SEGA®

SEGA®

Virtua Tennis 4™

OWNER'S MANUAL

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IMPORTANT

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

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

To maintain safety:

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

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

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

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

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

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

⚠   Indicates "HANDLE WITH CARE." In order to protect the human body and equipment, this display is attached to places where the instruction manual should be referred to.

⏚   Indicates a "protective earth terminal." Before operating the equipment, be sure to connect it to the ground.
(The step may be omitted for products in which a power cable with earth is used.)

- **Perform work in accordance with the instructions herein stated.**
  Instructions for work are explained by paying attention to the aspect of accident prevention. Failing to perform work as per the instructions can cause accidents. In the case where only those who have technical expertise should perform the work to avoid hazardous situation, the instructions herein state that the site maintenance personnel should perform such work.

- **Be sure to turn off the power before working on the machine.**
  To prevent an electric shock, be sure to turn off the power and unplug the power cable before carrying out any work that requires direct contact with the interior of the product. If the work is to be performed in the power-on status, the instruction manual herein always states to that effect.

- **Be sure to ground the earth terminal.**
  (This is not required in the case where a power cable with earth is used.)
  This product is equipped with the earth terminal. When installing the product, connect the earth terminal to the "accurately grounded indoor earth terminal" by using an earth wire. Unless the product is grounded appropriately, the user can be subject to an electric shock. After performing repair, etc. for the control equipment, ensure that the earth wire is firmly connected to the control equipment.

- **Ensure that the power supply used is equipped with an earth leakage breaker.**
  Using a power supply which is not equipped with the earth leakage breaker can cause a fire when earth leakage occurs.

- **Be sure to use fuses which meet the specified rating.**
  (Only for the machines which use fuses.)
  Using fuses exceeding the specified rating can cause a fire and an electric shock.

- **Specification changes (removal of equipment, conversion and addition) not designated by SEGA are not allowed.**
  The parts of the product include warning labels for safety, covers for personal protection, etc. It is very hazardous to operate the product by removing parts and/or modifying the circuits. Should doors, lids and protective parts be damaged or lost, refrain from operating the product, and contact where the product was purchased from or the office herein stated.
  SEGA shall not be held responsible for any accidents, compensation for damage to a third party, resulting from the specifications not designated by SEGA.

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

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

- **When handling the monitor, be very careful.**
  (Applies only to products with monitors.)
  Some of the monitor parts are subject to high tension voltage. Even after turning off the power, some portions are still subject to high tension voltage sometimes. Monitor repair and replacement should be performed only by those technical personnel who have knowledge of electricity and technical expertise.

- **Be sure to adjust the monitor properly.**
  (Applies only to products with monitors.)
  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 the power, check the following points to ensure that the product has been transported in a satisfactory status.

☐ Are there any dented portions or defects (cuts, etc.) on the external surfaces of the cabinet?
☐ Are casters and adjusters damaged?
☐ Do the power supply voltage and frequency requirements meet with those of the location?
☐ Are all wiring connectors correctly and securely connected? Unless connected in the correct way, connector connections can not be made accurately. Do not insert connectors forcibly.
☐ Do power cables have cuts and dents?
☐ Are all accessories available?
☐ Can all doors and lids be opened with the accessory keys? Can doors and lids be firmly closed?

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INTRODUCTION

This manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electro-mechanicals, servicing control, spare parts, etc. for the product, **"Virtua Tennis 4."**

This manual is intended for the owners, personnel and managers in charge of operation of the product.
Operate the product after carefully reading and sufficiently understanding the instructions.

In the unlikely event that the product does not function correctly, DO NOT allow anyone other than a technician to touch the internal system. Turn off the power to the machine, making sure to unplug the electrical cable from the outlet, and contact the office listed in this manual or the point-of-purchase for this product.

Use of this product is unlikely to cause physical injuries or damage to property. However, points that require special attention are indicated by bold text, the word "IMPORTANT" and the symbol below.

（STOP） **IMPORTANT**

> **Indicates important information that, if ignored, may result in the mishandling of the product and cause faulty operation or damage to the product.**

SPECIFICATIONS

Installation space	1,166 mm (45.9 in) [Width] x 865 mm (34.05 in) [Depth]
Height	2,130 mm (90.5 in)
Weight	140 kg (308.6 lb)
Max Power current rating	300 W, 2.5 A (AC 120 V 60 Hz Area) 299 W, 1.3 A (AC 230 V 50 Hz Area) 312 W, 1.3 A (AC 240 V 50 Hz Area)

(STOP) IMPORTANT

Indicates important information that, if ignored, may result in the mishandling of the product and cause faulty operation or damage to the product.

⚠ WARNING   ⚠ CAUTION

Indicates a warning or caution that, if ignored, may result in the mishandling of the product and cause faulty operation or damage to the product.

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Definition of 'Site Maintenance Personnel or Other Qualified Individuals'

⚠ WARNING

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

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

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

Site maintenance personnel:

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

Activities to be carried out by site maintenance personnel:

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

Other qualified professionals:

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

Activities to be carried out by other qualified professionals:

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

GAME VERSION NOTATION

Version numbers appearing in TEST MODE are displayed as asterisks and hyphens. When describing software version upgrades, only major version and minor version numbers are displayed. Release version numbers are for SEGA's administrative use only. If you require these numbers, please contact the office listed in this manual or the point of purchase for this product.

```
(Ver)
VER.*.**.--
```

Major version   Minor version   Release version
(may be two digits)
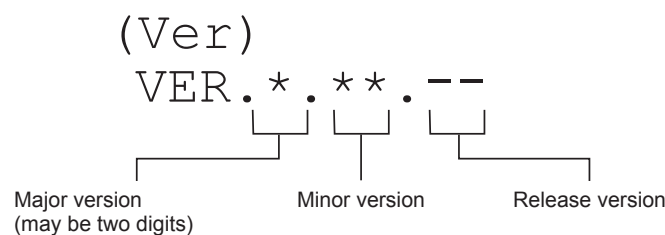
Waste of Electrical and Electronic Equipment (WEEE) Statement.

The WEEE (Waste of Electrical and Electronic Equipment) directive places an obligation on all EU based manufacturers and importers of Electrical and Electronic Equipment to take back products at the end of their useful life. Sega Amusements Europe Ltd accepts its responsibility to finance the cost of treatment and recovery of redundant WEEE in the United Kingdom in accordance with the specified WEEE recycling requirements.

The symbol shown below will be on all products manufactured from 13th August 2005, which indicates this product must NOT be disposed of with other normal waste. Instead, it is the user's responsibility to dispose of their waste equipment by arranging to return it to a designated UK collection point for the correct recycling of waste electrical and electronic equipment.

For more information about where you can send your waste equipment for recycling contact your local authority office.

For non-UK users contact your local authority office for information on the recycling of Waste Electrical and Electronic Equipment.

Battery Recycling Statement.

The EC Directive on Batteries and Accumulators (2006/66/EC) aims to minimise the impact of batteries on the environment and encourage the recovery of the materials they contain. To achieve increased collection and recycling of waste batteries, the Directive places 'producer responsibility' obligations on manufacturers and importers of portable, industrial and automotive batteries.

The symbol shown below will be on all equipment fitted with batteries from 26th September 2008 and indicates they must NOT be disposed of with other normal waste. Instead, it is the user's responsibility to dispose of used batteries by arranging to return them to a designated collection point for the correct recycling.

For more information about where you can send your waste batteries for recycling contact your local authority office.

REGISTERED IN ENGLAND REGISTERED NO. 1711515
REGISTERED OFFICE: BLOCK C 42 BARWELL BUSINESS PARK, CHESSINGTON, SURREY KT9 2NY

1 **HANDLING PRECAUTIONS**

When installing or inspecting the machine, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.
Non-compliance with the following points or inappropriate handling running counter to the cautionary matters herein stated can cause personal injury or damage to the machine.

⚠️**WARNING**

- Proceed with checks and tasks as indicated in these instructions. If instructions are not followed, or if tasks and/or checks are neglected, an electric shock or other very serious accident, even fatal accident, can occur. Also, customers could be injured while operating the product.

- Before performing work, be sure to turn the power off. Performing the work without turning the power off can cause an electric shock or short circuit. In the case work should be performed in the status of power on, this manual always states to that effect.

- To avoid an electric shock or short circuit, do not plug in or unplug quickly.

- To avoid an electric shock, do not plug in or unplug with a wet hand.

- Do not expose power cables or earth (ground) cables on the surface, (floor, passage, etc.). If exposed, the power cables and earth (ground) cables are susceptible to damage. Damaged cables can cause an electric shock or short circuit. Wherever wiring has been laid out on a floor surface, use a wiring protection cover.

- To avoid causing a fire or an electric shock, do not put things on or damage the power cables.

- When or after installing the product, do not unnecessarily pull the power cable. If damaged, the power cable can cause a fire or an electric shock.

- In case the power cable is damaged, ask for a replacement through where the product was purchased from or the office herein stated. Using the cable as is damaged can cause fire, an electric shock or leakage.

- Be sure to perform grounding appropriately. Inappropriate grounding can cause an electric shock.

- When inserting or removing a connector, always hold it by its main part. If you hold it by anything else while doing so, the connections between cable and connector terminal fixtures could be damaged; and there could be a short circuit or fire.

- Be sure that connections such as IC board are made properly. Insufficient insertion can cause an electric shock.

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

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

For the IC board circuit inspections, only the use of a logic tester is recommended. Using a Multi Tester or General Purpose Tester may result in damage to IC Circuits.

Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

This video gaming cabinet utilises a motorised steering feedback system. Do not attempt to service this part or any other part in close proximity to the steering mechanism whilst power is applied.

Some parts are not designed and manufactured specifically for this game machine. The manufacturers may discontinue, or change the specifications of such general-purpose parts. If this is the case, SEGA cannot repair or replace a failed game machine whether or not a warranty period has expired.

CONCERNING THE STICKER DISPLAY

This SEGA product has stickers attached describing the product manufacture No. (Serial No.) and Electrical Specifications. It also has a Sticker describing where to contact for repair and for purchasing parts.
When inquiring about or asking for repairs, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial Number indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this manual. In order to ensure you order the correct parts, mention the Serial No. when contacting the applicable places.

CONCERNING WARNING DISPLAYS

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

⚠ DANGER

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

⚠ CAUTION

Take care when
servicing within these
areas.

⚠ DANGER

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

⚠CAUTION

Caution is to be
taken when
servicing

⚠ DANGER

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

Serial number and Rating plate

Electrical Waste Logo
WEEE

Ringwide Serial Number

⚠ CAUTION

- **The operator MUST apply the Epileptiform Seizure Label to this product. Failing to apply this label may result in the player/observer suffering from a photosensitive seizure. Warning the potential player/ observer of this before the start of a game may prevent such accidents.**
- **It is also important to apply the correct language label for each location. There are nine (9) different language labels - please apply the label which matches your location.**

(STOP) IMPORTANT

Application of any warning labels must be placed in a location which is easy for the player/observer to read. Please follow the instructions below and apply the label in the location stated.
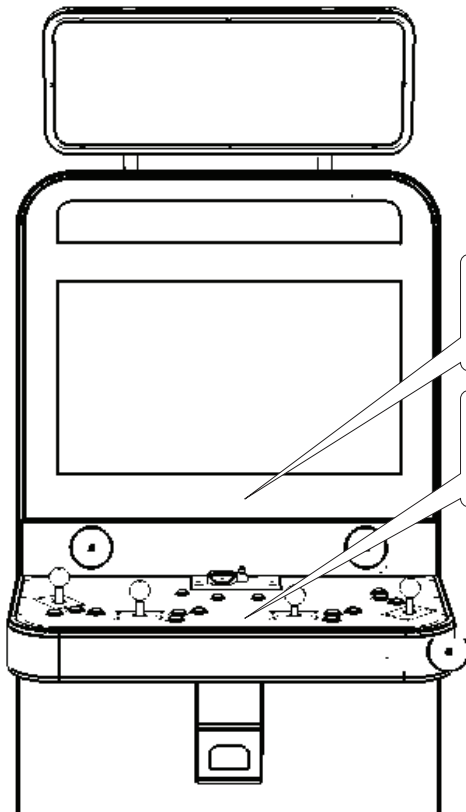
The Epileptically Seizure label is supplied in 9 different languages. Please choose the label which matches your language location.

Apply the label to the bottom right hand corner of the monitor mask. This location is unobstructed and can be easily read by players and observers alike.

⚠CAUTION
If you or your child have experienced a convulsive attack, loss of consciousness, etc. due to light stimulus or TV games, or fear that you might experience such symptoms, be very careful of using this machine.
If you feel sick while playing the game, immediately discontinue use and take a rest.
440-CS0186-01UK
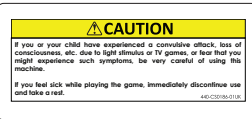
Epilepsy Warning (Multilingual) Sticker

⚠CAUTION
If you or your child have experienced a convulsive attack, loss of consciousness, etc. due to light stimulus or TV games, or fear that you might experience such symptoms, be very careful of using this machine.
If you feel sick while playing the game, immediately discontinue use and take a rest.
440-CS0186-01UK
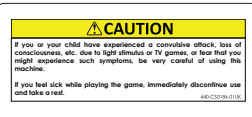
Epilepsy Warning (English) Printed Artwork

2 PRECAUTIONS REGARDING INSTALLATION

⚠ WARNING

This product is an indoor game machine. Do not install it outside. Even indoors, avoid installing in places mentioned below so as not to cause a fire, electric shock, injury and/or malfunction.

- Places subject to rain or water leakage, or places subject to high humidity in the proximity of an indoor swimming pool and/or shower, etc., or places where a water jet (high pressure washing device) could be used.

- 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 or unstable surfaces.

- Places subject to any type of violent impact.

- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.

- Areas where the temperature exceeds the applicable temperature (ambient temperature) range of 10 to 30 degrees centigrade.

2-1 LIMITATIONS OF USAGE

⚠ WARNING

Be sure to check the Electrical Specifications. Ensure that this product is compatible with the location's power supply, voltage, and frequency requirements. A label describing Electrical Specifications is attached to the product. Non-compliance with the Electrical Specifications can cause a fire and electric shock.

This product requires a breaker and earth mechanism as part of the location facilities. Using the product without these can cause a fire and electric shock.

Ensure that the indoor wiring for the power supply is rated at 15 A or higher (AC single phase 100 V ~ 120 V area), and 7 A or higher (AC 220 V ~ 240 V area). Non-compliance with the Electrical Specifications can cause a fire and electric shock.

Be sure to use an independent power supply equipped with an earth leakage breaker. Using a power supply without an earth leakage breaker can cause an outbreak of fire if a power surge occurs.

Putting many loads on one electrical outlet can cause generation of heat and a fire resulting from overload.

When using an extension cord, ensure that the cord is rated at 15 A or higher (AC 100 V ~ 120 V area) and 7 A or higher (AC 220 V ~ 240 V area). Using a cord rated lower than the specified rating can cause a fire and electric shock.

Securing a safe area for operation as described in this manual will ensure safe operation for players and observers.

SEGA shall not be held responsible for damage or compensation for damage to a third party, resulting from the failure to observe this instruction.

OPERATION AREA (SINGLE CABINET)

⚠ WARNING

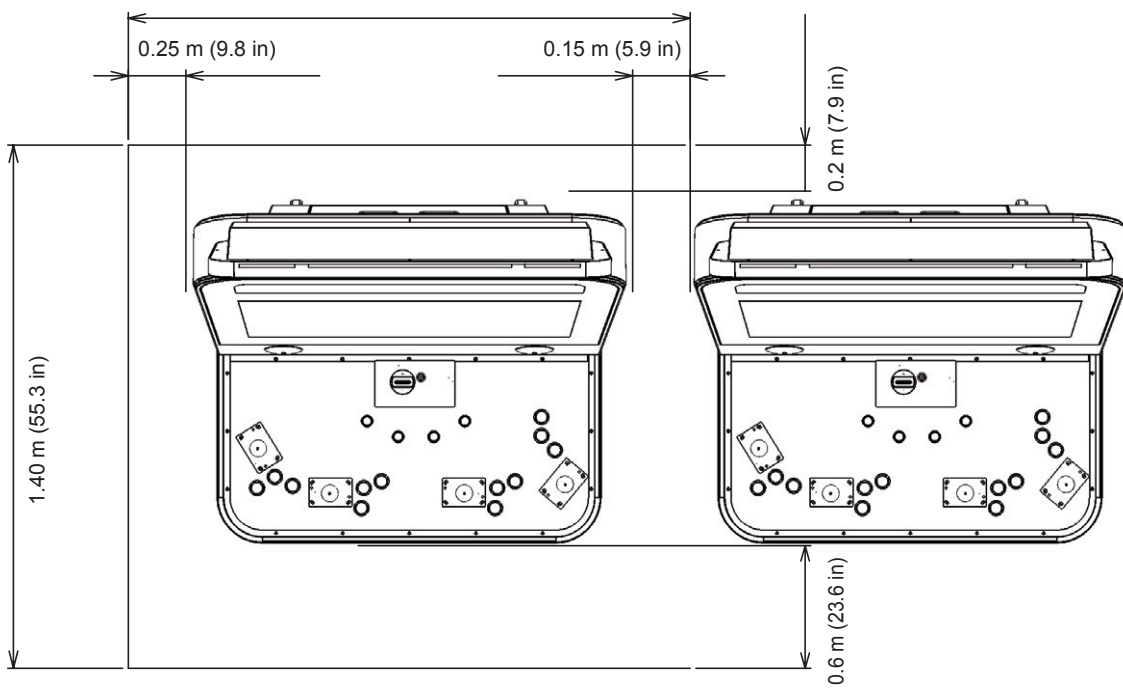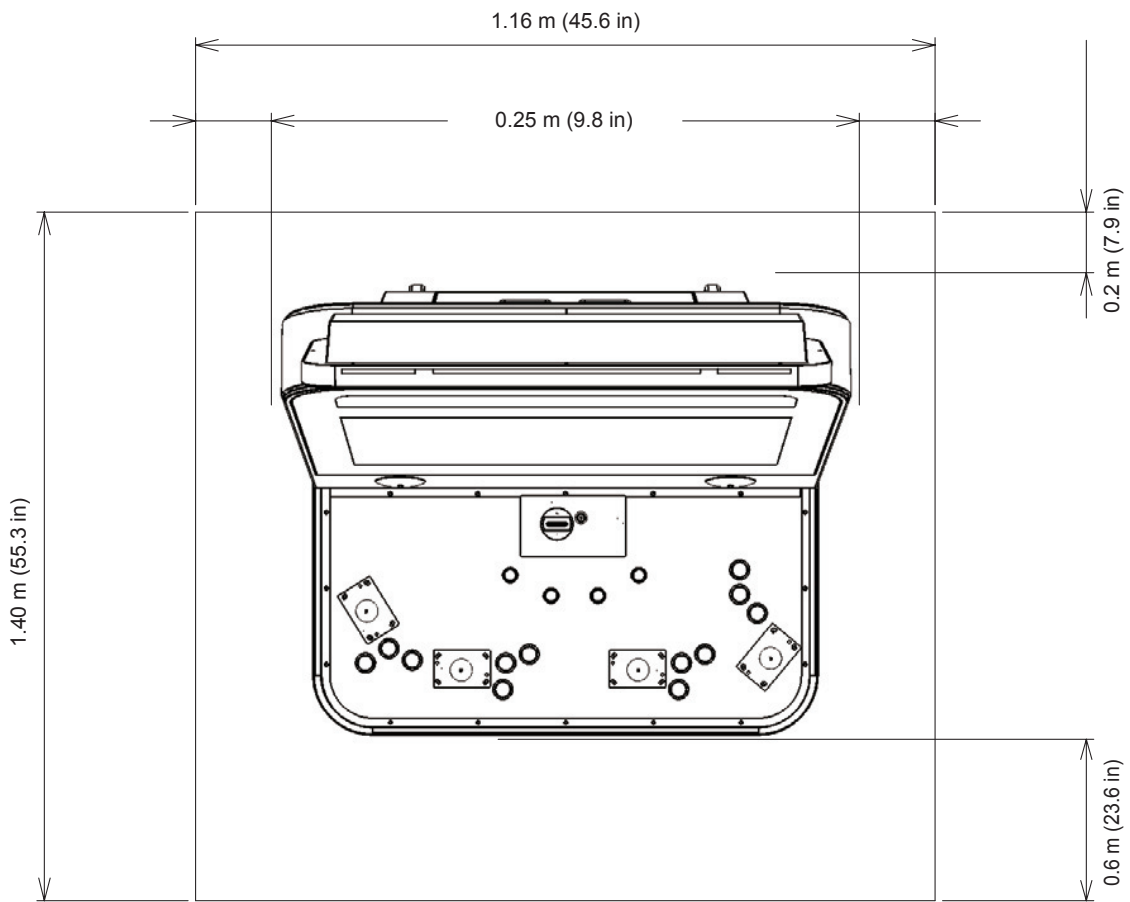- For safe operation, use and operate this product in an area measuring at least 1.16 m (45.6 in) in width and 104 m (55.3 in) in depth. SEGA shall not be held responsible for damage or compensation for damage to a third party, resulting from the failure to observe this instruction.

- The ceiling where this product is installed must be at least 2.30 m (92.5 in) high. If the ceiling is too low, the heat emitted from the product may cause it to catch on fire.

- Be sure to provide sufficient space specified in this manual. Do not allow objects to block the ventilation ports. It can cause generation of heat and a fire.

- Put the cabinets close together so that people cannot get through or provide enough space between them that people can go both ways without difficulty. If the cabinets are installed carelessly, people may bump into each other or the cabinets when passing between them or fall down. To prevent people from walking between them, place them 0.15 m (5.9 in) apart.

- If the machine does not fit through the entryway to the installation location, do not disassemble it without first consulting the instructions. Specific tools and adjustment procedures are required to assemble and disassemble the mechanical parts. Attempting to assemble or disassemble the machine without consulting the instructions may result in accidents during assembly/disassembly and electric shock, short circuits, and/or personal injury during operation. If the machine still does not fit through the entryway after following the procedures in this manual, contact your retailer or the office listed in this manual.

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

- To install this product, the entrance must be at least 0.87 m (34.2 in) in width and 1.80 m (71 in) in height. (without Billboard) If the entrance is too narrow, do not tilt the product carelessly. If all the product weight is put on the casters at one side only, there could be damage or deformation, causing serious accidents such as workers getting caught underneath.

OPERATION AREA

1.16 m (45.6 in)

0.25 m (9.8 in)

0.2 m (7.9 in)

1.40 m (55.3 in)

0.6 m (23.6 in)

0.25 m (9.8 in)

0.15 m (5.9 in)

0.2 m (7.9 in)

1.40 m (55.3 in)

0.6 m (23.6 in)

Width	0.86m (33.8in)
Depth	0.85m (33.4in)
Height	2.13m (83.8in)
Weight	140kg
Installation space	1166mm x 865mm x 2300mm

HORIZONTAL

Monitor Position
Applicable resolutions
- 640×480
- 1280×720
- 1920×1080

3 PRECAUTIONS REGARDING OPERATION

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

## 3-1 BEFORE OPERATION

⚠ 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 contact, collisions, and/or trouble between customers.

- During daily cleaning, be sure to check the surface of the control unit and other parts that the player touches with his/her hands for damage, cracks, or loose screws. If a player uses the machine while it is damaged, cracked, or has a loose screw, the player may become injured.

- Check carefully to make sure there are no gaps in the cabinet joints and that they are not loose. If there are gaps or looseness, players may get their hands or fingers caught, resulting in an injury.

- Make sure all the doors are locked securely and that they do not rattle. If the doors are not locked properly or there are gaps or rattling, the players could get their fingers or hands caught. It could also invite mischief.

- Be sure to perform appropriate adjustment of the LCD. 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.

- Inspect for the following items during a trial run. If there is any type of error, use the Test Mode, etc., to resolve the problem.If you continue use with an error, it can cause an accident or irreparable parts damage.

  - Is there any strangeness in the operability of the control unit?

  - Is there any improper adjustment of the LCD screen?

- Prepare a place where players can rest if they feel sick.

- If seats are fitted do not allow more than one person in any seat at any time. Do not allow adults to play the game with a child sitting in their lap.

⚠ WARNING

- To avoid electric shock, ensure that all covers and panels are undamaged and fitted. Do not operate with covers removed.

- 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.

⚠WARNING

- 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.

- Check if all of the adjusters are in contact with the surface. If they are not, the cabinet can move and cause an accident.
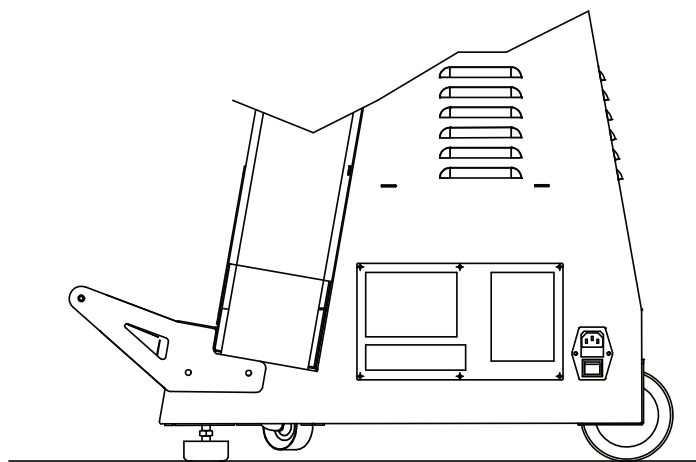
Ensure that the leg adjusters are both correctly adjusted so that the front castors are raised approximately 5mm from the floor surface.

- 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/stepladder.

- To avoid electric shock, check to see if door and cover parts are damaged or omitted.

- Do not place the following items on top of the product, nearby the product or hang them from the ceiling. Doing so could result in electric shock, short circuits and/or damage to the parts.

  Flower vases, flowerpots, cups, water tanks, cosmetics, and receptacles/containers/vessels containing chemicals and water.

3-2 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
>
> - **For safety reasons, do not allow any of the following people to play the game.**
> - **Those who have high blood pressure or a heart problem.**
> - **Those who have experienced muscle convulsion or loss of consciousness when playing video games, etc.**
> - **Those who have neck or spinal cord problems.**
> - **Those who are intoxicated or under the influence of drugs.**
> - **Pregnant women.**
> - **Those who are not in good health.**
> - **Those who do not follow the attendant's instructions.**
> - **Those who cannot grasp the Control Unit securely because of immobility in fingers, hands or arms.**
> - **Persons who disregard the product's warning displays.**
>
> **This product is intended for a single player only. Having two or more persons simultaneously playing this product can result to injury to the player and possible damage to the product.**
>
> - **Even players who have never been adversely affected by light stimulus might experience dizziness or headache depending on their physical condition when playing the game.**
>
> **Small children are especially likely to experience these symptoms. Caution guardians of small children to keep watch on their children during play.**
>
> - **Instruct those who feel sick during play to have a medical examination.**
> - **To avoid injury from falls and electric shocks due to spilled drinks, instruct the player not to place heavy items or drinks on the product.**
> - **To avoid electric shocks and short circuits, do not allow customers to put hands and fingers or extraneous matter in the openings of the product or small openings in or around the doors.**
> - **To avoid falls and resulting injury, immediately stop the customer from leaning against or climbing on the product, etc.**
> - **To avoid electric shock and short circuit, do not allow customers to unplug the power plug without a justifiable reason.**
> - **Instruct the guardians of small children to keep an eye on their children.**
>
> **Children cannot sense danger. Allowing small children to get near a player who is playing the game could result in the children being bumped, struck or knocked down.**

4 PART DESCRIPTIONS

Assembly Billboard

Assy LCD Display

Speakers

Service Door (control Panel)

Cash Door

Foot Rest

Coin Insert

Assy Control Panel

Rear Service Panels

AC Unit
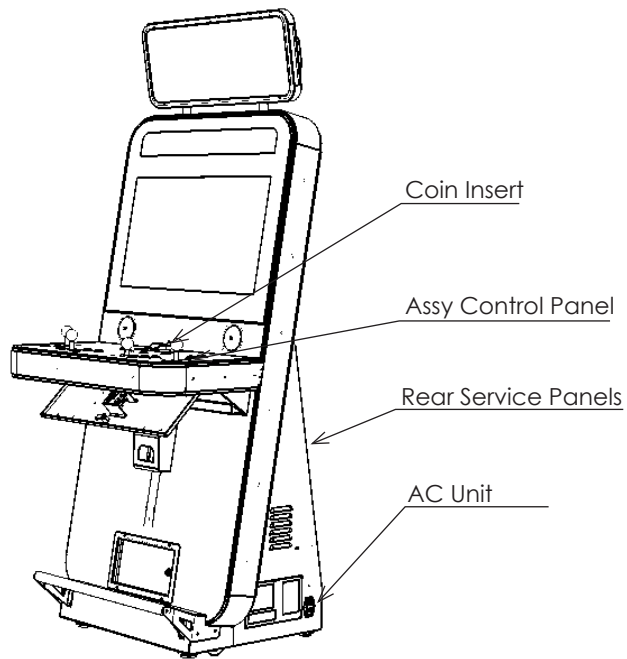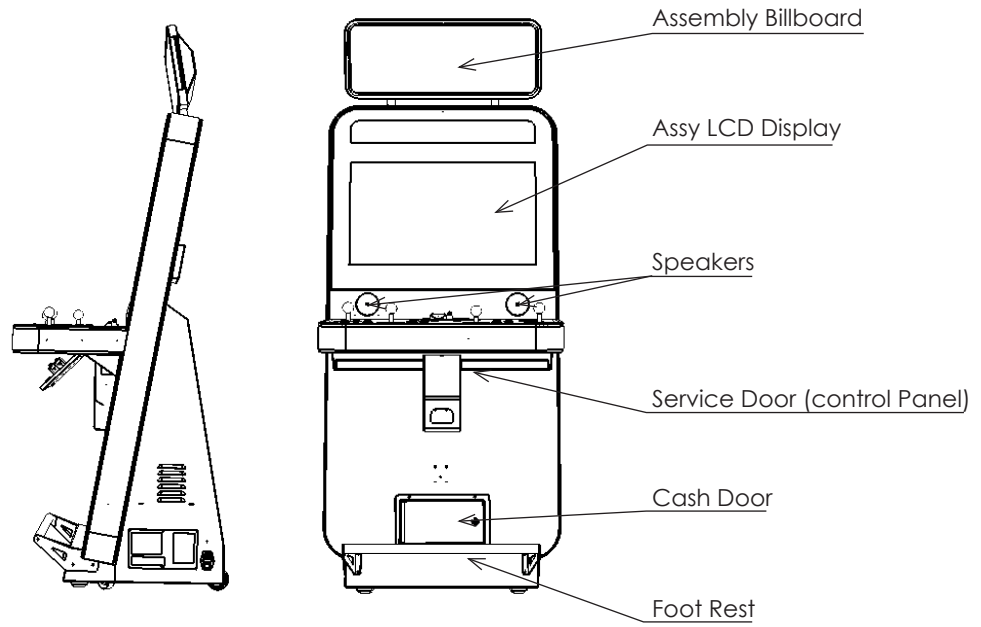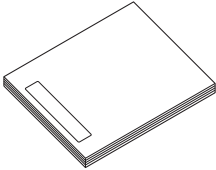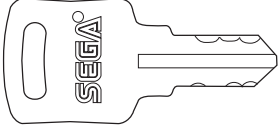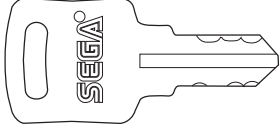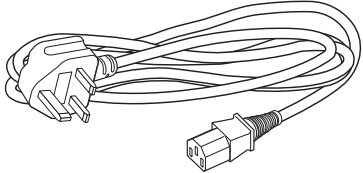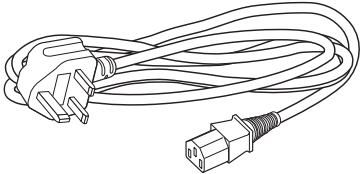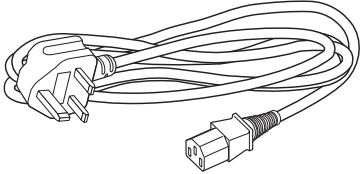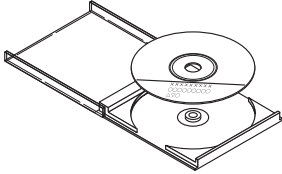
5 ACCESSORIES

Confirm that the accessories listed in the table below are present when setting up the product.
Accessories marked "Spare" in the note column are consumable items but included as spares.

Part name / number	Diagram / Use etc.	Quantity
Owners Manual		1
Key Master		4
Key (for cash box)		2
Power Cord (UK)		1
Power Cord (EU)		1
Power Cord (US)		1
DVD Software		1

6 ASSEMBLY AND INSTALLATION

⚠WARNING

- Perform assembly work by following the procedure herein stated. Failure to comply with the instructions can cause electric shock.

- Perform assembly as per this manual. Since this is a complex machine, incorrect assembling can cause an electric shock, machine damage and/or improper functioning as per specified performance.

- When assembling, more than one person is required. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.

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

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

- Do not unnecessarily push the display screen.

- This work should be carried out by site maintenance personnel or other qualified professionals. Work performed by non-technical personnel can cause a severe accident such as electric shock. Failing to comply with this instruction can cause a severe accident such as electric shock to the player during operation. If no one with proper technological expertise is available, request service from the office indicated in this document or the point of purchase so as to ensure safety.

- Provide sufficient space so that assembling can be performed. Performing work in places with narrow space or low ceiling may cause an accident and assembly work to be difficult.

- To perform work safely and avoid serious accident such as the cabinet falling down, do not perform work in places where step-like grade differences, a ditch, or slope exist.

- This product does not use any connectors other than those connected to and used by the game board when it leaves the factory. Do not needlessly connect wires to unused connectors. This could lead to overheating, generation of smoke and burn related injuries.

⚠ CAUTION

- Handle molded parts with care. Excessive weight or pressure may cause them to break and the broken pieces may cause injury.
- To perform the operation safely and accurately you must use a safe, steady footstool or stepladder. Working without this may lead to a fall and possible injury.

6-1   INSTALLING THE CABINET

⚠ CAUTION

- **To perform work safely and securely, be sure to prepare a step which is in a safe and stable condition. Performing work without using a step may lead to injury of damage to components.**

Tools required for installation
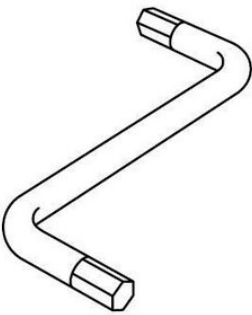
Allen Key (M4)
- Attaching Billboard
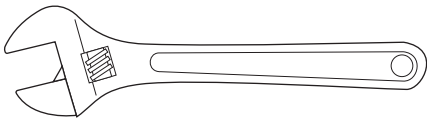
Adjustable Wrench
- Secure cabinet into position.
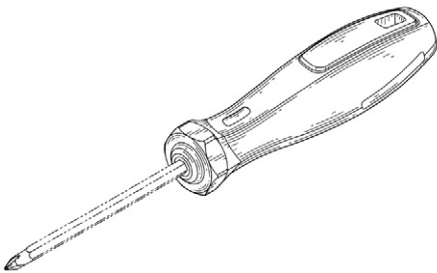
Phillips No1 Screwdriver
- Removing the Rear Service Panel.
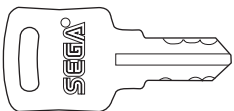
KEY
- Gain access to Service doors
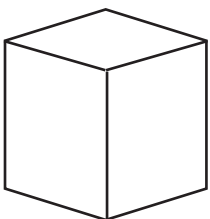
Step or Ladders
- Aid in fixing Billboard and Billboard Panel.

6-1-1 INSTALLING THE ASSY BILLBOARD

1   Unscrew the M4x10 MSCR BLK (8) and remove the Rear Panel

Rear panel

M4x10 MSCR (8)
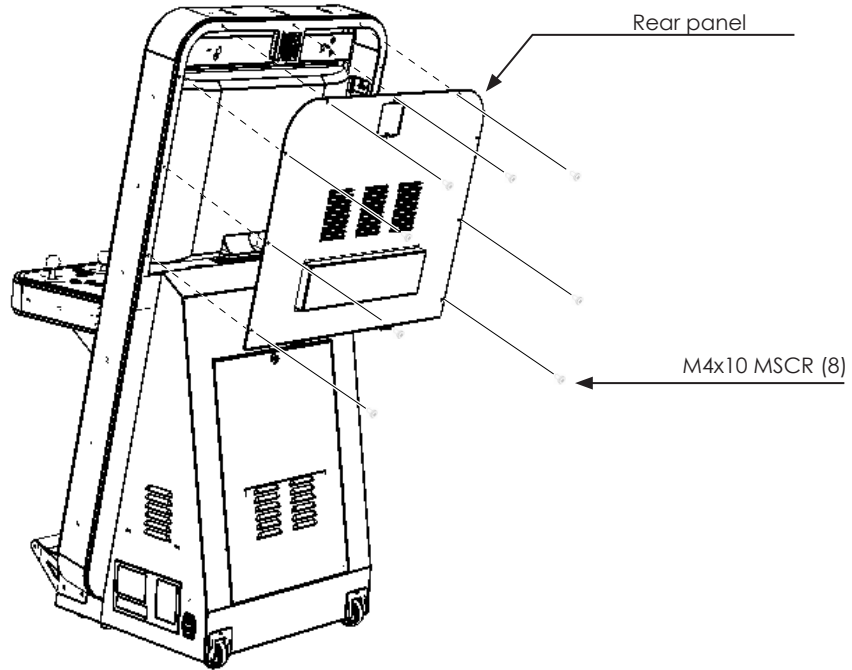
2   Using a stool or ladder, lift and place the Assy Billboard on to the top of the cabinet. Thread the LED Harness throught the cabinet so that a connetion can be made inside. Fix the Billboard in to place using the 4x M5x16 BTN HD SCR (supplied). Make connection inside cabinet.

Assy Billboard

Billboard LED Harness

Fix using M5x16 BTN HD SCR (4)

Connect LED Harness to Cabi
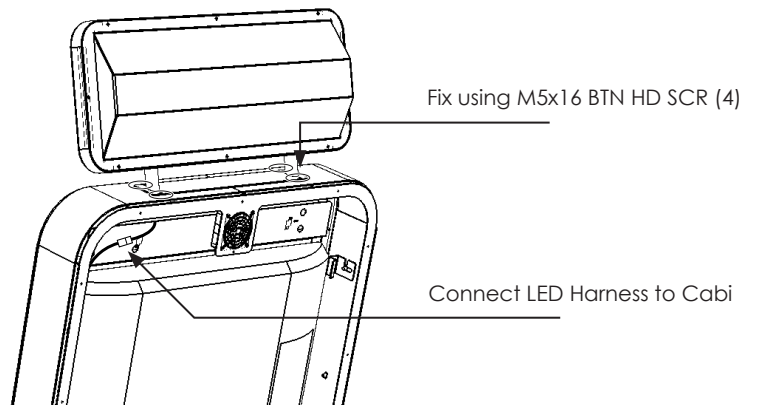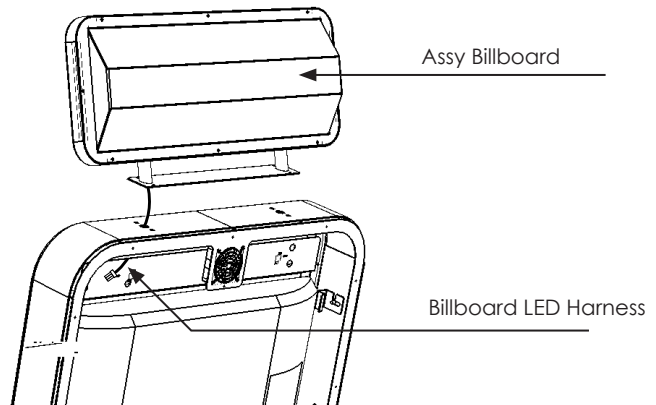
3   Replace the Rear Service Panel by following the instructions in step one in reverse.

Rear panel

M4x10 MSCR (8)
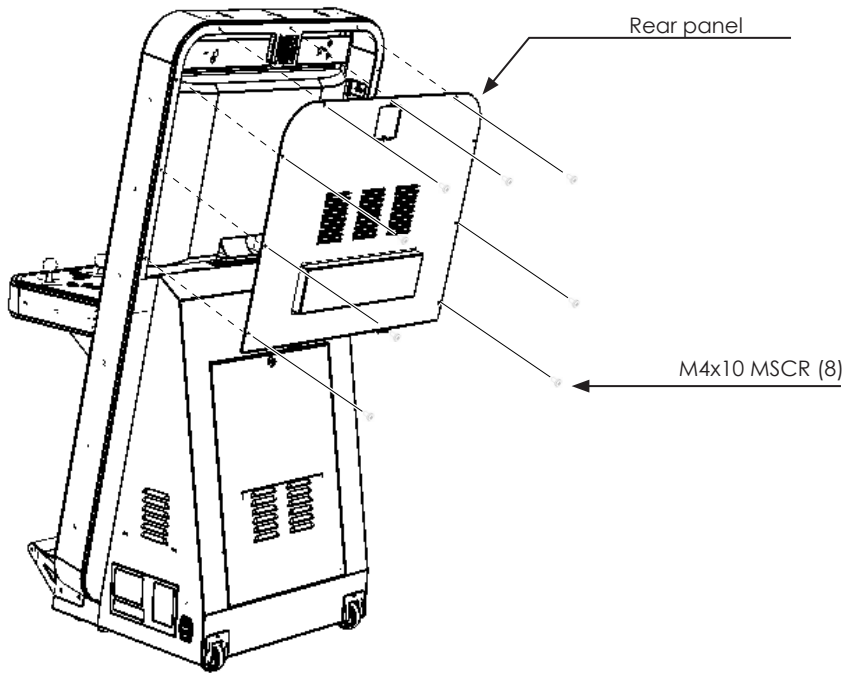
6-2   FIXATION TO SITE

> ### ⚠WARNING
>
> •   **Make sure that all the adjusters contact the floor. Otherwise the cabinet could move, causing an accident.**
>
> •   **Provide a ventilation space at least 20cm wide behind the cabinet. There are ventilation holes on the back of the cabinet. Do not block the ventilation holes. Doing so could trap heat inside resulting in fire. It could also result in equipment damage or cause parts to become exhausted prematurely.**

The product is equipped with 4 casters and 2 adjusters.

When installation position / site has been determined, have the adjusters come in direct contact with the floor. Establish a gap of about 5 mm between the floor and the casters and adjust the unit so that it will remain level.

1 Move the product to the installation site.

2 Bring the adjusters into direct contact with the floor. Use a wrench to align the height of the adjusters until the cabinet is perfectly level.

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

Casters (4)

Leg Adjusters (2)

ADJUSTER

CASTER

Fasten the nuts in an upward direction.

Approx. 5 mm

ADJUSTER
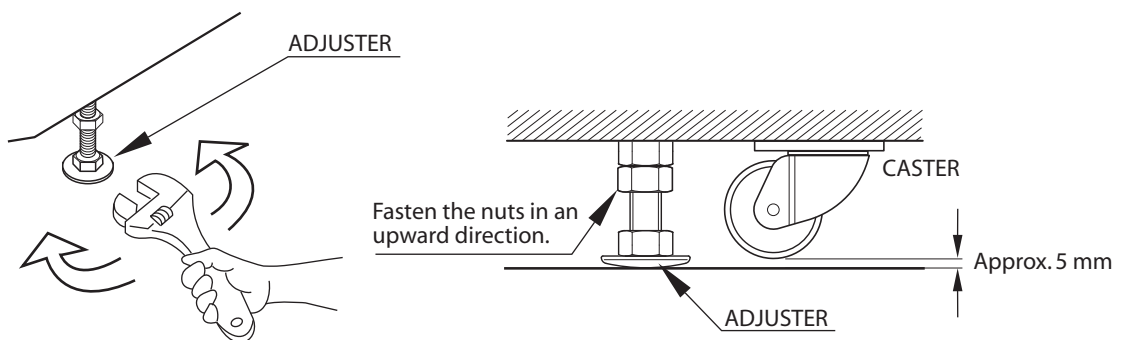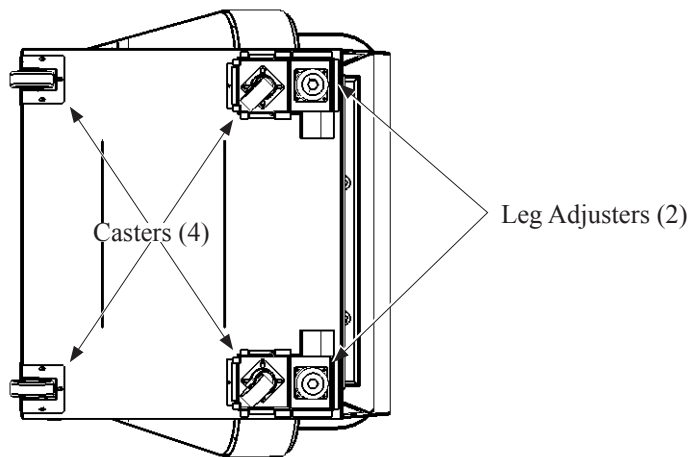
⚠️WARNING

- **Provide a ventilation space at least 20cm wide behind the cabinet. There are ventilation holes on the back of the cabinet. Do not block the ventilation holes. Doing so could trap heat inside resulting in fire. It could also result in equipment damage or cause parts to become exhausted prematurely.**

Leave a 200mm gap for ventilation
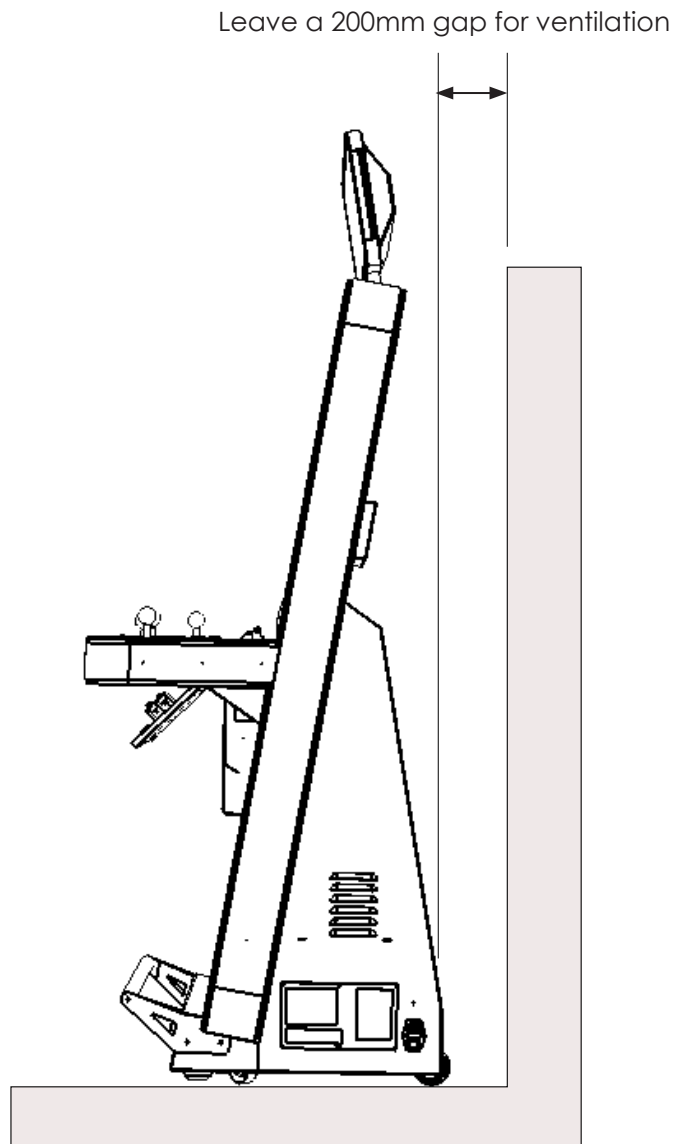
6-3   POWER SUPPLY AND OTHER CONNECTIONS

> ## ⚠WARNING
>
> •   **Use the power supply equipped with an earth leakage breaker. Use of power supply without such a breaker could result in fire if there is a current leakage.**
>
> •   **If an integral EARTH is not available, prepare a securely grounded indoor ground terminal. Without proper grounding, customers could be electrocuted and product operations might not always be stable.**
>
> •   **Do not expose the power cord or ground wire. If these are exposed, customers could stumble over them, for instance, and easily damage them. Additionally, if these lines are damaged, there could be a risk of electrical shock or short circuit. Set these lines at locations where they will not interfere with customer traffic, or attach covers to them.**
>
> •   **After laying out the power cord on the floor, be sure to always protect it. If the power cord is left exposed, it can easily be damaged, resulting in electrical shock.**

1   Confirm that the main switch is at OFF.

IEC Inlet

Fuse compartment

Mains ON/OFF Switch
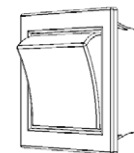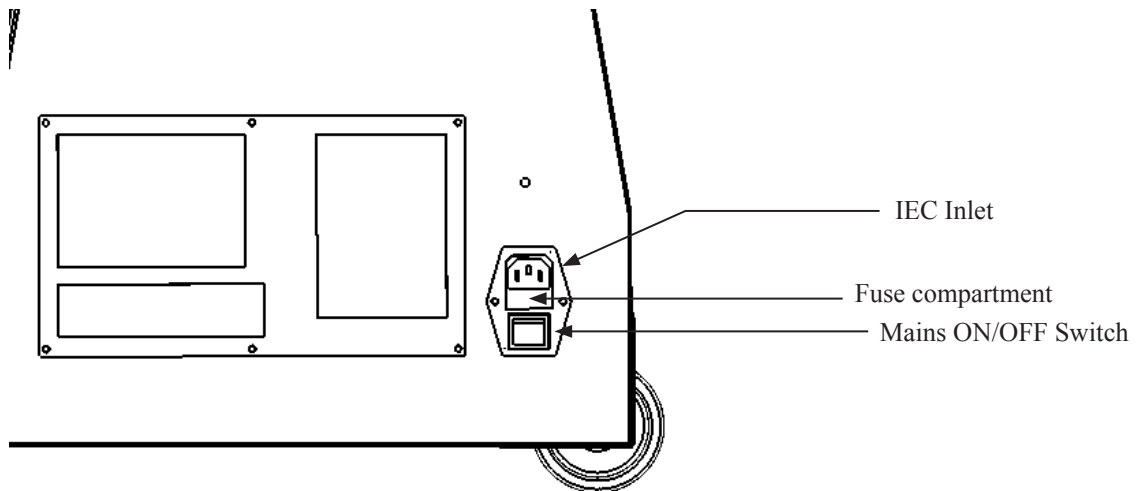
Mains Switch shown in
OFF position

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

3   The power code is laid out indoors. Protect the power cord by attaching wire cover to it. Please see example below.

WIRE COVER
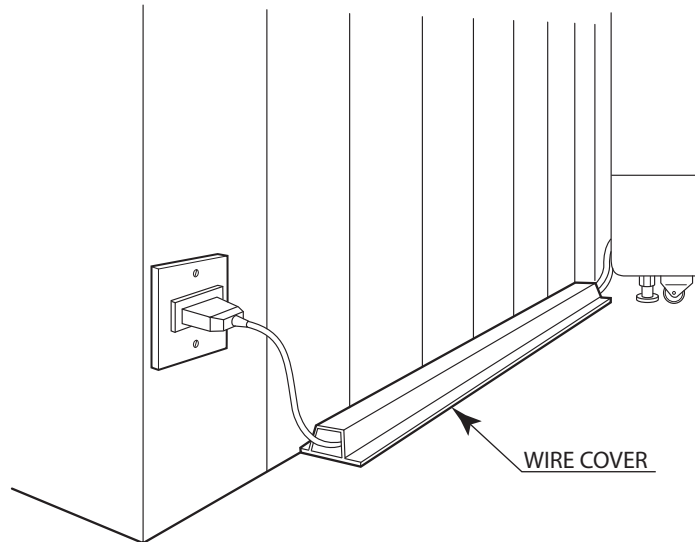
6-4   TURNING ON THE POWER

Set the main switch of the AC unit to ON and engage the power.

When you turn on the power, the billboard lighting will come on.

After the SEGA LOGO start up screen is displayed on the LCD screen, the Advertise (Attract) Mode will start.

The cabinet LEDs below the control panel will illuminate once initialisation is complete.

Start up sounds are output from the speakers on the left and right of the cabinet together with display of the SEGA startup screen.

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

COMPONENTS WHICH CHANGE STATE WHEN POWER IS APPLIED

Billboard illumination

Illuminates

Attract Mode - Game

Audio output

Illuminates
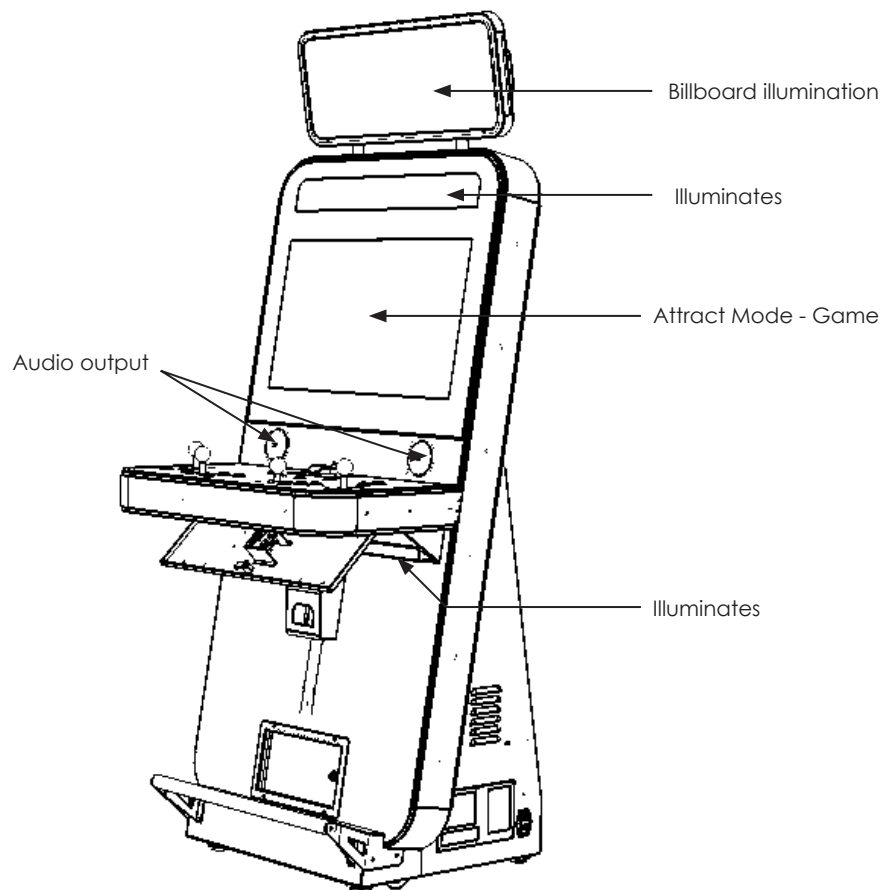
6-5   CONFIRMATION OF ASSEMBLY

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

9-3-3 INPUT TEST

This menu is used to test the system inputs such as steering, pedals and buttons. To implement the test, press each device that is listed and check the results on screen.

9-3-4 OUTPUT TEST

This menu is used to test the system oututs such as Lamps and LED.

9-2-6 COIN SETTINGS

As this system utilises a Credit Board PCB, it is important that the setting remain 1 COIN 1 PLAY. Deveation from this setting when using the Credit Board PCB can result in unusual credit outputs.

9-3-5 GAME ASSIGNMENTS

Apply settings to the game: change language, controls and sound to suit location.

⚠ WARNING

- Always disconnect the power cable before moving the product. If it is moved with the power cable connected, the cable could be damaged, causing fire or electric shock.

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

- When crossing a sloped or stepped area, always have the machine travel lengthways. Travelling with the machine in a sideways position could result in the machine falling over onto its side. Always use a minimum of two people working together plus lifting apparatus to accommodate slopped areas or stairs.

- To lift up the cabinet, hold it at the bottom at the designated lifting points. If you hold it anywhere else, the weight of the cabinet could cause damage to parts or attachments, resulting in injury.

- Do not push the cabinet from the side when moving. Pushing from the side as it may result in the cabinet falling over.

7-1 PRECAUTIONS WHEN MOVING FROM SITE

(STOP) **IMPORTANT**

> • **When moving the cabinet, do not grip or push the Billboard Plate. Doing so could deform or damage the part.**
>
> • **If moving through a door or place with a low ceiling such as an elevator, you should take apart the billboard and billboard plate.**

Detailed instructions for removing the Assy Billboard and Billboard Plate can be found in Chapter 6 of this manual. Please follow these instruction in reverse order for removal.

Remove the Billboard when transporting the machine in and out of buildings or when passing through areas with low ceilings.
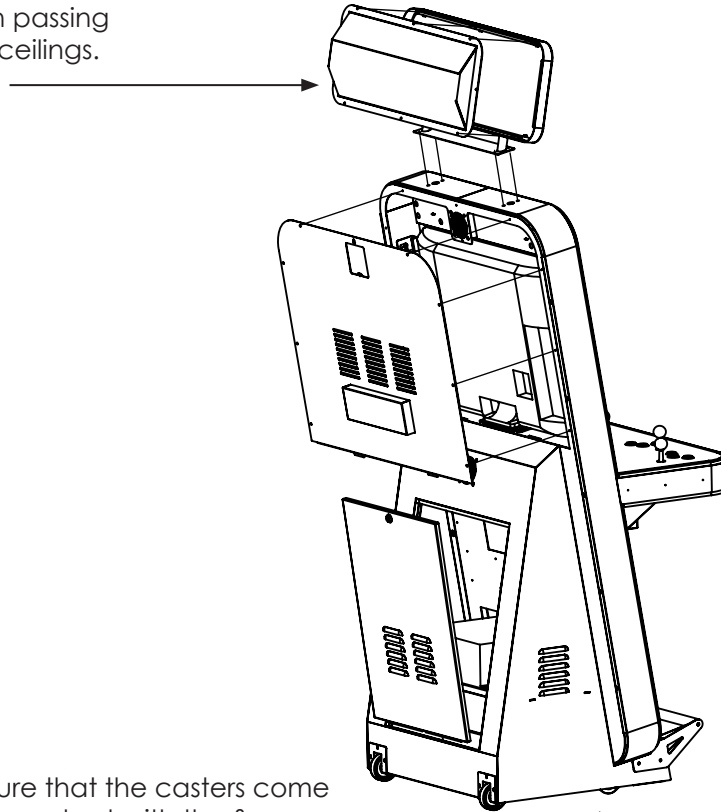
Ensure that the casters come into contact with the floor before moving.

8 GAME DESCRIPTION

8-1 GETTING STARTED

Virtua Tennis 4 is a versus type tennis game played using 1 lever and 3 buttons, and featuring a lineup of 18 real pro tennis players.
Supports a maximum 4 players.

8-2 GAME FLOW

Pressing the START button during Advertise Mode displays Main Menu A. Players select their desired play mode from this menu.

Singles Mode

Other players may join the game from this point, Position Select Screen A. This mode can be played by up to 2 players. 1-Player play differs from 2-Player. Winner is the first to win 2 games.
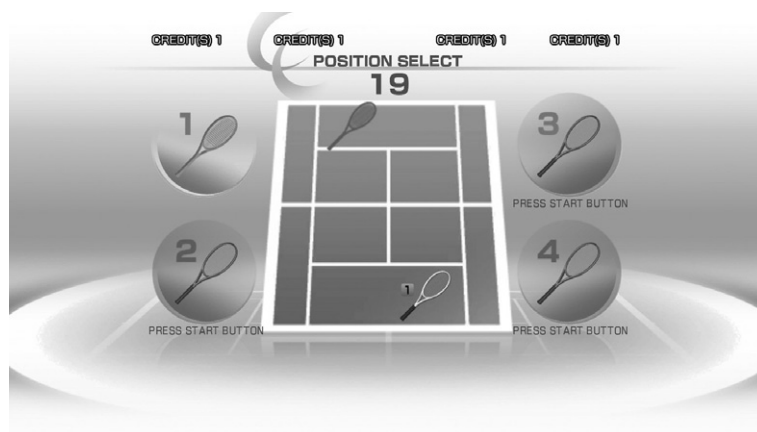
Position Select Screen A

- When playing Singles Mode 1-Player
Stage-by-stage play. Take part in a tennis tournament held in various worldwide locations, and aim to become the world champion of the year. Additional credits are required to continue both when advancing to the next stage and when the continue screen is displayed after losing.

- When playing Singles Mode 2-Player
One-on-one, human vs. human play. Once the match has finished, it is Game Over.

Doubles Mode

Other players may join the game from this point, Position Select Screen B. This mode can be played by up to 4 players, and if 4 players are not present CPU characters will make up the numbers. Winners are the first to win 2 games. Once the match is finished, it is Game Over.
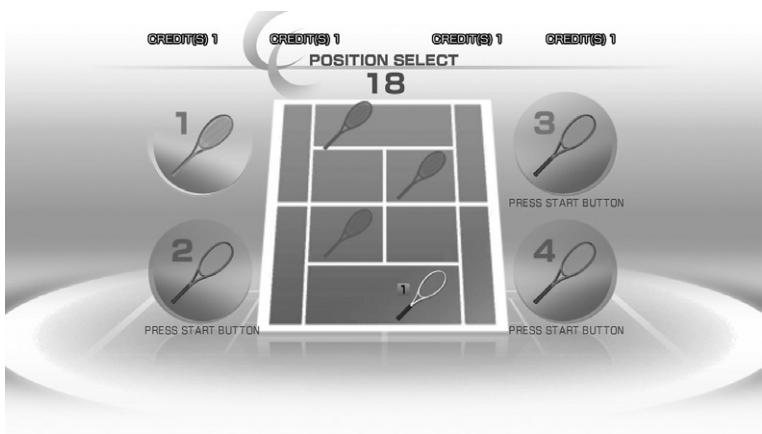
Position Select Screen B

Mini Game Mode

Players select one of 8 mini games from the Mini Game Selection Screen. 4 players maximum.

Mini Game Selection Screen

● Clay Shooting
Break as many clay targets as possible with well-aimed shots. Score extra points by breaking stacked targets with one shot, or by breaking golden targets. When you're running low on targets, break a red target to restock.

● Ace Striker
Take serves at a soccer goal and earn points for scoring. White-colored defenders and goalkeepers can be blown away with strong serves. You can earn more points by scoring as soon as the game starts, or by scoring goals in succession.

● Egg Collector
Touch the eggs on the court to make them hatch, and then guide as many chicks as possible to the Mother Hen. Avoid the balls that come flying at you, as you will lose chicks every time they hit. The more you guide to safety simultaneously, the higher your score.
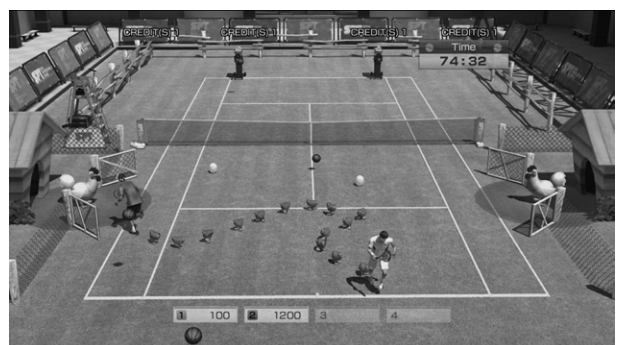
● Royal Poker

Flip cards over by hitting them with balls, and put together poker hands. The higher the hand, the higher the score. Aim for lit-up cards to efficiently build hands.

● Wind Match

If there is only 1 player, the objective is to keep a rally going with your opponent on a windswept court. Hitting a balloon on the court makes the wind's direction change. If there are multiple players, a versus match will be played on the windswept court.
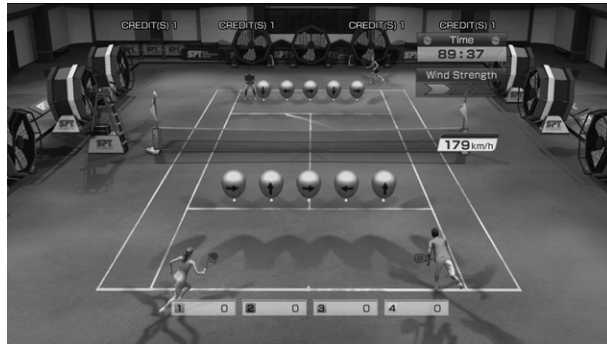
● Bomb Match

Make the ticking time-bomb explode in your opponent's court to score. Landing the bomb in the circular areas on the court will speed up the countdown. Make the bomb explode near your opponent for an even higher score.

● **Wall Match**

Sliding walls atop the net impede regular play. You can move them up and down by stepping on the correspondingly-colored switches on the court. Walls can bounce the ball back when up, so use them to your advantage. The more panels up when a point is scored, the higher the bonus.

● **Coin Match**

Collect the coins that appear on the court. Large coins score higher. You can make more coins appear by scoring points off your opponent.

When SHORT MODE has been turned ON in TEST MODE

The Main Menu will change to a dedicated menu, and wins in Singles and Doubles Mode will be decided on a first-to-1 basis.

Main Menu B

8-3   BASIC CONTROLS AND FUNCTION
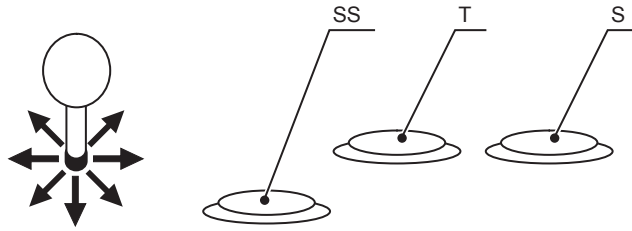
Lever	Move cursor/Move player/Set shot direction
Super Shot (SS) button	You can perform a Super Shot when the Match Momentum gauge is full. When it is not full, pressing this button will perform a Top Spin.
Top Spin (T) button	Hit a Top Spin shot.
Slice (S) button	Hit a Slice shot.
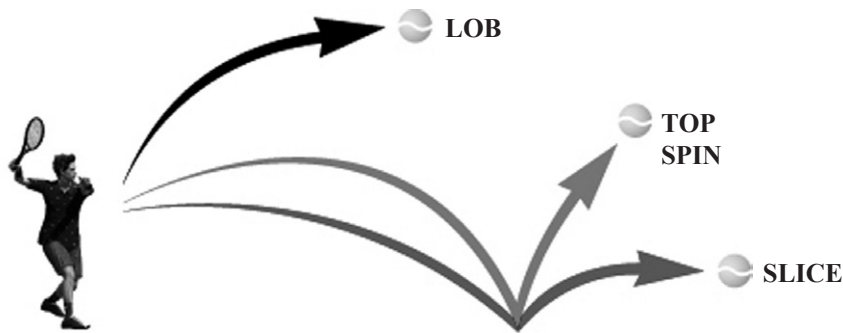
● Hitting serves

1   Move the lever left and right to set your start position.

2   Pressing a button will cause the player to toss the ball up. Press the button again when the Serve Gauge that appears next to the player is as close to MAX as possible.

3   You can use the lever to determine the direction the shot will take, but be careful not to hold it for too long as that will result in a fault.

● Shot types

Top Spin	Shot with high bounce trajectory, and high speed.
Slice	Shot with low bounce trajectory, and low speed.
Lob (T+S)	A high-trajectory shot intended to go over your opponent's head.

● Match Momentum gauge

Match Momentum builds up based on playing shots that fit your player's style, which is different from player to player (for example, a "STRONG BACKHAND" player's Match Momentum gauge will build up when they hit strong, backhand shots. The player's abilities will improve as the gauge rises, and once it is at MAX the Super Shot button can be pressed to perform a Super Shot in exchange for emptying the gauge. After the gauge has reached MAX, it will gradually decrease, returning to "0" once a set time has passed.

8-4   MATCH SCREEN

Singles Mode

2P Display + Score Display

1P Match Momentum Gauge

2P Match Momentum Gauge

Player 2

Singles Match Screen

Player 1

1P Display + Score Display

Doubles Mode

2P Display + Score Display

3P Match Momentum Gauge

2P Match Momentum Gauge

1P Match Momentum Gauge

4P Match Momentum Gauge

4P Display

3P Display

Doubles Match Screen

1P Display + Score Display

Mini Game Mode (1 Player)

Score Display   Current Level Display   Time Limit Display
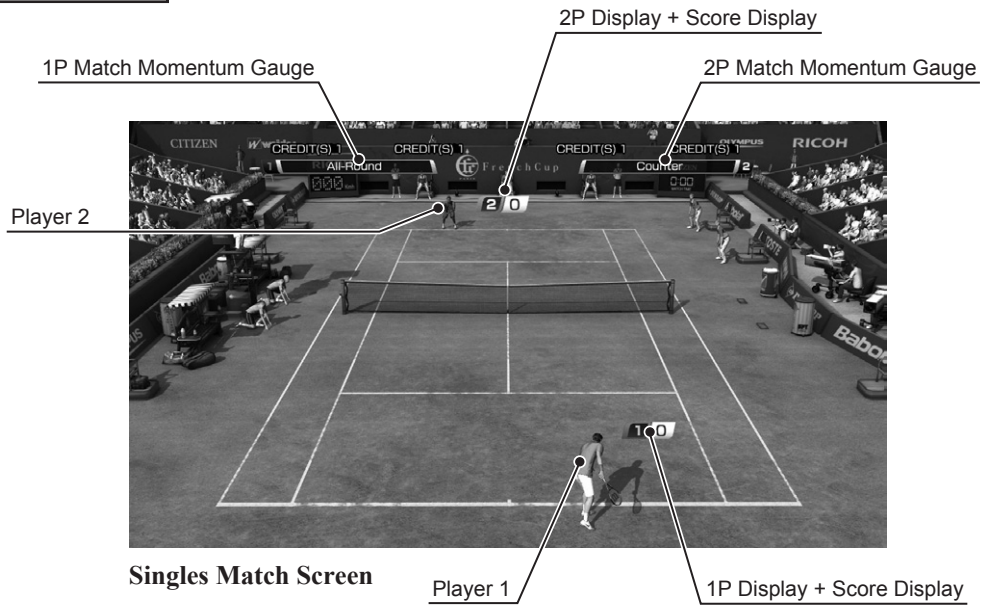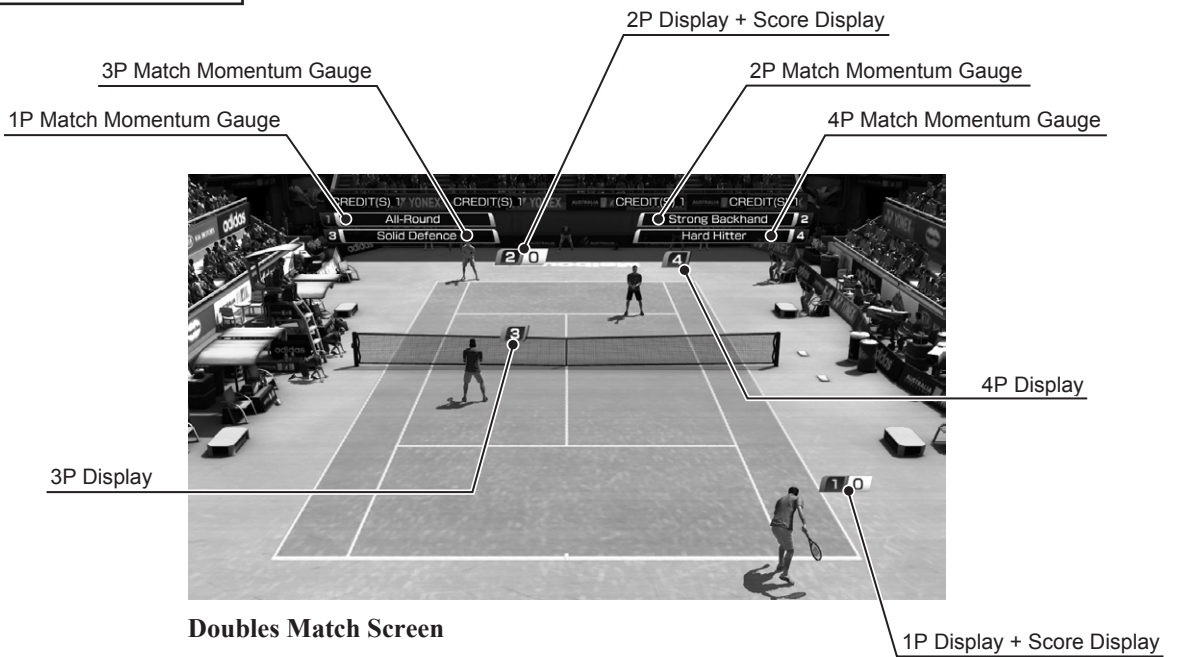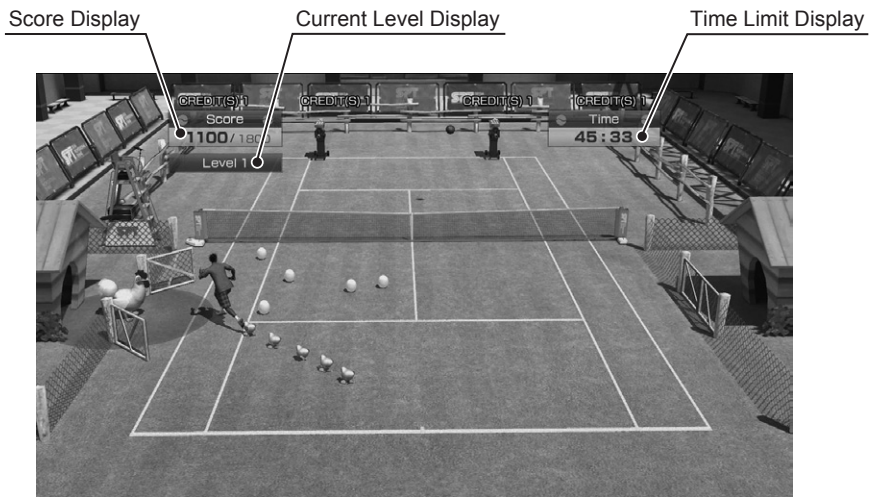
Mini Game Screen 1

Mini Game Mode (Multiplayer)

Time Limit Display

2P Score Display   3P Score Display

1P Score Display   4P Score Display

Mini Game Screen 2

9   EXPLANATION OF TEST AND DATA DISPLAY

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

Shown overleaf are the tests and screens to be used for different problems.

(STOP) IMPORTANT

- When changing the game configuration within the TEST MODE, be sure to exit all screens in the correct manner by choosing exit. DO NOT turn the machine ON/OFF to resume game. Changes WILL NOT take effect unless the correct method is used.

9-1 SWITCH UNIT AND COIN METER.

⚠ WARNING

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

STOP **IMPORTANT**

- **Adjust the sound to the optimum volume, taking into consideration the environmental requirements of the installation location.**
- **Removing the Coin Meter circuitry renders the game inoperable.**

9-1-1 SWITCH UNIT

Open the front service door situated beneath the Control Panel.
The functioning of each SW is as follows:

Credit Bd

Test Button

Service Button

Volume Control

Coin Counter
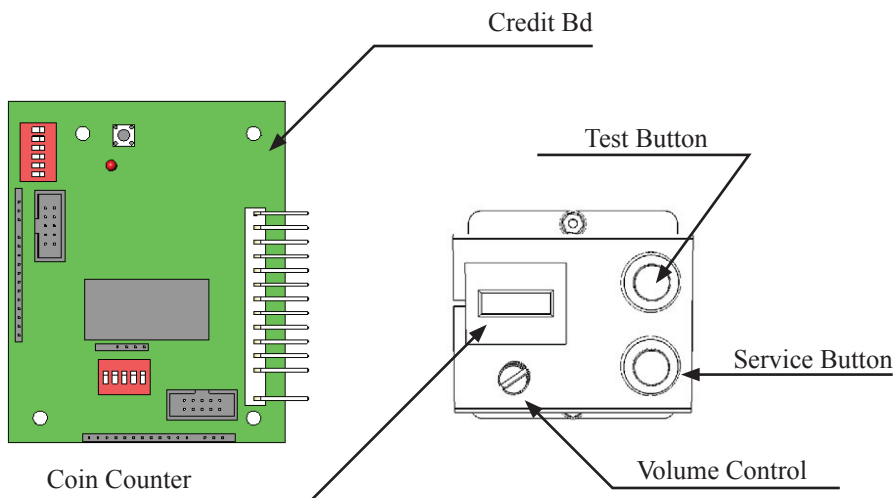
TEST Button (TEST):	For the handling of the Test Button, refer to the following pages.
SERVICE Button (SERVICE):	Gives credits without registering on the coin meter.
Sound Volume Switch (SOUND VOLUME):	Adjust sound volume for all of the machines' speakers.
Coin Counter	Counts and displayes coins in $0.10 units.
Game Counter	Counts games played

(STOP) **IMPORTANT**

●The details of changes to TEST MODE settings are saved when you exit from TEST MODE by selecting EXIT from the SYSTEM TEST MODE menu. Be careful because if the power is turned off before that point, changes to the settings will be lost.
●Use with the specified settings. If settings other than those specified are used, inappropriate operations or malfunction may occur.

Press the TEST Button, enter TEST MODE, and the SYSTEM TEST MENU screen will be displayed.
For Virtua Tennis 4, use the settings as listed below for "COIN ASSIGNMENTS" in SYSTEM TEST MODE.
(See also RINGEDGE service manual.)

COIN ASSIGNMENTS

About the COIN CHUTE TYPE settings for the following cabinet types
- Set to COMMON if the number of available coin slots is lower than the maximum number of players.
  NOTE: However, note that this will mean credits are shared.
- If set to INDIVIDUAL, then START buttons number 2 and 4 will stop functioning and become unusable.

<Operation examples>
● 1 cabinet, maximum 4 players, 4 coin slots available
Set to INDIVIDUAL.

● 2 cabinets, maximum 4 players, 2 coin slots available
Set to COMMON.
NOTE: However, note that this will mean credits are shared.
If set to INDIVIDUAL, then START buttons number 2 and 4 will stop functioning.

● 2 cabinets, maximum 2 players, 2 coin slots available
Set to INDIVIDUAL.

● 1 cabinet, maximum 2 players, 2 coin slots available
Set to INDIVIDUAL.

● 1 cabinet, maximum 2 players, 1 coin slot available
Set to COMMON.
NOTE: However, note that this will mean credits are shared.
If set to INDIVIDUAL, then START button number 2 will stop functioning.

-COIN TO CREDIT RATE
Set as 1 COIN - 1 PLAY when using a Credit Bd. Setting the game to anything other that 1 COIN - 1 PLAY will force the game to produce uncontrolable credit settings. ALL COIN SETTINGS ARE SET VIA THE CREDIT BOARD.

-GAME COST SETTING
The necessary credits for GAME START / CONTINUE can be set here.
Set as desired.

9-2-1   SYSTEM INFORMATION

The SYSTEM INFORMATION screen displays system information.
The following information is displayed on this screen.

SYSTEM INFORMATION 1/2

The SYSTEM INFORMATION 1/2 screen displays system information.

■ **SYSTEM INFORMATION 1/2 Screen**

```
            SYSTEM INFORMATION 1/2


   KEYCHIP
      KEYCHIP ID      A72*-***********
      MODEL TYPE      *
      REGION          ***
   MOTHER BOARD
      MAIN ID         ****-***********
      OS VERSION      *******
      REGION          **
      MEMORY SIZE     *****MB
   STORAGE DEVICE
      STORAGE SIZE    *GB
   GRAPHIC DEVICE
      DEVICE ID       ****:****
      BIOS VERSION    **.**.**.**.**


      PRESS TEST BUTTON TO NEXT
```

The following information is displayed on this screen.

● KEYCHIP

KEYCHIP ID	The serial number of the key chip.
MODEL TYPE	The model type.
REGION	The region setting of the key chip.

● MOTHER BOARD

MAIN ID	The serial number of the game board.
OS VERSION	The version of the system program.
REGION	The region setting of the game board.
MEMORY SIZE	The onboard memory size.

● STORAGE DEVICE

STORAGE SIZE	The total capacity of the program installer device.

● GRAPHIC DEVICE

DEVICE ID	The graphic device's ID.
BIOS VERSION	The graphic device's software version.

Press the TEST Button to move to the SYSTEM INFORMATION 2/2.

SYSTEM INFORMATION 2/2

The SYSTEM INFORMATION 2/2 screen displays system information.
Press the TEST Button on the SYSTEM INFORMATION 2/2 screen to return to the SYSTEM TEST MODE screen.

■ **SYSTEM INFORMATION 2/2 Screen**

```
            SYSTEM INFORMATION 2/2

   VOLTAGE CPU CORE              +*.** [V]
   VOLTAGE 3.3V                  +*.** [V]
   VOLTAGE 5V                    +*.** [V]
   VOLTAGE 12V                  +**.** [V]
   VOLTAGE BATTERY                 *****
   FAN CPU                     **** [rpm]
   FAN CHASSIS                 **** [rpm]
   TEMP CPU                       ** [C]
   TEMP CHASSIS                   ** [C]
                ERROR LOG ·····················(A)
   ERROR ****   ****   ****/**/**   **:**:**
   ERROR ****   ****   ****/**/**   **:**:**
   ERROR ****   ****   ****/**/**   **:**:**
   ERROR ****   ****   ****/**/**   **:**:**
   ERROR ****   ****   ****/**/**   **:**:**
        PRESS TEST BUTTON TO EXIT
```
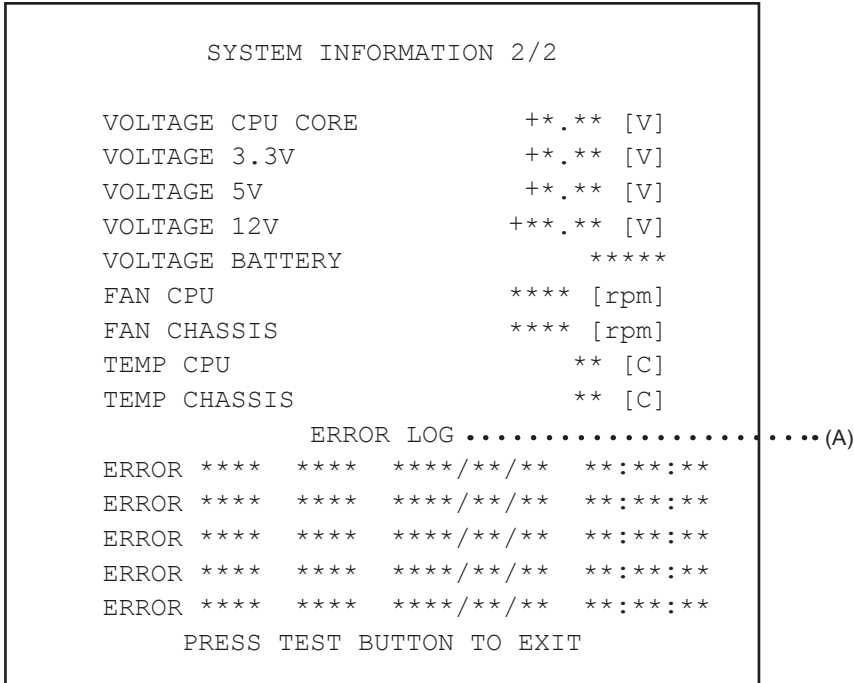
The following information is displayed on this screen.

VOLTAGE CPU CORE	CPU core voltage
VOLTAGE 3.3V	3.3 V voltage
VOLTAGE 5V	5 V voltage
VOLTAGE 12V	12 V voltage
VOLTAGE BATTERY	Backup battery status
FAN CPU	CPU fan RPM
FAN CHASSIS	Case fan RPM
TEMP CPU	CPU temperature
TEMP CHASSIS	Case temperature

Press the TEST Button to return to the SYSTEM TEST MODE screen.

(A) History list of the error occurred
   Display the previous 5 errors.
   It may not be displayed depending on the version of the installed system program.
   It may not also be displayed depending on the error.
   These error logs can not be cleared.

   - Error number
   - Game ID (The error which has been occurred except the game program will be displayed "---".
   - Date and time of the error occurred

9-2-2 STORAGE INFORMATION

The STORAGE INFORMATION screen displays information on the game stored in the program installer device.
This screen is also used when uninstalling the game stored within the program installer device.

Until preparations to launch the game are complete, a now checking screen will be displayed and uninstall cannot be performed.
If the program installer device does not contain any game data, "GAME PROGRAM NOT READY" screen will be displayed and uninstall cannot be performed.

NOTE: If an uninstall is performed, an install will then have to performed before the game board can be used again. Do not needless perform an uninstall.

■ STORAGE INFORMATION Screen

```
                    STORAGE INFORMATION


             *********** · · · · · · · · · · · · · · · · · · · · · · (A)
     0: *** Ver.*.** ****/**/** **:**:**        · · · · · · · · · · · · · (B)
     1: *** Ver.*.** ****/**/** **:**:**




     UNINSTALL · · · · · · · · · · · · · · · · · · · · · · · · · · · · · (C)
  -> EXIT

          SELECT WITH SERVICE BUTTON
            AND PRESS TEST BUTTON
```
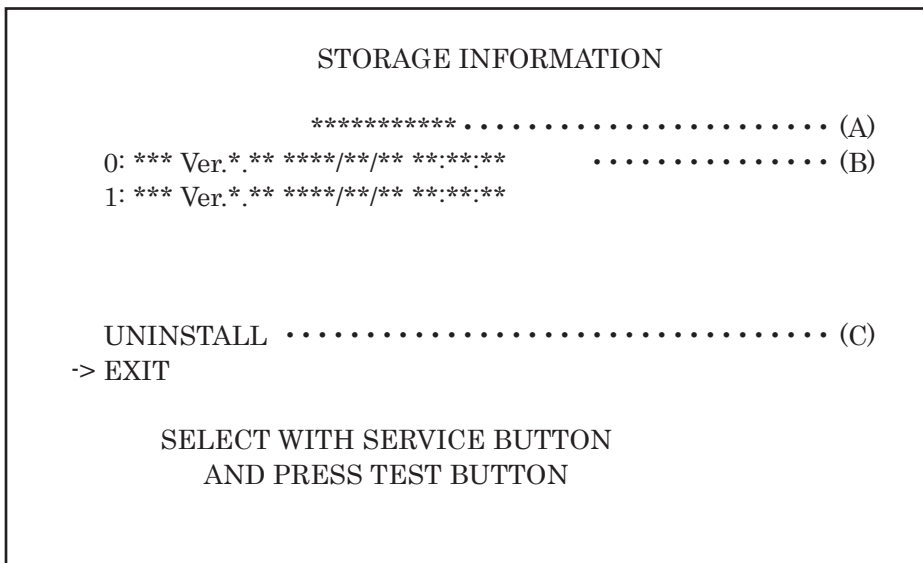
The following information is displayed on this screen.

(A) GAME TITLE

(B) INSTALLED GAME PROGRAM LIST
  - GAME ID
  - VERSION
  - DATE & TIME OF RELEASE

(C) UNINSTALL

When preparations to launch the game are complete, it is possible to uninstall the game stored in the program installer device. Select UNINSTALL and then select "YES" to uninstall all game programs stored in the program installer device. Performing this operation will also mean that GAME TEST MODE will disappear from the SYSTEM TEST MODE screen.

Move the cursor to EXIT and press the TEST Button to return to the SYSTEM TEST MODE screen.

9-2-3　　JVS TEST

The JVS TEST screen displays information on the connected JVS I/O boards.

Select INPUT TEST to display input data for the currently displayed JVS I/O board.

Select NODE to display information on the next NODE.

If no JVS I/O boards are connected, the message "NO JVS NODE" will be displayed.

■ **JVS TEST Screen**

```
                              JVS TEST
        INPUT TEST
        NODE                1/*
   -> EXIT
        NAME                SEGA ENTERPRISES,LTD.:
                            I/O BD JVS :837-13551:
                            Ver1.00
        CMD VER             1.1
        JVS VER             2.0
        COM VER             1.0
        SWITCH              2 PLAYER(S) 13 BIT[S]
        COIN                2 SLOT(S)
        ANALOG              8 CH
        ROTARY              0 CH
        KEYCODE             0
        SCREEN              X:0 Y:0 CH:0
        GENERAL IN          0 BIT(S)
        CARD                0 SLOT(S)
        HOPPER OUT          0 CH
        DRIVER OUT          6 CH
        ANALOG OUT          0 CH
        CHARACTER           CHARA:0 LINE:0
        BACKUP              0
                      SELECT WITH SERVICE BUTTON
                       AND PRESS TEST BUTTON
```

NOTE: The screen display will vary depending on the I/O board that is connected.

The figure above is one example.

The following information is displayed on this screen.

NODE	The currently displayed JVS I/O board number and the total number of connected JVS I/O boards
NAME	Name of the connected I/O board, etc.
CMD VER	Command format version
JVS VER	JVS standard version
COM VER	Communication version
SWITCH	Number of players and number of 1P switches
COIN	Number of coin slots
ANALOG	Number of analog channels
ROTARY	Number of rotary encoders
KEYCODE	Keycode input active/inactive
SCREEN	Screen position input (X axis, Y axis, number of channels)
GENERAL IN	Number of standard switches
CARD	Number of card slots
HOPPER OUT	Number of hoppers
DRIVER OUT	Number of standard output drivers
ANALOG OUT	Number of analog output channels
CHARACTER	Number of characters/lines displayed
BACKUP	Backup present/absent

Move the cursor to EXIT and press the TEST Button to return to the SYSTEM TEST MODE screen.

JVS INPUT TEST

Use the JVS INPUT TEST to test the JVS input.
The hexadecimal input information from the JVS I/O board will be displayed in real time.

■ **JVS INPUT TEST Screen**
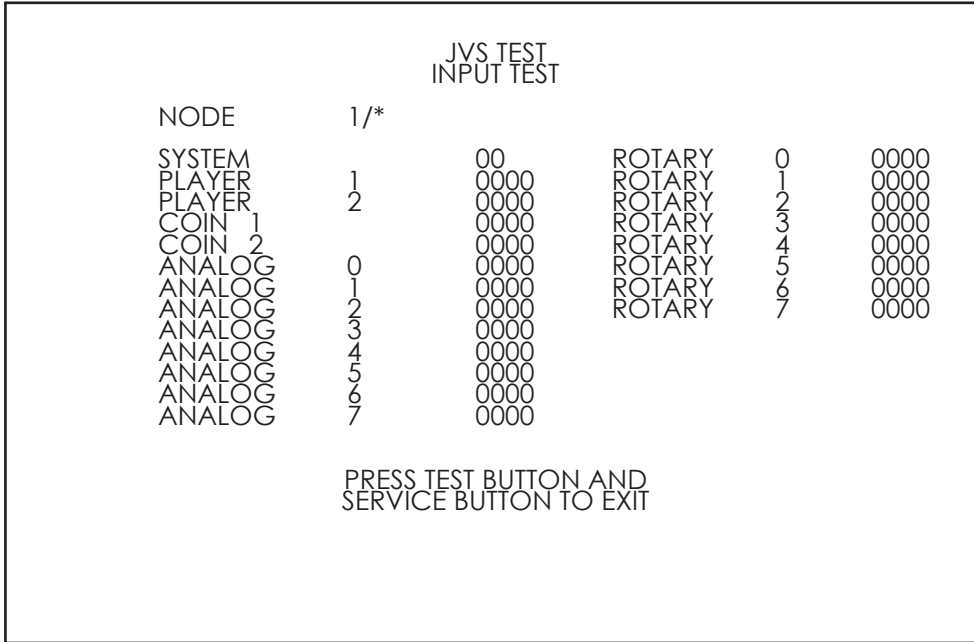
```
                          JVS TEST
                         INPUT TEST

    NODE          1/*

    SYSTEM                  00        ROTARY    0      0000
    PLAYER        1         0000      ROTARY    1      0000
    PLAYER        2         0000      ROTARY    2      0000
    COIN   1                0000      ROTARY    3      0000
    COIN   2                0000      ROTARY    4      0000
    ANALOG        0         0000      ROTARY    5      0000
    ANALOG        1         0000      ROTARY    6      0000
    ANALOG        2         0000      ROTARY    7      0000
    ANALOG        3         0000
    ANALOG        4         0000
    ANALOG        5         0000
    ANALOG        6         0000
    ANALOG        7         0000

              PRESS TEST BUTTON AND
              SERVICE BUTTON TO EXIT
```

NOTE: The screen display will vary depending on the I/O board that is connected.
The figure above is one example.

The following information is displayed on this screen.

SYSTEM	System switch input data
PLAYER	Player number and player switch input data
COIN	Slot number and coin input data
ANALOG	Channel number and analog input data
ROTARY	Rotary number and rotary input data

Press the SERVICE and TEST Buttons simultaneously to return to the JVS TEST screen.

9-2-4　　　MONITOR TEST

Use MONITOR TEST to check the output of the monitor.
Enter MONITOR TEST and the MONITOR TEST 1/2 Screen will be displayed.

■ MONITOR TEST Screen 1/2
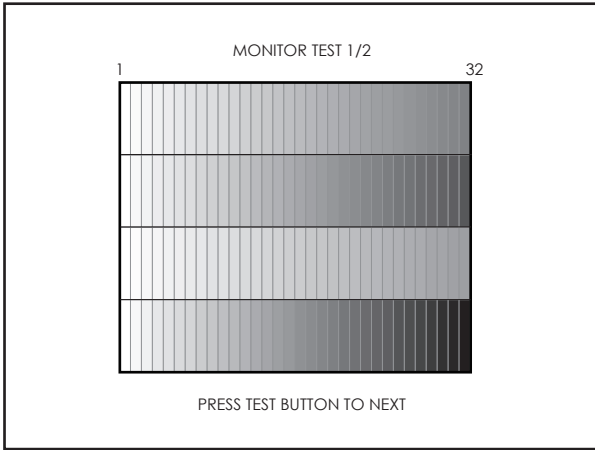
Press TEST Button and the screen will change to the MONITOR TEST 2/2 Screen.

■ MONITOR TEST Screen 2/2
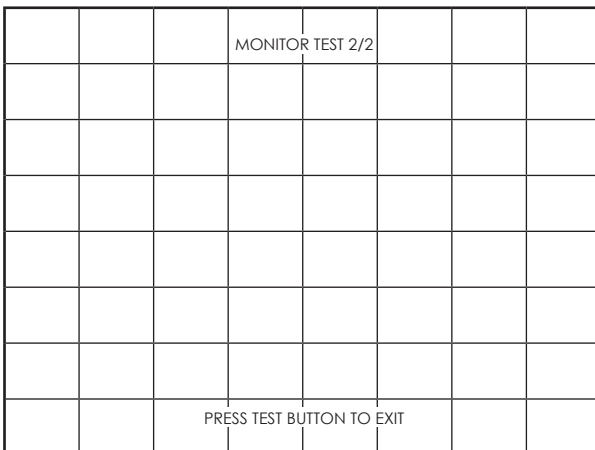
Press the TEST Button to return to the SYSTEM TEST MODE screen.

9-2-5   SPEAKER TEST

Use SPEAKER TEST to check the output of each speaker by having them each emit a test sound.

Select each speaker with the cursor and press the TEST Button to turn that speaker ON or OFF.
When set to ON a test sound will be emitted from that speaker.
It is possible to set multiple speakers to emit the test sound at the same time.
Depending on the cabinet used, some items will be displayed but no sound will be emitted.

■ **SPEAKER TEST Screen**

```
                          SPEAKER TEST


        LEFT SPEAKER          OFF
        RIGHT SPEAKER         OFF
        REAR LEFT SPEAKER     OFF
        REAR RIGHT SPEAKER    OFF
        CENTER SPEAKER        OFF
        WOOFER SPEAKER        OFF

    -> EXIT



                  SELECT WITH SERVICE BUTTON
                   AND PRESS TEST BUTTON
```

Move the cursor to EXIT and press the TEST Button to return to the SYSTEM TEST MODE screen.

9-2-6   COIN ASSIGNMENTS

Use COIN ASSIGNMENTS to alter the credit settings.

The game will award players the number of credits determined here.

Settings will only be saved if they have been changed.

■ **COIN ASSIGNMENTS Screen**

```
                    COIN ASSIGNMENTS

        COIN CHUTE TYPE  COMMON •••••••••••••••••••• (A)
        SERVICE TYPE      COMMON •••••••••••••••••••• (B)
        COIN CHUTE #1 COIN TO CREDIT RATE ••••••••••••• (C-1)
          1 COIN(S) COUNT AS 1 CREDIT(S)
        COIN CHUTE #2 COIN TO CREDIT RATE ••••••••••••• (C-2)
          1 COIN(S) COUNT AS 1 CREDIT(S)
        DETAIL SETTING •••••••••••••••••••••••••••••• (D)
        GAME COST SETTING •••••••••••••••••••••••••• (H)
     -> EXIT •••••••••••••••••••••••••••••••••••••• (I)


              SELECT WITH SERVICE BUTTON
              AND PRESS TEST BUTTON
```
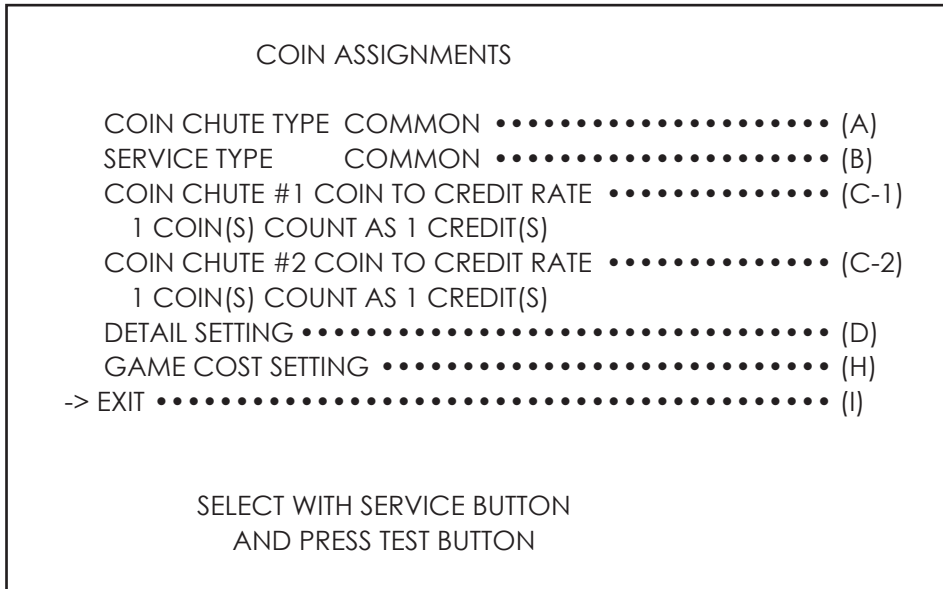
[COIN CHUTE TYPE: COMMON]

The following information is displayed on this screen.

(A) COIN CHUTE TYPE

COMMON	Allow all credits to be used by all players.
INDIVIDUAL	Treat each player's credits individually.

(B) SERVICE TYPE (Service Button Type)

COMMON	When the COIN CHUTE TYPE is set to COMMON, the number of credits available to all players will increase by 1.
	When the COIN CHUTE TYPE is set to INDIVIDUAL, each player's credits will increase by 1.
INDIVIDUAL	When the COIN CHUTE TYPE is set to COMMON, the number of credits available to all players will increase by 1.
	When the COIN CHUTE TYPE is set to INDIVIDUAL, the player corresponding to the SERVICE Button's credits will increase by 1.

(C-1) COIN CHUTE #1 COIN TO CREDIT RATE (Coin and credit conversion rate 1)

1 COIN(S) COUNT AS 1 CREDIT(S)	1 coin counts as 1 credit
2 COIN(S) COUNT AS 1 CREDIT(S)	2 coins count as 1 credit
3 COIN(S) COUNT AS 1 CREDIT(S)	3 coins count as 1 credit
4 COIN(S) COUNT AS 1 CREDIT(S)	4 coins count as 1 credit
5 COIN(S) COUNT AS 1 CREDIT(S)	5 coins count as 1 credit
1 COIN(S) COUNT AS 2 CREDIT(S)	1 coin counts as 2 credits
1 COIN(S) COUNT AS 3 CREDIT(S)	1 coin counts as 3 credits
1 COIN(S) COUNT AS 4 CREDIT(S)	1 coin counts as 4 credits
1 COIN(S) COUNT AS 5 CREDIT(S)	1 coin counts as 5 credits
FREE PLAY	Free play (no coins required)
DETAIL SETTING	More detailed settings

(C-2) COIN CHUTE #2 COIN TO CREDIT RATE (Coin and credit conversion rate 2)

When (A) COIN CHUTE TYPE is set to "COMMON," the detail settings for this item are restricted to the settings listed in (C-1).

(D) DETAIL SETTING

The COIN ASSIGNMENTS DETAIL SETTING screen allows more detailed settings that cannot be performed on (C) the COIN TO CREDIT RATE screen to be performed.

■ **DETAIL SETTING Screen**

```
                  COIN ASSIGNMENTS
                   DETAIL SETTING

      COIN CHUTE #1 MULTIPLIER ••••••••••••••••••••••••• E-1
       1 COIN COUNT AS 1 COIN (S)
      COIN CHUTE #2 MULTIPLIER ••••••••••••••••••••••••• E-2
       1 COIN COUNT AS 1 COIN (S)
      BONUS ADDER        NO BONUS ADDER ••••••••••••• F

       COIN TO CREDIT 1 COIN (S) 1 CREDIT ••••••••••••••• G
    -> EXIT

       COIN CHUTE #1 OPERATION
    COIN   1    2    3    4    5    6    7    8    9
    CREDIT 1    2    3    4    5    6    7    8    9


       COIN CHUTE #2 OPERATION
    COIN   1    2    3    4    5    6    7    8    9
    CREDIT 1    2    3    4    5    6    7    8    9

           SELECT WITH SERVICE BUTTON
            AND PRESS TEST BUTTON
```

[COIN CHUTE TYPE: COMMON]

The following information is displayed on this screen.

(E-1) COIN CHUTE #1 MULTIPLIER

Coin conversion rate for #1. (How many coins 1 inserted coin counts for)

(E-2) COIN CHUTE #2 MULTIPLIER

Coin conversion rate for #2. (How many coins 1 inserted coin counts for)

NOTE: When (A) COIN CHUTE TYPE is set to "COMMON," COIN CHUTE #1 and COIN CHUTE #2 can be set separately.

(F) BONUS ADDER

Use of a bonus coin.

NO BONUS ADDER	No bonus coin given
2 COINS GIVE 1 EXTRA COIN	2 coins inserted successively award 1 bonus coin
3 COINS GIVE 1 EXTRA COIN	3 coins inserted successively award 1 bonus coin
4 COINS GIVE 1 EXTRA COIN	4 coins inserted successively award 1 bonus coin
5 COINS GIVE 1 EXTRA COIN	5 coins inserted successively award 1 bonus coin
6 COINS GIVE 1 EXTRA COIN	6 coins inserted successively award 1 bonus coin
7 COINS GIVE 1 EXTRA COIN	7 coins inserted successively award 1 bonus coin
8 COINS GIVE 1 EXTRA COIN	8 coins inserted successively award 1 bonus coin
9 COINS GIVE 1 EXTRA COIN	9 coins inserted successively award 1 bonus coin

(G) COIN TO CREDIT

The number of coins to number of credits conversion rate.

Move the cursor to EXIT and press the TEST Button to return to the COIN ASSIGNMENTS screen.

(H) GAME COST SETTING

Use the COIN ASSIGNMENTS GAME COST SETTING screen to set the cost (number of required credits) that the game program will use to determine if there are enough credits to play the game.

A total of 8 game costs can be defined. The game cost is defined by the BOOT ID, and when the second boot recognizes the game, the game cost defined by the BOOT ID will be displayed.

If the game is not recognized, the default game cost will be displayed.

■ **GAME COST SETTING Screen**

```
            COIN ASSIGNMENTS
            GAME COST SETTING


    * credit (s) to start
    * credit (s) to continue



  -> EXIT


        SELECT WITH SERVICE BUTTON
         AND PRESS TEST BUTTON
```
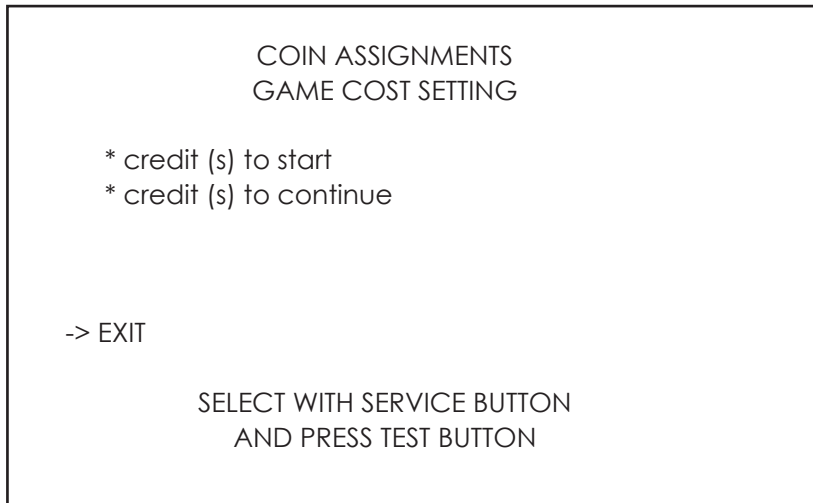
NOTE: The screen display will vary depending on the game that is installed. The figure above is one example.

Move the cursor to EXIT and press the TEST Button to return to the COIN ASSIGNMENTS screen.

(I) EXIT

Move the cursor to EXIT and press the TEST Button to return to the SYSTEM TEST MODE screen.

9-2-7   CLOCK SETTINGS

Use CLOCK SETTING to set the date and time.

Use the SERVICE Button to move the cursor to the category that you wish to change and press the TEST Button to increase that value. Holding the TEST Button down will make the value continuously increase.

■ **CLOCK SETTING Screen**

```
                    CLOCK SETTING

      CLOCK
       20**/ */ * (THU) 12:00:00 • • • • • • • • • • • • • • • • • • • • • • • • A


      TIMEZONE                  UTC+09:00 • • • • • • • • • • • • B
      DAYLIGHT SAVING TIME(DST)  DISABLE • • • • • • • • • • • • • C



    -> EXIT

               SELECT WITH SERVICE BUTTON
                AND PRESS TEST BUTTON


```
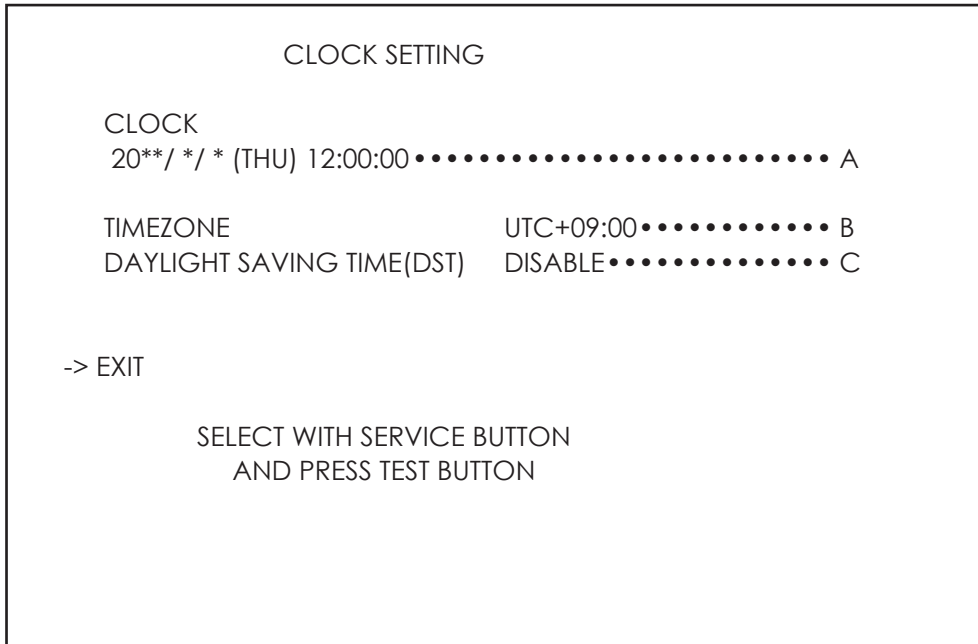
[DAYLIGHT SAVING TIME (DST): DISABLE]

(A) CLOCK

Displays the current time and date.

The time and date can be changed by selecting CLOCK.

Use the SERVICE Button to move the underline to the item you want to change and press the TEST Button to change the value.

If you select EXIT and press the TEST Button after changing the setting, you will be asked whether you really want to make the changes.

Select "YES" to change the value or "NO" to leave it as it is, and press the TEST Button.

Games connected to the network will adjust the time automatically.

Exercise caution as the game may become unplayable if the time is changed.

(B) TIMEZONE

Displays the time zone setting. If the machine is not available for ALL.Net, it is not displayed.

```
                    CLOCK SETTING

        CLOCK
         20**/ */ *(TUE) 12:00:00

        TIMEZONE                   UTC+09:00
        DAYLIGHT SAVING TIME(DST) •••••••••••••••••••• ENABLE

         DST START
         MAR/2nd/SUN 02:00:00
         DST END
         NOV/1st/SUN 02:00:00


      -> EXIT

                 SELECT WITH SERVICE BUTTON
                  AND PRESS TEST BUTTON
```

[DAYLIGHT SAVING TIME (DST): ENABLE]

(C) DAYLIGHT SAVING TIME (DST)

Displays the daylight saving time setting.

If set to ENABLE, you can specify when to start and end daylight saving time.

Move the cursor to EXIT and press the TEST Button to return to the SYSTEM TEST MODE screen.

9-2-8　　　NETWORK SETTINGS

Use NETWORK SETTING to determine network settings or to test the network.
There is no need to alter these settings for a game that does not use a network.

■ **NETWORK SETTING (Setting Menu) Screen**

```
                         NETWORK SETTING

         MAIN NETWORK
         NETWORK TEST
      -> EXIT

                    SELECT WITH SERVICE BUTTON
                    AND PRESS TEST BUTTON
```
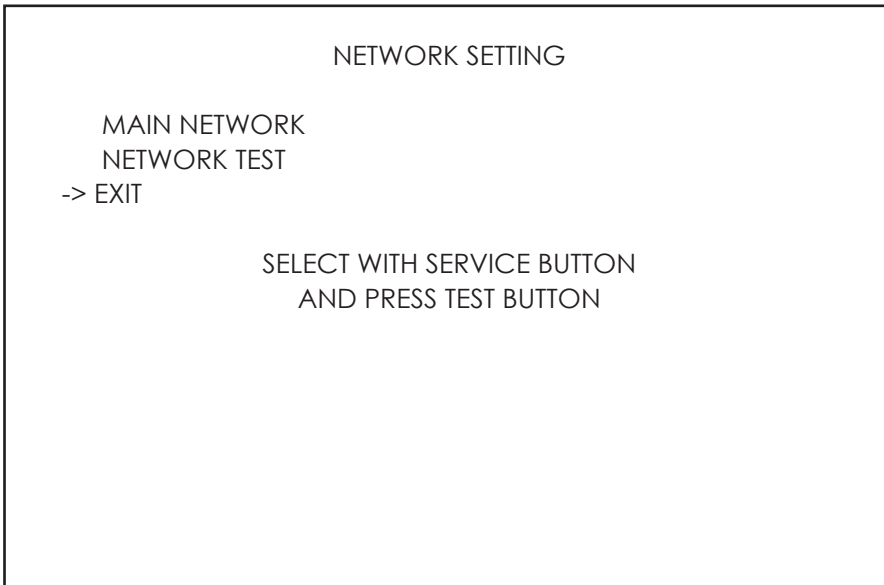
The following information is displayed on this screen.

MAIN NETWORK	Performs a network setting.
NETWORK TEST	Performs a network test.

Move the cursor to EXIT and press the TEST Button to return to the SYSTEM TEST MODE screen.

When using a hub for connecting a number of cabinets in a network, please change the IP addresses accordingly.

IP (192.168.88.XX)　　　　　XX indicating the cabinet number. i.e. 192.168.88.**01** for
　　　　　　　　　　cabinet 1. 192.168.88.**02** for cabinet 2 and so on up to a
　　　　　total of 8 cabinets.

(STOP) **IMPORTANT**

- **Do not connect any other device into the same hub as the linked cabinet. Doing so will cause networking problems between cabinets**

MAIN NETWORK

Select MAIN NETWORK on the NETWORK SETTING (Setting Menu) and the following screen will be displayed.

■ **NETWORK SETTING (Network Setting) Screen**

```
                        NETWORK SETTING

        MAC ADDRESS    **-**-**-**-**-** •••••••••••••••••••• A
        DHCP           ********  ••••••••••••••••••••••••• B
        IP ADDRESS ••••••••••••••••••••••••••••••••••••••• C
          *** *** *** ***
             .   .   .
        SUBNET MASK ••••••••••••••••••••••••••••••••••••• D
          *** *** *** ***
             .   .   .
        GATEWAY •••••••••••••••••••••••••••••••••••••••••• E
          *** *** *** ***
             .   .   .
        PRIMARY DNS ••••••••••••••••••••••••••••••••••••• F
          *** *** *** ***
             .   .   .
        SECONDARY DNS •••••••••••••••••••••••••••••••• G
          *** *** *** ***
             .   .   .
       -> EXIT

                  SELECT WITH SERVICE BUTTON
                  AND PRESS TEST BUTTON
```

The following information is displayed on this screen.

(A) MAC ADDRESS
> The individual ID number assigned to each device using the Ethernet.

(B) DHCP
> Set automatic acquisition of network settings.
> ENABLE: Acquire network settings automatically. (use when connected to a router)
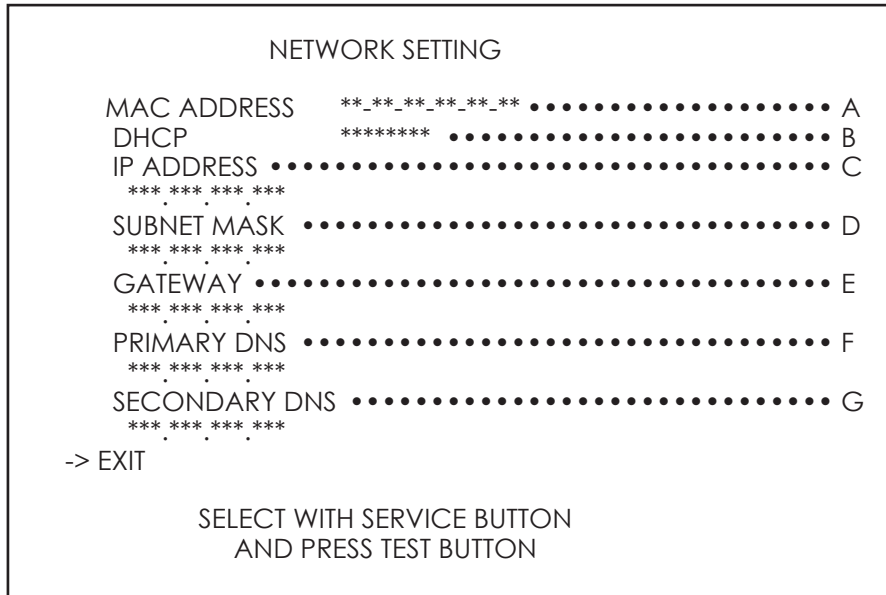> DISABLE: Input network settings manually. (use when connected to a Hub and/or fixed IP address)

(C) IP ADDRESS
> A setting required for the network.
> After setting the numbers, select SET and press the TEST Button to save the setting.
> When DHCP is set to ENABLE, this item cannot be selected.

(D) SUBNET MASK
> A setting required for the network.
> After setting the numbers, select SET and press the TEST Button to save the setting.
> When DHCP is set to ENABLE, this item cannot be selected.

(E) GATEWAY
> A setting required for the network. See the manual supplied with each game software for the correct setting.
> After setting the numbers, select SET and press the TEST Button to save the setting.
> When DHCP is set to ENABLE, this item cannot be selected.

(F) PRIMARY DNS
> A setting required for the network. See the manual supplied with each game software for the correct setting.
> After setting the numbers, select SET and press the TEST Button to save the setting.
> When DHCP is set to ENABLE, this item cannot be selected.

(G) SECONDARY DNS
> A setting required for the network. See the manual supplied with each game software for the correct setting.
> After setting the numbers, select SET and press the TEST Button to save the setting.
> When DHCP is set to ENABLE, this item cannot be selected.

Move the cursor to EXIT and press the TEST Button to return to the NETWORK SETTING (Setting Menu) screen.

NETWORK TEST

Check the network connection.
The test will begin as soon as this screen is displayed. The machine cannot be operated until the test is finished.

■ **NETWORK TEST Screen**

```
                    NETWORK TEST

         DHCP ------------ ****
         LOOPBACK -------- ****
         LINKUP ---------- ****
         GATEWAY --------- ****
         ROUTER ---------- ****
         HOPS                    *
         SERVER ---------- ****

              PRESS TEST BUTTON TO EXIT
```
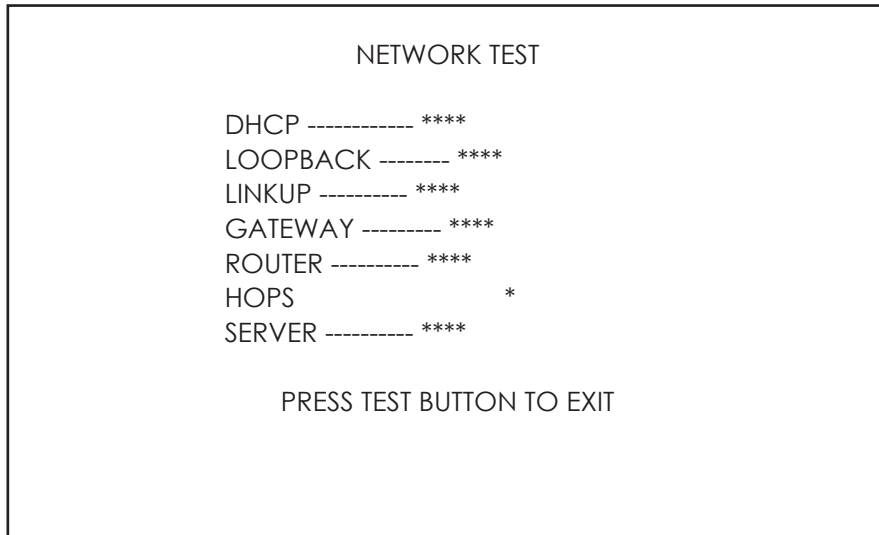
The following information is displayed on this screen.

DHCP	Status of communication settings acquisition when DHCP is set to ENABLE.
LOOPBACK	RINGWIDE network function operation status.
LINKUP	LAN cable connection status.
GATEWAY	Status of connection with title router, etc.
ROUTER	Status of connection with ALL.Net router.
HOPS	Number of router connections to ALL.Net router.
SERVER	Status of connection with ALL.Net server.

The status of determining items is as listed in the table below:

CHECK	Indicates that the item is currently being checked.
GOOD	Indicates that the item is functioning normally.
BAD	Indicates that the item is not functioning normally. (Damaged, incorrect settings, etc.)
N/A	Indicates that the item has not been checked. (Prerequisites have not been met, etc.)

Press the TEST Button to return to the NETWORK SETTING (Setting Menu) screen.

9-12 EXIT

Exit the Test Mode.

9-3 GAME TEST MODE

Press the TEST Button, and the SYSTEM TEST MODE screen will be displayed. (See also RINGEDGE service manual.)
Select GAME TEST MODE from the SYSTEM TEST MODE screen to display the Game Test Menu screen.

9-3-1 GAME TEST MENU

```
              GAME TEST MENU

              BOOKKEEPING
              INPUT TEST
              OUTPUT TEST
              GAME ASSIGNMENTS
              BACKUP DATA CLEAR

          >   EXIT




          SELECT WITH SERVICE BUTTON
            AND PRESS TEST BUTTON
```
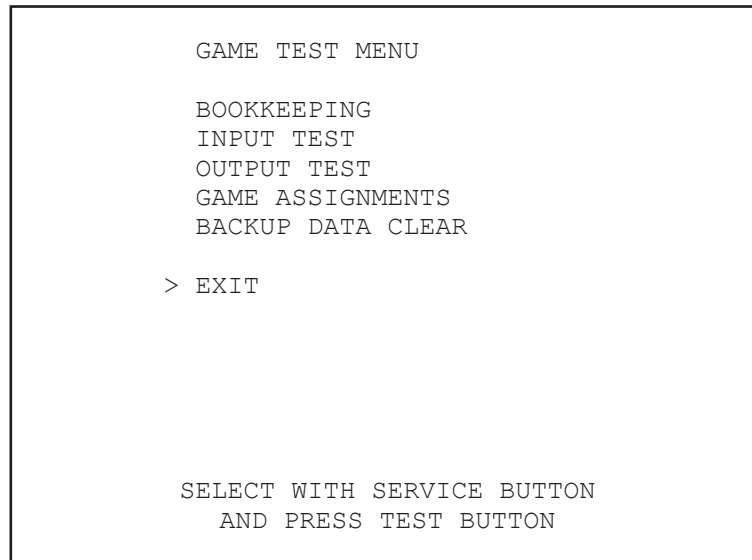
GAME TEST MENU Screen

Controls
- Use the SERVICE Button to move the cursor to the desired test item.
- Press the TEST Button to enter the selected item.
- Select EXIT and press the TEST Button to end the Game Test Mode and return to the System Test Menu Screen.
Select EXIT and press the TEST Button again to return to the Game Advertisement Screen.

Menu Items

BOOKKEEPING	Displays operational data.
INPUT TEST	Tests input devices.
OUTPUT TEST	Tests output devices.
	NOTE: Some types do not have output devices.
GAME ASSIGNMENTS	Adjusts game settings.
BACKUP DATA CLEAR	Erases all data within BOOKKEEPING, as well as current credits, ranking data and Mini Game best scores.

9-3-2   BOOKKEEPING

Displays all operation data up until the present.

```
                    BOOKKEEPING 1/3

      COIN 1                      0
      COIN 2                      0
      COIN 3                      0
      COIN 4                      0
      TOTAL COINS                 0

      COIN CREDITS                0
      SERVICE CREDITS             0
      TOTAL CREDITS               0




      PRESS TEST BUTTON TO CONTINUE
```

BOOKKEEPING Screen (1/3)

Controls
Press the TEST Button to enter the selected item.

Menu Items

COIN 1	The number of coins counted through each coin slot.
COIN 2	The number of coins counted through each coin slot.
COIN 3	The number of coins counted through each coin slot.
COIN 4	The number of coins counted through each coin slot.
TOTAL COINS	The total number of coins inserted (COIN 1 - COIN 4).
COIN CREDITS	The number of credits awarded by coins inserted.
SERVICE CREDITS	The number of credits awarded by use of the SERVICE Button.
TOTAL CREDITS	The total number of credits (COIN CREDIT + SERVICE CREDIT).

```
          BOOKKEEPING 2/3

NUMBER OF GAMES             0

TOTAL  TIME           00D 00H 00M 00S
TOTAL  PLAY TIME      00H 00M 00S

AVERAGE  PLAY TIME    00H 00M 00S
LONGEST  PLAY TIME    00H 00M 00S
SHORTEST PLAY TIME    00H 00M 00S




      PRESS TEST BUTTON TO CONTINUE
```
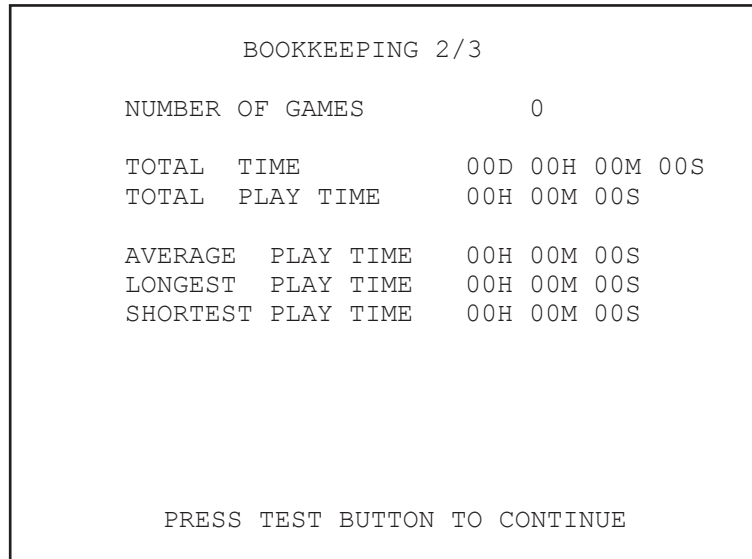
BOOKKEEPING Screen (2/3)

Controls

Pressing the TEST Button will bring up the following screen.

Menu Items

NUMBER OF GAMES	The total number of games played.
TOTAL TIME	The total time that the power supply has been ON. The day display (shown as --D) will not be displayed unless there has been more than 24 hours of play.
TOTAL PLAY TIME	The total play time. (Not included in the Test Mode.)
AVERAGE PLAY TIME	The average play time.
LONGEST PLAY TIME	The longest play time.
SHORTEST PLAY TIME	The shortest play time.

```
         BOOKKEEPING 3/3

   PLAY TIME HISTOGRAM

   0M00S - 0M59S          0
   1M00S - 1M59S          0
   2M00S - 2M59S          0
   3M00S - 3M59S          0
   4M00S - 4M59S          0
   5M00S - 5M59S          0
   6M00S - 6M59S          0
   7M00S - 7M59S          0
   8M00S - 8M59S          0
   9M00S - 9M59S          0
   OVER 10M00S            0

   PRESS TEST BUTTON TO EXIT
```

BOOKKEEPING Screen (3/3)

Controls
Press the TEST Button to return to the Game Test Menu screen.

Menu Items

PLAY TIME HISTOGRAM	Shows a breakdown of play times and their corresponding counts.

9-3-3   INPUT TEST

Tests input devices.

```
          INPUT TEST

     PLAYER    1P     2P     3P     4P
     UP        OFF    OFF    OFF    OFF
     DOWN      OFF    OFF    OFF    OFF
     RIGHT     OFF    OFF    OFF    OFF
     LEFT      OFF    OFF    OFF    OFF
     SHOT1     OFF    OFF    OFF    OFF
     SHOT2     OFF    OFF    OFF    OFF
     SHOT3     OFF    OFF    OFF    OFF
     START     OFF    OFF    OFF    OFF

     SERVICE   OFF           OFF
     TEST      OFF           OFF


     PRESS TEST AND SERVICE BUTTON TO EXIT
```
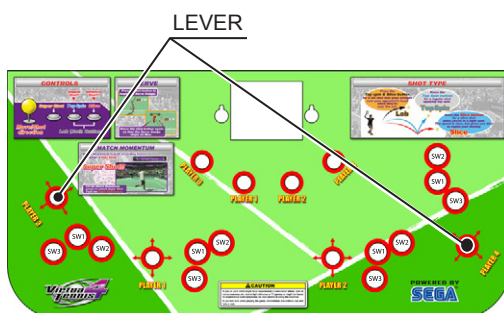
INPUT TEST Screen

If the number of connected I/O boards is 1, the 1P and 2P displays will flash. If the number is 2, all displays from 1P to 4P will flash.

Controls
If these each change to ON when the button is pressed, then they are functioning normally.

Menu Items

UP	Normal if ON when Lever is pressed up, and OFF when released.
DOWN	Normal if ON when Lever is pressed down, and OFF when released.
RIGHT	Normal if ON when Lever is pressed right, and OFF when released.
LEFT	Normal if ON when Lever is pressed left, and OFF when released.
SHOT1	Normal if ON when Top Spin (T) button is pressed, and OFF when released.
SHOT2	Normal if ON when Slice (S) button is pressed, and OFF when released.
SHOT3	Normal if ON when Super Shot (SS) button is pressed, and OFF when released.
START	Normal if ON when START button is pressed, and OFF when released.
SERVICE	Normal if ON when SERVICE Button is pressed, and OFF when released.
TEST	Normal if ON when TEST Button is pressed, and OFF when released.

- SHOT1 (SW1): Top Spin (T) button
- SHOT2 (SW2): Slice (S) button
- SHOT3 (SW3): Super Shot (SS) button

9-3-4　　OUTPUT TEST

Tests output devices.

```
            OUTPUT TEST

    LED 1       OFF
    LED 2       OFF




  > EXIT




      SELECT WITH SERVICE BUTTON
       AND PRESS TEST BUTTON
```

OUTPUT TEST Screen

Controls

- Use the SERVICE Button to move the cursor to the desired test item.

- Press the TEST Button to enter the selected item.

- Select EXIT and press the TEST Button to end the Game Test Mode and return to the Game Test Menu screen.

Menu Items

LED 1	Flashes when ON, turns off when OFF.
LED 2	Flashes when ON, turns off when OFF.

9-3-5　　　　GAME ASSIGNMENTS

Configure the game settings.

```
              GAME ASSIGNMENTS

     LANGUAGE              ENG
     ADVERTISE SOUND       ON
     SHORT MODE            OFF
     SPEED INDICATOR       km/h
     DEUCE                 OFF




  > EXIT




     SELECT WITH SERVICE BUTTON
       AND PRESS TEST BUTTON
```
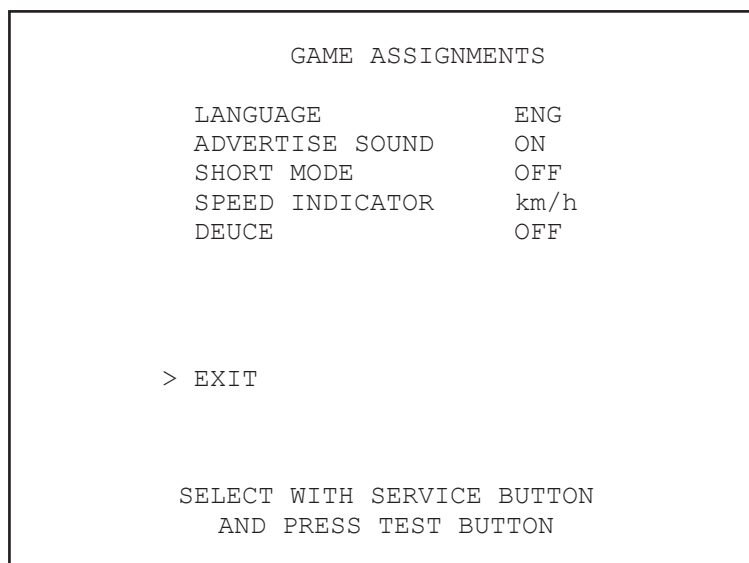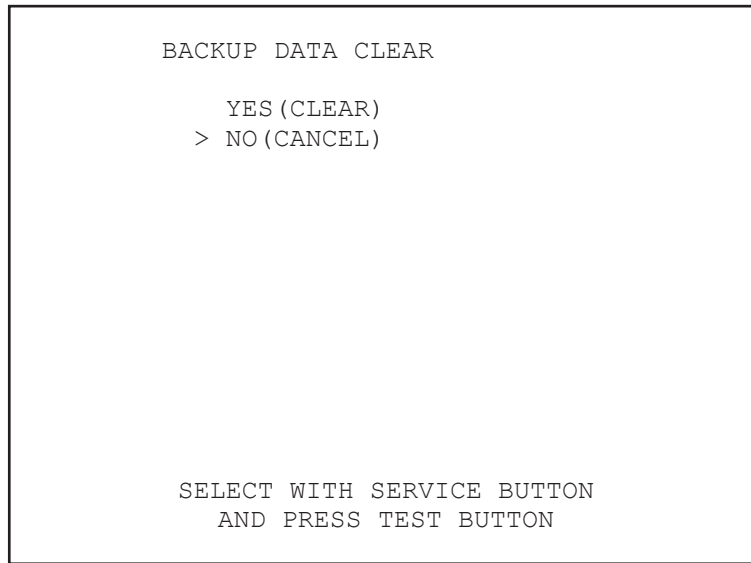
GAME ASSIGNMENTS Screem

Controls

- Use the SERVICE Button to move the cursor to the desired test item.
- Press the TEST Button to enter the selected item.
- Select EXIT and press the TEST Button to end the Game Test Mode and return to the Game Test Menu screen.

Menu Items

LANGUAGE	In-game language can be set to ENG (English), ITA (Italian), FRA (French), GER (German) or SPA (Spanish) here. Default setting is ENG.
ADVERTISE SOUND	Turns Advertise Mode sound ON/OFF. Default setting is ON. Turn ON to enable sound and OFF to disable.
SHORT MODE	SHORT MODE can be enabled here. If enabled, only Singles Mode and Doubles Mode will be available for selection, match time will be shortened, and consecutive matches will be disabled. Default setting is OFF.
SPEED INDICATOR	Select the units in which serve speed is displayed at the bottom right of the screen. (The default setting is kw/h.) (km/h: Display in km/h. mh: Display in mph.) The display on the in-game electric scoreboard will not change.
DEUCE	DEUCE amount can be set here. If set to "2TIMES" or "4TIMES," the maximum DEUCE numbers will be 2 and 4 respectively, and the next time a DEUCE is reached the player who scored that point will win. Default setting is OFF.

9-3-6   BACKUP DATA CLEAR

Erases all data within BOOKKEEPING, as well as current credits, ranking data and Mini Game best scores.

```
                     BACKUP DATA CLEAR

                        YES(CLEAR)
                      > NO(CANCEL)














                  SELECT WITH SERVICE BUTTON
                    AND PRESS TEST BUTTON
```

BACKUP DATA CLEAR Screen

Controls
- Use the SERVICE Button to move the cursor to the desired test item.
- Press the TEST Button to enter the selected item.

Menu Items

YES	When the data has been cleared, the message "COMPLETED" will be displayed. Press the TEST Button again to return to the Game Test Menu screen.
NO	Return to the Game Test Menu screen without clearing the data.

CONTROLLER UNIT(S)

> ⚠️**WARNING**
>
> • When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
>
> • Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.
>
> • Exercise due caution in performing soldering work. If soldering iron is handled carelessly, there could be fires or burns.
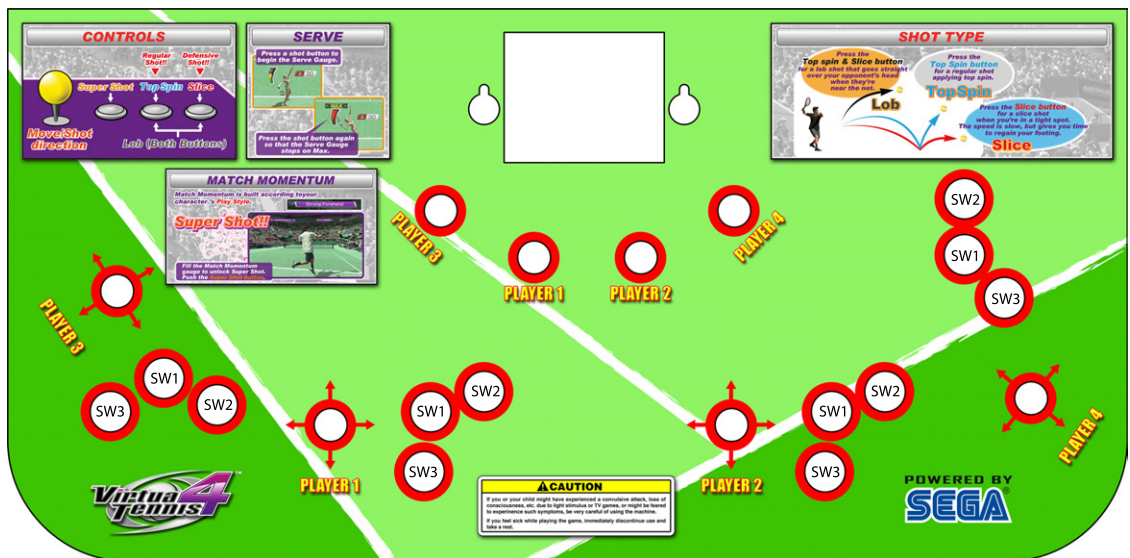

●SW1:Top Spin (T) button
●SW2:Slice (S) button
●SW3:Super Shot (SS) button
●LEVER: 8 ways

10-1 REMOVING THE CONTROL PANEL

REPLACEMENT PROCEDURE

This procedure requires the following tools: M4 socket or nut wrench, a pair of wire cutters to cut through any cable ties.

1 Lower the Service Door beneath the Control Panel Assy.

2 Remove the (11) M4 serated nuts which secure the panel to the base.

3 Disconnect all connectors and cut any cable ties which may prevent removing the Control Panel.

4 Once all has been disconnected - carefully lift the panel whilst taking care not to damage any harnesses.

Service door and key

M4 fixing points (11)
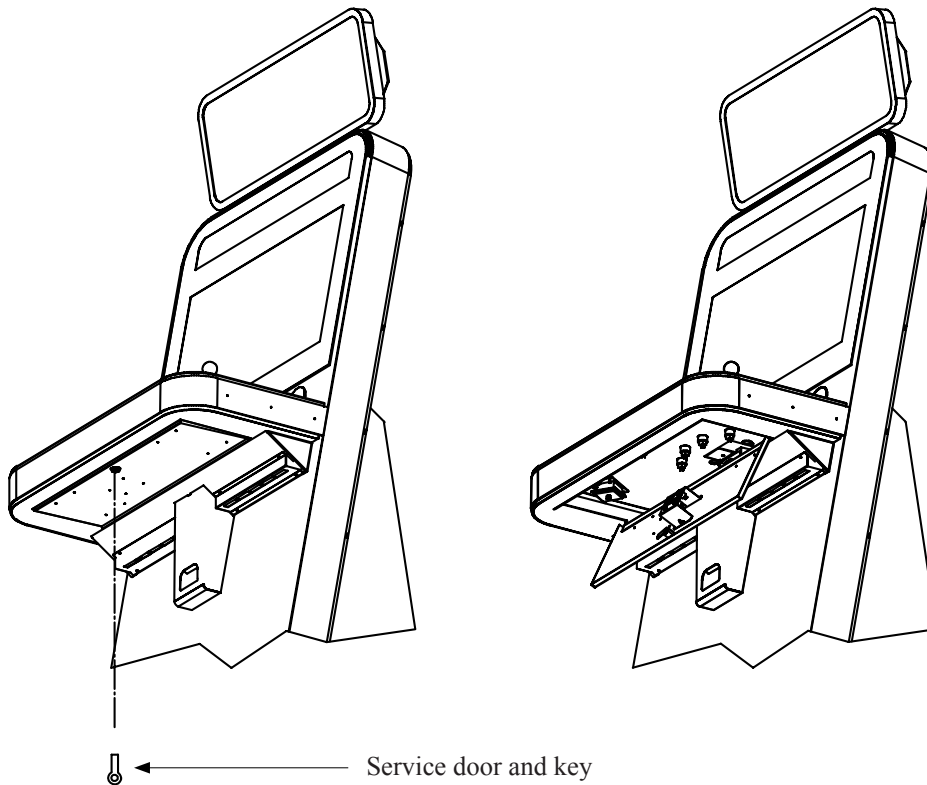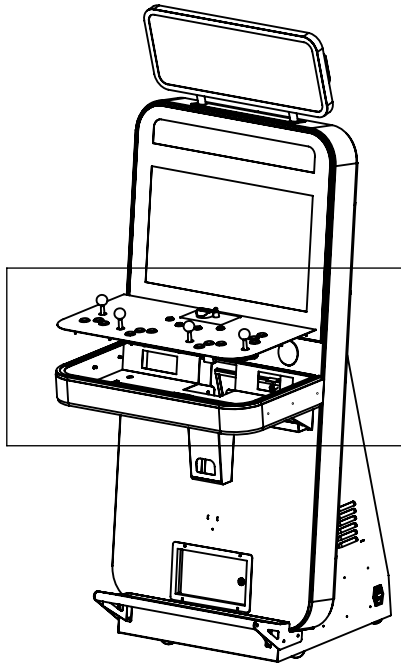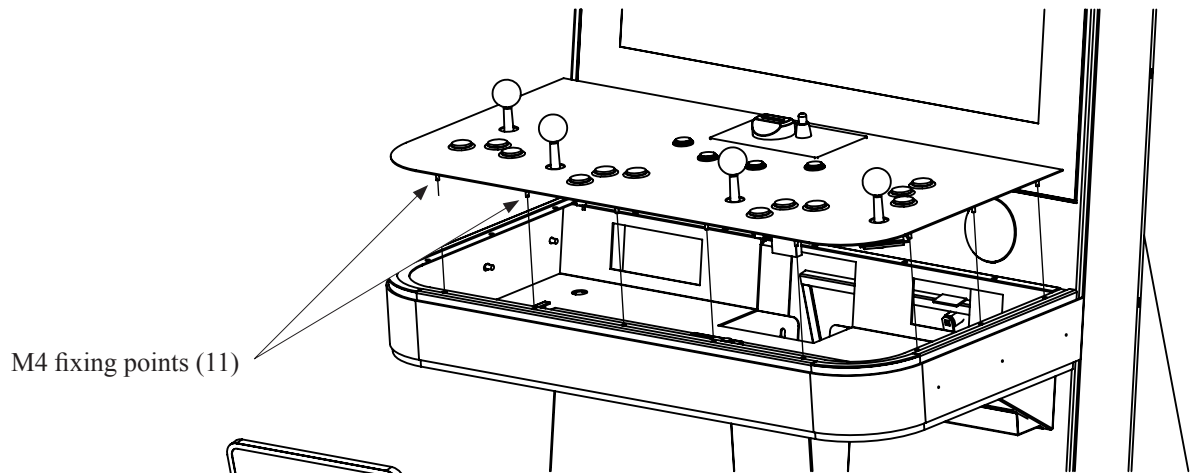
5 Replace in reverse order.

11 GRAPHICS DISPLAY

11-1 SAFETY PRECAUTIONS WHEN HANDLING THE MONITOR

⚠ WARNING

Responding to breakdown or abnormality

- If smoke or a strange odor appears, immediately unplug the power cable from the power source.

  Continuing to use the product may cause a fire or an electric shock. Ensure that smoke is no longer emitted, and contact the point of purchase.

- If nothing displays on the screen, immediately unplug the power cable from the power source.

  Continuing to use the product may cause a fire or an electric shock. Contact the point of purchase and request an inspection.

- If water or a foreign object enters the monitor's interior, immediately unplug the power cable from the power source.

  Continuing to use the product may cause a fire or an electric shock. Contact the point of purchase and request an inspection.

- If the monitor is dropped or the cabinet is damaged, immediately unplug the power cable from the power source.

  Continuing to use the product may cause a fire or an electric shock. Contact the point of purchase and request an inspection.

  During operation

- Do not repair, reconstruct, or disassemble the monitor.

  The monitors interior contains high voltage parts. A fire or an electric shock could result.

  For inspections, adjustments, and repair of the monitors interior, request work from the point of purchase.

- Do not insert foreign objects.

  If metal objects or flammable materials such as paper are inserted into the interior through ventilation openings or other apertures, an electric shock could result.

- In the event of a thunder storm, do not touch the product or the power cable. An electric shock could result.

- Make sure to perform appropriate adjustments. Do not operate the product when the screen is flickering, distorted, or experiencing other abnormalities. Images from an improperly adjusted screen could cause players and other customers to experience dizziness, headaches, and other ailments.

11-2 CLEANING THE SCREEN SURFACE

> ### ⚠CAUTION
>
> ● **Use a soft, dry cloth (flannel-type) to wipe away dirt. Do not use materials such as coarse mesh gauze.**
>
> ● **Alcohol (ethanol) is the recommended solvent for removing dirt. When using a cleaning agent, follow the precautions below.**
>
> - **Dilute neutral cleaning agents for home use with water. Soak a soft cloth in the solution, and wring it thoroughly before wiping the screen.**
>
> - **Do not use abrasive cleaning agents or powders, or cleaning agents containing bleach.**
>
> - **Do not use alkaline cleaning agents such as glass cleaners, or solvents such as thinners.**
>
> ● **Do not scrub or scratch the screen surface with abrasive materials such as brushes or scrub brushes.**

CLEAN THE SCREEN DAILY.

11-3 ADJUSTMENT METHOD

(STOP) **IMPORTANT**

> **All adjustment values are set accurately at the time of shipping from the factory. Do not readjust these values needlessly or apply adjustments not specified in this manual. The display may not appear properly if the values are incorrect.**

There is a seperate manual which accompanies the LCD display. Please refer to this manual at all times.

12 COIN HANDLING

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.

12-1 ACCESSING THE COIN SELECTOR

1   Before starting any work, TURN THE POWER OFF.

2   Unlock the service door below the Control Panel and locate the Coin Acceptor Retaining Screws.

Service Door

Coin Acceptor retaining screws (2)
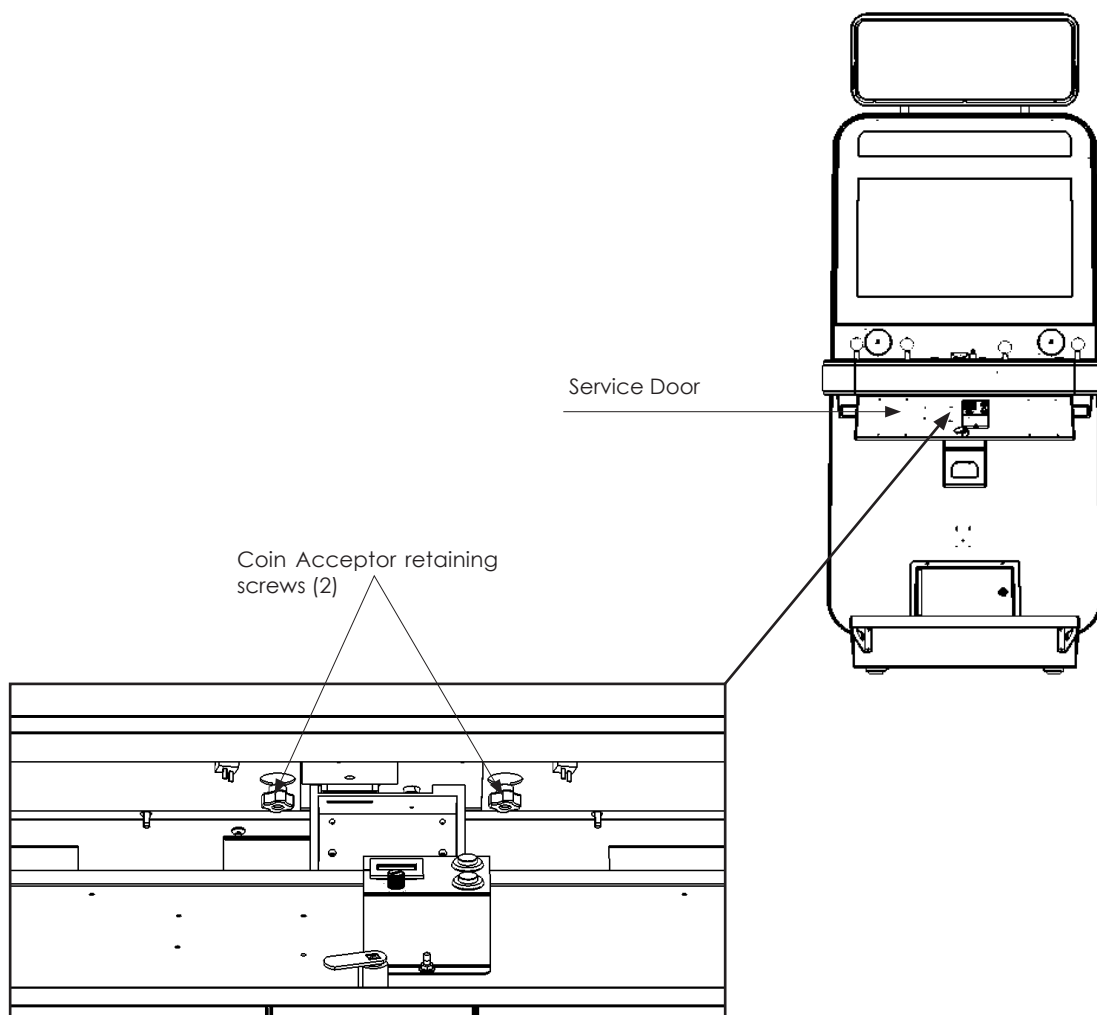
3 Loosen the Coin Mech Retaining Screws (2) and carefully lift up the Coin Mech Housing. Once you have about 1CM clearance, pull the Coin Mech Houseing towards you to release.

Coin Mech Housing
Slide forward

Coin Mech Housing
Then lift to remove
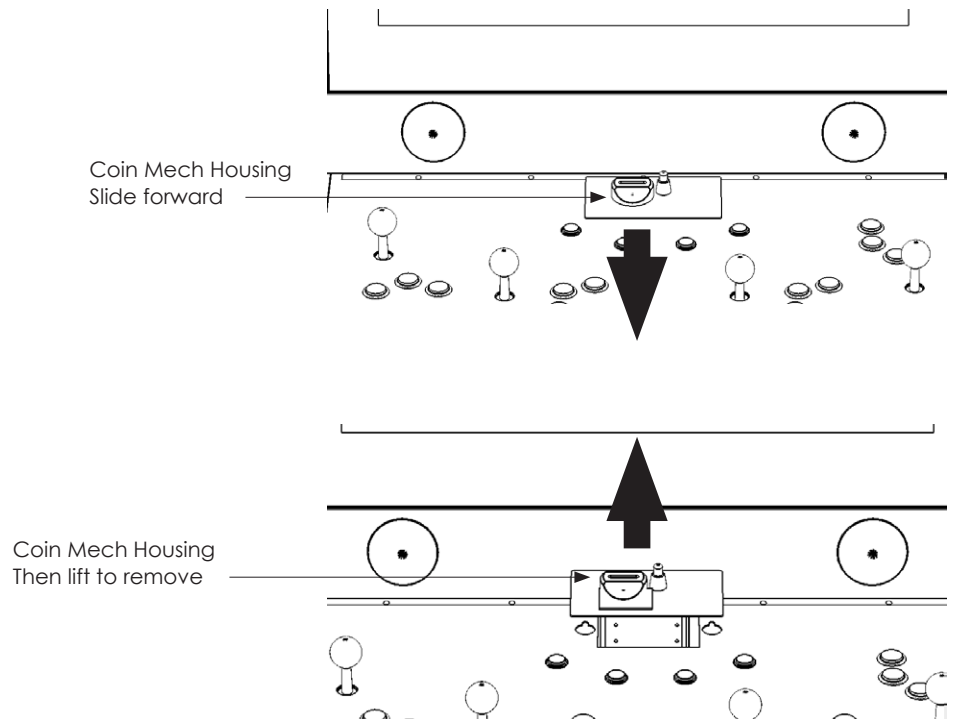
4 Disconnect the harness from the Coin Acceptor before complete removal.

5 Refit following these instructions in reverse order.

12-2 CLEANING THE COIN SELECTOR

(STOP) IMPORTANT

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

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

1 Turn the power for the machine OFF. Open the Coin Chute Door

2 Remove the Coin Selector from the Coin Chute Door

3 Open the gate and dust off by using a soft brush (Small soft Paint Brush, etc.)
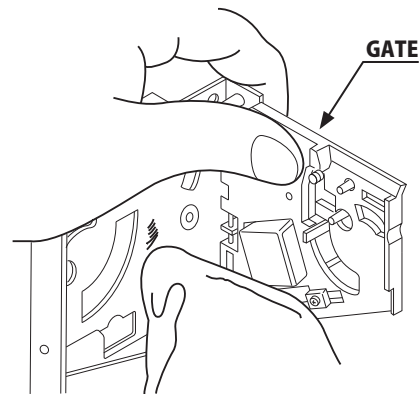

GATE

12-1 FIG 1

CLEANING THE COIN SELECTOR (MECHANICAL).

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

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

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

12-1 FIG 2

CRADLE

4 After wiping off as per previous step, further apply a dry cloth to completely dry the Coin Selector.
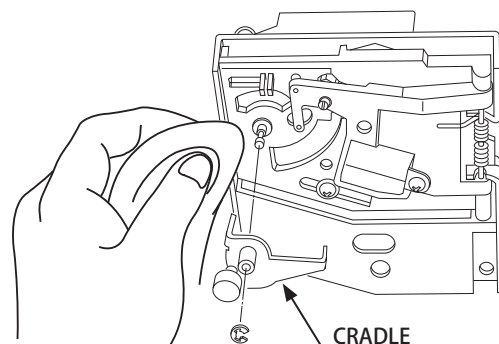
Coin Insertion Test

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

Does the Coin Meter count satisfactorily?

Does the coin drop into the cashbox correctly?

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

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

12-1 FIG 3

CLEANING THE COIN SELECTOR (SR3 / NRI)

1 Remove and clean smears by using a damp soft cloth dipped in water. DO NOT use any diluted chemical detergent or cleansing agent as this will impair the workings of the component.
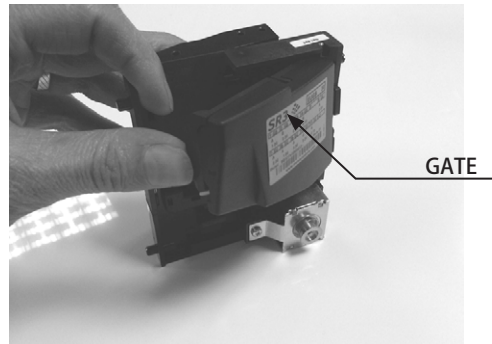
GATE

2 Open the reject gate to gain access to the rundown path.
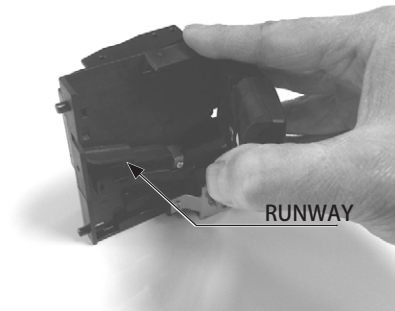
RUNWAY

3 Remove the dirt and stains from the runway by wiping off with a soft damp cloth.

4 After wiping off as per previous step, further apply a dry cloth to completely dry the coin Selector.
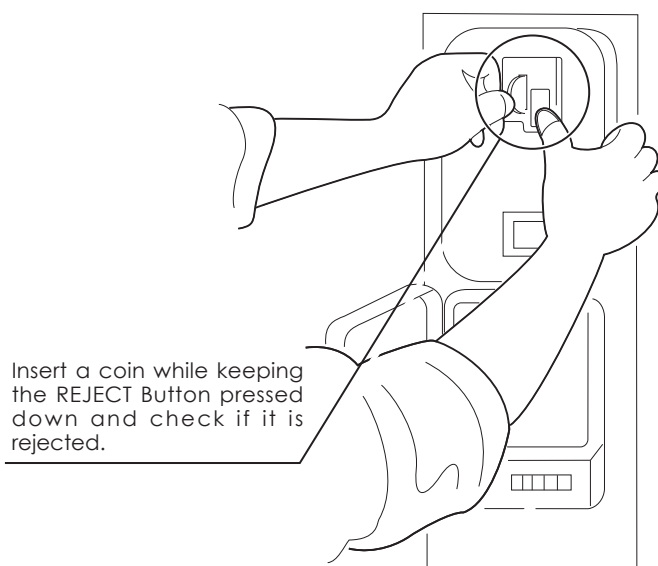
12-2 FAULT FINDING

Fault Finding

The following information is presented for customers' guidance in rectifying a fault but does not cover all possible causes.

All acceptors with electronic faults should be returned to an approved service centre for repair.

SYMPTOM	INVESTIGATE	POSSIBLE CAUSE
Acceptor does not work (all coins reject)	Connector	Poor Contact
		Loose Wire
	Power Supply	Not switched on
		Incorrect voltage
		Inadequate current
		Rise time too slow
	Inhibit all inputs	Acceptor Inhibited
	Accept gate	Gate not free or dislocated
	Accept channel	Obstruction
	Reject gate	Not fully closed
	LED on rear cover RED	EEPROM chksm error
		SR Sensor fault
		Credit opto fault
		Credit sensor blocked
		Reject lever pressed
	LED on rear cover YELLOW	Reinstall power
Poor Acceptance	Power Supply	Voltage less than 10v (Voltage drops when coil engages)
	Accept gate	Gate jam or dislocated
	Connector	Loose
	Coin rundown	Dirty
	Bank Select	Both banks enabled
Coin stick or jam in acceptor.	Accept channel	Acceptor dirty or may have some damage
	Accept gate	
	Regect gate	
A true coin type rejects	Label	Coin not programmed
No accept signal	Connector	Loose or broken wire
	Accept channel	Path dirty or obstructed

STOP **IMPORTANT**

- **The price of play is determined by the configuration of switches located on either an EXCEL board or VTS board. The type of board used is determined by product location. Switch settings for both types of board remain the same.**

This product comes equipped with a Crane NRI Coin Acceptor. To adjust the price of play ALL credit setting are adjusted via the EXCEL CREDIT BOARD.

IMPORTANT!
The CREDIT SETTINGS within the SYSTEM TEST MODE must be set to 1 coin 1 credit to allow the CREDIT BOARD to function correctly.

The CREDIT BD has a built accumilator. This is controlled by 2 DIL Switches. These allow the operator to select the price of play, type of coin acceptor and region.

EXCEL Credit Board

Credit Board

Service Button

Channel 1
CN3

SW3

Status LED

DIP SW 1

Channel 2
CN5
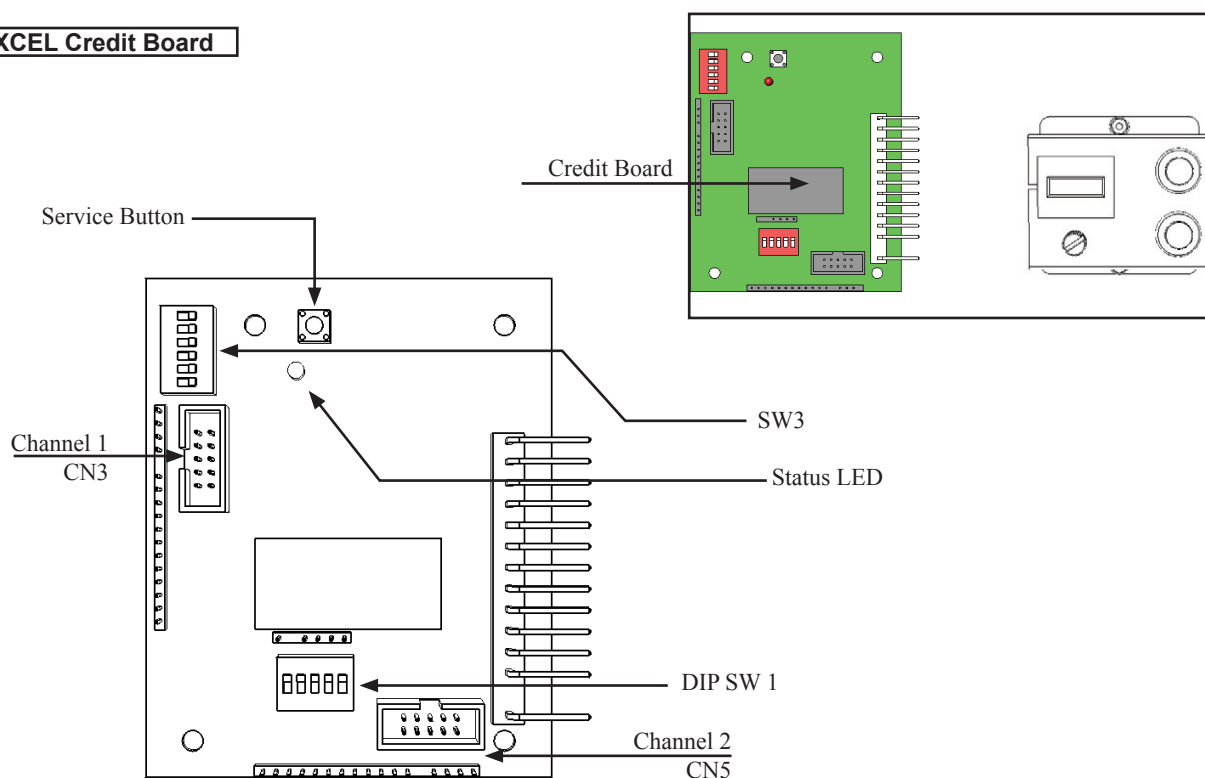
DIL SW3 (Regional Settings)
Adjust these switches to specify the type of Coin Acceptor used and currency.

Default = SW1&SW2 ON - SR3/NRI in parallel mode, Sterling.

SERVICE BUTTON   Provides a SERVICE CREDIT when pressed
Status LED   Flashes when functioning.
CHANNEL 1   To Coin Acceptor (SR3 TYPE.)
DIL SW1 (credit settings)   Adjust to required price of pay.
VOL CONTROL   MAIN VOLUME ADJUSTMENT (FRONT SPEAKERS)

12

COIN HANDLING

Country	Setting	Switch 3 Setting						Credit Board Mode Settings Switch 3 — Coin Validator Programming									C120/SR3 Only		
		SW1	SW2	SW3	SW4	SW5	SW6	COIN1	COIN2	COIN3	COIN4	COIN5	COIN6	COIN7	COIN8	COIN9	COIN10	COIN11	COIN12
UK	Coin Controls C220 Parallel	OFF	OFF	OFF	OFF			£1	50p new	20p	10p	50p old	-						
UK	Coin Controls C220 Binary	ON	OFF	OFF	OFF			£1	50p new	20p	10p	-	-						
UK	Coin Controls C220 Binary	OFF	ON	OFF	OFF			£1	50p new	20p	10p	£2	-						
UK	Coin Controls SR3 Parallel	ON	ON	OFF	OFF			£1	50p new	20p	10p	£2	-						
UK	Coin Controls SR3 Parallel	OFF	OFF	ON	OFF			£1	50p new	20p	10p	£2	-	50p old					
UK Euro	SR3 Parallel	ON	OFF	ON	OFF			£2 / €2	£1 / €1	50p / 50¢	20p / 20¢	10p / 10¢	-	-	50p old				
UK	Mars ME/MS 111 Parallel	ON	OFF	OFF	OFF			£1	£2	20p	10p	50p new	50p old						
UK	NRI Parallel	OFF	ON	ON	OFF			10p	20p	50p	£1	£2	-						
Belgium	Parallel	ON	ON	ON	OFF			-	50BFr	20BFr	5BFr	-							
Holland	Parallel	OFF	OFF	OFF	ON			-	5NLG	2.5NLG	1NLG								
Austria	SR3 Parallel	ON	OFF	OFF	ON			20Sch	10Sch	5Sch	1Sch								
Spain	Coin Controls C220 Binary	OFF	ON	OFF	ON			500Pta	200Pta	100Pta	50Pta	25Pta	200Pt old	25Pta old	-				
Spain	Coin Controls C220 Parallel	OFF	OFF	OFF	ON			500Pta	200Pta	100Pta	50Pta	25Pta	50Pta old	200Pta old	-				
Spain	SR3/NRI Parallel	ON	ON	OFF	ON			100Pta	50Pta new	25Pta new	-	50Pta old	-	25Pta old	50Pta old				
Portugal Euro	Parallel	ON	OFF	OFF	ON			200Es / €1	100Es / 50¢	50Es	-	-	-	-	-				
	TBA				OFF			TBA											
	TBA				ON			TBA											
Channels						OFF		Direct Mode											
						ON		2 channel Mode											

Please Note

The credit board automatically sets the validator for parallel and binary operation through an output on pin 8 of the 17 way pinstrip. For the feature to work it is necessary for the validator interconnecting cable to include at wire at this position

Note: These switch settings are under constant review and may change due to world currency updates.

Set SW 1 according to the option settings found in the relevant Price of Play Settings Table on the following pages.

Set SW 3 on the VTS /Excel board as shown in the table above corresponding to the country required.

	Price	Bonus			DIL Switch 1				
					1	2	3	4	5
1	10p	50p = 5 plays	£1 = 10 plays	£2 = 20 plays	OFF	OFF	OFF	OFF	OFF
2	10p	50p = 6 plays @ 8.33p per play	£1 = 12 plays @ 8.33p per play	£2 = 24 plays @ 8.33p per play	ON	OFF	OFF	OFF	OFF
3	20p	50p = 2.5 plays	£1= 5 plays	£2 = 10 plays	OFF	ON	OFF	OFF	OFF
4	20p	50p = 3 plays @ 16.66p per play	£1 = 6 plays @ 16.66p per play	£2 = 12 plays @ 16.66p per play	ON	ON	OFF	OFF	OFF
5	30p	50p = 1.66 plays	£1 = 3.33 plays	£2 = 6.66 plays	OFF	OFF	ON	OFF	OFF
6	30p	50p = 1.66 plays	£1 = 4 plays @ 25p per play	£2 = 8 plays @ 25p per play	ON	OFF	ON	OFF	OFF
7	30p	50p = 2 plays @ 25p per play	£1 = 4 plays @ 25p per play	£2 = 8 plays @ 25p per play	OFF	ON	ON	OFF	OFF
8	30p	50p = 2 plays @ 25p per play	£1 = 3 plays @ 33.33p per play	£2 = 6 plays @ 33.33p per play	ON	ON	ON	OFF	OFF
9	40p	50p = 1.25 plays	£1 = 2.5 plays	£2 = 5 plays	OFF	OFF	OFF	ON	OFF
10	40p	50p = 1.25 plays	£1 = 3 plays @ 33.3p per play	£2 = 6 plays & 33.3p per play	ON	OFF	OFF	ON	OFF
11	50p	50p = 1 play	£1 = 2 plays	£2 = 4 plays	OFF	ON	OFF	ON	OFF
12	50p	50p = 1 play	£1 = 2 plays	£2 = 4 plays	ON	ON	OFF	ON	OFF
13	50p	50p = 1 play	£1 = 1.66 plays	£2 = 3.33 plays	OFF	OFF	ON	ON	OFF
14	60p	50p = 0.83 play	£1 = 2 plays @ 50p per play	£2 = 4 plays @ 50p per play	ON	OFF	ON	ON	OFF
15	60p	50p = 0.83 play	£1 = 2 plays @ 50p per play	£2 = 3.33 plays	OFF	ON	ON	ON	OFF
16	80p	50p = 0.62 play	£1 = 1.25 plays	£2 = 2.5 plays	ON	ON	ON	ON	OFF
17	80p	£1 = 1.25 plays	£1 = 2 plays	£2 = 2.5 plays	OFF	OFF	OFF	OFF	ON
18	£1	£1 = 2 plays	£1 = 1 play	£2 = 2 plays	ON	OFF	OFF	OFF	ON
19	£1	2x50p = 1 play	£1 = 1 play	£2 = 2 plays	OFF	ON	OFF	OFF	ON
20	£1	2x50p = 1 play	£2 = 2 plays	£2 = 3 plays @ 66.6p per play	ON	ON	OFF	OFF	ON
21	£1.50	2x50p = 1 play	£1 = 0.66 plays	£4 = 5 plays @ 80p per play	OFF	OFF	ON	OFF	ON
22	£1.50	3x50p = 1 play	£1 = 0.66 plays	£3 = 2 plays	ON	OFF	ON	OFF	ON
23	£2	3x 50p = 1 play	£1 = 0.5 play	£2 = 2 plays @ £1 per play	OFF	ON	ON	OFF	ON
24	£2	4x 50p = 1 play	£1 = 0.5 play	£2 = 1 play	ON	ON	ON	OFF	ON
25	£3	4x 50p = 1 play	£1.50 = 0.5 play	£3 = 1 play	OFF	OFF	OFF	ON	ON
26	£3	6x50p = 1 play	£1.50 = 0.5 play	£2 = 1 play	ON	OFF	OFF	ON	ON
27	£5	6x50p = 1 play	£5 = 1 play	£5 = 2 plays @ £2.50 per play	OFF	ON	OFF	ON	ON
28	£5	£1 = 0.2 play	£5 = 1 play	£10 = 2 plays	ON	ON	OFF	ON	ON
29	£7.50	£1 = 0.2 play	£10 = 1.33 plays	£10 = 3 plays @ £3.33p per play	OFF	OFF	ON	ON	ON
30	£7.50	£5 = 0.66 play	£10 = 1.33 plays	£15 = 2 plays	ON	OFF	ON	ON	ON
31	£10	£5 = 0.66 play	£10 = 2 plays @ £5 per play	£15 = 2 plays	OFF	ON	ON	ON	ON
32	£10	£10 = 1 play	£20 = 2 play	£30 = 3 play	ON	ON	ON	ON	ON
		Free Play			ON	ON	ON	ON	ON

| No.	Price	Bonus			DIL Switch 1				
					1	2	3	4	5
1	10¢	50¢ = 5 plays	€1 = 10 plays	€2 = 20 plays	OFF	OFF	OFF	OFF	OFF
2	10¢	50¢ = 6 plays @ 8.33¢ per play	€1 = 12 plays @ 8.33¢ per play	€2 = 24 plays @ 8.33¢ per play	ON	OFF	OFF	OFF	OFF
3	20¢	50¢ = 2.5 plays	€1=5 plays	€2 = 10 plays	OFF	ON	OFF	OFF	OFF
4	20¢	50¢ = 3 plays @ 16.66¢ per play	€1 = 6 plays @ 16.66¢ per play	€2 = 12 plays @ 16.66¢ per play	ON	ON	OFF	OFF	OFF
5	30¢	50¢ = 1.66 plays	€1 = 3.33 plays	€2 = 6.66 plays	OFF	OFF	ON	OFF	OFF
6	30¢	50¢ = 1.66 plays	€1 = 4 plays @ 25¢ per play	€2 = 8 plays @ 25¢ per play	ON	OFF	ON	OFF	OFF
7	30¢	50¢ = 2 plays @ 25¢ per play	€1 = 4 plays @ 25¢ per play	€2 = 8 plays @ 25¢ per play	OFF	ON	ON	OFF	OFF
8	30¢	50¢ = 2 plays @ 25¢ per play	€1 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play	ON	ON	ON	OFF	OFF
9	40¢	50¢ = 1.25 plays	€1 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play	OFF	OFF	OFF	ON	OFF
10	40¢	50¢ = 1.25 plays	€1 = 2.5 plays	€2 = 5 plays	ON	OFF	OFF	ON	OFF
11	50¢	50¢ = 1 play	€1 = 2 plays	€2 = 4 plays	OFF	ON	OFF	ON	OFF
12	50¢	50¢ = 1 play	€1 = 2 plays	€2 = 4 plays	ON	ON	OFF	ON	OFF
13	50¢	50¢ = 1 play	€1 = 2 plays	€2 = 4 plays	OFF	OFF	ON	ON	OFF
14	60¢	50¢ = 0.83 play	€1 = 1.66 plays	€2 = 3.33 plays	ON	OFF	ON	ON	OFF
15	60¢	50¢ = 0.83 play	€1 = 2 plays	€2 = 4 plays @ 50¢ per play	OFF	ON	ON	ON	OFF
16	80¢	50¢ = 0.62 play	€1 = 1.25 plays	€2 = 2.5 plays	ON	ON	ON	ON	OFF
17	80¢	£1 = 1.25 plays	€1.50 = 2 plays @ 75¢ per play	€2 = 2.5 plays	OFF	OFF	OFF	OFF	ON
18	€1	2x50¢ = 1 play	€1 = 1 play	€2 = 2 plays	ON	OFF	OFF	OFF	ON
19	€1	2x50¢ = 1 play	€1 = 1 play	€2 = 2 plays	OFF	ON	OFF	OFF	ON
20	€1	2x50¢ = 1 play	€1 = 1 play	€2 = 2 plays	ON	ON	OFF	OFF	ON
21	€1.50	3x50¢ = 1 play	€1 = 0.66 plays	€3 = 2 plays	OFF	OFF	ON	OFF	ON
22	€1.50	3x 50¢ = 1 play	€1 = 0.66 plays	€3 = 2 plays	ON	OFF	ON	OFF	ON
23	€2	4x 50¢ = 1 play	€1 = 0.5 play	€2 = 1 play	OFF	ON	ON	OFF	ON
24	€2	4x 50¢ = 1 play	€1 = 0.5 play	€4 = 5 plays @ 80¢ per play	ON	ON	ON	OFF	ON
25	€3	6x50¢ = 1 play	€1.50 = 0.5 play	€3 = 1 play	OFF	OFF	OFF	ON	ON
26	€3	6x50¢ = 1 play	€1.50 = 0.5 play	€3 = 1 play	ON	OFF	OFF	ON	ON
27	€5	€1 = 0.2 play	€5 = 1 play	€10 = 2 plays	OFF	ON	OFF	ON	ON
28	€5	€1 = 0.2 play	€5 = 1 play	€10 = 3 plays @ 3.33¢ per play	ON	ON	OFF	ON	ON
29	€5	€1 = 0.66 play	€10 = 1.33 plays	€15 = 2 plays	OFF	OFF	ON	ON	ON
30	€7.50	€5 = 0.66 play	€10 = 1.33 plays	€15 = 2 plays	ON	OFF	ON	ON	ON
31	€7.50	€10 = 1 play	€10 = 2 plays @ €5 per play	€30 = 3 play	OFF	ON	ON	ON	ON
32	€10	Free Play	€20 = 2 play	€30 = 3 play	ON	ON	ON	ON	ON

12-5 NRI OPTIONS - STERLING / EURO SELECT

### SELECTING STERLING / EURO OPTION

The NRI coin acceptor (supplied) is programmed to accept UK Sterling and the Euro. Factory setting is for the UK Sterling. If the configuration needs to change to the Euro, then please follow the instructions below for changing over to the Euro and visa versa.

Coin Information   -   Memory Block 0   (DIL switch S1.10 is set to OFF)

Memory Block 1   (DIL switch S1.10 is set to ON)

If the coin validator is to access the other memory block and, e.g., accept euro coins instead of national currency coins, the correct block can be selected using the upper switching block:
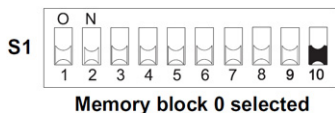
Sterling selection
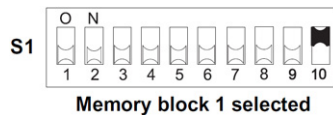
Euro selection

To select memory block 0, (STERLING) move DIL switch S1.10 of the upper switching block to the bottom OFF position, for memory block 1, move it to the ON position.

12-6 NRI OPTIONS - TEACH AND RUN PROGRAMMING

TEACH AND RUN PROGRAMMING (NRI)

If the machine is positioned in location where only tokens are used, then the NRI Coin Acceptor can be programmed to accept and credit special coins/tokens.

Please follow the instructions below to enable and program the TEACH & RUN facility.

TEACHING COIN CHANNELS USING TEACH MODE

In order to generate new acceptance bands you can teach up to eight coin channels using the lower switching block on the coin validator. You will need at least ten coins of the new type. There is a different switch assignment for the double and single block data-management:

Switching block S2 (with double block data-management)

DIL switch		off	on
S2.1	Coin channel 9		teach
S2.2	Coin channel 10		teach
S2.3	Coin channel 11		teach
S2.4	Coin channel 12		teach
S2.5	Coin channel 13		teach
S2.6	Coin channel 14		teach
S2.7	Coin channel 15		teach
S2.8	Coin channel 16		teach
S2.9	Teach mode	switch off	switch on
S2.10	Acceptance band	normal	wide
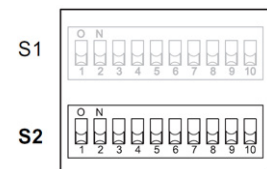
By default, the eight teach channels have been programmed, so that one coin impulse is transmitted to the machine via coin signal line 6, when a new coin is accepted.

🔞 LAMPS AND LIGHTING

⚠️WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.

- You may get burned by a hot fluorescent lamp or other lamps. Pay full attention to the lamps when performing the work.

- Be sure to use lamps of the designated rating. Using lamps of undesignated rating can cause a fire or malfunctioning.

- There is the danger of short circuits or smoke generation due to deterioration of insulation in lighting fixtures resulting from age deterioration. Check for anomalies such as the following: Does it smell like something is burning? Is there socket discoloration? Are any lamps being replaced frequently? Do lamps not go on properly?

⚠️CAUTION

This product utilises 12v LED strips. It is important that you replace these LED strips with that of the same voltage and rating. Failing to observe this caution may result in PCB failure or possible fire hazard.

13-1 REPLACING THE BILLBOARD LED BAR

⚠️ WARNING

- THIS WORK ON TOP OF THE CABINET, SHOULD NOT BE UNDERTAKEN WITHOUT THE USE OF A SUITABLE STEP OR FOOTSTOOL.
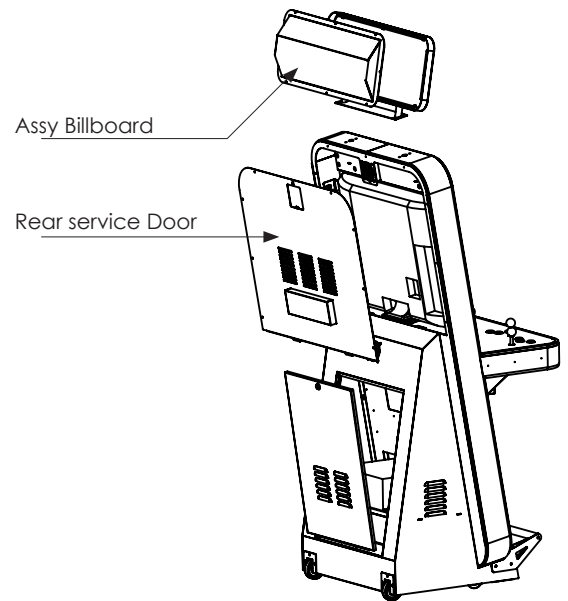

⚠️ WARNING

MAKE SURE THAT THE MAIN SUPPLY VOLTAGE TO THE MACHINE IS SWITCHED OFF BEFORE ATTEMPTING TO CARRY OUT THIS WORK
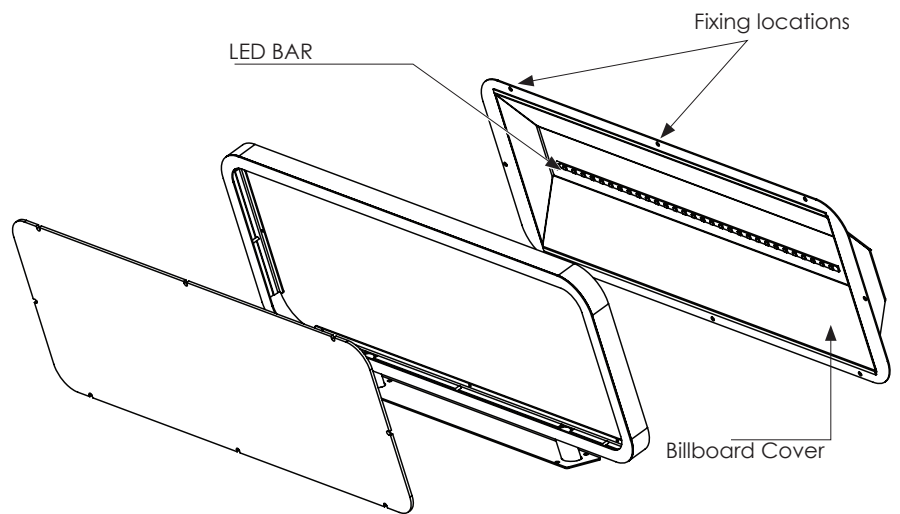
1 Before replacing any lamp, TURN THE POWER OFF.

2 Remove the ASSY BILLBOARD from the cabinet (See chapeter 6 for illustraition).

Assy Billboard

Rear service Door

3 Unscrew the M4x10 M SCR BLK (8) from around the outside edge of the Billboard Cover. Remove the Back cover to reveal the LED BAR. Carefully unclip the LED BAR to remove.

Fixing locations

LED BAR

Billboard Cover

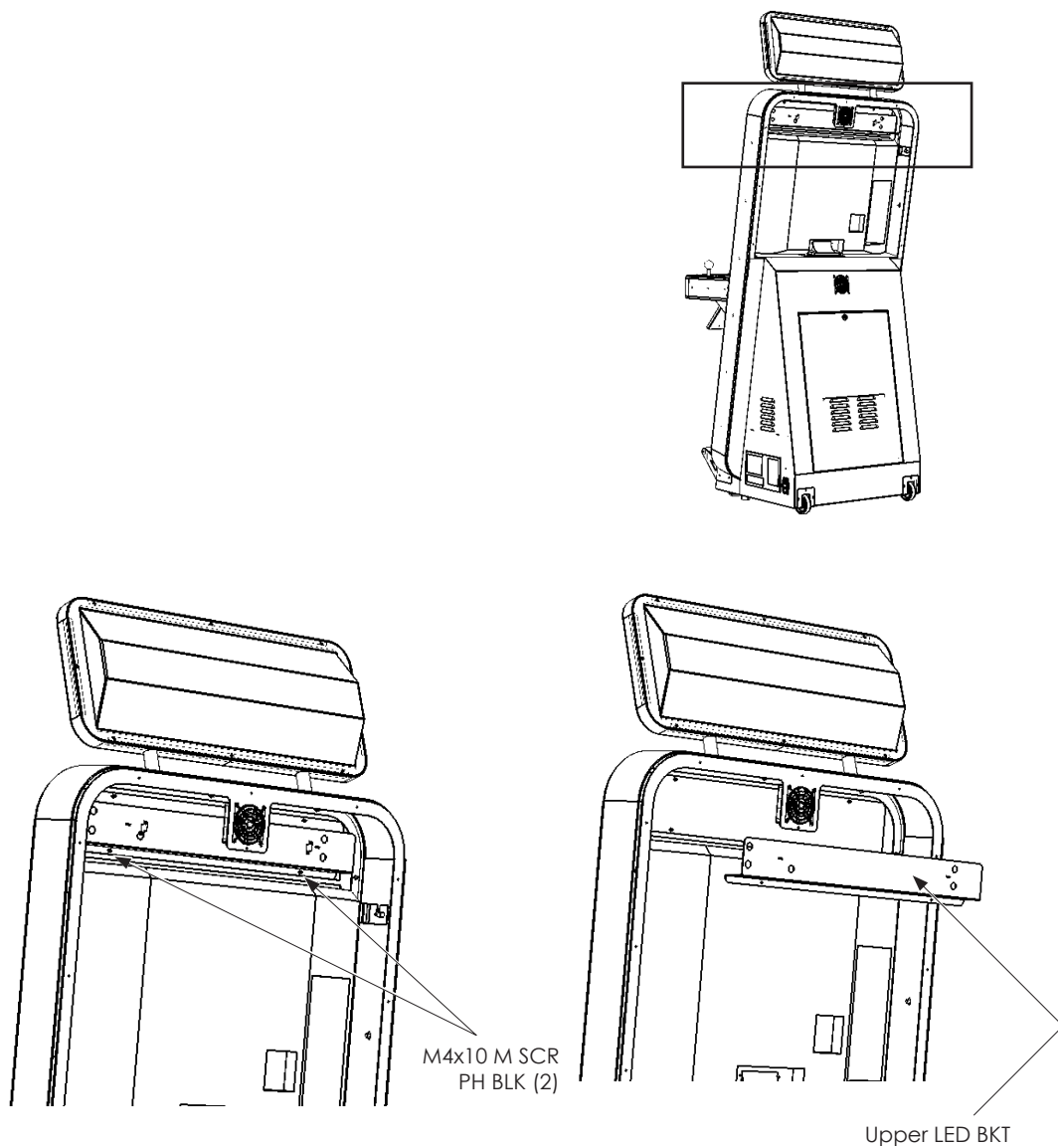*4* Refit following these instructions in reverse order.

13-2 REPLACING THE HEADER LED BAR
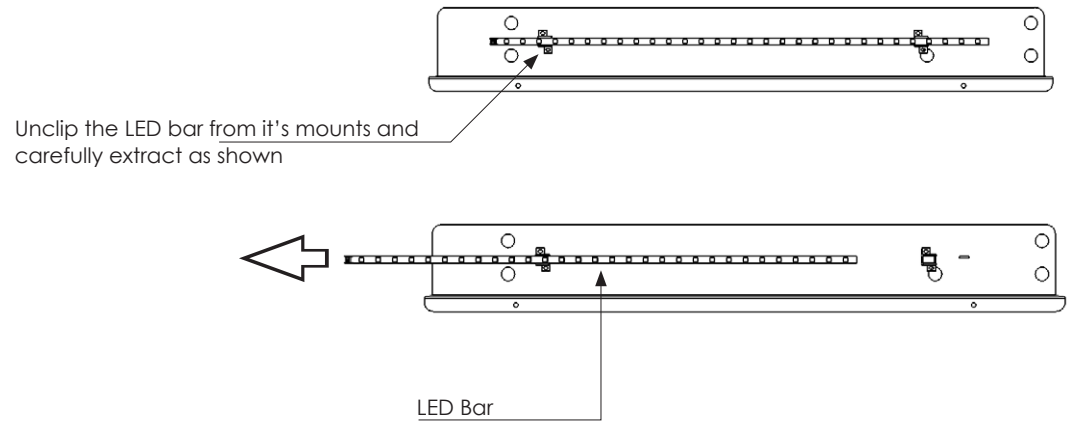
⚠ WARNING

MAKE SURE THAT THE MAIN SUPPLY VOLTAGE TO THE MACHINE IS SWITCHED OFF BEFORE ATTEMPTING TO CARRY OUT THIS WORK

1   Before replacing any lamp, TURN THE POWER OFF.

2   Using the instructions from the previous steps - remove the Rear Service Panel.

M4x10 M SCR
PH BLK (2)

Upper LED BKT

4 Once the LEB BKT has been removed, carefully unclip the LED bard from the mounts (2) and extract as shown.

Unclip the LED bar from it's mounts and carefully extract as shown

LED Bar

5 Replace the LED BAR , to refit, follow these instructions in reverse order.

13-3 REPLACING THE LOWER LED BAR

> ### ⚠ WARNING
>
> **MAKE SURE THAT THE MAIN SUPPLY VOLTAGE TO THE MACHINE IS SWITCHED OFF BEFORE ATTEMPTING TO CARRY OUT THIS WORK**

1   Before replacing any lamp, TURN THE POWER OFF.

2   Located either Left or Right Lower LED Panels. Removal for either unit is the same.

LED PANELS / LEFT & RIGHT
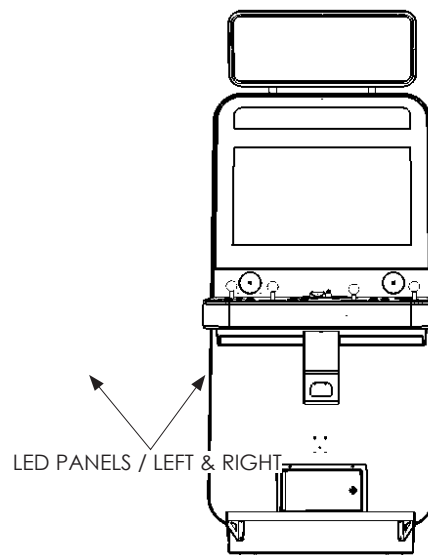
3   Unscrew and remove the M4x10 M SCR PH BLK from the 4 edges of the LED Panel. Disconnect before complete removal.

M4x10 M SCR PH BLK (4)
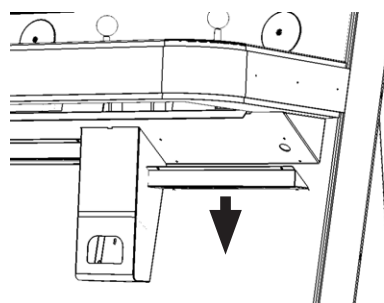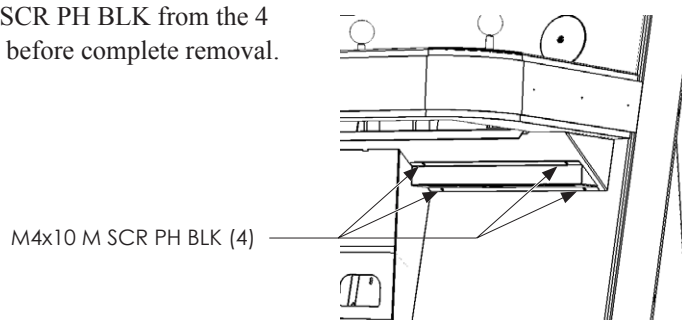
4 Using a M4 socket, undo the M4 NUT SER PAS (4) which secure the LED BARD to the BKT. Disconnect and remove.

M4 NUT SER PAS

LED BRKT
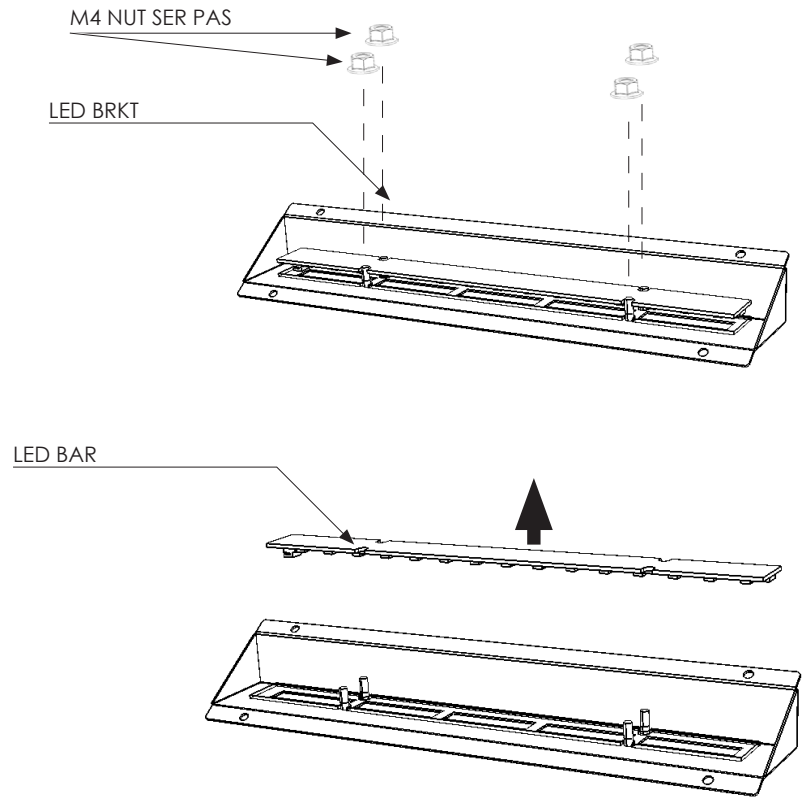
LED BAR

5 Replace LED BAR. To refit, follow these instructions in reverse order.

14 PERIODIC INSPECTION

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

When handling the controller, the player will be in direct contact with it. In order to always allow the player to enjoy the game, be sure to clean it regularly. Also, it is advisable to provide wet tissue, etc. available for player use.

⚠ WARNING

• **Every 6 months check to see if power cords are damaged, the plug is securely inserted, dust is accumulated between the socket outlet and the power plug, etc. Using the product with accumulated dust in the interior may cause fire or electric shock.**

• **Never use a water jet, etc. to clean the inside and outside of the cabinet. If wetness occurs for any reason, do not use the product until it has completely dried.**

• **Once a year, request the office shown on this manual or the dealer from whom the product was originally purchased to perform the internal cleaning. Using the product with accumulated dust in the interior may cause fire or other accidents.**

Note that you are liable for the cost of cleaning the interior parts.

• **There is the danger of accidents involving electrical shorts circuits or fire caused by factors such as the deterioration of insulation in electrical and electronic equipment over time. Check that there are no abnormalities such as odors from burning.**

---

14 TABLE 01 PERIODIC INSPECTION TABLE

ITEMS	DESCRIPTION	PERIOD
CABINET	Confirm that adjusters contact floor	Daily
CONTROL PANEL	Controllers & Buttons	Monthly
	Controller operation	Every 3 months
	Button operation	Every 3 months
AUDIO	Operation	Monthly
	Levels	Every 3 months
START BUTTON	Switch inspection	Every 3 months
CABINET LIGHTING	Operation	Monthly
MONITOR	Screen cleaning	Weekly
	Confirm settings	Monthly or when moving
COIN CHUTE DOOR	Coin switch inspection	Monthly
	Coin insertion test	Monthly
	Selector cleaning	Every 3 months
CONTROL PANEL	Cleaning	Daily/Weekly
GAME BOARD	Confirm settings	Monthly
POWER CABLES	Inspection, Cleaning	6 months
INTERIOR	Cleaning	Yearly
CABINET SURFACES	Cleaning	As appropriate

Cleaning the Cabinet Surfaces

⚠ WARNING

- **Never use a water jet or any other pressurised cleaning equipement to clean the inside and/or outside of this cabinet.**

- **If wetness occurs for any reason, do not use the product until it has completely dried.**

- **Do not operate outdoors at anytime and especially during the rainy season at Wimbledon as the prodcut can become very wet and may cause a double fault.**

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.

Some general-purpose household, kitchen and furniture cleaning products may contain strong solvents that degrade plastic components, coatings, and print. Before using any cleaning product, read the product's cautionary notes carefully and test the product first on a small area that is not highly visible.

15 TROUBLESHOOTING

15-1 TROUBLESHOOTING (WHEN NO ERROR MESSAGE IS SHOWN)

⚠️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 the event that a problem cannot be resolved by employing the procedures listed in this Manual, be sure to request service from the office shown on this Manual or the dealer from whom the product was originally purchased. Attempts to employ procedures other than those specified in this Manual can cause electrical shock, shorting, or fire.

- In the event of a problem that is not described here, be sure to contact the office shown on this Manual or the dealer from whom the product was originally purchased. Careless attempts at repair can result in electrical shock, shorting, or fire.

If a problem occurs, first check to make sure that the wiring connectors are properly connected.

15 TABLE 01

PROBLEM	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine is not activated.	The power is not ON.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	The Fuse on the AC Unit has blown due to momentary over current.	After eliminating the cause of overload, replace the specified rating fuse.
	The fuse of the connect board has blown due to momentary over current.	After eliminating the cause of overload, replace the specified rating fuse.
LCD Display not powering "ON"	Connector connection fault.	Check connections to the LCD Unit.
Sound is not emitted.	Sound volume adjustment is not correct	Adjust the Switch Unit's sound adjustment volume.
	Faulty connections for various connectors	Check the connections for the game board, amp, speakers and Volume connectors
	Malfunctioning BD, amp and speaker	Perform Sound Test.
Sounds are emitted and the lamps are lit, but the screen is black.	Faulty connections for the visual signal connector or the monitor power connector	Check the connections for the monitor and game board connectors.
	Faulty LCD Display	See Chapter 11

Colors on the monitor screen are strange.	Faulty connection for the visual signal connector.	Check the visual signal connector connection and make sure it is secured properly.
	Screen adjustment is not appropriate.	Make adjustment appropriately.
The on-screen image sways and/or shrinks.	The power source and voltage are no correct.	Make sure that the power supply and voltage are correct.
Does not accept input from any switch or volume.	Faulty connector connections	Check the connection for the I/O Board and Cabinet connector.
		Check the power for the I/O Board.
Start button input does not work.		Check the connections for the connectors between the I/O Board, the cabinet and the control panel and those inside the control panel.
Does not accept input in from the Reset Button unit.		Check the connections between the I/O Board, the Cabinet and the Reset Button Unit
	Faulty Microswitch	Replace Microswitch

For ERROR CODES and problems concerning the Ringedge CPU, please refer to chanper 16

Replacing Fuses

⚠️WARNING

• In case fuse replacements other than those stated in this manual are necessary, contact where you purchased the product from for inquiries regarding this matter.

• In order to prevent an electric shock, be sure to turn power off and unplug from the socket outlet before performing work by touching the internal parts of the product.

• Be careful so as not to damage wirings. Damaged wiring can cause electric shock and short circuit accidents.

• Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause fire and electric shock accidents.

• After eliminating the cause of the blowing of fuse, replace the fuse. Depending on the cause of fuse blowing, continued use with the fuse as is blown can cause generation of heat and fire hazard.

Fuses are located on the following:

MAINS INPUT (EU)   3.15A CERAMIC 20mm Fuse Type - T

MAINS INPUT (US)   6.3A CERAMIC 20mm Fuse Type - T

There are no other serviceable fuses within this product.

16 GAME BOARD (RINGEDGE)

⚠ WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.

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

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

⚠ CAUTION

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

(STOP) IMPORTANT

Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

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16-1 HANDLING PRECAUTIONS

⚠ WARNING

- To prevent electric shock or IC Board malfunctioning, be sure to turn off the power for the cabinet when installing or removing the IC Board.

- Extraneous matter such as dust on the IC Board can cause the IC Board to generate heat and result in a fire due to short circuit, etc. Ensure the IC Board surfaces are always kept clean.

- Keep the IC board well cooled. RINGEDGE is provided with ventilating fans. Do not block the air outlets of these fans. Also do not place anything closely to RINGWIDE. Failure to observe these instructions may cause an overheating and fire.

- Always follow the usage conditions from SEGA as well as the usage conditions for the cabinet you are using for RINGEDGE. Failure to do so may cause an overheating and fire.

- To avoid an electric shock or malfunctioning, do not pull out the power cord while the power is on.

- To avoid an electric shock or malfunctioning, do not touch the power input port with a wet hand.

- To avoid causing a fire or an electric shock, do not put things on or damage the power cords.

- When, or after installing the product, do not unnecessarily pull the power cord. If damaged, the power cord can cause a fire or an electric shock.

- In case the power cord is damaged, ask for a replacement through where the product was purchased from or the office herein stated. Using the cord as is damaged can cause fire, an electric shock or leakage.

(STOP) IMPORTANT

- Be sure to connect the IC Board and connectors completely. Insufficient insertion can damage IC Board, etc.

- For the IC Board circuit inspection, only the use of Logic Tester is permitted. The use of ordinary testers is not permitted as these can damage the IC Board.

- Do not subject the IC Board to static electricity when installing the IC Board in the cabinet or when connecting wire harness connectors to the IC Board.

- When soldering buttons, etc. to the wire harnesses, be sure to remove the wire harnesses from the IC Board so as not to subject the IC Board to heat.

- Some parts are the ones designed and manufactured not specifically for this product. The manufacturers may discontinue, or change the specifications of, such general-purpose parts. If this is the case, SEGA cannot repair or replace a failed product whether or not a warranty period has expired.

16-2 PARTS DETAILS
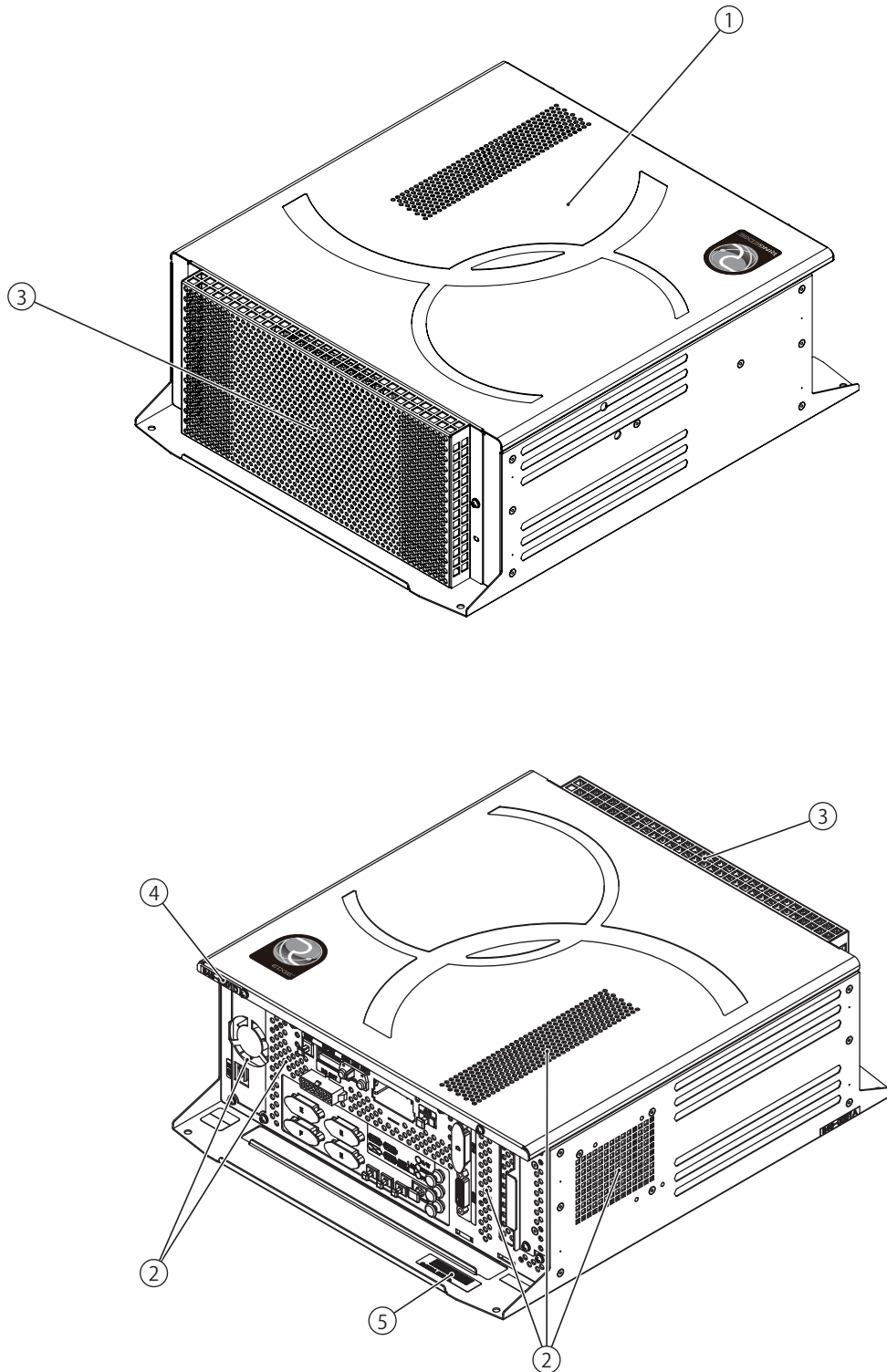
① Shield case
② Exhaust vent (Do not block or cover.)
③ Intake vent (Do not block or cover.)
④ Board number
⑤ Board serial number

CONNECTORS, SWITCHES AND LED

> ⚠ **WARNING**
>
> ● **When connecting the connector, check the orientation and type carefully and connect securely. The connector must be connected in the proper direction and type. If it is connected in the wrong direction or indiscriminately at an incline, or connected wrong connector, so that a load is applied, the connector or its terminal pins could break, causing a short circuit or fire.**
>
> ● **Do not connect components to ⑨ JVS I/O that are not designated by SEGA. Connecting unspecified components could cause an accident such as an electric shock or fire.**
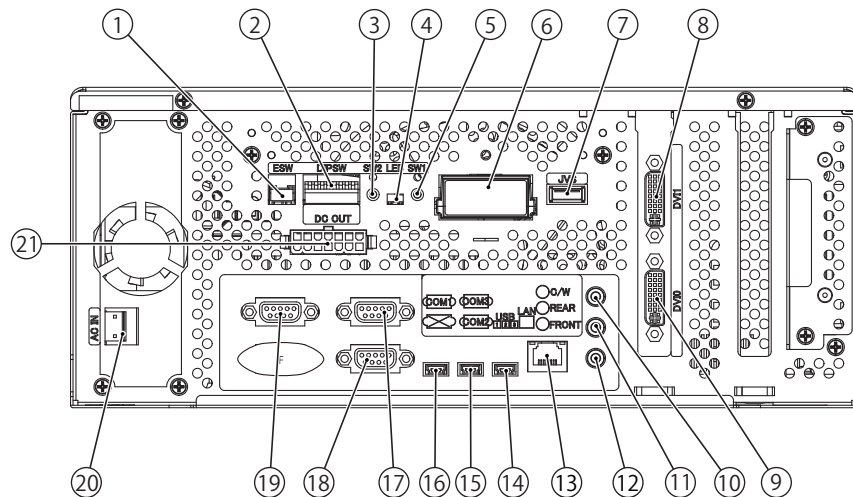
① Test/Service button external input port
② DIP SW (Dip switches)
③ Service button (SW2)
④ LED1, LED2 (From right to left: 1, 2)
⑤ Test button (SW1)
⑥ Key chip socket
⑦ JVS I/O port
⑧ DVI output 1
⑨ DVI output 0
⑩ Center/Woofer lineout
⑪ Rear lineout
⑫ Front lineout
⑬ LAN port
⑭ USB port 3
⑮ USB port 2
⑯ USB port 1
⑰ Serial communication port 3
⑱ Serial communication port 2
⑲ Serial communication port 1
⑳ Power input port
㉑ External power supply port

① **Test/Service Button External Input Port**

Terminal No.	Signal Name
1	SW1
2	SW2
3	GND
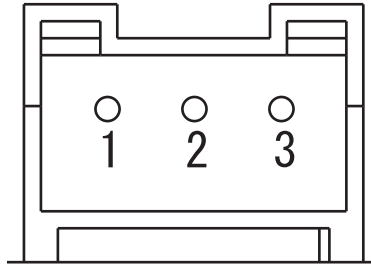
② **DIP SW**

No. 1, No. 2 and No.3:

Use differs depending on game software. Set according to the Service Manual provided with the game software itself.

No. 4:

Changes the facing of the monitor. Use differs depending on game software. Set according to the Service Manual provided with the game software itself. If no specific directions are given set to horizontal display (OFF).

    OFF: Horizontal display

    ON: Vertical display

No. 5, No. 6 and No. 7:

Set the resolution of the video output.

Use differs depending on game software. Set according to the Service Manual provided with the game software itself.

Resolution	No. 5	No. 6	No. 7
*	OFF	OFF	OFF
640 x 480	ON	OFF	OFF
1024 x 600	OFF	ON	OFF
1024 x 768	ON	ON	OFF
1280 x 720	OFF	OFF	ON
1280 x 1024	ON	OFF	ON
1360 x 768	OFF	ON	ON
1920 x 1080	ON	ON	ON

NOTES:

- If there are no specific settings for the resolution, set it to OFF/OFF/OFF. (*)

- When the setting is OFF/OFF/OFF, the system test will be displayed at a resolution of 640 × 480, and the game program will be displayed at the game resolution.

No. 8:
Use differs depending on game software. Set according to the Service Manual provided with the game software itself.
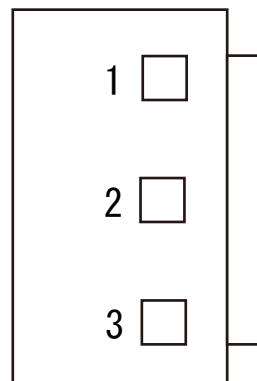
The factory settings when a game board (RINGEDGE) is purchased as a stand-alone unit.

No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
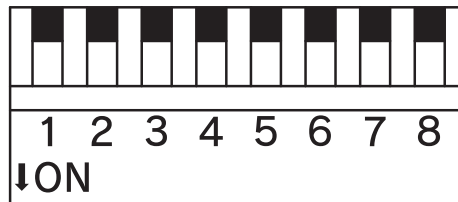
⑳ **Power Input Port**

Terminal No.	Signal Name
1	AC_N
2	NC
3	AC_L

㉑ **External Power Supply Port**
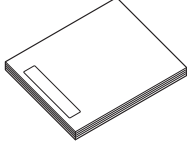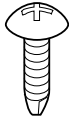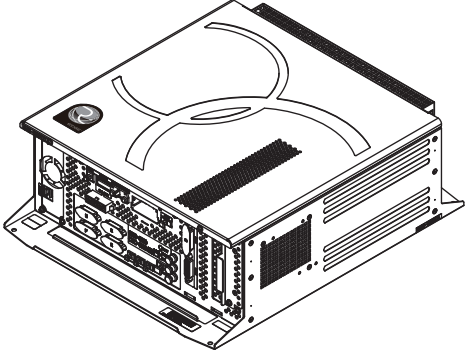
Terminal No	Signal Name	Terminal No.	Signal Name	Maximum Output Current
1	GND	8	+12V DC	
2	GND	9	+12V DC	2.3 A
3	GND	10	+12V DC	
4	GND	11	+5V DC	
5	GND	12	+5V DC	2.3 A
6	GND	13	+5V DC	
7	GND	14	+3.3V DC	1.2 A
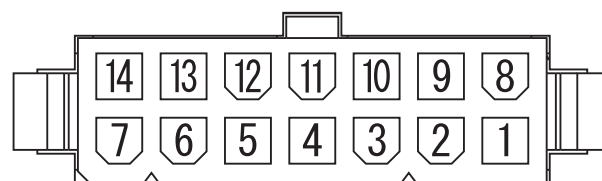
16-3 RINGWIDE COMPONENTS

■ **ACCESSORIES**

Parts not labeled with part numbers are as yet unregistered or cannot be registered. Be sure to handle all parts with care, as some parts are not available for purchase separately.

DESCRIPTION/PART NO.	FIGURES/NOTES	QTY
SERVICE MANUAL 420-7206-01	This manual.	1
TAPPING SCREW 011-P00412	Used for installing the RINGEDGE.	4
RINGEDGE 846-0001D-01: USA 846-0001D-02: OTHERS 846-0001D-03: CHINA		1 ea.

16-4 ERROR CODES DISPLAY

⚠ WARNING

- **If an error code is displayed get on-site maintenance personnel or other qualified professional to look at it. An unqualified person attempting to resolve an error code problem may lead to electric shock, short circuit and risk of fire.**

  If no on-site maintenance personnel or qualified professional is available immediately turn off the power and contact the customer services in this manual or your supplier.

- **If a problem not described in this manual occurs, or the resolution to a problem described in this manual is not effective, do not make further attempts to resolve the problem yourself. Immediately turn off the power and contact the office listed in this manual or your supplier. Any unguided attempts to solve such problems may lead to a serious accident.**

(STOP) IMPORTANT

If an error number or message not listed below appears, cease using the product immediately and contact the office listed in this manual or the point of purchase for this product.

RINGEDGE is equipped to display various errors on-screen to help solve any problems. If an error is displayed the game cannot be used. Use the following table of causes and countermeasures to solve the problem.

DISPLAY	Error 0001 Keychip Not Found
CAUSE	There is no key chip, or the key chip is not connected correctly.
COUNTERMEASURES	Check that the key chip is connected correctly.

DISPLAY	Error 0002 Keychip Not Available
CAUSE	The key chip is not supported. The RINGEDGE system program must be updated.
COUNTERMEASURES	Check how the game was installed. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0004 Game Program Not Acceptable
CAUSE	The key chip is not supported.
COUNTERMEASURES	Check that the key chip from a different system is not inserted. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0008 Keychip Access Failed
CAUSE	The key chip could not be accessed.
COUNTERMEASURES	Reinsert the key chip and restart RINGEDGE.If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0010
	Unexpected Game Program Failure
CAUSE	The game program crashed due to an unexpected error.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0020
	EXIO Not Found
CAUSE	The I/O board inside RINGEDGE is not recognized.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0021
	Main board Malfunctioning
CAUSE	The main board does not recognize itself.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0022
	Game Program Not Found on Storage Device
CAUSE	There is no game program on the storage device.
COUNTERMEASURES	Use the installation media (DVD DRIVE, etc.) to reinstall the game.

DISPLAY	Error 0023 - 0026
	Main board Malfunctioning
CAUSE	Failed to access the main board.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE.If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0027
	Low Battery
CAUSE	The button battery may be depleted.
COUNTERMEASURES	Replace the button battery.

DISPLAY	Error 0041
	Game Program Not Found on Install Media
CAUSE	There is no game program on the install media.
COUNTERMEASURES	Check that the game program, place on the install media (DVD DRIVE etc.), and the key chip correspond to each other.

DISPLAY	Error 0042
	Game Program Not Found on Install Media
CAUSE	Some part of the game program is missing.
COUNTERMEASURES	Check how the game was installed. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0049
	Install Media Access Failed
CAUSE	Failed to access the install media.
COUNTERMEASURES	Check that the install media (DVD DRIVE etc.) is connected correctly. Check that the game disk is not scratched, damaged or dirty. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0052
	Install Media Access Failed
CAUSE	Failed to access the install media.
COUNTERMEASURES	Check that the install media (DVD DRIVE etc.) is connected correctly. Check that the game disk is not scratched, damaged or dirty. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0055
	Game Program Verify Error
CAUSE	The installed game program is not working correctly.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0064
	Game Program Not Found on Server
CAUSE	No game program on the LAN install server.
COUNTERMEASURES	Check that the game program, place on the LAN install server, and the key chip correspond to each other.

DISPLAY	Error 0066
	Game Program Verify Error
CAUSE	The installed game program is not working correctly.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0081
	Invalid Storage Format
CAUSE	The storage format is wrong.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0082
	Game Program Access Failed
CAUSE	The storage device cannot be recognized.
COUNTERMEASURES	Reinstall the game program. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0083
	Storage Device Not Acceptable
CAUSE	The storage does not have enough space.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0084
	Storage Device Malfunctioning
CAUSE	The storage device may be broken.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0085
	Invalid Storage Format
CAUSE	The storage format is wrong.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0088
	System Program Verify Error
CAUSE	The installed system program is not working correctly.
COUNTERMEASURES	Perform a manual recovery of RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0090
	High CPU Temperature
CAUSE	The CPU temperature is high.
COUNTERMEASURES	Refer to Chapter 7, and clean RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0091
	Too High CPU Temperature
CAUSE	The CPU temperature is high.
COUNTERMEASURES	Refer to Chapter 7, and clean RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0501 - 0530
	(No message)
CAUSE	The connected device cannot be recognized.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0531
	(No message)
CAUSE	The connected graphics device cannot be recognized.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0532
	(No message)
CAUSE	The connected USB device cannot be recognized.
COUNTERMEASURES	Check that the USB devices are connected correctly, and turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0533 - 0550
	(No message)
CAUSE	The connected device cannot be recognized.
COUNTERMEASURES	Turn the power off and then restart the RINGEDGE. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0901
	Wrong Platform
CAUSE	The game board being used is not supported.
COUNTERMEASURES	Check to see if any game programs have been upgraded.

DISPLAY	Error 0902
	Wrong System Program
CAUSE	It was started up with an unsupported system program.
	The RINGEDGE system program must be updated.
COUNTERMEASURES	Check how the game was installed. If that doesn't fix the problem, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0903
	Wrong Region.
CAUSE	The game is for a foreign region.
COUNTERMEASURES	Use a domestic game.

DISPLAY	Error 0905
	Graphic Function Not Found
CAUSE	The RINGEDGE graphics function cannot be recognized.
COUNTERMEASURES	Check that the game program is compatible with the RINGEDGE. If it is, contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0906
	Sound Function Not found
CAUSE	The RINGEDGE sound function cannot be recognized.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0907
	Not Enough System Memory
CAUSE	RINGEDGE does not have enough memory.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0908
	Not Enough SRAM
CAUSE	RINGEDGE does not have enough SRAM.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0909
	Not Enough Storage Device
CAUSE	RINGEDGE does not have enough storage.
COUNTERMEASURES	Contact the office listed in this manual or the point of purchase for this product.

DISPLAY	Error 0910
	Wrong Resolution Setting
CAUSE	The game does not support the current resolution settings.
COUNTERMEASURES	Change the DIP SW to the correct settings and restart the RINGEDGE.

DISPLAY	Error 0911
	Wrong Horizontal/Vertical Setting.
CAUSE	The monitor horizontal/vertical settings are incorrect.
COUNTERMEASURES	Change the DIP SW to the correct settings and restart the RINGEDGE.

DISPLAY	Error 0949
	Keychip Not Found
CAUSE	Failed to access the key chip.
COUNTERMEASURES	Check that the key chip is connected correctly.

DISPLAY	Error 6401
	JVS I/O board is not connected to main board.
CAUSE	(1) The I/O board is not connected. (2) Unreliable connection between the game board and the I/O board.
COUNTERMEASURES	(1) Connect the I/O board to RINGEDGE. Check that the power cable is connected to I/O board. (2) Reconnect or replace the JVS cable that connects the I/O board to RINGEDGE.

DISPLAY	Error 6402
	JVS I/O board does not fulfill the game spec.
CAUSE	The correct I/O board is not connected.
COUNTERMEASURES	Use an I/O board that provides the proper input/output for the game.

DISPLAY	Error 8001
	Network address error (DHCP)
CAUSE	The network connection settings could not be initialized.
COUNTERMEASURES	Check the network connection and follow the startup procedures to restart the system.

DISPLAY	Error 8002
	Network setting error (SYSTEM)
CAUSE	The SYSTEM TEST MODE NETWORK SETTING is incorrect.
COUNTERMEASURES	Check the NETWORK SETTING.

DISPLAY	Error 8003
	Network address error (Dup.IP)
CAUSE	The network connection settings could not be initialized.
COUNTERMEASURES	Check the network connection and follow the startup procedures to restart the system.

DISPLAY	Error 8004 Network setting error (Dup.IP)
CAUSE	The SYSTEM TEST MODE NETWORK SETTING is incorrect.
COUNTERMEASURES	Check the NETWORK SETTING.

DISPLAY	Error 8005 Network type error (WAN)
CAUSE	The line type of the connected ALL.Net router is incorrect.
COUNTERMEASURES	Check the line type of the connected ALL.Net router.

DISPLAY	Error 8006 Network timeout error (DHCP)
CAUSE	The network connection settings could not be initialized.
COUNTERMEASURES	Check the network connection and follow the startup procedures to restart the system.

DISPLAY	Error 8007 Network timeout error (DNS-WAN)
CAUSE	A connection could not be established with ALL.Net.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and the network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

DISPLAY	Error 8008 Network timeout error (DNS-LAN)
CAUSE	A connection could not be established with the ALL.Net router.
COUNTERMEASURES	Check the RINGEDGE network connection and the in-store network ALL.Net connection and then follow the startup procedures to restart the system.

DISPLAY	Error 8009 Network Game Disabled
CAUSE	The GAME TEST MODE ALL.Net connection is set to OFF.
COUNTERMEASURES	Check the GAME TEST MODE settings.

DISPLAY	Error 8103 ALL.Net System error (TIMEOUT)
CAUSE	A connection could not be established with ALL.Net.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and the network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

DISPLAY	Error 8104 ALL.Net System error (REG)
CAUSE	ALL.Net registration could not be confirmed.
COUNTERMEASURES	Check to make sure ALL.Net registration (the agreement) has been successfully completed.

DISPLAY	Error 8106 ALL.Net System Caution
CAUSE	A connection could not be established with ALL.Net.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

DISPLAY	Error 8111 ALL.Net System error (REG)
CAUSE	ALL.Net registration could not be confirmed.
COUNTERMEASURES	Check to make sure ALL.Net registration (the agreement) has been successfully completed.

DISPLAY	Error 8113 ALL.Net System error (MODE)
CAUSE	The ALL.Net settings could not be confirmed.
COUNTERMEASURES	Contact the office listed in this manual.

DISPLAY	Error 8114 ALL.Net System error (RTC)
CAUSE	A connection could not be established with ALL.Net.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and the network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

DISPLAY	Error 8201 ALL.Net System error (TIMEOUT)
CAUSE	A connection could not be established with ALL.Net.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

DISPLAY	Error 8202 ALL.Net System error (REG)
CAUSE	ALL.Net registration could not be confirmed.
COUNTERMEASURES	Check to make sure ALL.Net registration (the agreement) has been successfully completed.

DISPLAY	Error 8301 Network error (GAME-LAN)
CAUSE	The connection with the devices that make up this game could not be confirmed.
COUNTERMEASURES	Check the network connection and follow the startup procedures to restart the system.

| DISPLAY	Error 8302 Maintenance time (GAME)
CAUSE	Currently the server is undergoing maintenance.
COUNTERMEASURES	Wait until server maintenance is complete.

DISPLAY	Error 8303 Network error (GAME)
CAUSE	A connection could not be established with ALL.Net.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and the network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

DISPLAY	Error 8304 Network failed (GAME)
CAUSE	Automatic recovery from the network failure is not possible.
COUNTERMEASURES	Check the RINGEDGE network connection, the in-store network connection and the connection between the ALL.Net router and the network cable, and then follow the startup procedures to restart the system. If the error persists, check the maintenance information.

Manual Recovery

Use the following procedure to return the RINGEDGE system program to a previous state.

1 Press the TEST and SERVICE Buttons simultaneously with the RINGEDGE power off.
Hold the buttons down and turn on the power.

2 After RINGEDGE starts up and the following message is displayed, release the buttons.
The system program will recover automatically. The Advertising screen will be displayed once everything finishes.
Until it is displayed, do not interfere with the cabinet's operations.
(If you are uninstalling a game, the Install Wait screen will be displayed.)

```
SYSTEM UPDATE

STEP1



DO NOT TURN OFF THE POWER
```
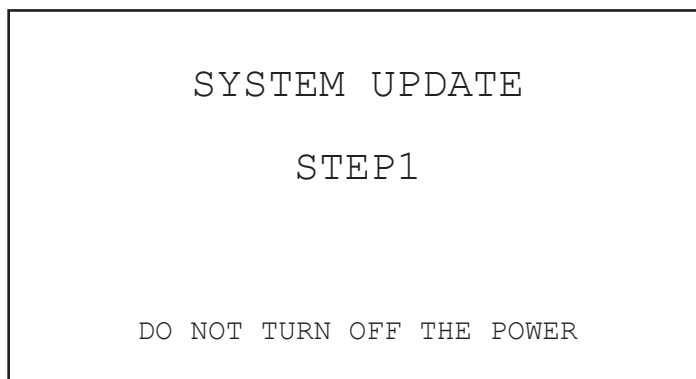
16-5 REPLACING THE BUTTON BATTERY

⚠ WARNING

- Make sure you do not damage the printed board and wires. Such damage can lead to electric shock, short circuit and fire hazard.

- To prevent overheating, explosion, or fire:

  - Do not recharge, disassemble, heat, incinerate, or short the battery.

  - Do not allow the battery to come into direct contact with metallic objects or other batteries.

  - To preserve the battery, wrap it in tape or other insulating material.

- Follow local regulations when disposing of the battery. Improper disposal can damage the environment.

- Even the site maintenance personnel or other qualified professionals must not perform replacement operations for parts not described in this manual. In the event that such work is required either contact the office listed in this manual or first confirm the procedure with the place or office of purchase. Failure to do so may lead to electric shock or short circuit.

- Do not turn on the power with current carrying parts exposed. Doing so could result in electric shock or short circuit.

⚠ CAUTION

To avoid risk of malfunction and damage:

  - Make sure the positive and negative ends are aligned correctly.

  - Use only batteries approved for use with this unit.

(STOP) IMPORTANT

- The batteries in RINGEDGE can be used for approximately 8 years of standard usage. If the battery appears to require replacement sooner than 8 years it is more likely that an error has occurred with some other part of the board. Rather than exchanging the battery requesting repair of the board itself may be more appropriate.

- Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

The button battery that require replacement can be found on the main board, inside the RINGEDGE shield case.

1 Remove the unit on which RINGEDGE is placed from the game cabinet.
RINGEDGE must be removed still attached to the base (wooden shelf, etc.).

2 Remove 2 screws for the RINGEDGE lid. The screws are on top of the connector side.

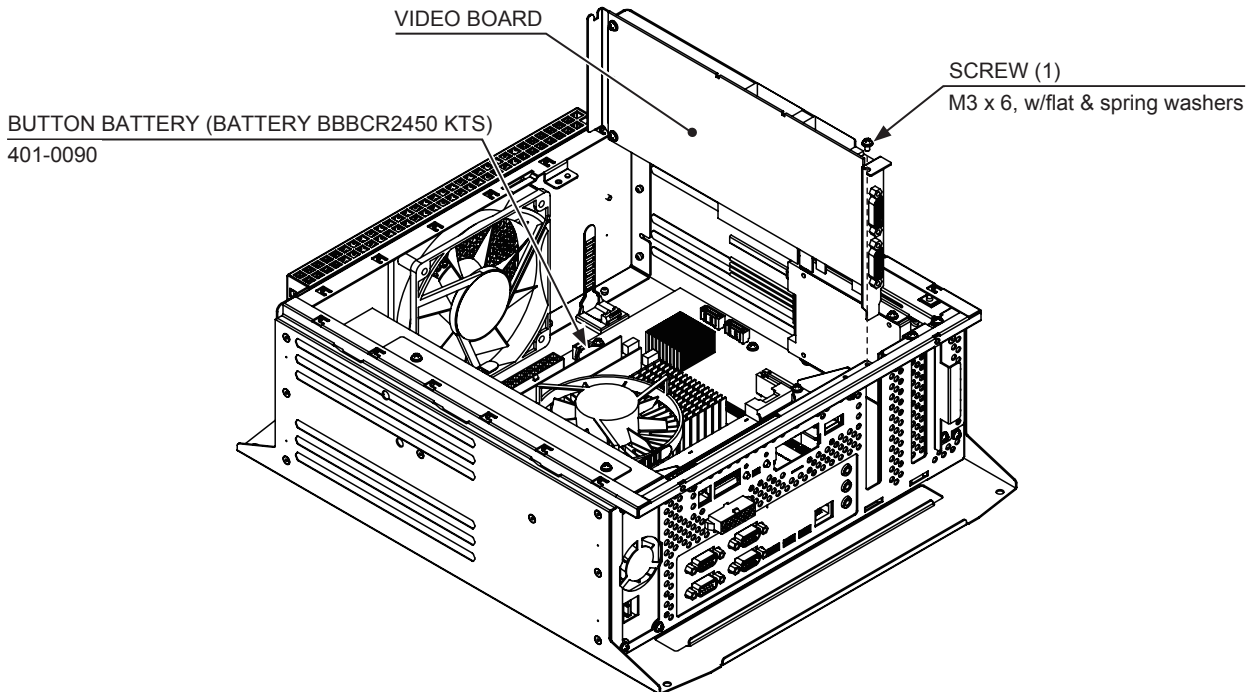*3* Press on the front and back of the lid from above and slide toward the side with the connectors, releasing the catches on the left and right sides. Remove the lid.

Hold pressing
and slide toward the connector side.

CATCHES

SCREW (2)
M3 x 6, w/flat & spring washers
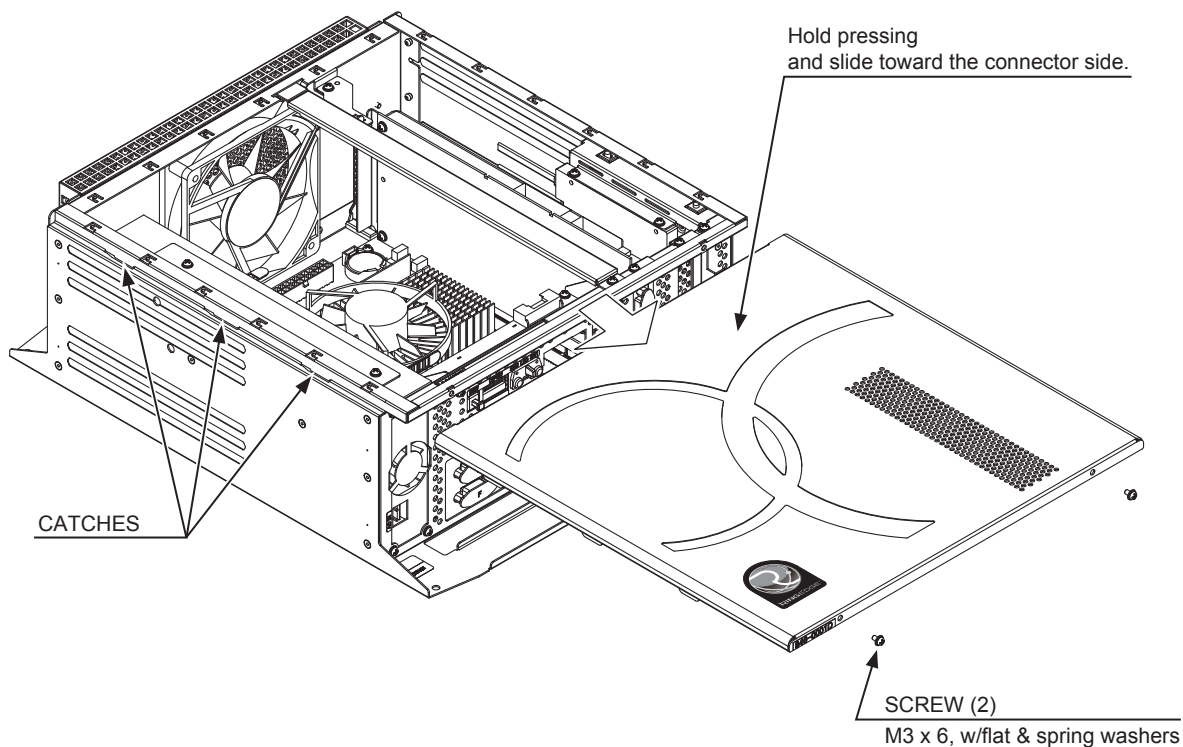
4 The main board is the board on the bottom of the RINGEDGE shield case.

5 Remove the 2 screws from both sides of the metal plate fastening the top of the video board, and take off the metal plate.

METAL PLATE

SCREW (2)
M3 x 6, w/flat & spring washers
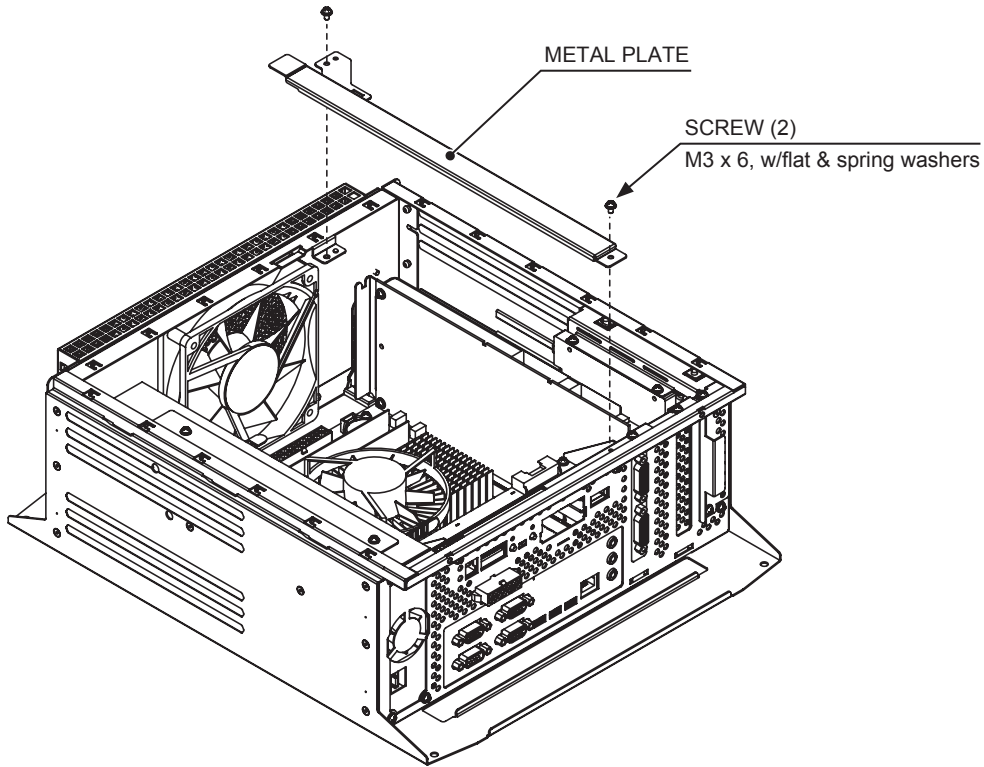
6 Remove the screw fastening the video board to the case, and remove the video board by pulling it straight up.

VIDEO BOARD

SCREW (1)
M3 x 6, w/flat & spring washers

BUTTON BATTERY (BATTERY BBBCR2450 KTS)
401-0090

7 Replace the button battery on the main board.

8 Change the jumper socket attached to the connector as shown in the figure.

CONNECTOR SIDE

Before moving   After moving
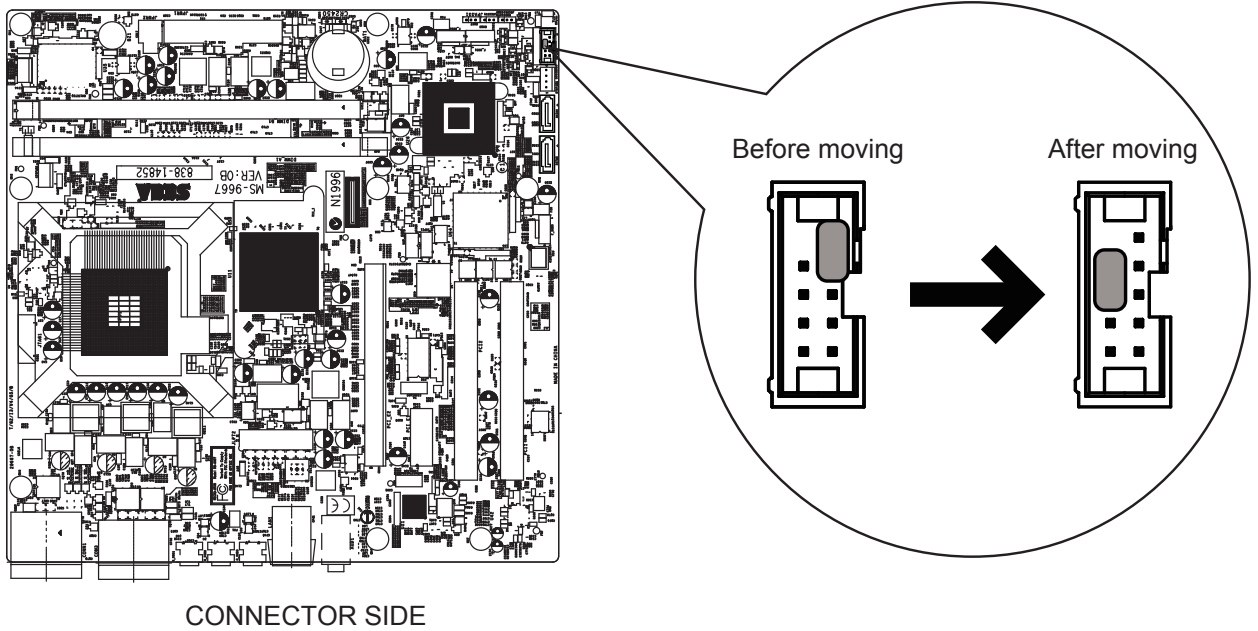
9 Refer to Steps 1 to 6 and work in reverse order to attach the RINGEDGE to the cabinet.

10 Turn on the power to the game cabinet, and turn off the power after 1 second.

11 Refer to Steps 1 to 3 and remove the RINGEDGE from the cabinet, and open the lid.

12 Make sure to return the jumper socket to its original position.

Before moving   After moving
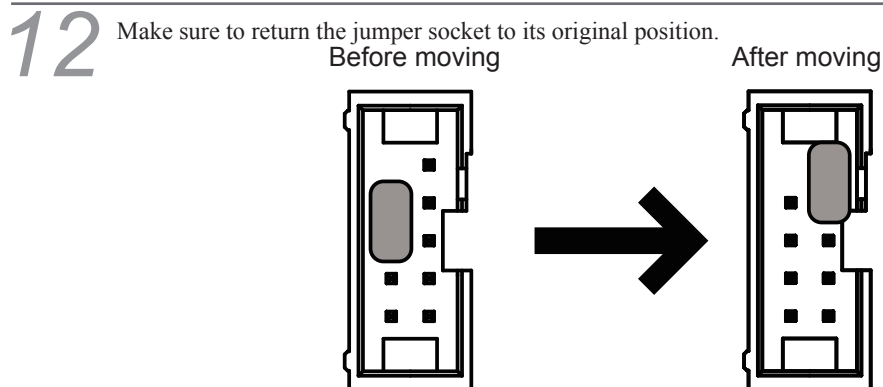
13 Refer to Steps 1 to 3 and work in reverse order to attach the RINGEDGE to the cabinet.
If the power does not turn on, redo the procedure starting from Step 8.

16-6 CLEANING RINGWIDE

(**STOP**) **IMPORTANT**

- **Clean RINGEDGE once a year or whenever either "Error 0090" or "Error 0091" occurs. Dust accumulating in game boards may not function properly.**
- **Set each cabinet to correct settings after cleaning the product. Be sure to set RINGEDGE to correct settings when returning. If the proper settings are not used, the units may not function properly.**
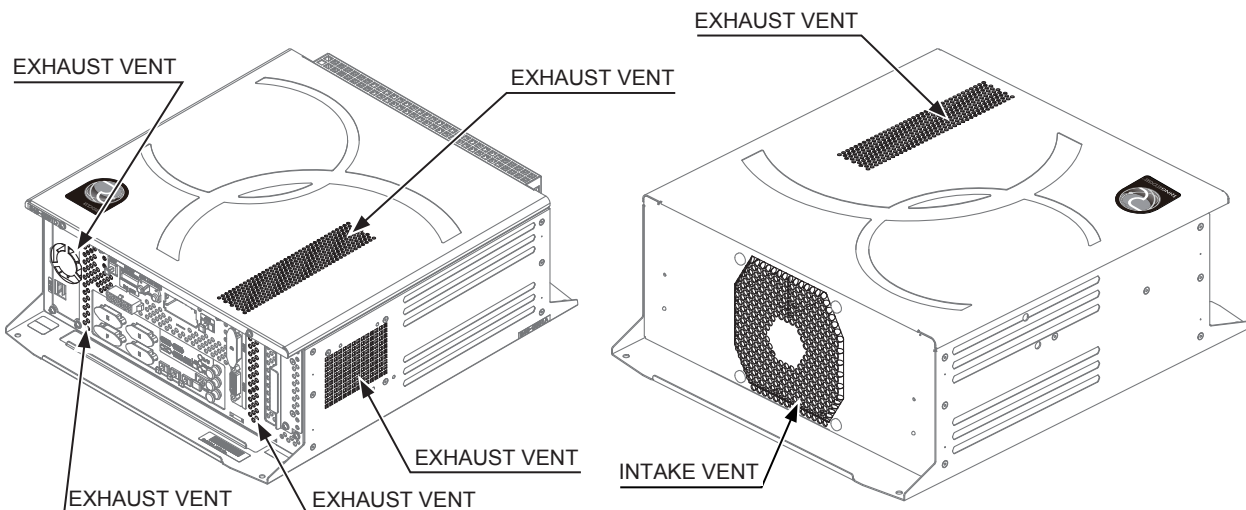
Once a year remove RINGEDGE from the cabinet and use a vacuum cleaner to clean around the RINGEDGE's air vents and installation area.

1 Refer to the manual included with the game machine, and remove RINGEDGE from the cabinet.

2 Remove the 2 screws and take off the RINGEDGE metal filter. The screws are on the opposite side of the connector face.

METAL FILTER

SCREW (2)
M3 x 8, w/flat & spring washers
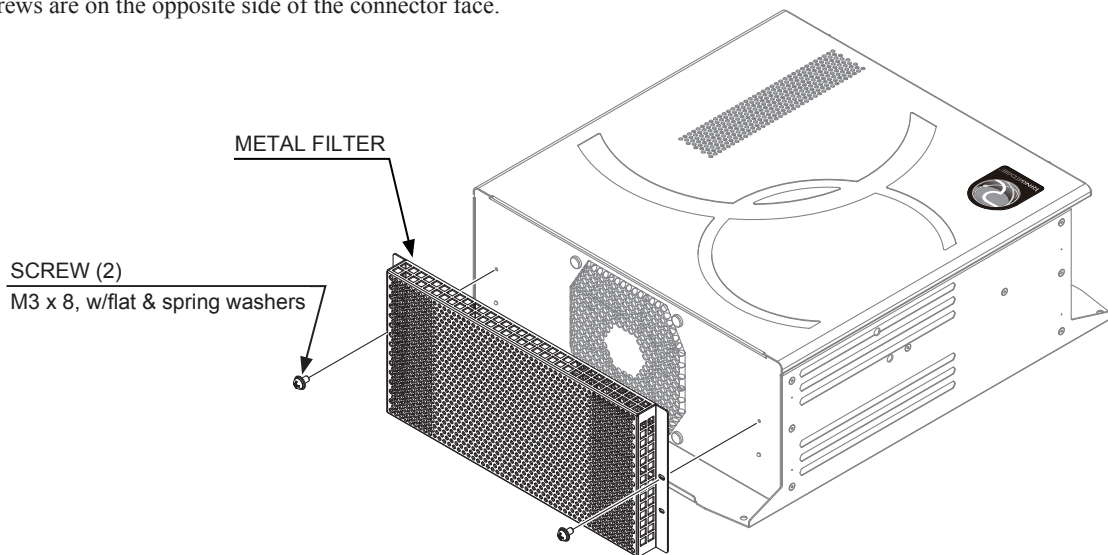
3 Clean the front and back of the metal filter and the area around the RINGEDGE exhaust and intake vents with a vacuum.

EXHAUST VENT

EXHAUST VENT

EXHAUST VENT

EXHAUST VENT

EXHAUST VENT

EXHAUST VENT

EXHAUST VENT

INTAKE VENT

4 Clean around installment parts of RINGEDGE in the cabinet with a vacuum cleaner. Be sure not to damage wirings and boards. Electronic devices on boards may damage by static electricity, and be sure not to vacuum electronic devices by a vacuum cleaner.

5 Set each RINGEDGE you removed by the reverse method.

16-7 GAME BOARD (RINGEDGE) - LOCATION/REMOVAL

⚠ WARNING

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

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

● **When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.**

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

1 The machine is fitted with a RINGEDGE Game Board. To access the Game board re-move the Rear Service Door. (The Ringedge is positioned directly behind it).
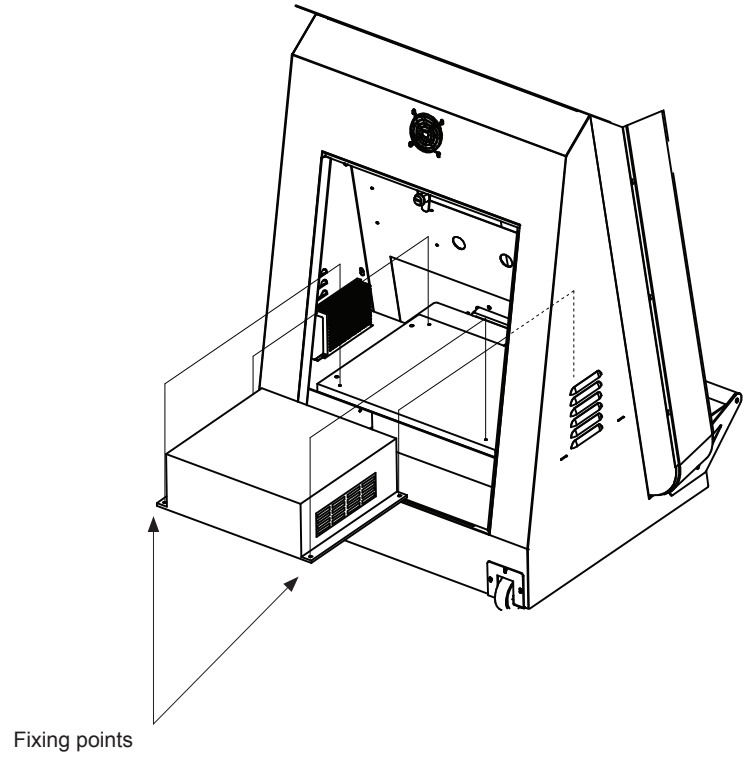
Ringedge Game Bd

Rear Service Door
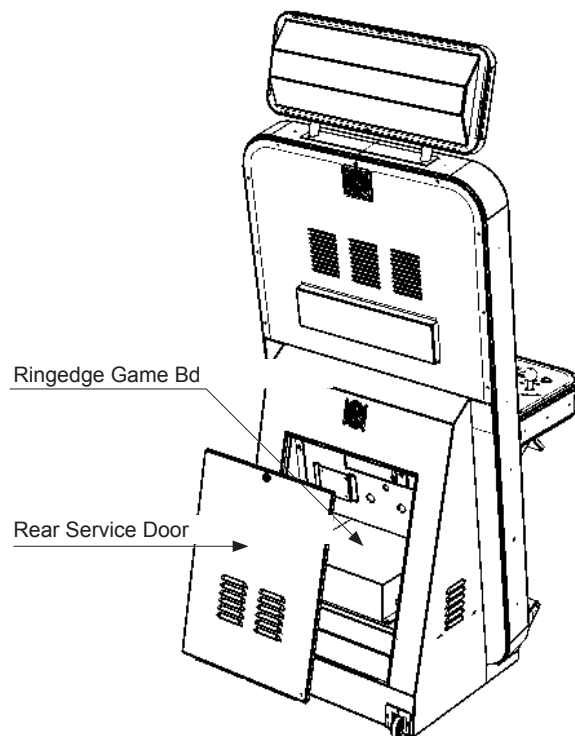
2 Disconnect all connections made at the connector Panel.

3 Remove the fixings (4) at each corner of the Ringedge Game Bd case.

Fixing points

4 Remove the fixings (4) at each corner of the Ringedge Game Bd case.

17 FUSES AND FUSE REPLACEMENT

⚠ WARNING

- **In case fuse replacements other than those stated in this manual are necessary, contact where you purchased the product from for inquiries regarding this matter.**

- **In order to prevent an electric shock, be sure to turn power off and unplug from the socket outlet before performing work by touching the internal parts of the product.**

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

- **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.**
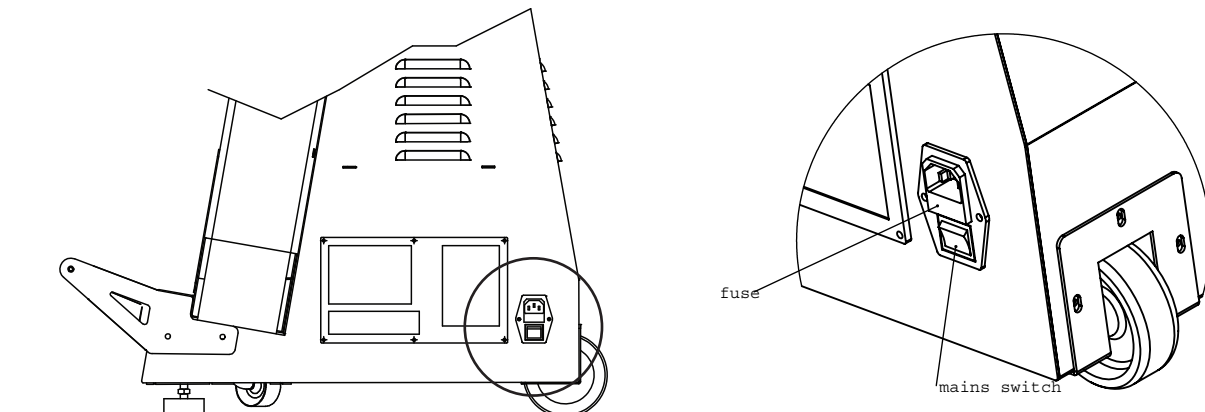
⚠ CAUTION

For continued protection against risk of fire, replace only with the same type of fuse having the same electrical ratings.
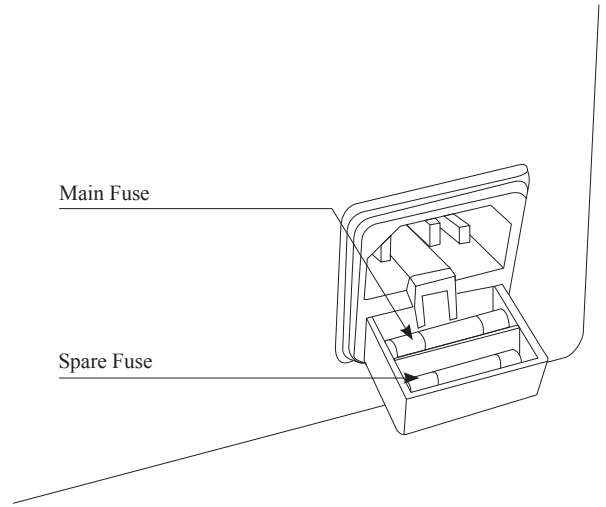
17-1 MAIN FUSE REPLACEMENT

1   Remove power from the machine and disconnect the mains lead..

2   Locate the main IEC inlet and the fuse compartment.

fuse

mains switch

3 Open the compartment. There are normally 2 fuses within the compartment. The fuse closest to the outer edge is a spare and can replace the fuse at the rear of the compartment if nesscasary.

Main Fuse

Spare Fuse

Fuses are located on the following:

MAINS INPUT (EU)   3.15A CERAMIC 20mm Fuse Type - T

MAINS INPUT (US)   6.3A CERAMIC 20mm Fuse Type - T

There are no other serviceable fuses within this product.

18 DESIGN-RELATED PARTS (ARTWORK)

For the warning display stickers, refer to Section 1.
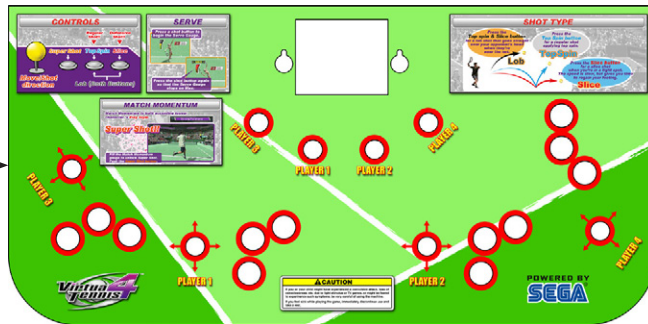
DECAL Billboard
3-7P-1831

DECAL Sub Instruction
3-7P-1830

DECAL Instruction
2-7A-1633

DECAL Control Panel
2-7A-1658

DECAL Cabinet
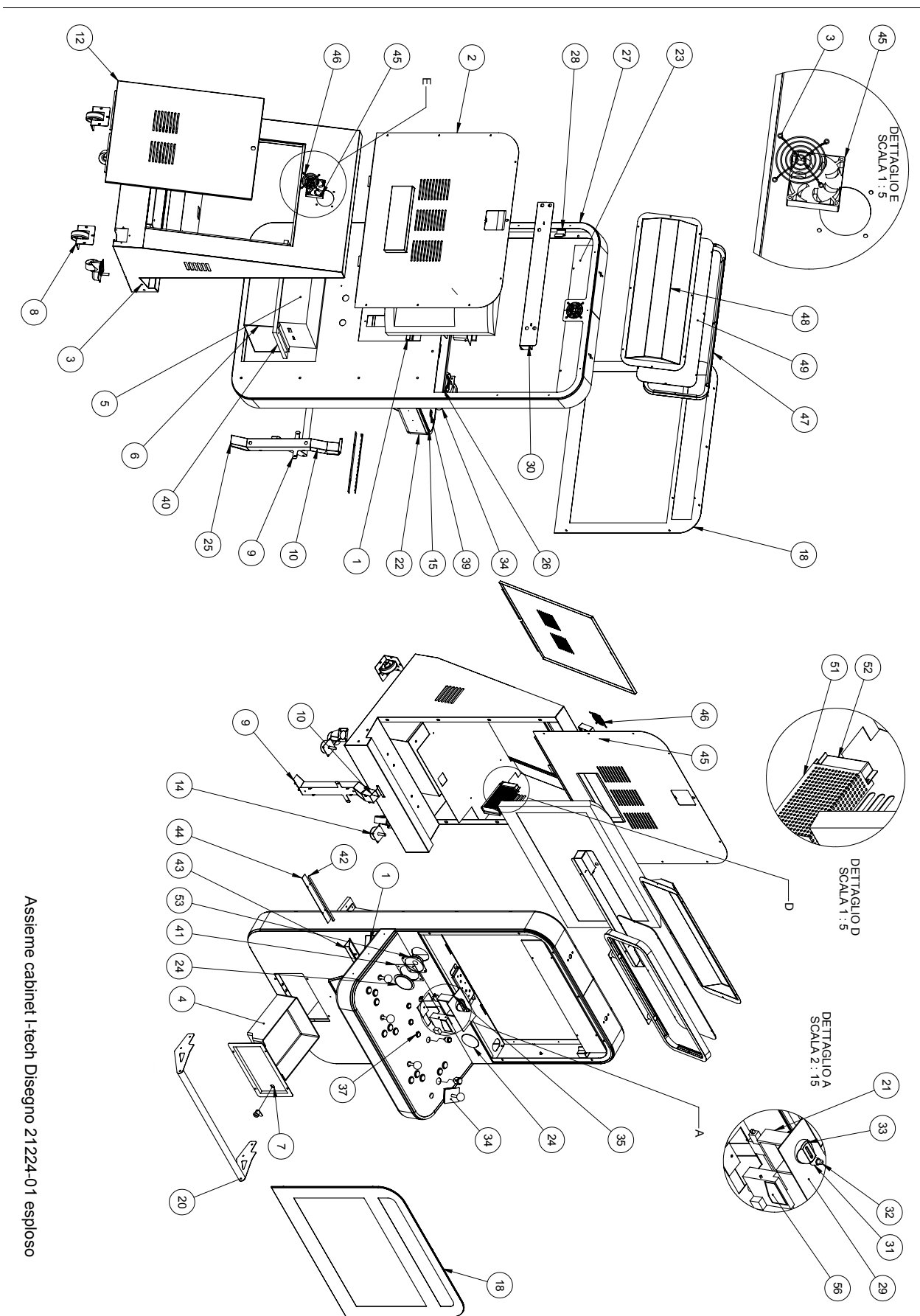2-7A-1661

19 PARTS LIST

① ASSY TOP VIRTUA TENNIS 4 (D-1/5)

ITEM NO	PART NO	DESCRIPTION	QTY
1	4-m-1508	Cabinet Main	1
2	4-m-1511	Back Door LCD	1
3	4-m-1501	Rear Cabinet	1
4	2-6C-0101	Cash Box	1
5	847-0001D-02	Assy Case Edg W	1
6	4-m-1526	Cash box surround	1
7	4-m-0685	Cash box door	1
8	2-4R-0088	Castor Fixed	2
9	4-m-1503	Coin Chute	1
10	4-m-1502	Coin Chute Top	1
11	2-4S-0094-S	Locking Tang	1
12	4-m-1525	Back Door Main	1
13	2-4R-0128	Castor swivel	2
14	4-m-0401	Leg Adjuster	2
15	4-m-1517	Control Panel	1
16	4-m-1514	Test / service plate	1
17	2-1C-0045	Meter	1
18	2-8v-0053	Main Glass	1
19	4-m-1512	Glass reinforcement Bkt	1
20	4-m-1500	Foot rest	1
21	2-7S-0087	Coin mech support	1
22	4-m-1510	Control panel fascia	1
23	2-7P-0587	Artwork Monitor Top	1
24	4-m-1513	Speaker grille	2
25	4-m-1504	Coin Chute Lower	1
26	4-m-1506	Metal Frame	1
27	4-m-1509	Metal fascia stainless	2
28	4-m-1516	Monitor bracket upper	2
29	4-m-1523	Coin Entry plate	1
30	4-m-1518	LED strip Billboard	1
31	2-5P-0132	Coin Reject collar	1
32	2-5P-0131	Coin Reject Plunger	1
33	2-5p-0134	Coin Entry Bezel	1
34	6-m-0206	Assy 8Way Joystick Yellow	4
35	4-m-1524	Coin Mech Bracket	1
36	2-1p-0325	Reset Button	2
37	2-1P-0159	SW PB D24 Yellow	4
38	2-1F-0071	Mesh Filter	1
39	2-1P-0354	SW PB D30 Dark Grey	12
40	3-9m-0211	Game Board Wood	1
41	4-m-1529	Speaker mount	2
42	6-E-1199	LED Bar	3

43	4-m-1530	Lower LED Bracket	2
44	2-7P-0593	LED Bar Bracket	3
45	2-1V-0010	Fan	2
46	2-6G-0051	Fan Grille	2
47	4-m-1531	Billboard Frame	1
48	4-m-1532	Billboard Rear Cover	1
49	2-7P-0592	Billboard Panel	1
50	2-4D-0037	M4 Flange nut	2
51	2-1A-0080	PSU	1
52	2-7P-0589	Terminal Strip Guard	1
53	2-1A-0081	Speaker	2
54	6-E-2171	32" LCD	1
55	4-m-1515	Monitor Bracket Bottom	1
56	6-E-2217	SR3 STD Body	1
	EP1380-1	EXCEL CREDIT BD	1
	837-14505	I/O CNTRL BD FOR JVS	1
	610-0816-0045	DVD SOFT KIT VT4	1
	253-5644-039BG	KEY CHIP RGE VT4	1

19

PARTS LIST

PARTS LIST

DETTAGLIO E
SCALA 1 : 5

DETTAGLIO D
SCALA 1 : 5

DETTAGLIO A
SCALA 2 : 15

Assieme cabinet I-tech Disegno 21224-01 esploso

866

2130

805,57

B

DETTAGLIO B
SCALA 1 : 5

11 60 17 16 36

36

50

36

16

11
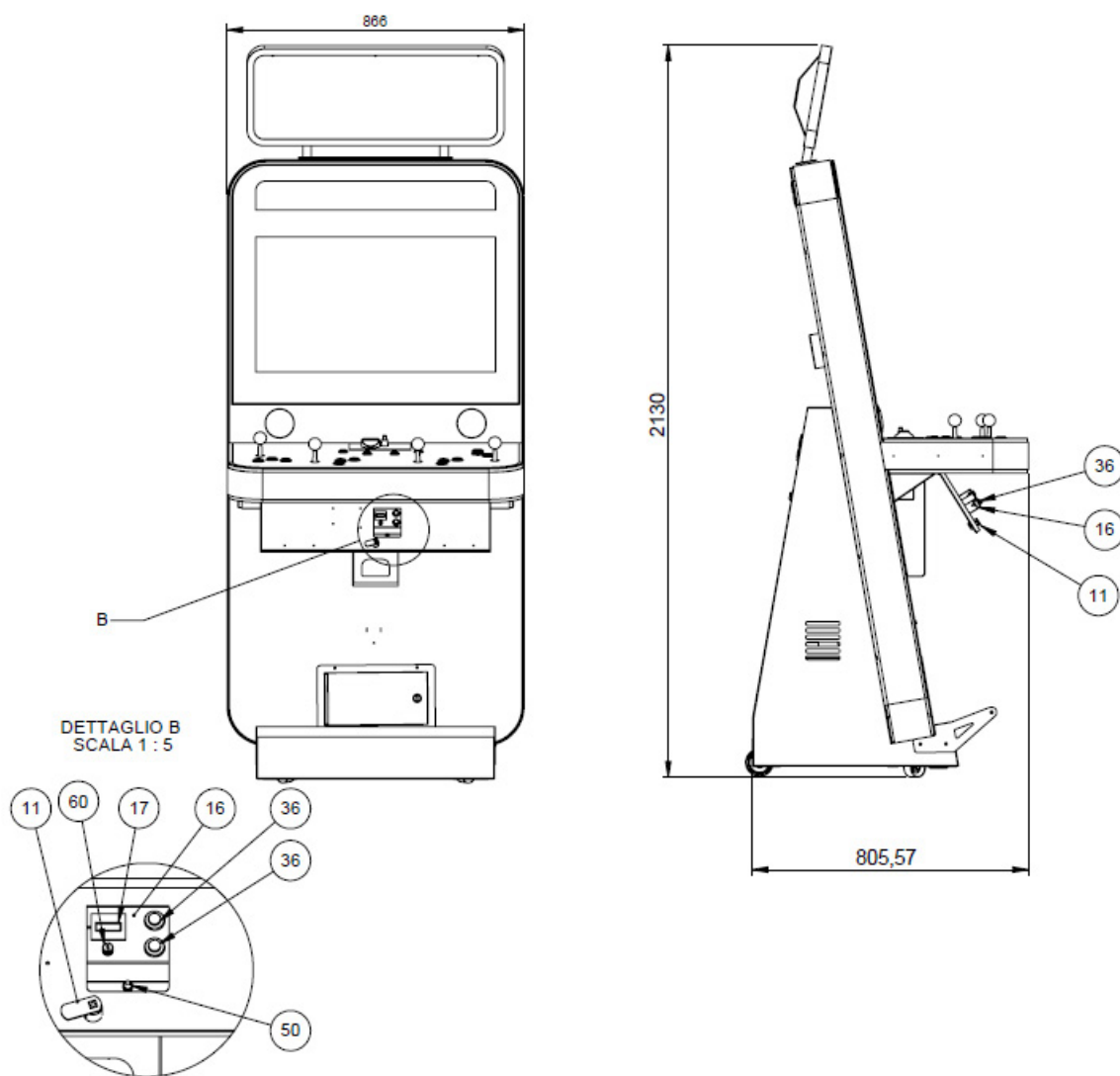
19

PARTS LIST

Assieme cabinet I-tech Disegno 21224-01-esploso

DETTAGLIO C
SCALA 2:15

18
23
47
49
48
20
11
7
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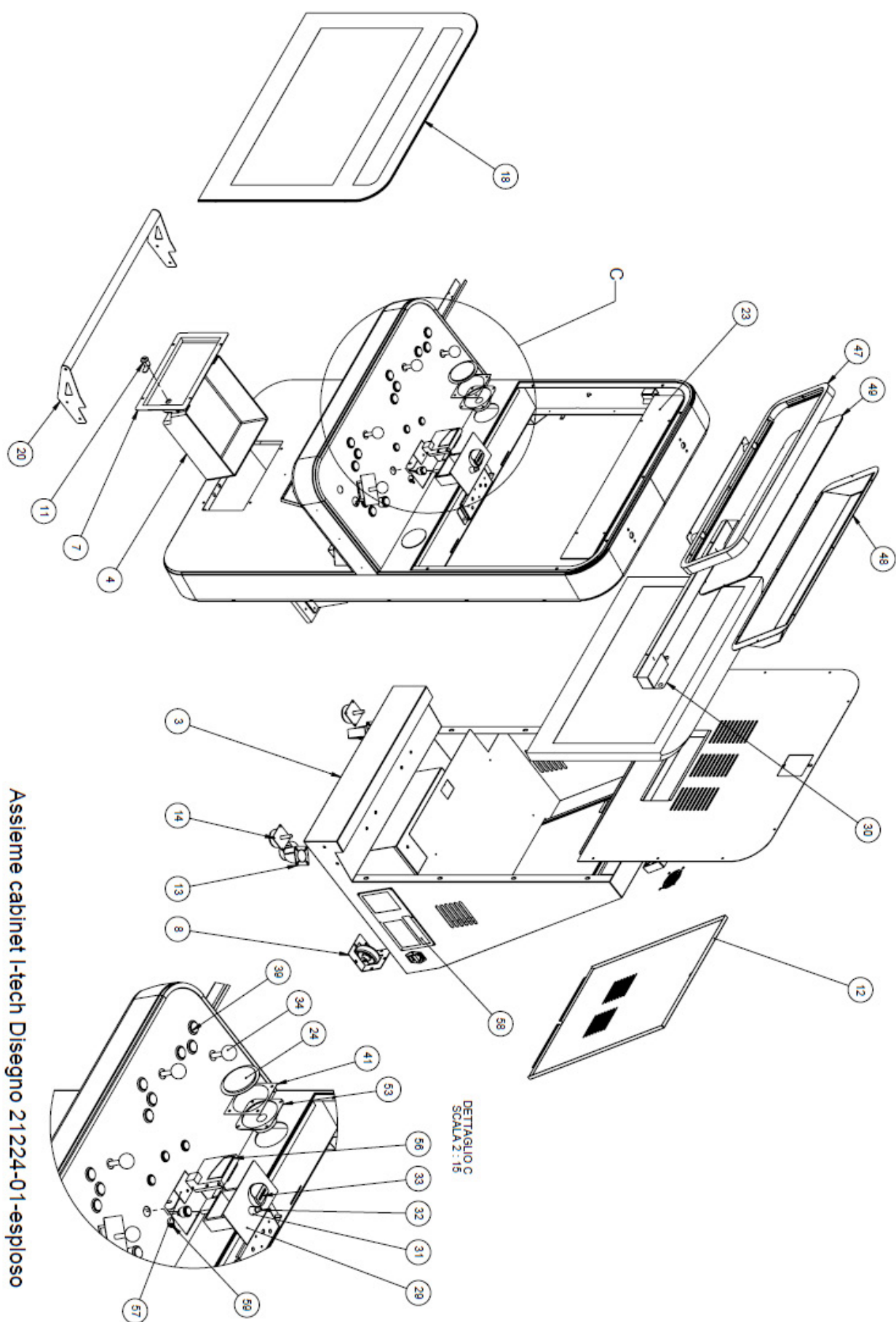
🔟 WIRE COLOUR CODE TABLE

⚠ WARNING

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

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

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

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

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

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

Note 1:   If the right-hand side numeral is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.
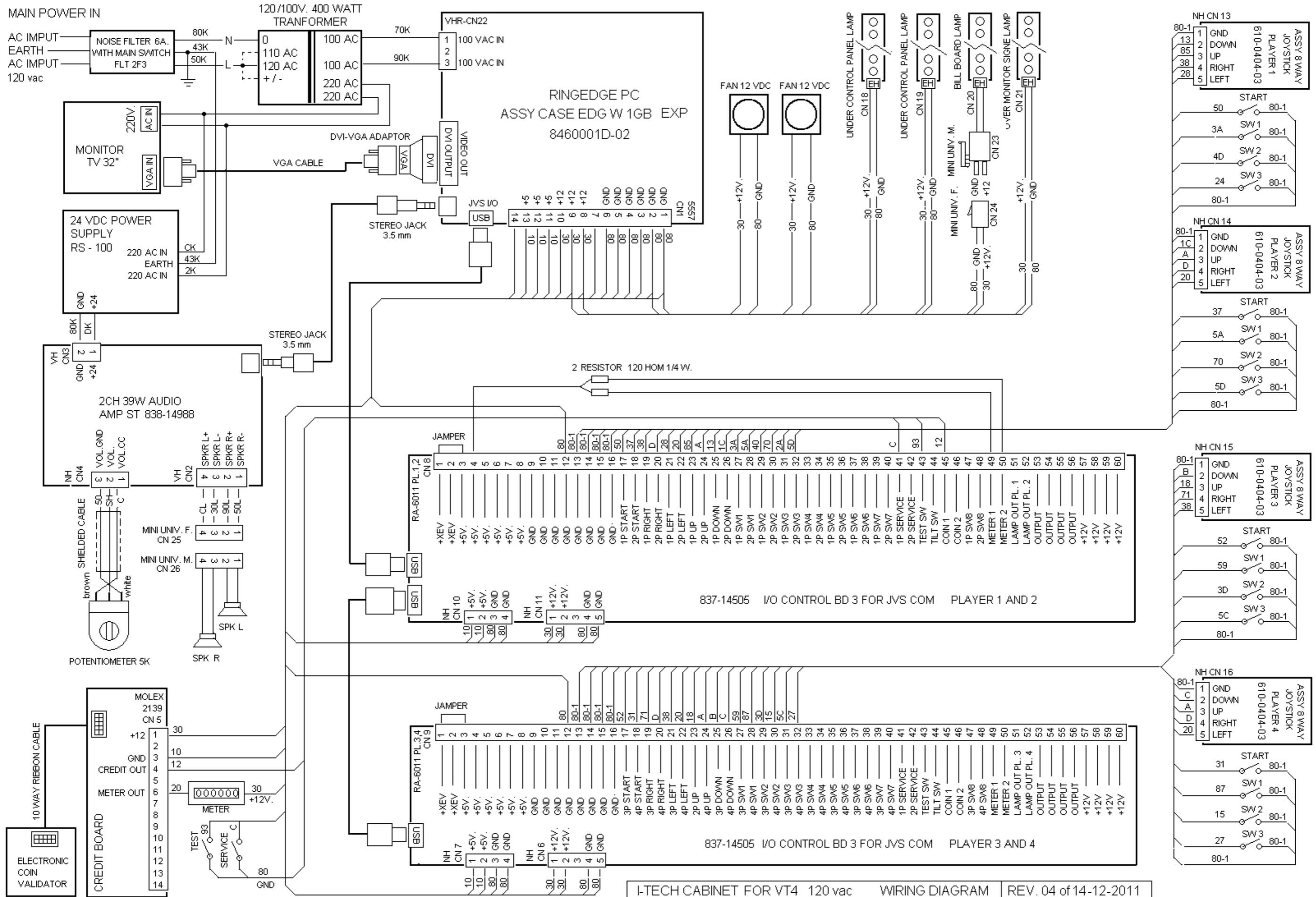
<Example> 51·········WHITE/RED

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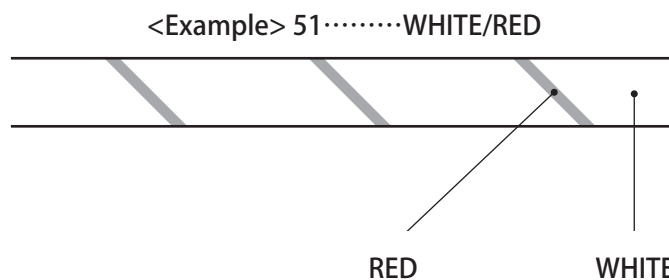
Note 2:   The character following the wire color code indicates the size of the wire.

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

21 **SCHEMATIC DIAGRAMS**
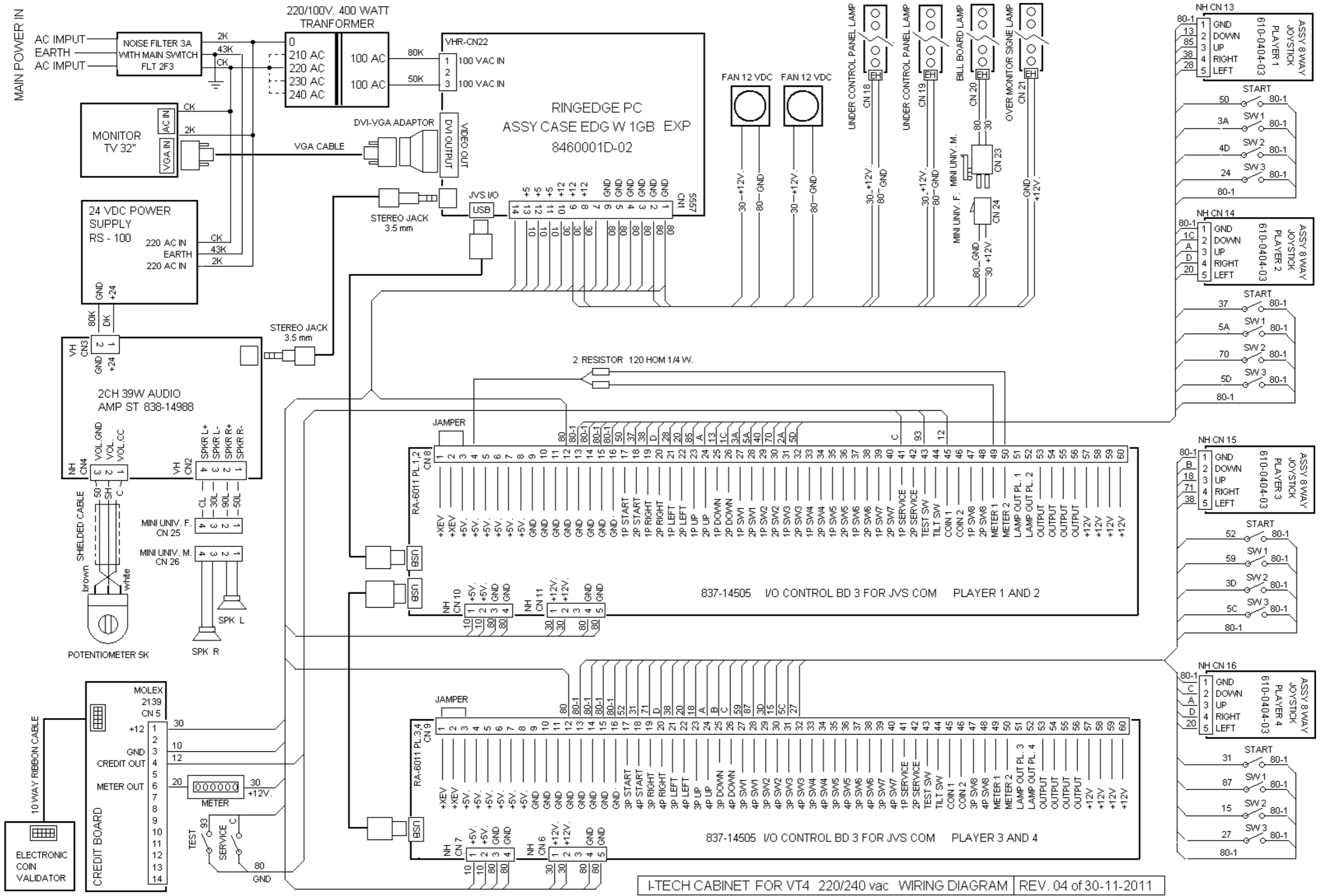
I-TECH CABINET FOR VT4 220/240 vac WIRING DIAGRAM | REV. 04 of 30-11-2011

I-TECH CABINET FOR VT4 120 vac   WIRING DIAGRAM   REV. 04 of 14-12-2011