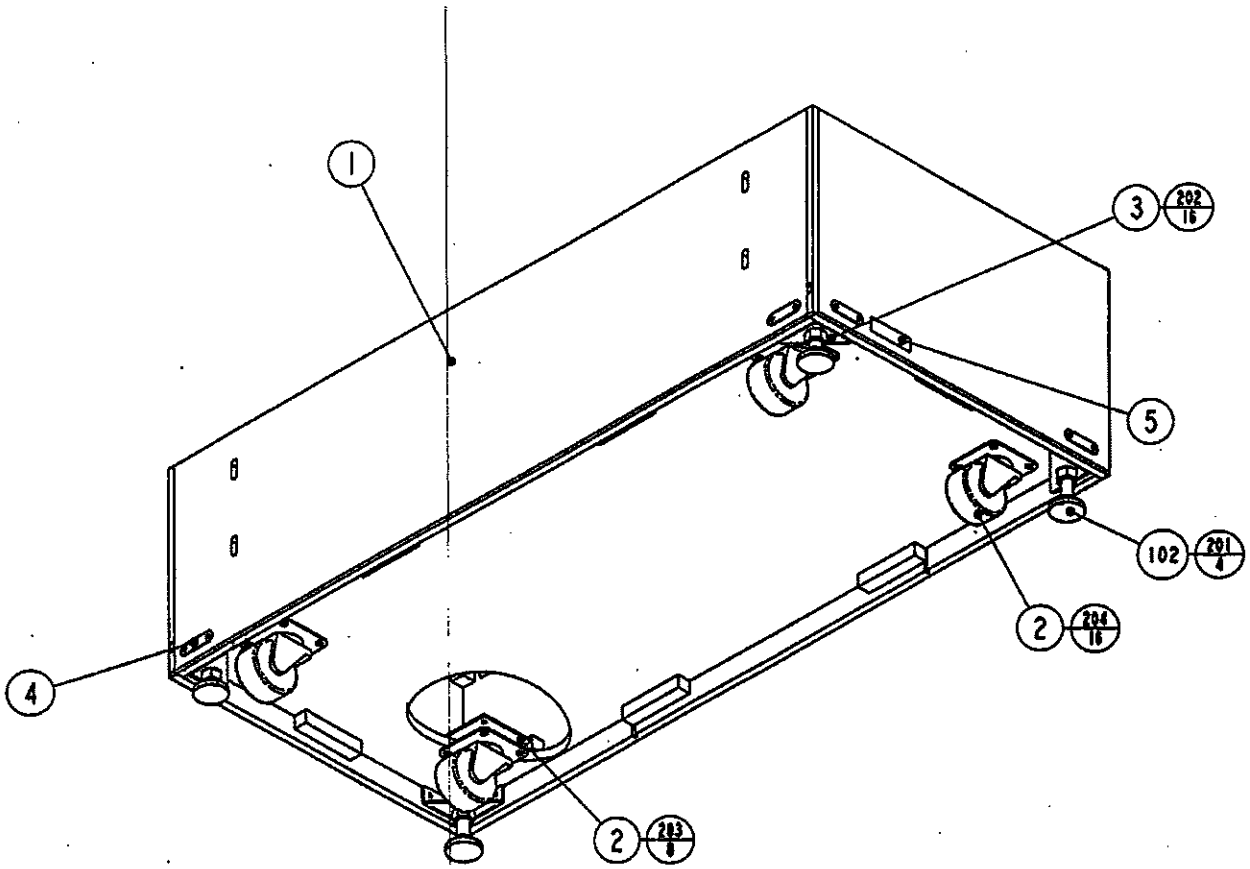
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-0510	PTV W/STICKER PTR	
2	MGL-1150	ASSY MASK	
3	HOD-1101	PTV HOLDER	
4	RAL-0501	MASK HOLDER	
201	000-F00412	M SCR FH M4 × 12	
202	000-P00516-W	M SCR PH W/FS M5 × 16	
204	000-P00520-W	M SCR PH W/FS M5 × 20	
205	000-T00525-0C	M SCR TH CRM M5 × 25	
206	068-552016-0C	FLT WSHR CRM 5.5-20 × 1.6	

③ PTV W/STICKER PTR (PTR-0510)



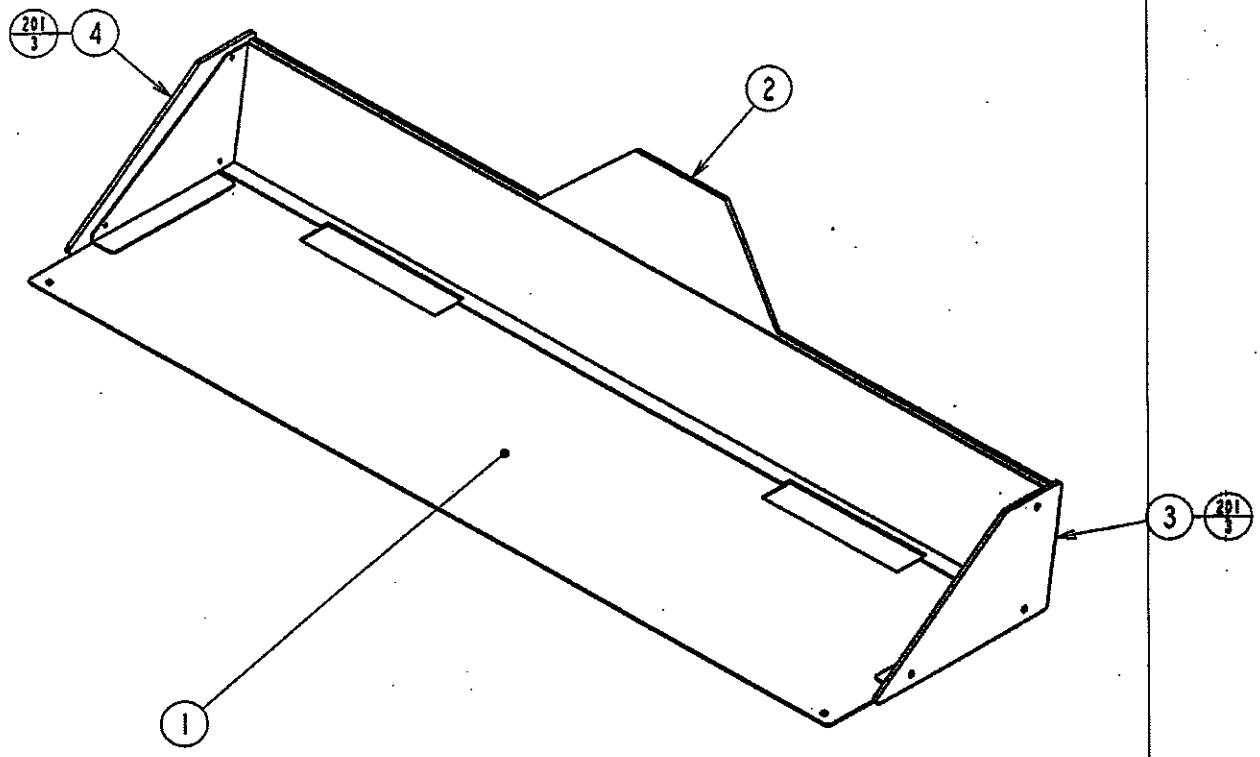
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-0511	STICKER PTV SIDE L	
2	PTR-0512	STICKER PTV SIDE R	
101	200-5788-31	PROJECTION DSPL T 50TYPE 31K	
	200-5799-31	PROJECTION DSPL M 50TYPE 31K	

④ ASSY PTV BASE (PTR-0550)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-0551	PTV BASE	
2	SCR-1008	NUT PLATE FOR CASTER	
3	ARC-1006	LEG BRACKET	
4	117-5233	PLATE LEG BRACKET BLACK	
101	601-9377	CASTER FAI=75	
102	601-5699X	LEG ADJUSTER BOLT M16 × 75	
201	050-H01600-0B	HEX NUT BLK M16	
202	030-000630-SB	HEX BLT BLK W/S M6 × 30	
203	011-P03512	TAP SCR PH 3.5 × 12	
204	030-000625-WB	HEX BLT W/FS BLK M6 × 25	

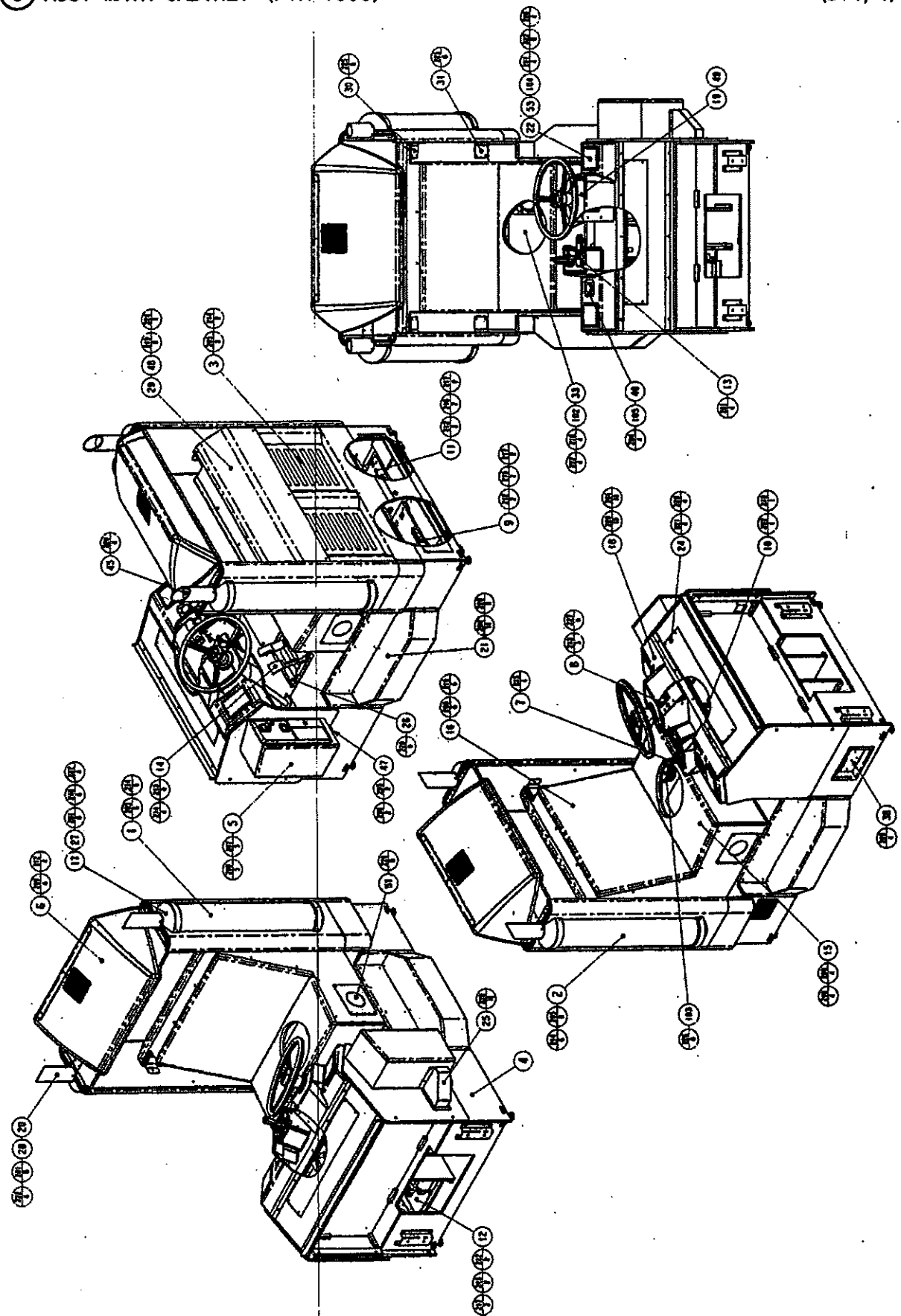
(5) ASSY SUB BILLBOARD (PTR-1600)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1601	SUB BILLBOARD BASE	
2	PTR-1602	SUB BILLBOARD PLATE	
3	PTR-1604	SIDE PLATE L	
4	PTR-1605	SIDE PLATE R	
201	000-T00412-0C	M SCR TH CRM M4 × 12	

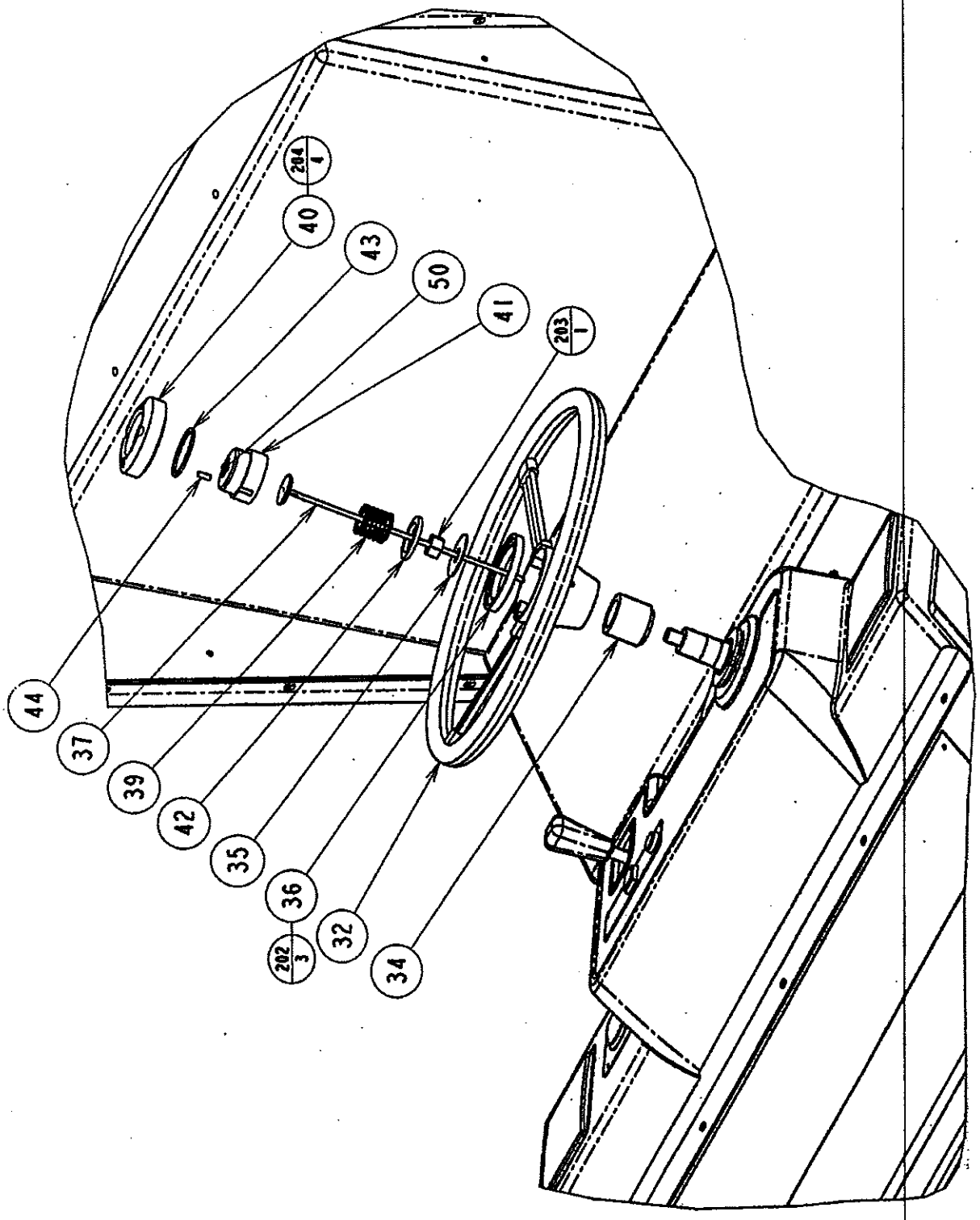
⑥ ASSY MAIN CABINET (PTR-1000)

(D-1/4)



⑥ ASSY MAIN CABINET (PTR-1000)

(D-2/4)



⑥ ASSY MAIN CABINET (PTR-1000) (D-3/4)

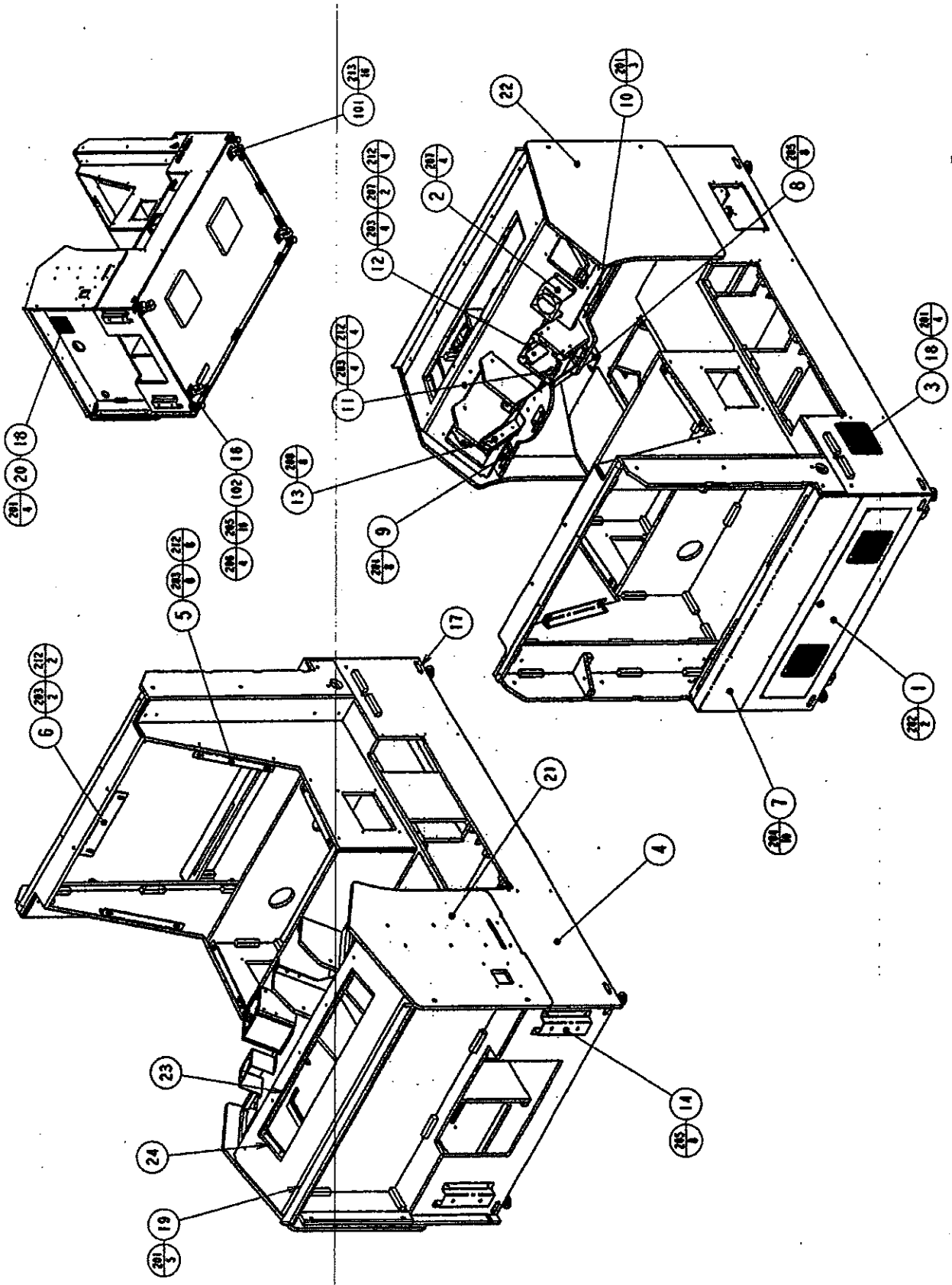
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1070	ASSY PILLAR L	
2	PTR-1075	ASSY PILLAR R	
3	PTR-1080	ASSY BACK PANEL	
4	PTR-1100	ASSY SUB-CABI	
5	PTR-1200	ASSY COINCHUTE TOWER	
6	PTR-1500	ASSY MAIN BILLBOARD	
7	PTR-2100	ASSY HIGH/LOW/BACK SHIFTER	
8	PTR-2500	ASSY HANDLE MECHA	
9	PTR-4000	ASSY MAIN BD	
10	PTR-4100	ASSY CONTROL BD	
11	PTR-4200	ASSY AMP BD	
12	PTR-4300	ASSY PWR SPLY	
13	PTR-2600	ASSY VR BUTTON START AND 1VIEW	
14	SPG-2200	ASSY ACCEL & BRAKE	
15	PTR-1001	SEAT	
16	PTR-1002	SEAT BACK	
17	PTR-1004	END CAP	
18	PTR-1005	CONTROL PANEL COVER	
19	PTR-1006	CONT PNL PLATE	
20	PTR-1007	DESIGN PIPE	
21	PTR-1008	STEP	
22	PTR-1010	SPKR BRKT	
23	PTR-1011	PLATE HORN BUTTON	
24	PTR-1013	LID TOP FRONT	
25	PTR-1014	WIRE COVER	
26	PTR-1015	ACCEL BRKT	
27	PTR-1016	END CAP BRKT UPPER	
28	PTR-1018	PIPE JOINT BRKT	
29	PTR-1019	BACK PANEL COVER	
30	PTR-1020	PILLAR CABI BRKT UPPER	
31	PTR-1021	PILLAR CABI BRKT LOWER	
32	PTR-2501	STEERING HANDLE	
33	STW-3031	WOOFER BRKT	
34	PTR-2507	COLLAR HANDLE SHAFT	
35	PTR-2508	WSHR HANDLE SHAFT	
36	PTR-2509	COLLAR STEERING HUB	
37	PTR-2510	ROD HORN BUTTON	
38	PTR-1060	AC UNIT	
39	PTR-2512	COMP SPRING HORN BUTTON	
40	PTR-2513	FRM HORN BUTTON	
41	PTR-2514	CAP HORN BUTTON	
42	PTR-2525	CUSHION L	
43	PTR-2526	CUSHION U	
44	PTR-2527	PIN HORN BUTTON	
45	PTR-1023	PIPE SAFETY	
46	440-WT0192-EG	TAG W LAMP ENG	
47	PTR-1022	TOWER SHELF	
48	PTR-1024	STICKER BACK PANEL COVER	
49	PTR-1026-01	PLAY INSTR SH PTR ENG A	OTHERS
	PTR-1026-02	PLAY INSTR SH PTR ENG B	KOREA
50	PTR-2530	STEERING HORN MARK	
51	PTR-1115	WOOFER NET	
53	PTR-1027	SPEAKER SPACER CUSHION	

⑥ ASSY MAIN CABINET (PTR-1000)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
101	130-5096	ASSY SERVO SPEAKER BOX	
102	130-5196	WOOFER 4OHM 80W	
103	130-5172	BASS SHAKER	
104	509-5966	SW PB OBSA-60UM 14V 3.8W PTR	
105	280-5275-SR10	CORD CLAMP SR10	
106	280-0419	HARNESS LUG	
107	270-5117	FERRITE CORE TDK ZCAT3035-1330	
108	601-0460	PLASTIC TIE BELT 100 MM	
201	000-T00412-0C	M SCR TH CRM M4 × 12	
202	000-P00420	M SCR PH M4 × 20	
203	050-H01600	HEX NUT M16	
204	000-T00425-0C	M SCR TH CRM M4 × 25	
205	030-000640-SB	HEX BLT W/S BLK M6 × 40	
206	060-F00600-0B	FLT WSHR BLK M6	
207	030-000840-SB	HEX BLT W/S BLK M8 × 40	
208	068-852216	FLT WSHR 8.5-22 × 1.6	
209	000-T00550-0B	M SCR TH BLK M5 × 50	
210	011-T03512	TAP SCR TH 3.5 × 12	
211	000-P00408-W	M SCR PH W/FS M4 × 8	
212	068-552016-0B	FLT WSHR BLK 5.5-20 × 1.6	
213	030-000625-SB	HEX BLT W/S BLK M6 × 25	
214	068-652016-0B	FLT WSHR BLK 6.5-20 × 1.6	
215	030-00825-S	HEX BOLT W/S M8 × 25	
216	000-P00530	M SCR PH M5 × 30	
217	060-S00500	SPR WSHR M5	
218	068-441616-0C	FLT WSHR CRM 4.4-16 × 1.6	
219	050-H00800	HEX NUT M8	
220	000-T00416-0B	M SCR TH BLK M4 × 16	
221	068-441616-0B	FLT WSHR BLK 4.4-16 × 1.6	
222	000-P00420-WB	M SCR PH W/FS BLK M4 × 20	
223	000-T00430-0B	M SCR TH BLK M4 × 30	
224	000-T00416-0C	M SCR TH CRM M4 × 16	
225	000-T00630-0B	M SCR TH BLK M6 × 30	
226	050-F00400	FLG NUT M4	
227	000-T00516	M SCR TH M5 × 16	
228	000-P00512-W	M SCR PH W/FS M5 × 12	
229	060-F00400	FLT WSHR M4	
301	PTR-60021	WIRE HARN BASS	
302	PTR-60028	WIRE HARN HORN SUB	
303	PTR-60034	WIRE HARN VR BUTTON	
304	PTR-60033	WIRE HARN MOTOR CONTROL	

(7) ASSY SUB-CABI (PTR-1100)

(D-1/3)



⑦ ASSY SUB-CABI (PTR-1100)

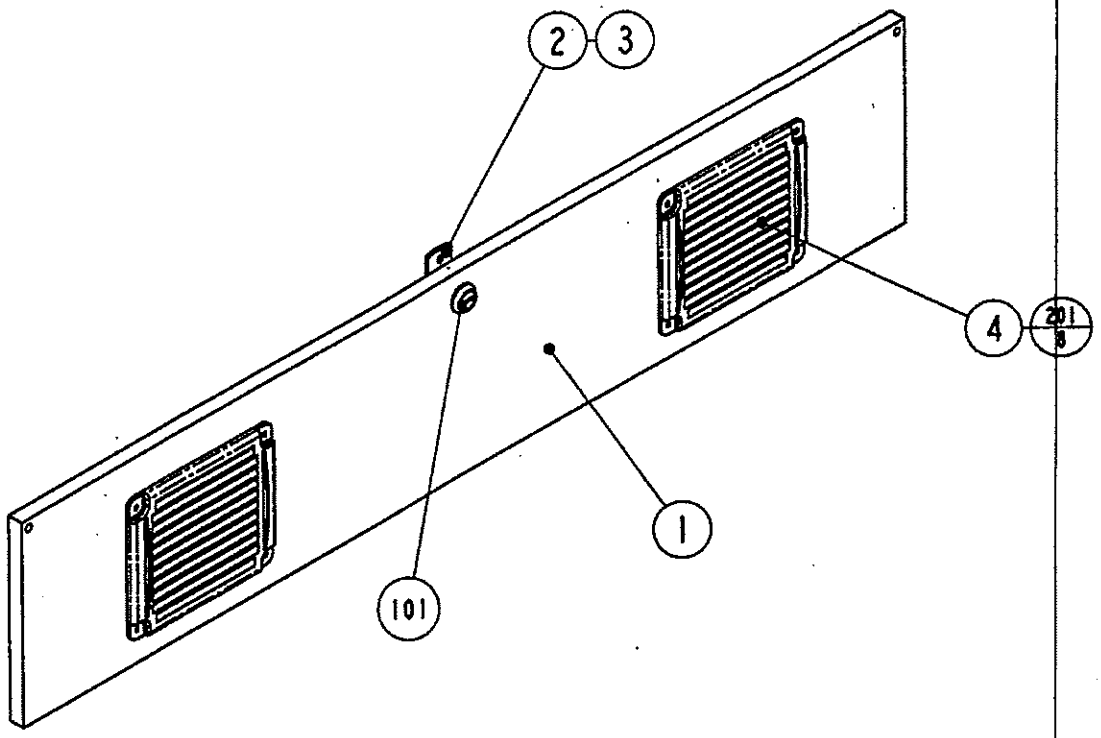
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1190	ASSY BACK LID	
2	PTR-1012	BRKT HORN BUTTON	
3	STR-1070	FAN UNIT	
4	PTR-1101	MAIN CABINET	
5	PTR-1102	SEAT BRKT	
6	PTR-1103	SEAT BRKT UPPER	
7	PTR-1104	BACK PLATE	
8	PTR-1107	DUMMY SHAFT	
9	PTR-1108	CTRL COVER BRKT A	
10	PTR-1109	CTRL COVER BRKT B	
11	PTR-1111	SHIFTER BRKT A	
12	PTR-1112	SHIFTER BRKT B	
13	PTR-1113	CTRL PNL REINFORCE	
14	PTR-1114	JOINT BRKT	
16	ARC-1006	LEG BRACKET	
17	117-5233	PLATE LEG BRACKET BLACK	
18	253-5460-01	AIR VENT BLACK	
19	PTR-1116	SASH PTV	
20	STR-1070-01	FAN UNIT OPPOSITE FLOW	
21	PTR-1121	STICKER CABI L	
22	PTR-1122	STICKER CABI R	
23	PTR-1119	WATER SEAL 865X10 T5	
24	PTR-1120	WATER SEAL 120X10 T5	
101	601-9377	CASTER FAI=75	
102	601-5699X	LEG ADJUSTER BOLT M16 × 75	
103	280-5009-01	CORD CLAMP 21	
104	280-0419	HARNESS LUG	
105	601-0460	PLASTIC TIE BELT 100 MM	
106	117-5402-06	EARTH TERMINAL PLATE 6P	
107	280-5275-SR10	CORD CLAMP SR10	
201	000-T00420-0B	M SCR TH BLK M4 × 20	
202	000-T00430-0B	M SCR TH BLK M4 × 30	
203	FAS-000070	M SCR TH BLK M6 × 25	
204	079-000008	SCR NAIL THH STNLS 1.5 × 16	
205	030-000630-SB	HEX BLT BLK W/S M6 × 30	
206	050-H01600-0B	HEX NUT BLK M16	
207	000-P00416-WB	M SCR PH W/FS BLK M4 × 16	
208	011-P00412	TAP SCR PH 4 × 12	
209	011-F00312	TAP SCR FH 3 × 12	
210	011-T03512	TAP SCR TH 3.5 × 12	
211	011-F03516	TAP SCR FH 3.5 × 16	
212	068-652016-0B	FLT WSHR BLK 6.5-20 × 1.6	
213	030-000625-WB	HEX BLT W/FS BLK M6 × 25	

⑦ ASSY SUB-CABI (PTR-1100)

(D-3/3)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
301	PTR-60005	WIRE HARN AC FRONT	
302	PTR-60006	WIRE HARN AC BACK	
303	PTR-60031	WIRE HARN MOTOR	
304	PTR-60032	WIRE HARN ENCODER	
305	PTR-60103	WIRE HARN EARTH SHIFTER	
306	600-6972-1200	WIRE HARN EARTH ID5 1200MM	
307	600-6972-1800	WIRE HARN EARTH ID5 1800MM	
308	600-6972-0750	WIRE HARN EARTH ID5 0750MM	
309	PTR-6001	ASSY WIRE	
310	PTR-60102	WIRE HARN EARTH PEDAL	

⑧ ASSY BACK LID (PTR-1190)



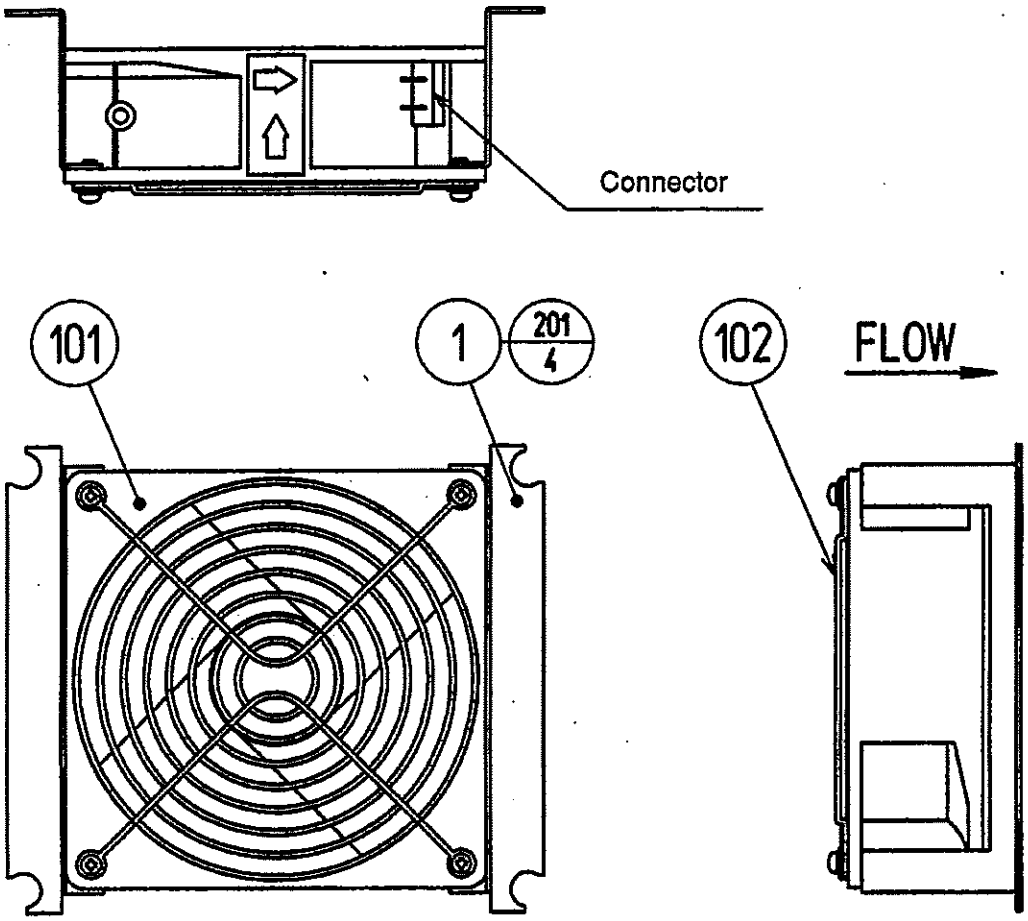
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1191	BACK LID	
2	DP-1148X	LKG TNG	
3	117-0062	PLATE LOCK RETAINER	
4	253-5460-01	AIR VENT BLACK	
101	220-5575	CAM LOCK MASTER W/O KEY	
201	000-T00416-0B	M SCR TH BLK M4 × 16	

⑨ ASSY WIRE (PTR-6001)

ASSY WIRE (PTR-6001) is comprised of the following wire harnesses.
An ASSY DRG. is unavailable.

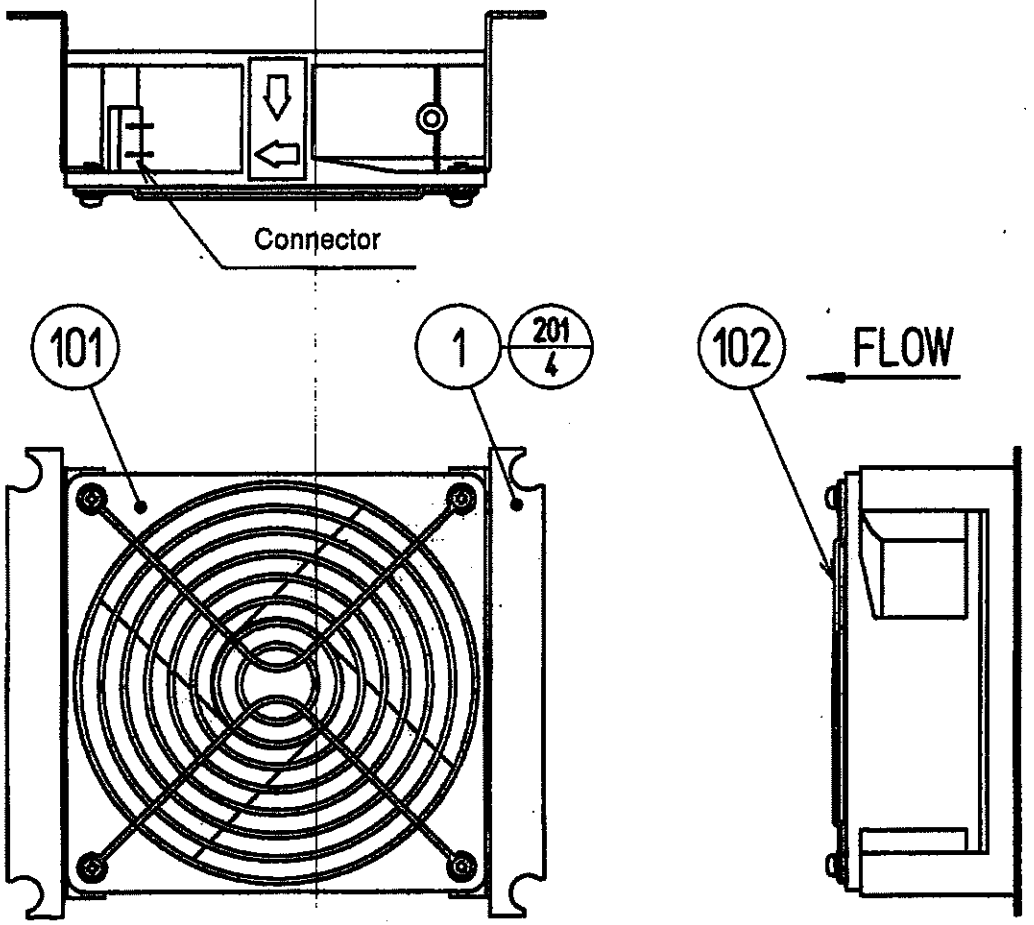
ITEM NO.	PART NO.	DESCRIPTION	NOTE
101	601-0460	PLASTIC TIE BELT 100 MM	
301	PTR-60018	WIRE HARN WOOFER 2	
302	PTR-60019	WIRE HARN SPEARKER 2	
303	PTR-60020	WIRE HARN VOLUME 2	
304	PTR-60024	WIRE HARN IO	
305	PTR-60025	WIRE HARN ANALOG	
306	PTR-60027	WIRE HARN DC DRIVE	
308	600-7009-4000	ASSY RGB CA D-SUB 15P 4000MM	

⑩ FAN UNIT (STR-1070)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	105-5340-01	FAN BRKT LONG	
101	260-0011-02	AXIAL FLOW FAN AC100V 50-60HZ	
102	601-8543	FAN GUARD	
201	000-P00312-W	M SCR PH W/FS M3 × 12	

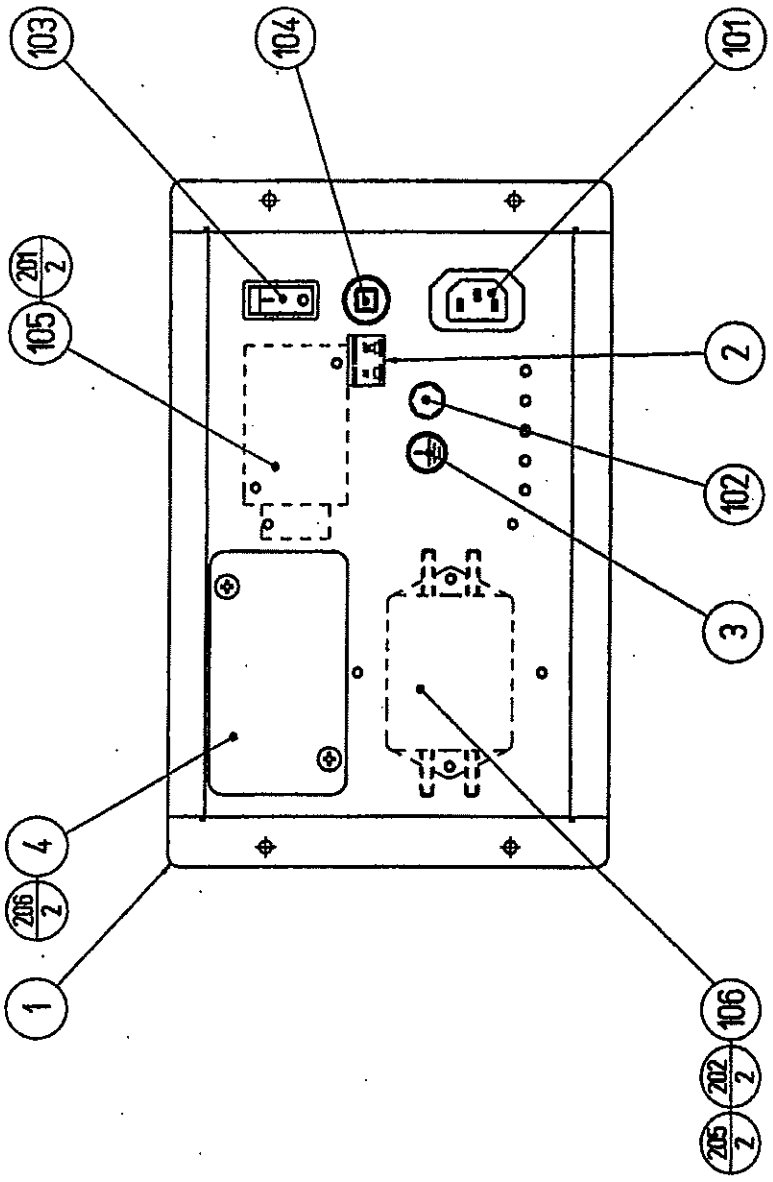
(11) FAN UNIT OPPOSITE FLOW (STR-1070-01)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	105-5340-01	FAN BRKT LONG	
101	260-0011-02	AXIAL FLOW FAN AC100V 50-60HZ	
102	601-8543	FAN GUARD	
201	000-P00312-W	M SCR PH W/FS M3 × 12	

⑫ AC UNIT (PTR-1060)

(D-1/2)



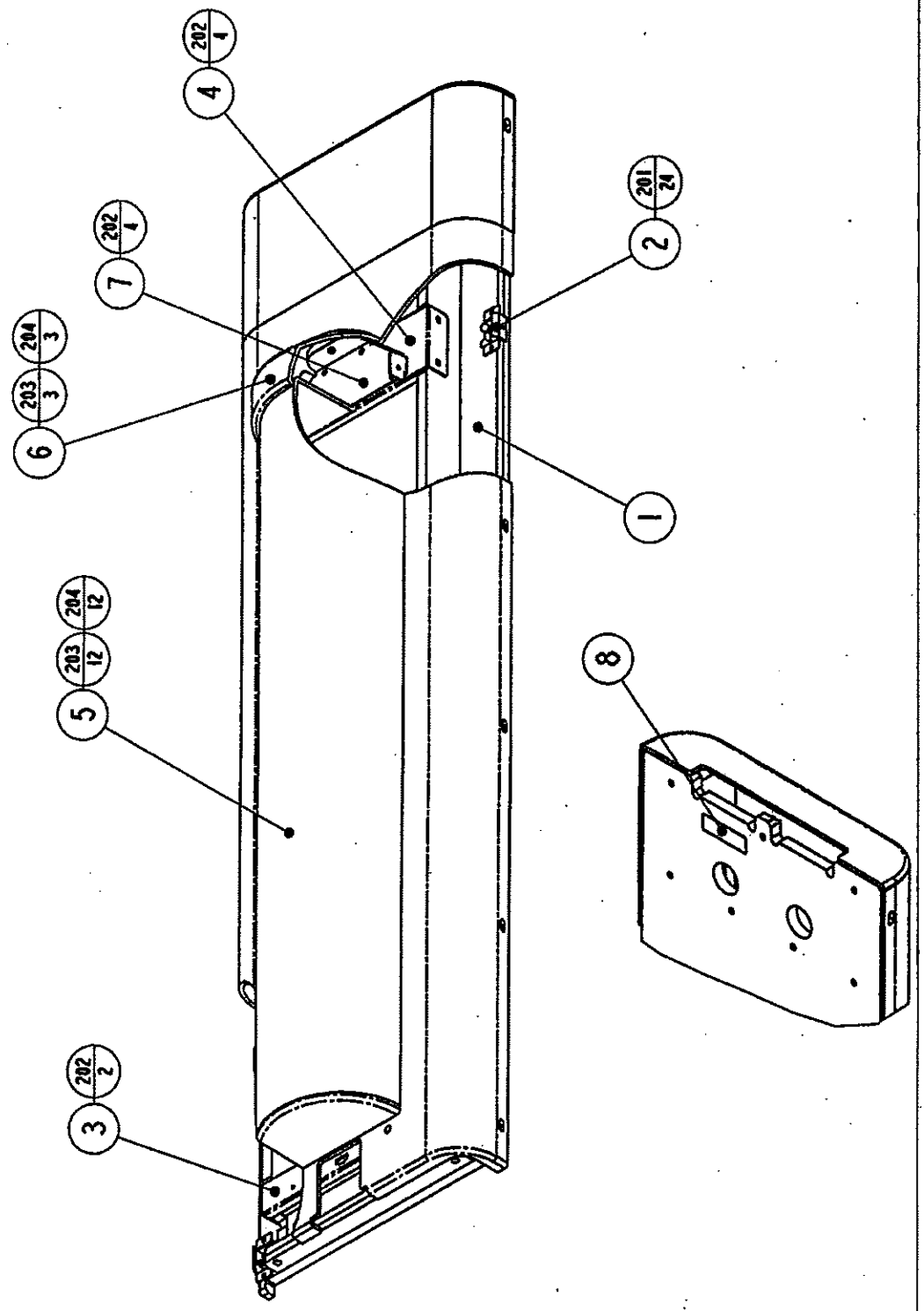
⑫ AC UNIT (PTR-1060)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	FRI-1021	AC BRACKET	
2	421-7468-01	STICKER C.P W/PIC	
3	421-8202	STICKER EARTH MARK	
4	FRI-1022	CONNECTOR LID	
101	214-0202	AC INLET PANEL TYPE	
102	280-0417	TERMINAL BINDING POST BLACK	TAIWAN
		NOT USED	OTHERS
103	509-5453-91-V-B	SW ROCKER J8 V-B	
104	512-5046-10000	C.P 10000MA CE UL	AC 110 ~ 120V AREA
	512-5046-5000	C.P 5000MA CE UL	AC 220 ~ 240V AREA
105	450-5126	MAGNET CONTACT S-N10CX	AC 110V AREA
	450-5133	MAGNET CONTACT S-N10CX AC 200V	AC 220V 60Hz AREA
	450-5134	MAGNET CONTACT S-N10CX AC 230V	AC 220V 50Hz, AC240V AREA
	450-5135	MAGNET CONTACT S-N10CX AC 120V	AC 120V AREA
106	270-5081	NOISE FILTER 20A	
108	310-5029-G20	SUMITUBE F G 20MM	
109	601-0460	PLASTIC TIE BELT 100 MM	
201	000-P00416-W	M SCR PH W/FS M4 × 16	
202	000-P00408-W	M SCR PH W/FS M4 × 8	
203	050-H00400	HEX NUT M4	
204	060-S00400	SPR WSHR M4	
205	060-F00400	FLT WSHR M4	
206	000-T00408-0B	M SCR TH BLK M4 × 8	
301	FRI-60001	WIRE HARN AC INLET A	
302	FRI-60002	WIRE HARN AC INLET B	
303	FRI-60003	WIRE HARN EARTH AC INLET	
304	FRI-60004	WIRE HARN CP	
305	FRI-60005	WIRE HARN MAIN SW	
306	FRI-60006	WIRE HARN FILTER IN	
307	PTR-60001	WIRE HARN AC UNIT	
308	600-6972-0100	WIRE HARN EARTH ID5 0100MM	TAIWAN
		NOT USED	OTHERS
309	PTR-60101	WIRE HARN EARTH AC UNIT	
/	008-T00412-0B	TMP PRF SCR TH BLK M4 × 12	

(13) ASSY PILLAR L (PTR-1070)

(D-1/2)



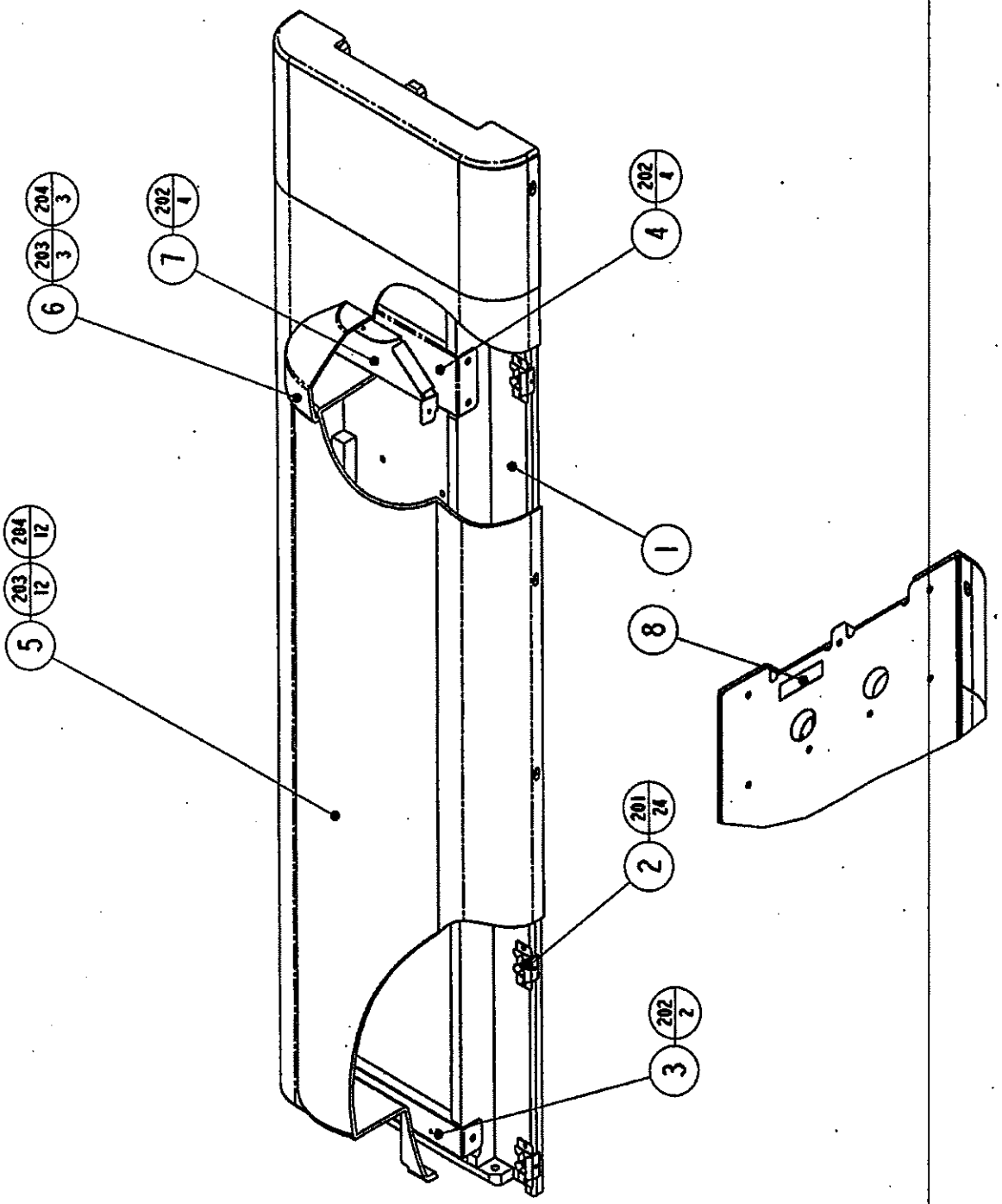
⑬ ASSY PILLAR L (PTR-1070)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1071	PILLAR BASE	
2	PTR-1072	PILLAR COVER BRKT	
3	PTR-1073	UPPER BRKT	
4	PTR-1074	LOWER BRKT	
5	PTR-1003	PILLAR COVER	
6	PTR-1004	END CAP	
7	PTR-1017	END CAP BRKT LOWER	
201	011-P03512	TAP SCR PH 3.5 × 12	
202	000-P00420-WB	M SCR PH W/FS BLK M4 × 20	
203	000-T00412-0C	M SCR TH CRM M4 × 12	
204	068-441616-0C	FLT WSHR CRM 4.4-16 × 1.6	

⑭ ASSY PILLAR R (PTR-1075)

(D-1/2)

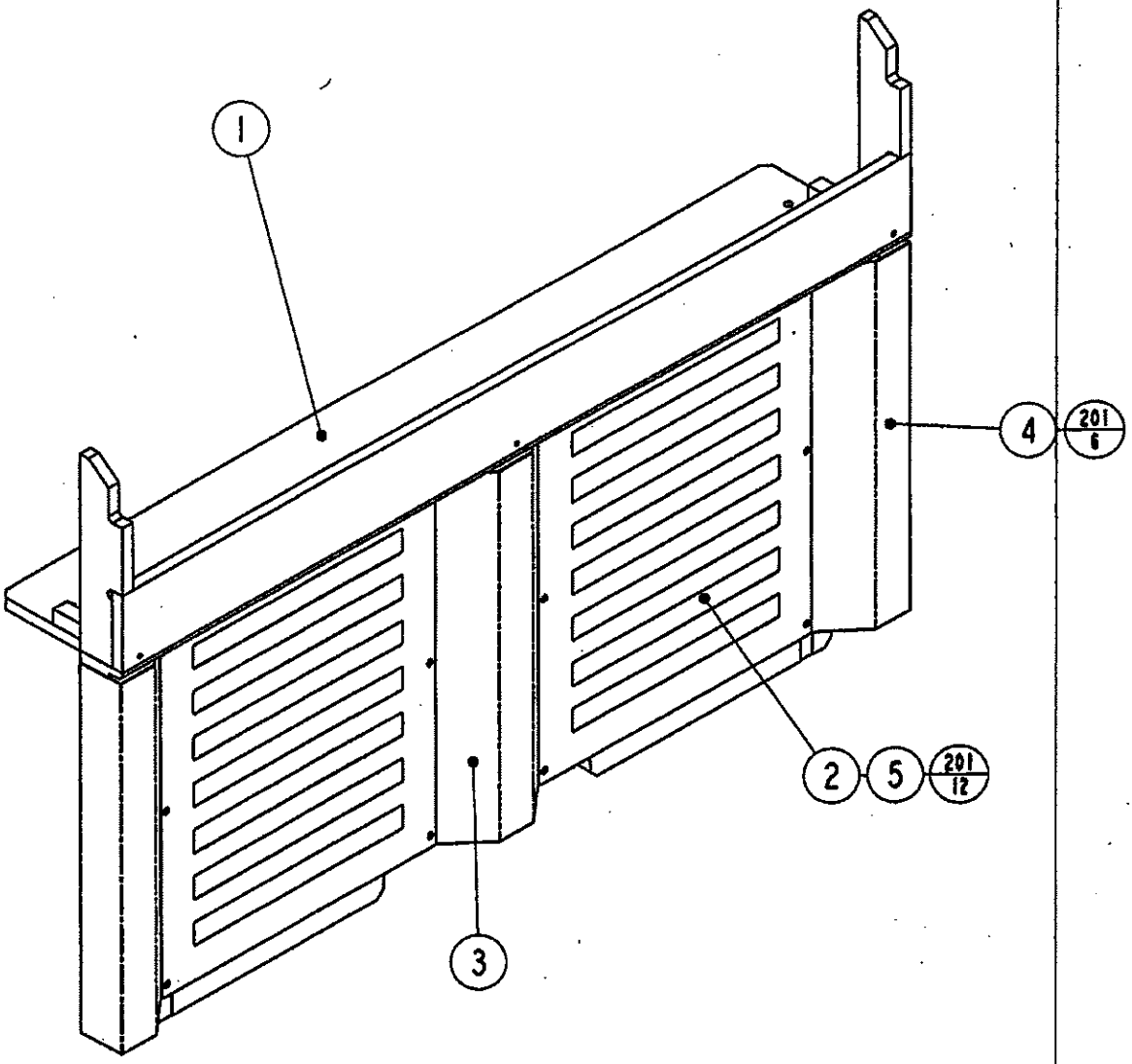


⑭ ASSY PILLAR R (PTR-1075)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1071	PILLAR BASE	
2	PTR-1072	PILLAR COVER BRKT	
3	PTR-1073	UPPER BRKT	
4	PTR-1074	LOWER BRKT	
5	PTR-1003	PILLAR COVER	
6	PTR-1004	END CAP	
7	PTR-1017	END CAP BRKT LOWER	
101	280-0419	HARNESS LUG	
201	011-P03512	TAP SCR PH 3.5 × 12	
202	000-P00420-WB	M SCR PH W/FS BLK M4 × 20	
203	000-T00412-0C	M SCR TH CRM M4 × 12	
204	068-441616-0C	FLT WSHR CRM 4.4-16 × 1.6	
301	PTR-60007	WIRE HARN AC PILLAR	

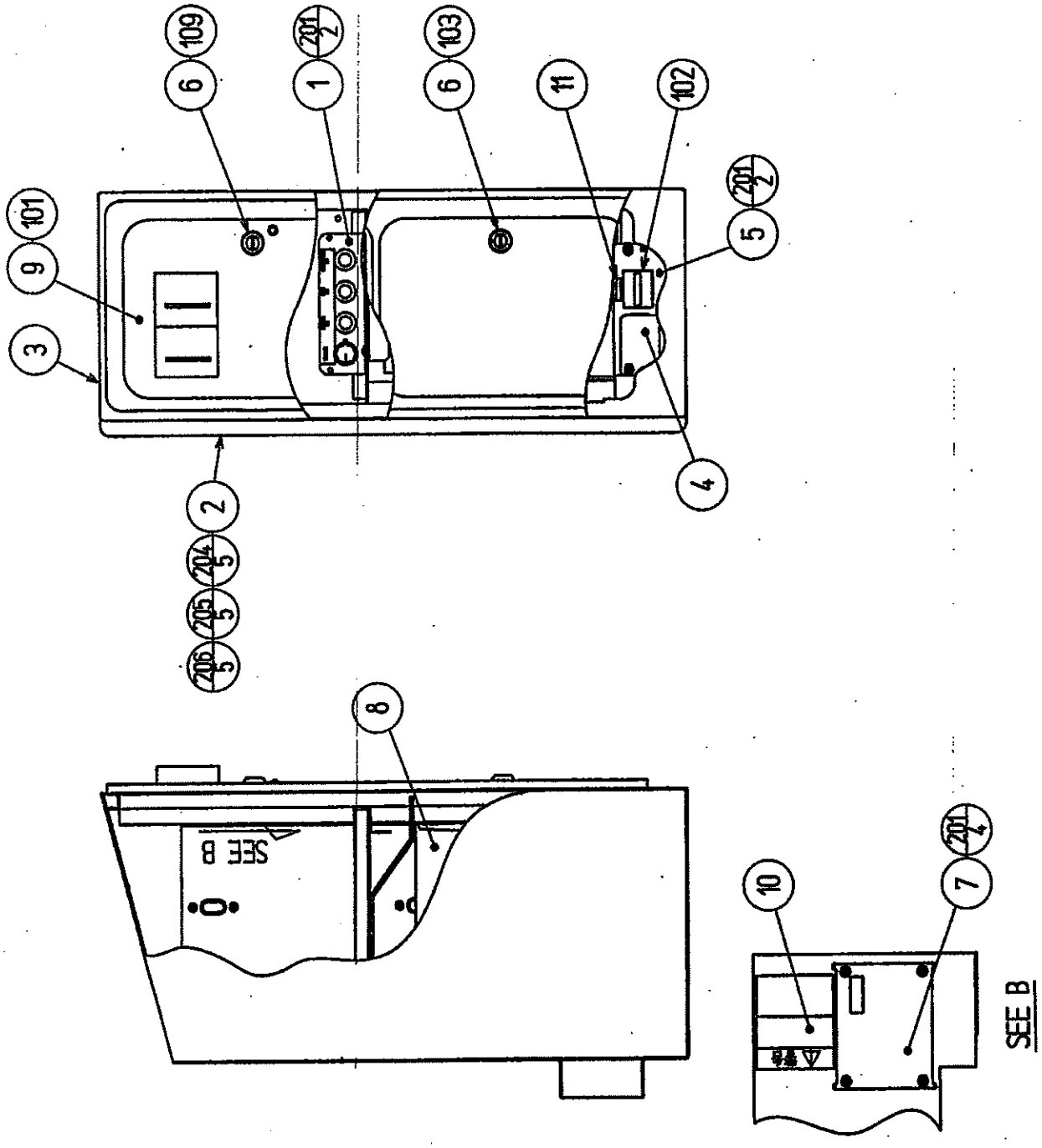
(15) ASSY BACK PANEL (PTR-1080)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1081	BACK PANEL	
2	PTR-1082	DESIGN PLATE	
3	PTR-1083	DESIGN PILLAR	
4	PTR-1084	DESIGN SIDE PILLAR	
5	PTR-1085	STICKER GRILLE PATTERN	
201	000-T00416-0C	M SCR TH CRM M4 × 16	

(16) ASSY COINCHUTE TOWER (PTR-1200)

(D-1/2)

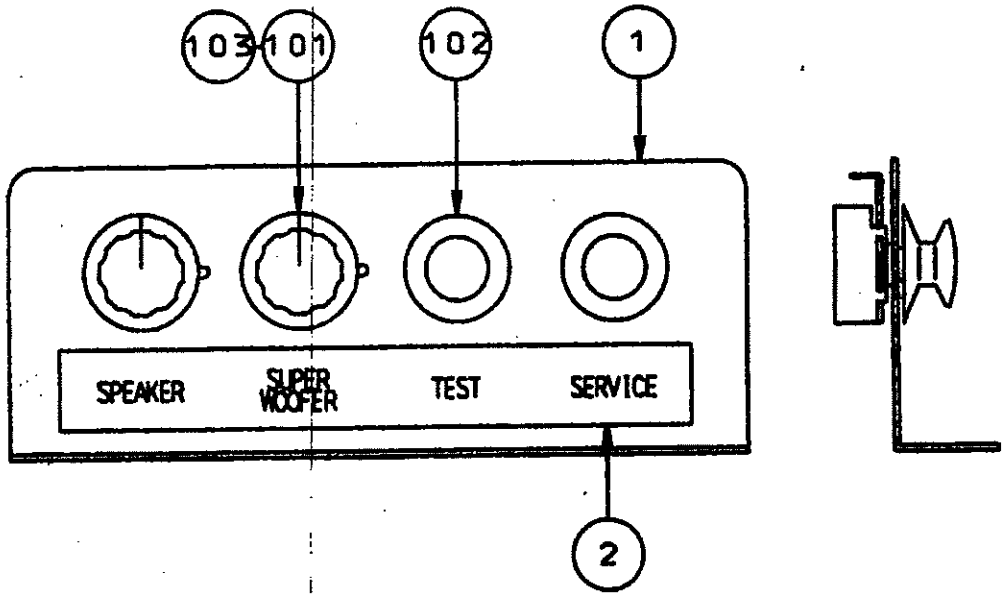


⑯ ASSY COINCHUTE TOWER (PTR-1200)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-1180	SW UNIT	
2	PTR-1201	TOWER COVER L	
3	APC-0301	COINCHUTE TOWER	
4	APC-0302	METER HOLE LID	
5	DRT-0301X	COIN METER BRKT	
6	DP-1167	TNG LKG	
7	105-5171	CHUTE PLATE SINGLE	
8	253-5366	CASH BOX	
9	421-7501-02	STICKER 6.3V 0.15A	
10	440-WS0002XEG	STICKER W POWER OFF ENG	
11	421-6591-01	STICKER COIN METER	
101	220-5237-92-～	ASSY C.C 2DR ～	
	220-5482-91-～	ASSY C.C 2DR ～	
102	220-5643-01	MAG CNTR DC5V 6P WH MZ-674-D04	
103	220-5574	CAM LOCK W/KEYS	
104	601-0460	PLASTIC TIE BELT 100 MM	
105	280-5275-SR10	CORD CLAMP SR10	
106	280-5009-01	CORD CLAMP 21	
107	310-5029-F20	SUMITUBE F F 20MM	
108	601-6231-C045	EDGING NEW TYPE	
109	220-5575	CAM LOCK MASTER W/O KEY	
201	000-P00408-W	M SCR PH W/FS M4 × 8	
202	000-P00408-S	M SCR PH W/S M4 × 8	
203	060-F00400	FLT WSHR M4	
204	050-H00800	HEX NUT M8	
205	068-852216	FLT WSHR 8.5-22 × 1.6	
206	060-S00800	SPR WSHR M8	
301	PTR-60022	WIRE HARN VOLUME 3	
302	PTR-60023	WIRE HARN COINCHUTE TOWER	
303	600-6455-02	WIRE HARN C.C DOOR SINGLE	
304	600-6972-0750	WIRE HARN EARTH ID5 0750MM	
305	600-6972-0300	WIRE HARN EARTH ID5 0300MM	
306	600-6972-0150	WIRE HARN EARTH ID5 0150MM	

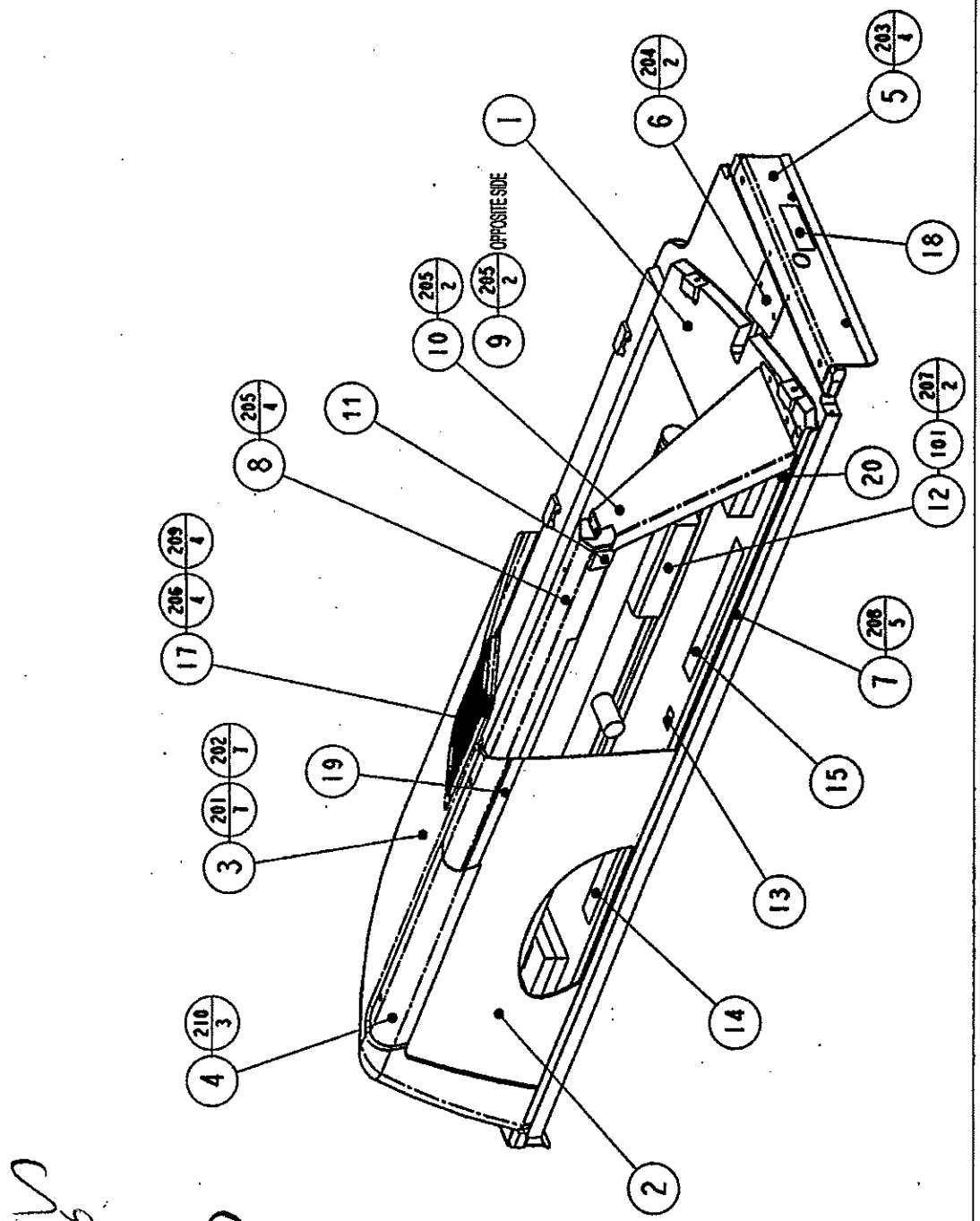
⑰ SW UNIT (INY-1180)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	INY-1181	SW BRKT	
2	421-8911	STICKER SW UNIT	
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	
303	600-6609-34	WIRE HARN VOLUME B	

(18) ASSY MAIN BILLBOARD (PTR-1500)

(D-1/2)



See Page 79 for Item

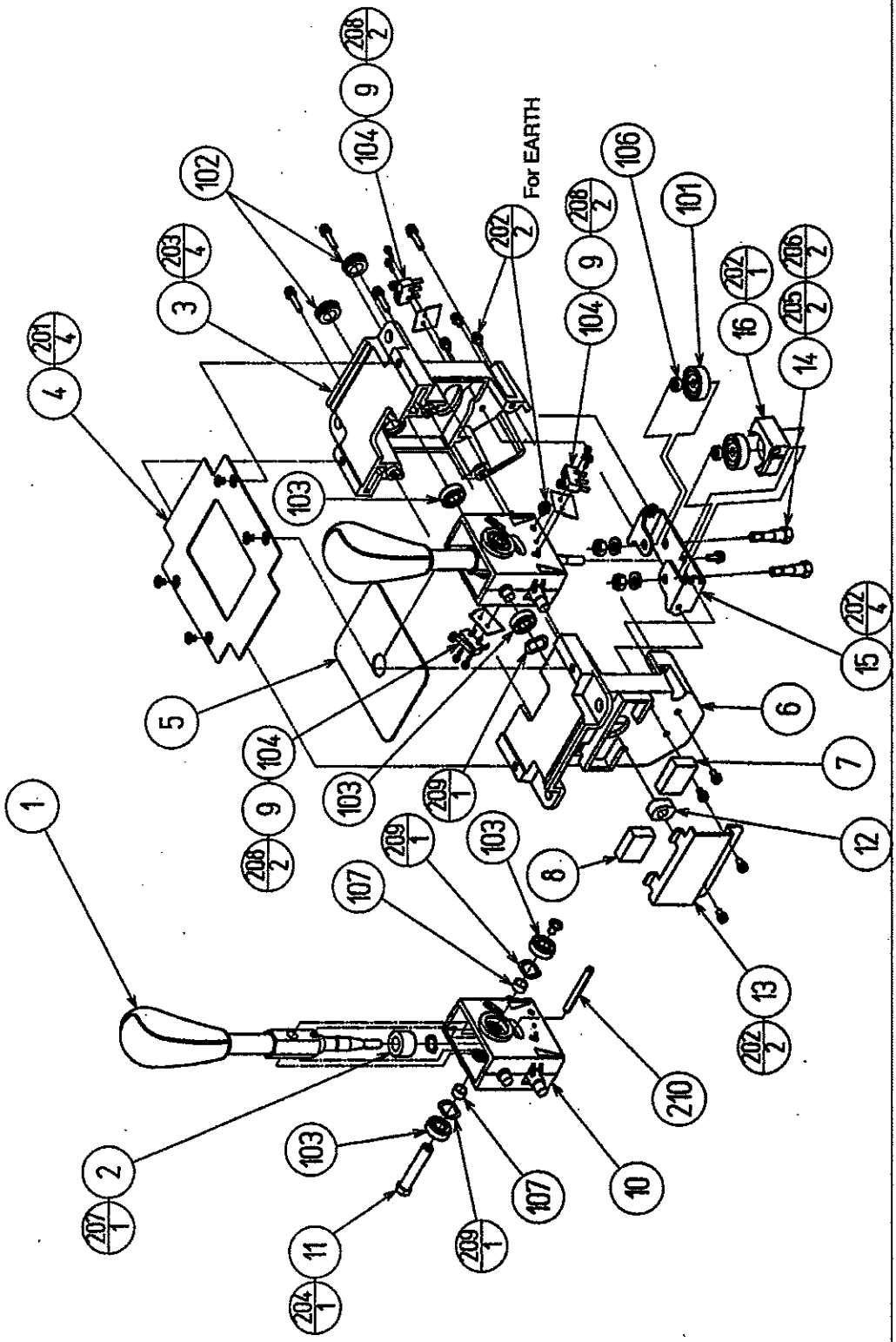
⑱ ASSY MAIN BILLBOARD (PTR-1500)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-1501	MAIN BILLBOARD BASE	
2	PTR-1502	MAIN BILLBOARD PLATE	
3	PTR-1503	MAIN BILLBOARD COVER	
4	PTR-1504	SASH	
5	PTR-1505	BILL JOINT BRKT	
6	PTR-1506	BILL WIRE COVER	
7	PTR-1507	SASH LOWER	
8	PTR-1508	SASH BRKT	
9	PTR-1509	SIDE GUIDE L	
10	PTR-1510	SIDE GUIDE R	
11	PTR-1511	CUSHION	
12	253-5457	FL HOLDER	OTHERS
		Locally supplied.	USA
13	421-7501-18	STICKER FL32W	OTHERS
		Locally supplied.	USA
14	440-WS0143-EG	STICKER W POWER OFF WIDE ENG	
15	440-WS0027-EG	STICKER W HIGH TEMP WIDE ENG	
17	253-5460-01	AIR VENT BLACK	
19	PTR-1512	CUSHION UPPER	
20	PTR-1513	CUSHION LOWER	
101	390-6659-32EX	ASSY FL32W EX W/CONN HIGH S CE	OTHERS
		Locally supplied.	USA
102	280-0419	HARNESS LUG	
201	000-T00418-0C	M SCR TH CRM M4 × 18	
202	068-441616-0C	FLT WSHR CRM 4.4-16 × 1.6	
203	000-T00620-0B	M SCR TH BLK M6 × 20	
204	000-T00410-0B	M SCR TH M4 × 10 BLK	
205	000-P00416-WB	M SCR PH W/FS BLK M4 × 16	
206	000-T00416-0B	M SCR TH BLK M4 × 16	
207	000-P00440-W	M SCR PH W/FS M4 × 40	OTHERS
		Locally supplied.	USA
208	011-T03516	TAP SCR TH 3.5 × 16	
209	050-F00400	FLG NUT M4	
210	000-T00412-0C	M SCR TH CRM M4 × 12	
301	PTR-60008	WIRE HARN AC BILLBOARD MAIN	

(19) ASSY HIGH/LOW/BACK SHIFTER (PTR-2100)

(D-1/2)

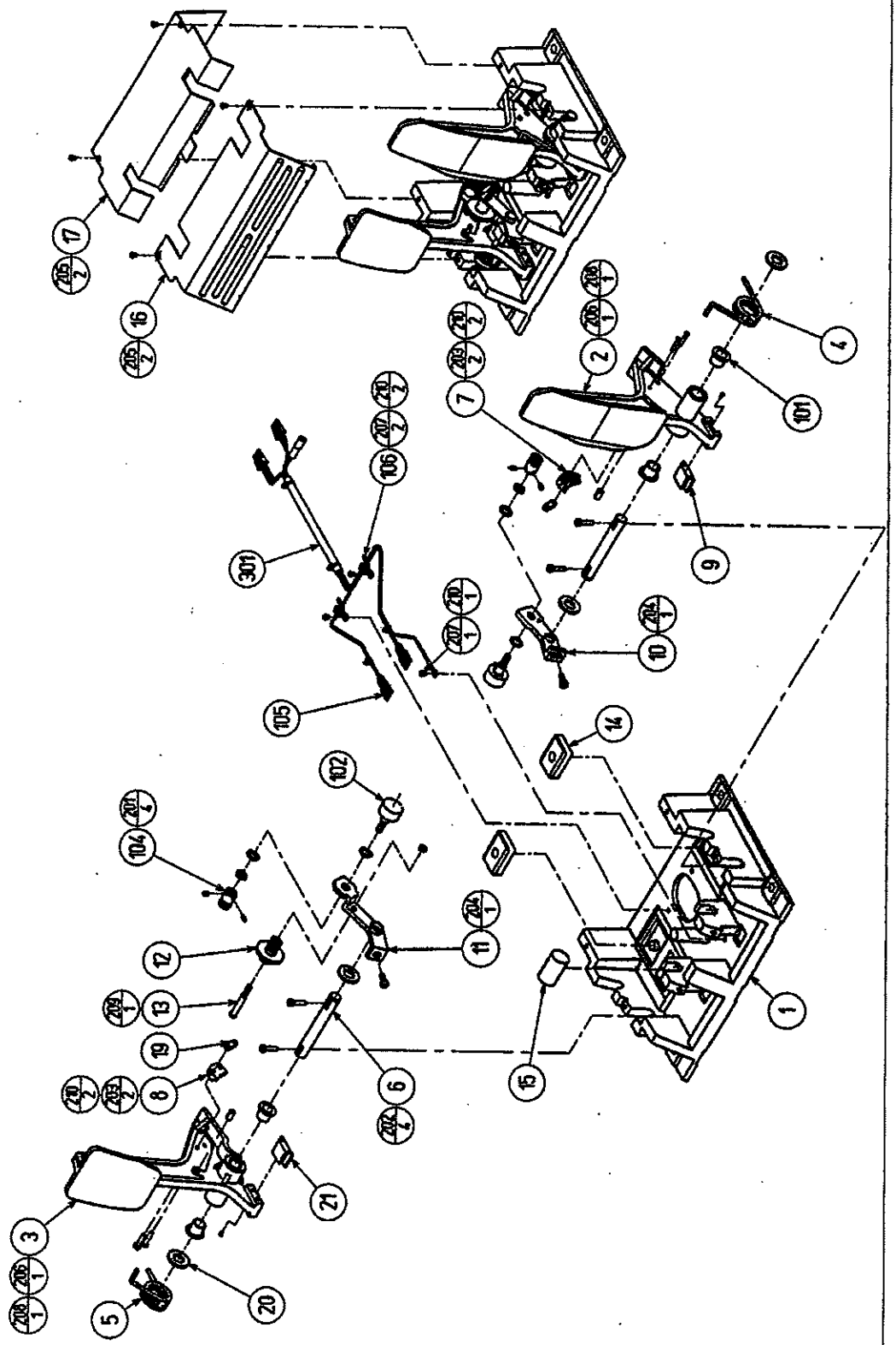


⑲ ASSY HIGH/LOW/BACK SHIFTER (PTR-2100)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	SPG-2151	SHIFT KNOB	
2	SPG-2152	STOPPER RUBBER	
3	SPG-2153	FRONT BASE	
4	SPG-2154	SLIDE COVER	
5	SPG-2155	SLIDE PLATE	
6	SPG-2156	REAR BASE	
7	SPG-2157	RUBBER BLOCK 45	
8	SPG-2158	RUBBER BLOCK 65	
9	SPG-2159	INSULATOR SHEET	
10	SPG-2160X	SHAFT CASE	
11	SPG-2161	SHAFT BOLT	
12	SPG-2162	CENTERING BLOCK	
13	SPG-2163	RUBBER CASE	
14	SPG-2164	ROLLER BOLT	
15	PTR-2101	ROLLER SUPPORT	
16	PTR-2102	GUIDE	
101	100-5252	BEARING ROLLER 25	
102	100-5193	GROMMET 11	
103	100-5242	BEARING FAI 8	
104	509-5636	SW MICRO TYPE SS-5GL2T	
105	601-0460	PLASTIC TIE BELT 100 MM	
106	280-5306	SPACER FAI 6 × 30	
107	280-5307	SPACER FAI 8 × 55	
201	000-F00408	M SCR FH M4 × 8	
202	000-P00410-W	M SCR PH W/FS M4 × 10	
203	000-P00420-W	M SCR PH W/FS M4 × 20	
204	000-P00510-W	M SCR PH W/FS M5 × 10	
205	050-H00600	HEX NUT M6	
206	060-S00600	SPR WSHR M6	
207	065-S010S0-Z	STP RING BLK OZ S10	
208	FAS-000033	M SCR PH W/FS M2.3 × 12	
209	FAS-650008	WAVE WSHR 12.7-18.1 × 2.5	
210	FAS-450006	SPR PIN WAVE STN 5 × 45	
301	600-6445-45	WIRE HARN SHIFT MECHA	
302	600-6872	WIRE HARN EARTH SHIFT MECHA	

⑳ ASSY ACCEL&BRAKE (SPG-2200)

(D-1/2)



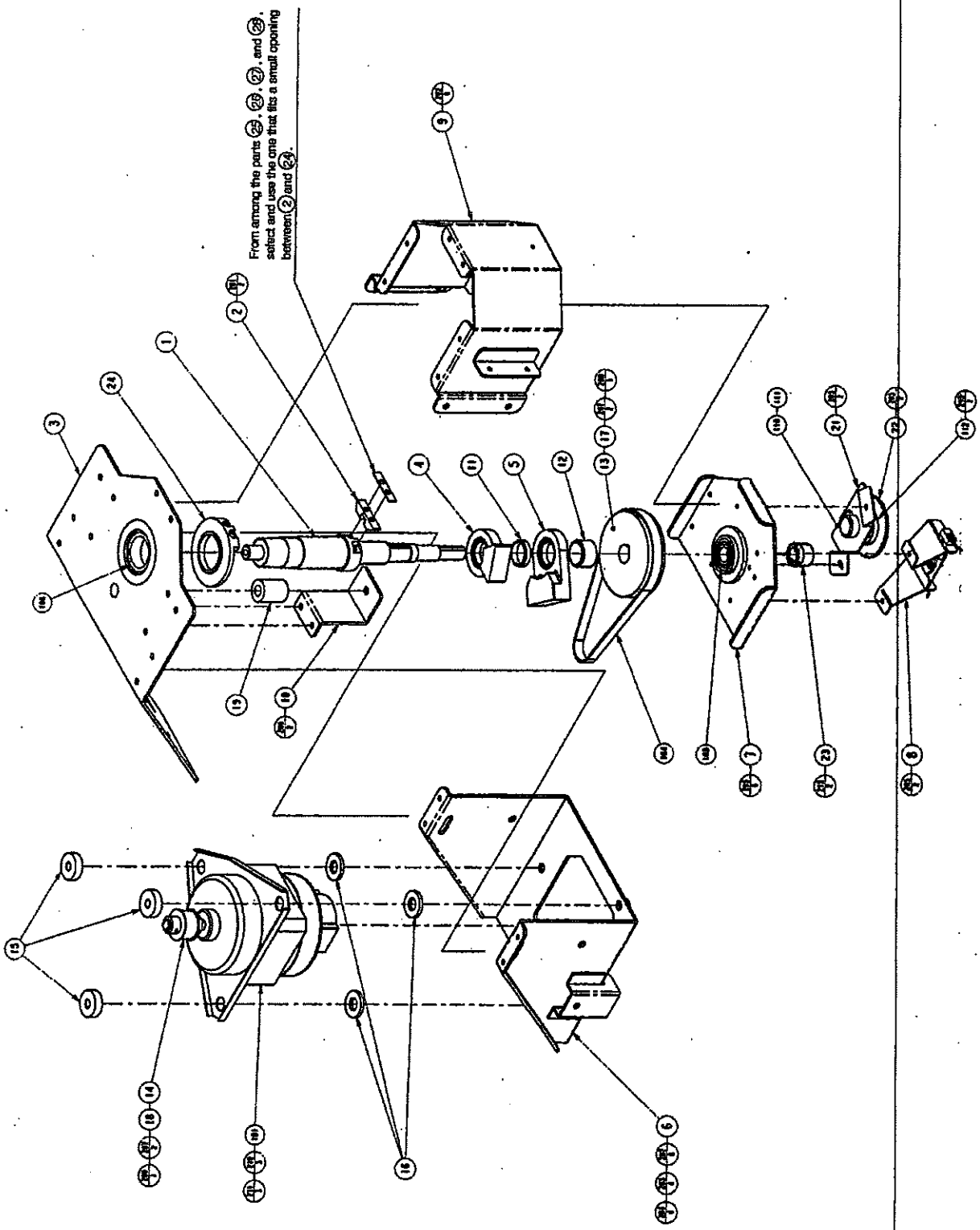
⑳ ASSY ACCEL&BRAKE (SPG-2200)

(D-2/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	SPG-2201	BASE	
2	SPG-2202	ACCEL PEDAL	
3	SPG-2203	BRAKE PEDAL	
4	SPG-2204	ACCEL SPRING	
5	SPG-2205	BRAKE SPRING	
6	SPG-2206	SHAFT	
7	SPG-2207	ACCEL GEAR	
8	SPG-2208	BRAKE GEAR	
9	SPG-2209	NEUTRAL STOPPER	
10	SPG-2210	VR PLATE ACCEL	
11	SPG-2211	VR PLATE BRAKE	
12	SPG-2212	AMPL GEAR	
13	SPG-2213	GEAR SHAFT	
14	SPG-2214	STOPPER	
15	SPG-2215	RUBBER CUSHION	
16	SPG-2216	COVER	
17	SPG-2217	VR COVER	
19	SPG-2219	GEAR STAY	
20	SPG-2220	WSHR	
21	SPG-2221	NEUTRAL STOPPER D	
101	100-5263	BEARING 12	
102	220-5484	VOL CONT B-5K OHM	
104	601-7944	GEAR 15	
105	310-5029-F15	SUMITUBE F F 15MM	
106	280-0419	HARNESS LUG	
201	028-A00304-P	SET SCR HEX SKT CUP P M3 × 4	
202	020-000520-0Z	HEX SKT H CAP SCR BLK M5 × 20	
203	000-P00420	M SCR PH M4 × 2	
204	000-P00508-W	M SCR PH W/FS M5 × 8	
205	000-T00408-0C	M SCR TH CRM M4 × 8	
206	FAS-450005	SPR PIN BLK 0Z 6 × 10	
207	000-P00405	M SCR PH M4 × 5	
208	FAS-000001	M SCR TH CRM M3 × 6	
209	050-H00500	HEX NUT M5	
210	060-F00400	FLT WSHR M4	
301	600-6840	WIRE HARN ACCEL&BRAKE	

(21) ASSY HANDLE MECHA (PTR-2500)

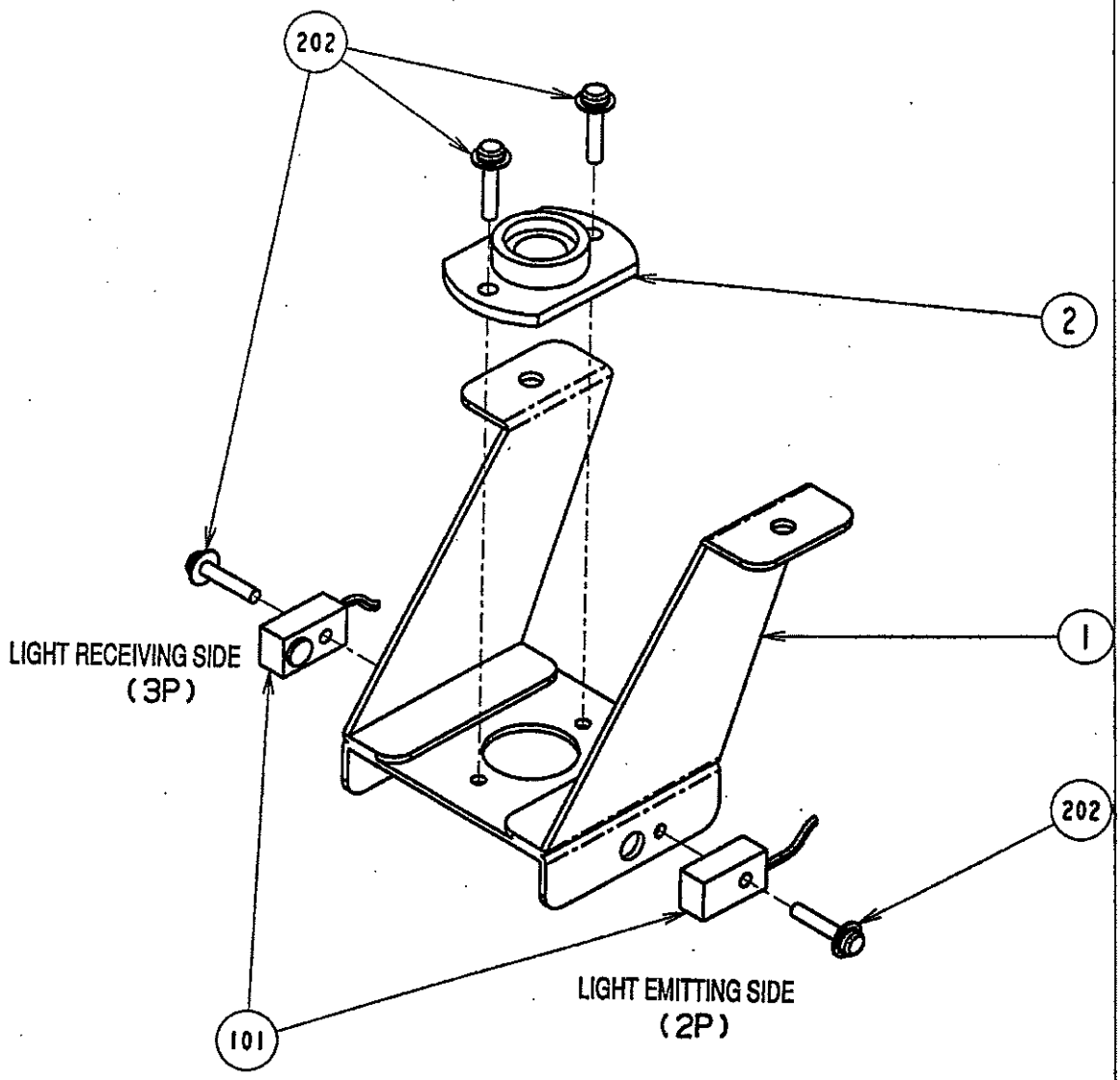
(D-1/2)



(21) ASSY HANDLE MECHA (PTR-2500)

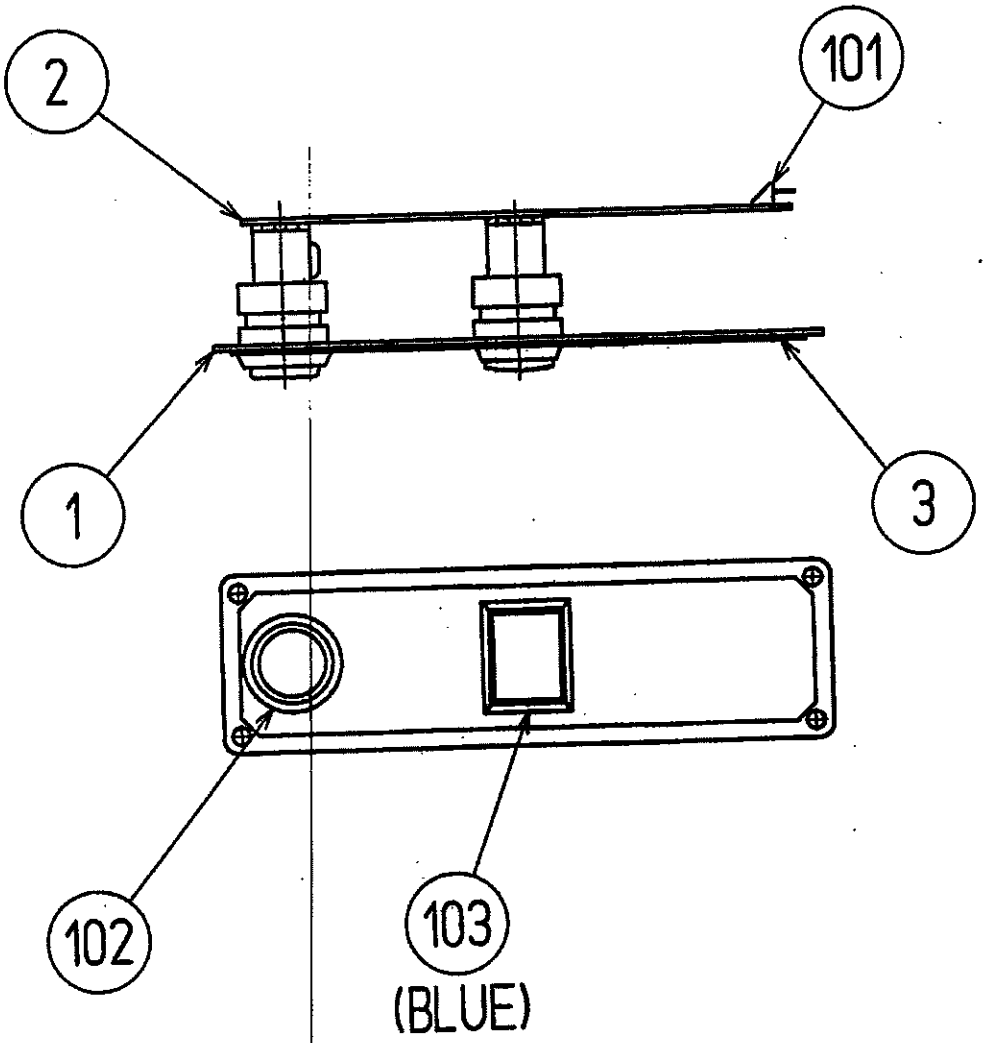
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-2502	HANDLE SHAFT	
2	PTR-2503	STOPPER BLOCK	
3	PTR-2504	BASE HANDLE MECHA	
4	PTR-2505	STOPPER RING A	
5	PTR-2506	STOPPER RING B	
6	PTR-2515	MOTOR BASE	
7	PTR-2516	BEARING BASE	
8	PTR-2550	SENSOR UNIT	
9	PTR-2521	COVER BRKT	
10	PTR-2522	STOPPER BRKT	
11	PTR-2523	COLLAR A	
12	PTR-2524	COLLAR B	
13	PTR-2528	PULLEY 60	
14	SPG-2504	PULLEY 20 S5M	
15	ASK-3502	MOTOR SPACER	
16	ASK-3503	MOTOR COLLAR	
17	DYN-1270	STOPPER KEY	
18	SPG-2453	KEY 4 × 4 × 40	
19	SPG-2109	STOPPER RUBBER	
21	PTR-2517	VOL BRKT	
22	PTR-2518	GEAR 90 M075	
23	PTR-2519	GEAR 30 M075	
24	PTR-2531	STOPPER COLLAR	
25	PTR-2532-06	SPACER PLATE06	
26	PTR-2532-08	SPACER PLATE08	
27	PTR-2532-10	SPACER PLATE10	
28	PTR-2532-12	SPACER PLATE12	
101	350-5448-01	SERVO MOTOR 500W NEW	
104	601-9173	TIMING BELT	
105	100-5112	BEARING 17	
106	100-5052	BEARING 6007ZZ	
107	280-5009-01	CORD CLAMP 21	
108	280-5275-SR10	CORD CLAMP SR10	
109	601-0460	PLASTIC TIE BELT 100 MM	
110	220-5484	VOL CONT B-5K OHM	
	220-5373	VOL CONT B-5K	
111	310-5029-F20	SUMITUBE F F 20MM	
112	601-8966	GEAR HOLDER	
113	270-5117	FERRITE CORE TDK ZCAT3035-1330	
201	020-000530-0Z	HEX SKT H CAP SCR BLK OZ M5 × 30	
202	000-P00516-W	M SCR PH W/FS M5 × 16	
203	030-000625-S	HEX BLT W/S M6 × 25	
204	060-F00600	FLT WSHR M6	
205	000-P00414-W	M SCR PH W/FS M4 × 14	
206	050-F00500	FLG NUT M5	
207	028-C00416-P	SET SCR CH CUP P M4 × 16	
208	065-S020S0-Z	STP RING BLK OZ S20	
209	065-S012S0-Z	STP RING BLK OZ S12	
210	030-000830-S	HEX BLT W/S M8 × 30	
211	060-F00800	FLT WSHR M8	
213	028-A00304-P	SET SCR HEX SKT CUP P M3 × 4	
301	PTR-60029	WIRE HARN HORN MAIN	
302	PTR-60030	WIRE HARN HANDLE	

(22) SENSOR UNIT (PTR-2550)



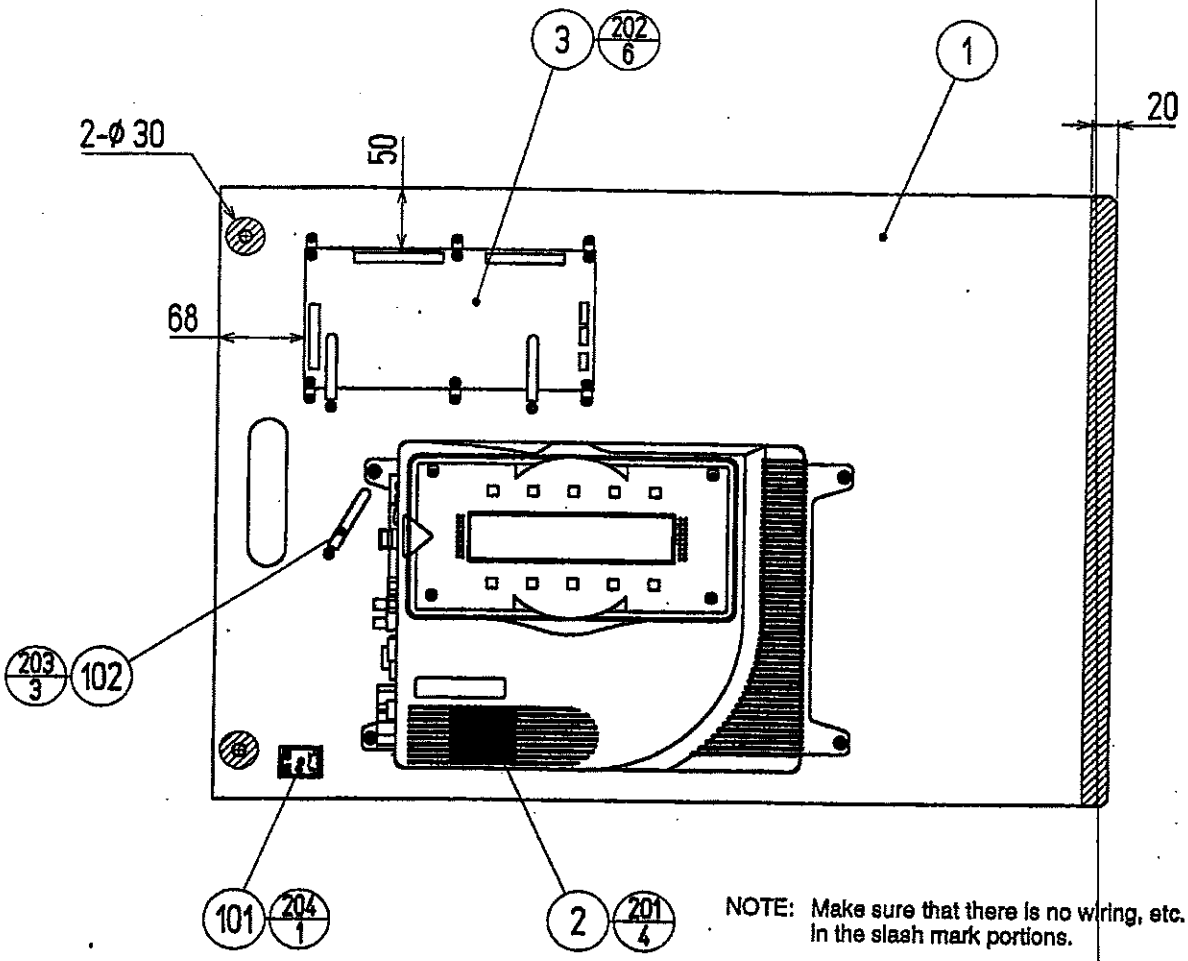
ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-2551	SENSOR BEKT	
2	PTR-2552	GUIDE RING	
101	370-5226	PHOTO SENSOR OMT-01DAMP NEW	
102	280-5275-SR10	CORD CLAMP SR10	
202	000-P00312-W	M SCR PH W/FS M3 × 12	

(23) ASSY VR BUTTON START AND 1VIEW (PTR-2600)



ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	APC-2151X	VR BUTTON BRKT	
2	171-6478B	PC BD LIGHTING SWX5	
3	PTR-2601	STICKER VR BUTTON	
101	212-5205-12	CONN JST M 12P RTA	
102	509-5560-Y	PB SW W/L 6V 1L Y	
103	509-5561-S	PB SW W/L 6V 5L S	

(24) ASSY MAIN BD (PTR-4000)

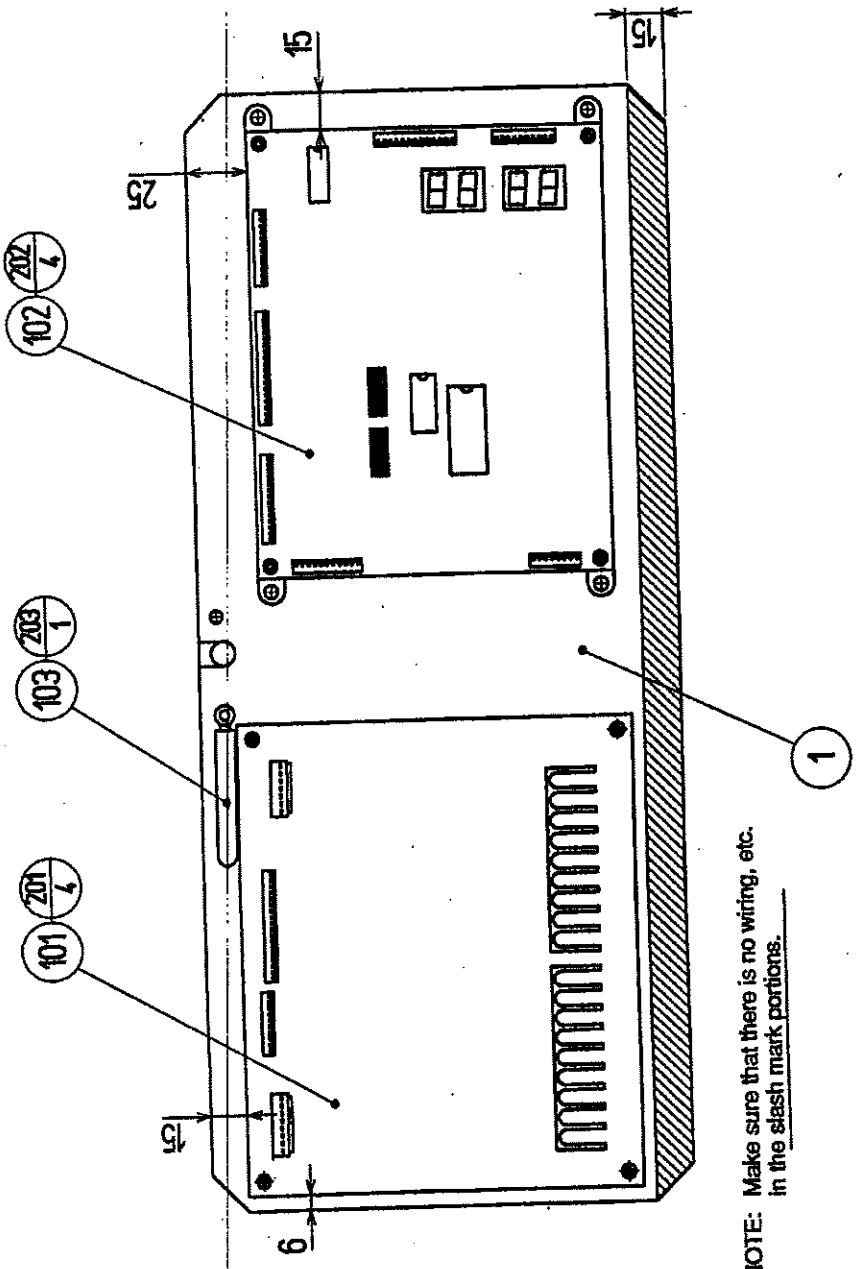


NOTE: Make sure that there is no wiring, etc. in the slash mark portions.

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-4001	MAIN BD BASE	
2	840-0023D-02	ASSY CASE NAO PTR EXP	OTHERS
	840-0023D-04	ASSY CASE NAO PTR AUS	AUSTRALIA
	840-0023D-03	ASSY CASE NAO PTR KOR	KOREA
	840-0023D-01	ASSY CASE NAO PTR USA	USA
3	837-13844	I/O CONTROL BD 2 FOR JVS FRI	
101	280-5009-01	CORD CLAMP 21	
102	280-0419	HARNESS LUG	
103	601-0460	PLASTIC TIE BELT 100 MM	
201	000-P00416-W	M SCR PH W/FS M4 × 16	
202	011-T00316	TAP SCR TH 3 × 16	
203	011-T03512	TAP SCR TH 3.5 × 12	
204	011-F00312	TAP SCR FH 3 × 12	
301	600-7141-050	CABLE JVS TYPE A-B 050CM	
302	600-7159-034	WIRE HARN JVS PWR 034CM	
303	PTR-60017	WIRE HARN SOUND OUT	
304	PTR-60026	WIRE HARN DC IO	

(25) ASSY CONTROL BD (PTR-4100)

(D-1/2)

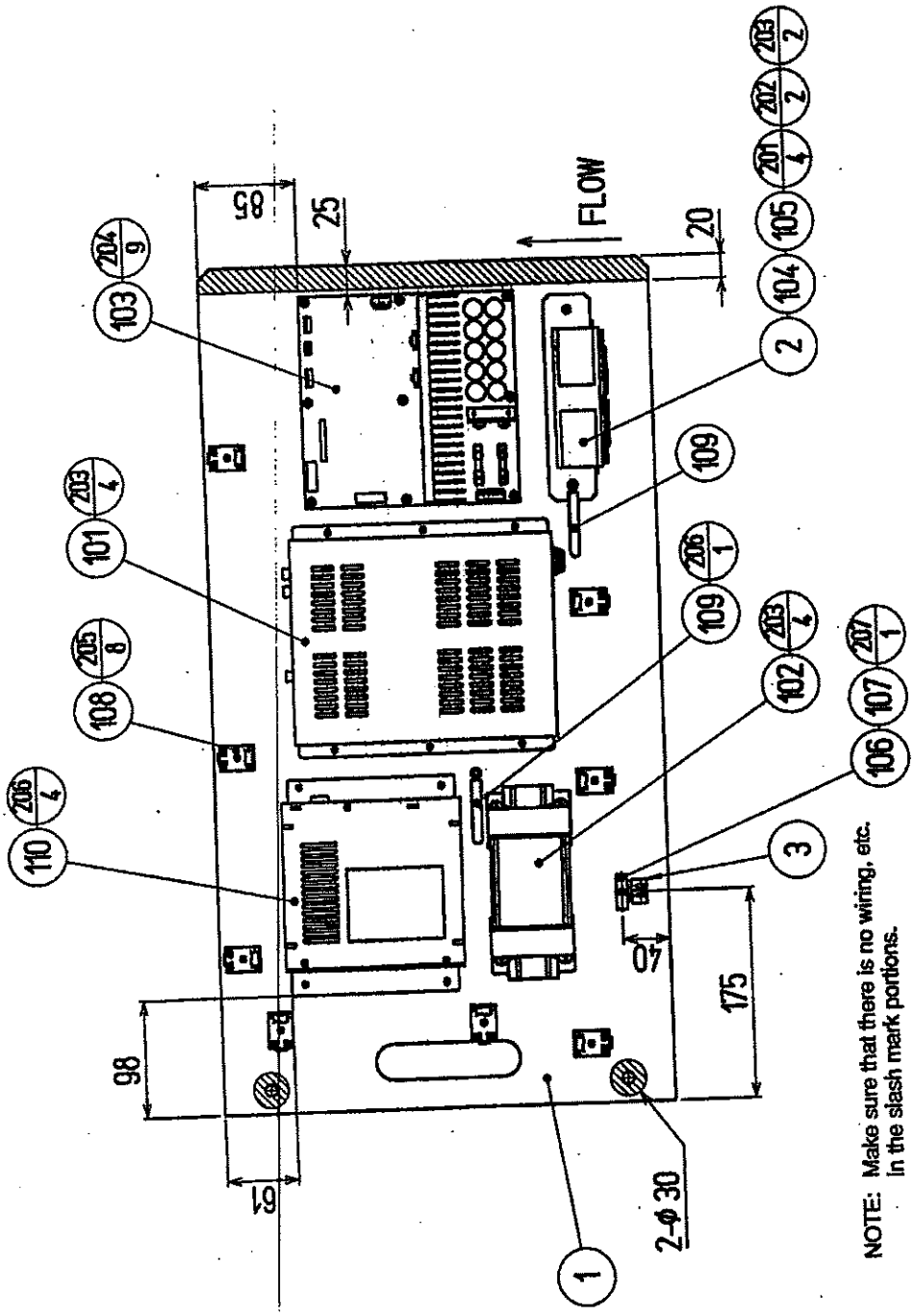


NOTE: Make sure that there is no wiring, etc. in the slash mark portions.

(25) ASSY CONTROL BD (PTR-4100)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-4101	CONTROL BD BASE	
101	838-12912-01	SERVO MOTOR DRIVE BD NEW	
102	838-13992	DRIVE BD PTR	
103	280-0419	HARNESS LUG	
201	011-P00325	TAP SCR PH 3 × 25	
202	011-T03516	TAP SCR TH 3.5 × 16	
203	011-T03512	TAP SCR TH 3.5 × 12	
301	PTR-60035	WIRE HARN AC EXT	
302	PTR-60036	WIRE HARN DC EXT	

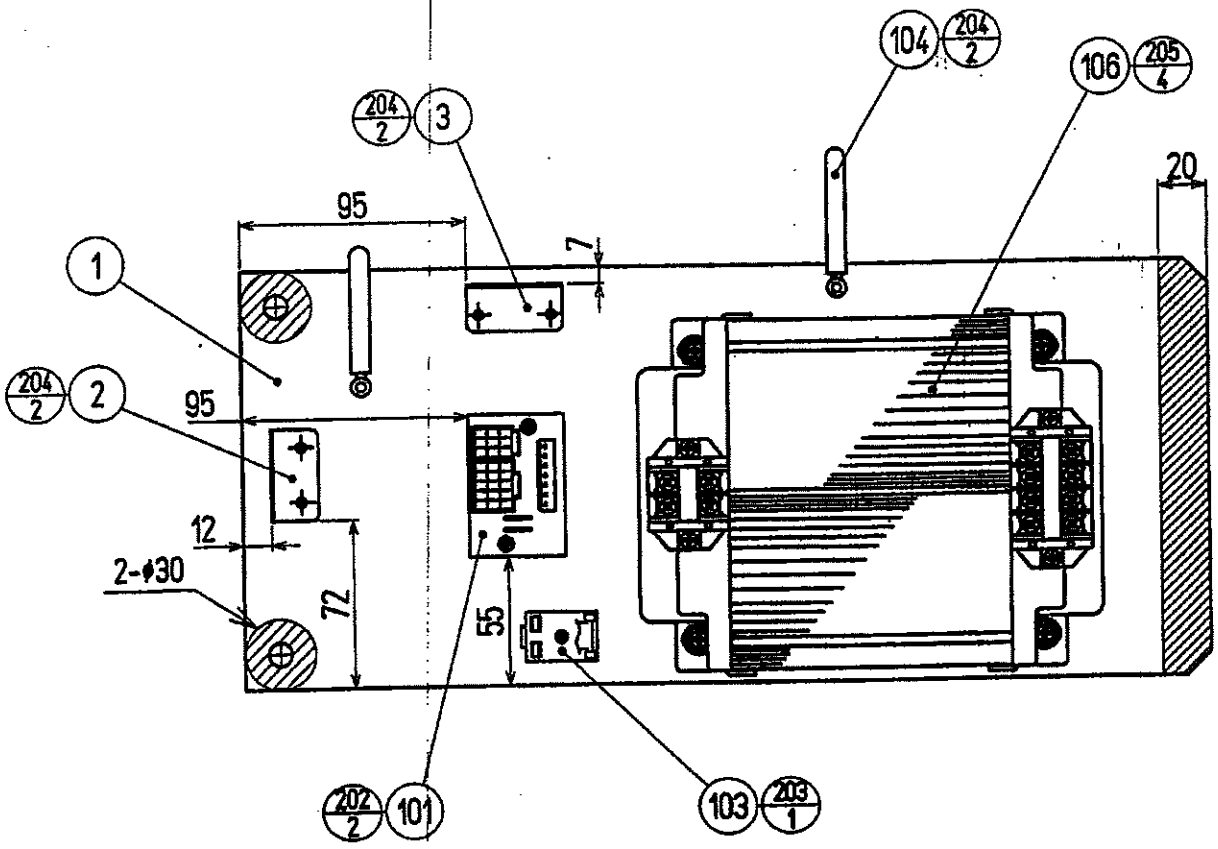
(26) ASSY AMP BD (PTR-4200)



(26) ASSY AMP BD (PTR-4200)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-4201	AMP BD BASE	
2	DRT-4502	FAN MOTOR BRKT	
3	421-7914-250630	STICKER AC 250V 6.3A	
101	601-10369	STEREO PWR AMP 47	
102	560-5419-V	XFMR 100V 23V9.6A × 2	
103	838-13723	WOOFER AMP 50W × 2	
104	260-0011-02	AXIAL FLOW FAN AC100V 50-60HZ	
105	601-8543	FAN GUARD	
106	514-5086-6300	FUSE S.B 6300MA 250V HBC CE	
107	514-5084	FUSE HOLDER F-60B W/F-60	
108	280-5009-01	CORD CLAMP 21	
109	280-0419	HARNESS LUG	
110	400-5397-01	SW REGU FOR JVS VA	
111	601-0460	PLASTIC TIE BELT 100 MM	
112	310-5029-D20	SUMITUBE F D 20 MM	
201	000-P00312-W	M SCR PH W/FS M3 × 12	
202	050-F00300	FLG NUT M3	
203	000-P00416-W	M SCR PH W/FS M4 × 16	
204	011-P00325	TAP SCR PH 3 × 25	
205	011-F00312	TAP SCR FH 3 × 12	
206	011-T03512	TAP SCR TH 3.5 × 12	
207	011-F00312	TAP SCR #1 FH 3 × 12	
301	PTR-60010	WIRE HARN WOOFER 1	
302	PTR-60011	WIRE HARN SPEAKER 1	
303	PTR-60012	WIRE HARN VOLUME 1	
304	PTR-60013	WIRE HARN AMP	
305	PTR-60014	WIRE HARN SOUND MIX	
306	PTR-60015	WIRE HARN AC AMP	
307	PTR-60016	WIRE HARN SOUND IN	

(27) ASSY PWR SPLY (PTR-4300)



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

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	PTR-4301	PWR SPLY BASE	
2	PTR-4302	CONN BRKT VL3P	
3	PTR-4303	CONN BRKT UP18P	
101	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	560-5384	XFMR 100-120V 100V 10A WB	AC 110～120V AREA
	560-5377	PWR XFMR 200-240V 100V10A CE	AC 220～240V AREA
202	011-P00325	TAP SCR PH 3×25	
203	011-F00310	TAP SCR FH 3×10	
204	011-T03512	TAP SCR TH 3.5×12	
205	000-P00616-W	M SCR PH W/FS M6×16	
301	PTR-60002	WIRE HARN AC 1	
302	PTR-60003	WIRE HARN AC 2	
303	PTR-60004	WIRE HARN AC 3	

21. WIRE COLOR CODE TABLE

THE WIRE COLOR CODE is as follow:

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

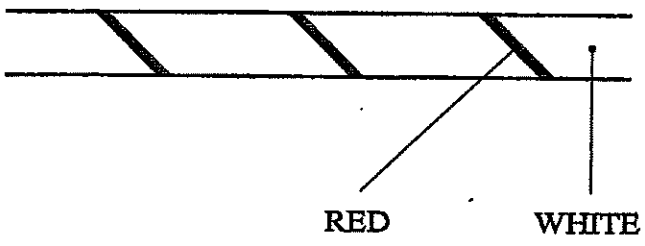
Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

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.

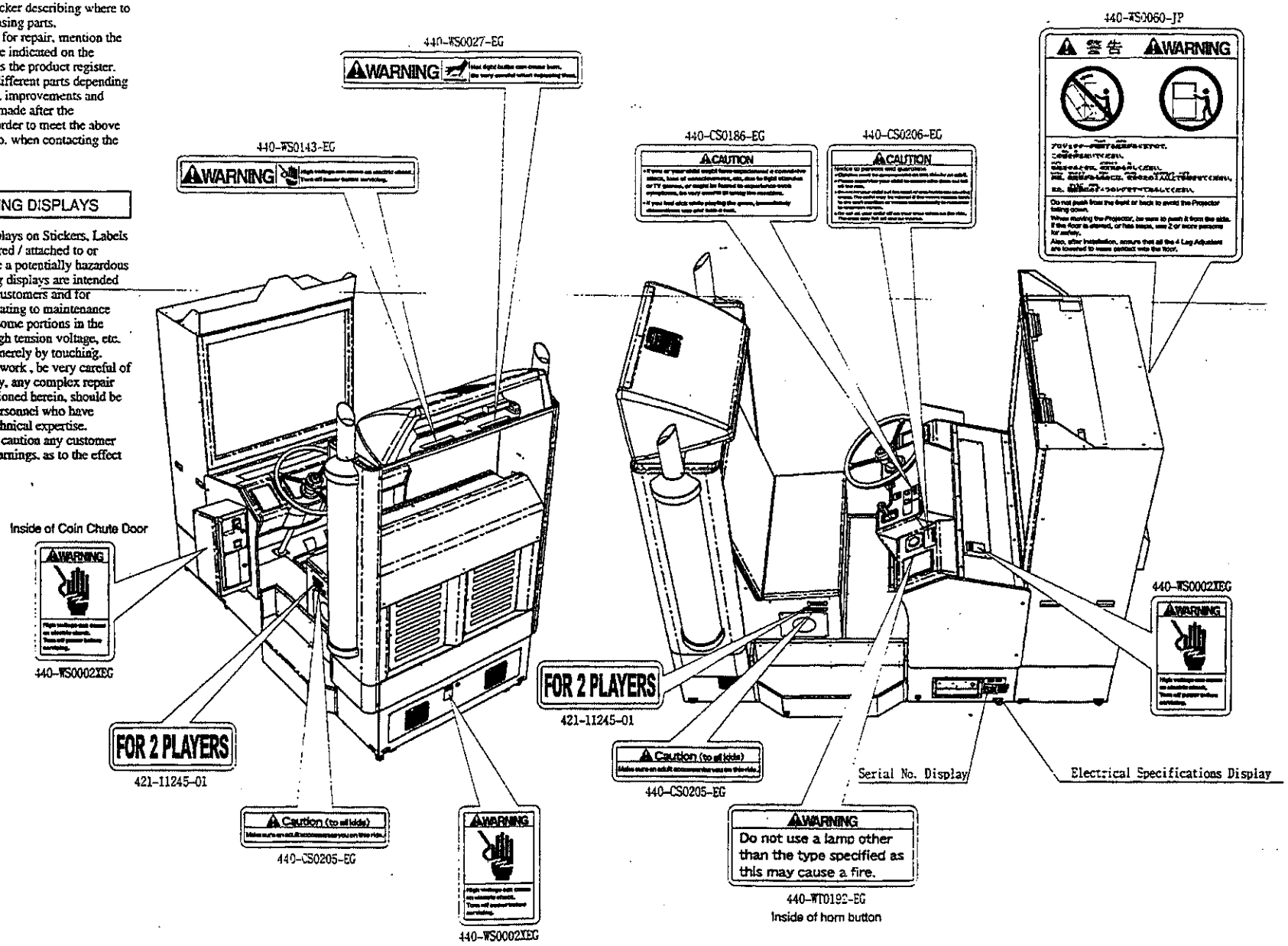
U:	AWG16
K:	AWG18
L:	AWG20
None:	AWG22

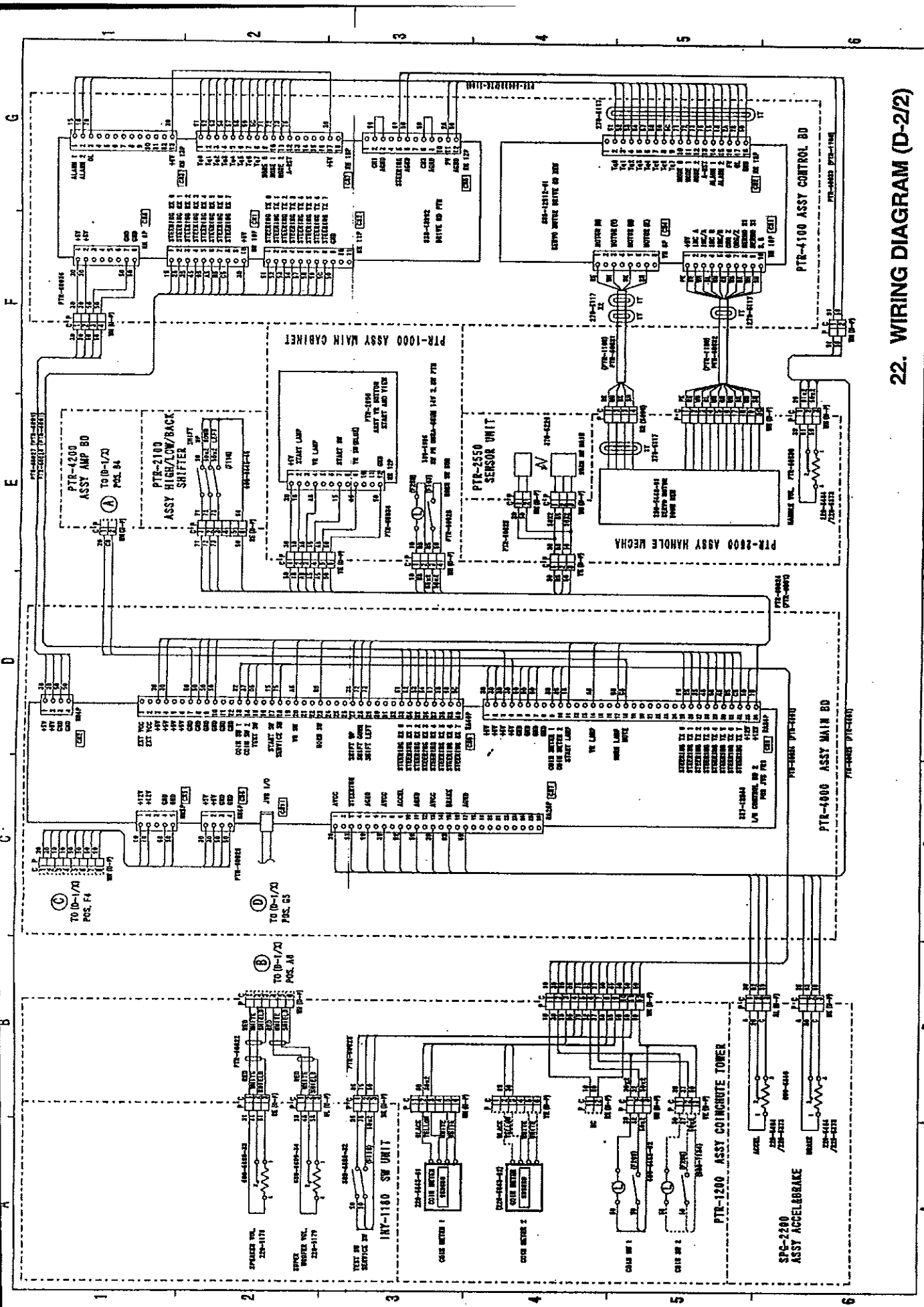
CONCERNING THE STICKER DISPLAY

SEGA product has Stickers describing the product manufacture No. (Serial No.) and Electrical Specifications. Also it has a Sticker describing where to contact for repair and for purchasing parts.
When inquiring about or asking for repair, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial No. indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this Manual. In order to meet the above situations, mention the Serial No. when contacting the applicable places.

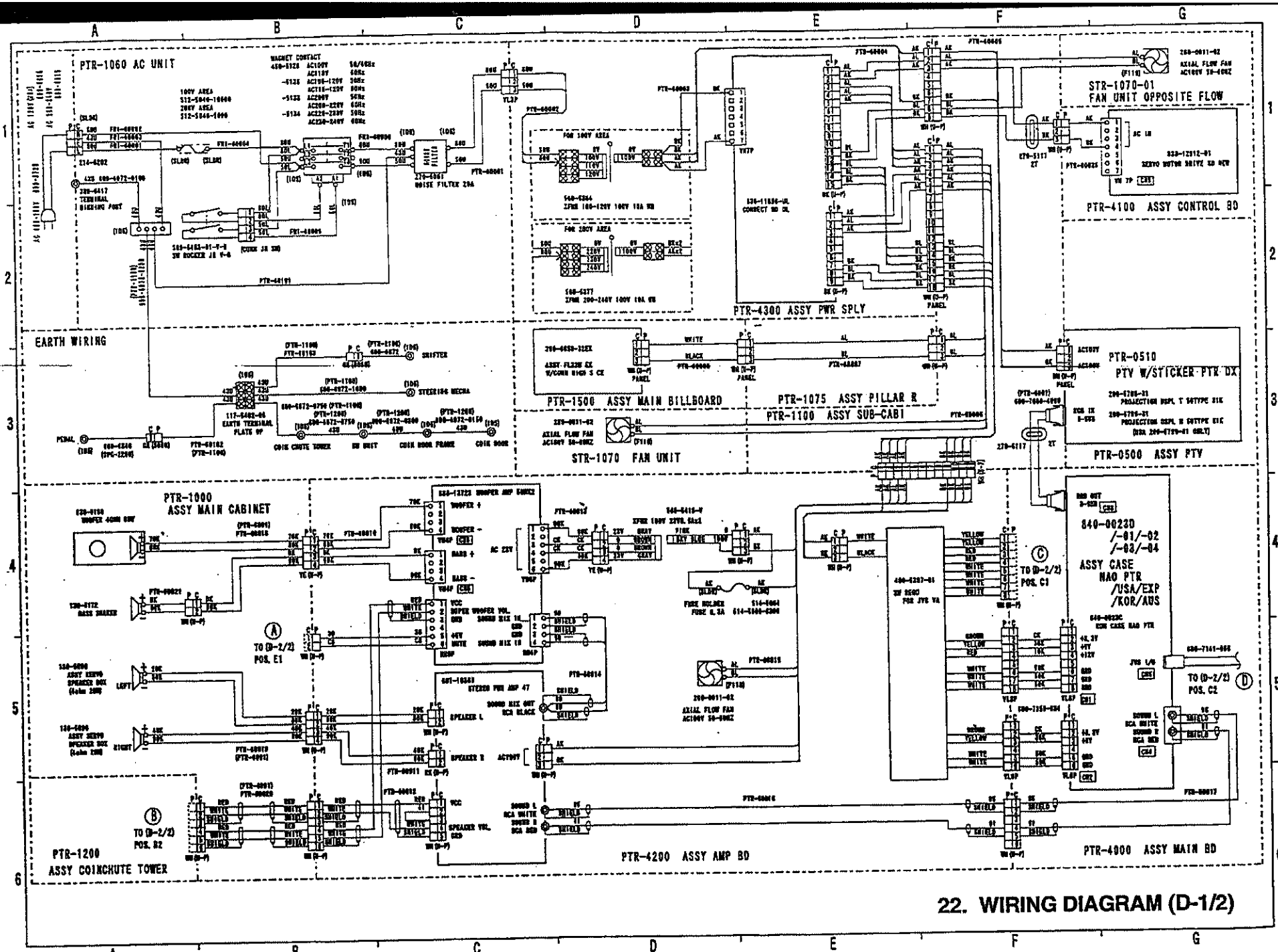
CONCERNING WARNING DISPLAYS

SEGA product has warning displays on Stickers, Labels and or printed instructions adhered / attached to or incorporated in the places where a potentially hazardous situation can arise. The warning displays are intended for accident prevention for the customers and for avoiding hazardous situation relating to maintenance and servicing work. There are some portions in the Cabinet, which are subject to high tension voltage, etc. where accidents can be caused merely by touching.
When performing the servicing work , be very careful of the warning displays. Especially, any complex repair and replacement work not mentioned herein, should be performed by those technical personnel who have knowledge of electricity and technical expertise.
For the prevention of accidents, caution any customer whose act runs counter to the warnings, as to the effect that he must stop the act.





22. WIRING DIAGRAM (D-2/2)



22. WIRING DIAGRAM (D-1/2)