

1<sup>st</sup> PRINTING

SEGA®

Sega Amusements Europe Limited.  
42 Barwell Business Park, Leatherhead Road, Chessington, Surrey, KT9 2NY, United Kingdom.  
Telephone: +44 (0) 208 391 8090 Facsimile: +44 (0) 208 391 8099  
email: mailbox@sega.co.uk Web: http://www.segaarcade.com

Sega Corporation  
Canal Side Bldg 1-39-9 Higashishinagawa Shinagawa-ku, Tokyo, 140-8583, Japan.  
Telephone: +81-3-687-7133 Facsimile: +81-3-687-7134

© SEGA

TRANSFORMERS HUMAN ALLIANCE

OWNERS MANUAL

420-0021UK

SEGA®

OWNER'S MANUAL

TRANSFORMERS  
HUMAN ALLIANCE™



#### 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 Owner's Manual, Serviceman Manual and/or Service Manual should be referred to.

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

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

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

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

## **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.

### Sega Amusements Europe Limited.

42 Barwell Business Park, Leatherhead Road, Chessington, Surrey, KT9 2NY. United Kingdom.

European Sales: +44 (0) 208 391 8090    Facsimile: +44 (0) 208 391 8099

STS (Spares): +44 (0) 208 391 8060    Facsimile: +44 (0) 208 391 8096

email: mailbox@sega.co.uk    Web: http://www.segaarcade.com

### Sega Corporation

Canal Side Bldg 1-39-9 Higashishinagawa Shinagawa-ku, Tokyo, 140-8583, Japan.

Telephone: +81-3-687-7133    Facsimile: +81-3-687-7134

### Play It! Amusements, inc.

252 Beinoris Drive, Wood Dale, IL. 60191, USA

USA Sales: +00 (1) 224 265 4287

## SPECIFICATIONS

### Installed Dimensions

Machine Dimensions: 1.62m (63.8in.) [Width] x 2.41m (94.9in.) [Depth]

Machine Height: 2.38m (93.7in.) (With Billboard)

Machine Weight: 496kg (1093.49lb) Approx

Rating: AC238V@1.21A, (268W) AC114V@1.79A, (205W)

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

### **WARNING**

Servicing and maintenance work of the contents herein stated should be performed by the SERVICEMAN stipulated as per IEC Standard. Those who do not have technical expertise and knowledge other than the SERVICEMAN are not allowed to perform the work herein stated. Executing aforementioned work by such non-technical personnel can cause serious accidents that may endanger life.

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 specialised 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:**

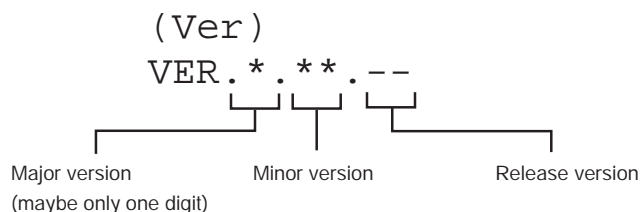
Persons employed by amusement equipment manufacturers, or involved in design, production, testing or maintenance of amusement equipment. The individual should have either graduated from technical school or hold similar qualifications in electrical/electronics/mechanical engineering.

#### **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. When describing software version upgrades, only major versions 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.



### 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



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

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

## WARNING

- Before performing work, be sure to turn the power off. Performing the work without turning the power off can cause an electric shock or short circuit. In the case work should be performed in the status of power on, this manual always states to that effect.
- To avoid an electric shock or short circuit, do not plug in or unplug quickly.
- To avoid an electric shock, do not plug in or unplug with a wet hand.
- Do not expose power cords or earth wires on the surface, (floor, passage, etc.). If exposed, the power cords and earth wires are susceptible to damage. Damaged cords and wires can cause an electric shock or short circuit.
- To avoid causing a fire or an electric shock, do not put things on or damage the power cords.
- When or after installing the product, do not unnecessarily pull the power cord. If damaged, the power cord can cause a fire or an electric shock.
- In case the power cord is damaged, ask for a replacement through where the product was purchased from or the office herein stated. Using the cord as is damaged can cause fire, an electric shock or leakage.
- Be sure to perform grounding appropriately. Inappropriate grounding can cause an electric shock.
- Be sure to use fuses meeting the specified rating. Using fuses exceeding the specified rating can cause a fire or an electric shock.
- Be sure that connections such as IC BD are made properly. Insufficient insertion can cause an electric shock.
- Specification changes, removal of equipment, conversion and/or addition, not designated by SEGA are not permitted.
  - Failure to observe this may cause a fire or an electric shock. Non-compliance with this instruction can have a bad influence upon physical conditions of the players or the onlookers, or result in injury during play.
  - SEGA shall not be held responsible for damage, compensation for damage to a third party, caused by specification changes not designated by SEGA.
- Do not perform any work or change parts not listed in this manual. Doing so may lead to an accident.  
If you need to perform any work not listed in this manual, request work from the office indicated in this manual or the point of purchase, or inquires for details.
- Be sure to perform periodic maintenance inspections herein stated.



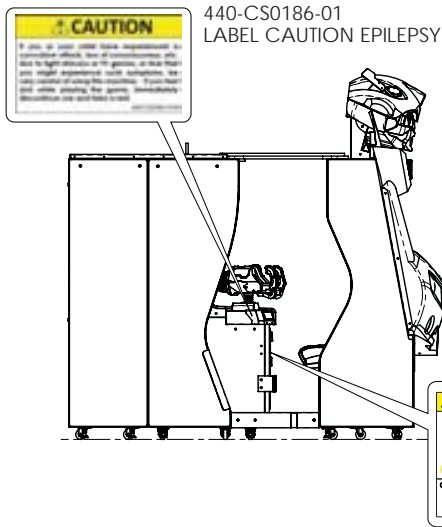
## IMPORTANT

- For the IC board circuit inspections, only the logic tester is allowed. The use of a multiple-purpose tester is not permitted, so be careful in this regard.
- The LED Video Screen is employed for this machine. The screen is susceptible to damage, therefore, be very careful when cleaning the screen. For details, refer to the section "Projector."
- Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.
- Some parts are not designed and manufactured specifically for this game machine. The manufacturers may discontinue, or change the specifications of such general-purpose parts. If this is the case, SEGA cannot repair or replace a failed game machine whether or not a warranty period has expired.

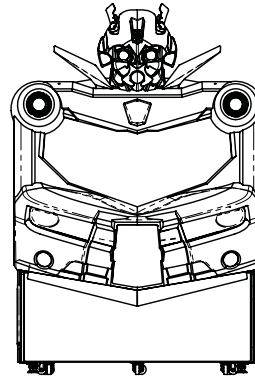
This SEGA product has stickers attached describing the product manufacture No. (Serial No.) and Electrical Specifications. It also has a Sticker describing where to contact for repair and for purchasing parts.

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.

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.

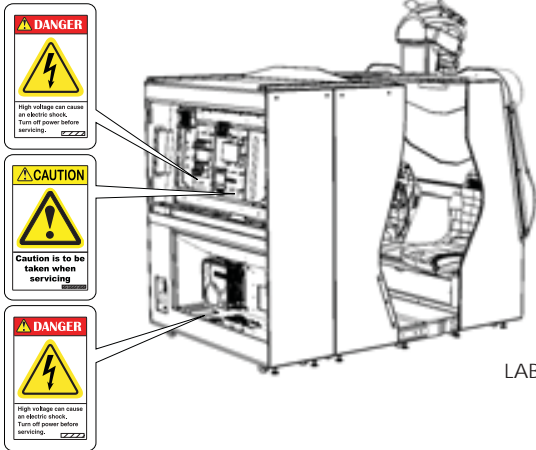


440-CS0186-01 LABEL CAUTION EPILEPSY



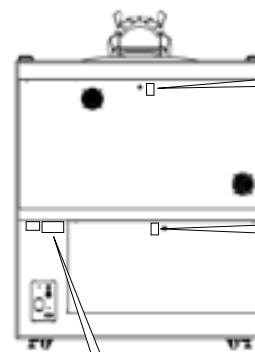
440-CS0030UK LABEL CAUTION

440-DS0010UK LABEL DANGER HI VOLTAGE

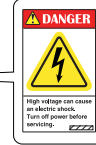


440-CS0030UK LABEL CAUTION

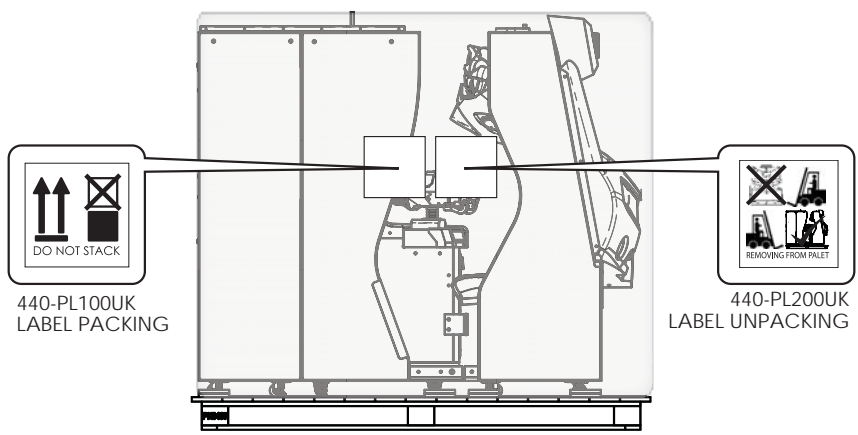
440-DS0010UK LABEL DANGER HI VOLTAGE



440-DS0010UK LABEL DANGER HI VOLTAGE

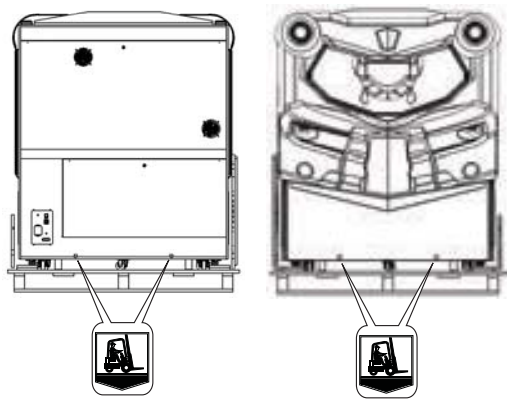


421-7988-91UK LABEL RATING SERIAL LB1046 LABEL PAT TEST



440-PL100UK  
LABEL PACKING

440-PL200UK  
LABEL UNPACKING



440-WS100UK  
LABEL FORK HERE



 **WARNING**

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

- Places subject to rain or water leakage, or places subject to high humidity in the proximity of an indoor swimming pool and/or shower, etc.
- Places subject to direct sunlight, or places subject to high temperatures in the proximity of heating units, etc.
- Places filled with inflammable gas or vicinity of highly inflammable/volatile chemicals or hazardous matter.
- Dusty places.
- Sloped surfaces.
- Places subject to any type of violent impact.
- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.
- The operating (ambient) temperature range is not from 5°C to 30°C.
- Places near water or spray from water such as a Jet Wash or Swimming Pool.



**⚠ WARNING**

- Be sure to check the Electrical Specifications. Ensure that this product is compatible with the location's power supply, voltage, and frequency requirements. A plate describing Electrical Specifications is attached to the product. Non-compliance with the Electrical Specifications can cause a fire and electric shock.
- This product requires a breaker and earth mechanism as part of the location facilities. Using the product without these can cause a fire and electric shock.
- Ensure that the indoor wiring for the power supply is rated at 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.

**Electricity consumption:**

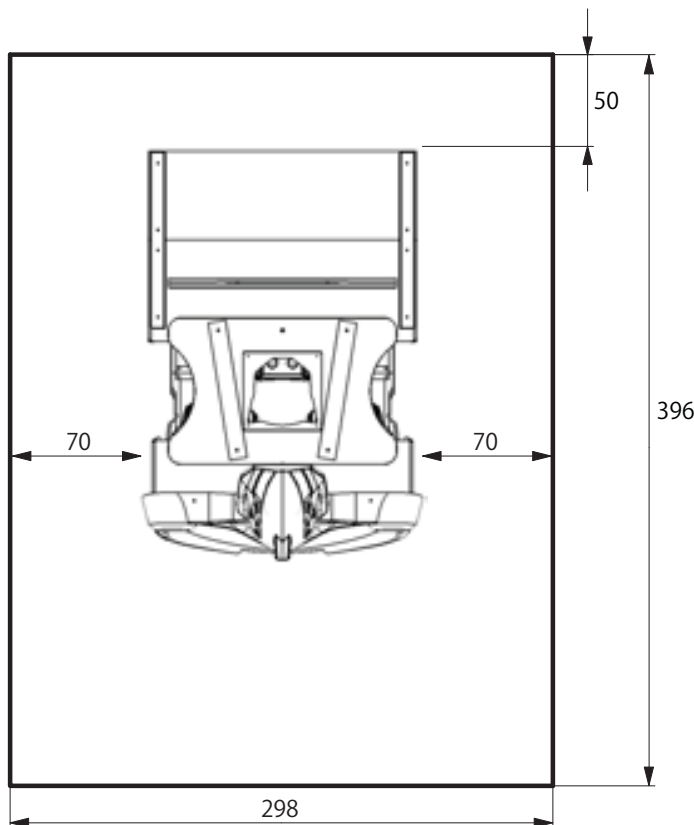
MA . 275w @ 230VAC 240VAC  
 MA 215w @ 110VAC 120VAC

**⚠ WARNING**

- For the operation of this machine, secure a minimum area of 2.98 m (W) x 3.96 m (D). If the machine rolls during play it could lead to serious injury, especially if anyone is hit on the head. You must secure the space specified in this document.
- Be sure to provide sufficient space specified in this manual. Do not allow objects to block the ventilation ports. It can cause generation of heat and a fire.
- SEGA shall not be held responsible for damage or compensation for damage to a third party, resulting from the failure to observe this instruction.
- If the machine does not fit through the entryway to the installation location, do not disassemble it without first consulting the instructions. 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.

**STOP IMPORTANT**

To install this product, the entrance must be at least 1.52 m in width and 1.96 m in height.



Installation and operation area cm

# PRECAUTIONS REGARDING PRODUCT OPERATION

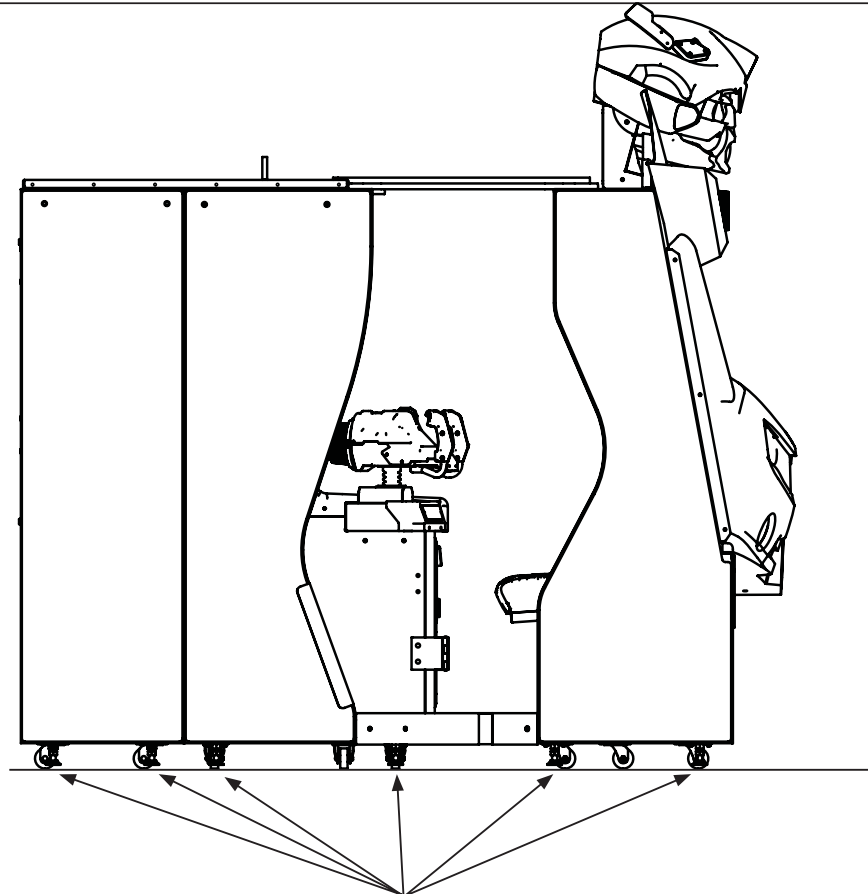
To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

## PRECAUTION

### WARNING

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

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



Ensure that all of the adjusters are in contact with the floor.



## **⚠ WARNING**

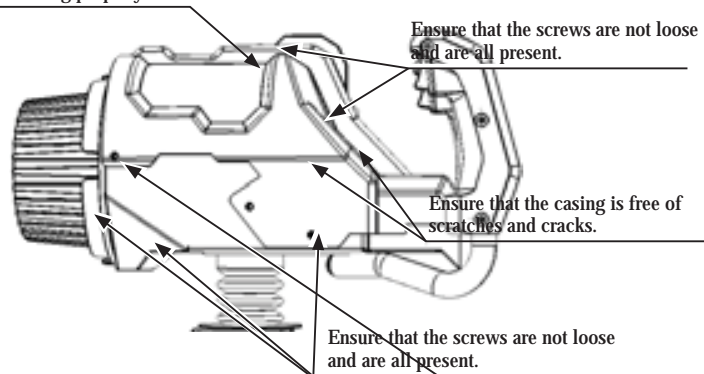
- Do not put any heavy item on this product. Placing any heavy item on the product can cause a falling down accident or parts damage.
- Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step ladder.
- When using a stepladder or stool while working, do not hold onto the billboard carrier (the round pipe section). Holding or hanging off this may bend it out of shape or damage it, and could lead to a fall or an accident.
- To avoid electric shock, check to see if door & cover parts are damaged or omitted.
- To avoid electric shock, short circuit and/or parts damage, do not put the following items on or in the periphery of the product.

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

## **⚠ CAUTION**

- To avoid injury, be sure to provide sufficient space by considering the crowd situation at the installation location. Insufficient installation space can cause customers to bump into each other, causing trouble.
- Every day when cleaning the Control Unit (Gun), inspect the gun and make sure that there are no scratches or cracks in the surface, and that the fastening screws are not loose. If the game is played with scratches, cracks or loose screws, it can cause injuries to the player or to people nearby.

Ensure that the trigger is functioning properly.



- When you clean the cabinet each day, always make sure that there is nothing placed on the seats and that they are not damp or wet. The construction of this product may allow for willful misconduct by players.

## **STOP IMPORTANT**

To ensure customers enjoy playing the game, clean the Control Unit regularly. If there is any dirt buildup, the trigger may not return properly after being pulled.

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

**⚠ WARNING**

- For safety reasons, do not allow any of the following people to play the game.
  - Those who require supporting devices, etc., to walk.
  - 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.
  - Intoxicated persons.
  - Pregnant women.
  - Persons susceptible to motion sickness.
  - Persons who disregard the product's warning displays.
- 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, 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.

## CAUTION

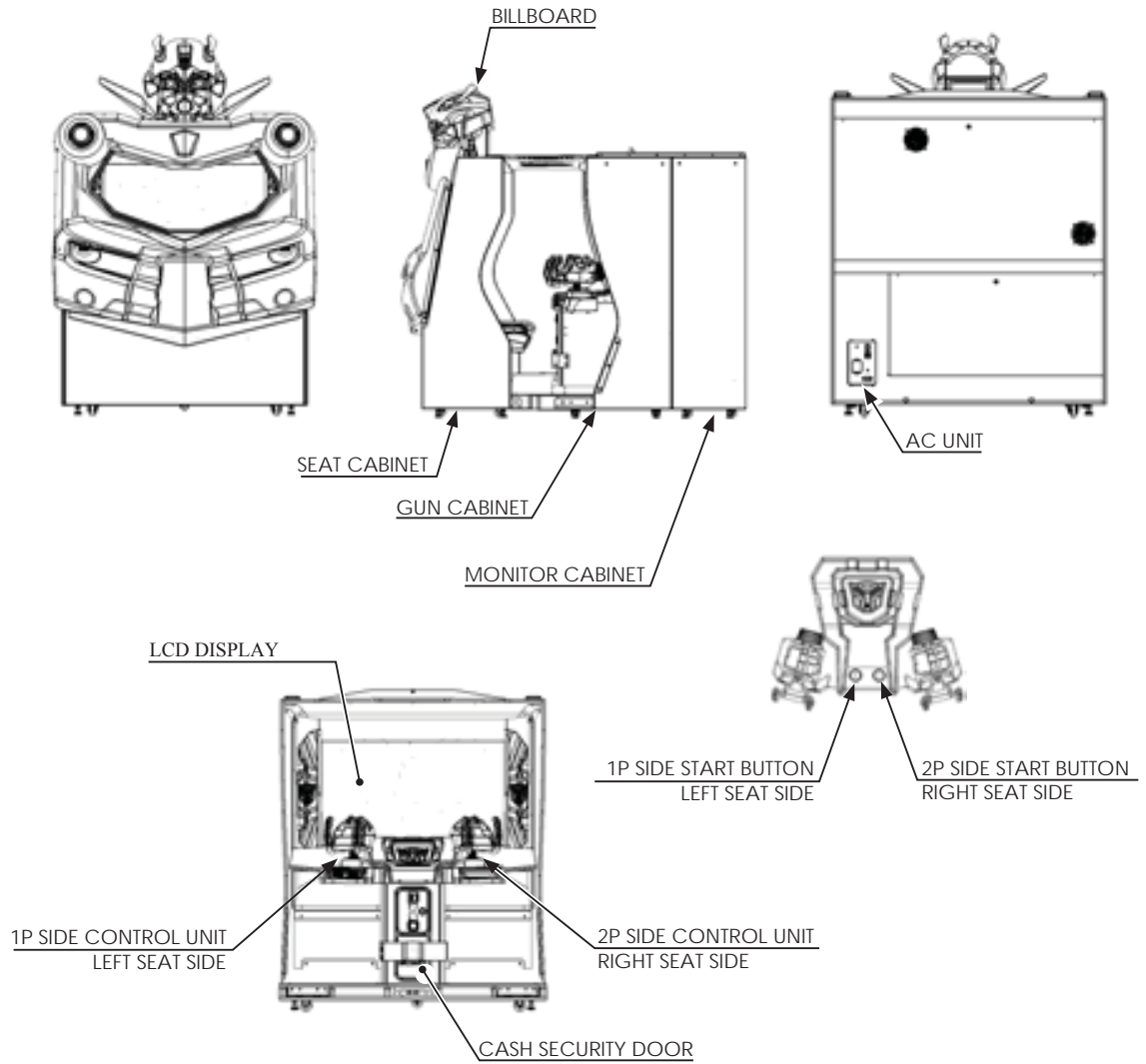
- Immediately stop such violent acts as hitting and kicking the product. Such violent acts can cause parts damage or falling down, resulting in injury due to fragments and falling down.
- Two or more players must never be allowed to play using a single Control Unit. Playing in such a way could lead to physical injuries.
- When entering or exiting the machine, players may trip over the base. Be sure to warn players who do not appear to be exercising proper caution.

## IMPORTANT

The interior of the cabinet is hard to see from the outside which may lead to willful misconduct by players or accidents going unnoticed. When the game is not in use, check the interior at regular intervals and make sure that nothing has been forgotten or placed on the seats.

# RT D CRI TION

RT D CRI TION



ame o ac art

- In this product, the Cabinet which houses the LCD display screen shall be referred to as the Monitor Cabinet
- Facing the LCD display screen, the left side is the 1P seat and the right side is the 2P seat.

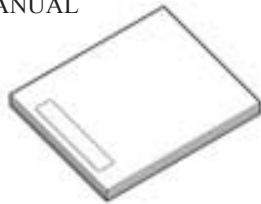
## A a or easurements o ac nit pon urc ase

	(Width x Depth x Height)	(Weight)
Monitor Cabinet	1,532 mm 506 mm 1,795 mm	314 kg
Gun Cabinet	1,532 mm 881 mm 1,950 mm	
Seat Cabinet (without Billboard)	1,620 mm 868 mm 1,795 mm	158 kg
Billboard	500 mm 510 mm 550 mm	10 kg

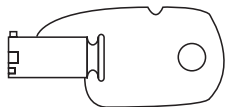
Confirm that the accessories listed in the table below are present when setting up the product.  
Accessories marked "Spare" in the note column are consumable items but included as spares.

A a

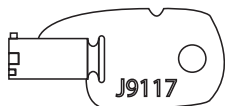
OWNER'S and SERVICE MANUAL  
420-0021UK (1)  
**This manual**



KEY  
(2)  
For the cashbox door  
(Located inside the coin chute  
door at time of shipment)



MASTER KEY  
220-5575UK (2)  
**For opening/closing the doors**  
(Packaged with this manual, in the  
box supplied with the product)



PLAY INSTR SHEET MULTI  
TRF-1914-XXUK where "xx denotes language  
01 - English (fitted)  
02 **French**  
03 **Turkish**  
04 - Italian  
05 **Spanish**  
06 **Russian**



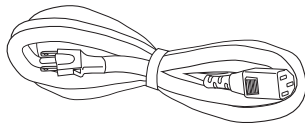
STICKER SHEET C EPILEPSY MULTI  
440-CS0186UKUK (1)  
**Multilingual caution label epilepsy seizure**  
(English version fitted as standard)  
*Please see chapter 1 for label positioning.*



The parts listed in Table 5b are needed to operated the product. These are the final parts used once installation assembly has been completed.

**A b**

**POWER CABLE**  
 LM1227 (1) <UK>  
 LM1246 (1) <European>  
 LM1550 (1) <America>  
**For installation, see chapter 6**



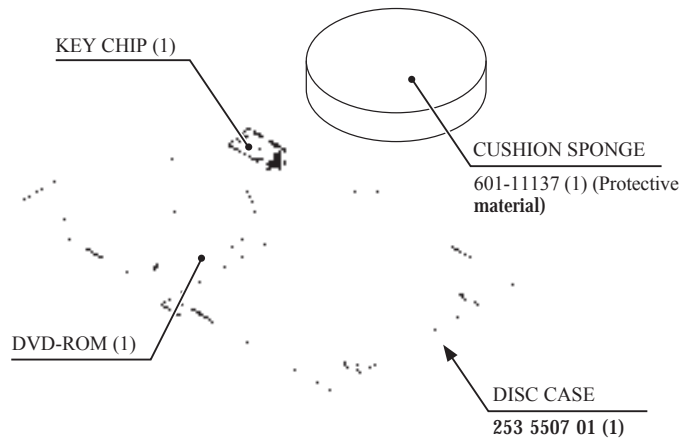
**STICKER 840-0012D-02**  
 443-40012D-02 (1)

**Board number stickers, see chapter 6 [11]**



**DVD SOFTWARE KIT**  
 (1)

**Software media, see chapter 6 [13]**

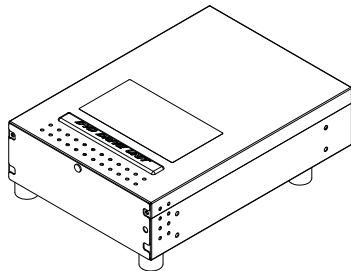


To order the DVD-ROM by itself, use the following part number:  
 610-0816-5026 (DVD SOFT TC1 JESRFIGSPTR).

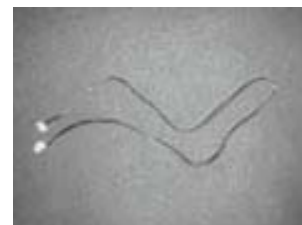
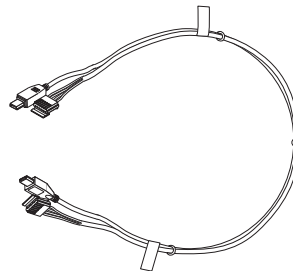
DVD DRIVE and DVD wire are sold separately but they are required for installing the product's software. If they were not provided when the product was delivered, consult with the point of purchase, or arrange to obtain the following kit numbers. The DVD DRIVE, DVD wire and INSTALLATION wire that are accessories to "Dream Raiders" can also be used with this product.

**A c :**

**DVD DRIVE (Optional)**  
 610 0719 01 91 (1)  
**For software installation, see chapter 6 [10]**



**INSTALLATION WIRE (Optional)**  
 BRK-60219 (1)  
**For software installation, see chapter 6 [10]**



**DVD WIRE (Optional)**  
 605 0094 (1)  
**For software installation, see chapter 6 [10]**

 **WARNING**

- Perform assembly work by following the procedure herein stated. Failure to comply with the instructions can cause electric shock.
- Perform assembling as per this manual. Since this is a complex machine, incorrect assembling can cause an electric shock, machine damage and/or improper functioning as per specified performance.
- When assembling, more than one person is required. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.
- Ensure that connectors are properly connected. Improper connections can cause electric shock.
- Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a risk of fire.
- This work should be carried out by site maintenance personnel or other qualified professionals. Work performed by non-technical personnel can cause a severe accident such as electric shock. Failing to comply with this instruction can cause a severe accident such as electric shock to the player during operation. If no one with proper technological expertise is available, request service from the office indicated in this document or the point of purchase so as to ensure safety.
- Provide sufficient space so that assembling can be performed. Performing work in places with narrow space or low ceiling may cause an accident and assembly work to be difficult.
- To perform work safely and avoid serious accident such as the cabinet falling down, do not perform work in places where step-like grade differences, a ditch, or slope exist.
- Do not leave power cords or ground wires exposed in areas of heavy foot traffic. Doing so may cause them to become damaged, possibly resulting in electric shock and/or short circuits. When laying wiring across the floor, always use safety covers to protect the wires. (Wiring diameter: power cable - approx.  $\phi$  8)
- Have a flashlight or another supplementary lighting unit available while working. With indoor lighting alone, the cabinet interior may be too dark. Working without proper lighting can lead to accidents. It also hinders proper work performance.
- The cabinet has ventilation ports. Be sure not to block them. If they are blocked, heat can build up, leading to fire. This can also accelerate wearing of parts and malfunctions.
- Secure ample ventilation space around the cabinet. If heat builds up, there could be accidents associated with heat or smoke generation.
- Do not unnecessarily push the projector. This could cause the unit to tip over.
- 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.
- When connecting the connectors on the DVD wire, you must carefully check the tags on the wire to find the correct connector. Even when you have the correct connector, you must pay careful attention to the direction and angle of insertion. Attempting to forcefully connect the incorrect connector or connecting a connector at the wrong angle or facing may damage the connector and could lead to overheating and burn related injuries.
- When attaching or removing doors or lids, be careful that your hand or finger does not get caught in anything.

## **IMPORTANT**

- Be very careful when handling the LED display screen. The screen can be damaged easily and cannot be repaired once damaged. Such damage can only be repaired by completely replacing the screen.
- Be careful not to damage parts surfaces. In some cases, if such surfaces are damaged, the part must be replaced; it cannot be reinforced or repaired.

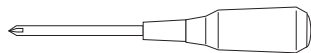


The assembly of this product is performed in the following 12 steps.

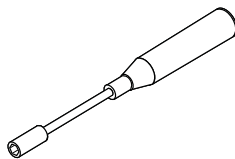
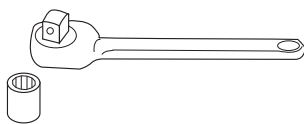
- 6.1 UNPACKING THE CABINET
- 6.2 ATTACHING THE BILLBOARD (BUMBLEBEE HEAD)
- 6.3 ATTACHING THE BILLBOARD (LABELS)
- 6.4 JOINING THE CABINETS
- 6.5 ATTACHING THE FRONT AND SIDE BKTS
- 6.6 ATTACHING THE REAR
- 6.7 APPLYING THE HOW TO PLAY INSTRUCTIONS
- 6.8 FINAL INSTALLATION SITE
- 6.9 CONNECTING THE DDDRIE
- 6.10 CONNECTING POWER AND SOUND CABLES
- 6.11 ENABLING POWER SUPPLY (SOFTWARE INSTALLATION)
- 6.12 CONFIRMATION OF INSTALLATION

T R i O i

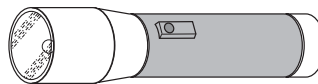
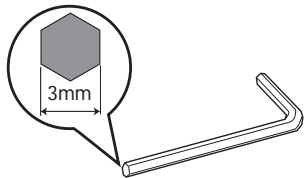
- Philips screwdriver ( or M4, M6 screws)



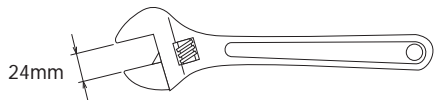
- A socket wrench or hexagonal screwdriver ( or M4, M6 and M8) hexagon bolts and nuts)



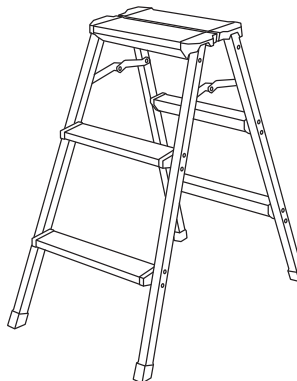
- A 3 millimeter hexagonal bar wrench or screwdriver - Flashlight or other supplementary lighting



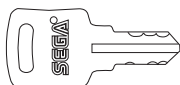
- A 24 millimeter spanner (Adjustable spanner)



- Stepladder



- Master key (accessory)

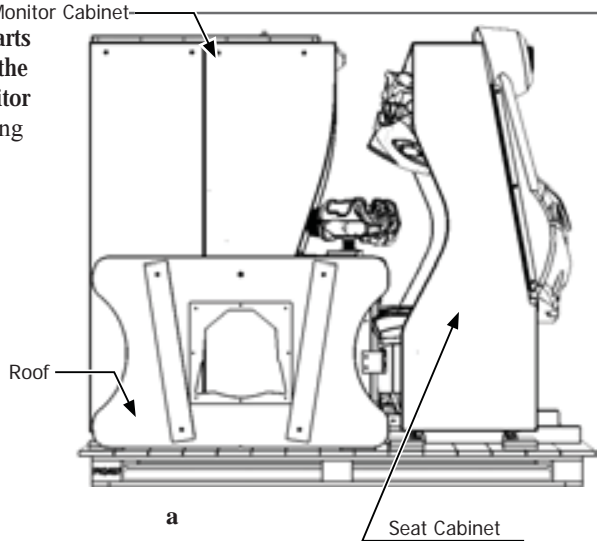


# UN C I N T C I N T

In this product the cabinet that contains both the MONITOR cabinet and GUN cabinet and will be simply referred to as the "MONITOR cabinet"


Carefully unpack the machine. Locate the parts listed below and place to one side. Remove the 2 parts of the machine from the pallet (Monitor cabinet and Seat cabinet) using suitable lifting equipment.

**Please note:**  
During transit the floor for this machine is placed along the opposite side from the roof.



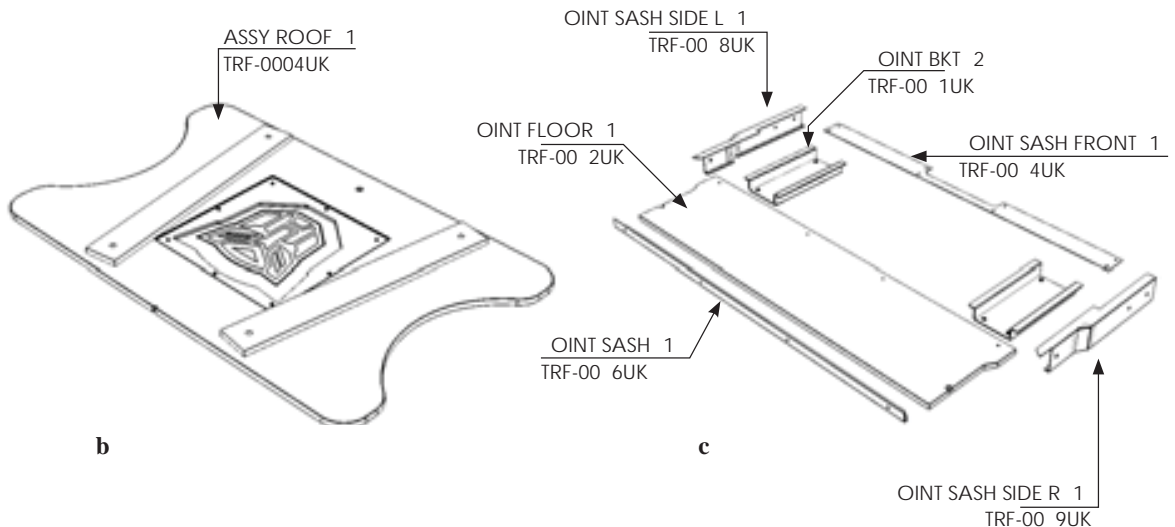
ND IN T  
TION

## STOP IMPORTANT

- Be very careful when removing the Monitor and Seat cabinets from the pallet. Use only hydraulic lifting equipment such as a fork lift. The machine weighs in excess of 450kgs. DO NOT attempt to remove the machine from the pallet by hand. Doing so may result in serious personel injury and/or damage to the cabinet and its components.
- There are 4 "LIFTING POINTS" highlighted on the lower front and rear parts of the machine by a  symbol. Always use these points when lifting.

### Check parts required for installation

Below is a illustrated diagram of the components required to carry out assembly and installation of this cabinet.

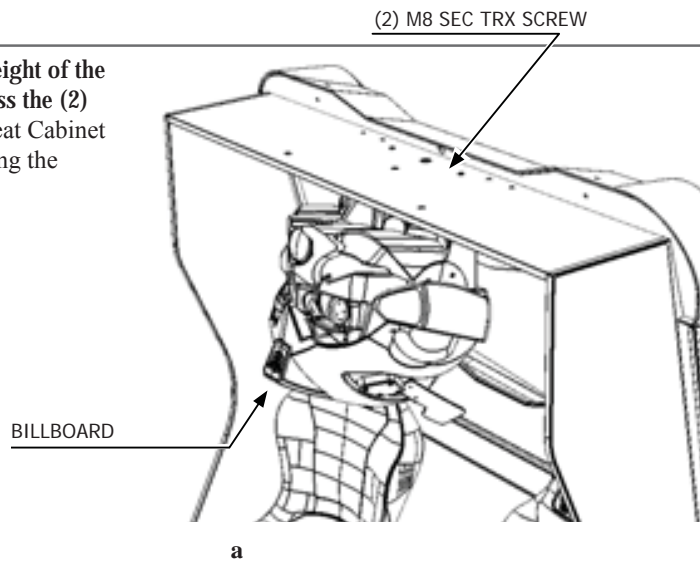


### ⚠ CAUTION

- Handle molded parts with care. Excessive weight or pressure may cause them to break and the broken pieces may cause injury.
- Use at least two people when carrying out this operation. Trying to carry out this work single handedly may result in injury or component damage.

Whilst in transit, the Billboard is attached to the underside of the Seat Cabinet Roof. The Billboard weights in excess of 8kg. At least two people must work together to perform this operation. Some parts of the Billboard are fragile, please take care when handling.

Have one person hold and take the weight of the Billboard. Safely using a ladder, access the (2) M8 fixings from the top side of the Seat Cabinet Roof. Take extra care when unscrewing the final fixing.

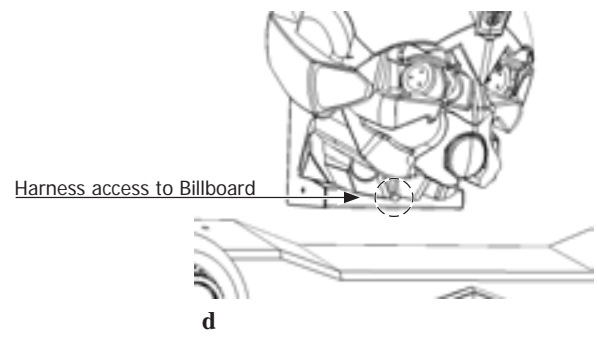
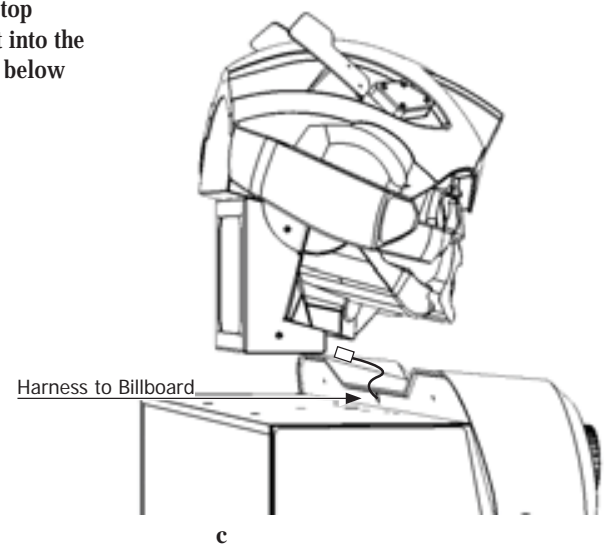


Remove the (4) M4x12 Truss Head Black fixings from the Rear Billboard Panel and carefully lower the Billboard into position on top of the Seat Cabinet Roof.

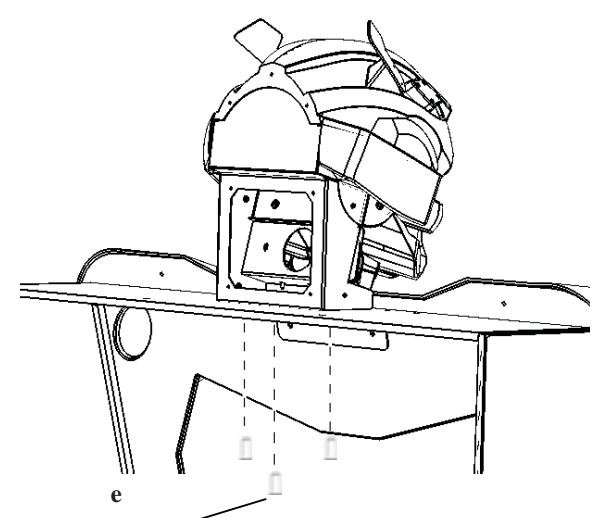
TRUSS SCREW (4 ea.), black  
M4x12



locate the Harness protruding from the top centre of the Rear Moulding and feed it into the hole located in the bracket situated just below Bumblebee's chin. (Billboard).



Using the (2) M8 fixings (removed from step 1) and an additional fixing of the same type (located in the spares fixings bag in the cash box) secure the Billboard into position. Make the connection inside the Billboard and re-fit the Billboard Rear Plate.

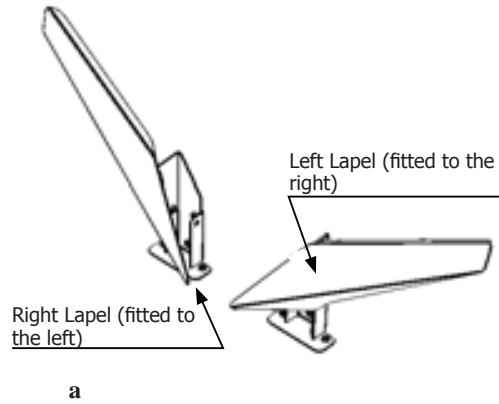


SEC TRX SCREW (3 ea.), black  
M8x20

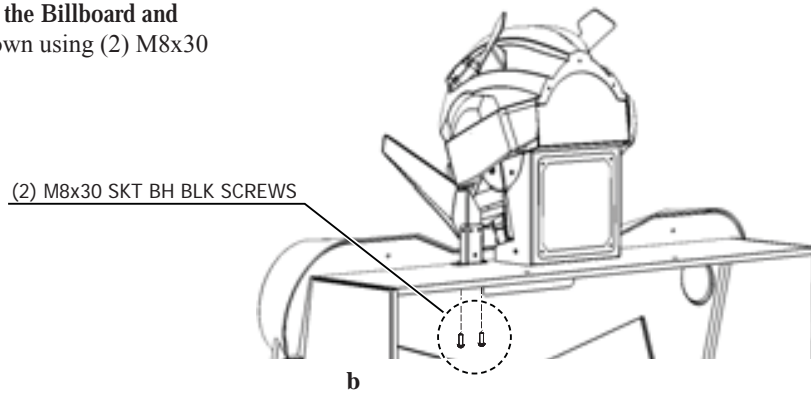
# TT C I N T I O R D

Attach the Billboard Lapels to the roof of the Seat Cabinet.

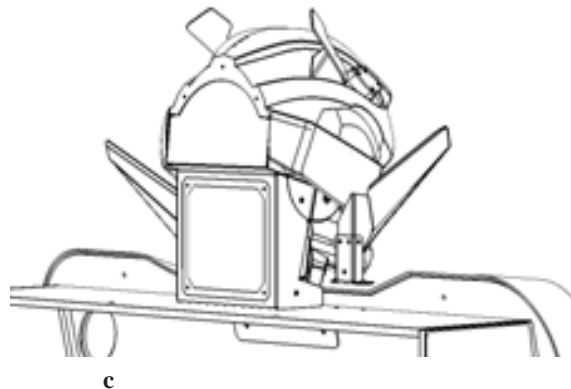
Identify and locate the (2) Billboard Lapels.  
The Lapels are handed and can be only fitted in the correct positions.



Offer the Left Lapel up to the Billboard and secure into position as shown using (2) M8x30 SKT BH BLK

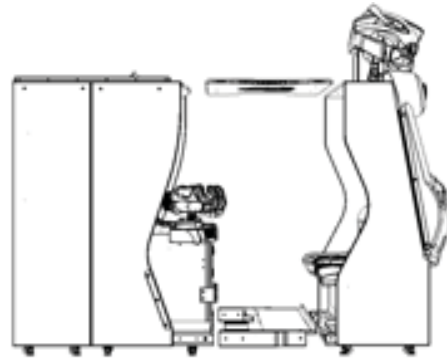


Repeat step 2 when fitting the Right Lapel.



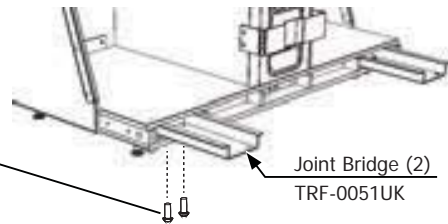
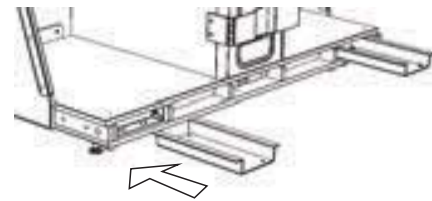
# INSTALLATION

Final assembly of the cabinet consists of applying the JOINT BRIDGE, FLOOR, FLOOR SASHES, HARNESS CONDUIT, SIDE BKTS and ROOF.



a Installation of

Fitting the (2) Joint Bridge Offer either JOINT BRIDGE up to the Gun Cabinet and place into position as shown. Secure from the underside using (2) M8x40 HEX BLT PAS. DO NOT TIGHTEN AT THIS POINT as it may lead to misalignment of fixings later on.

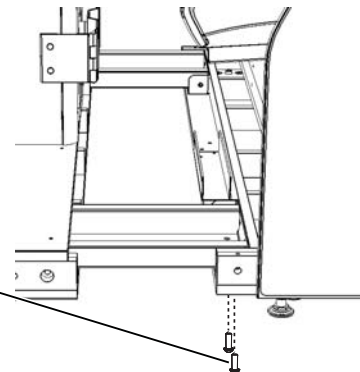
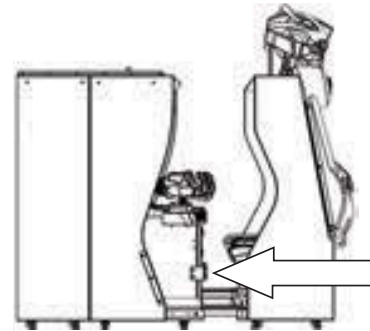


HEX BLT (2 ea.), black  
M8x40

Joint Bridge (2)  
TRF-0051UK

b

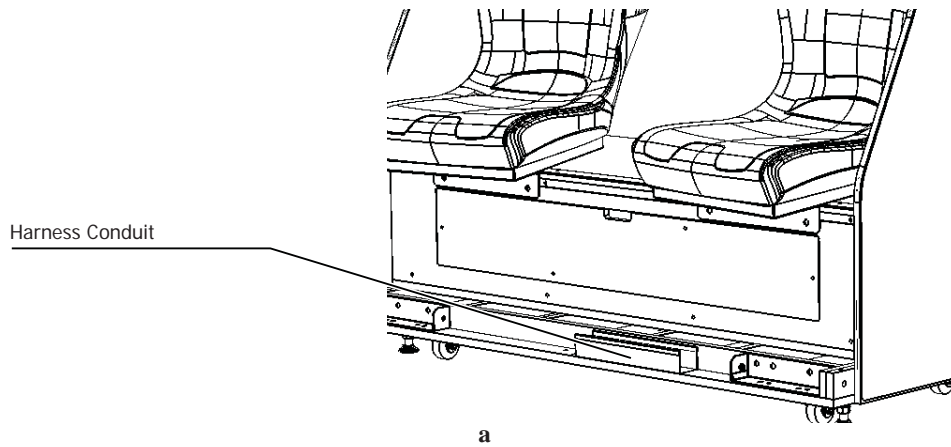
Once both Joint Bridges have been fitted to the Gun Cabinet, carefully slide the Seat Cabinet up to the Joint Bridges so that they interlock. Once aligned, secure using M8x40 Hex Bolts (2). Tighten all eight fixings.



HEX BLT (2 ea.), black  
M8x40

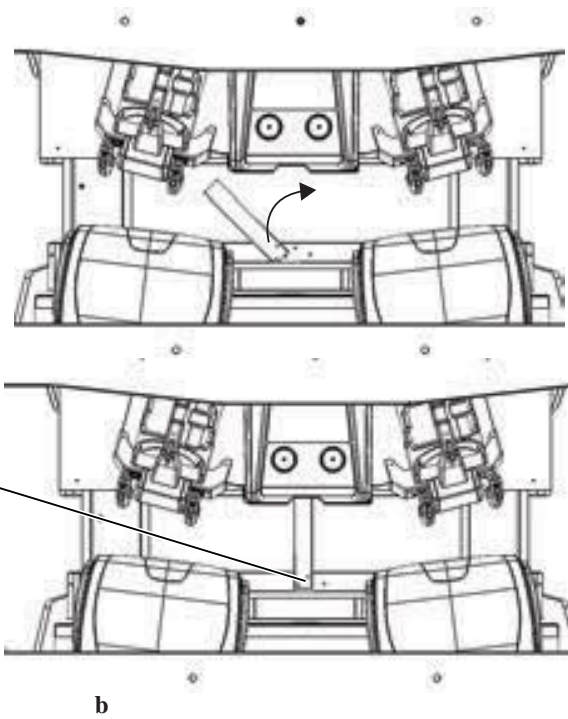
c

Locate the Harness Conduit

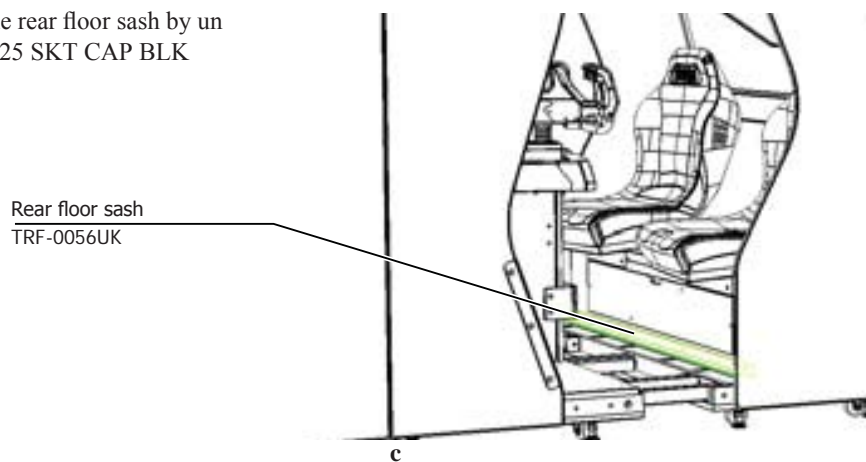


In nescasary, loosen the single fixing holding the Harness Conduit in place. Carefully swing the Conduit across to meet the Gun Cabinet. Once in place Make both connection good to Mount Plate in Gun Cabinet.

Secure the Harness Conduit at the one end by tightening the single fixing which is already inplace and adding an additional M4x20 fixing

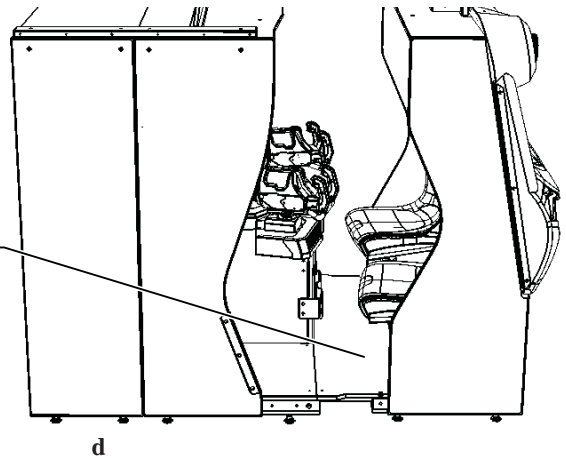


Locate and remove the rear floor sash by unscrewing the (4) M4x25 SKT CAP BLK



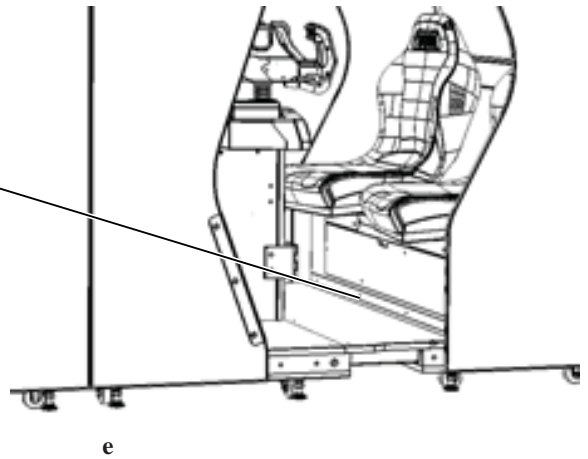
Place the floor in between the Gun and Seat Cabinet

Joint Floor (1)  
TRF-0052UK



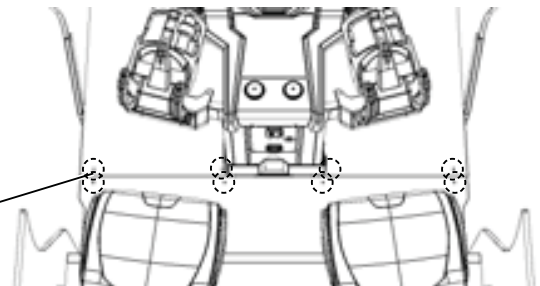
Refit the rear sash

Socket cap Screw blk (4)  
M4x25



Remove the (8) M4x20 TMP PRF screws from the front section of the Gun Cabinet.

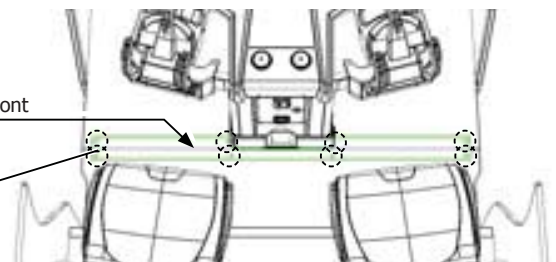
Sec Tmp Prf Stn (8)  
M4x20



Place the Joint Front Sash into location as shown and secure with the (8) M4x20 TMP PRF removed from step 7.

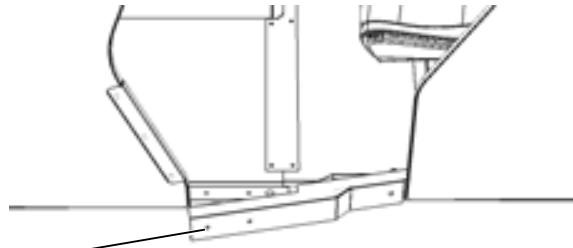
Joint Sash Front  
TRF-0054UK

Sec Tmp Prf Stn (8)  
M4x20

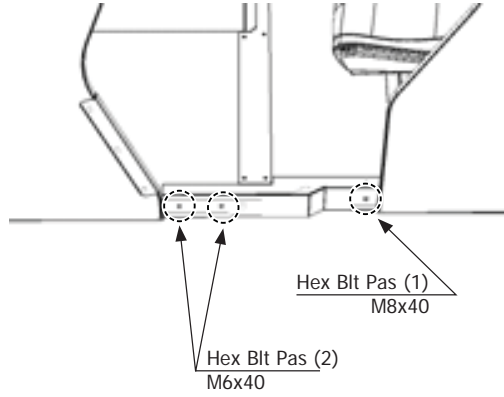




Attach the Joint Sash Side L to the Left hand side of the cabinet as shown in the illustration. Secure in to place using (2) M6x40 BLT PAS and (1) M8x40 BLT PAS. Repeat this step when fixing the Joint Sash Side R.



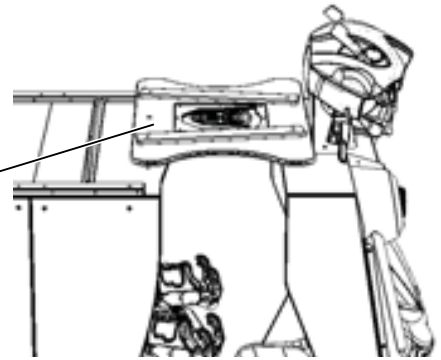
Joint Sash Side L  
TRF-0058UK



# TT C I N T R O O

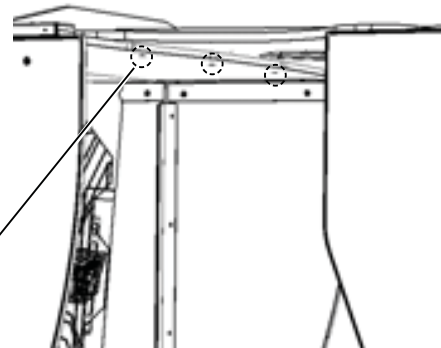
Using 2 people, place the Panel Roof in the orientation shown on top of the cabinet.

Panel Roof  
TRF-0004UK



a

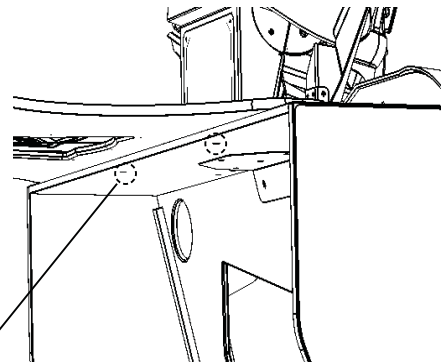
Fix the front section of the roof into position using (3) M8x40 SKT BH BLK (3) M8 WSHR SPR BLK and (3) M8 WSHR FLT BLK 22OD



b

Fix the rear section of the roof into position using (2) M8x40 SKT BH BLK (2) M8 WSHR SPR BLK and (2) M8 WSHR FLT BLK 22OD

Button Head Socket Screw (3)  
M8x40



c

Button Head Socket Screw (2)  
M8x40

The **PLAY INSTRUCTIONS** are supplied in several different languages. These are: English (fitted) French, Turkish, Italian, Spanish and Russian.

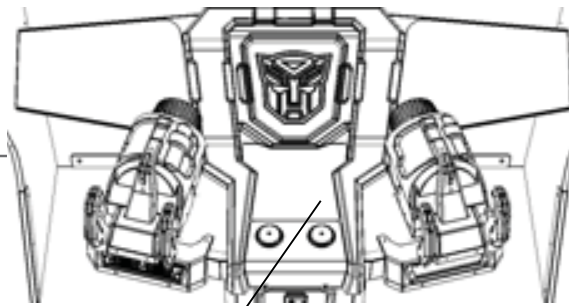
**PLAY INSTRUCTION**



a

If a language other than English is required for location then the English version which is fitted will need to be removed.

The Play Instructions are self adhesive, therefore, it is fairly easy to remove. If removing the Play Instructions prove to be difficult then apply a small amount of heat using a hair dryer to soften the adhesive prior removal. **DO NOT** under any circumstances use equipment such as a heat gun or paint remover gun as this will damage the artwork and plastic mouldings.



b

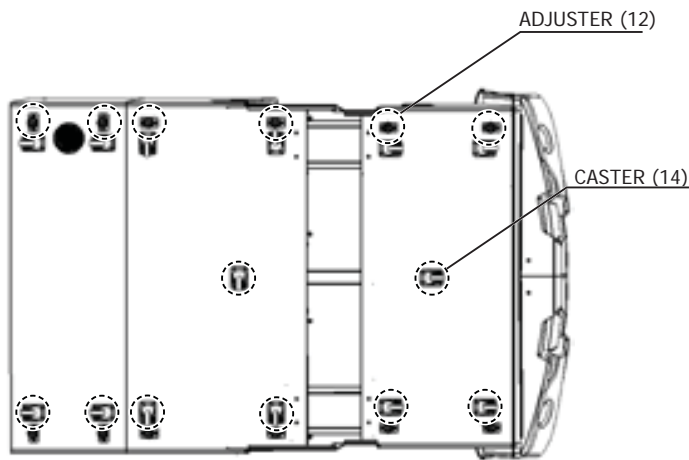
Play Instruction Panel  
TRF-1914UK

**WARNING**

**Make sure that all the adjusters contact the floor. Otherwise the cabinet could move, causing an accident.**

The product comes with casters attached at 17 locations and adjusters at 12 locations (Fig. 6-10a). When the installation site has been determined, have the adjusters come in direct contact with the floor. Establish a gap of about 5 mm between the floor and the casters and adjust the unit so that it will remain level.

INSTALLATION

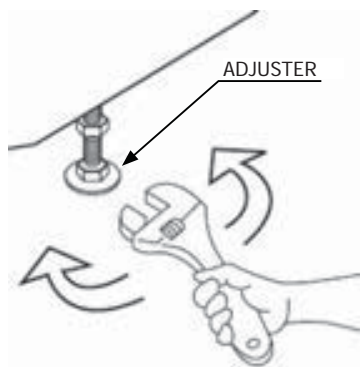


a Bottom view

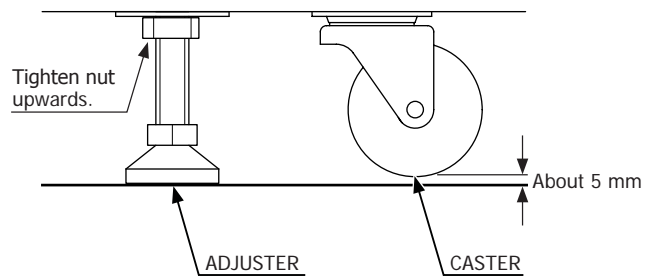
Move the product to the installation site. If the product is to be installed near a wall, secure enough passage way space for players to access the seat. You must also secure a 20 cm space between the back wall and the back of the cabinet for ventilation.

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.

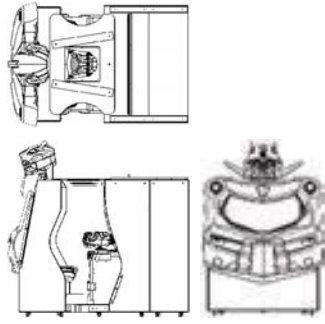
After setting, turn adjuster nuts upwards to tighten them and secure adjuster heights.



b Align the Adjusters

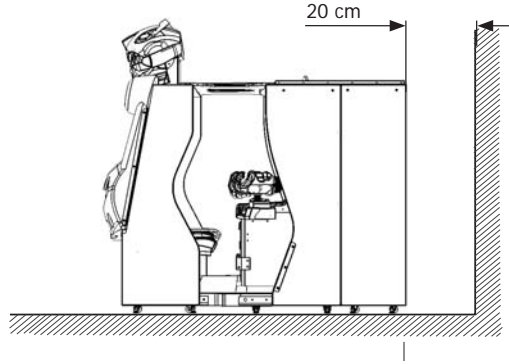


Views are reduced to 1/100. Use them for reference in installation site layout.



c ree Sur ace ie s

You must secure a minimum 20cm ventilation space between the back of the Gun Cabinet and the wall.



d entilation Space

## CONNECT DVD DRIVE

NOT THE PRODUCT IS NOT THE PRODUCT

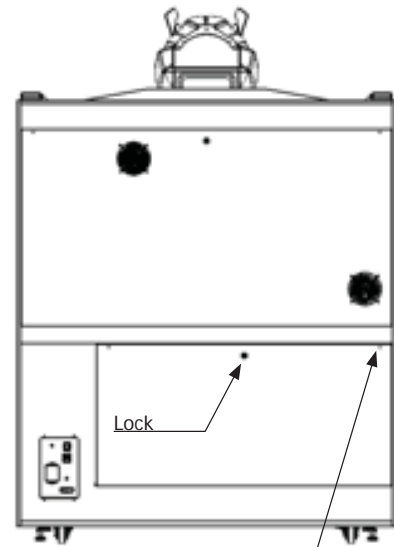
### WARNING

- When connecting the DVD wire connector, check the orientation carefully and connect securely. The connector must be connected in the proper direction. If it is connected in the wrong direction or indiscriminately at an incline so that a load is applied, the connector or its terminal pins could break, causing a short circuit or fire.
- Be careful not to damage the DVD wire by getting it caught between objects, etc. Doing so may cause a short circuit or fire.
- Connect the DVD DRIVE to the RING EDGE 2 before connecting the power. Adhere strictly to the proper sequence in performing work. Failing to do so may cause electrical shock or short circuit.

You will need the supplied DVD software kit, board number sticker, and the separately sold DVD DRIVE and DVD wire. To prepare for software installation, you will need to connect the RING EDGE 2 and DVD DRIVE inside the cabinet using the DVD wire.

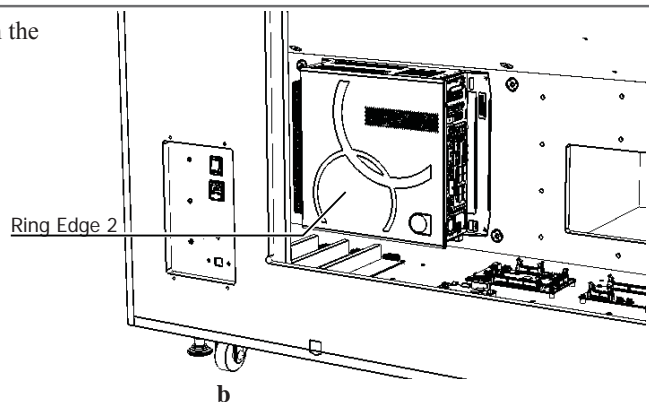
The RING EDGE 2 is the Computer metal case found inside the rear door on the left hand side on the vertical face..

Remove the (2) M4x25 Truss Screws from the upper corners of the door, Unlock the door using the A444 key (supplied) and place to one side,



a TRUSS SCREW (2), black  
M4x25

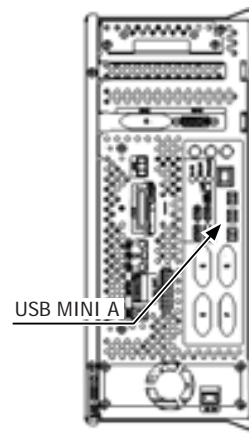
You will find Ring Edge 2 positioned on the Left Hand side.



b

---

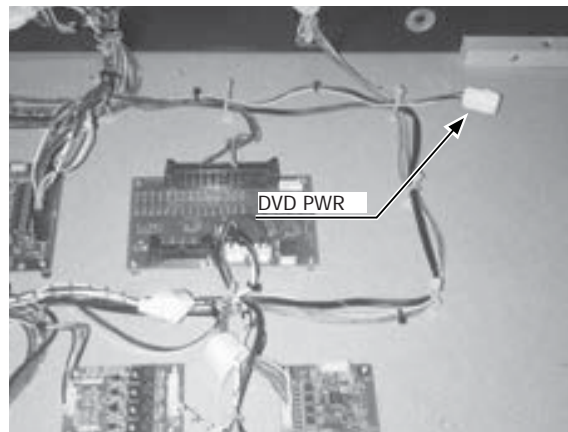
Connect the DVD drive USB cable into an unused USB port on the RING EDGE 2 Game Bd.



c

---

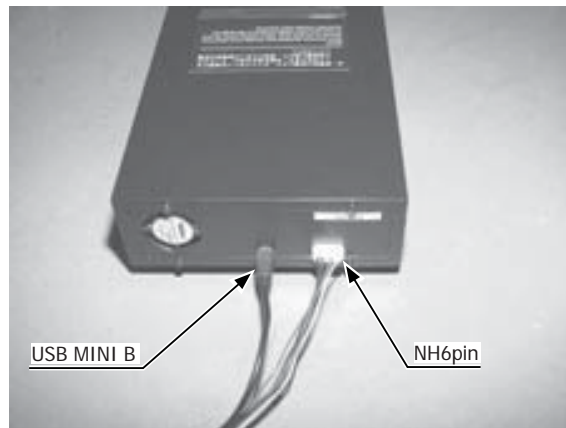
Connect the Installation wire into the POWER fly lead within the cabinet



d

---

On the side of the DVD wire with the "DVD" tag, there are two connectors. Connect them to the DVD DRIVE.



e

## CONNECTION OF ROUND CORD

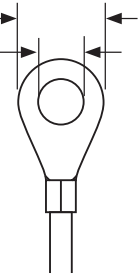
O i i i i i i

### WARNING

- Use the power supply equipped with an earth leakage breaker. Use of power supply without such a breaker could result in fire if there is a current leakage.
- Have available a securely grounded indoor ground terminal. Without proper grounding, customers could be electrocuted and product operations might not always be stable.
- Do not expose the power cord or ground wire. If these are exposed, customers could stumble over them, for instance, and easily damage them. Additionally, if these lines are damaged, there could be a risk of electrical shock or short circuit. Set these lines at locations where they will not interfere with customer traffic, or attach covers to them.
- After laying out the power cord on the floor, be sure to always protect it. If the power cord is left exposed, it can easily be damaged, resulting in electrical shock.
- When using the product's AC unit ground terminal, use ground wire with a circular terminal as shown in the illustration, and establish ground securely. Avoid indiscriminant grounding operations such as use of wire with only its sheath peeled off.

Terminal width 12 mm

Hole diameter 6.4 mm



### IMPORTANT

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

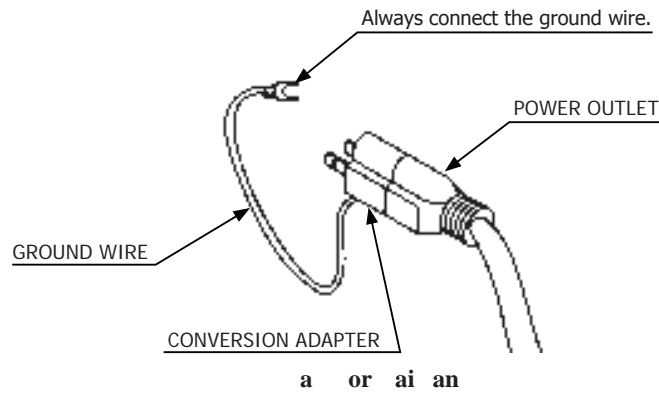


The AC unit is on the lower back of the DLP. This AC unit contains the following.

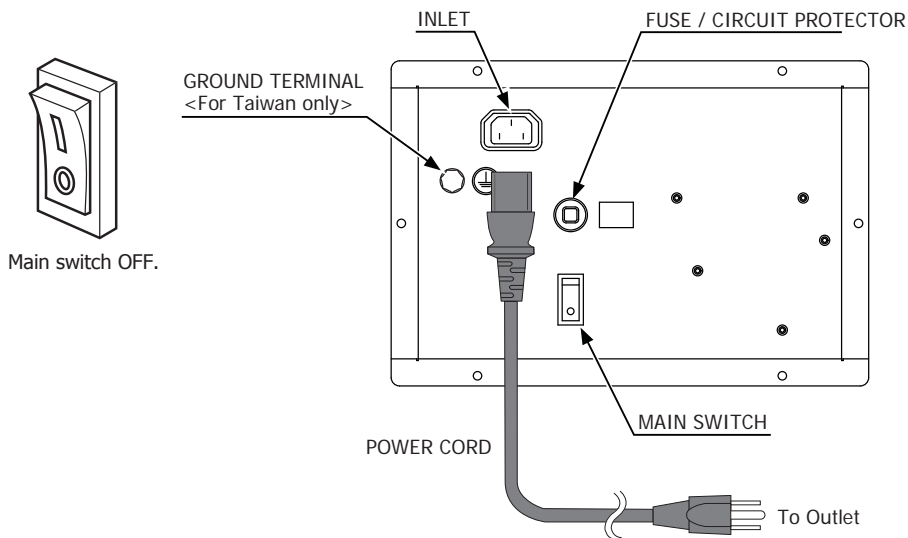
- Main switch
- Inlet for power cable connection
- Ground terminal
- Circuit protector

The accessory power cord has a ground wire inside it.

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



Confirm that the main switch is at OFF.



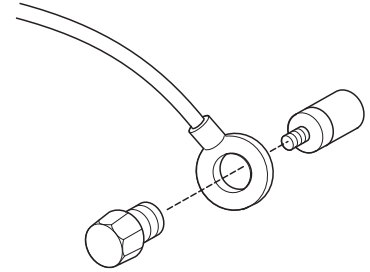
Fully insert the power cord connector on the side opposite the power plug into the AC unit inlet.

---

Fully insert the power cord plug into the outlet.

---

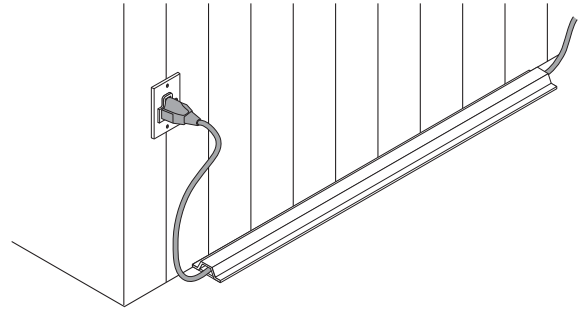
When using a ground wire made available separately, connect one end of the wire to the AC unit ground terminal and the opposite end to an indoor ground terminal. The AC unit ground terminal is a bolt and nut combination. Remove the nut and pass the bolt through the ground terminal, then secure the nut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



c

---

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



d

**⚠ WARNING**

- Be careful not to damage the DVD wire by getting it caught between objects, etc. Doing so may cause a short circuit or fire.
- The following explanation assumes that the product has been assembled properly as explained above. If there is an error or if the product operates in a manner other than as indicated below, cut off the power supply immediately. Failure to do so may result in a fire or electrical shock.
- If you look directly at the laser beam in the DVD DRIVE, you could suffer vision impairment. Do not look inside the DVD DRIVE.

**STOP IMPORTANT**

- The software is not installed on the game board (LINDBERGH) when the power supply is engaged, so the “Error 22” message is not a malfunction. However, if there is another error display, or if there is no video output at all, there might have been an error in product assembly, wiring connections might be faulty, or the RING EDGE 2 might not be functioning properly.
- After the power supply is engaged, wait for “Error 22” message to be displayed. If the product is indiscriminately operated in any way beforehand, there could be unexpected problems or malfunctions, as well as damage to parts.
- Once “Error 22” is displayed, set the DVD-ROM in the DVD DRIVE and re-engage the power supply. Installation takes place.
- After the power supply is engaged, the DVD DRIVE tray will not come out for about 30 seconds even if you press the switch. This is due to DVD DRIVE initialization.
- The DVD DRIVE tray can come out or return only while the power supply is engaged. The tray cannot be opened or closed while the power is off.
- Even after the software has been installed, store the DVD software kit, DVD DRIVE and DVD wire in a secure location.
- If for any reason installation cannot be completed, an error is displayed. Refer to the service manual and take corrective action.

Prepare the supplied DVD software kit and the separately sold DVD DRIVE and DVD wire. (See Chapter 5.)

---

Before supplying the power, you must make sure the DVD wire is not pinched or trapped.

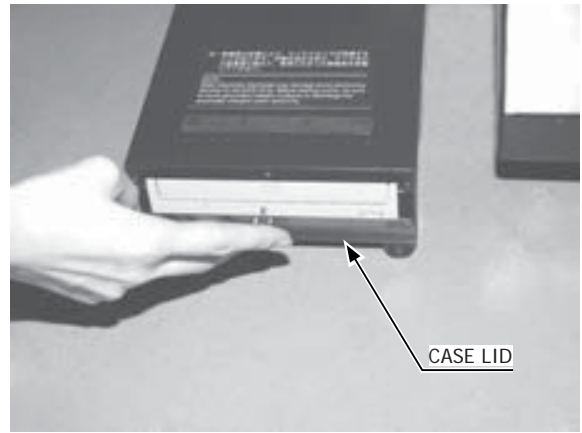
---

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

---

The RING EDGE 2 start up screen appears. Wait for at least one minute. The error state is established. Check to be sure it is “Error 22.” If it is “Error 22,” proceed to the next operation. If it is not “Error 22,” refer to the RING EDGE 2 Service Manual and take corrective action.

Take out 1 urea (plastic head) screw and re move the DVD DRIVE case lid.



a

Press the DVD DRIVE switch and the DVD DRIVE tray will come out. Set the DVD from the DVD software kit into the tray. Always have the labeled side facing upward.



b

Press the DVD DRIVE switch. The tray goes back into the drive.

Re engage the power. Turn the main switch to OFF once, wait for at least one minute, then turn the switch back to ON.

Software is installed automatically from the DVD to the RING EDGE 2. In some cases, it may take about 5 minutes to install software to the RING EDGE 2.

Initiali ation is completed when the Attract Mode screen appears.

Press the DVD DRIVE switch so that the tray comes out. Remove the DVD.

Press the DVD DRIVE switch so that the tray goes back into the unit. If the power is cut off, the tray will not move.

Set the main switch to OFF.

Remove the DVD wire from the DVD DRIVE.

---

Attach the DVD DRIVE case lid and fasten it with 1 urea screw.

---

Unlock and remove front door PCB.

---

Remove the DVD wire from the RING EDGE 2. Leave the key chip inserted.

---

Attach the outlet plate to front door PCB. Fasten with 2 truss screws.

---

Attach and lock front door PCB.

---

Store the DVD DRIVE, DVD wire and DVD software kit in a location free of dust and cigarette smoke.

T i
-----

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

When you turn on the power, the attract lighting in the rear window and below the main moulding of the Main Cabinet will come on.

After the RING EDGE 2 start up screen is displayed on the LCD screen, the Advertise (Attract) Mode will start. During Attract Mode, demo footage and how to play the game will be displayed on the screen.

Sound will be emitted from the left and right front and rear speakers inside the Main Cabinet and the speaker in the center of the seat cabinet.

If the unit is set for no sound during Attract Mode, there is no sound output.

If there are enough credits to enable play, the start button flashes. It goes out if there are no credits during Attract Mode.

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

## CON IR TION O IN T TION

Use test mode to confirm that assembly is proper, and that the RING EDGE 2, connecting boards, and input/output devices are normal.

Perform the following tests in test mode.

For tests (1) to (4), refer to the TEST AND DISPLAY DATA within this Manual. For tests (5) to (7), see [9-3 Game Test Mode].

---

### Information Display Screen

When "SYSTEM INFORMATION," "STORAGE INFORMATION," or "VS TEST" has been selected on the system test mode menu, system information, game information and information on JVS I/O board connected to RING EDGE 2 are displayed.

If each category of information is displayed without anomalies, the RING EDGE 2 is normal.

---

### Input Test Screen

When "INPUT TEST" has been selected on the JVS test screen, data input to the JVS I/O board is displayed. On the product, this is the screen for the testing coin switch.

Insert a coin. If the display to the side of the switch changes, the switch and wiring connections are normal.

---

### Monitor Test Screen

When "MONITOR TEST" has been selected on the system test mode menu, the screen for checking projector (monitor) adjustment status appears.

Projector adjustment is completed when the product is shipped from the factory, but you should observe the test screen to determine whether further adjustment is necessary. Refer to Chapter 10 and adjust the projector if necessary.

---

### Speaker Test Screen

When "SPEAKER TEST" has been selected on the system test mode menu, the screen for checking speaker sound output appears.

To confirm that audio output is normal, have test sound output from the game unit's speaker.

---

### Input Test

When "INPUT TEST" has been selected on the game test mode menu, the screen for testing input device appears. Test operate the input device by pressing each switch. If the display on the side of each input device changes to "ON" and numerical values change smoothly in accordance with each operation, the input device and its wiring connections are normal. (See 9-3a.)



a

S Screen

---

### Output Test

When "OUTPUT TEST" has been selected on the game test mode menu, the screen for testing lamps and other output devices appears.

If each output device operates properly, the output device and its wiring connections are normal. (See 9-3b.)



b S Screen

---

### Calibration

Confirm that the operability of control unit do not present any hindrances to play. Calibration is adjusted when the product is shipped from the factory but it might need to be adjusted again because of vibrations during transport, etc.

If such things as operability are not satisfactory, select "GUN CALIBRATION" on the game test mode menu and check and adjust settings. (See 9-3c.)



c A A Screen

Conduct the aforesaid tests when performing routine tests each month.

**⚠ 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, disconnect the Display, Main Cabinet and Seat Cabinet. If you tilt them while connected together, the connection points may be damaged and personnel could be injured.
- When lifting the cabinet up steps, you must hold it by the designated handles or by the bottom surface. Lifting it by any other area may lead to damage or disfiguration to that part or surrounding parts due to the weight of the cabinet and could also lead to injury of personnel.
- When tilting the cabinet to move it across a sloped or stepped area, always use at least two people. Attempting such an operation alone can lead to accident or injury.
- When moving the components separately, take care concerning the direction you push the Display and Seat Cabinet in. These elements may fall over, causing damage or an accident.

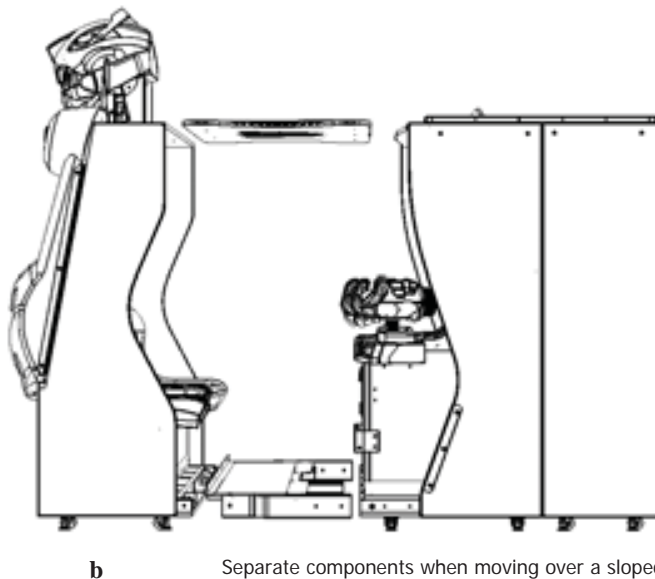
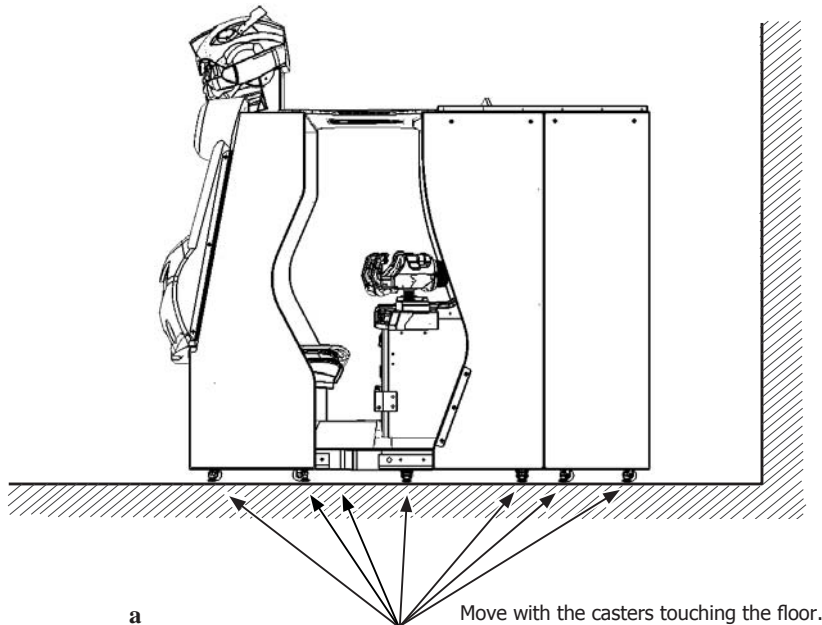
**⚠ CAUTION**

- When moving the components do not push any of the plastic elements or shaped parts. Do not use them to pull the components along either. This may damage the parts or the surrounding parts and this could lead to accidents or injury.
- After dividing the components to move them, do not use the Control Units in the Main Cabinet to push or pull the cabinet. This may damage or disfigure these parts and lead to malfunctions or injury.
- When moving the separated components, be sure to push/pull each cabinet lengthways. Trying to move the cabinet any other way may cause the cabinet to topple over.



**STOP** IMPORTANT

- When moving the cabinet, do not hold, push or pull the Control Units. This may disfigure or damage them.
- If you need to move components through a narrow or low door and the only way to get the separated components through is to turn them on their side, or if a separation method other than those described in this manual is required, either make a request to the office listed in this document or the place of purchase to perform the operation or contact them regarding how to perform it. Carelessly turning the components onto their side or separating them in ways other than those depicted in this manual may lead to unreparable damage.
- Do not press the projector screen. The screen can be easily damaged and cannot be repaired if it is, meaning complete replacement will be necessary.



**⚠ WARNING**

- Do not carelessly separate the components of the Monitor Cabinet. This may lead to accidents during maintenance and electric shocks or short circuits during operation.
- After separation of the Monitor Cabinet, the individual Gun Cabinet and Rear Cabinet are not sufficiently strong. Take care which places you push or pull. Do not turn the components onto their sides. This may lead to disfigurement or damage and could cause accidents during maintenance. It could even lead to unrepairable damage.

**⚠ CAUTION**

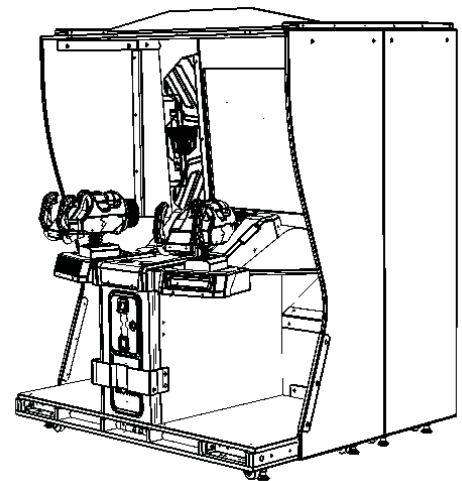
- To work safely and precisely prepare a steady, safety stool or ladder to stand on. Climbing onto the cabinet or hanging down from it can lead to accidents.
- Perform the separation operation with at least two people. Performing the operation alone could lead to an accident.

**STOP IMPORTANT**

If the only way to get the separated components into a desired location is to turn them onto their side, or if a separation method other than those described in this manual is required, contact the office listed in this document or the place of purchase. Turning the components onto their side may disfigure or misalign the cabinet and could lead to unrepairable damage.

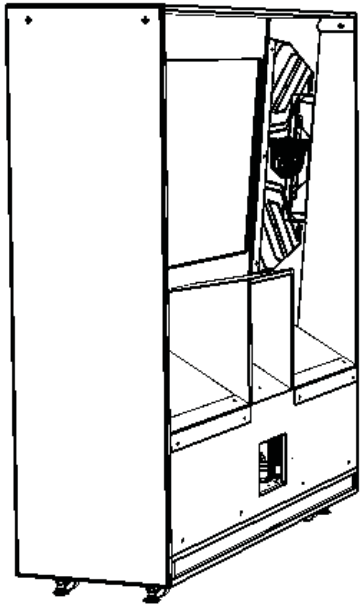
If the entranceway is narrow, follow the process detailed below to separate the Monitor Cabinet and Gun Cabinet.

When the Monitor Cabinet and Gun Cabinet are separated, take due care during all moving operations. Hold the bottom surface as much as possible and move the component slowly.



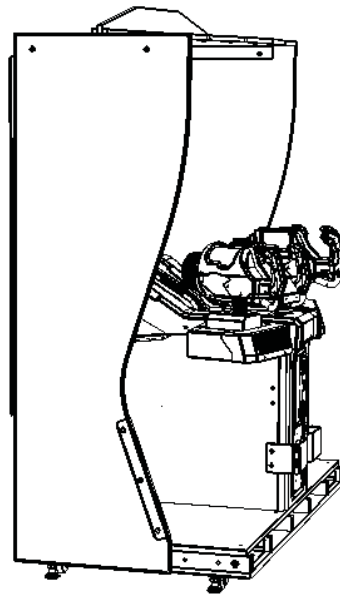
a A A

The measurements of each component can be found on page 12 of this manual



b

A

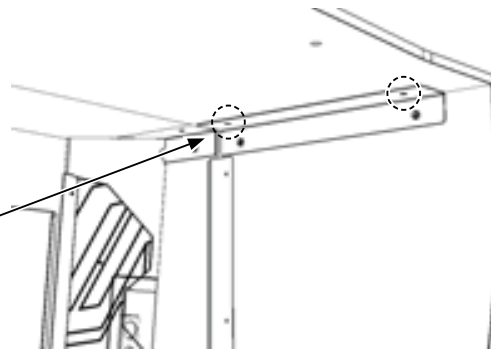


c

A

Remove the left and right JOINT BRIDGE BKT UPPR. Unscrew the (2) M8x30 SKT BH BLTS from the underside of the roof.

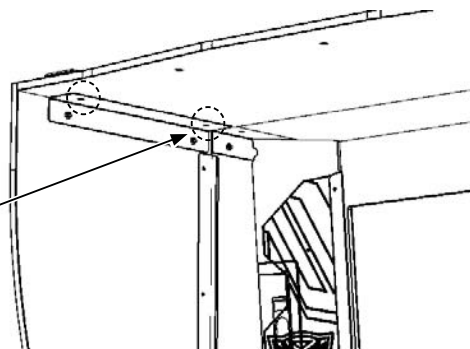
Socket Button Head Bolt  
029-B00830-0B



d

Repeat step for the Left hand Side

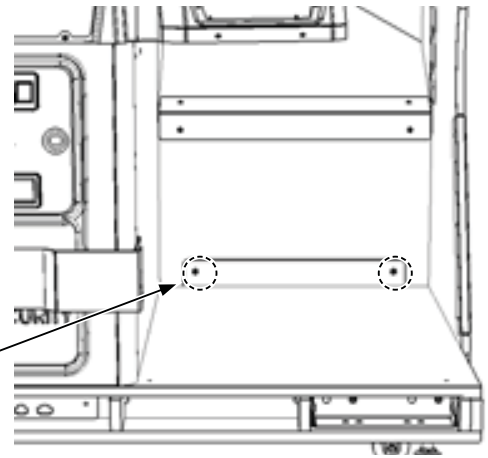
Socket Button Head Bolt  
029-B00830-0B



e

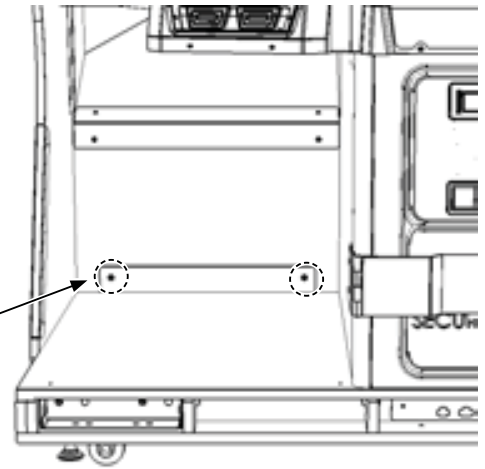
Remove the (2) M8x30 Hex Bolt Pas from the Right hand side LOWER OINT PLATE BKTS .

Hex Bolt Pas (2)  
M8x30



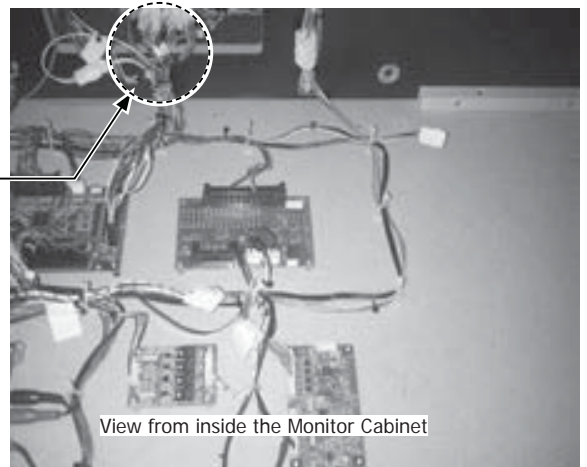
Repeat step 3 to remove the left hand side.

Hex Bolt Pas (2)  
M8x30



Carefully disconnect the harnesses from the inside of the cabinet which travel between the Monitor and Gun Cabinets

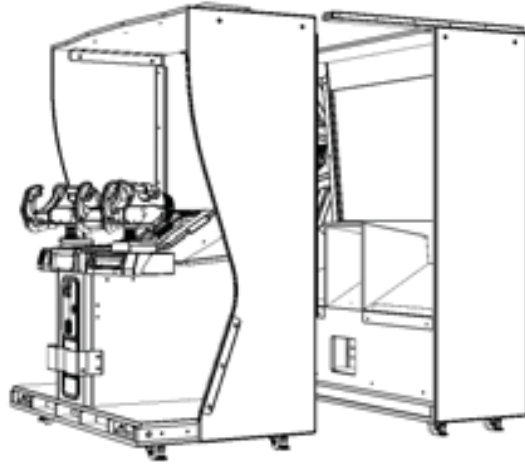
Disconnect the harness



View from inside the Monitor Cabinet

---

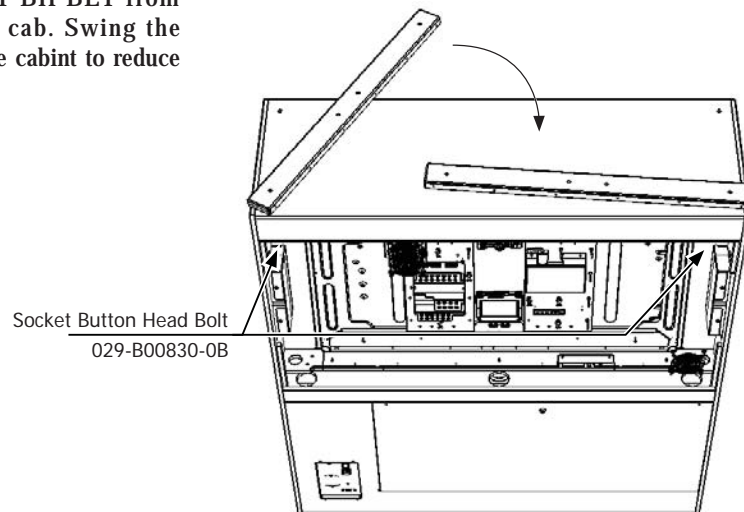
Once all the harnesses have been disconnected, carefully prise the cabinets apart.



i

---

Loosen the (2) M8x30 SKT BH BLT from inside rear of the monitor cab. Swing the Bracket Corner joints into the cabinet to reduce profile.



---

To reassemble, follow the steps 1 to 7 in reverse order. Also refer to the Installation Guide within Section 6 of this manual.

## D CRI TION

After the coins are inserted, available credits will display at the bottom of the screen. After required coins are inserted, the text will change from "Please insert coins" into "Please press start button". The start button on the cabin will be flicking.

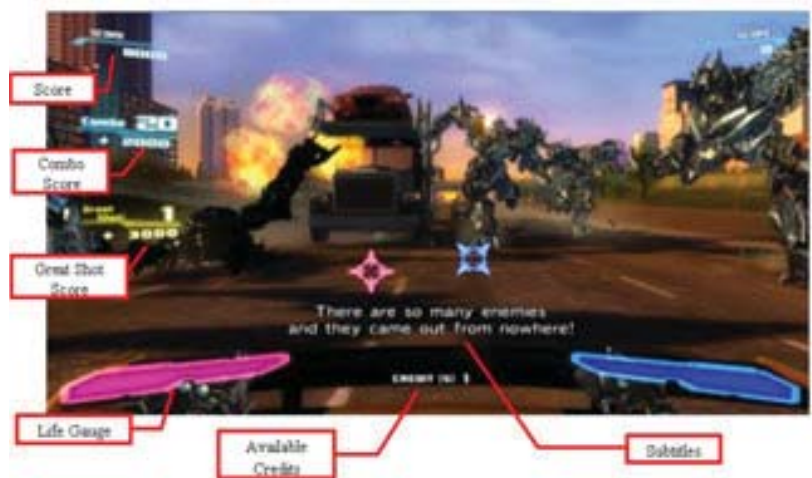
Coin system can accumulate up to 24 credits. Credits beyond 24 will not be counted and returned to player, but will be recorded by system internal counter.

Based on the difference of test mode settings, "INSERT COIN(S)"/"INSERT MORE COIN(S)" may change to "SWIPE CARD TO PLAY".

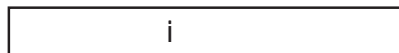
The player's acting role based on which side the "START" button is pressed. Press "START" button once to start the game. If you choose the left one, you will be player1, the right one will be player2.



Player1 and Player2's life gauge, score, streak attack and fatal attack will be displayed on the left side of the screen for (player1) and right side of screen for (player2). The available credits and subtitles will be displayed on the bottom of the screen.



a



The player will meet various enemies throughout the game. If some enemies appear to be outlined, this is the signal to attack



b

Use the controller to aim at the enemies. You must shoot at the enemies before they shoot you.



c

A score will be rewarded when the enemy is destroyed.

The enemy will attack if the player does not destroy it in a given time. Each time a player is shot, the player's life gauge will decrease. If the player's life gauge decreases to 0, the game is over



d

### Alliance fire

When the crosshair of both player 1 and player 2 controllers are in close proximity to each other, allied Autobots weapons will appear in the lower center section of the screen and the corresponding crosshair between both players crosshair.



e



If the players keep their crosshairs close to each other for a certain time, the Autobots will attack enemies with player's fire.



Destroying enemies using Autobots' fire, "alliance fire" or "times of alliance fire" will be display in the screen center. Each time an enemy is destroyed using the Alliance Fire", the players freindship score is increased.



**Super Alliance fire**

The player will encounter special enemies carrying energon cubes. These enemies can be identified by a blue "shimmering" outline.





When one of the Special enemies are destroyed, the accompanied Autobots will gain the energon cubes.



i

If the player(s) destroy the special blue enemy using alliance fire, Autobots will appear and accompany the player to provide a much more powerful source of firepower.

Super alliance fire will be triggered in single mode as well.



C O

As the player progresses through the game, they will encounter the Decepticons. Players will fight together with Autobots against a few special Decepticons. These Decepticons will have square attack marks on their body.

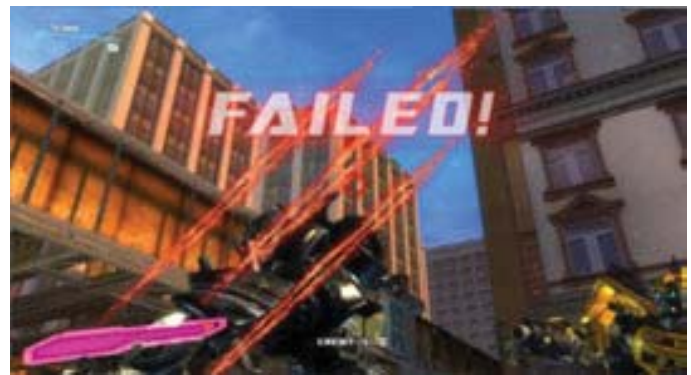


If the player(s) can clear all the attack marks from the Desepticons before they disappear, the player(s) will be rewarded extra bonuses.



l

If the player(s) are unable to clear all the attack marks before they disappear, the players will be attacked and the corresponding life gauge(s) will decrease.



m

Results are determined by how much damage to each marker a player can obtain.



n

Based on players' performances in co op game, the final result screen will be displayed.



0

i C

As the player progresses through the game they will encounter a series of mini games called "ACTION SEQUENCE CONTROLS"



p

Players will be required to interact by either maneuvering thier corresponding controllers in certain directions or by pressing the "Start" or "Action" buttons.

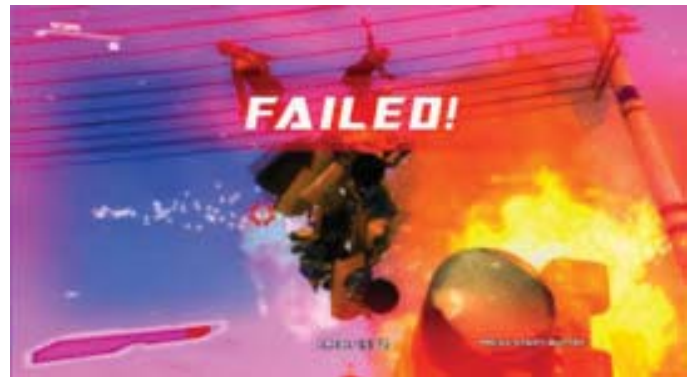


If the players succeed in this action, they can avoid the “Decepticons attack” and gain extra score bonus.



r

If the players fails in this action, the life gauge” will be decreased.



s



At the end of each level, there will be a Decepticons boss to fight against. Just like in co-op mode, there will be attack markers on these BOSSES.



t



Shoot at the attack markers before they disappear, the BOSS life gauge will decrease. When the BOSS life gauge decreases to 0, it is defeated.



ii

In BOSS battle, one of your colleagues may need your help. When the BOSS captures Bumblebee, and the players successfully destroy all the attack markers, Bumblebee will be rescued, and the "Friendship" between the two players will rise.



v

i i R

When each level is cleared, "Stage Result" will be displayed.

In this screen the surviving player's score and "Friendship" will be displayed.

"Friendship" is the rate representing how well player work together with the Autobots. The higher the "Friendship", the better you work with Autobots.

In "Stage Result", based on the "Friendship" rate, the player can recover a part of the "life gauge", the higher the "Friendship" is, the more "Life Gauge" will recover.



O T O

i T

If the player wants to join the game during other player's game process, the player can insert coins and press "START" button. If enough credits are reached, the "START" button on the other side on cabin will continue flick, press to join the game.

C i

When the player's life gauge is 0, "Continue Game" screen will appear. Insert enough coins and press "START" button to continue. If enough credits are available, press "START" button directly to join the game.

Ov

If the player's life gauge is 0 and doesn't continue, when the countdown is 0, game is over.

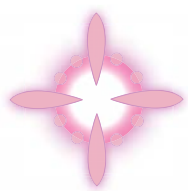
N

When the game is all cleared, if the total score is in top10, the player can input the name to display in the game ranking.

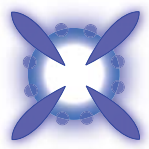
U i C U i

Use the control unit to aim at targets and fire. Moving the control unit will move the target sight on the screen. The red target is the 1P side and blue target is the 2P side.

Pull the trigger to fire on the screen and also the control unit reacts by internal motor. You have unlimited ammunition.

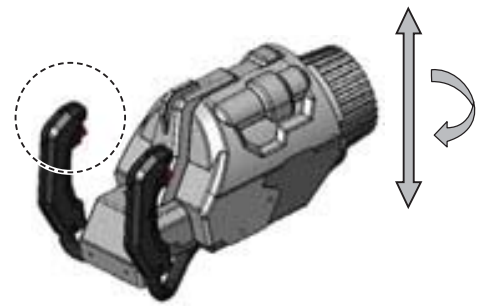


1P S D ( S )



2P S D ( H S )

Targets

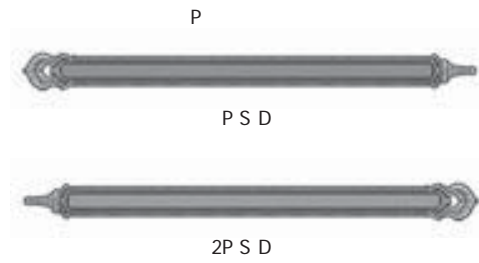


Control unit

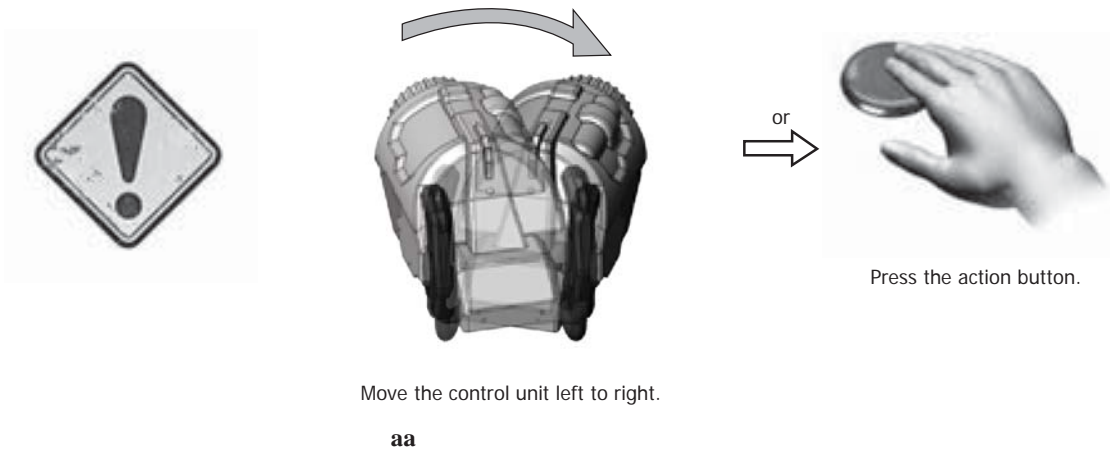
R

Once the game starts, the life for the player(s) will be displayed. The 1P side is red and the 2P side is blue.

- Use the control unit to aim and fire at the oncoming enemies.
  - Being hit by enemy attacks will reduce your life.
- It is game over when your life reaches zero.



During the game, a player will have to perform various actions. When an action needs to be performed, the action icon will appear on the screen. The action icon indicates the start of an action. Then follow the onscreen instructions.



**⚠ WARNING**

Do not touch any parts that are not specified in these directions. Touching unspecified locations may lead to electric shock or cause short circuits.

**⚠ CAUTION**

- Be careful that your finger or hand does not get caught when opening/closing the coin chute door.
- Operating the TEST Button and SERVICE Button during Test Mode may be slightly uncomfortable, due to the position of the buttons in relation to the cabinet seats. Take care not to hurt your shoulder or back, or scratch or catch yourself on any parts of the cabinet.

**STOP IMPORTANT**

- When you enter the Test Mode, fractional coin and bonus adder data is erased.
- Adjust the sound to the optimum volume, taking into consideration the environmental requirements of the installation location.
- Removing the Coin Meter circuitry renders the game inoperable.
- Have a flashlight on hand and operate in Test Mode very carefully. The cabinet interior is dark and narrow and you could easily make mistakes in operation.



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

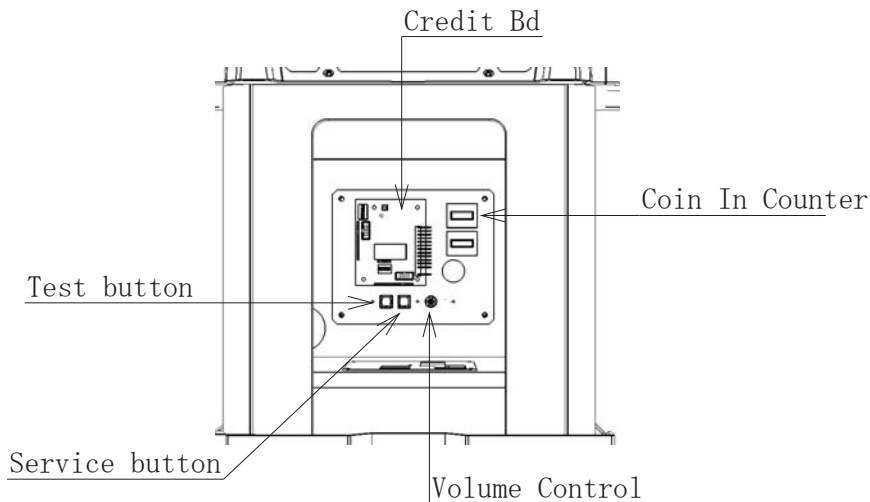
Shown below are the tests and screens to be used for different problems.

This product uses a RING RDGE 2 game board and a DVD DRIVE. In the system, a different game can be played by putting a different DVD ROM in the DVD DRIVE.

For this reason, the product's Test Mode consists of two modes: a System Test Mode for systems in which coin settings, for instance, are made for products that use the same system, and a Game Test Mode for setting of difficulty level, etc., and for input/output test of operational units used exclusively with this product.

## ITC UNIT AND COIN TOWER

The SWITCH UNIT and COUNTERS are housed within the COINTOWER. To access these controls you will need to open the COIN door, the switches and counters can be found directly on the rear face of the Tower.



a S itc nit

D IC	UNCTION
TEST BUTT N	Press to enter TEST M DE - Also used to enter choices selected within TEST M DE
SER ICE BUTT N	Press or SER ICE CREDIT - Also used to scroll through TEST MENUs
C IN IN C UNTER	Counts inserted coins ( 0.10 or 0.10 1 count)
LUME C NTR L	Adjusts audio level

**STOP IMPORTANT**

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

In the system test mode, the main activities include checking RING EDGE 2 information and actions and the setting of coin/credit. Also, a screen appears for checking screen adjustments. For details, see the RING EDGE 2 service manual, which is provided separately.

Use the following settings with this product. If the settings are not as specified, error messages might appear and operations might not be normal.

• **COIN ASSIGNMENTS**

COIN CHUTE TYPE: COMMON  
 SERVICE TYPE (SERVICE Button Type): COMMON

• **NETWORK SETTING**

NETWORK TYPE: MAIN  
 MAIN NETWORK: Setting Not Required.

---

When the TEST Button is pressed, the system test mode menu screen (SYSTEM TEST MODE) appears.

---

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

---

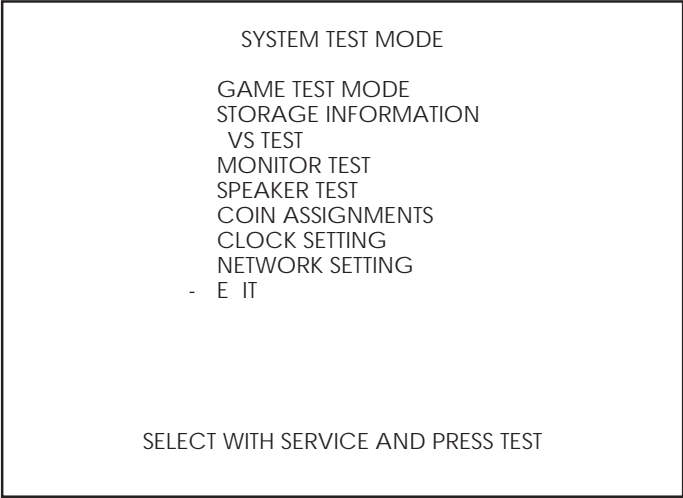
Press the TEST Button to confirm selection of the item.

---

When testing and checking are completed, select EXIT and press the TEST Button. The SYSTEM TEST MODE screen reappears.

---

When all tests are completed, select EXIT and press the TEST Button. The game screen reappears.



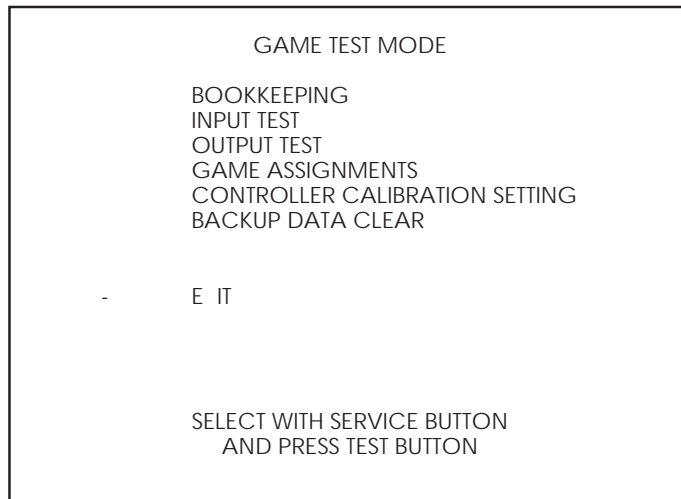
**FIG. 9-2 SYSTEM TEST MODE Screen**

**STOP IMPORTANT**

**To change settings in the game test mode, simply making changes on the setting screen will not be effective. Complete the Test Mode in normal fashion.**

Highlight GAME TEST Mode on the system test mode menu, and press the TEST Button to enter the game test mode.

Once you enter the game test mode, the game test mode menu will be displayed.



**FIG. 9-3a GAME TEST MODE MENU Screen**

---

Press the SERVICE Button to highlight the desired menu item with the cursor.

---

Press the TEST Button to perform the selected item. To learn how to proceed after executing the selected item, read the item's explanation.

---

When test or setting is completed, take steps to have the game test mode menu screen reappear. **The steps involved vary with the item.**

---

Select EXIT and press the TEST Button. The system test mode menu screen reappears.

---

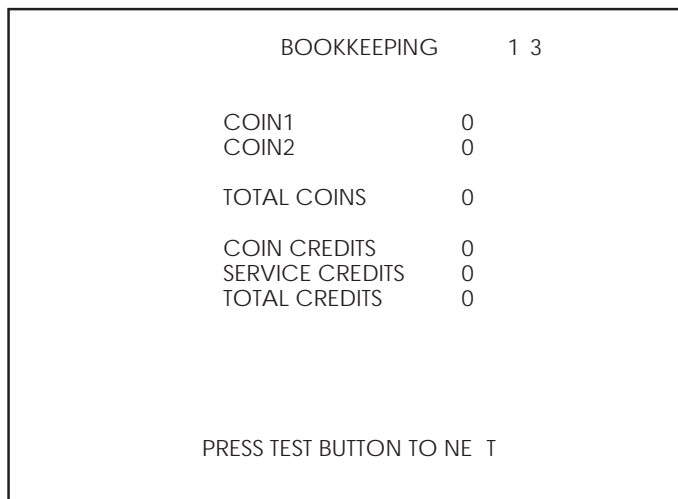
On the system test mode menu screen, select EXIT and press the TEST Button. The game screen reappears.

• **Menu Item**

BOOKKEEPING	D
INPUT TEST	T
OUTPUT TEST	T
GAME ASSIGNMENTS	Adjust game specific settings
CONTROLLER CALIBRATION	A
BACKUP DATA CLEAR	E

**Displays bookkeeping information across 4 screens.**

When the TEST Button is pressed, proceed to the next screen. When the TEST Button is pressed while the (3/3) screen is displayed, the game test mode menu screen reappears.

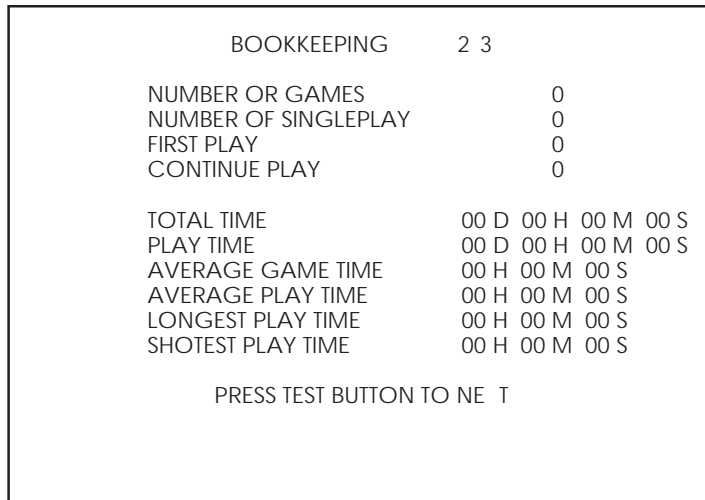


**FIG. 9-3a01 BOOKKEEPING Screen (1/3)**

**<Menu Explanation>**

COIN 1/COIN 2	Number of coins inserted in each coin slot.
TOTAL COINS:	Total number of coins.
COIN CREDITS:	Number of credits awarded from inserting coins.
SERVICE CREDITS:	Number of credits awarded with the SERVICE Button.
TOTAL CREDITS:	Total of COIN CREDITS and SERVICE CREDITS.

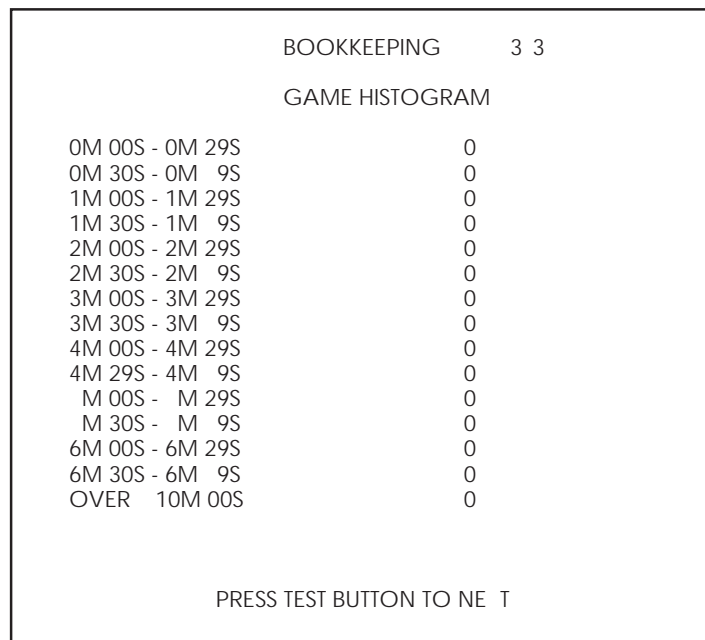
N TION O T T NDD T DI



**FIG. 9-3e02 BOOKKEEPING Screen (2/3)**

**<Menu Explanation>**

NUMBER OF GAMES:	Total number of plays on the 1P side and on the 2P side.
NUMBER OF SINGLEPLAY:	Total number of single plays on the 1P side and on the 2P side. (without another player joining play).
FIRST PLAY	Total number of first time plays by Player 1 or Player 2.
CONTINUE PLAY:	Total number of continues on the 1P side and on the 2P side.
TOTAL TIME:	Amount of time the game has been in operation.
PLAY TIME:	Total play time.
AVERAGE GAME TIME:	Average control time for a single game.
AVERAGE PLAY TIME:	Average play time for a single game.
LONGEST PLAY TIME:	Longest play time for a single game.
SHORTEST PLAY TIME:	Shortest play time for a single game.



**FIG. 9-3a03 BOOKKEEPING Screen (3/3)**

**<Menu Explanation>**

Play time will be recorded into different lines by 30 second intervals  
 All play time over 10 minutes are written into the line OVER 10M 00S

# INPUT TEST

INPUT TEST	
PLAYER1 CONTROLLER	3
PLAYER1 CONTROLLER Y	7
PLAYER1 CONTROLLER TRIGGER L	OFF
PLAYER1 CONTROLLER TRIGGER R	OFF
PLAYER1 START BUTTON	OFF
PLAYER2 CONTROLLER	3
PLAYER2 CONTROLLER Y	7
PLAYER2 CONTROLLER TRIGGER L	OFF
PLAYER2 CONTROLLER TRIGGER R	OFF
PLAYER2 START BUTTON	OFF
SERVICE TEST	
PRESS TEST AND SERVICE BUTTON TO EXIT	

**FIG. 9-3b INPUT TEST Screen**

The condition of each input device can be checked. Periodically check the condition of each input device on this screen. Conditions are normal if each device operates and yields output as indicated below.

### <Operation>

Press the SERVICE Button and move the cursor to the item (output device) you want to test.

Whenever the TEST Button is pressed, the display on the right side of the item goes from OFF to ON and the selected output device operates. Confirm that the device operates normally.

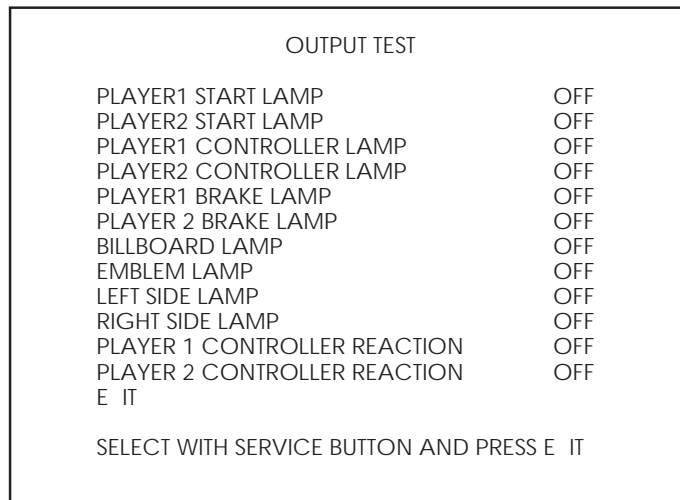
Press the SERVICE Button and move the cursor to EXIT.

When the TEST Button is pressed, the game test mode menu screen reappears.

### <Menu Explanation>

PLAYER1 CONTROLLER	M	1		
PLAYER1 CONTROLLER Y				
PLAYER1 CONTROLLER TRIGGER L	P	1		OFF
PLAYER1 CONTROLLER TRIGGER R	P	1		OFF
PLAYER1 START BUTTON	P	1 START	-	ON
PLAYER2 CONTROLLER	M	2		
PLAYER2 CONTROLLER Y				
PLAYER2 CONTROLLER TRIGGER L	P	2		OFF
PLAYER2 CONTROLLER TRIGGER R	P	2		OFF
PLAYER2 START BUTTON	P	2 START	-	ON
SERVICE TEST	P	SERVICE TEST	-	ON

# OUTPUT TEST



**FIG. 9-3c OUTPUT TEST Screen**

The condition of each output device can be checked. Periodically check the condition of each output device on this screen. Conditions are normal if each device operates and yields output as indicated below.

### <Operation>

Press the SERVICE Button and move the cursor to the item (output device) you want to test.

Whenever the TEST Button is pressed, the display on the right side of the item goes from OFF to ON and the selected output device operates. Confirm that the device operates normally.

Press the SERVICE Button and move the cursor to EXIT.

When the TEST Button is pressed, the game test mode menu screen reappears.

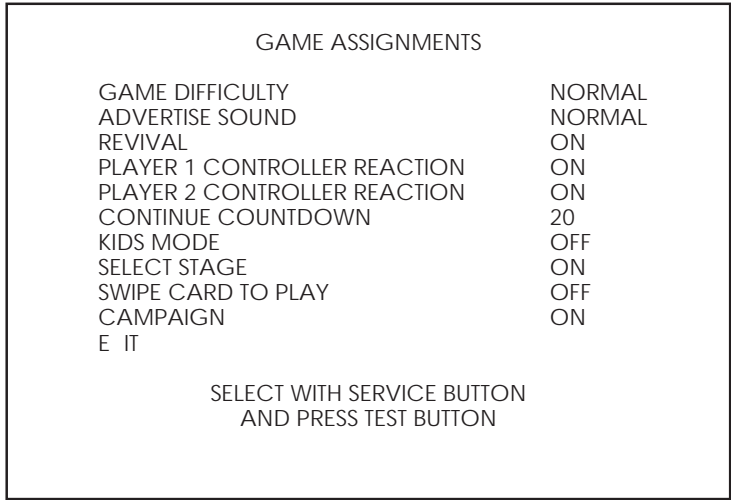
### <Menu Explanation>

PLAYER1 START LAMP	T	OFF ON	1
PLAYER 2 START LAMP	T	OFF ON	2
PLAYER1 CONTROLLER LAMP	T	OFF ON	1
PLAYER2 CONTROLLER LAMP	T	OFF ON	2
PLAYER1 BRAKE LAMP	T	OFF ON	1
PLAYER2 BRAKE LAMP	T	OFF ON	2
BILLBOARD LAMP	T	OFF ON	
EMBLEM LAMP	E	TEST	A
	E	RED GREEN BLUE	
LEFT SIDE LAMP	E	TEST	
		BLUE RED MAGENTA	
		GREEN CYAN YELLOW WHITE OFF	
RIGHT SIDE LAMP	E	TEST	
		BLUE RED MAGENTA	
		GREEN CYAN YELLOW WHITE OFF	
PLAYER1 CONTROLLER REACTION	T	OFF ON	1
PLAYER2 CONTROLLER REACTION	T	OFF ON	2

**STOP IMPORTANT**

**Setting changes do not become effective until EXIT is selected on the setting screen. After a setting has been changed, be sure to always exit the setting screen.**

N TION O T T NDD T DI



**FIG. 9-3d GAME ASSIGNMENTS Screen**

The various game settings are established.

**<Operation>**

- Press the SERVICE Button, move the cursor to the item whose setting is to be changed and select the item.
- When the TEST Button is pressed, the preset value of the selected item changes.
- Press the SERVICE Button and move the cursor to EXIT.
- When the TEST Button is pressed, the game setting screen exits and the game test mode menu screen reappears.

**<Menu Explanation>**

- DIFFICULTY: Set the Game Difficulty. Select from 5 options: from VERY EASY to VERY HARD.
- ADVERTISE SOUND: Turn sound during the Attract (standby) mode. Select from 5 options: "NORMAL", "3/4", "1/2", "1/4" or OFF.
- REVIVAL: Set to "ON" for both player1 and player 2 game to finish **simutainously**.
- PLAYER 1 CONTROLLER REACTION: Set to "ON" for player 1 controller feedback (vibration)
- PLAYER 2 CONTROLLER REACTION: Set to "ON" for player 2 controller feedback (vibration)
- CONTINUE COUNTDOWN: Set amount of "countdown to continue" time. Select from 3 options: "10", "20", "30". DEFAULT = 20
- KIDS MODE: Set to "ON" to prevent player gun being shown on screen. DEFAULT = OFF



SELECT STAGE: Set to "ON" to enable stage selection. DEFAULT = "ON".

SWIPE CARD TO PLAY: TOGGLE ON/OFF: When "ON" the information "SWIPE CARD TO PLAY" will be shown at the bottom of the screen during attract. When "OFF" it will read "INSERT COINS TO PLAY". Turn sound during the Attract (standby) mode.

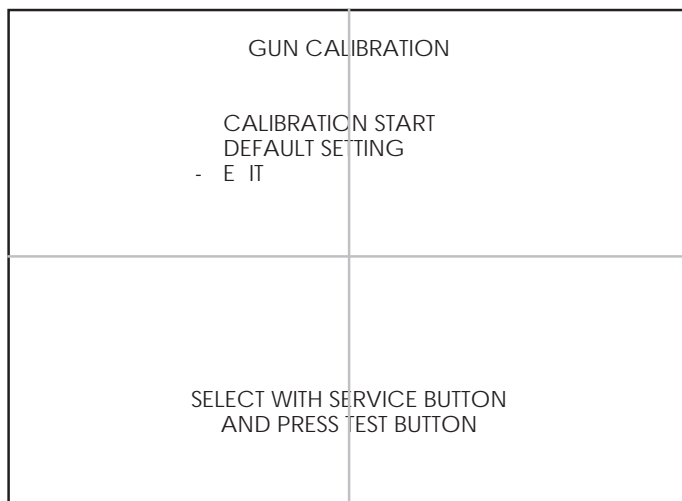
CAMPAIGN: Toggle ON/OFF: Set to "OFF" to disable campaign. DEFAULT = ON

EXIT: Return to the Game Test Menu screen.

## UN C I R T I O N T T I N

### **STOP** IMPORTANT

**Calibration is relevant to operability. Manipulate and adjust the control unit with appropriate force. Do not make adjustments with excessive force.**



**FIG. 9-3e01 GUN CALIBRATION Screen**

Change the volume input values of the control unit. After changing the volume, use this screen to adjust and check it. You must adjust the sight for 1P side and 2P side separately.

#### <Operation>

---

Press the SERVICE Button and move the cursor to the item you want to select.

---

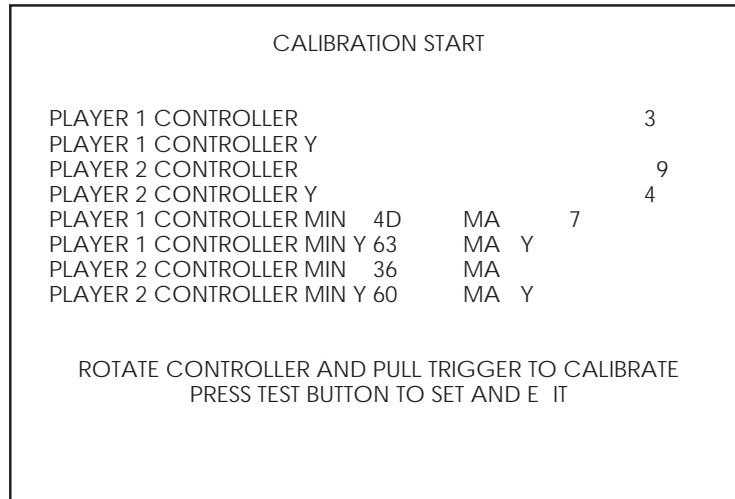
Move the cursor to CALIBRATION START and press the TEST Button to adjust the calibration.

---

Move the cursor to EXIT and press the TEST Button, the calibration screen exits and the game test mode menu screen reappears.

**Perform individual calibration of the control units for the 1P side and 2P side.**

The current maximum and minimum individual volume values will be reset when entering the Gun Calibration Screen.



**FIG. 9-3c02 Calibration Screen**

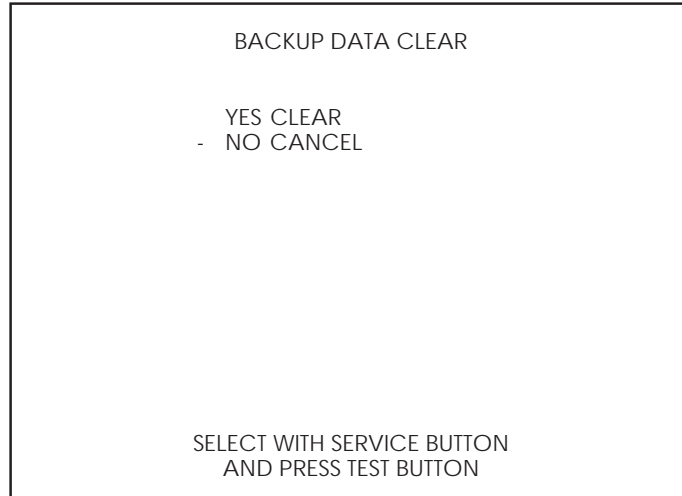
**<Operation>**

---

Slowly move the control unit you wish to adjust to each of the four corners of the screen, pulling the trigger at each corner'. The values will set automatically.

---

Press the TEST Button and the calibration settings will be altered to reflect all changes made before returning to the GAME TEST Mode screen.



**FIG. 9-3f BACKUP DATA CLEAR Screen**

---

Press the **SERVICE** Button and move the cursor to the item you want to select.

---

To clear data, move the cursor to YES (CLEAR) and then press the TEST Button. When the data has been cleared, the message “COMPLETED” will be displayed and return to the game test mode menu screen automatically.

---

Move the cursor to NO (CANCEL) and press the TEST Button to return to the game test mode menu screen **without clearing the data.**



**STOP IMPORTANT**

- If the adjustment method in this manual does not resolve the problem contact the customer service number in this manual or your supplier.
- Do not stick tape, stickers or anything else onto the screen. Any kind of adhe-

**REMARK**

This specification applies to the 54.6 inch Color TFT-LCD Module P550HVN02.0. This LCD module has a TFT

active matrix type liquid crystal panel 1,920x1,080 pixels, and diagonal size of 54.6 inch. This module supports

1,920x1080 mode. Each pixel is divided into Red, Green and Blue sub-pixels or dots which are arranged in vertical

stripes. Gray scale or the brightness of the sub-pixel color is determined with a 10-bit gray scale signal for each

dot.

The P550HVN02.0 has been designed to apply the 10-bit 2 channel LVDS interface method. It is intended to

support displays where high brightness, wide viewing angle, high color saturation, and high color depth.

\* General Information

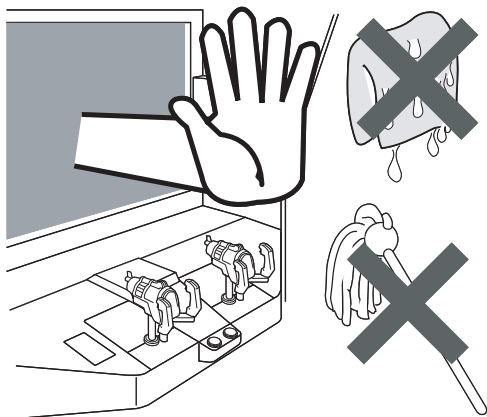
Items	Specification	Unit	Note
Active Screen Size	54.6	Inch	
Display Area	1209.6(H) x 680.4(V)	mm	
Outline Dimension	1235.6(H) x 706.4(V) x 25.5(D)	mm	1
Driver Element	a-Si TFT active matrix		
Display Colors	10 bit (8bit+FRC), 1073.7M	Colors	
Number of Pixels	1,920x1080	Pixel	
Pixel Pitch	0.21 (H) x 0.63(W)	mm	
Pixel Arrangement	RGB vertical stripe		
Display Operation Mode	Normally Black		
Display Orientation	Landscape/Portrait Enable		
Surface Treatment	AG		Haze = 11%

**⚠ CAUTION**

- Since the LCD display screen is susceptible to damage, pay careful attention to its handling. When cleaning, refrain from using water or volatile chemicals.
- Do not climb onto the control panel. This could lead to injuries, such as bump-
- When reaching across the control panel to clean the screen there is a risk of hurting your shoulder or arm. Use a mop with a non-feathery, soft, dry cloth mop head and wipe the surface of the screen.

When the screen surface becomes dirty with dust, etc., clean it by using a soft cloth such as gauze. When water, and volatile chemicals such as benzene, thinner, etc., spill on the screen surface, it may be subject to damage, therefore, do not use them.

Also, since the surfaces are susceptible to damage, refrain from rubbing them with a hard material or using a duster. If the screen is especially dirty, call in a professional cleaner.



## ■ CONTRO UNIT

### WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.
- Do not touch any parts that are not specified in these directions. Touching unspecified locations may lead to electric shock or cause short circuits.
- This work should be performed by site maintenance personnel or other skilled professionals. Work performed by non-technical personnel can cause a severe accident such as an electric shock.
- Exercise due caution in performing soldering procedures. If soldering iron is handled carelessly, there could be fires or burns.
- Proceed very carefully when heating thermal contraction tube. Careless operations can result in fires or burns.

### CAUTION

- When fastening plastic parts, be careful not to tighten screws and nuts excessively. Otherwise parts may be damaged, resulting in injuries from fragments, etc.
- Be careful not to get hand or finger caught when removing or attaching the parts.
- Disconnection and connection of connectors will be performed within the narrow cabinet space. Take due care not to scratch or otherwise injure yourself.
- Take care when carrying the removed Control Units. Such heavy lifting carries a risk of injury to back or shoulders.

### STOP IMPORTANT

- After the volume has been replaced, be sure to set the volume value on the test mode calibration screen and the input test screen and check variations in the volume value.
- After adjusting or replacing a microswitch, always check ON/OFF of the switch on the input test screen of the test mode.
- Handle parts inside the Control Unit very carefully. Be especially careful to avoid damage, deformation or loss of these parts. If any one of these parts is lost or defective, it can result in damages and/or faulty operations.

If the operability of the Control Unit is unsatisfactory, or if settings on the test mode calibration screen are ineffective, the problem could be a defective mechanism, displacement of the position where volume or microswitch has been fastened, or malfunctioning of volume or microswitch.

Carry out the following procedure to replace Control Unit or microswitch. Also be sure to grease the mechanical components of the Control Unit once every 3 months.

## O T O R O CONTRO UNIT

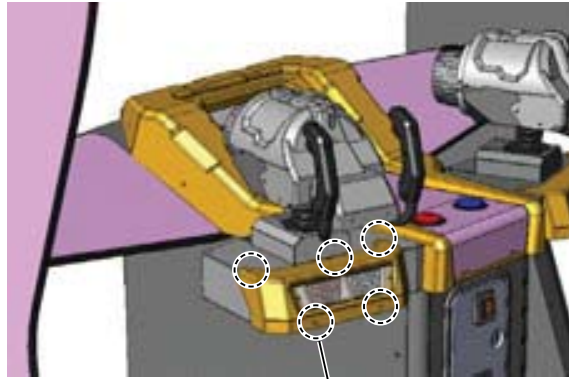
When changing the volume or microswitches in the Control Unit you must first remove the Control Unit. Performing these operations with the Control Unit still attached is difficult and may damage parts or wires.

The following tools are needed for the following procedure.

- Phillips head screwdriver (for M6)
- Wrench or screwdriver for tamperproof screws (for M4)  
A 7 millimeter spanner, hexagonal screwdriver, or socket wrench

Turn off the power.

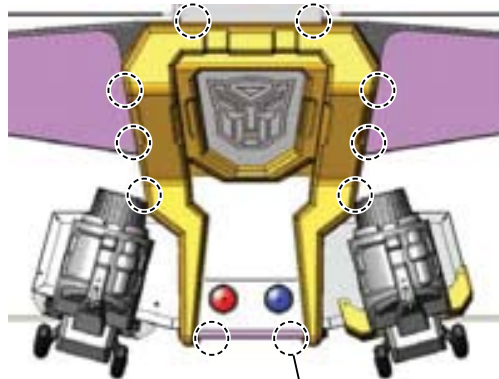
Remove the (5) M4x12 Internal Hex screws which secure the Brake Light Cover to the Control Panel Assy



H SC ( ea.) black  
M x 2

a

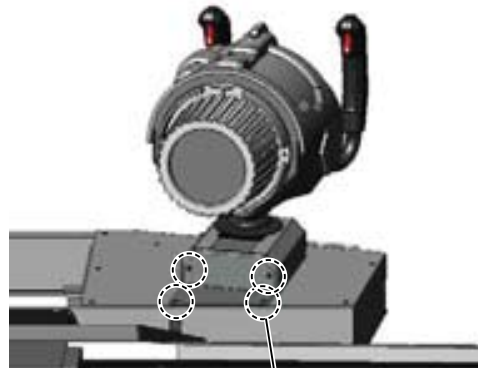
Remove the (10) Internal Hex screw which secure the Control Panel Cover. Carefully lift the Control Panel Cover up to gain access to the Player 1 and Player 2 Start Buttons. Unclip the buttons from their respective housings and remove.



H SC ( 0 ea.) black  
M x 2

b

Remove the (4) Internal Hex screw which secure the Rear Securing Plate.

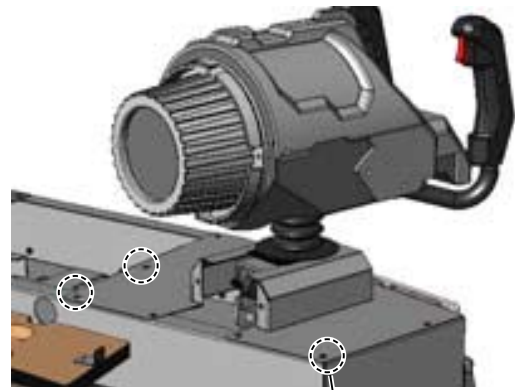


H SC ( ea.) black  
M x 2

c

CONTRO UNIT

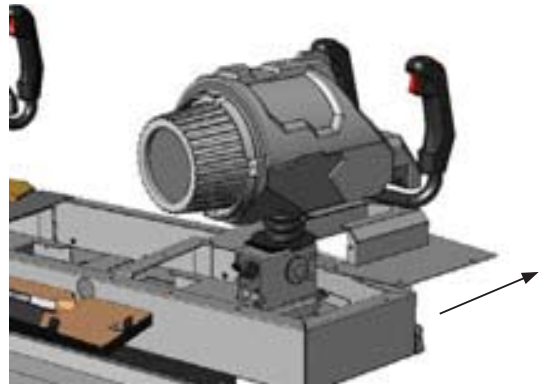
Remove the (3) M4 Internal Hex screws from the Controller base plate.



d

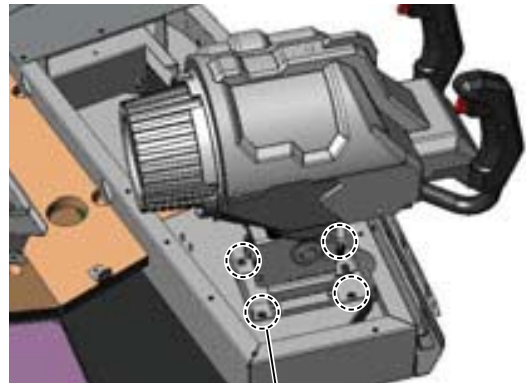
H SC (3 ea.) black  
M x 2

Carefully slide the base plate out towards the rear of the cabinet.



e

Remove the (4) M8 hex bolts from the base of the controller. Disconnect all harnesses.

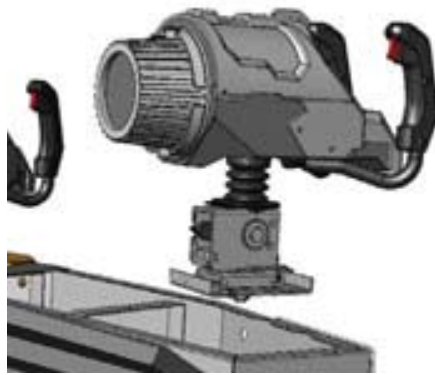


H B P S ( ea.)  
M8x20



---

Lift the Control Unit directly upward and remove it.



■ CONTROL UNIT

**STOP IMPORTANT**

**The volume axis directions when the Control Units are pointed directly at the screen are different.**

The X (left and right) axis volume is on the bottom of the Control Unit.  
 If the X axis volume does not seem to be working properly and the TEST Mode calibration screen has no effect, the cause is likely to be a problem with or damage to the gears of the X axis volume.

When replacing the volume, you will need a replacement volume and three heat shrink tubes. You will also need the following tools and some solder.

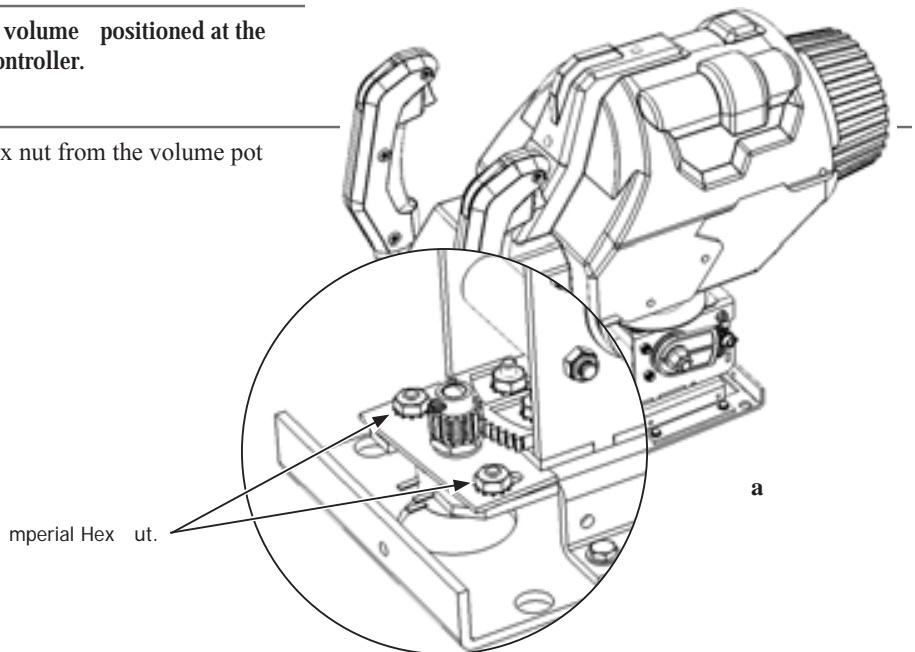
- Wrench or screwdriver for tamperproof screws (for M4)  
     **A 7 millimeter spanner, hexagonal screwdriver, or socket wrench**
- An 11-12 millimeter spanner  
     **Cutters**
- **Wire stripper**
- Soldering iron  
     **Industrial heat gun**



Turn off the power and remove the Control Unit (see 11-1).

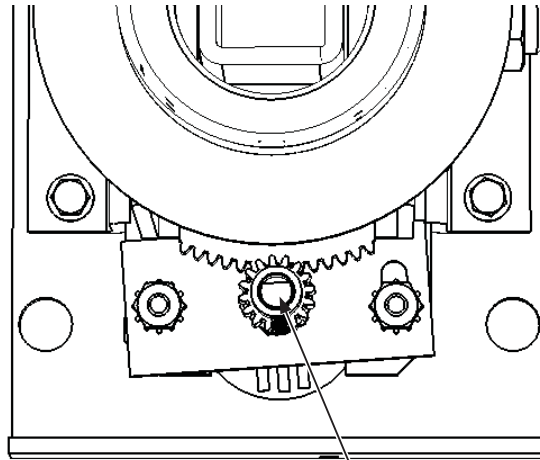
Locate the X axis volume positioned at the rear base of the controller.

Loosen the (2) hex nut from the volume pot bracket.



---

With the Control Unit's pointing to the centre of the screen, make sure that the D Cut in the Volume pot is positioned as it is in FIG 11-2b



**b A i s e t a n d i t o l u m e**

Volume axis D cut face with left and right axis perpendicular to the controller

---

**Tighten the two previously loosened screws.**

---

Move the Control Unit left and right and check that the gears move smoothly.

---

**Reattach the Control Unit, then turn on the power and adjust the volume value on the calibration screen.**

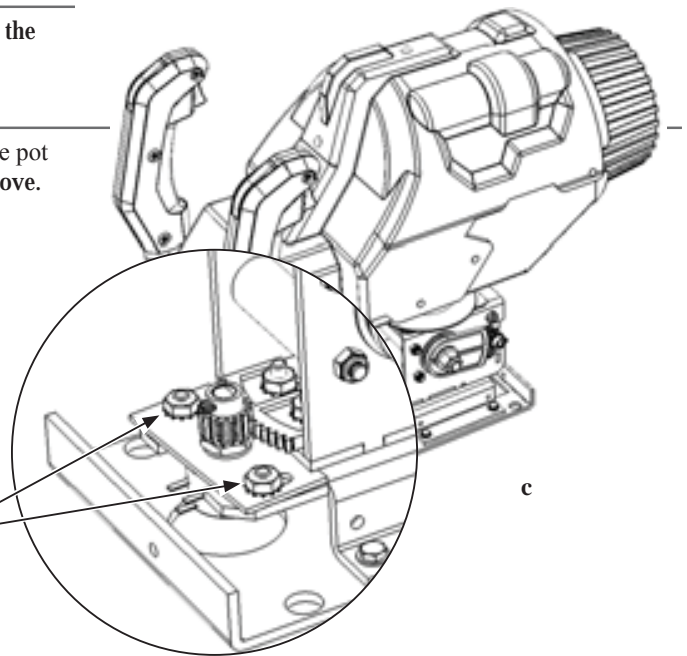
R

Turn off the power and remove the Control Unit (see 11-1).

Locate the **axis volume** positioned at the rear base of the controller.

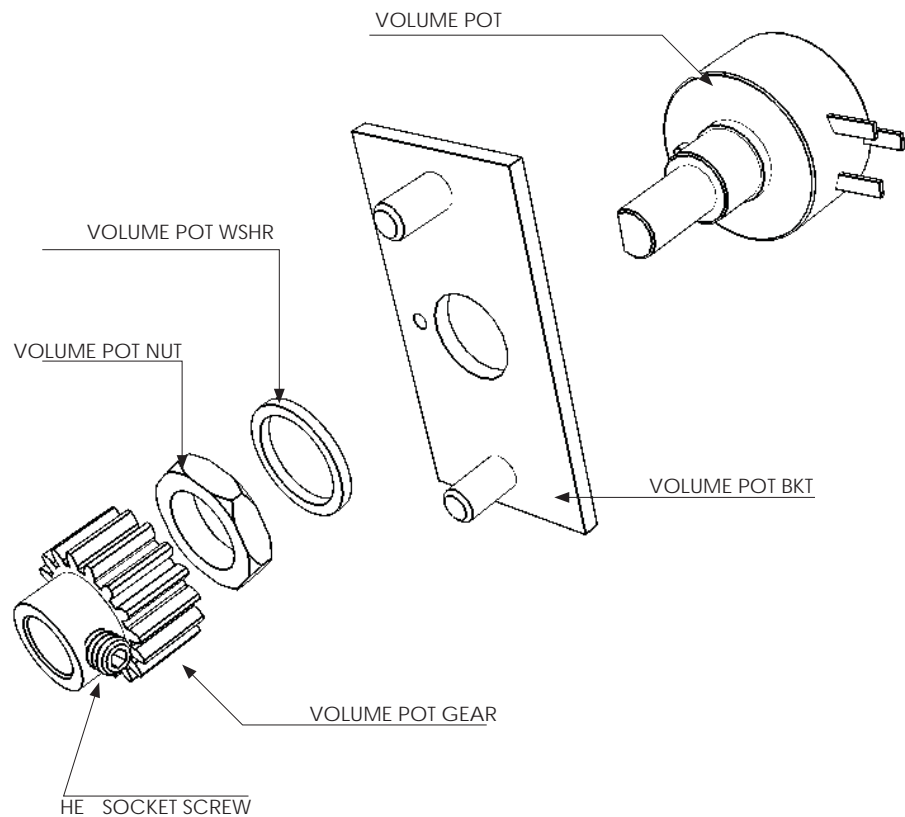
Unscrew the (2) hex nut from the volume pot bracket. Disconnect the harness and remove.

Imperial Hex Nut.



Loosen the single hexagonal grub screw on the volume pot gear and remove the gear.

Remove the nut which secures the volume pot to the volume pot bracket and separate.



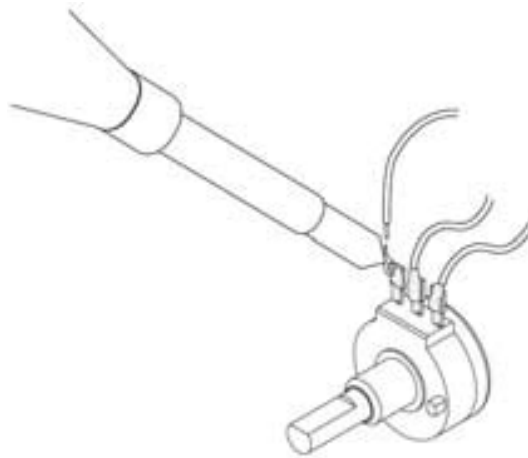
d

---

The wire connected to the volume pot will be reused. Use a tool such as a pair of snips or cutters to remove the old heatshrink tubes which cover the contacts.

---

Use a soldering iron to melt the solder and separated the wires from the old volume pot. Be very careful when using a soldering iron.



e

---

If the exposed conductive wire at the end is less than 5mm, use a tool such as a wire stripper or cutter to cut the wire insulation back to a workable length. Place new sleeving over the wire before resoldering them to the pot.

---

Once soldered, cover the bare contacts with the sleeving. If heatshrink is used, apply heat from an appropriate hot air blower to shrink the sleeving tightly over the contacts.

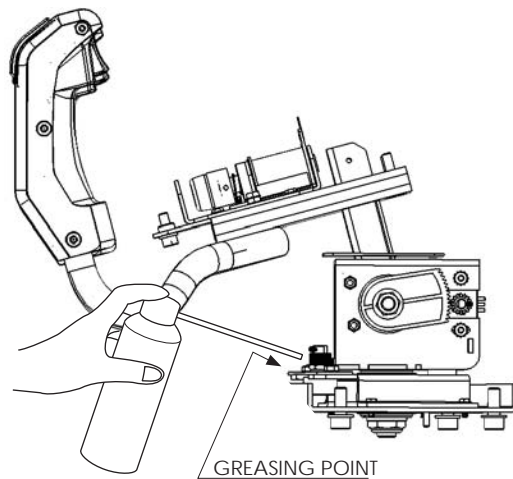
---

Reassemble the pot to the pot bracket by working in reverse order of these instructions. Refer to the POT VOLUME ADJUSTMENT section of this manual.

**STOP IMPORTANT**

- Be sure to use the designated grease. Using undesignated grease can cause parts damage.
- Do not apply grease to locations other than as specified. Doing so may create a risk of operational problems and deterioration of parts.
- The designated periods for greasing serve only as a guide. Whenever there are squeaks or other anomalies, apply grease at designated locations.

Use spray grease once every three months to grease up the gear mesh portion of the constituent parts.  
Use "Grease Mate" (part number 090-0066) for the spray grease.



The Y (up and down) axis volume is on the bottom of the Control Unit.  
 If the Y axis volume does not seem to be working properly and the TEST Mode calibration screen has no effect, the cause is likely to be a problem with or damage to the gears of the Y axis volume.

When replacing the volume, you will need a replacement volume and three heat shrink tubes. You will also need the following tools and some solder.

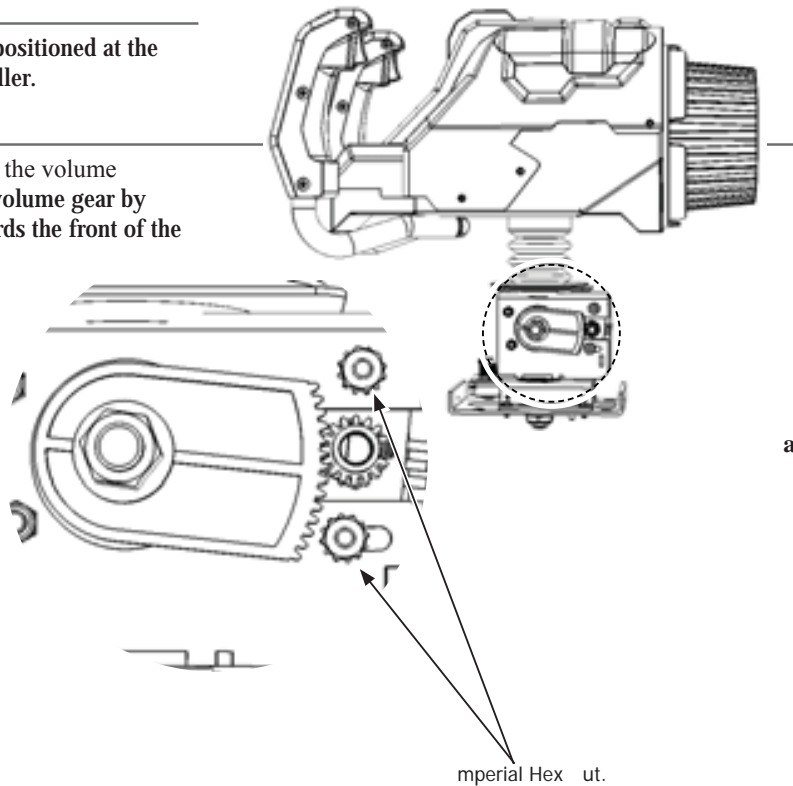
- Wrench or screwdriver for tamperproof screws (for M4)
- A 7 millimeter spanner, hexagonal screwdriver, or socket wrench
- An 11-12 millimeter spanner
- Cutters
- Wire stripper
- Soldering iron
- Industrial heat gun



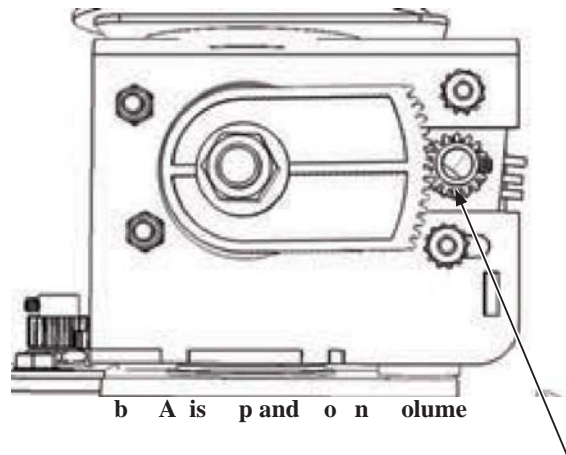
Turn off the power and remove the Control Unit (see 11-1).

Locate the Y axis volume positioned at the right hand side of the controller.

Loosen the (2) hex nut from the volume pot bracket. Disengage the volume gear by sliding the bracket out towards the front of the controller.



With the gear disengaged and the Control Unit's pointing in the upper most position, make sure that the D Cut in the Volume pot is positioned as it is in FIG 11-3b



Position of Volume axis D cut face when controller pointing upper most postion.

Engage the gears and tighten the two previously loosened screws.

Move the Control Unit lup and down and check that the gears move smoothly.

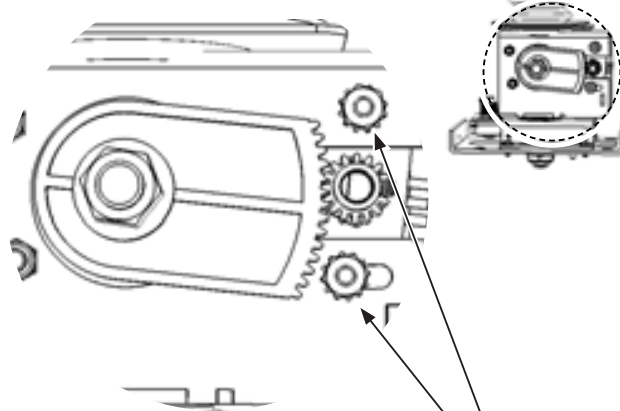
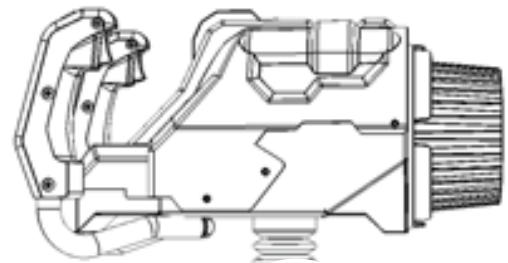
Reattach the Control Unit, then turn on the power and adjust the volume value on the calibration screen.

R

Turn off the power and remove the Control Unit (see 11-1).

Locate the axis volume positioned at the rear base of the controller.

Unscrew the (2) hex nut from the volume pot bracket. Disconnect the harness and remove.



perial Hex ut.



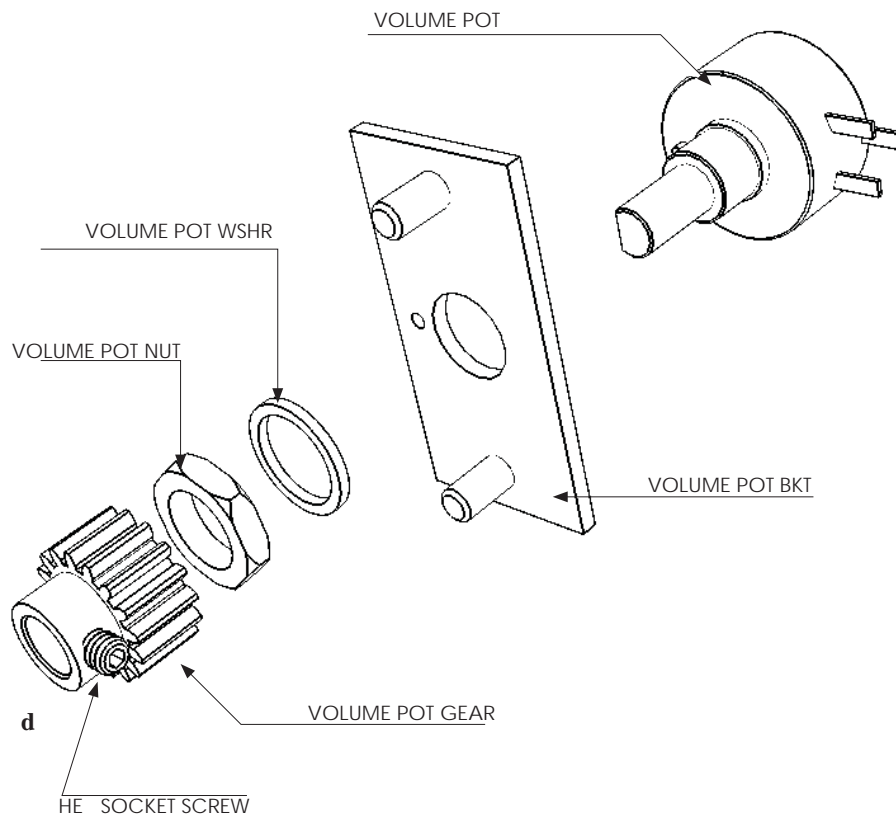
---

Loosen the single hexagonal grub screw on the volume pot gear and remove the gear.

---

Remove the nut which secures the volume pot to the volume pot bracket and separate.

---

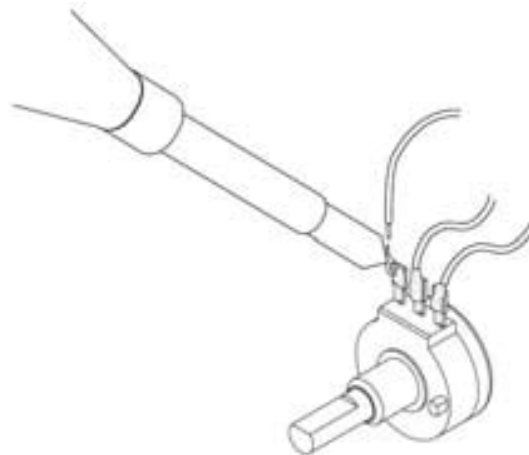


---

The wire connected to the volume pot will be reused. Use a tool such as a pair of snips or cutters to remove the old heatshrink tubes which cover the contacts.

---

Use a soldering iron to melt the solder and separated the wires from the old volume pot. Be very careful when using a soldering iron.



If the exposed conductive wire at the end is less than 5mm, use a tool such as a wire stripper or cutter to cut the wire insulation back to a workable length. Place new sleeving over the wire before resoldering them to the pot.

Once soldered, cover the bare contacts with the sleeving. If heatshrink is used, apply heat from an appropriate hot air blower to shrink the sleeving tightly over the contacts.

Reassemble the pot to the pot bracket by working in reverse order of these instructions. Refer to the POT VOLUME ADJUSTMENT section of this manual.

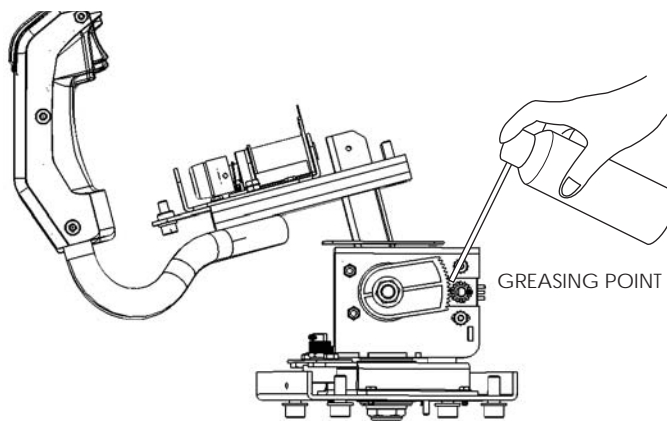
i

**STOP IMPORTANT**

- Be sure to use the designated grease. Using undesignated grease can cause parts damage.
- Do not apply grease to locations other than as specified. Doing so may create a risk of operational problems and deterioration of parts.
- The designated periods for greasing serve only as a guide. Whenever there are squeaks or other anomalies, apply grease at designated locations.

Use spray grease once every three months to grease up the gear mesh portion of the constituent parts. Use "Grease Mate" (part number 090-0066) for the spray grease.

d



If the trigger does not seem to be working properly, it is likely a fault with the microswitch inside the Control Unit's grip or there is foreign matter or dirt on the trigger. Remove the Control Unit when exchanging the microswitch or when disassembling and cleaning individual parts.

When replacing the microswitch, you will need a replacement microswitch and two heat shrink tubes. You will also need the following tools and some solder.

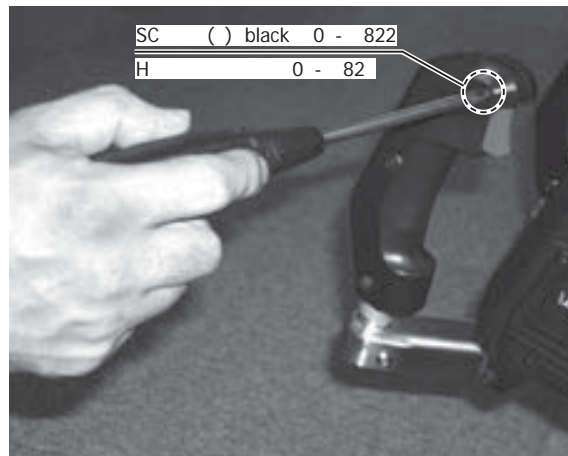
- Phillips head screwdriver (for M4,)
- Wrench or screwdriver for tamperproof screws (for M4)
- An 8 millimeter spanner or hexagonal screwdriver or socket wrench.
- Nippers
- **Cutters**
- Soldering iron
- **Industrial dryer**

The microswitch slots into the left hand part of the grip, the left grip. During this operation you will remove and replace the right hand part of the grip, the right grip.

The screws and nuts fixing the grip in place are treated as part of this product. If you lose them they can be reordered using their respective product numbers.

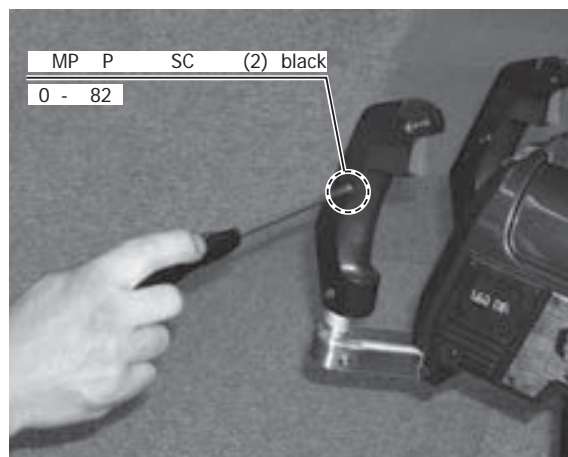
Turn off the power and remove the Control Unit (See 11-1).

**Disassemble the grip with the microswitch inside it. The top screw on the right grip uses a hexagon nut. Use a Phillips head screwdriver (for M4 screw).**



a

**Remove the two tamperproof screws holding the right grip in place. Use a wrench or screw driver for tamperproof screws (for M4).**

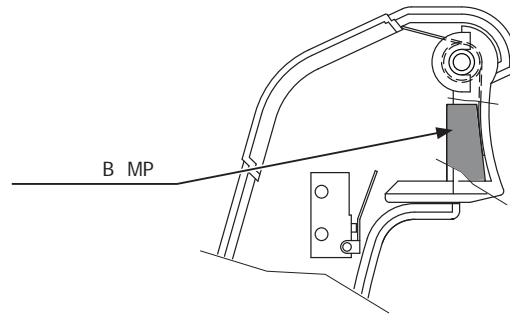


b

Remove the right grip. Be careful when removing the grip as the pieces inside may come free. When disassembling and cleaning individual parts, be careful of the direction you attach the trigger bumper. Attaching it in the wrong direction may lead to a malfunction in the operation of the trigger.

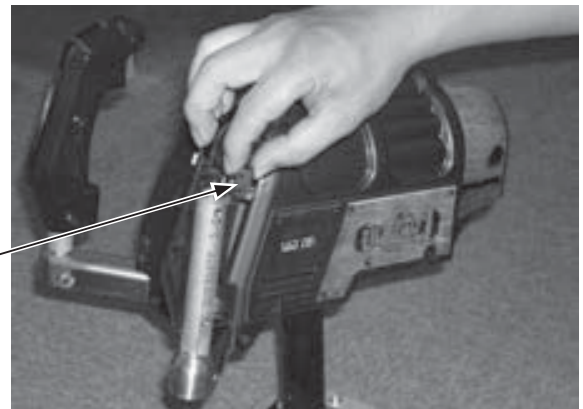


c



d

The microswitch is slotted into the left grip. Remove it gently, being careful not to damage the wires.



e

M C S CH

The wire attached to the microswitch will be used with the replacement microswitch. Remove the old heat shrink tubing attached to the wire using the nippers or cutters.

Use the soldering iron to remove the wire soldered to the microswitch terminal.

Pass the wire through each of the heat shrink tubes.

Solder the wire to the terminal on the replacement microswitch. Use the wiring diagram to make sure you don't solder in the wrong place.

---

Use the industrial dryer to apply heat and attach the heat shrink tubing to the soldered area.

---

Insert the microswitch into the left grip and attach it.

---

Reattach the right grip, taking care not to pinch the wire. Replace the two tamperproof screws, screw and nut to fix it in place. Be careful not to tighten the screws too tightly.

---

Reattach the Control Unit to the cabinet.

---

Turn on the power and use the input test screen in GAME TEST Mode to check the operation of the trigger.

---



CONTROL UNIT

# R C I N T D C C O I

The X (left and right) axis volume is on the bottom of the Control Unit.

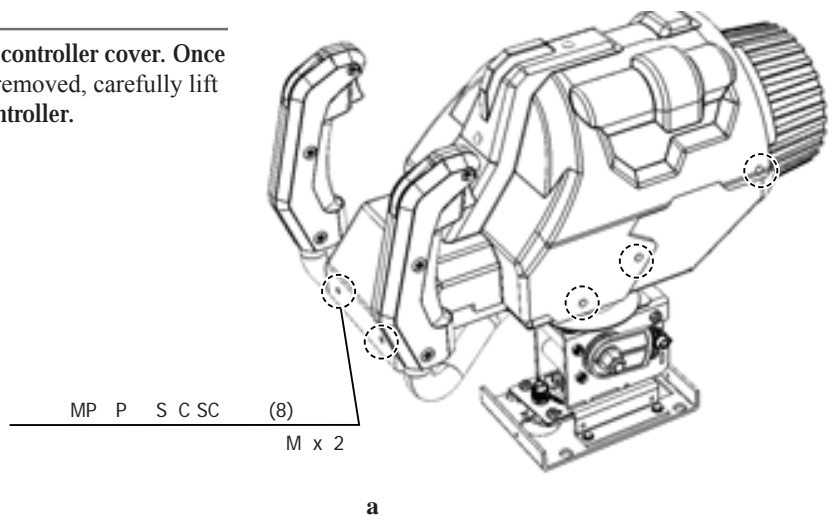
If the X axis volume does not seem to be working properly and the TEST Mode calibration screen has no effect, the cause is likely to be a problem with or damage to the gears of the X axis volume.

When replacing the feedback coil, you will need a replacement coil and two heat shrink tubes. You will also need the following tools and some solder.

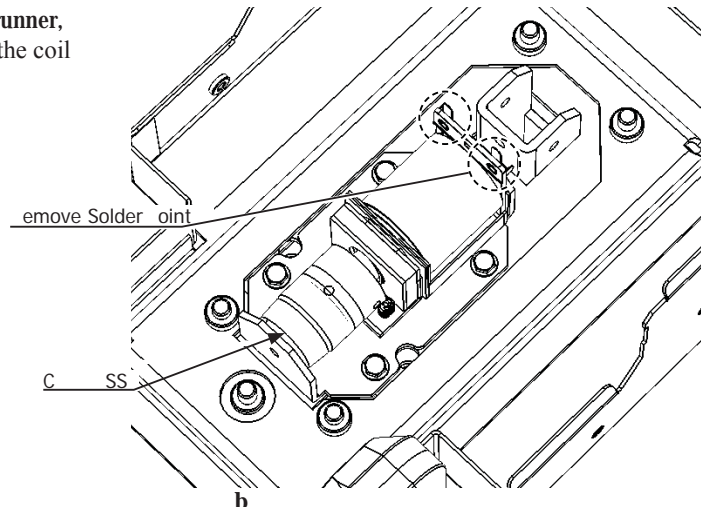
- Wrench or screwdriver for tamperproof screws (for M4)  
A 7 millimeter spanner, hexagonal screwdriver, or socket wrench
- An 11-12 millimeter spanner  
Cutters  
Wire stripper
- Soldering iron  
Industrial heat gun

Turn off the power and remove the Control Unit (See 11-1).

Unscrew and remove the controller cover. Once all (8) screws have been removed, carefully lift off the cover from the controller.

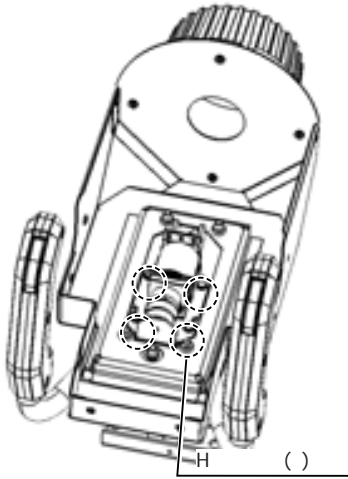


Using an open ended spanner or nut runner, remove the (4) Hex Nut which secure the coil assembly to the controller.



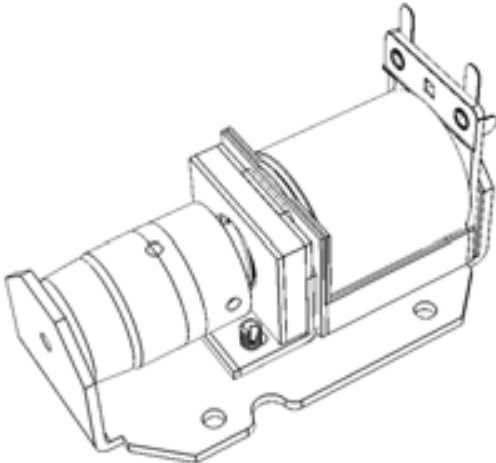
Note: This image has been modified to easy illustration

Once the coil has been desoldered,unscrew and remove the (4) Hex Nut which secure the Coil Assy to the Controller.



c

The Coil Assy may be broken down further into individual components, but for the purpose of this exercise only the assembly is removed.



d

## COIN REJECTOR

This product is supplied with either an electronic coin validator (particular to Europe) or a mechanical coin acceptor (particular to USA and Asia). Identify which coin acceptor is being used and consult the relevant information within this section of the manual.

### Handling the Coin Jam

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

## CLEANING THE COIN REJECTOR

### 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:

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

Remove the Coin Selector from the Coin Chute Door

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

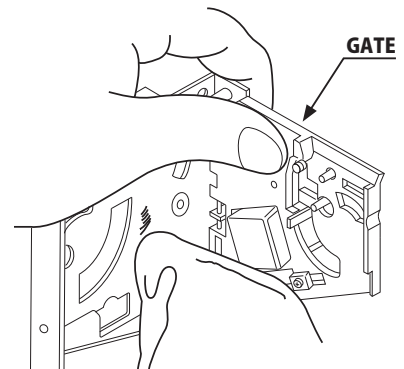


FIG. 12-1a



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

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

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

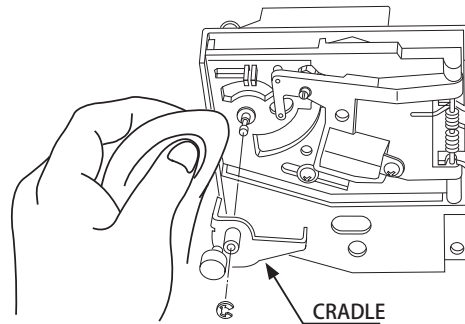


FIG. 12-1b

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



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

Does the Coin Meter count satisfactorily

Does the coin drop into the cashbox correctly

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

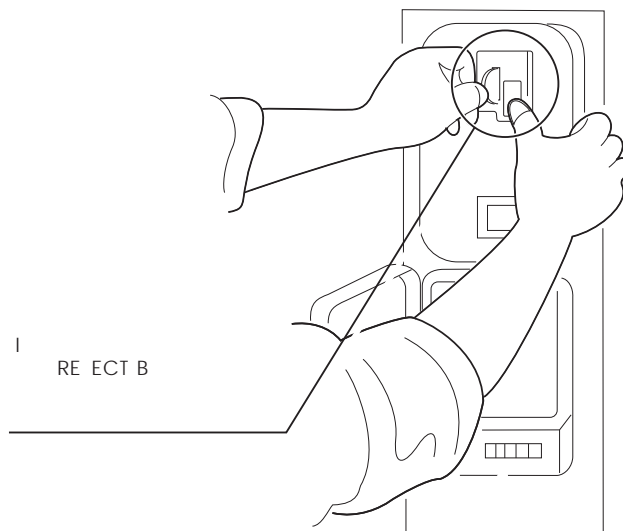


FIG. 12-1c

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.

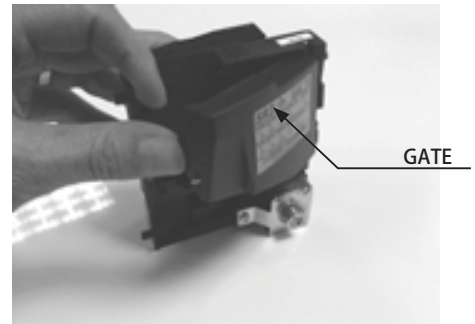


FIG. 12-1d

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



FIG. 12-1e

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

After wiping off as per previous step, further apply a dry cloth to completely dry the coin Selector.



FIG. 12-1f

**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
A	C	P C
		L W
	P S	N
		I
		I
		R
	I	A I
	A	G
	A	O
	R	N
	LED RED	EEPROM
SR S		
C		
C		
LED YELLOW	R	
P A	P S	V 10
		V
	A	G
	C	L
	C	D
C	B S	B
	A	A
	A	
R		
A	L	C
N	C	L
	A	P

**STOP IMPORTANT**

• SEGA amusement products are fitted with either an EXCEL CREDIT PCB or a VTS (Volume, Test, Service) PCB. Both these components operate coin handling in the same way. Only one of these components are fitted.

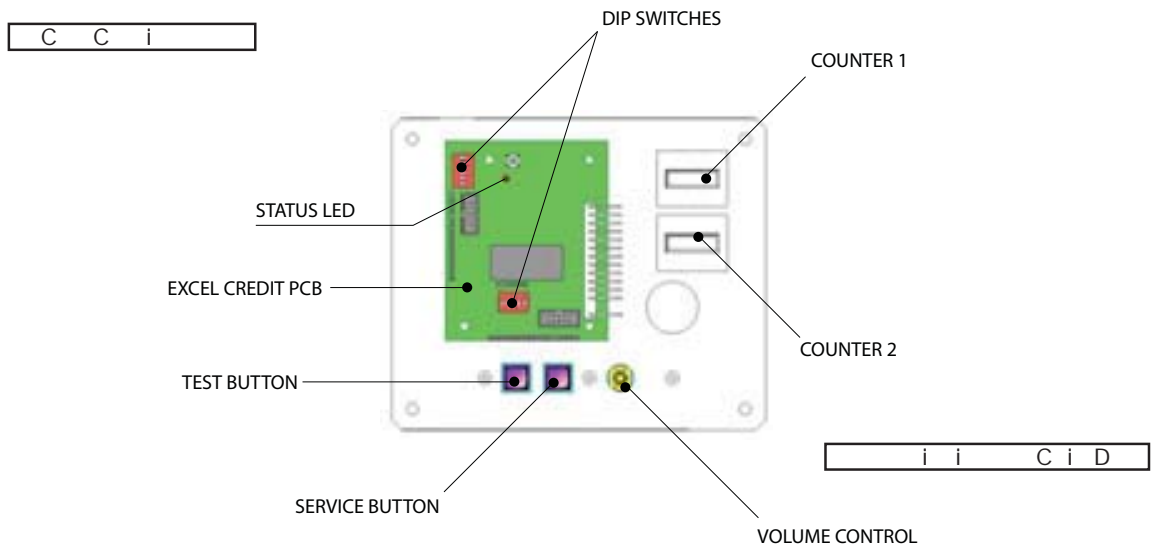
• The price of play is determined by the configuration of switches located on either an EXCEL board or VTS board. The type of board used is determined by product location. Switch settings for both types of board remain the same.

This product comes equipped with a Money Controls SR3 Coin Acceptor. To adjust the price of play ALL credit settings 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 VTS BD has a built in Credit Board. This is controlled by 2 DIP Switches. These allow the operator to select the price of play, type of coin acceptor and region.



**FIG. 12-3a**

**DIL SW3 (Regional Settings)**

Adjust these switches to specify the type of Coin Acceptor used and currency.

Default SW1 SW2 ON NRI in parallel mode, Sterling.

- |                           |  |
|---------------------------|--|
| TEST BUTTON               | Provides access to the TEST MENU when pressed. |
| 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)        |

This product comes equipped with a Money Controls SR3 Coin Acceptor. To adjust the price of play ALL credit settings are adjusted via the VTS 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 VTS BD has a built in Credit Board. This is controlled by 2 DIL Switches. These allow the operator to select the price of play, type of coin acceptor and region.

T

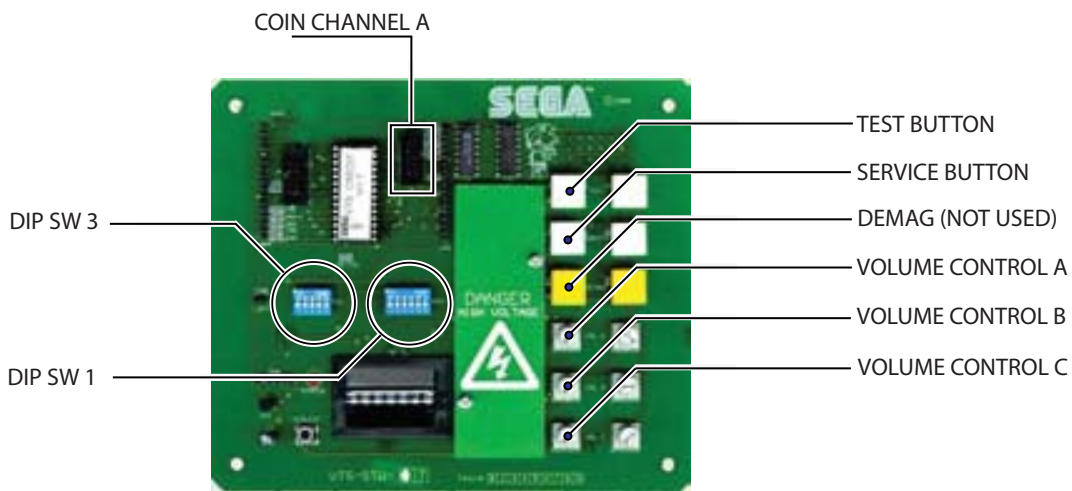


FIG. 12-4a

i i C i D

**DIL SW3 (Regional Settings)**

Adjust these switches to specify the type of Coin Acceptor used and currency.

Default SW1 SW2 ON SR3 in parallel mode, Sterling.

TEST BUTTON	Provides access to the TEST MENU when pressed.
SERVICE BUTTON	Provides a SERVICE CREDIT when pressed
Status LED	Flashes when functioning.
CHANNEL A	To Coin Acceptor (SR3 TYPE.)
DIL SW1 (credit settings)	Adjust to required price of pay.
DEMAG	NOT USED
VOL CONTROL A	MAIN VOLUME ADJUSTMENT (FRONT SPEAKERS)
VOL CONTROL B	SECONDARY VOL ADJUSTMENT (GUN SPEAKERS)
VOL CONTROL C	NOT USED

Country	Setting	Switch 3 Setting										Coin Validator Programming										C120/SR3 Only			
		SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	CONV1	CON2	CON3	CON4	CON5	CON6	CON7	CON8	CON9	CON10	CON11	CON12		
UK	Coin Controls	OFF	OFF	OFF	OFF						E1	50p new	20p	10p	-	50p old	-	-							
UK	C120 Parallel	OFF	OFF	OFF	OFF						E1	50p new	20p	10p	-	50p old	-	E2							
UK	Coin Controls	ON	OFF	OFF	OFF						E1	50p new	20p	10p	-	50p old	-	E2							
UK	C120 Binary	OFF	ON	OFF	OFF						E1	50p new	20p	10p	-	50p old	-	E2							
UK	Coin Controls	OFF	ON	OFF	OFF						E1	50p new	20p	10p	-	50p old	-	E2							
UK	C120 Binary	OFF	ON	OFF	OFF						E1	50p new	20p	10p	-	50p old	-	E2							
UK	Coin Controls	OFF	OFF	ON	OFF						E2	E1	50p new	20p	10p	-	50p old	-	50p old						
Euro	SR3 Parallel	OFF	OFF	ON	OFF						E2	E1	50p	20p	10p	-	50p old	-	50p old						
UK	Mars WEIGS	ON	OFF	ON	OFF						E1	E2	20p	10p	50p new	50p old									
UK	TT1 Parallel	OFF	ON	ON	OFF						10p	20p	50p	E1	E2	-	-								
UK	MR Parallel	OFF	ON	ON	OFF						50p	20p	50p	50p	-	-	-								
Belgium	Parallel	ON	ON	ON	OFF						50p	20p	50p	50p	-	-	-								
Holland	Parallel	OFF	OFF	OFF	ON						-	50p	20p	50p	-	-	-								
Austria	SR3 Parallel	ON	OFF	OFF	ON						20p	10p	50p	50p	-	-	-								
Spain	Coin Controls	OFF	ON	OFF	ON						50p	20p	10p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p		
Spain	C120 Binary	OFF	ON	OFF	ON						50p	20p	10p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p		
Spain	SR3 Parallel	ON	ON	OFF	ON						50p	20p	10p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p		
Spain	Coin Controls	OFF	OFF	ON	ON						100p	50p	-	25p	-	50p	-	25p	-	50p	-	25p	-		
Spain	C120 Parallel	OFF	OFF	ON	ON						100p	50p	-	25p	-	50p	-	25p	-	50p	-	25p	-		
Portugal	Parallel	ON	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
Euro	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON						200p	100p	50p	25p	20p	50p	25p	20p	50p	25p	20p	50p	25p		
	TS4	OFF	OFF	ON	ON																				



COIN ND IN

Price	Bonus					DL Switch 1				
	1	2	3	4	5	1	2	3	4	5
1 50p	50p = 5 plays	£1 = 10 plays	£2 = 20 plays			OFF	OFF	OFF	OFF	OFF
2 50p	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 = 3 plays @ 33.3p per play	£2 = 6 plays @ 33.3p per play			ON	ON	OFF	ON	OFF
13 50p	50p = 1 play	£1 = 2 plays	£2 = 5 plays @ 40p per play			OFF	OFF	ON	ON	OFF
14 60p	50p = 0.83 play	£1 = 1.66 plays	£2 = 3.33 plays			ON	OFF	ON	ON	OFF
15 60p	50p = 0.83 play	£1 = 2 plays @ 50p per play	£2 = 4 plays @ 50p per play			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	£1.50 = 2 plays @ 75p per play	£2 = 2.5 plays			OFF	OFF	OFF	OFF	ON
18 £1	2x50p = 1 play	£1 = 1 play	£2 = 2 plays			ON	OFF	OFF	OFF	ON
19 £1	2x50p = 1 play	£1 = 1 play	£2 = 3 plays @ 66.6p per play			OFF	ON	OFF	OFF	ON
20 £1	2x50p = 1 play	£2 = 2 plays	£4 = 5 plays @ 80p per play			ON	ON	OFF	OFF	ON
21 £1.50	3x50p = 1 play	£1 = 0.66 plays	£3 = 2 plays			OFF	OFF	ON	OFF	ON
22 £1.50	3x 50p = 1 play	£1 = 0.66 plays	£2 = 2 plays @ £1 per play			ON	OFF	ON	OFF	ON
23 £2	4x 50p = 1 play	£1 = 0.5 play	£2 = 1 play			OFF	ON	ON	OFF	ON
24 £2	4x 50p = 1 play	£1 = 0.5 play	£5 = 3 plays @ £1.66 per play			ON	ON	ON	OFF	ON
25 £3	6x50p = 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	£5 = 2 plays @ £2.50 per 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 @ £3.33p per play			ON	ON	OFF	ON	ON
29 £7.50	£5 = 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	£10 = 2 plays @ £5 per play			ON	OFF	ON	ON	ON
31 £10	£10 = 1 play	£20 = 2 play	£30 = 3 play			OFF	ON	ON	ON	ON
32	Free Play					ON	ON	ON	ON	ON

T R I N R I C O T T I N

	Price	Bonus					Dial 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 = 2.5 plays	€2 = 5 plays		OFF	OFF	OFF	ON	OFF	
10	40¢	50¢ = 1.25 plays	€1 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play		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 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play		ON	ON	OFF	ON	OFF	
13	50¢	50¢ = 1 play	€1 = 2 plays	€2 = 5 plays @ 40¢ per play		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 @ 50¢ per play	€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 = 3 plays @ 66.6¢ per play		OFF	ON	OFF	OFF	ON	
20	€1	2x50¢ = 1 play	€2 = 2 plays	€4 = 5 plays @ 80¢ per play		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	€2 = 2 plays @ €1 per play		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	€5 = 3 plays @ €1.66 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	€5 = 2 plays @ €2.50 per 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	€7.50	€5 = 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	€10 = 2 plays @ €5 per play		ON	OFF	ON	ON	ON	
31	€10	€10 = 1 play	€20 = 2 play	€30 = 3 play		OFF	ON	ON	ON	ON	
32			Free Play			ON	ON	ON	ON	ON	

COIN ND IN



**⚠ 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**

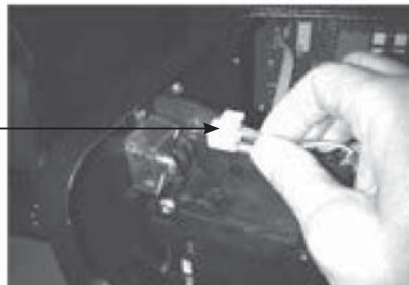
Failing to observe this caution may result in PCB failure or possible fire hazard.

**COIN DOOR**

Step 1. Open the Coin Door and locate the Lamp Housing directly behind the Coin Insert Be el.

L H

Step 2. Hold the Lamp Housing firmly between your index finger and thumb and gently pull upwards. Do Not try to remove the Lamp Housing whilst holding the bulb as the bulb may break causing injury.



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Step 3. Once the Lamp Housing has been removed, carefully hold the bulb between your fingers and pull the Lamp Housing away.

Do not twist either bulb or Lamp Housing whilst removing the bulb as this may cause damage to both bulb and or Housing.

T W B -12 12

Step 4. Simply push-fit a replacement bulb of the same type and follow these steps in reverse to refit.

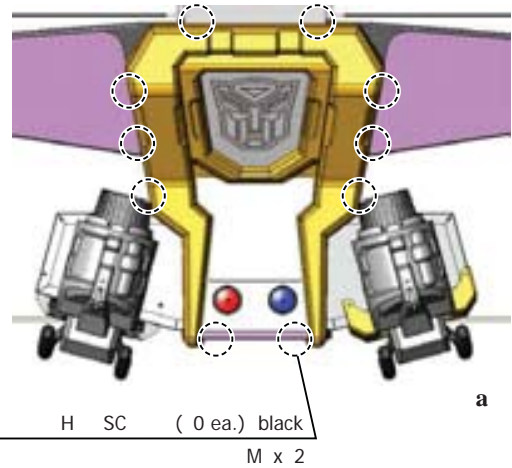


b

# T RT UTTON

Turn off the power.

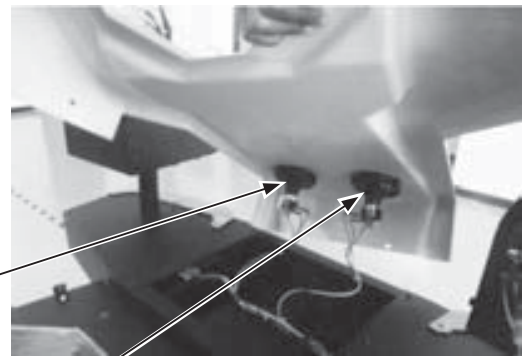
Remove the (10) Internal Hex screw which secure the Control Panel Cover. Carefully lift the Control Panel Cover up to gain access to the Player 1 and Player 2 Start Buttons. Unclip the buttons from their respective housings and remove.



Identify the Button Assy for which the lamp has to be changed.

P 2 S B  
09-000 -B

P S B  
09-000 -



Remove Lamp and Switch housing from the Button by pulling the housing away from the button. These can sometimes be a little tight on initial removal.

MP DS CH  
H S



R

CIN

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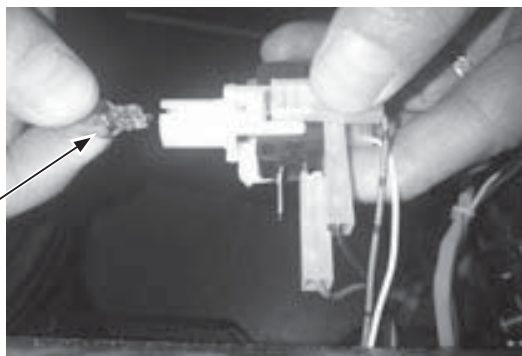
The bulb is a simple “push fit” type. Simply hold **onto the bulb and pull directly out of the socket. DO NOT twist the bulb as this will cause the bulb to shatter which inturn may result in an injury**



MP DS CH  
H S

d

**Replace the bulb for that of the same type. Place the bulb and switch housing back into the button assembly and reassemble the control panel. To reassemble, simply follow steps 1 to 5 in revers order,**



B B D P  
2v .2

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ND 1 TIN

**⚠ WARNING**

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

**STOP IMPORTANT**

The interior of the cabinet is hard to see from the outside which may lead to willful misconduct by players or accidents going unnoticed. When the game is not in use, check the interior at regular intervals and make sure that nothing has been forgotten or placed on the seats.

In order to maintain the performance of this product and operate it safely, inspect the following items routinely and perform maintenance.

The player directly touches and manipulates the Control Unit with his/her hands. Clean it as necessary and provide hand towels, etc., so that players will be comfortable while playing.

The service manual referred in the table is the RING EDGE 2 service manual, which is provided separately.

ITEMS	DESCRIPTION	PERIOD
CABINET	Confirm that adjusters contact floor	Daily
	Seat check, removal of forgotten / other items	Daily
LCD DISPLAY	Screen cleaning	Weekly
	Check screen adjustment	1 month
	Exchange of lamp unit	When message is displayed
CONTROL UNIT	Cleaning	As appropriate
	Inspection of volume	1 month
	Greasing	3 months
COIN SELECTOR	Inspection of coin switch	1 month
	Coin insertion test	1 month
	Coin Selector cleaning	3 months
GAME BOARD	Individual tests	1 month
	Check of settings	1 month
LAMPS AND LIGHTING	Inspection of lighting fixtures	As appropriate
ELECTRICAL/ELECTRONIC PARTS	Inspection	As appropriate
POWER CABLE	Inspection, Cleaning	1 year
CABINET INTERIOR	Cleaning	1 year
CABINET SURFACES	Cleaning	As appropriate

C i C i
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When the cabinet surfaces become dirty, remove stains with a soft cloth soaked in water or diluted (with water) chemical detergent and then wrung dry. To avoid damaging the finish, do not use such solvents as thinner, benzene, etc. (other than ethyl alcohol) or abrasives (bleaching agent and chemical dust cloth).

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

**⚠ WARNING**

- If an error message is displayed, have the problem looked at by a store maintenance person or a technician. Unless the problem is addressed by someone with specialized knowledge or skills, there could be electrical shock, short circuits or fire. If there are no store maintenance people or technicians, cut off the power immediately and contact the office shown in this manual or the dealer from whom the product was originally purchased.
- If problems other than those covered in this manual arise, or if no improvements can be noted after measures given in this manual have been taken, do not take measures indiscriminately. Cut off the power immediately and contact the office shown in this manual or the dealer from whom the product was originally purchased. Indiscriminate countermeasures could lead to unforeseeable accidents. They could also result in permanent damages.
- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.
- After the cause of circuit protector activation has been removed, have the circuit protector re-engaged. If the unit is used continuously as is, there could be heat generation or fire, depending on the cause of the activation.

**⚠ CAUTION**

- When removing and replacing parts, take due care not to trap or pinch your fingers.
- The Control Units contain gears, cams and other moving machine parts. Take due care not to trap or pinch your fingers.

An error message indicates an error with the game board. Check the separate RING EDGE 2 Service Manual for more details.

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

PROBLEMS	CAUSE	COUNTERMEASURES
When the main SW is turned ON, the machine is not activated.	The power is not ON.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	The Circuit Protector of the AC Unit functioned due to momentary overcurrent.	After eliminating the cause of overload, have the Circuit Protector of the AC Unit restored. (See Section 6 [11], refer to the following.)
	The screen is not adjusted correctly.	Adjust the screen correctly. (See chapter 10.)
No sound output.	Volume is not adjusted properly.	Adjust the volume. (See chapter 9.)
	Board or amp malfunction.	Check by performing a speaker test. (See 9.)
The Control Unit (Gun) does not target correctly.	Due to external or environmental factors the targeting is off.	Perform calibration in TEST Mode. (See 9.)
	Volume damaged.	Exchange the volume. (See 11.)
The Control Unit is not operating properly.	Microswitches damaged.	Check ON, OFF on the input test and if it is not working exchange the microswitch. (See 11)
	The volume gears are not properly engaging.	Adjust the engagement. (See 11.)
	Something is trapped or caught in the revolving or other parts.	Remove the trapped item or clean the trigger.
	Grease has deteriorated.	Apply grease to the designated grease areas. (See 11.)
Control Unit does not respond.	The Control Unit motor is set not to move.	Alter the TEST Mode settings. (See 9.)
	Due to overload or other factors, an error has occurred with the motor, which has been sensed by the motor sensor and the motor has been stopped.	Remove the cause of the motor error.
	Motor damaged.	Exchange the motor.
The Control Unit makes a lot of noise when it vibrates.	Due to a problem with the vibration parts or wear over time, the internal parts have moved.	Adjust the position of the vibration parts. (See 11.)
The START button(s) do not light	The light is dead.	Exchange the light. (See chapter 13.)

 **WARNING**

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a fire risk.
- Do not expose the game board, etc. without a good reason. Failure to observe this can cause electric shock hazard or malfunctioning.
- Do not use this product with connectors other than those that were connected and used with the game board at the time of shipping. Do not carelessly connect wires to connectors that were not used at the time of shipping, as this may cause overheating, smoke or fire damage.
- When returning the game board after making repairs or replacements, make sure that there are no errors in the connection of connectors. Erroneous connections can lead to electrical shock, short circuits or fires.
- When connecting a connector, check the direction carefully. Connectors must be connected in only one direction. If indiscriminate loads are applied in making connections, the connector or its terminal fixtures could be damaged, resulting in electrical shock, short circuits or fires.

 **CAUTION**

- In this product, setting changes are made during the test mode. The game board need not be operated. Use the game board, etc. as is with the same setting made at the time of shipment so as not to cause electric shock and malfunctioning.
- Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

 **IMPORTANT**

- When a game board is to be replaced, put the old game board with anomaly into a special box for replacing the game board and send it. If a special box is not available or if it has been damaged, arrange to have the Game Board packed in suitable packaging.
- For replacement or repair, pack the game board and send it without disassembling it. Order for servicing might not be accepted if any part of the game board has been removed. If any part is removed, a service fee will be charged even if the warranty period has not yet expired.
- Do not remove the key chip from the game board before sending the board for servicing.

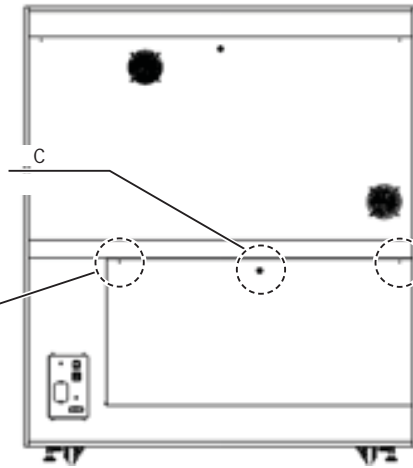


The game board (RING EDGE 2) is inside the rear door mounted on the far wall in the left had corner.

Turn off the power.

Remove the door release fixings (Phillips (2)) and unlock and remove the door.

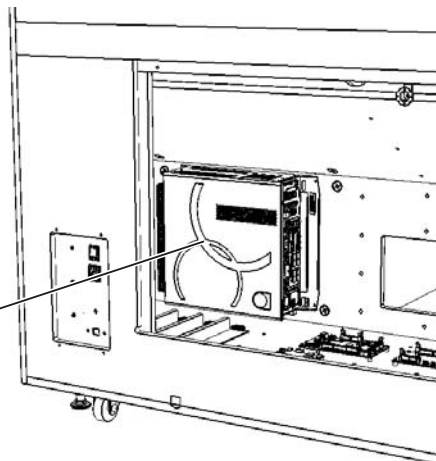
(2) MSC P B  
M x30



a

Unlock with the master key and remove the front door PCB.

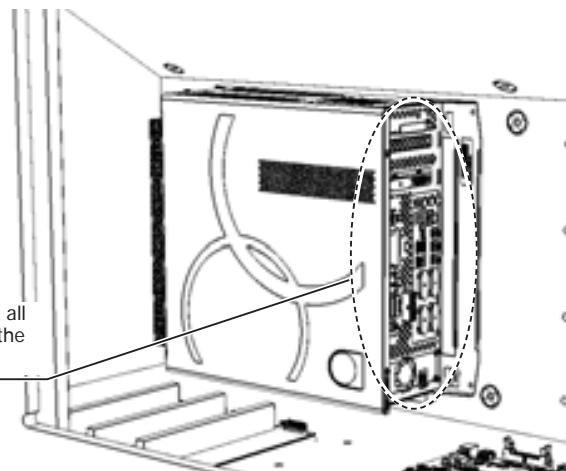
M BD  
D 2



b

Disconnect all of the connectors connected to the Game Bd. (RING EDGE 2).

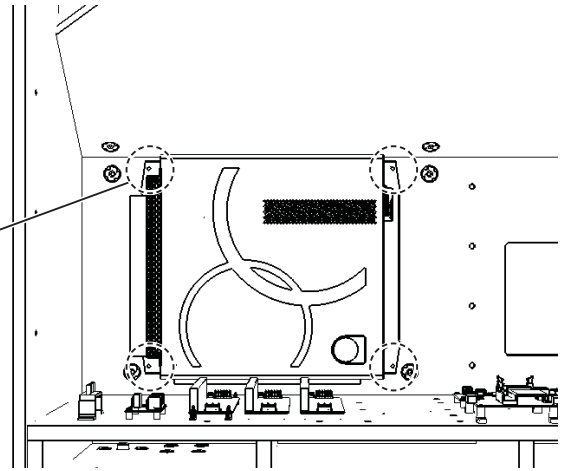
Carefull disconnect all connection to from the ame Bd



c

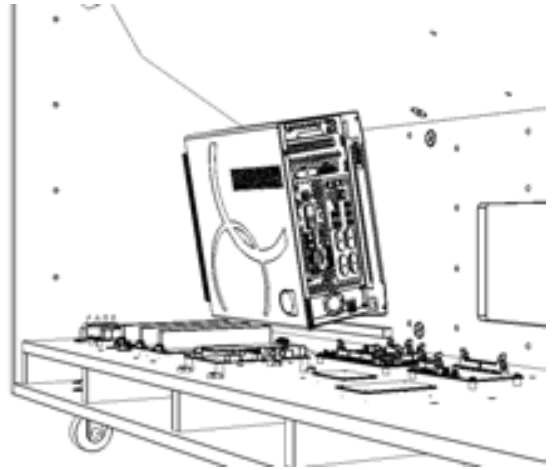
Unscrew the (4) M4 Phillips screws which secure the Game Board to the rear wall of the cabinet. - Start from the bottom two fixings, leaving the upper fixings until last.

MSC PH P P S ( )  
M x 2



d

Tilt the Game board from the top edge and carefully remove from the cabinet. The Game Bd is HEAVY so take care not to clash with other components when removing as this could cause component damage.

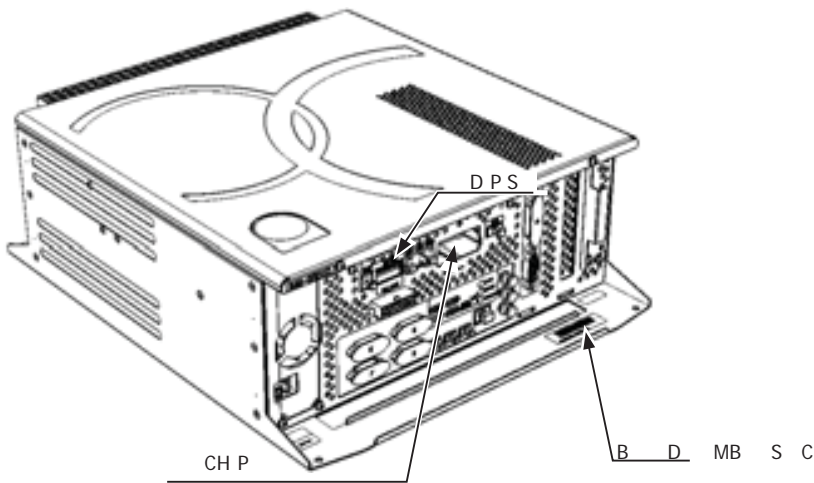


e

**STOP** IMPORTANT

- With the key chip inserted into it, this board serves as a special-purpose game board for the product.
- Use with the dip switches (DIP SW) on the board at the prescribed settings. If settings do not match the product, an error message will be displayed. In some cases, the game cannot be started.

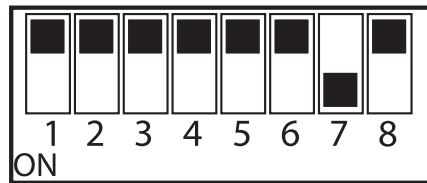
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Use this product with the DIP SW settings shown in the figure below.



b

# DI NR TD RT

For the warning display stickers, refer to Section 1.

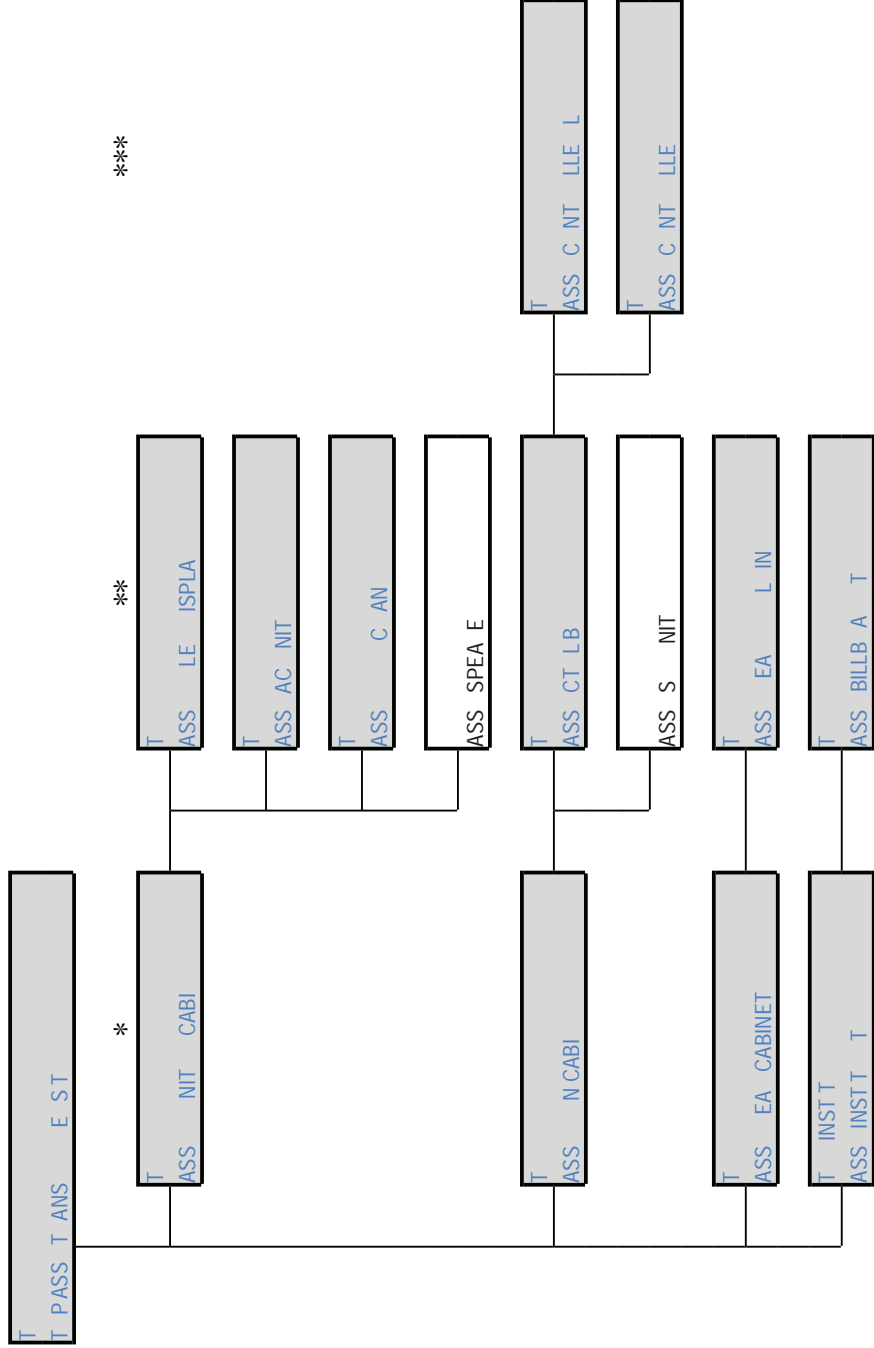
DI NR TD RT





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T P A S S T A N S E S T E A T E B S T C T E

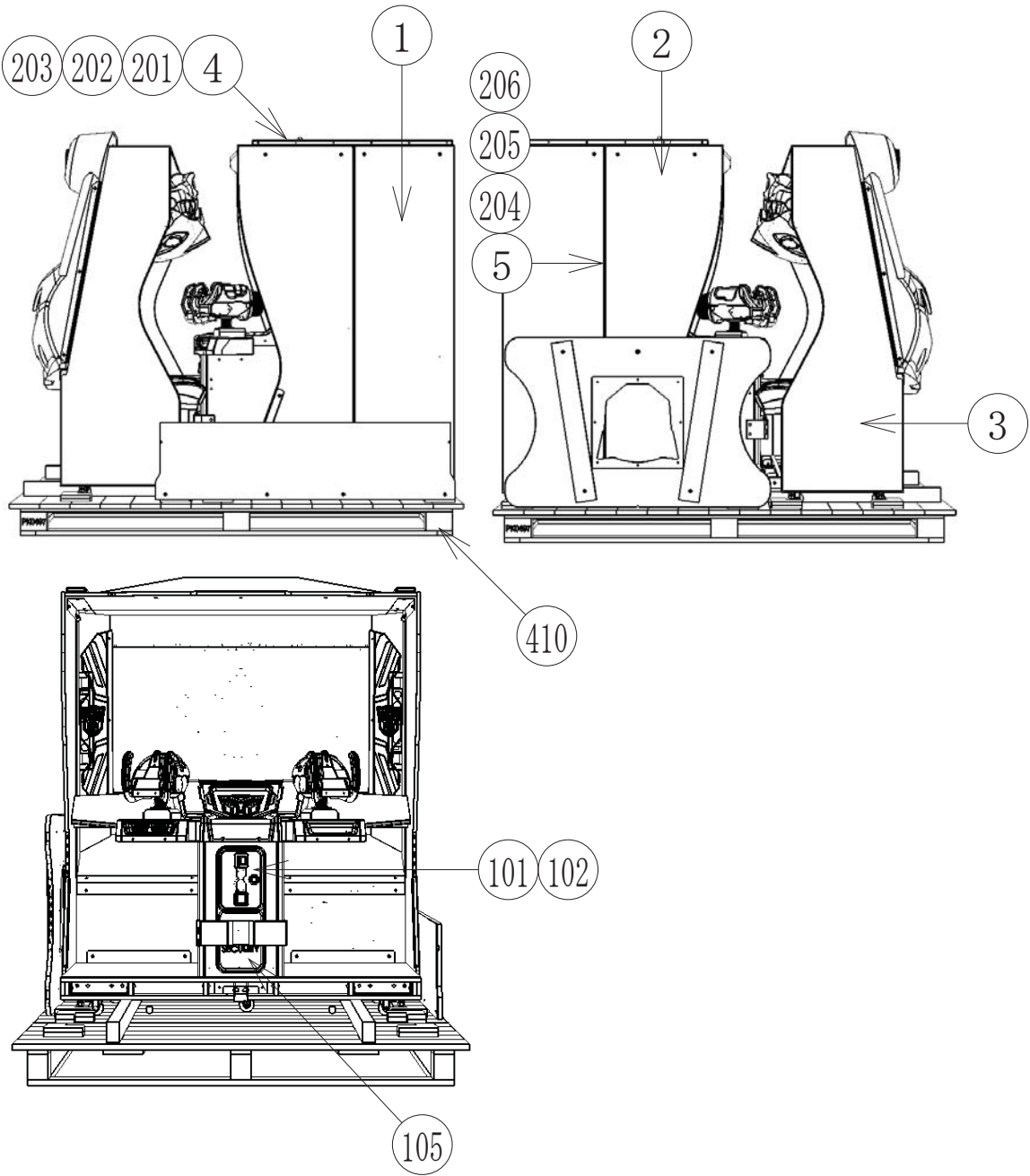


RT I T

① TOP ASSY TRANSFORMERS TH (TRF-0000UK)

(D-1/2)

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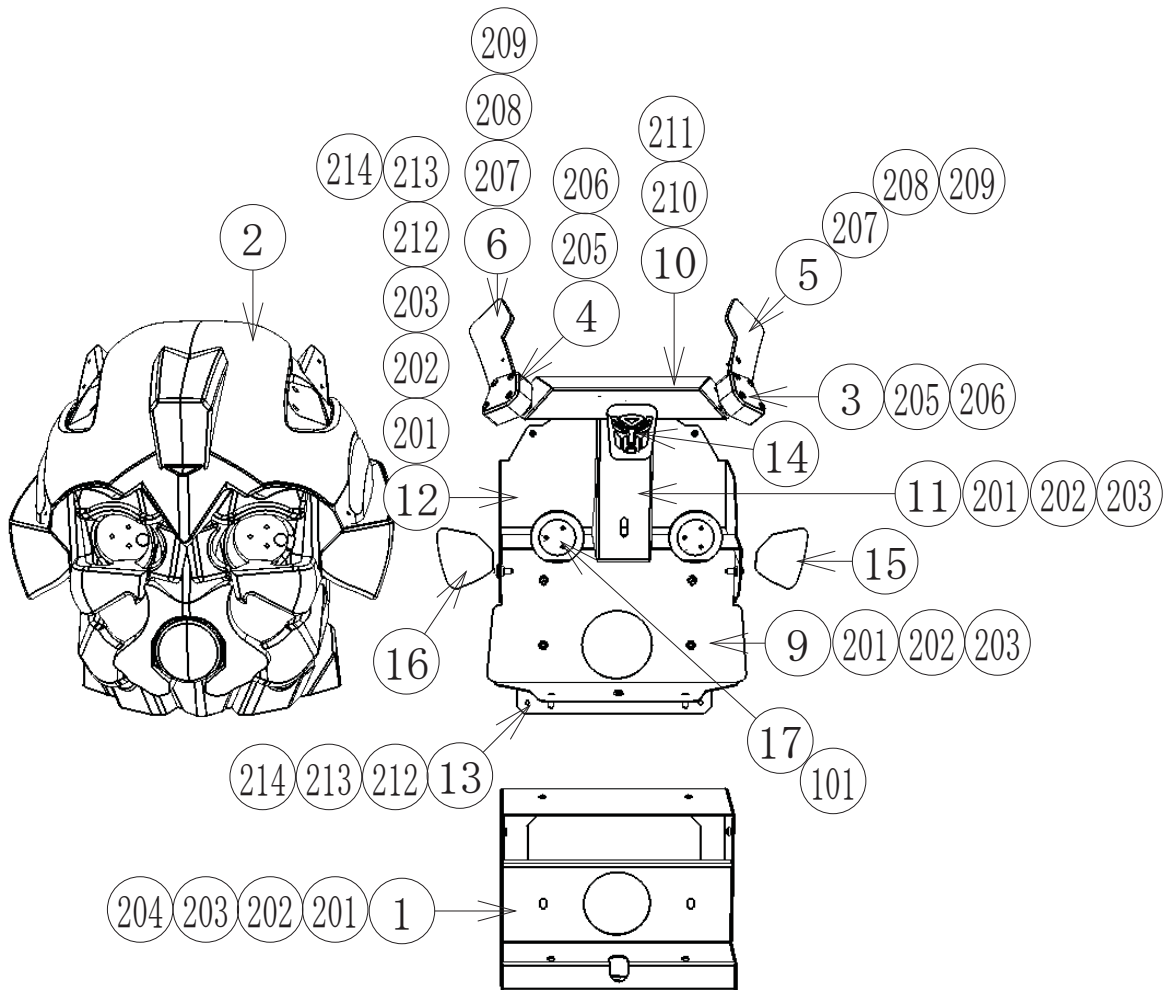
① TOP ASSY TRANSFORMERS TH (TRF-0000UK)

(D-2/2)

IT	NO	RT NO	D CRI TION	T
	1	TRF-1000UK	ASSY M NIT R CABI	1
	2	TRF-1500UK	ASSY UN CABI	1
	3	TRF-3000UK	ASSY REAR CABINET	1
	4	TRF-0001UK	BRKT C RNER J INT BRID IN	2
	5	TRF-0002UK	PLATE C ER J INT AP	2
	20	421-7988-91UK	STICKER SERIAL NUMBER UK	2
	21	421-7020UK	STICKER CAUTI N F RK	4
	22	LB1102	STICKER DAN ER US LTA E	3
	23	LB1046	LABEL TESTED F R ELEC. SAFETY	1
	24	LB1130	LABEL WEEE WHEELIE BIN	1
	101	220-5374-01	D R DFMD W/FR L CK C120 UNI	1
	102	220-5575UK	L CK (J9117) KEY T LIKE 22MM W CAM	1
	103	S1247	ALUMINIUM STICKY CLIP ASK-3	3
	104			1
	105	220-5727-01B	D R CASH H.S. STS	1
	201	029-B00830-0B	M8 30 SKT BH BLK	8
	202	060-S00800-0B	M8 WSHR SPR BLK	8
	203	068-852216-0B	M8 WSHR 22 D FLT BLK	8
	204	029-B00412-0B	M4 12 SKT BH BLK	10
	205	060-S00400-0B	M4 WSHR SPR BLK	10
	206	068-441616-0B	M4 WSHR 16 D FLT BLK	10
	401	TRF-INST-TH	ASSY INST TRF TH	1
	410	PK0497	PALLET TRF TH	1
	411	PK0484	SHRINK WRAP D D	1

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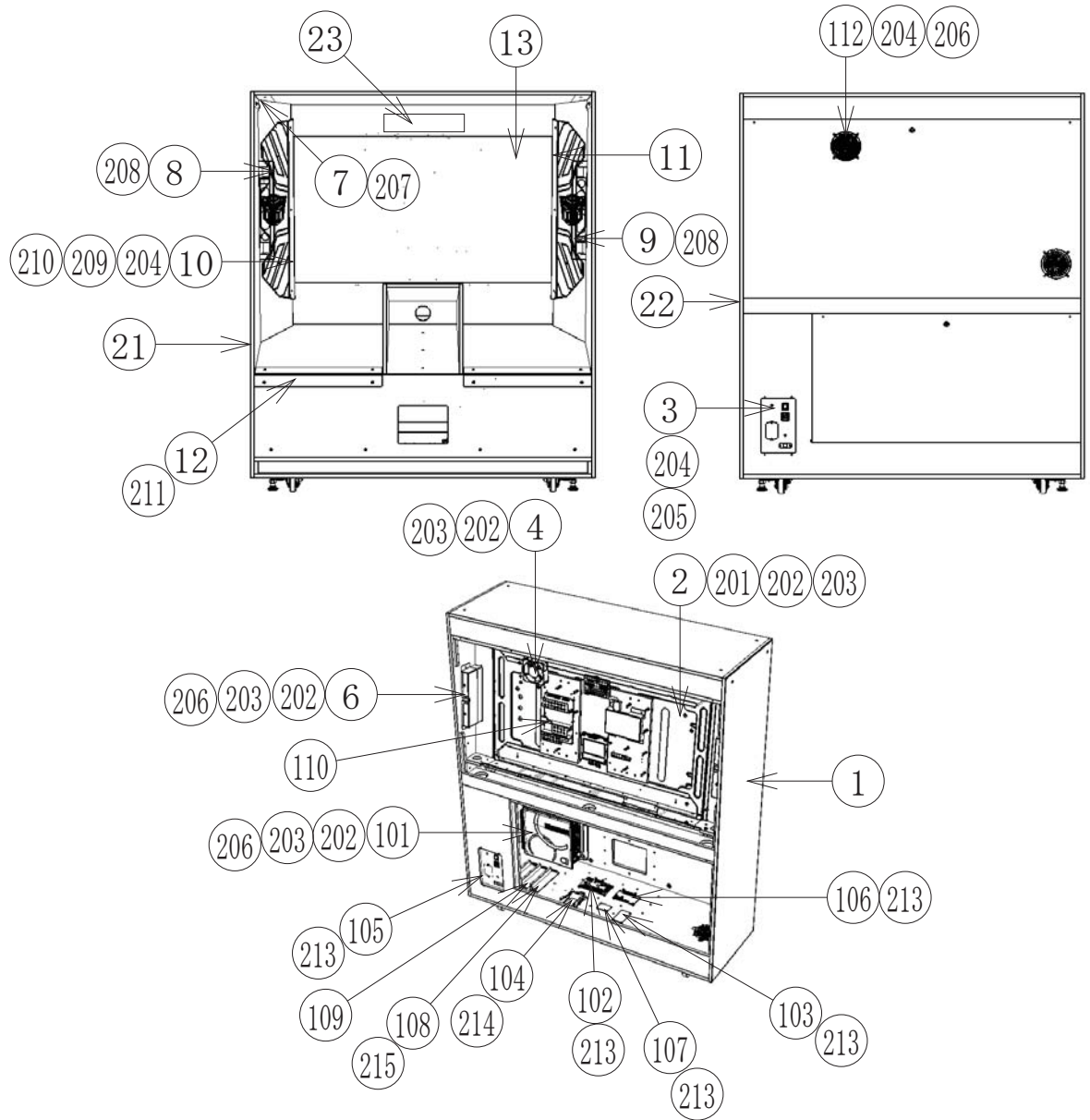
② ASSY BILLBOARD (TRF-0500UK)

(D-2/2)

IT	NO	RT NO	D CRI TION	T
	1	TRF-0501UK	BASE BB HEAD	1
	2	TRF-0502UK	ASSY BB HEAD	1
	3	TRF-0502-EUK	BB BL CK L	1
	4	TRF-0502-FUK	BB BL CK R	1
	5	TRF-0502- UK	BB LE ER L	1
	6	TRF-0502-HUK	BB LE ER R	1
	9	TRF-0505UK	BRKT CL SIN HEAD BTM	1
	10	TRF-0506UK	BRKT CR SS BRACE	1
	11	TRF-0507UK	BRKT BRACE J IN	1
	12	TRF-0508UK	BRKT CL SIN HEAD BACK	1
	13	TRF-0509UK	PLATE C ER	1
	14	TRF-0510UK	DECAL BAD E HELMET	1
	15	TRF-0511UK	STICKER HELMET ENCAP L	1
	16	TRF-0512UK	STICKER HELMET ENCAP R	1
	17	TRF-0513UK	LENS BB EYE	2
	101	601-12955-006	BILLB ARD LED	2
	201	029-B00620-0B	M6 20 SKT BH BLK	10
	202	060-S00600-0B	M6 WSHR SPR BLK	10
	203	068-652016-0B	M6 WSHR 20 D FLT BLK	14
	204	050-F00600	M6 NUT FL SER PAS	4
	205	029-B00540-0B	M5 40 SKT BH BLK	8
	206	029-B00512-0B	M5 12 SKT BH BLK	8
	207	000-F00420	M4 20 MSCR CSK PAS	4
	208	068-441616	M4 WSHR 160D FLT PAS	4
	209	050-F00400	M4 NUT FL SER PAS	4
	210	068-552016	M5 WSHR 20 D FLT PAS	4
	211	050-F00500	M5 NUT FL SER PAS	4
	212	029-B00412-0B	M4 12 SKT BH BLK	7
	213	060-S00400-0B	M4 WSHR SPR BLK	7
	214	068-441616-0B	M4 WSHR 160D FLT BLK	7
	301	TRF-60021UK	WH LED EYES	1

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③ ASSY MONITOR CABINET (TRF-1000UK)

(D-2/3)

IT	NO	RT NO	D C R I T I O N	T
	1	TRF-1002UK	ASSY FR NT CABINET	1
	2	TRF-1200UK	ASSY 55 LED DISPLAY	1
	3	TRF-1080UK	ASSY AC UNIT	1
	4	TRF-1340UK	ASSY 12 DC FAN	1
	5			1
	6	D -1020UK	ASSY SPEAKER	2
	7	TRF-1003UK	BRKT C RNER J INT T P	2
	8	TRF-1011UK	PLATE M N SIDE L	1
	1	TRF-1011-AUK	PLATE M N SIDE L BLANK	1
	9	TRF-1012UK	PLATE M N SIDE R	1
	1	TRF-1012-AUK	PLATE M N SIDE R BLANK	1
	10	TRF-1013UK	BRKT M N SIDE LI HT	2
	11	TRF-1014UK	SPACER M N SIDE LI HT	2
	12	TRF-1015UK	BRKT KICK SL PIN SHELF	2
	13	TRF-1209UK	LASS LED 55 SCREEN PR TECT	1
	14	CFB-4003-01UK	EARTH PLATE	1
	21	TRF-1051UK	STICKER FR NT CABI LH SIDE	1
	22	TRF-1052UK	STICKER FR NT CABI RH SIDE	1
	23	RND-0160	L ENERIC BLUE LAR E	1
	101	846-5001D-12	ASSY CASE R E2 W 2 B E P	1
	102	837-14572	I/ C NTR LBD 3 F RJ S C M	1
	103	837-14981-01	IC BD E P 8 UTPUT RS232	1
	104	838-14515-A09	S UND AMP ANAL IN	1
	105	838-14551-02UK	AC DISTRIBUTI N BD	2
	106	838-0005- UK	I/ BD SAE	1
	107	838-0012UK	LAMP DR BRD	1
	108	400-075-012-01	PSU 12 DC 75W MW LPS-75-12	1
	109	400-075-024-01	PSU 24 DC 50W MW LPS-50-24	1
	110	400-283-51224	PSU 55 LED DPS-283APA-ESS5	1
	111	EP1424	LED C NTR LLER	1
	112	FN1012	FAN UARD METAL 120MM (F -12)	5
	113	280-L00811- S	STAND FF 7.94 D 3.56ID 11.11L	8
	114	S1011	PCB FEET	8
	201	000-P00420	M4 20 MSCR PAN PAS	6
	202	060-S00400	M4 WSHR SPR PAS	14
	203	068-441616	M4 WSHR 160D FLT PAS	14
	204	029-B00425-0B	M4 25 SKT BH BLK	22
	205	050-F00400	M4 NUT FL SER PAS	4
	206	000-P00412	M4 12 MSCR PAN PAS	14
	207	020-F00830-0B	M8 30 SKT CSK BLK	4
	208	008- S0412	M4 12 TMP PRF STN	4
	209	060-S00400-0B	M4 WSHR SPR BLK	6
	210	068-441616-0B	M4 WSHR 16 D FLT BLK	6
	211	020-000820-0	M8 20 SKT CAP	8
	212	012-P00416-F	N8 5/8 S/TAP FL 0	2
	213	012-P00325	N4 1 S/TAP PAN PAS	20
	214	012-P03512-F	N6 1/2 S/TAP FL PAS	6
	215	012-P00312	N4 1/2 S/TAP PAN PAS	8

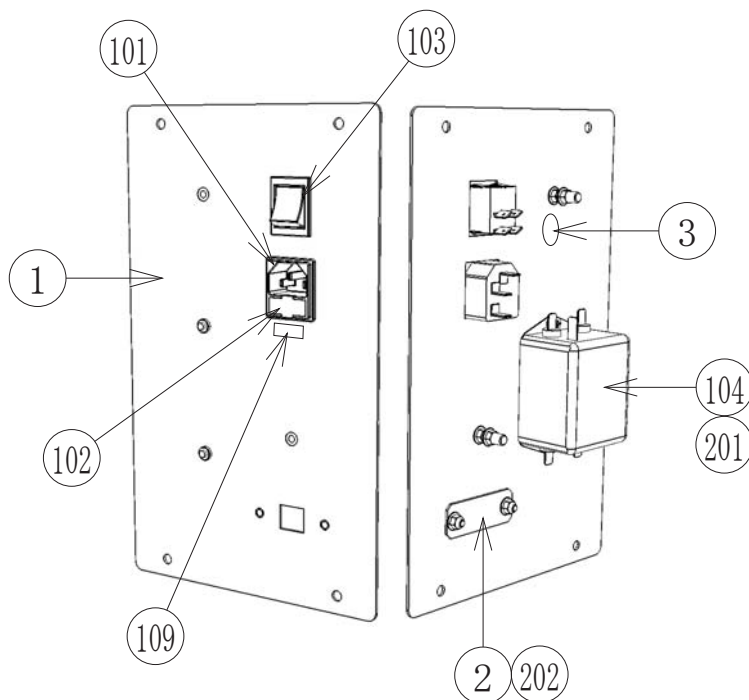
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③ ASSY MONITOR CABINET (TRF-1000UK)

(D-3/3)

IT NO	RT NO	D CRI TION	T
301	TRF-60002UK	WH AC DIST	1
302	TRF-60003UK	WH 24 DC DIST	1
303	TRF-60005UK	WH 12 DIST	1
304	TRF-60006UK	WH I/	1
305	TRF-60008UK	WH LED DRI ER	1
306	TRF-60009UK	WH AUDI FR NT	1
307	TRF-60014UK	WH SIDE PANEL ILLUMINATI N	1
308	TRF-60016UK	WH LED DRI ER UT	1
309	390-2012-R B	LED FL STRIP R B 5MTR	1.6
310	BE-6001UK	WH LED CLIP	2
311	TRF-60024UK	WH DBA E TN	1

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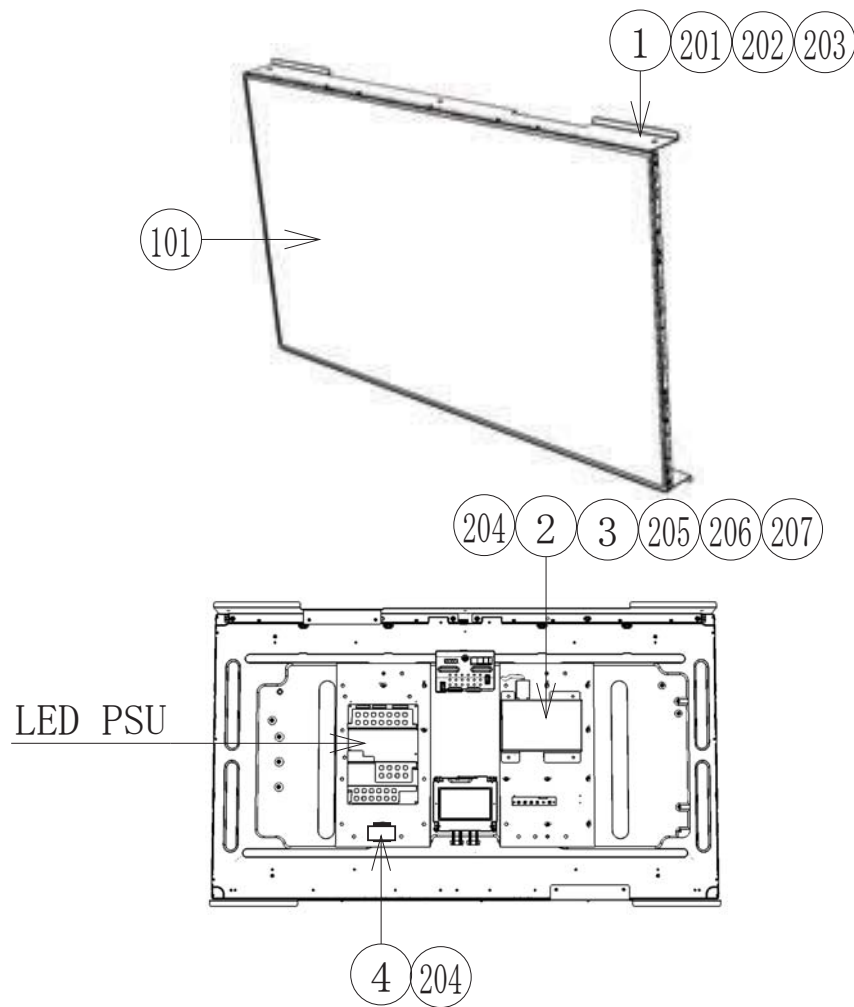


RT I T

IT NO	RT NO	D C R I T I O N	T
1	D -1081UK	PLATE AC	1
2	ST-0403UK	PLATE AC CAP	1
3	LB1096	STICKER PR TECTI E EARTH	1
101	EP1302	EUR S CKET FUSED 10A 250 AC	1
102	514-5078-5000	FUSE 5 20 CERAMIC SB 5000mA	2
103	SW1109	SWITCH R CKER 250 AC	1
104	EP1419	FILTER SCHAFFNER 2030-16-06	1
108	310-5029-D508	HEAT SHRINK SLEE IN 50.8DIA	4
109	LB1126-5-250	FUSE LABEL 5A 250	1
201	000-P00408	M4 8 MSCR PAN PAS	2
202	050-F00400	M4 NUT FL SER PAS	4
203	060-S00400	M4 WSHR SPR PAS	
301	TRF-60001UK	WH AC IN	1

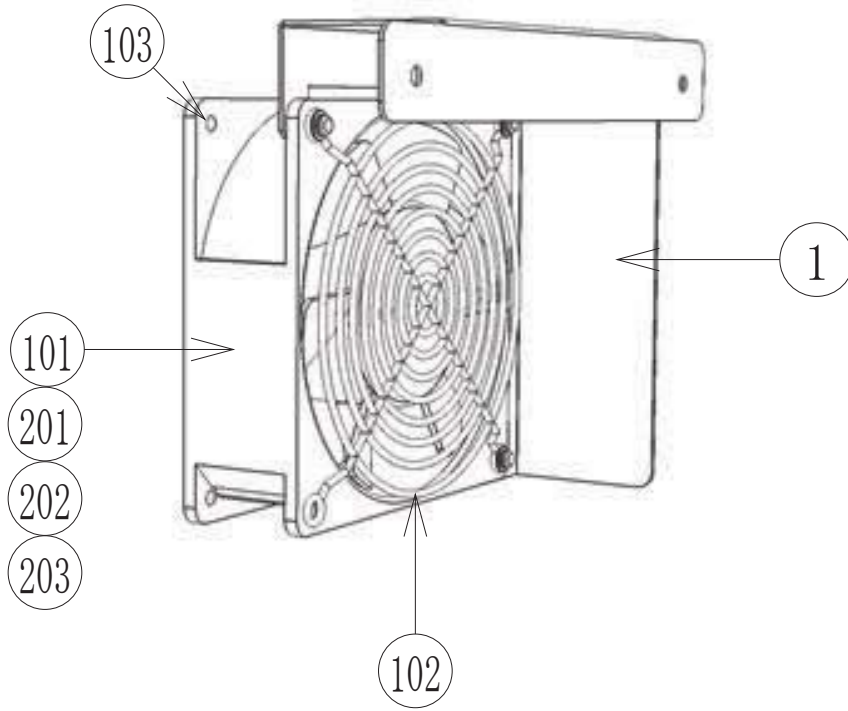
⑤ ASSY 55 LED DISPLAY (TRF-1200UK)

(D-1/1)



IT	NO	RT NO	D CRI TION	T
	1	TRF-1206UK	BRKT LED M UNT	2
	2	TRF-1207UK	C ER PRISMA BD DM DUL	1
	3	TRF-1210UK	PNL PRISMA BD DM DUL MNT 55	2
	4	TRF-1211UK	BRKT LED INLET	1
	101	200-6055-02-AU	55 LED AU P550H N02.0	1
	102	280-A01264-W	R UTER TWIST D12 S 6.4 W D	8
	103	280-L00811- S	STAND FF 7.94 D 3.56ID 11.11L	12
	201	000-P00306	M3 6 MSCR PAN PAS	10
	202	060-S00300	M3 WSHR SPR PAS	12
	203	060-F00300	M3 WSHR F RM A FLT PAS	12
	204	012-P00410-F	N8 3/8 S/TAP FL PAS	6
	205	020-000620-0	M6 20 SKT CAP	4
	206	060-S00600	M6 WSHR SPR PAS	4
	207	068-652016	M6 WSHR 20 D FLT PAS	4
	208	000-P00312	M3 12 MSCR PAN PAS	2
	209	012-P00320	N4 3/4 S/TAP PAN PAS	12

RT I T



RT I T

IT	NO	RT NO	D CRI TION	T
	1	ST-1008UK	BRKT FAN	1
	101	260-0012-01UK	FAN DC 12 V A IAL	1
	102	FN1012	FAN GUARD METAL 120MM (F -12)	2
	103	S1195	RI ET SNAP SR-4080B	5
	201	000-P00312	M3 12 MSCR PAN PAS	3
	202	060-S00300	M3 WSHR SPR PAS	3
	203	060-F00300	M3 WSHR F LRM A FLT PAS	3





7 ASSY GUN CABINET (TRF-5100UK)

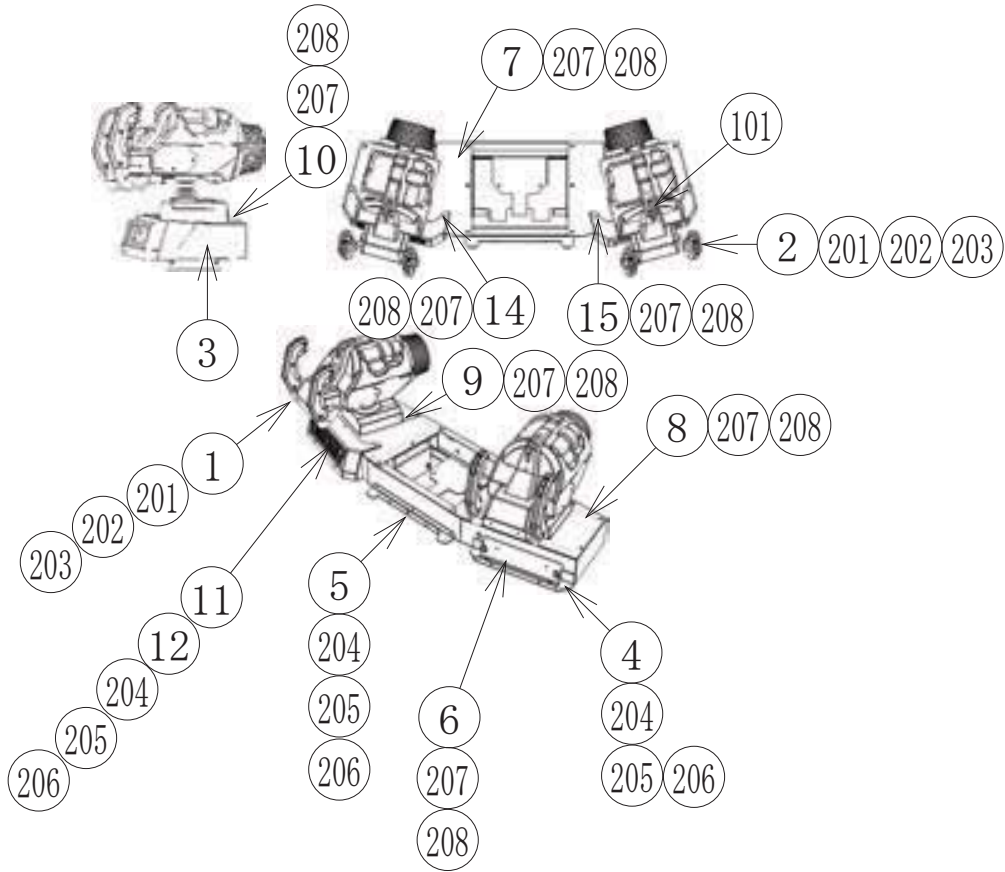
(D-2/2)

IT	NO	RT NO	D CRI TION	T
1	TRF-1502UK		ASSY MID CABINET	1
2	TRF-1900UK		ASSY CTRL B	1
3	D -3850UK		ASSY SW UNIT	1
4	TRF-0003UK		BRKT J INT BRID E SECURE	2
5	TRF-1003UK		BRKT C RNER J INT T P	2
6	TRF-1511UK		PLATE AUT B T	1
7	TRF-1512UK		BRKT MT PLATE AUT B T	1
8	TRF-1513UK		BRKT MT C NPANE C ER	6
9	TRF-1514UK		PLATE J INT L WER M N UN CABI	2
10	TRF-1515UK		BRKT KICK CHEEK	2
11	601-12955-001		C NPANE C ER UL-HB	1
12	DUT-0302UK		C IN PATH PLATE	1
13	PP1087		B CASH F R MINI D R	1
14	L I-0304UK		L CKIN HASP	1
15	L I-0305UK		BRKT PADL CK	1
16	TRF-1516UK		C ER F TWELL LI HT	2
17	TRF-1517UK		BRKT PNL MNT	1
21	TRF-1551UK		STICKER MID CABI LH SIDE	1
22	TRF-1552UK		STICKER MID CABI RH SIDE	1
23	TRF-1553UK		STICKER CTRL B L	1
24	TRF-1554UK		STICKER CTRL B R	1
25	TRF-1913UK		STICKER PLAY INSTR	1
101	509-0001-BL		BTN 12 1.2W BLU S P INT CPBL	1
102	509-0001-RE		BTN 12 1.2W BLU S P INT CPBL	1
201	020-F00830-0B		M8 30 SKT CSK BLK	12
202	030-000830		M8 30 BLT PAS	12
203	060-S00800		M8 WSHR SPR PAS	12
204	068-852216		M8 WSHR 220D FLT PAS	12
205	000-P00420		M4 20 MSCR PAN PAS	25
206	060-S00400		M4 WSHR SPR PAS	21
207	060-F00400		M4 WSHR F RM A FLT PAS	21
208	029-B00412-0B		M4 12 SKT BH BLK	18
209	060-S00400-0B		M4 WSHR SPR BLK	18
210	068-441616-0B		M4 WSHR 16 D FLT BLK	18
211	050-U00800		M8 NUT NYL K PAS	8
212	060-F00800		M8 WSHR F RM A FLT PAS	8
301	TRF-60004UK		WH REAR SPKR E TN	1
302	TRF-60011UK		WH C IN HANDLIN	1
303	TRF-60012UK		WH CTRL PNL BUTT NS ILLUM	1
304	TRF-60015UK		WH DBA	1
305	TRF-60017UK		WH FL R ASSY	1
306	390-2012-R B		LED FL STRIP R B 5MTR	1.3
307	BE-6001UK		WH LED CLIP	3
308	LM1006L R		L M C IN MECH LAMP	1

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⑨ ASSY CTRL BOX (TRF-1900UK)

(D-1/1)

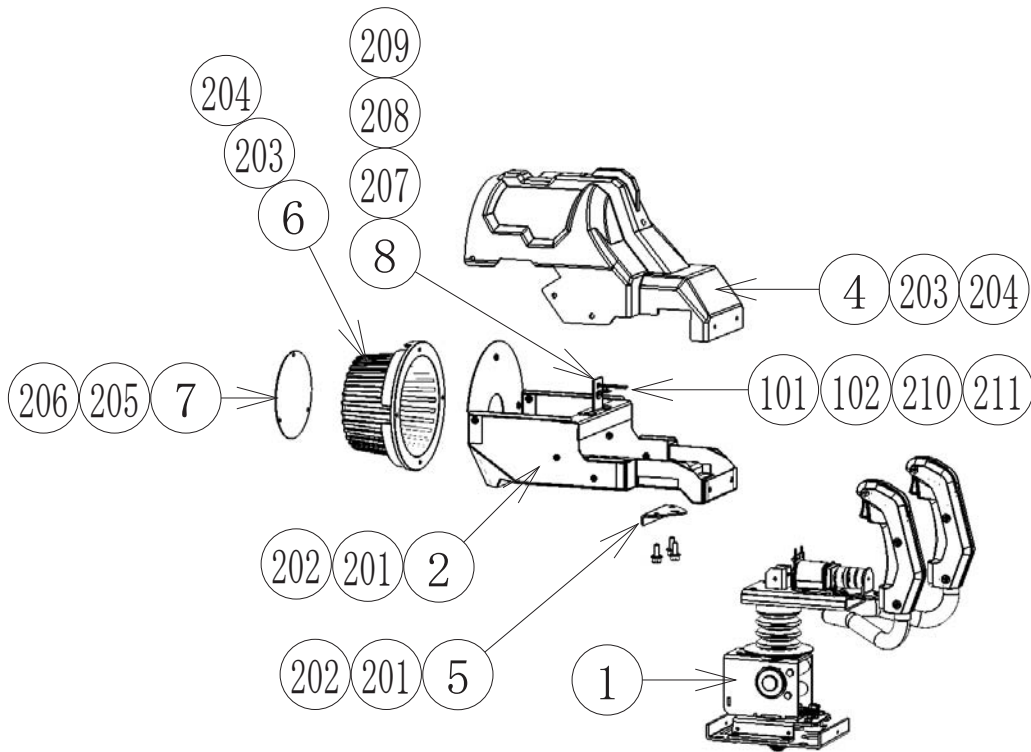


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IT	NO	RT NO	D C R I T I O N	T
	1	TRF-2000UK	ASSY C NTR LLER L	1
	2	TRF-2050UK	ASSY C NTR LLER R	1
	3	TRF-1901UK	CTRL PNL UNDER	1
	4	TRF-1902UK	BRKT CTRL PNL FR NT UTER	2
	5	TRF-1903UK	BRKT CTRL PNL FR NT CENTRE	1
	6	TRF-1904UK	BRKT BRAKE LI HT MT	2
	7	TRF-1905UK	LID CTRL FR NT L	1
	8	TRF-1906UK	LID CTRL FR NT R	1
	9	TRF-1907UK	LID CTRL REAR L	1
	10	TRF-1908UK	LID CTRL REAR R	1
	11	TRF-1909UK	PLATE DIFFUSER	2
	12	TRF-1911UK	PLATE BRAKE LI HT INNER	2
	14	601-12955-003	UN UNDER C ER L UL-HB	1
	15	601-12955-004	UN UNDER C ER R UL-HB	1
	101	601-12955-007	UN UNDER LED	2
	201	020-000820-0	M8 20 SKT CAP	8
	202	060-F00800	M8 WSHR F RM A FLT PAS	8
	203	060-S00800	M8 WSHR SPR PAS	8
	204	000-P00412	M4 12 MSCR PAN PAS	11
	205	060-S00400	M4 WSHR SPR PAS	11
	206	068-441616	M4 WSHR 160D FLT PAS	11
	207	029-B00412-0B	M4 12 SKT BH BLK	30
	208	068-441616-0B	M4 WSHR 160D FLT BLK	30
	301	TRF-60013UK	WH C NTR LLERS	1

⑩ ASSY CONTROLLER L (TRF-2000UK)

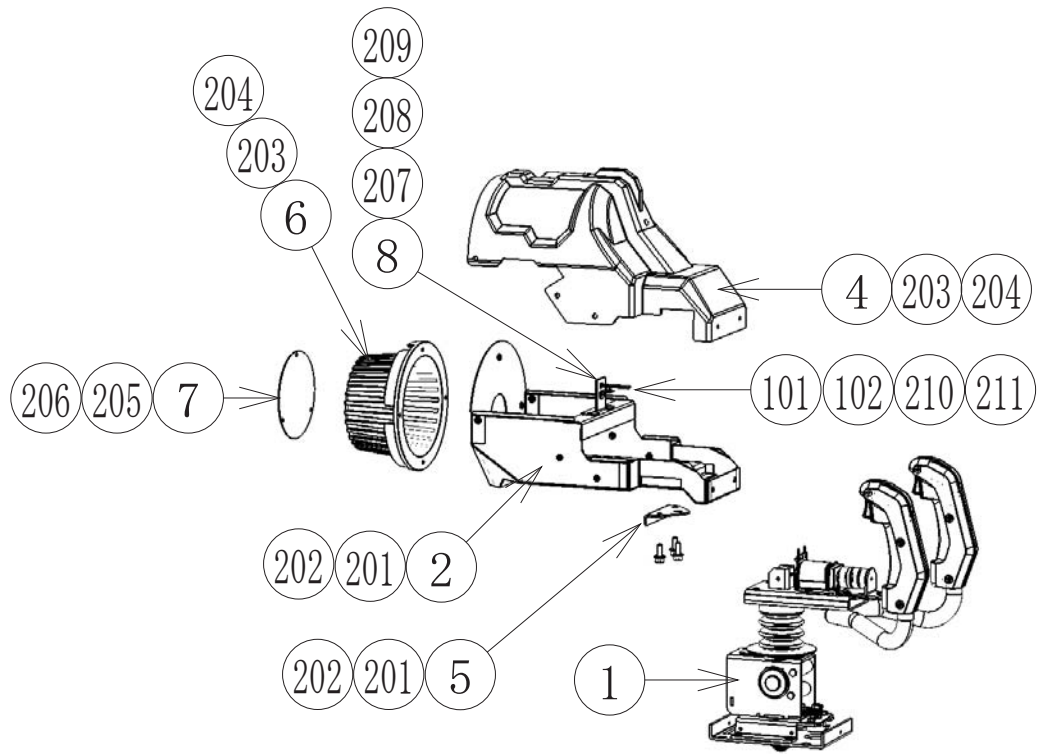
(D-1/1)



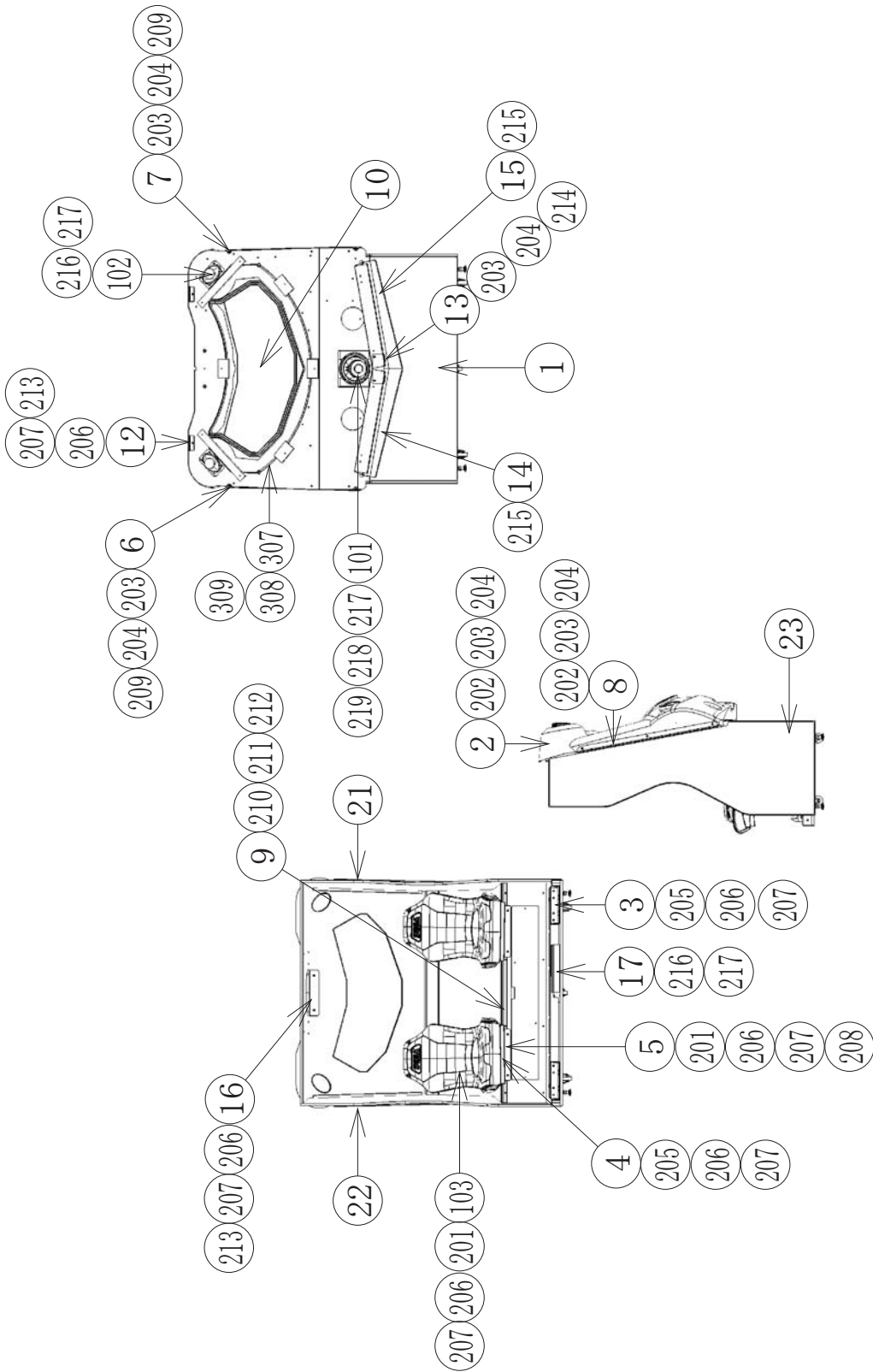
RT I T

IT	NO	RT NO	D CRI TION	T
	1	D -2001-01UK	C NT CHASSIS W/BLK HANDLE	1
	2	TRF-2002UK	BASE UN	1
	4	601-12955-002	UN C ER	1
	5	P -2005UK	BRKT MT PEASH TER	1
	6	601-12955-005	UN MU LE C ER UL-HB	1
	7	TRF-2006UK	PLATE MU LE CL SIN	1
	8	TRF-2007UK	BRKT LI HT MT INTERNAL	1
	101	601-12955-008	UN UPPER LED 1P RED	1
	102	280-L00605- S	STAND FF 6.35 D 3.56ID 4.76L	1
	201	020-000616-	M6 16 SKT CAP	5
	202	060-S00600	M6 WSHR SPR PAS	5
	203	060-F00600	M6 WSHR F RM A FLT PAS	5
	204	008- S0412	M4 12 TMP PRF STN	12
	205	000-P00408	M4 8 MSCR PAN PAS	3
	206	060-S00400	M4 WSHR SPR PAS	3
	207	000-P00412	M4 12 MSCR PAN PAS	2
	208	060-S00400	M4 WSHR SPR PAS	2
	209	060-F00400	M4 WSHR F RM A FLT PAS	2
	210	000-P00312	M3 12 MSCR PAN PAS	1
	211	068-330808-PN	M3 WSHR 8 D FLT NYL N	1
	301	TRF-60020UK	WH UN ILLUMINATI N	1

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IT NO	RT NO	DESCRIPTION	QTY
1	D -2001-01UK	CONTROLLER CHASSIS W/BLK HANDLE	1
2	TRF-2002UK	BASE UNIT	1
4	601-12955-002	COVER	1
5	P -2005UK	BRACKET PEASHTER	1
6	601-12955-005	INTERNAL MOUNTING BRACKET	1
7	TRF-2006UK	SIGNAL MOUNTING PLATE	1
8	TRF-2007UK	INTERNAL LIGHT BRACKET	1
101	601-12955-009	BLUE 2P UPPER LED UNIT	1
102	280-L00605-S	STAND 6.35 D 3.56 I D 4.76 L	1
201	020-000616-	M6 16 SKT CAP	5
202	060-S00600	M6 WSHR SPR PAS	5
203	060-F00600	M6 WSHR F RMA FLT PAS	5
204	008-S0412	M4 12 TMP PRF STN	12
205	000-P00408	M4 8 MSCR PAN PAS	3
206	060-S00400	M4 WSHR SPR PAS	3
207	000-P00412	M4 12 MSCR PAN PAS	2
208	060-S00400	M4 WSHR SPR PAS	2
209	060-F00400	M4 WSHR F RMA FLT PAS	2
210	000-P00312	M3 12 MSCR PAN PAS	1
211	068-330808-PN	M3 WSHR 8 D FLT NYL N	1
301	TRF-60020UK	WH UN ILLUMINATION	1



⑫ ASSY REAR CABINET (TRF-3000UK)

(D-2/3)

IT	NO	RT NO	D CRI TION	T
	1	TRF-3002UK	ASSY REAR CABINET	1
	2	TRF-3700UK	ASSY REAR M ULIDIN	1
	3	TRF-0003UK	BRKT J INT BRID E SECURE	2
	4	TRF-3003UK	SEAT M UNT TRAY	2
	5	TRF-3004UK	BRKT SEAT M UNT BTM	2
	6	TRF-3005UK	BRKT SECURE AC INNER L	1
	7	TRF-3006UK	BRKT SECURE AC INNER R	1
	8	TRF-3007UK	BRKT SECURE AC UTER	2
	9	TRF-3008UK	BRKT SEAT J INT FR NT	1
	10	TRF-3009UK	REAR WIND W	1
	11			2
	12	TRF-3011UK	BRKT SECURE AC UPPER	2
	13	TRF-3012UK	BRKT SECURE AC L WER	1
	14	TRF-3013UK	REAR D WNLI HT L	1
	15	TRF-3014UK	REAR D WNLI HT R	1
	16	TRF-3015UK	BRKT SUPP BILLB ARD	1
	17	TRF-3016UK	BRKT C NDUIT	1
	21	TRF-3551UK	STICKER REAR CABI LH SIDE	1
	22	TRF-3552UK	STICKER REAR CABI RH SIDE	1
	23	TRF-3553UK	STICKER REAR CABI BACK	1
	101	130-5280	W FER 4 HM 80W SI ER RNE	1
	102	130-04030-E	SPKR ELIP 4 HM 30W IS D 4x6P	2
	103	253-5550UK-21YM	PAN SEAT W L SE AYELL M TTLE	2
	104	EP1424	LED C NTR LLER	1
	201	020-000820-0	M8 20 SKT CAP	22
	202	029-B00620-0B	M6 20 SKT BH BLK	10
	203	060-S00600-0B	M6 WSHR SPR BLK	18
	204	068-652016-0B	M6 WSHR 20 D FLT BLK	18
	205	030-000830	M8 30 BLT PAS	14
	206	060-S00800-0B	M8 WSHR SPR BLK	41
	207	068-85221-0B	M8 WSHR 220D FLT BLK	41
	208	020-000840-0	M8 40 SKT CAP	4
	209	030-000630	M6 30 BLT PAS	6
	210	029-B00430-0B	M4 30 SKT BH BLK	8

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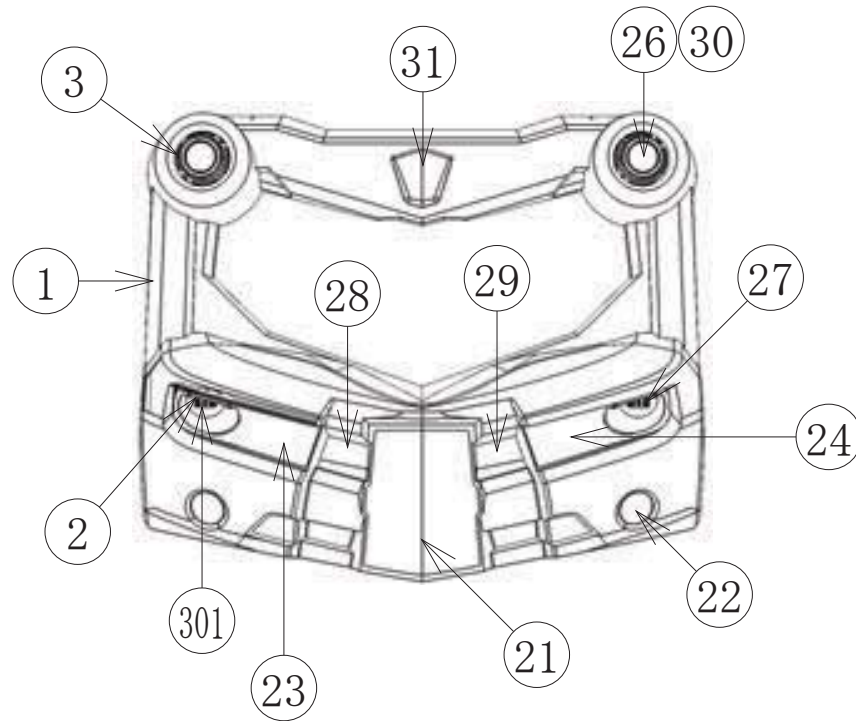
IT	NO	RT NO	D	CRI TION	T
	211	060-S00400-0B	M4	WSHR SPR BLK	8
	212	068-441616-0B	M4	WSHR 16 D FLT BLK	8
	213	029-B00830-0B	M8	30 SKT BH BLK	5
	214	030-000640	M6	40 BLT PAS	2
	215	000-F00420	M4	20 MSCR CSK PAS	4
	216	000-P00408	M4	8 MSCR PAN PAS	10
	217	068-441616	M4	WSHR 160D FLT PAS	14
	218	000-P00416	M4	16 MSCR PAN PAS	4
	219	060-S00400	M4	WSHR SPR PAS	4
	220	012-P03512-F	N6	1/2 S/TAP FL PAS	2
	301	TRF-60010UK	WH	AUDI REAR	
	302	TRF-60018UK	WH	SPEAKER LINK	1
	303	TRF-60019UK	WH	REAR M ULIDIN	2
	305	TRF-60022UK	WH	R B LED SPLITTER	1
	307	390-2012-R B	LED	FL STRIP R B 5MTR	1
	308	BE-6001UK	WH	LED CLIP	2.5
	309	TRF-60025UK	LED	C NTR L UT	2

RT  
IT

⑬ ASSY REAR MOULDING (TRF-3700UK)

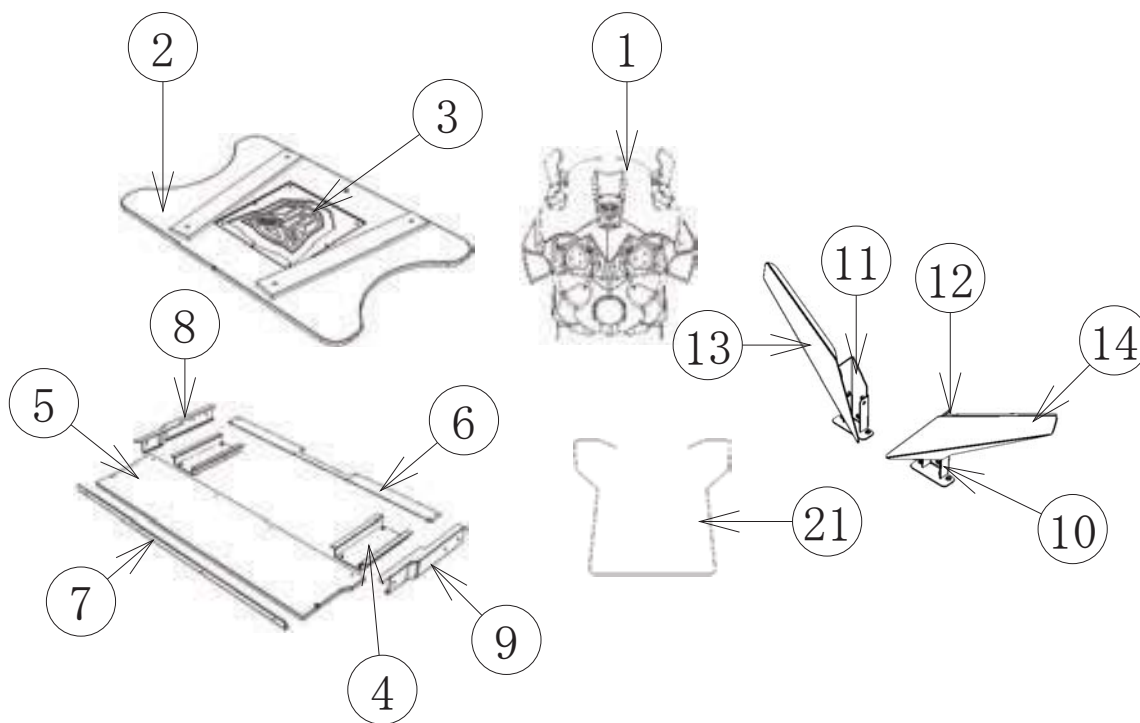
(D-1/1)

RT  
I  
T



IT	NO	RT NO	D C R I T I O N	T
	1	TRF-3701-AUK	REAR AC BLANK	1
	2	TRF-3709UK	BRKT DIFFUSER MT	2
	3	601-12955-005	UN MU LE C ER UL-HB	2
	21	TRF-3702UK	STICKER CENTRE	1
	22	TRF-3703UK	STICKER F LI HT	2
	23	TRF-3705UK	C ER HEADLI HT L	1
	24	TRF-3706UK	C ER HEADLI HT R	1
	26	TRF-3710-AUK	LED LENS INSERT BLANK	2
	27	TRF-3711UK	LED SPACER	2
	28	TRF-3713UK	STICKER RILLE MID L	1
	29	TRF-3714UK	STICKER RILLE MID R	1
	30	TRF-3712UK	LED LENS INSERT BACK	2
	31	TRF-3715UK	DECAL SHIELD	1
	301	TRF-6001UK	ASSY HEADLAMPS	1
	302	TRF-60026UK	WH REAR EYES	
	303	TRF-6002UK	ASSY REAR EYES	2





RT I T

IT	NO	RT NO	D CRI TION	T
	1	TRF-0500UK	ASSY BILLB ARD TH	1
	2	TRF-0004UK	PANEL R F	1
	3	TRF-0005UK	INSERT R F	1
	4	TRF-0051UK	J INT BRID E	2
	5	TRF-0052UK	J INT FL R	1
	6	TRF-0054UK	J INT SASH FR NT	1
	7	TRF-0056UK	J INT SASH REAR	1
	8	TRF-0058UK	J INT SASH SIDE L	1
	9	TRF-0059UK	J INT SASH SIDE R	1
	10	TRF-0006UK	BRKT BASE LAPEL	2
	11	TRF-0007UK	SUPP RT LAPEL L	1
	12	TRF-0008UK	SUPP RT LAPEL R	1
	13	TRF-0009UK	LAPEL L	1
	14	TRF-0010UK	LAPEL R	1
	20	440-CS0186UK	STICKER C EPILEPSY MULTI	1
	21	TRF-1914UK	PLAY INSTR SH MULTI	1
101	LM1227		UK MAINS LEAD 10A WITH PLU	1
102	LM1246		EUR LEAD 10A EUR PEAN S CKET	1

IT NO	RT NO	D CRI TION	T
201	029-B00830-0B	M8 30 SKT BH BLK	7
202	060-S00800-0B	M8 WSHR SPR BLK	8
203	068-852216-0B	M8 WSHR 22 D FLT BLK	8
204	029-B00840-0B	M8 40 SKT BH BLK	5
205	029-B00412-0B	M4 12 SKT BH BLK	4
206	060-S00400-0B	M4 WSHR SPR BLK	8
207	068-441616-0B	M4 WSHR 16 D FLT BLK	8
208	030-000840	M8 40 BLT PAS	10
209	060-S00800	M8 WSHR SPR PAS	8
210	068-852216	M8 WSHR 22 D FLT PAS	8
211	000-P00420	M4 20 MSCR PAN PAS	2
212	060-S00400	M4 WSHR SPR PAS	2
213	060-F00400	M4 WSHR F RM A FLT PAS	2
214	008-0S0420	M4 20 TMP PRF STN	8
215	068-441616-0C	M4 WSHR 16 D FLT CRM	8
216	029-B00425-0B	M4 25 SKT BH BLK	4
217	030-000640	M6 40 BLT PAS	4
218	060-S00600	M6 WSHR SPR PAS	4
219	068-652016	M6 WSHR 20 D FLT PAS	4
220	029-B00620-0B	M6 20 SKT BH BLK	6
221	060-S00600-0B	M6 WSHR SPR BLK	6
222	068-652016-0B	M6 WSHR 20 D FLT BLK	6
401			1
402	420-0021UK	MANUAL TRANSF RMERS TH	1
403	S1019	SELF SEAL BA 9 12.3/4	1
404	253-5644-063B	KEY CHIP R E2 TC1	1
405	610-0816-5026	D D S FT KIT TC1 JESRFI SPTR	1
406	SAECE-xxx	DECLARATI N F C NF RMITY	1

*Please note: Some fixings listed in the ASSY INST KIT are fitted to the product before shipping.*

**⚠ WARNING**

**Working from the previous wire colors will create a high risk of fire.**

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

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

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

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

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

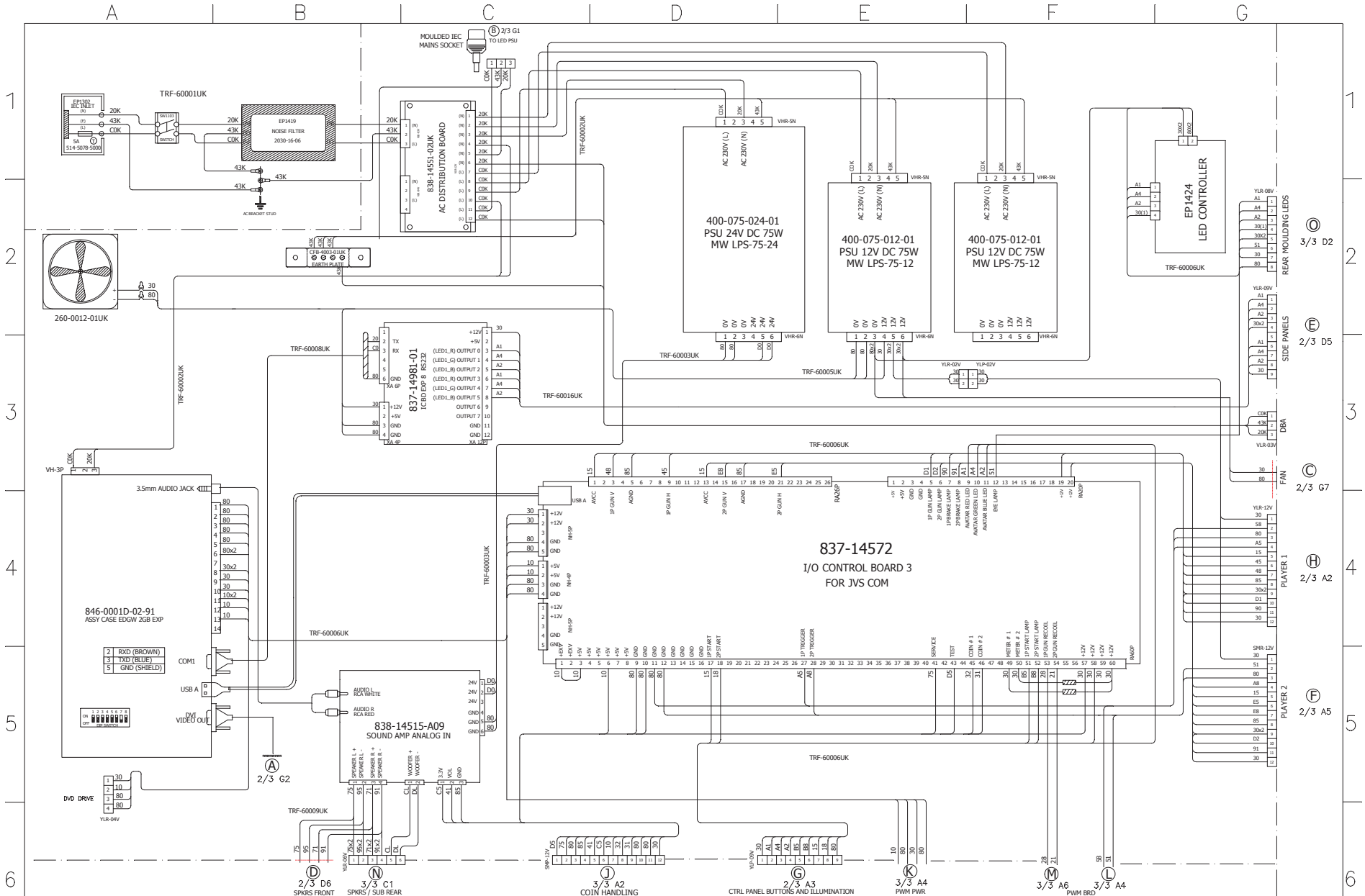
Note 1: If the right hand side numeral is not 0, that particular wire has a spiral color code. The left hand side character shows the base color and the right hand side one, the spiral color.

Example 51 WHITE/RED



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

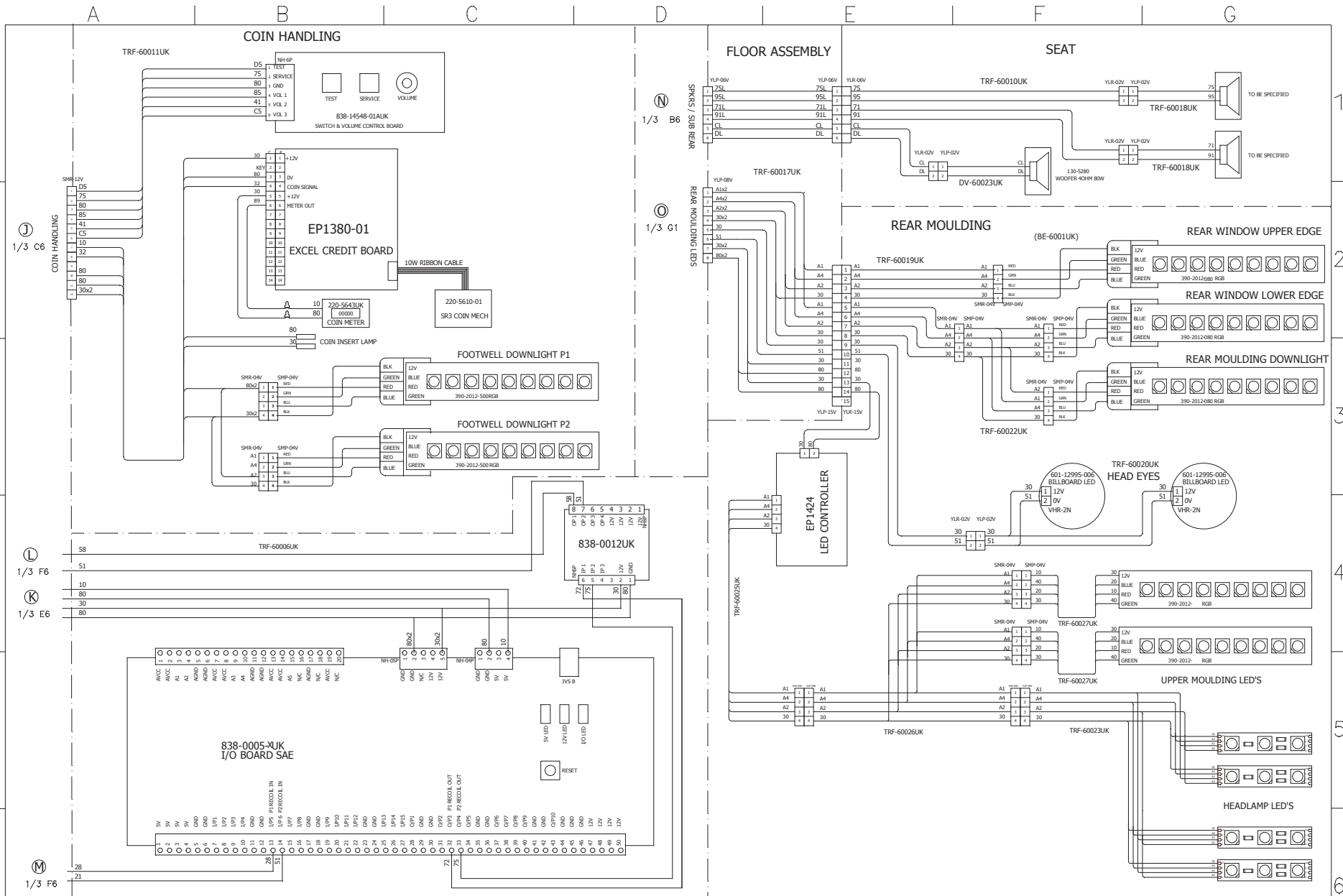
- U: AWG16
- K: AWG18
- L: AWG20
- None: AWG22



8 BLACK	43 EARTH WIRE	AWG18 UL1672
7 ORANGE	7 LIGHT GREEN	AWG20 UL1672
6 WHITE	7 PURPLE	AWG16 UL1015
5 GREEN	4 BROWN	AWG18 UL1015
4 YELLOW	3 SKY BLUE	AWG20 UL1007
3 BLUE	2 PINK	AWG22 UL1007
2 RED	1 GRAY	AWG24 UL1007

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**TRANSFORMERS HUMAN ALLIANCE**  
 ORIGINAL SIZE  
 1 A2 3





8 BLACK	D LIGHT GREEN	4-3 EARTH WIRE
7 ORANGE	E PURPLE	7 AWG13 UL1672
5 WHITE	C BROWN	4 AWG20 UL1672
4 GREEN	F SKY BLUE	6 AWG18 UL1015
3 YELLOW	9 GRAY	L AWG20 UL1007
2 BLUE		AWG22 UL1007
1 RED		AWG24 UL1007

ALTERATION

DRAWN

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DESCRIPTION

ORIGINAL SIZE 3 A2 3

