

1<sup>st</sup> PRINTING

SEGA<sup>®</sup>

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© SEGA

TRANSFORMERS HUMAN ALLIANCE

OWNER'S MANUAL

420-0021UK

SEGA<sup>®</sup>

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.

## **IMPORTANT**

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

## **WARNING**    **CAUTION**

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

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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:**

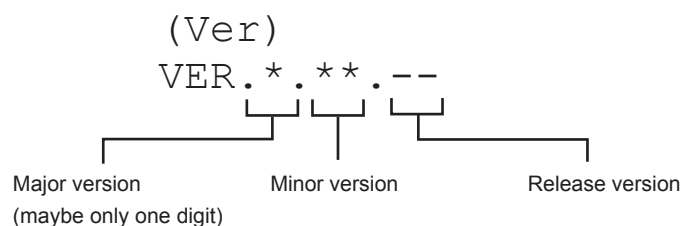
Persons employed by amusement equipment manufacturers, or involved in design, production, testing or maintenance of amusement equipment. The individual should have either graduated from technical school or hold similar qualifications in electrical/electronics/mechanical engineering.

#### **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



# 1 HANDLING PRECAUTIONS

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

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

## WARNING

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

## **STOP** IMPORTANT

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

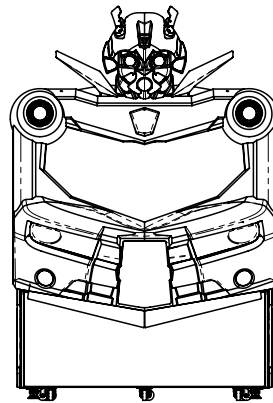
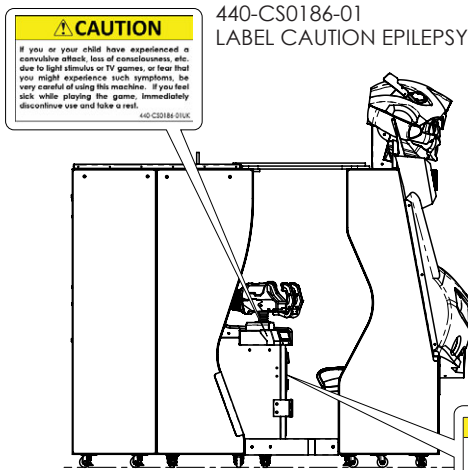
**CONCERNING THE STICKER DISPLAY**

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

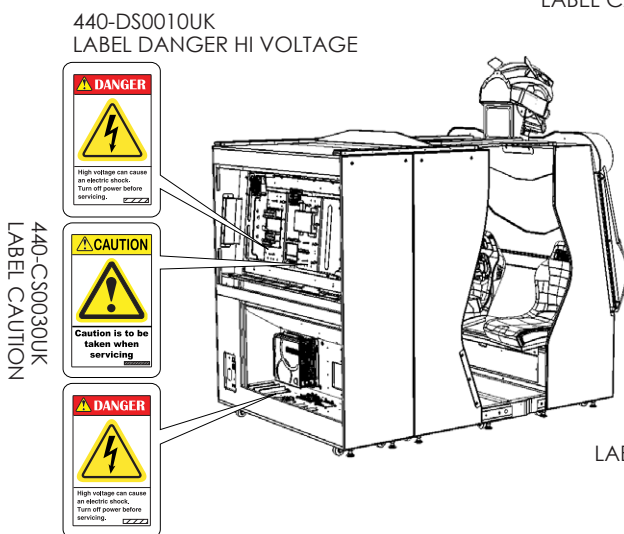
When inquiring about or asking for repairs, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial Number indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this manual. In order to ensure you order the correct parts, mention the Serial No. when contacting the applicable places.

**CONCERNING WARNING DISPLAYS**

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

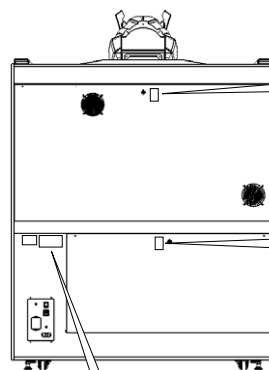


440-CS0030UK LABEL CAUTION



440-DS0010UK LABEL DANGER HI VOLTAGE

440-DS0010UK LABEL DANGER HI VOLTAGE

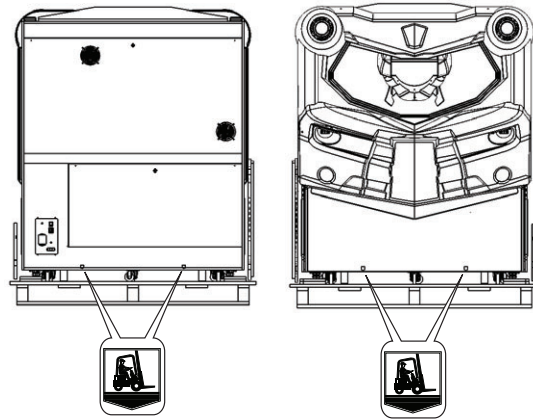
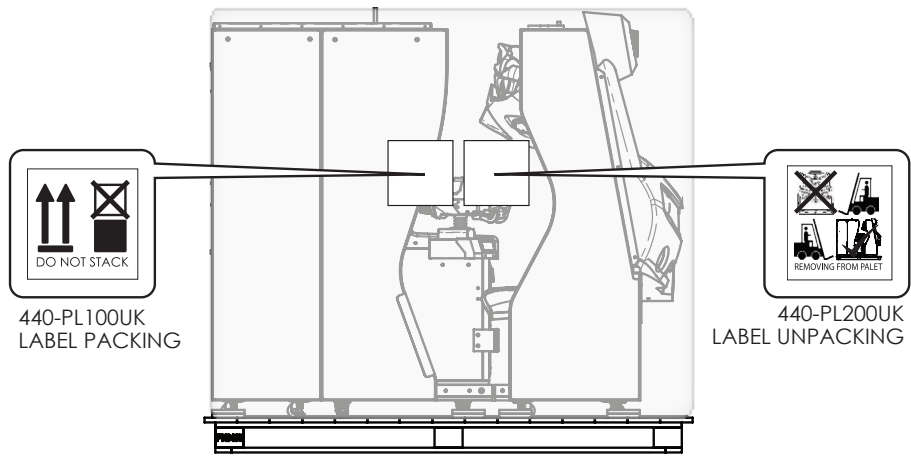


440-DS0010UK LABEL DANGER HI VOLTAGE



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

**2** PRECAUTIONS REGARDING INSTALLATION LOCATION



## **2** PRECAUTIONS REGARDING INSTALLATION LOCATION

### **WARNING**

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

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

## 2-1 LIMITATIONS OF USAGE

### WARNING

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

MAX. 275w @ 230VAC-240VAC

MAX 215w @ 110VAC-120VAC

## 2-2 OPERATION AREA

### 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.

### IMPORTANT

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

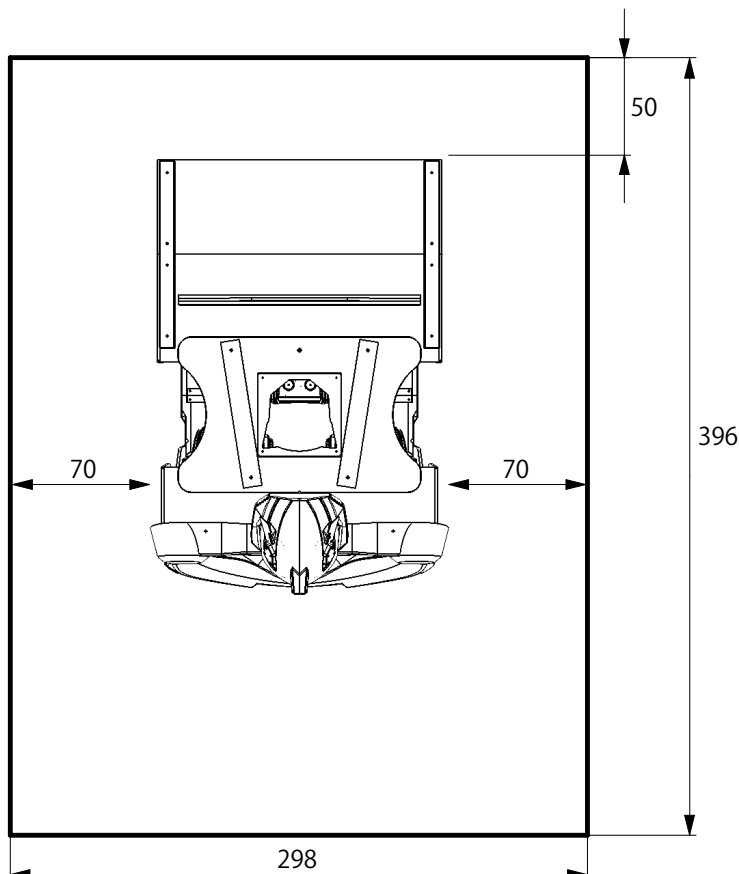


FIG. 2 Installation and operation area (cm)

### 3 PRECAUTIONS REGARDING PRODUCT OPERATION

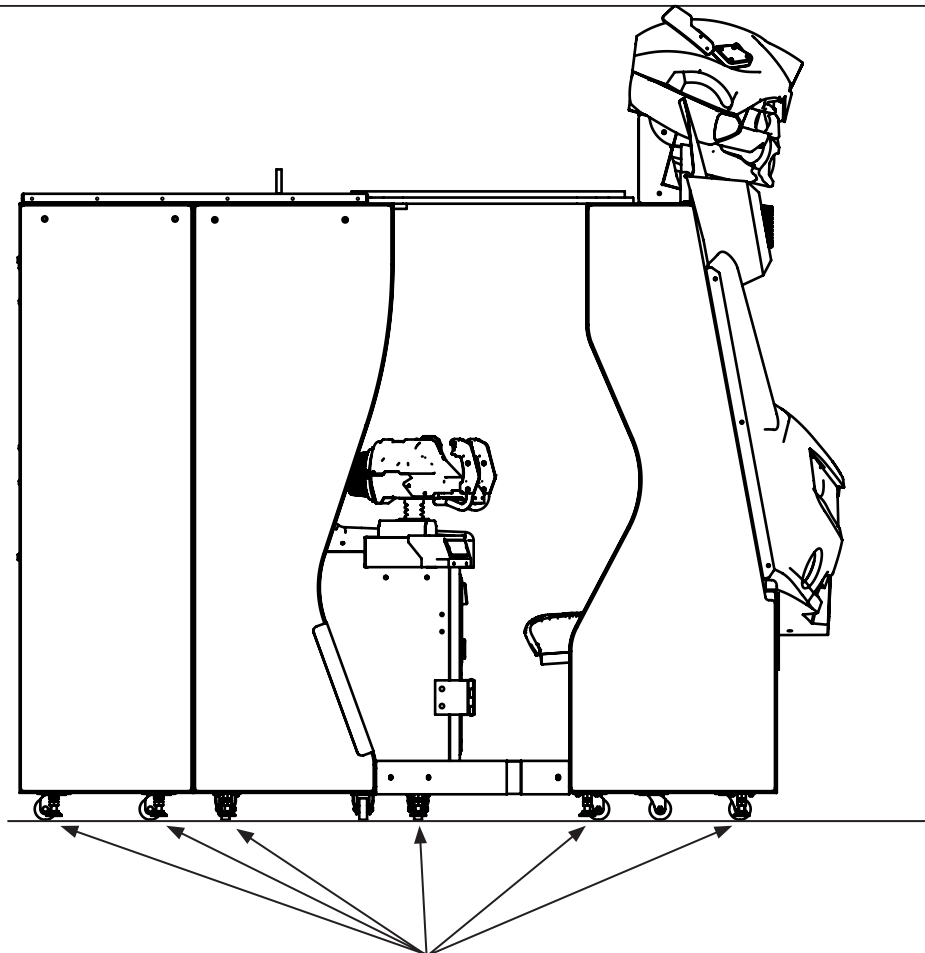
To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

#### 3-1 BEFORE OPERATION

##### 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

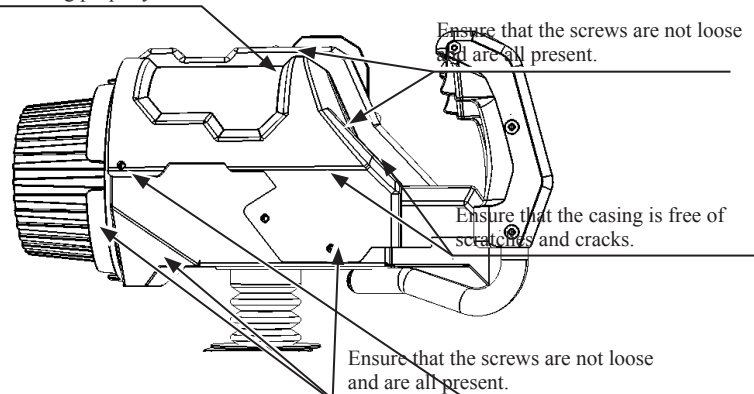
- Do not put any heavy item on this product. Placing any heavy item on the product can cause a falling down accident or parts damage.
- Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step ladder.
- When using a stepladder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

## 3-2 DURING OPERATION (PAYING ATTENTION TO CUSTOMERS)

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

### WARNING

- For safety 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.

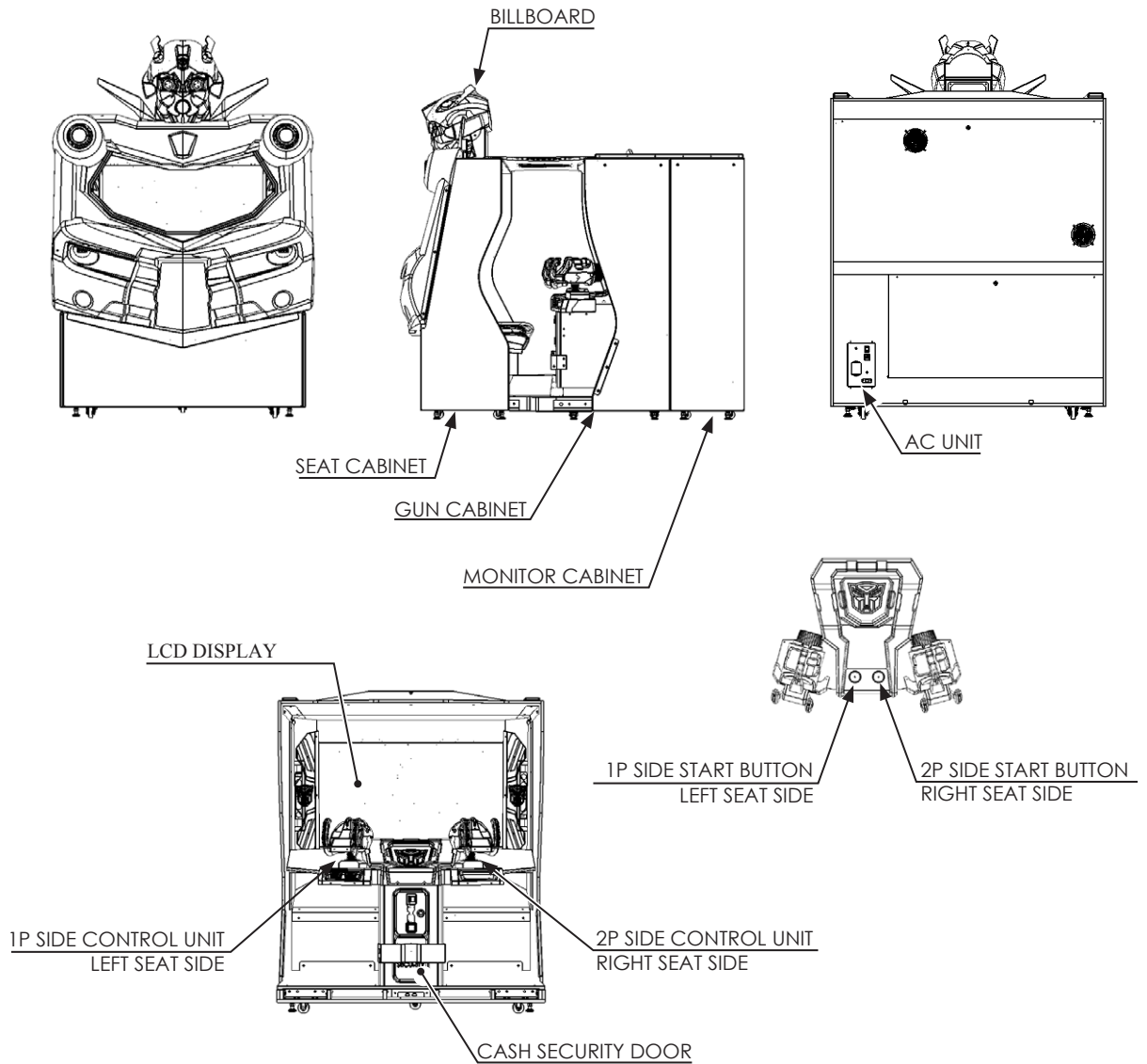
## CAUTION

- 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.

## 4 PARTS DESCRIPTION



**FIG. 4 Name of Each Part**

- 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.

**TABLE 4 Major Measurements of Each Unit Upon Purchase**

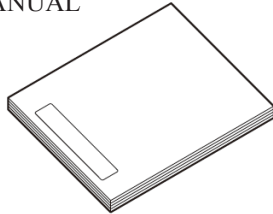
	(Width x Depth x Height)	(Weight)
Monitor Cabinet	1,532 mm × 506 mm × 1,795 mm	314 kg
Gun Cabinet	1,532 mm × 881 mm × 1,950 mm	
Seat Cabinet (without Billboard)	1,620 mm × 868 mm × 1,795 mm	158 kg
Billboard	500 mm × 510 mm × 550 mm	10 kg

# 5 ACCESSORIES

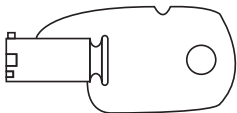
Confirm that the accessories listed in the table below are present when setting up the product. Accessories marked “Spare” in the note column are consumable items but included as spares.

TABLE 5a

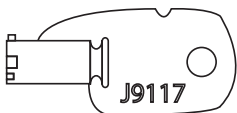
OWNER’S and SERVICE MANUAL  
420-0021UK (1)  
This manual



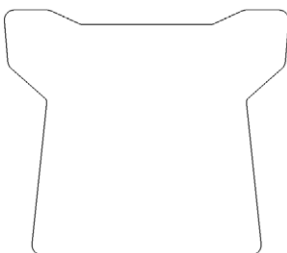
KEY  
(2)  
For the cashbox door  
(Located inside the coin chute  
door at time of shipment)



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

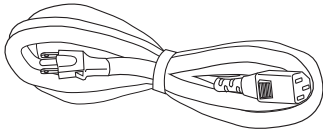
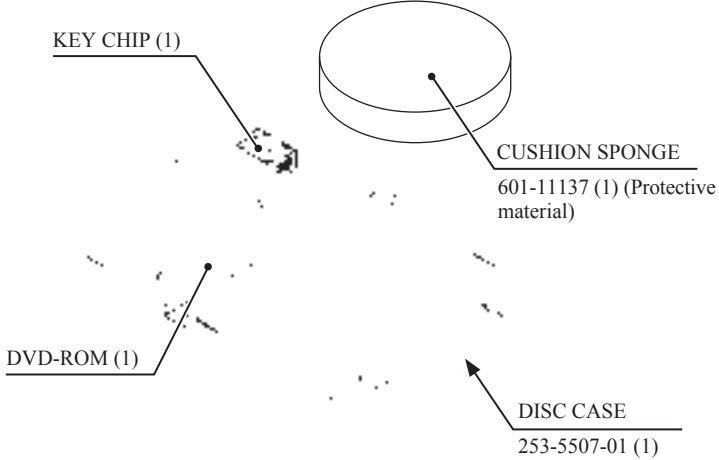


STICKER SHEET C EPILEPSY MULTI  
440-CS0186UKUK (1)  
Multilingual caution label - epilepsy seizure  
(English version fitted as standard)  
*Please see chapter 1 for label positioning.*



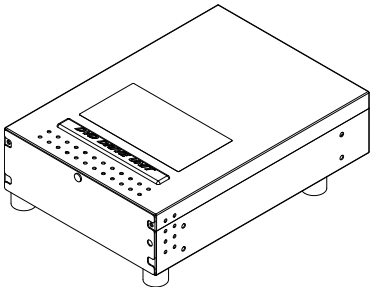
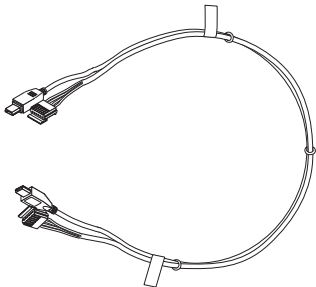
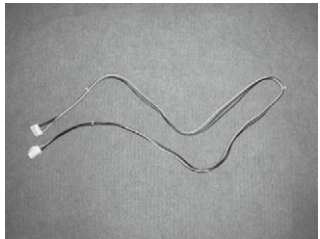
The parts listed in Table 5b are needed to operated the product. These are the final parts used once installation assembly has been completed.

**TABLE 5b**

<p><b>POWER CABLE</b>          LM1227 (1) &lt;UK&gt;          LM1246 (1) &lt;European&gt;          LM1550 (1) &lt;America&gt;          For installation, see chapter 6</p>	<p><b>STICKER 840-0012D-02</b>          443-40012D-02 (1)          Board number stickers, see chapter 6 [11]</p>	<p><b>844-0012D-02</b></p>
	<p><b>DVD SOFTWARE KIT</b>          (1)          Software media, see chapter 6 [13]</p>	 <p><b>KEY CHIP (1)</b></p> <p><b>CUSHION SPONGE</b>          601-11137 (1) (Protective material)</p> <p><b>DVD-ROM (1)</b></p> <p><b>DISC CASE</b>          253-5507-01 (1)</p>
<p>To order the DVD-ROM by itself, use the following part number:          610-0816-5026 (DVD SOFT TC1 JESRFIGSPTR).</p>		

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.

**TABLE 5c XKT-1515-01: DVD DRIVE KIT FOR RING EDGE 2 ENG**

<p><b>DVD DRIVE (Optional)</b>          610-0719-01-91 (1)          For software installation, see chapter 6 [10]</p>	<p><b>INSTALLATION WIRE (Optional)</b>          BRK-60219 (1)          For software installation, see chapter 6 [10]</p>	
		
<p><b>DVD WIRE (Optional)</b>          605-0094 (1)          For software installation, see chapter 6 [10]</p>		

## 6 ASSEMBLY AND INSTALLATION

### WARNING

- Perform assembly work by following the procedure herein stated. Failure to comply with the instructions can cause electric shock.
- Perform assembling as per this manual. Since this is a complex machine, incorrect assembling can cause an electric shock, machine damage and/or improper functioning as per specified performance.
- When assembling, 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.  $\varnothing$  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.

**STOP 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.

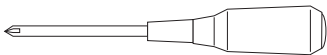


The assembly of this product is performed in the following 12 steps.

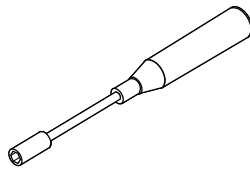
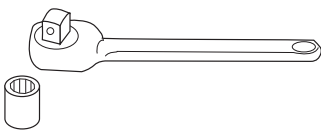
- 6.1 UNPACKING THE CABINET
- 6.2 ATTACHING THE BILLBOARD (BUMBLEBEE HEAD)
- 6.3 ATTACHING THE BILLBOARD (LAPELS)
- 6.4 JOINING THE CABINETS
- 6.5 ATTACHING THE FLOOR AND SIDE BKTS
- 6.6 ATTACHING THE ROOF
- 6.7 APPLYING THE "HOW TO PLAY" INSTRUCTIONS
- 6.8 FIXATION TO INSTALLATION SITE
- 6.9 CONNECTING THE DVD DRIVE
- 6.10 CONNECTION OF POWER AND GROUND CABLES
- 6.11 ENGAGING POWER SUPPLY (SOFTWARE INSTALLATION)
- 6.12 CONFIRMATION OF INSTALLATION

**Tools Required for Assembly Operation**

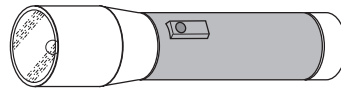
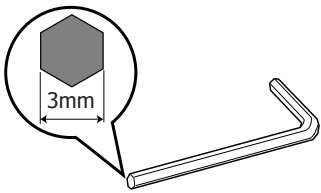
- Philips screwdriver (for M4, M6 screws)



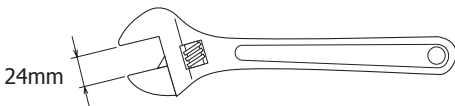
- A socket wrench or hexagonal screwdriver (for M4, M6 and M8) hexagon bolts and nuts)



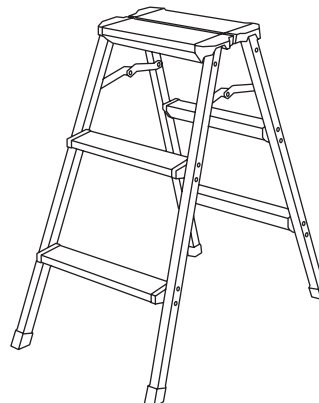
- A 3 millimeter hexagonal bar wrench or screwdriver
- Flashlight or other supplementary lighting



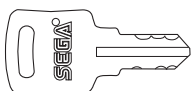
- A 24 millimeter spanner (Adjustable spanner)



- Stepladder



- Master key (accessory)



## 6-1 UNPACKING THE CABINET

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

- 1 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.

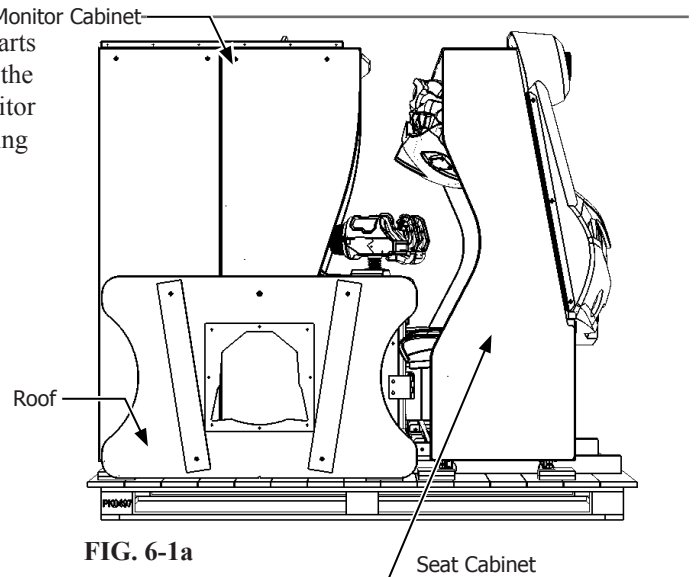



FIG. 6-1a

### 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.

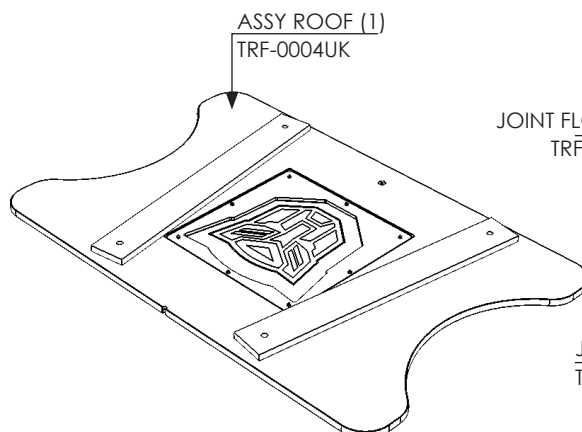


FIG. 6-1b

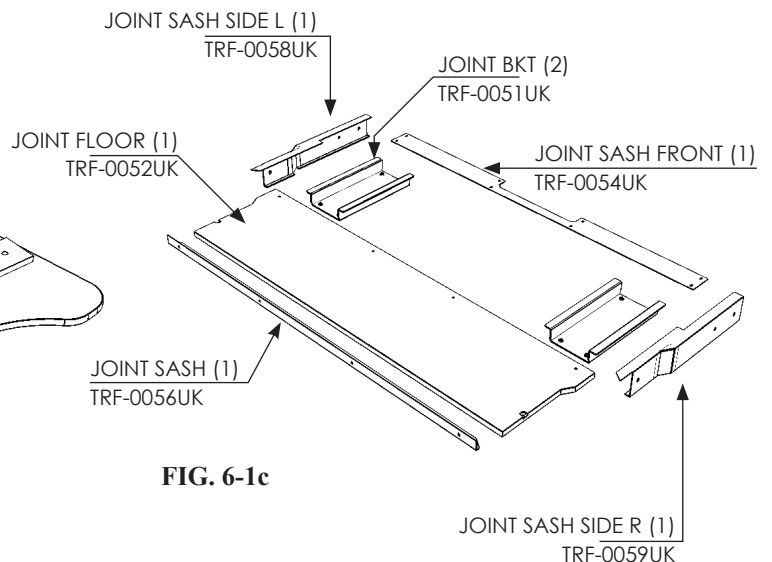


FIG. 6-1c

## 6-2 ATTACHING THE BILLBOARD (BUMBLEBEE HEAD)

### **⚠ 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.

- 1** 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.

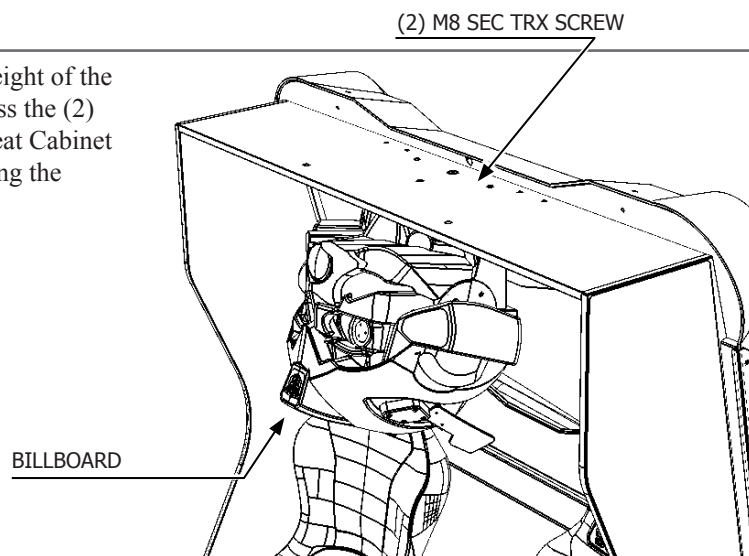


FIG. 6-2a

- 2** 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

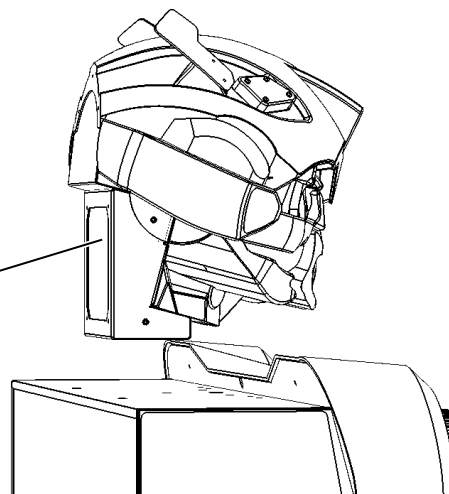


FIG. 6-2b

- 3 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).

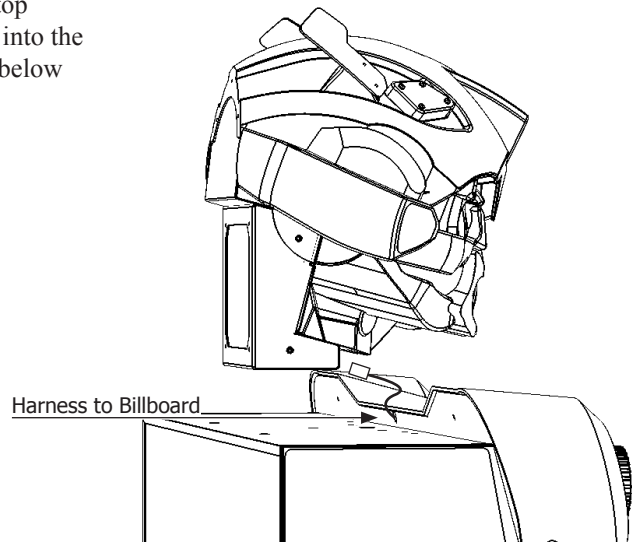


FIG. 6-2c

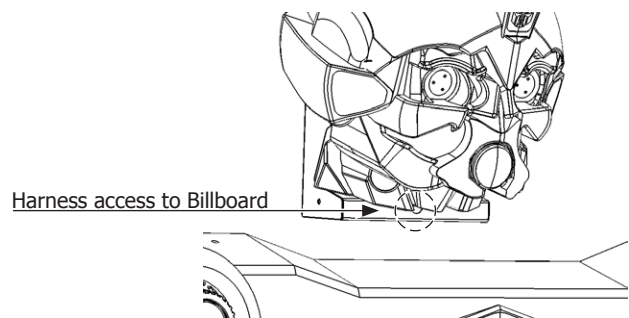


FIG. 6-2d

- 4 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.

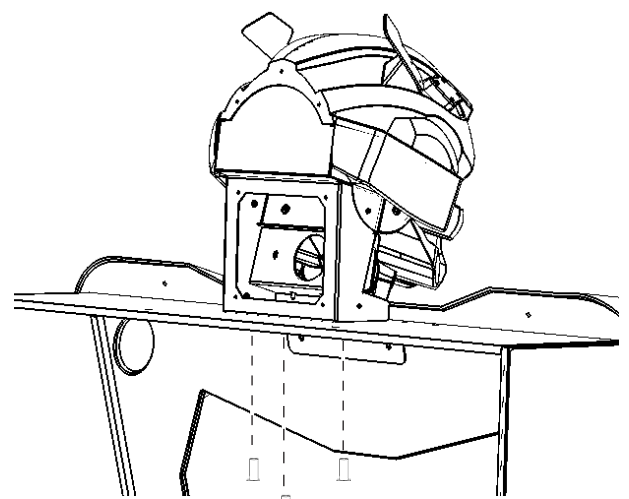


FIG. 6-2e

SEC TRX SCREW (3 ea.), black  
M8x20

## 6-3 ATTACHING THE BILLBOARD (LAPELS)

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

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

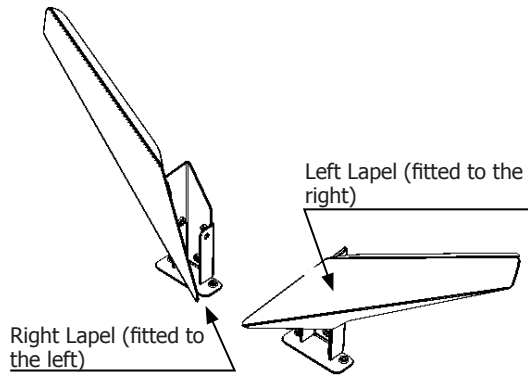


FIG. 6-3a

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

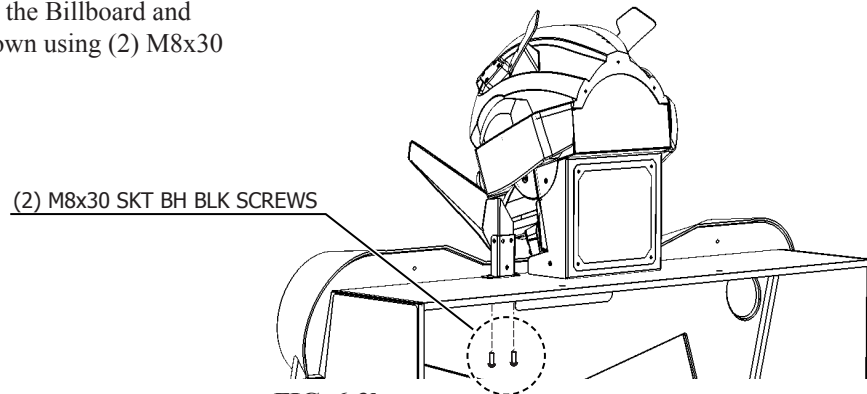


FIG. 6-3b

- 3 Repeat step 2 when fitting the Right Lapel.

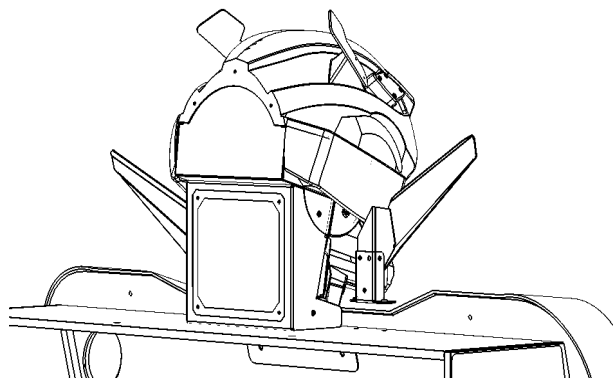


FIG. 6-3c

## 6-4 JOINING THE CABINETS

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

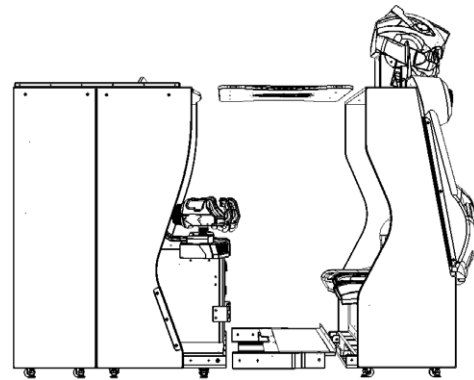
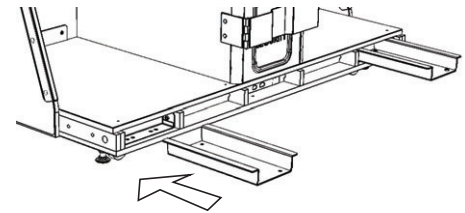


FIG. 6-4a Installation Kit

- 1 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 missalignment of fixings later on.



HEX BLT (2 ea.), black  
M8x40

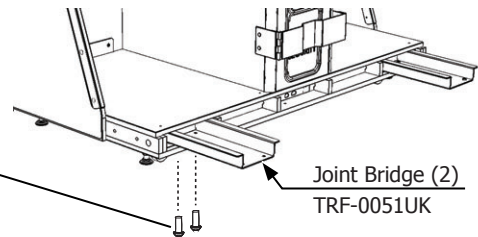
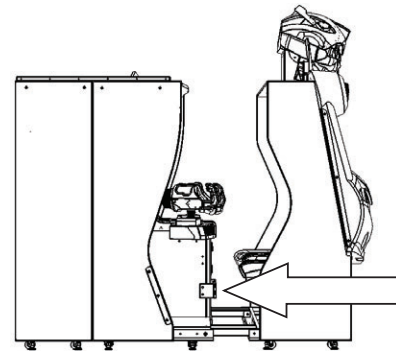


FIG. 6-4b

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



HEX BLT (2 ea.), black  
M8x40

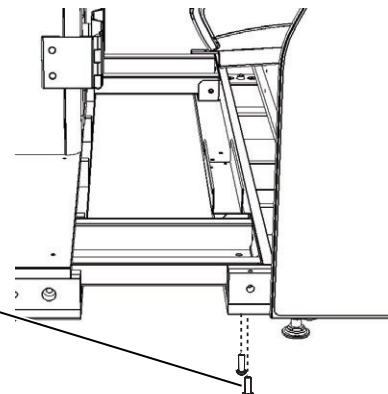


FIG. 6-4c

## 6-5 ATTACHING THE FLOOR AND SIDE BKTS

- 1 Locate the Harness Conduit

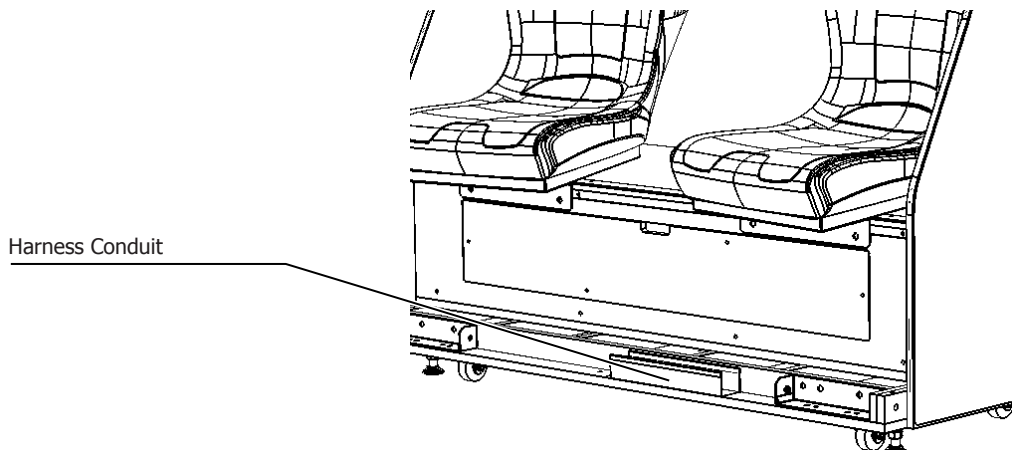


FIG. 6-5a

- 2 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.

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

MSCR PAN PAS (1)  
M4x20

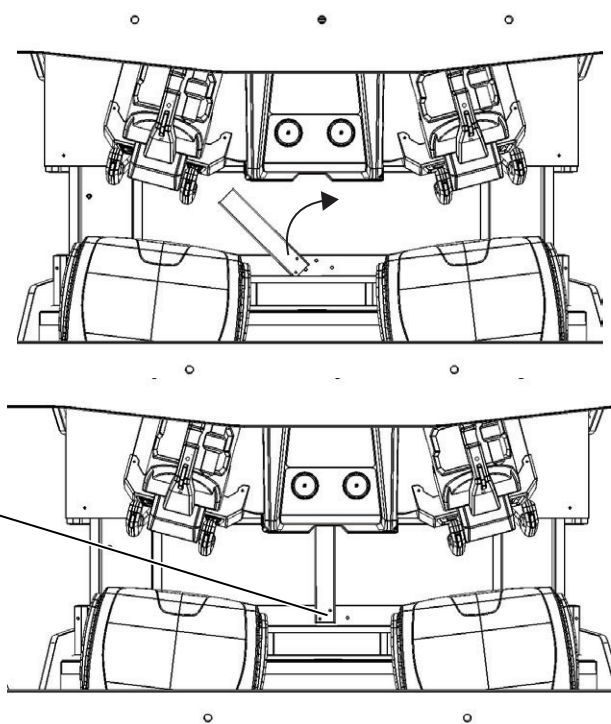


FIG. 6-5b

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

Rear floor sash  
TRF-0056UK

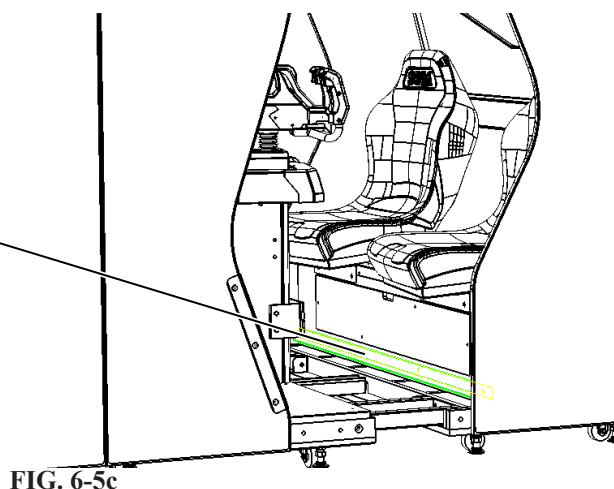


FIG. 6-5c

5 Place the floor in between the Gun and Seat Cabinet

Joint Floor (1)  
TRF-0052UK

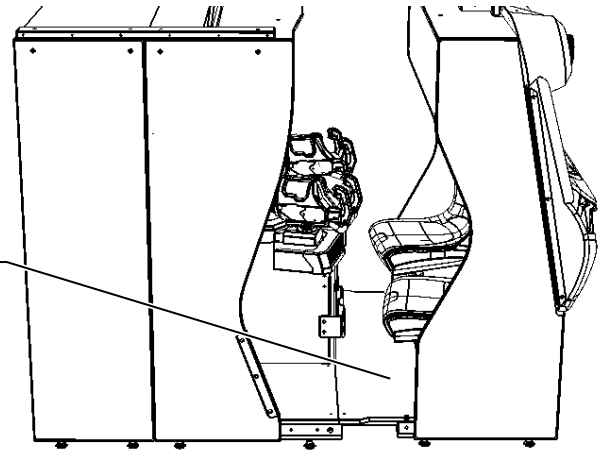


FIG. 6-5d

6 Refit the rear sash

Socket cap Screw blk (4)  
M4x25

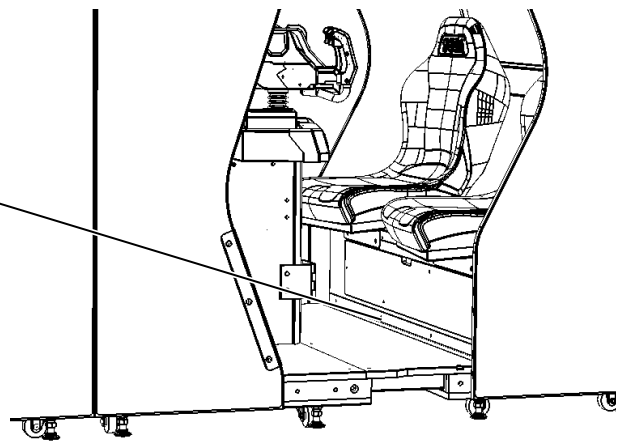


FIG. 6-5e

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

Sec Tmp Prf Stn (8)  
M4x20

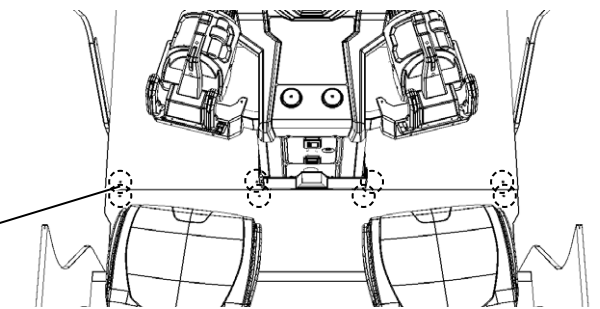


FIG. 6-5f

8 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

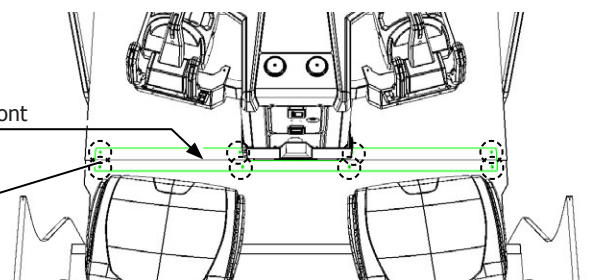
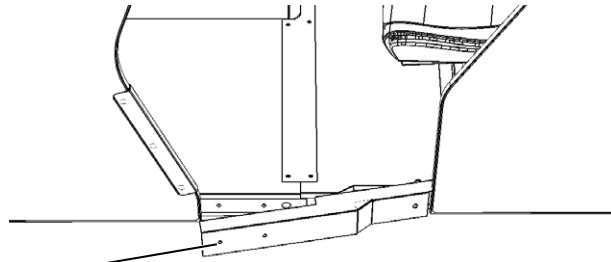


FIG. 6-5g

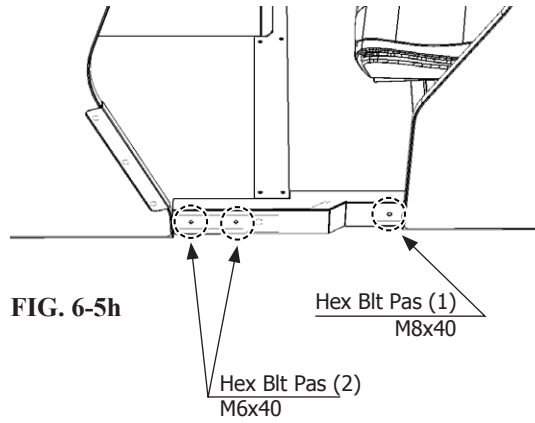


- 9** Attach the Joint Sash Side L to the Left habes side of the cabinet as shown in the illustration. Secure in to place using (2) M6x40 BLT PAS and (1) M8x40 BLT PAS. Repeat this step when fixing the Joint Sash Side R.



Joint Sash Side L  
TRF-0058UK

**FIG. 6-5h**



**FIG. 6-5h**

Hex Blt Pas (1)  
M8x40

Hex Blt Pas (2)  
M6x40

## 6-6 ATTACHING THE ROOF

- 1 Using 2 people, place the Panel Roof in the orientation shown ontop of the cabinet.

Panel Roof  
TRF-0004UK

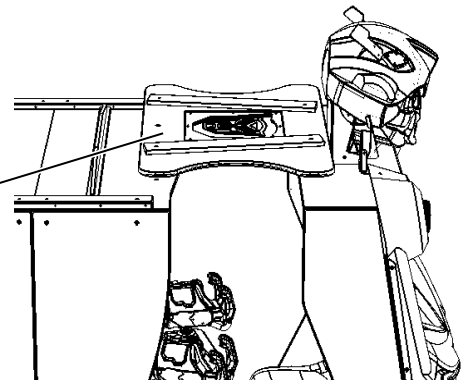


FIG. 6-6a

- 2 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

- 3 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

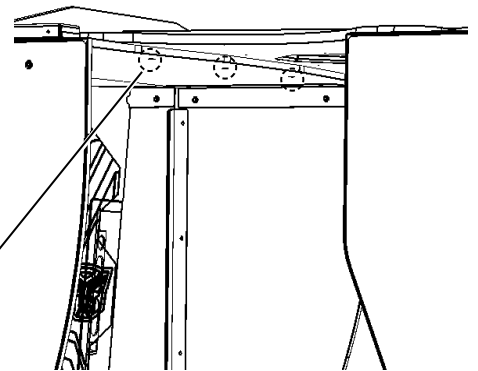


FIG. 6-6b

Button Head Socket Screw (2)  
M8x40

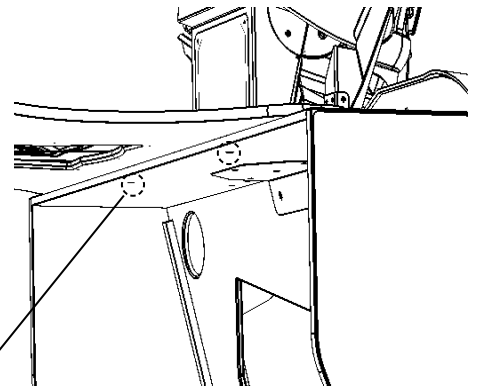


FIG. 6-6c

## 6-7 APPLYING "HOW TO PLAY" INSTRUCTIONS

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

### PLAY INSTRUCTION

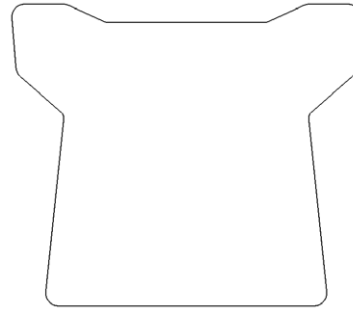


FIG. 6-7a

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

**2** 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.

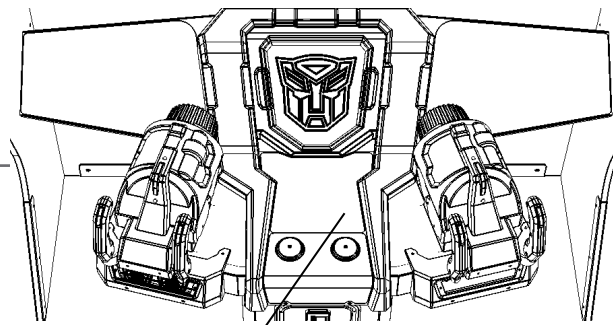


FIG. 6-7b

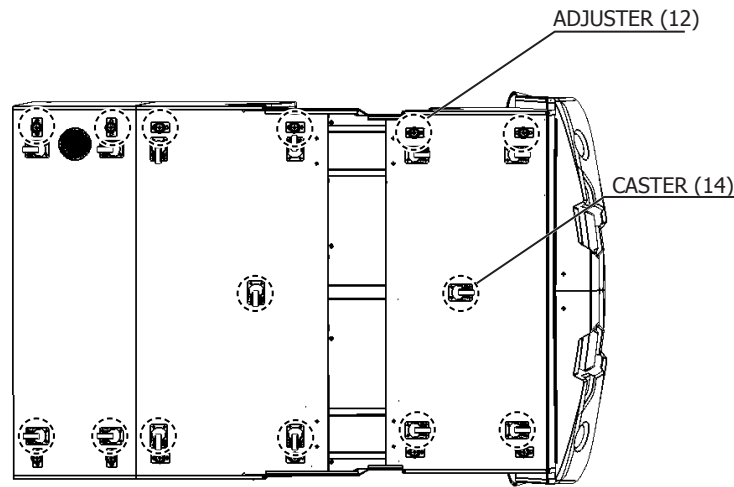
Play Instruction Panel  
TRF-1914UK

**6-8 FIXATION TO INSTALLATION SITE**

**⚠ WARNING**

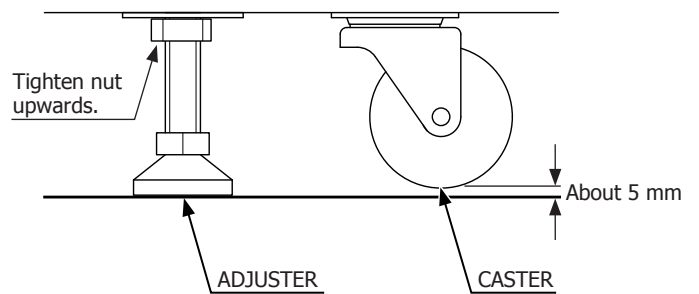
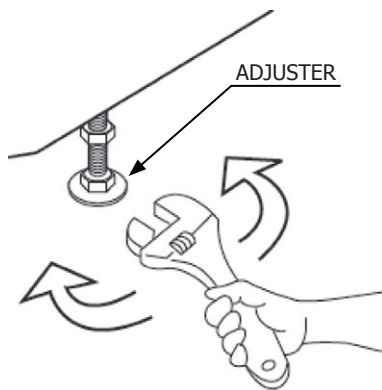
**Make sure that all the adjusters contact the floor. Otherwise the cabinet could move, causing an accident.**

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.



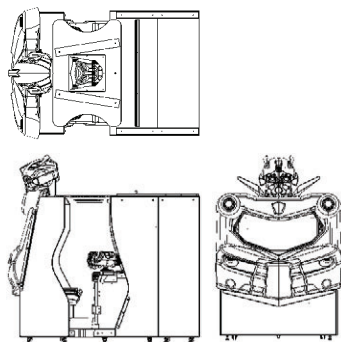
**FIG. 6-9a Bottom View**

- 1** 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.
- 2** Bring the adjusters into direct contact with the floor. Use a wrench to align the height of the adjusters until the cabinet is perfectly level.
- 3** After setting, turn adjuster nuts upwards to tighten them and secure adjuster heights.



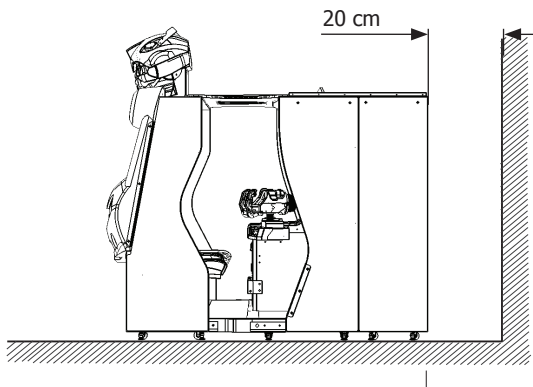
**FIG. 6-9b Aligning the Adjusters**

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



**FIG. 6-9c Three Surface Views**

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



**FIG. 6-9d Ventilation Space**

## 6-9 CONNECTING THE DVD DRIVE

**PLEASE NOTE THAT THIS PRODUCT IS DESPATCHED WITH SOFTWARE PRE-INSTALLED**

### **⚠ 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..

- 1 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,

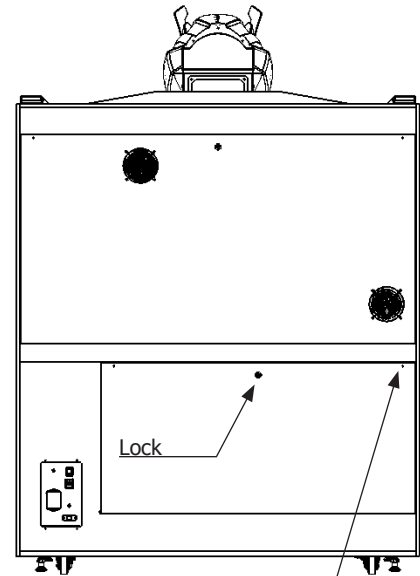


FIG. 6-10a TRUSS SCREW (2), black M4x25

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

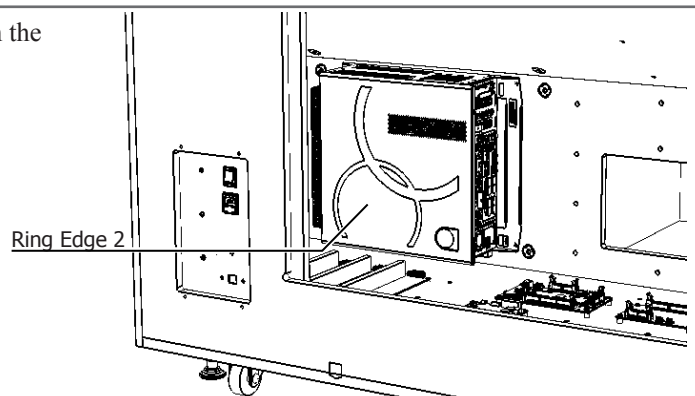


FIG. 6-10b

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

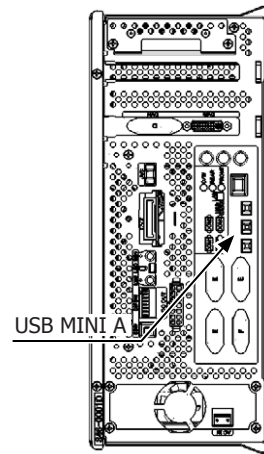


FIG. 6-10c

- 4** Connect the Installation wire into the POWER fly lead within the cabinet

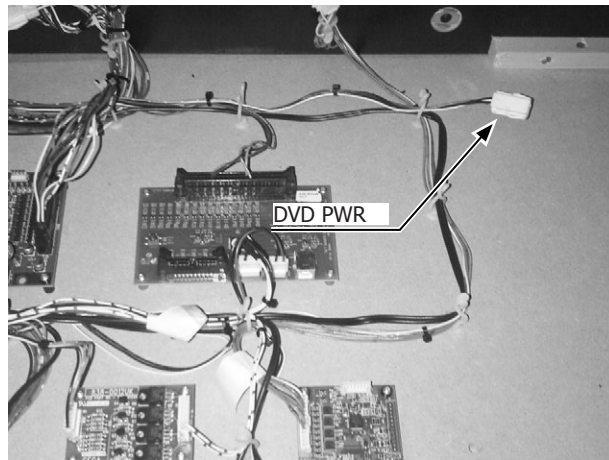


FIG. 6-10d

- 5** On the side of the DVD wire with the “DVD” tag, there are two connectors. Connect them to the DVD DRIVE.

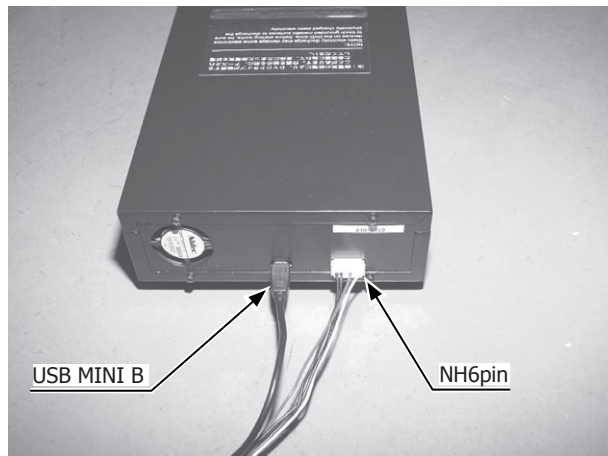


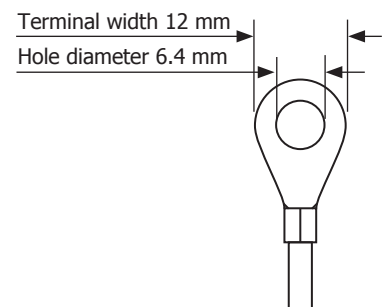
FIG. 6-10e

## 6-10 CONNECTION OF POWER AND GROUND CABLES

(Only applies where an intergral earth is not present in the mains/power lead.)

### 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.



### 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.

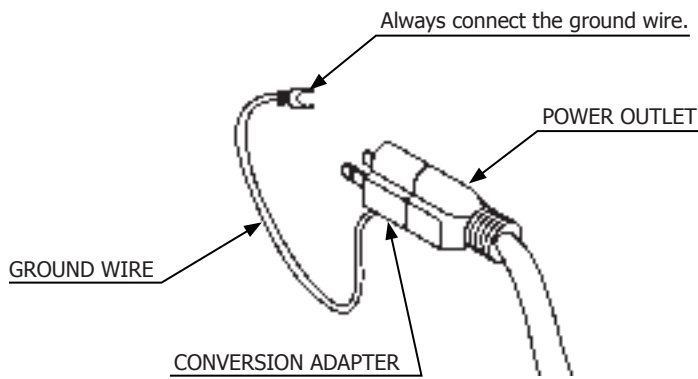


The AC unit is on the lower back of the DLP. This AC unit contains the following.

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

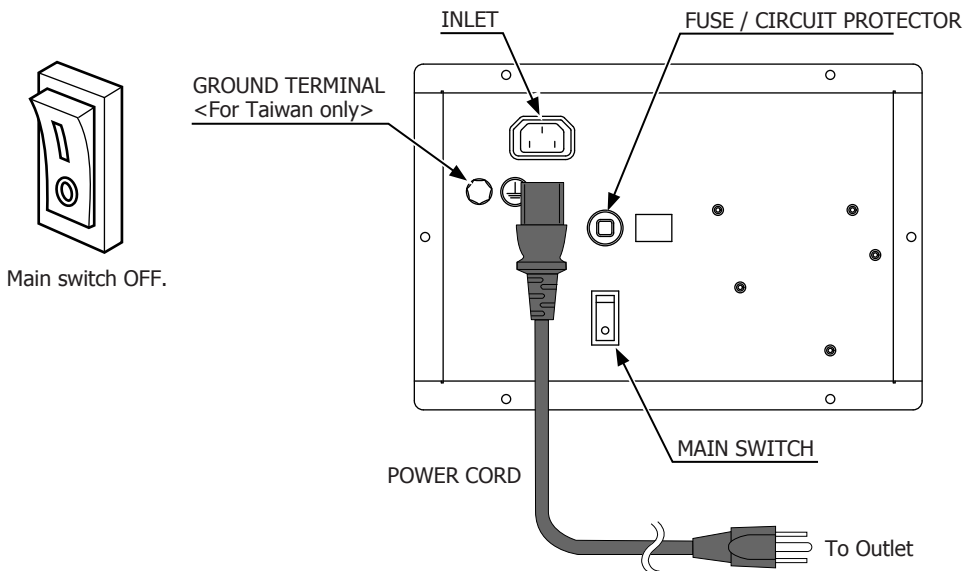
The accessory power cord has a ground wire inside it.

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>



**FIG. 6-11a <For Taiwan>**

**1** Confirm that the main switch is at OFF.



**FIG. 6-11b AC Unit**

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

**3** Fully insert the power cord plug into the outlet.

**4** 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>

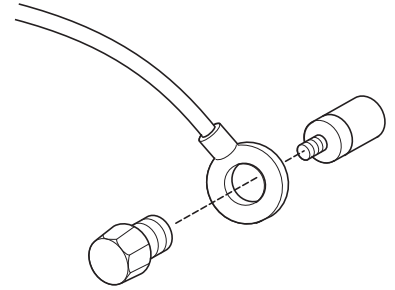


FIG. 6-12c

**5** 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>

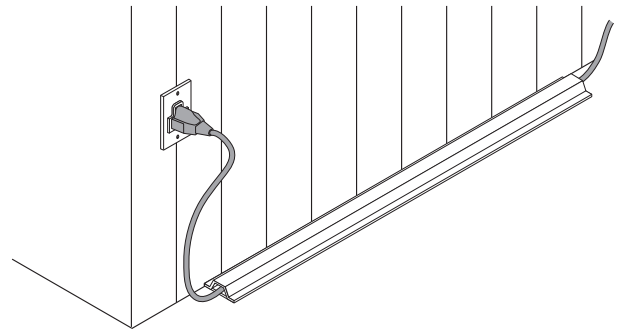


FIG. 6-12d

## 6-11 ENGAGING POWER SUPPLY (SOFTWARE INSTALLATION)

### 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.

### 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.)

- 1** Before supplying the power, you must make sure the DVD wire is not pinched or trapped.
- 2** Turn the main switch of the AC unit to ON and engage the power supply.
- 3** 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.

- 4** Take out 1 urea (plastic head) screw and remove the DVD DRIVE case lid.

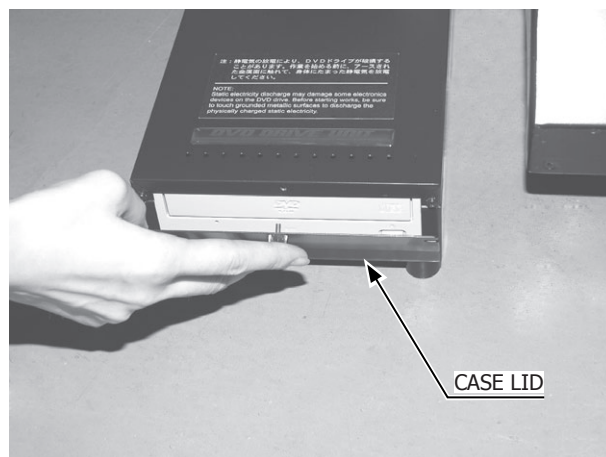


FIG. 6-13a

- 5** 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.

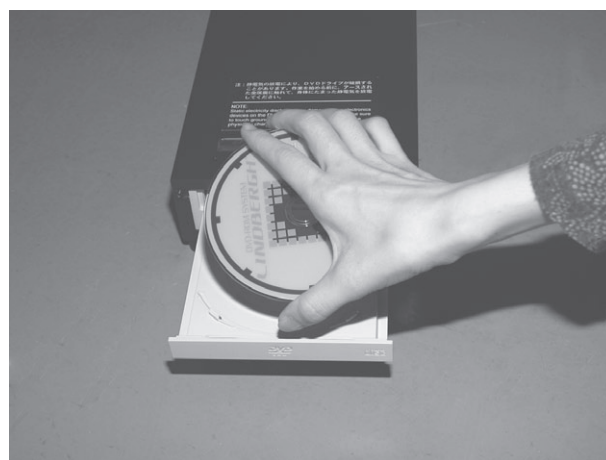


FIG. 6-13b

- 6** Press the DVD DRIVE switch. The tray goes back into the drive.
- 7** Re-engage the power. Turn the main switch to OFF once, wait for at least one minute, then turn the switch back to ON.
- 8** 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.
- 9** Initialization is completed when the Attract Mode screen appears.
- 10** Press the DVD DRIVE switch so that the tray comes out. Remove the DVD.
- 11** 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.
- 12** Set the main switch to OFF.
- 13** Remove the DVD wire from the DVD DRIVE.

---

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

---

**15** Unlock and remove front door PCB.

---

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

---

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

---

**18** Attach and lock front door PCB.

---

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

---

### **Process for Turning on the Power**

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

When you turn on the power, the 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.

## 6-12 CONFIRMATION OF INSTALLATION

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].

### 1 Information Display Screen

When “SYSTEM INFORMATION,” “STORAGE INFORMATION,” or “JVS 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.

### 2 JVS 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.

### 3 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.

### 4 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.

### 5 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.)

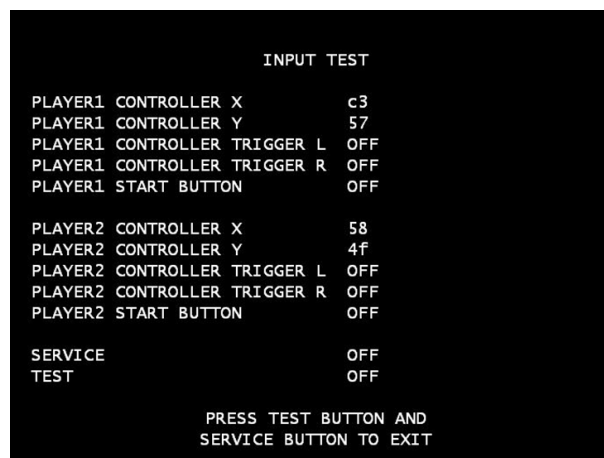


FIG. 6-13a INPUT TEST Screen

## 6 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.)

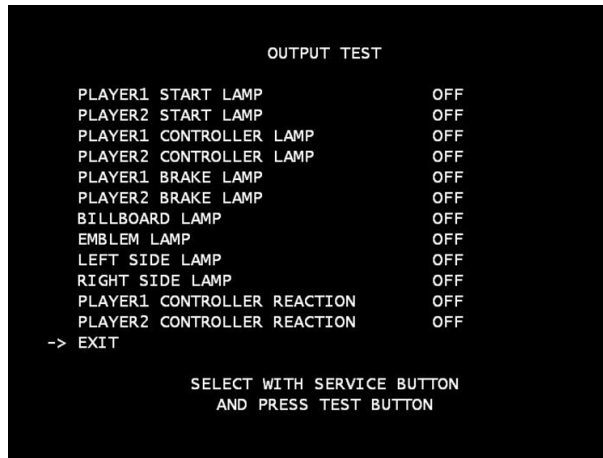


FIG. 6-13b OUTPUT TEST Screen

## 7 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.)

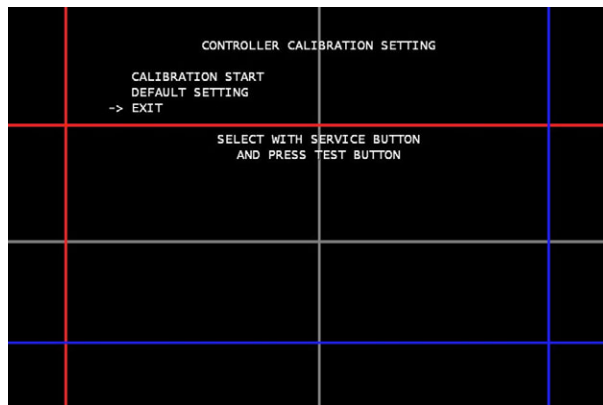


FIG. 6-13c GUN CALIBRATION Screen

Conduct the aforesaid tests when performing routine tests each month.

## **7** PRECAUTIONS WHEN MOVING

### **7-1 MOVING THE MACHINE**

#### **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 adjusters 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**

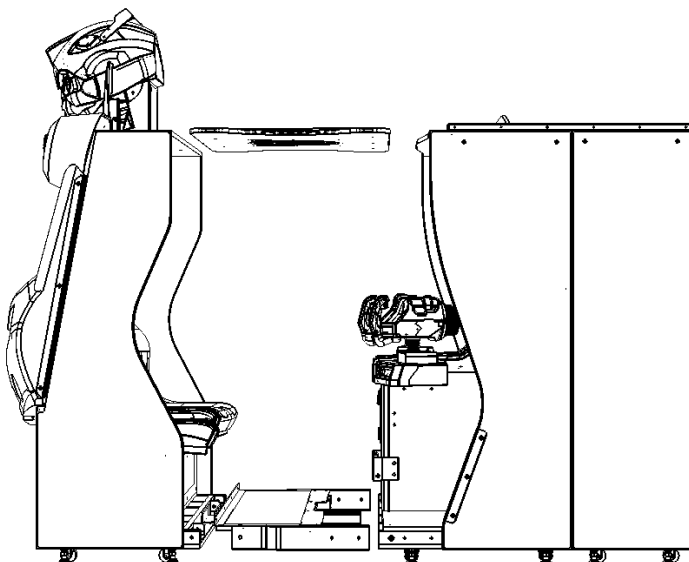
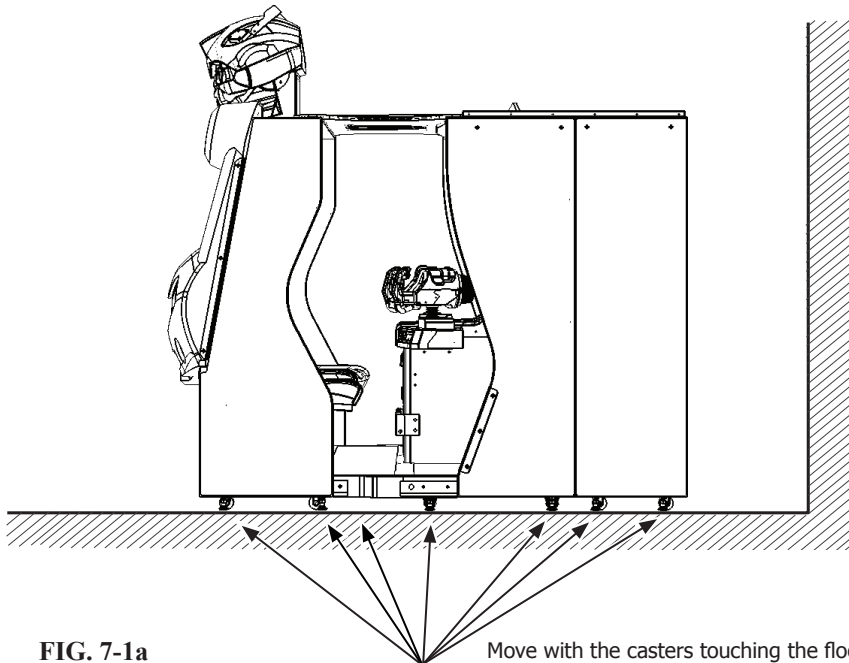
- When moving the components do not push any of the plastic elements or shaped parts. Do not use them to pull the components along either. This may damage the parts or the surrounding parts and this could lead to accidents or injury.
- After dividing the components to move them, do not use the Control 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.



## 7-2 SEPARATING THE MONITOR/GUN CABINET

### ⚠ 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.

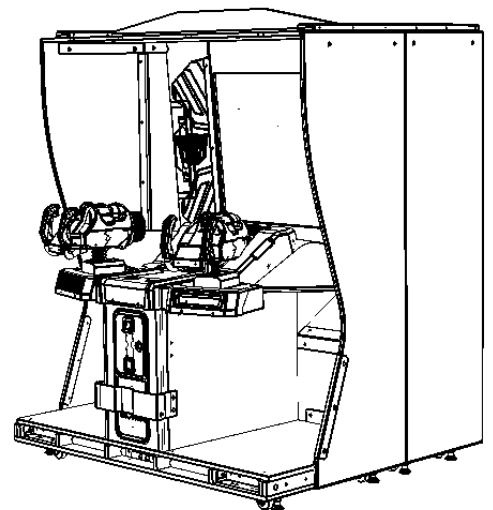


FIG. 7-2a MAIN CABINET

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

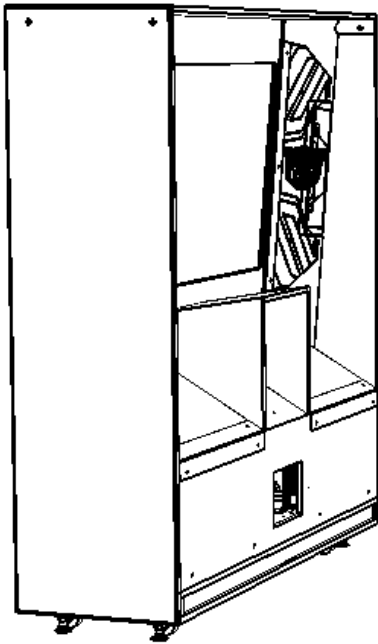


FIG. 7-2b MONITOR CABINET

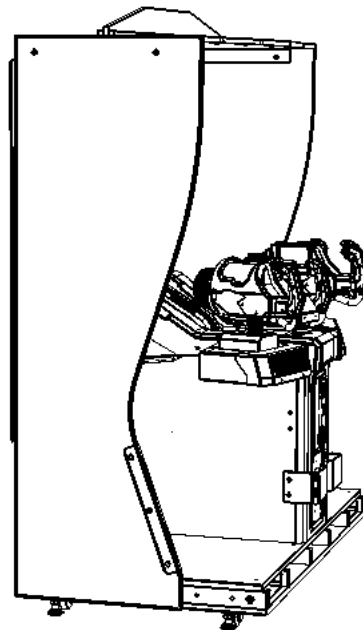


FIG. 7-2c GUN CABINET

- 1 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

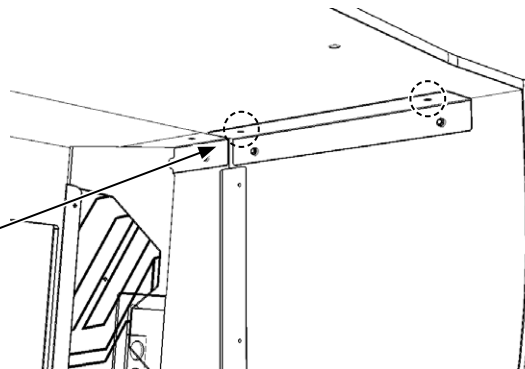


FIG. 7-2d

- 2 Repeat step for the Left hand Side

Socket Button Head Bolt  
029-B00830-0B

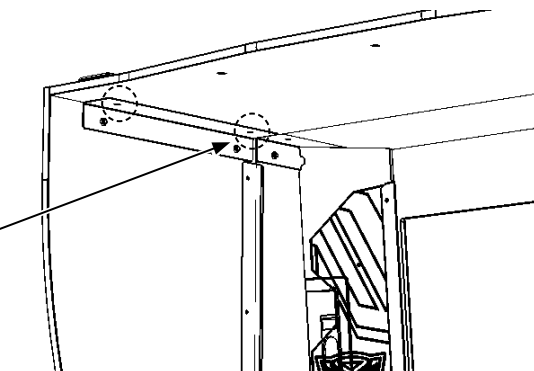


FIG. 7-2e

- 3 Remove the (2) M8x30 Hex Blt Pas from the Right hand side LOWER JOINT PLATE BKTS .

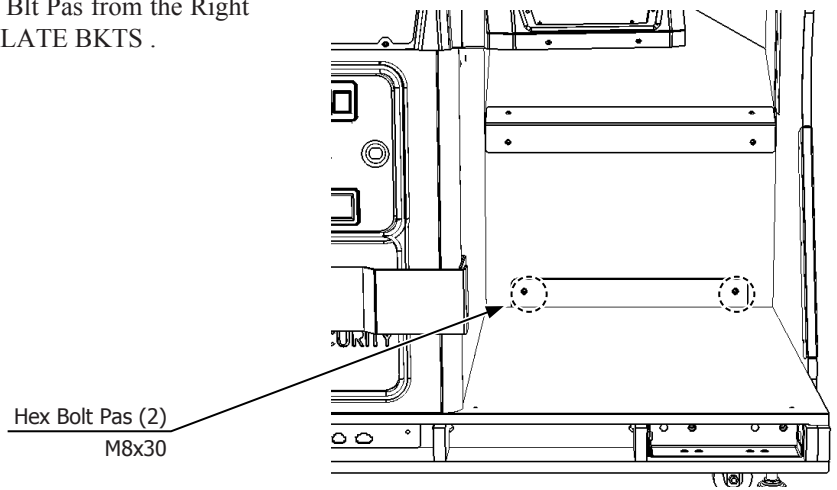


FIG. 7-2f

- 4 Repeat step 3 to remove the left hand side.

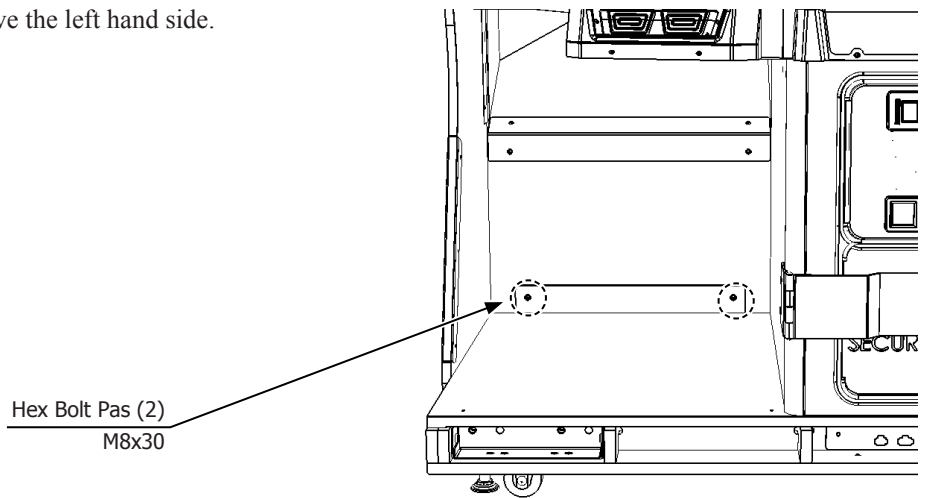


FIG. 7-2g

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

Disconnect the harness

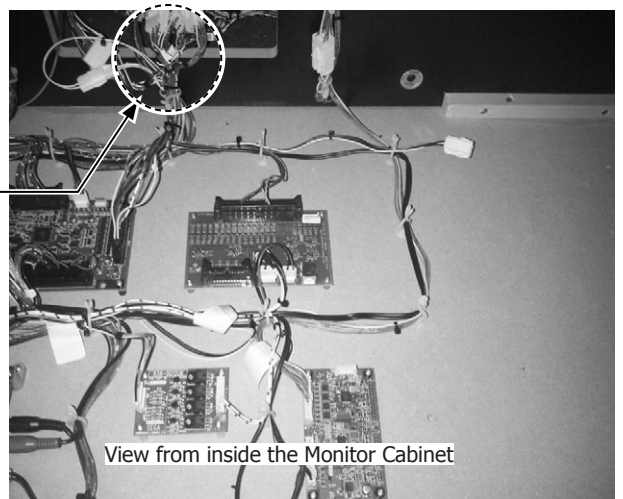


FIG. 7-2h

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

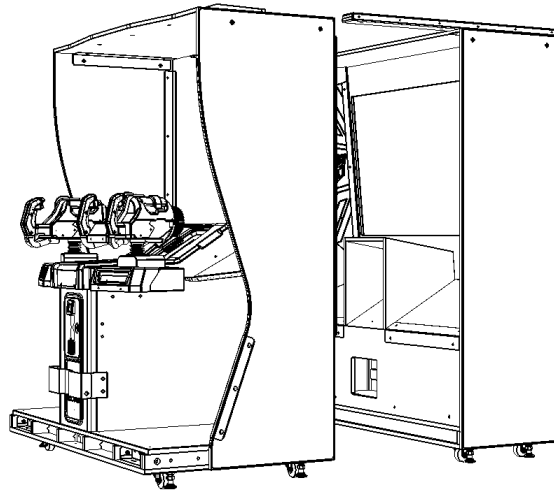


FIG. 7-2i

- 
- 7** 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.

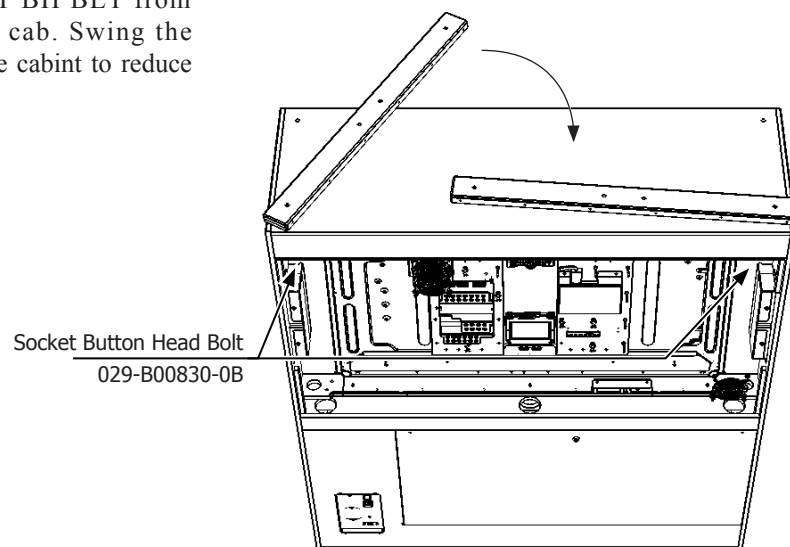


FIG. 7-2j

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

## 8 GAME DESCRIPTION

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.

### Game screen

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.



FIG. 8a

### Basic control

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

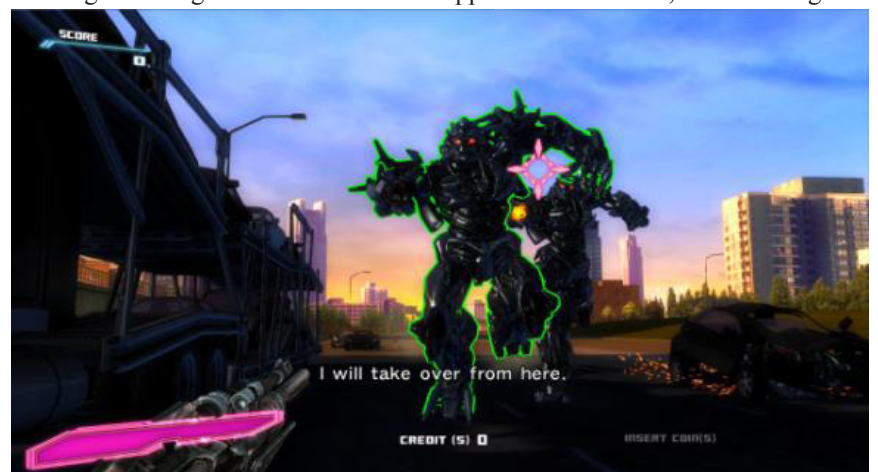


FIG. 8b

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

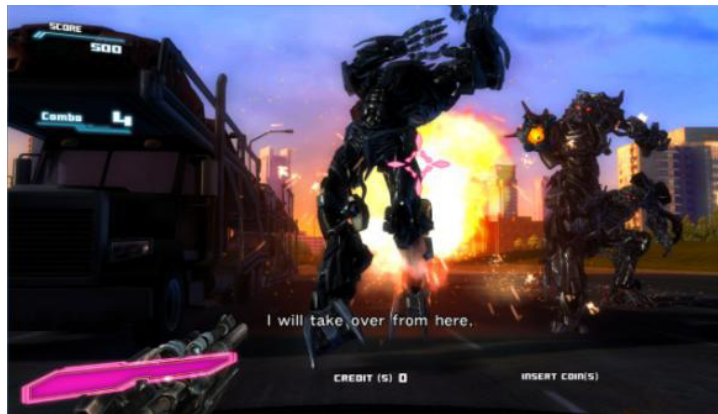


FIG. 8c

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



FIG. 8d

### 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 cooresponding crosshair between both players crosshair.



FIG. 8e

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



FIG. 8f

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.



FIG. 8g

### Super Alliance fire

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



FIG. 8h



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



FIG. 8i

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.



FIG. 8j

### Co Op Battle

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.



FIG. 8k

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



FIG. 8l

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.



FIG. 8m

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

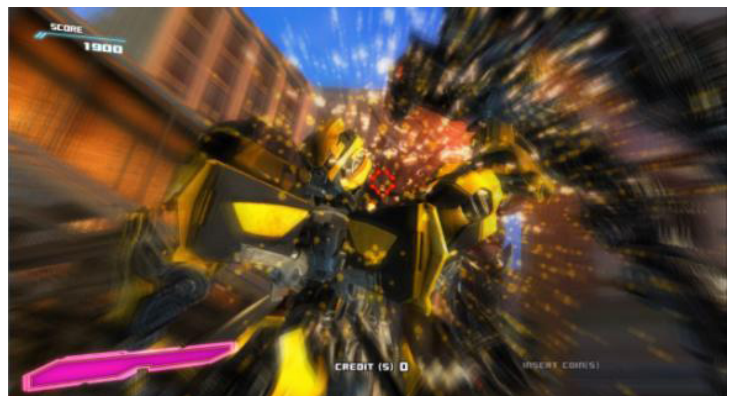


FIG. 8n

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

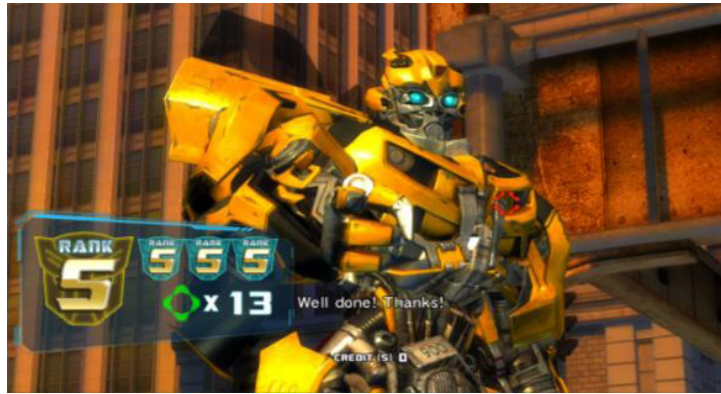


FIG. 8o

### Action Sequence Controls

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



FIG. 8p

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



FIG. 8q

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



FIG. 8r

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



FIG. 8s

### Boss Battle

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.



FIG. 8t

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.

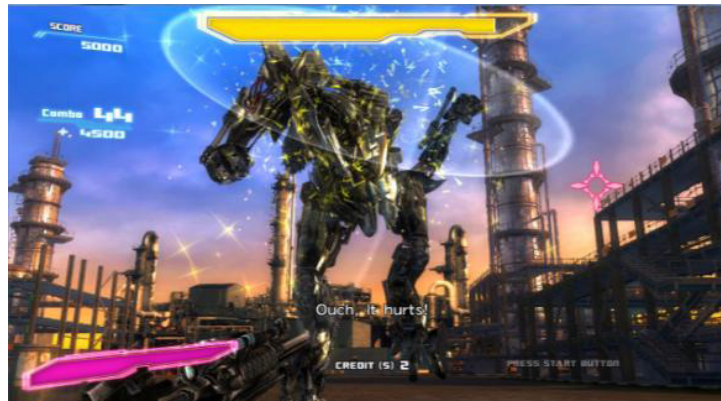


FIG. 8u

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.



FIG. 8v

### Stage & Friendship Results

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.

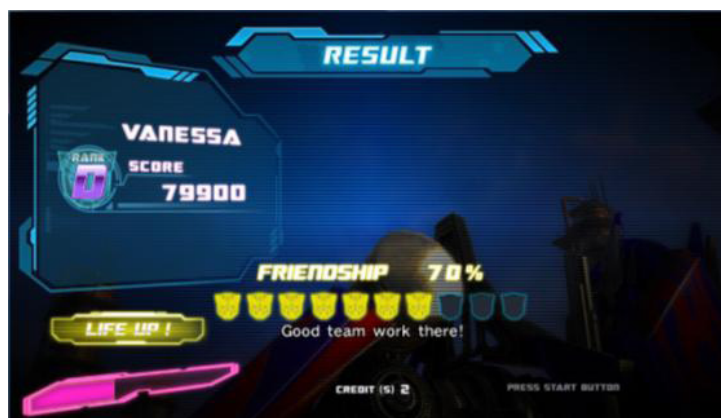


FIG. 8w

## HOW TO PLAY

### Join The Game

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.

### Game Continue

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.

### Game Over

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

### Name Entry

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.

### Using the Control Unit

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.

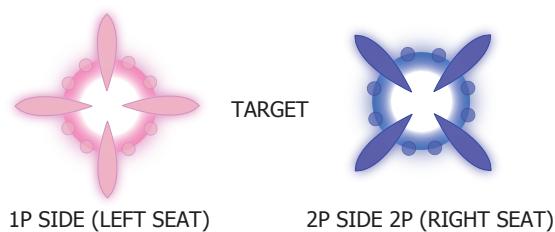


FIG. 8x Targets

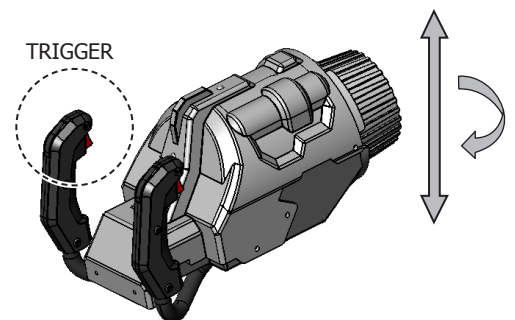


FIG. 8y Control Unit

## Game Rules

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.

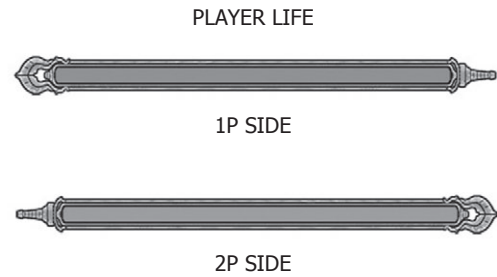
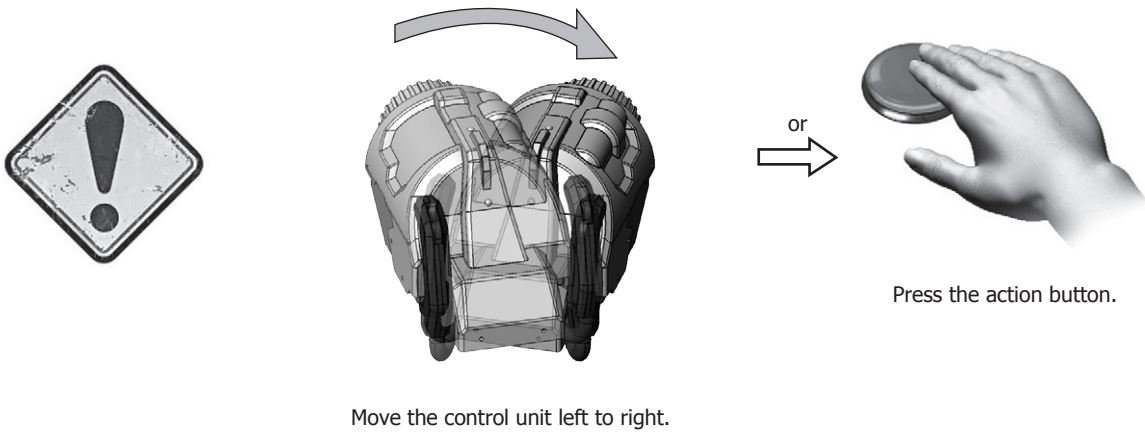


FIG. 8z

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.



Move the control unit left to right.

FIG. 8aa

## 9 EXPLANATION OF TEST AND DATA DISPLAY

### 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.

## 9-1 SWITCH UNIT AND COIN METER.

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.

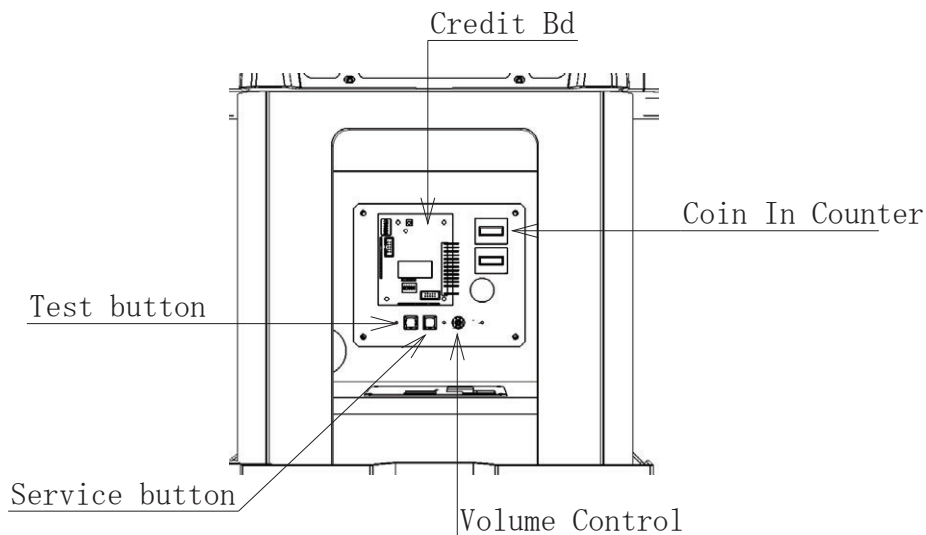


FIG. 9-1a Switch Unit

DEVICE	FUNCTION
TEST BUTTON	Press to enter TEST MODE - Also used to enter choices selected within TEST MODE
SERVICE BUTTON	Press for SERVICE CREDIT - Also used to scroll through TEST MENUs
COIN IN COUNTER	Counts inserted coins (£0.10 or \$0.10 = 1 count)
VOLUME CONTROL	Adjusts audio level

## 9-2 SYSTEM TEST MODE

### 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.

- 1 When the TEST Button is pressed, the system test mode menu screen (SYSTEM TEST MODE) appears.
- 2 Use the SERVICE Button to move the cursor to the desired test item.
- 3 Press the TEST Button to confirm selection of the item.
- 4 When testing and checking are completed, select EXIT and press the TEST Button. The SYSTEM TEST MODE screen reappears.
- 5 When all tests are completed, select EXIT and press the TEST Button. The game screen reappears.

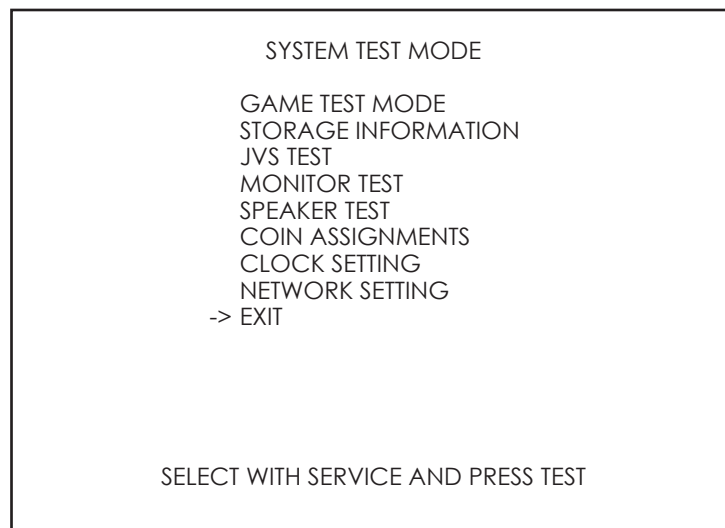


FIG. 9-2 SYSTEM TEST MODE Screen

## 9-3 GAME TEST MODE

### 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.

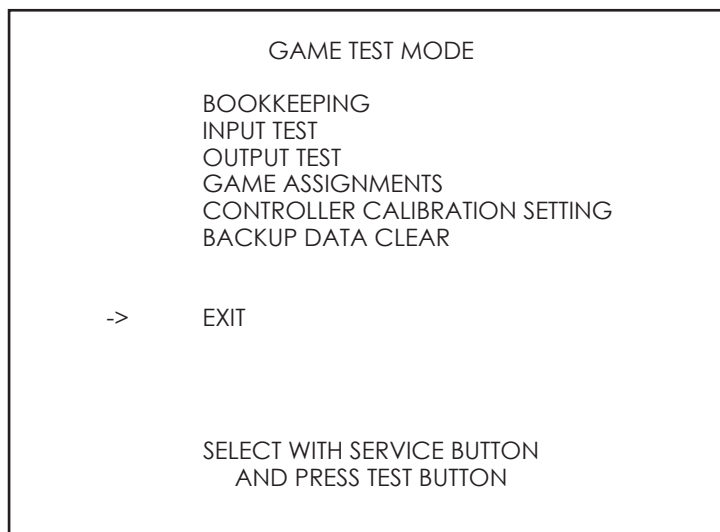


FIG. 9-3a GAME TEST MODE MENU Screen

- 1 Press the SERVICE Button to highlight the desired menu item with the cursor.
- 2 Press the TEST Button to perform the selected item. To learn how to proceed after executing the selected item, read the item's explanation.
- 3 When test or setting is completed, take steps to have the game test mode menu screen reappear. The steps involved vary with the item.
- 4 Select EXIT and press the TEST Button. The system test mode menu screen reappears.
- 5 On the system test mode menu screen, select EXIT and press the TEST Button. The game screen reappears.

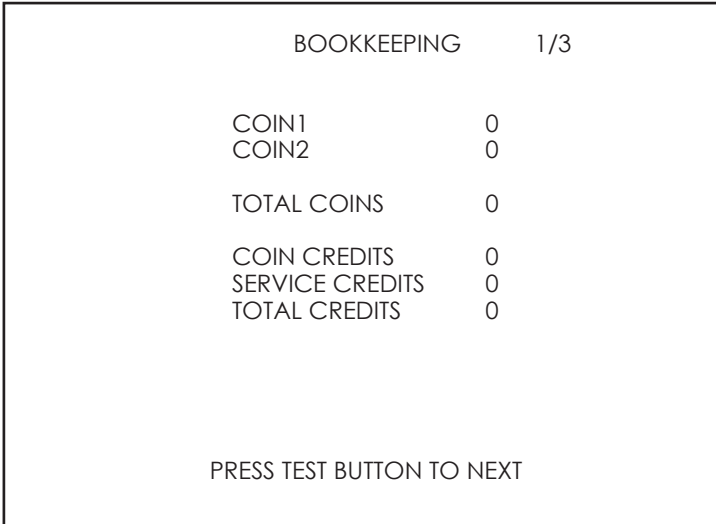
• Menu Item

BOOKKEEPING	Displays all recorded game data
INPUT TEST	Tests each input device used in this game
OUTPUT TEST	Tests each output device used in this game
GAME ASSIGNMENTS	Adjust game specific settings
CONTROLLER CALIBRATION	Adjust controller aim settings
BACKUP DATA CLEAR	Erases all types of game records

## 9-3a BOOKKEEPING

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.



The screenshot shows a screen titled "BOOKKEEPING" with a page indicator "1/3" in the top right corner. The screen displays a list of items and their corresponding counts:

COIN1	0
COIN2	0
TOTAL COINS	0
COIN CREDITS	0
SERVICE CREDITS	0
TOTAL CREDITS	0

At the bottom of the screen, the text "PRESS TEST BUTTON TO NEXT" is displayed.

**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.

BOOKKEEPING		2/3
NUMBER OF GAMES		0
NUMBER OF SINGLEPLAY		0
FIRST PLAY		0
CONTINUE PLAY		0
TOTAL TIME		00 D 00 H 00 M 00 S
PLAY TIME		00 D 00 H 00 M 00 S
AVERAGE GAME TIME		00 H 00 M 00 S
AVERAGE PLAY TIME		00 H 00 M 00 S
LONGEST PLAY TIME		00 H 00 M 00 S
SHORTEST PLAY TIME		00 H 00 M 00 S
PRESS TEST BUTTON TO NEXT		

**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.

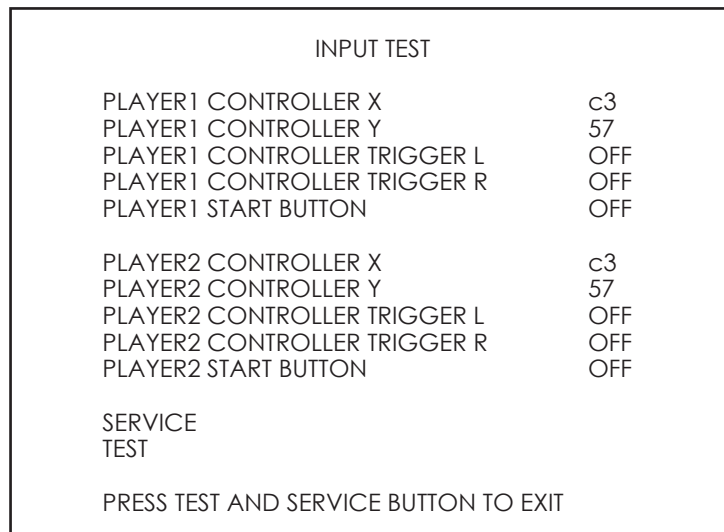
BOOKKEEPING		3/3
GAME HISTOGRAM		
0M 00S - 0M 29S		0
0M 30S - 0M 59S		0
1M 00S - 1M 29S		0
1M 30S - 1M 59S		0
2M 00S - 2M 29S		0
2M 30S - 2M 59S		0
3M 00S - 3M 29S		0
3M 30S - 3M 59S		0
4M 00S - 4M 29S		0
4M 29S - 4M 59S		0
5M 00S - 5M 29S		0
5M 30S - 5M 59S		0
6M 00S - 6M 29S		0
6M 30S - 6M 59S		0
OVER 10M 00S		0
PRESS TEST BUTTON TO NEXT		

**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

## 9-3b INPUT TEST



**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>

- 1** Press the SERVICE Button and move the cursor to the item (output device) you want to test.
- 2** 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.
- 3** Press the SERVICE Button and move the cursor to EXIT.
- 4** When the TEST Button is pressed, the game test mode menu screen reappears.

### <Menu Explanation>

PLAYER1 CONTROLLER X	Move the player 1 controller up, down, left and right and the data (x and y of the controller) varies based on movement.
PLAYER1 CONTROLLER Y	Move the player 1 controller up, down, left and right and the data (x and y of the controller) varies based on movement.
PLAYER1 CONTROLLER TRIGGER L	Pull the player 1 controller's left trigger, the item will display "ON", release the trigger, the item will display "OFF".
PLAYER1 CONTROLLER TRIGGER R	Pull the player 1 controller's right trigger, the item will display "ON", release the trigger, the item will display "OFF".
PLAYER1 START BUTTON	Press the player 1 START button - the item will show "ON"
PLAYER2 CONTROLLER X	Move the player 2 controller up, down, left and right and the data (x and y of the controller) varies based on movement.
PLAYER2 CONTROLLER Y	Move the player 2 controller up, down, left and right and the data (x and y of the controller) varies based on movement.
PLAYER2 CONTROLLER TRIGGER L	Pull the player 2 controller's left trigger, the item will display "ON", release the trigger, the item will display "OFF".
PLAYER2 CONTROLLER TRIGGER R	Pull the player 2 controller's right trigger, the item will display "ON", release the trigger, the item will display "OFF".
PLAYER2 START BUTTON	Press the player 2 START button - the item will show "ON"
SERVICE	Press the SERVICE button - the item will show "ON"
TEST	Press the TEST button - the item will show "ON"

## 9-3c OUTPUT TEST

OUTPUT TEST	
PLAYER1 START LAMP	OFF
PLAYER2 START LAMP	OFF
PLAYER1 CONTROLLER LAMP	OFF
PLAYER2 CONTROLLER LAMP	OFF
PLAYER1 BRAKE LAMP	OFF
PLAYER 2 BRAKE LAMP	OFF
BILLBOARD LAMP	OFF
EMBLEM LAMP	OFF
LEFT SIDE LAMP	OFF
RIGHT SIDE LAMP	OFF
PLAYER 1 CONTROLLER REACTION	OFF
PLAYER 2 CONTROLLER REACTION	OFF
EXIT	
SELECT WITH SERVICE BUTTON AND PRESS EXIT	

**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>

- 1** Press the SERVICE Button and move the cursor to the item (output device) you want to test.
- 2** 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.
- 3** Press the SERVICE Button and move the cursor to EXIT.
- 4** When the TEST Button is pressed, the game test mode menu screen reappears.

### <Menu Explanation>

PLAYER1 START LAMP	Toggle OFF/ON to illuminate player 1 start lamp.
PLAYER 2 START LAMP	Toggle OFF/ON to illuminate player 2 start lamp.
PLAYER1 CONTROLLER LAMP	Toggle OFF/ON to illuminate player 1 controller lamp.
PLAYER2 CONTROLLER LAMP	Toggle OFF/ON to illuminate player 2 controller lamp.
PLAYER1 BRAKE LAMP	Toggle OFF/ON to illuminate player 1 brake lamp.
PLAYER2 BRAKE LAMP	Toggle OFF/ON to illuminate player 2 brake lamp.
BILLBOARD LAMP	Toggle OFF/ON to illuminate billboard lamp (eyes)
EMBLEM LAMP	Each press of the TEST button will step the Autobots Emblem lamp through "RED", "GREEN", "BLUE" colour sequence.
LEFT SIDE LAMP	Each press of the TEST button will step the left display screen lamp through "BLUE", "RED", "MAGENTA", "GREEN", "CYAN", "YELLOW", "WHITE", "OFF" sequence
RIGHT SIDE LAMP	Each press of the TEST button will step the right display screen lamp through "BLUE", "RED", "MAGENTA", "GREEN", "CYAN", "YELLOW", "WHITE", "OFF" sequence
PLAYER1 CONTROLLER REACTION	Toggle OFF/ON to engage player 1 controller feedback.
PLAYER2 CONTROLLER REACTION	Toggle OFF/ON to engage player 2 controller feedback.

## 9-3d GAME ASSIGNMENTS

### 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.

GAME ASSIGNMENTS	
GAME DIFFICULTY	NORMAL
ADVERTISE SOUND	NORMAL
REVIVAL	ON
PLAYER 1 CONTROLLER REACTION	ON
PLAYER 2 CONTROLLER REACTION	ON
CONTINUE COUNTDOWN	20
KIDS MODE	OFF
SELECT STAGE	ON
SWIPE CARD TO PLAY	OFF
CAMPAIGN	ON
EXIT	ON

SELECT WITH SERVICE BUTTON  
AND PRESS TEST BUTTON

FIG. 9-3d GAME ASSIGNMENTS Screen

The various game settings are established.

#### <Operation>

- 1 Press the SERVICE Button, move the cursor to the item whose setting is to be changed and select the item.
- 2 When the TEST Button is pressed, the preset value of the selected item changes.
- 3 Press the SERVICE Button and move the cursor to EXIT.
- 4 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 simultaneously.
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

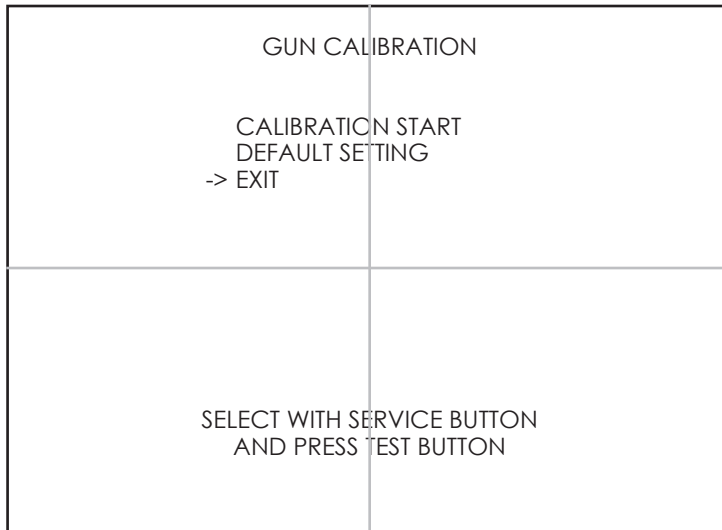


SELECT STAGE:	Set to "ON" to enable stage selection. DEFAULT = "ON".
SWIPE CARD TO PLAY:	TOGGLE ON/OFF: When "ON" the information "SWIPE CARD TO PLAY" will be shown at the bottom of the screen during attract. When "OFF" it will read "INSERT COINS TO PLAY". Turn sound during the Attract (standby) mode.
CAMPAIGN:	Toggle ON/OFF: Set to "OFF" to disable campaign. DEFAULT = ON
EXIT:	Return to the Game Test Menu screen.

### 9-3e GUN CALIBRATION SETTINGS

**STOP IMPORTANT**

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



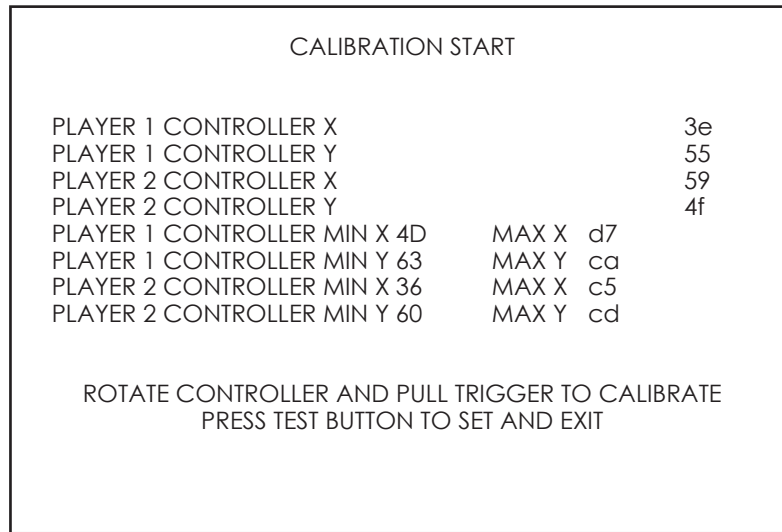
**FIG. 9-3e01 GUN CALIBRATION Screen**

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>**

- 1** Press the SERVICE Button and move the cursor to the item you want to select.
- 2** Move the cursor to CALIBRATION START and press the TEST Button to adjust the calibration.
- 3** 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>

- 1
 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.
- 2
 Press the TEST Button and the calibration settings will be altered to reflect all changes made before returning to the GAME TEST Mode screen.

## 9-3f BACKUP DATA CLEAR

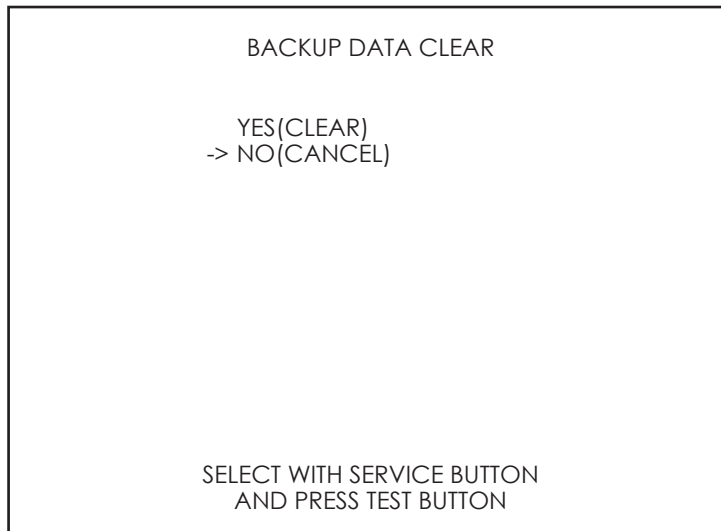


FIG. 9-3f BACKUP DATA CLEAR Screen

- 1** Press the SERVICE Button and move the cursor to the item you want to select.
- 2** 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.
- 3** Move the cursor to NO (CANCEL) and press the TEST Button to return to the game test mode menu screen without clearing the data.

## 10 VIDEO DISPLAY

### CAUTION

The LCD display screen is adjusted prior to leaving the factory. Avoid any unnecessary adjustment.

### 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 adhesive may damage the surface of the screen.

## 10-1 GENERAL DESCRIPTION

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%

## 10-2 CLEANING THE SCREEN

### **⚠ 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 bumping your head.
- 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.

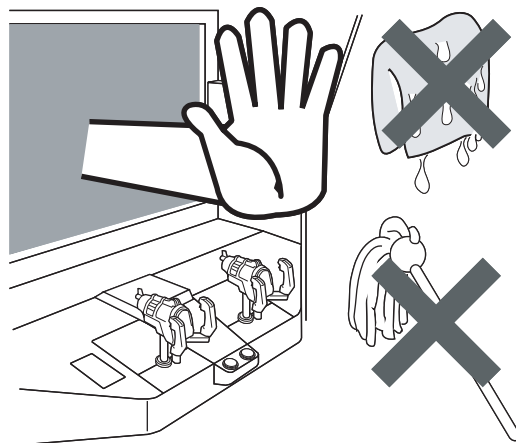


FIG. 10-1

## 11 CONTROL 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.

### 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.

## 11-1 HOW TO REMOVE CONTROL UNIT

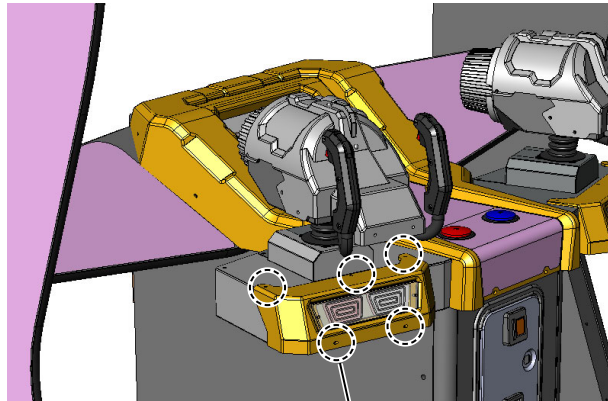
When changing the volume or microswitches in the Control Unit you must first remove the Control Unit. Performing these operations with the Control Unit still attached is difficult and may damage parts or wires.

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

**1** Turn off the power.

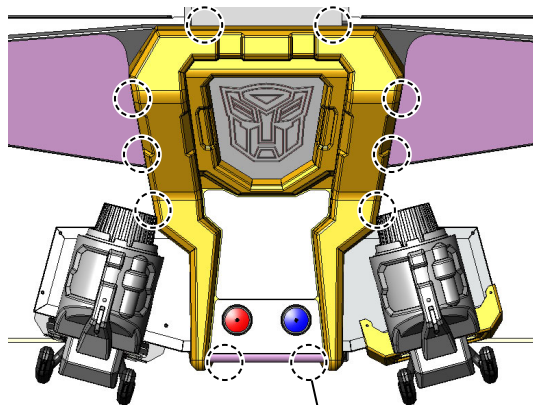
**2** Remove the (5) M4x12 Internal Hex screws which secure the Brake Light Cover to the Control Panel Assy



INTERNAL HEX SCREW (5 ea.), black  
M4x12

FIG. 11-1a

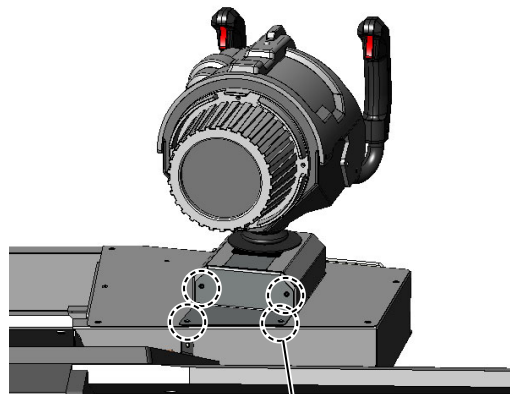
**3** Remove the (10) Internal Hex screw which secure the Control Panel Cover. Carefully lift the Control Panel Cover up to gain access to the Player 1 and Player 2 Start Buttons. Unclip the buttons from their respective housings and remove.



INTERNAL HEX SCREW (10 ea.), black  
M4x12

FIG. 11-1b

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



INTERNAL HEX SCREW (4 ea.), black  
M4x12

FIG. 11-1c

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

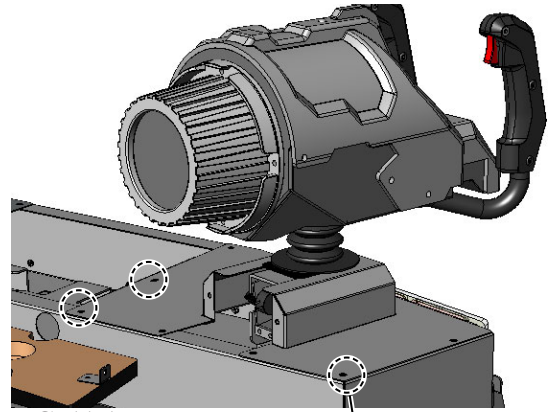


FIG. 11-1d

INTERNAL HEX SCREW (3 ea.), black  
M4x12

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

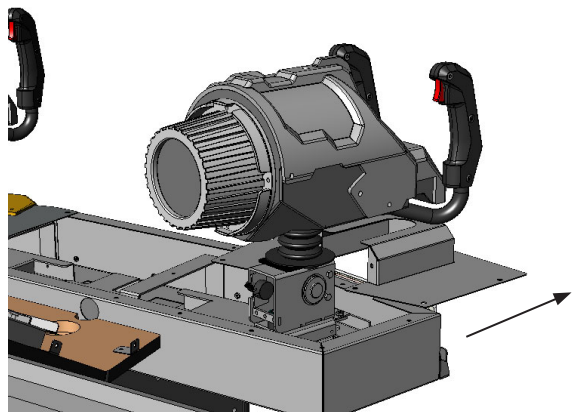


FIG. 11-1e

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

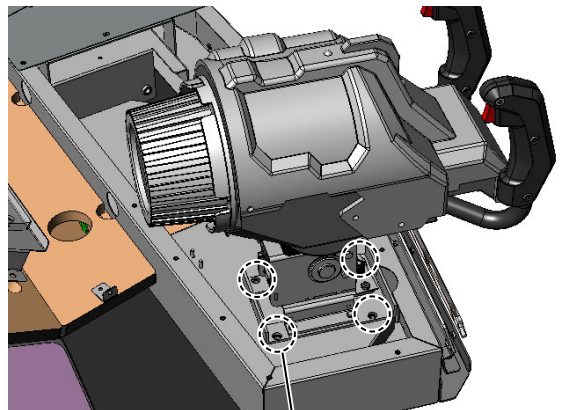


FIG. 11-1f

HEX BLT PAS (4 ea.)  
M8x20



- 
- 7** Lift the Control Unit directly upward and remove it.

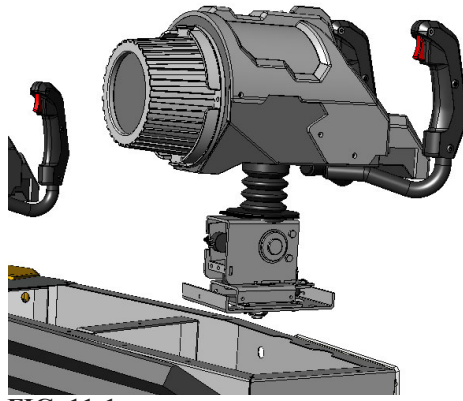


FIG. 11-1g

## 11-2 ADJUSTING OR REPLACING THE X AXIS VOLUME

### **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.

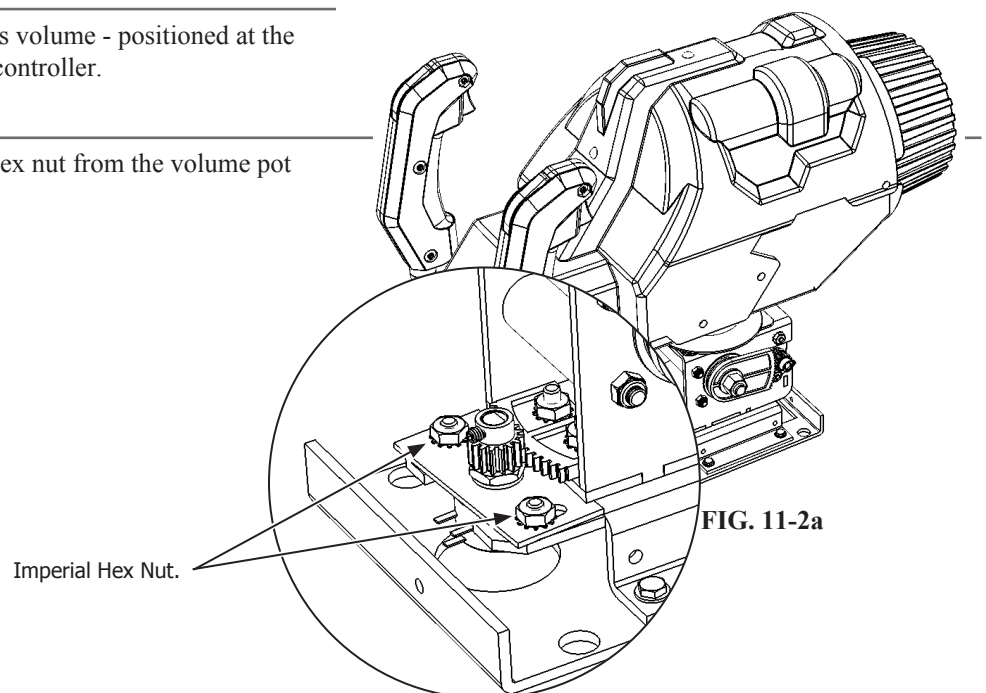
If the X axis volume does not seem to be working properly and the TEST Mode calibration screen has no effect, the cause is likely to be a problem with or damage to the gears of the X axis volume.

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.

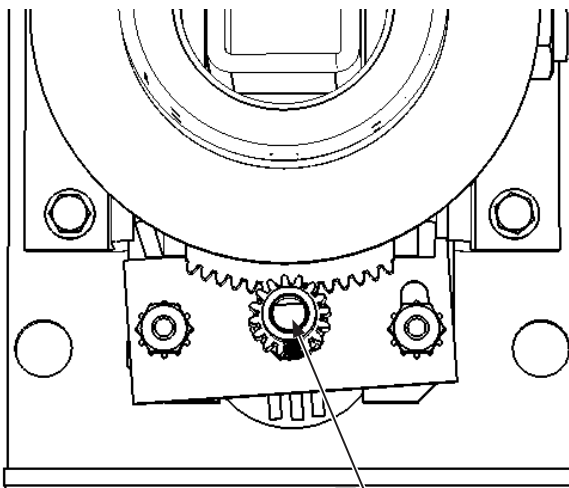
- Wrench or screwdriver for tamperproof screws (for M4)
- A 7 millimeter spanner, hexagonal screwdriver, or socket wrench
- An 11-12 millimeter spanner
- Cutters
- Wire stripper
- Soldering iron
- Industrial heat gun

### Adjustment

- 1 Turn off the power and remove the Control Unit (see 11-1).
- 2 Locate the X axis volume - positioned at the rear base of the controller.
- 3 Loosen the (2) hex nut from the volume pot bracket.



- 
- 4** 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



**FIG. 11-2b X Axis (Left and Right) Volume**

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

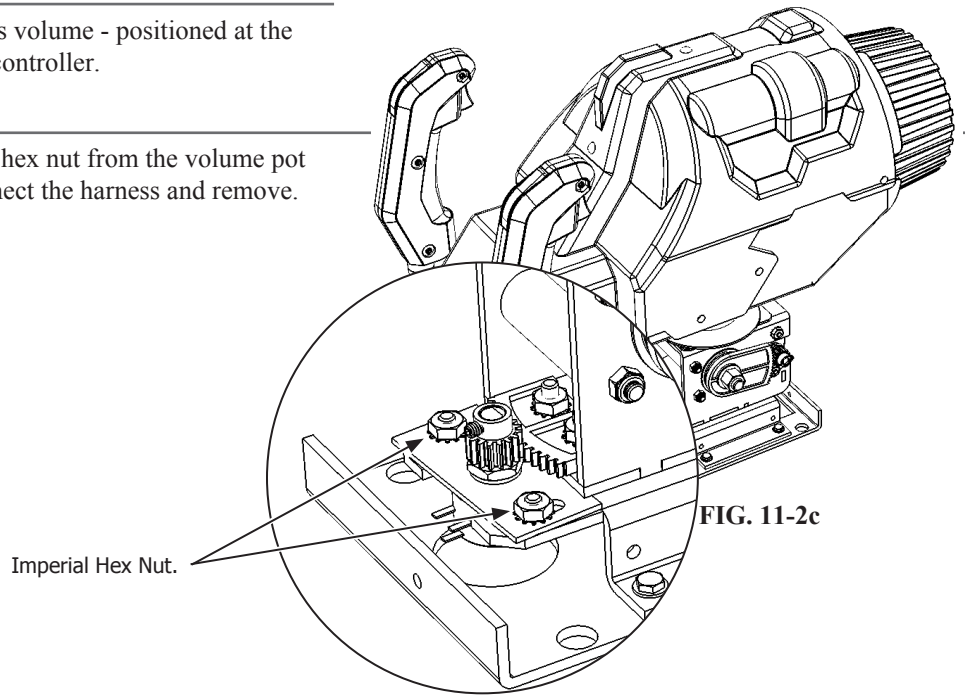
- 
- 5** Tighten the two previously loosened screws.
- 
- 6** Move the Control Unit left and right and check that the gears move smoothly.
- 
- 7** Reattach the Control Unit, then turn on the power and adjust the volume value on the calibration screen.

**Replace**

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

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

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



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

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

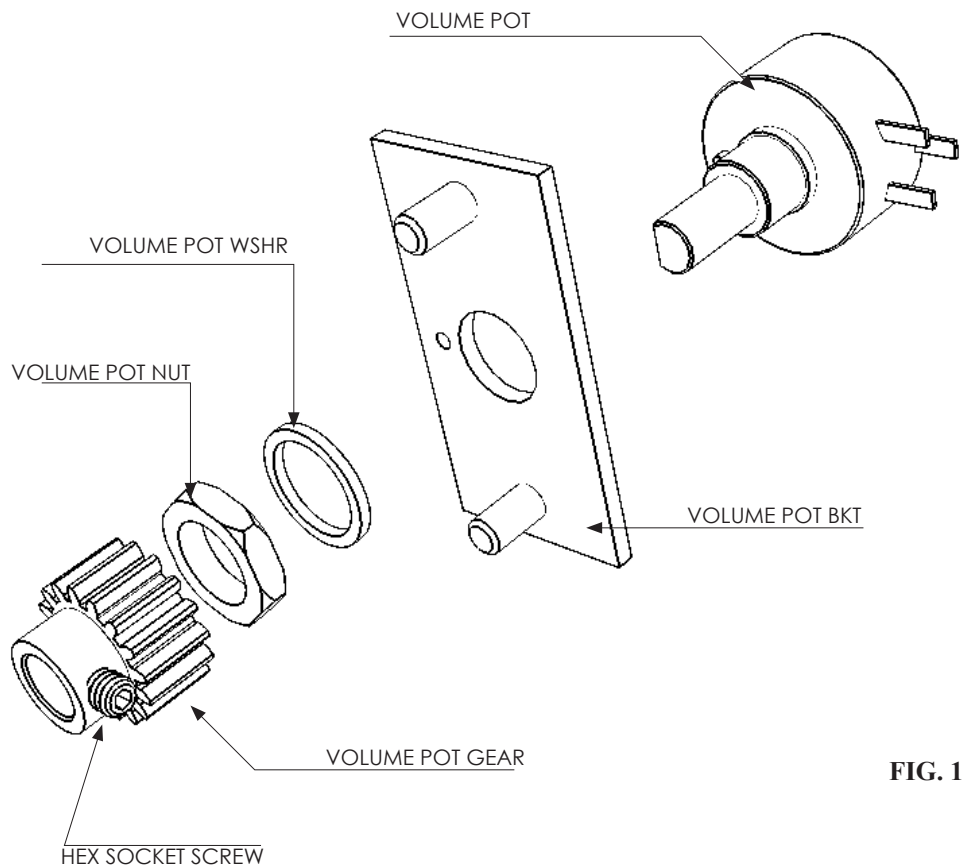


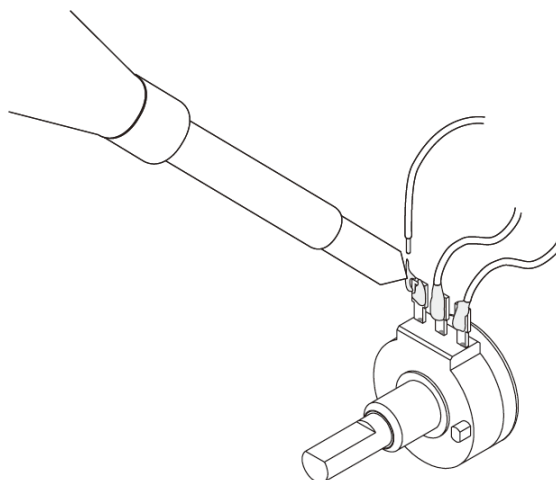
FIG. 11-2d

---

**6** 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.

---

**7** 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.



**FIG. 11-2e**

---

**8** 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.

---

**9** 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.

---

**10** 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.

## Greasing

### **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.

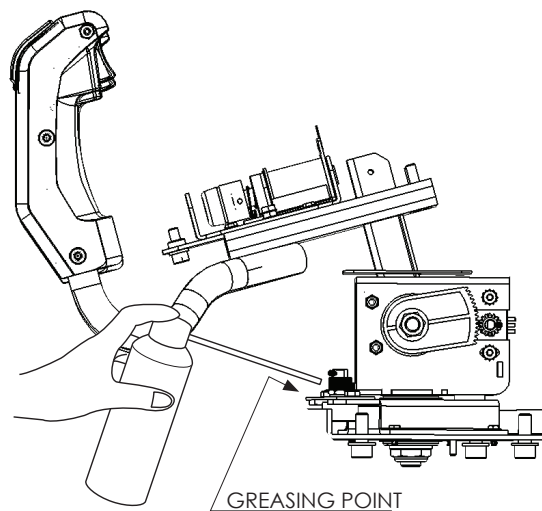


FIG. 11-2f

## 11-3 ADJUSTING OR CHANGING THE Y AXIS VOLUME

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

### Adjustment

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

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

**3** 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.

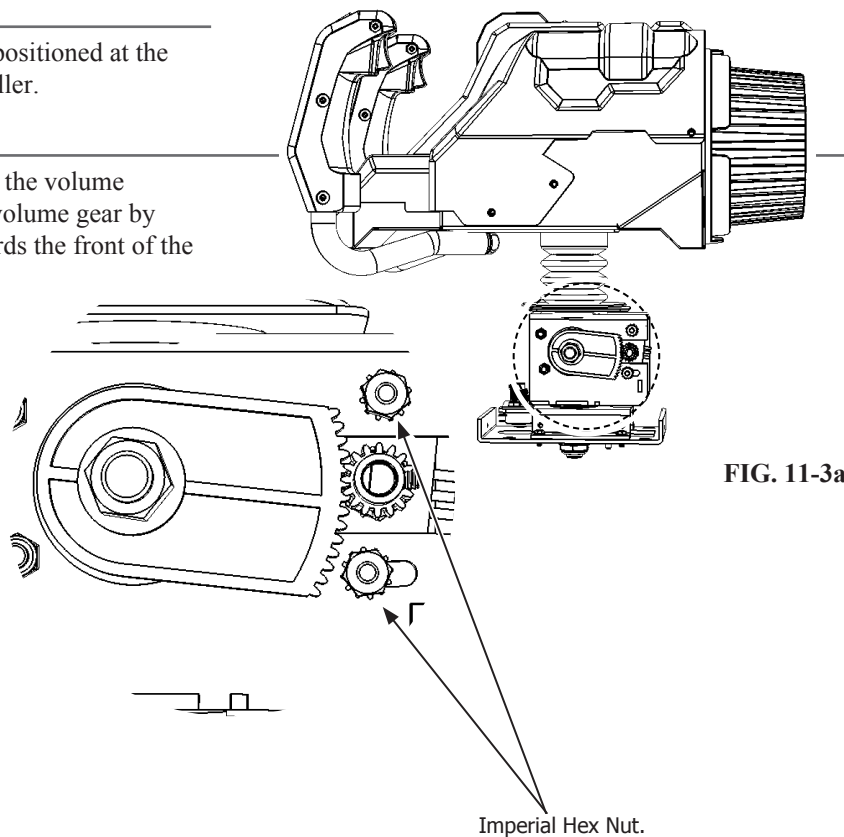


FIG. 11-3a

- 4 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

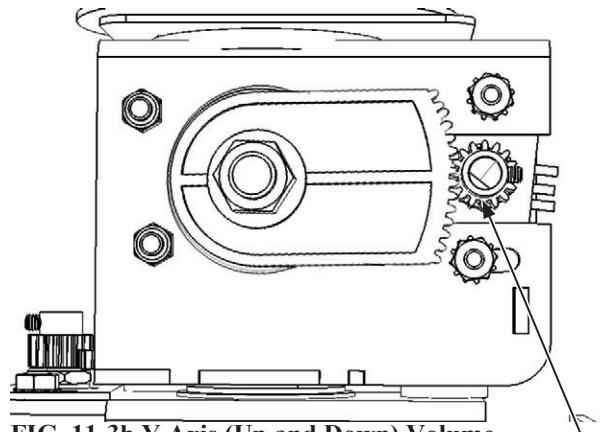


FIG. 11-3b Y Axis (Up and Down) Volume

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

- 5 Engage the gears and tighten the two previously loosened screws.
- 6 Move the Control Unit up and down and check that the gears move smoothly.
- 7 Reattach the Control Unit, then turn on the power and adjust the volume value on the calibration screen.

**Replace**

- 1 Turn off the power and remove the Control Unit (see 11-1).
- 2 Locate the X axis volume - positioned at the rear base of the controller.
- 3 Unscrew the (2) hex nut from the volume pot bracket. Disconnect the harness and remove.

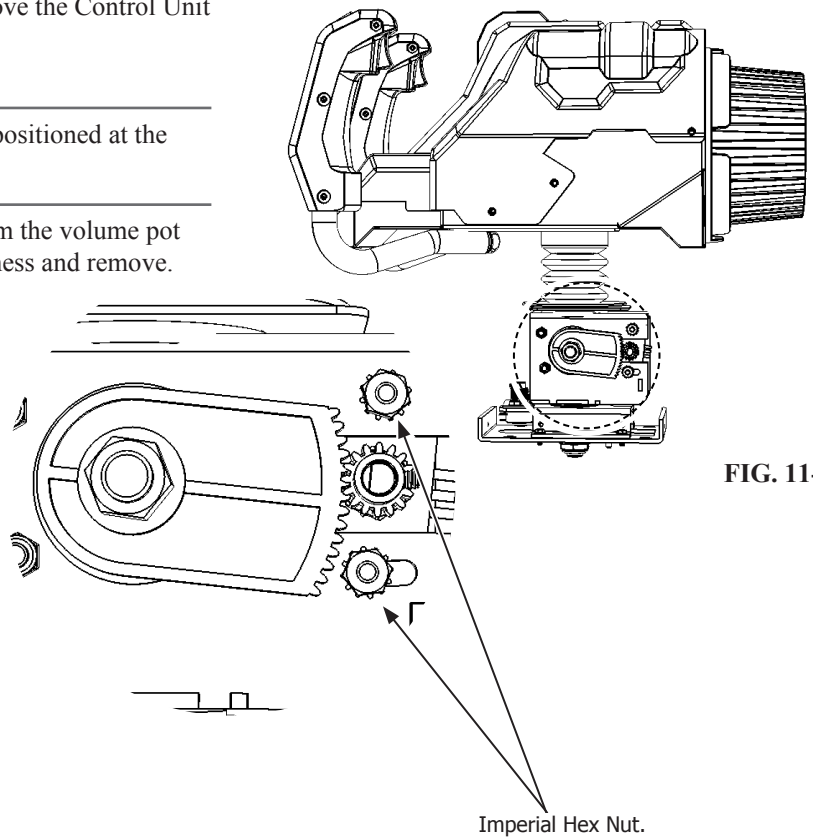
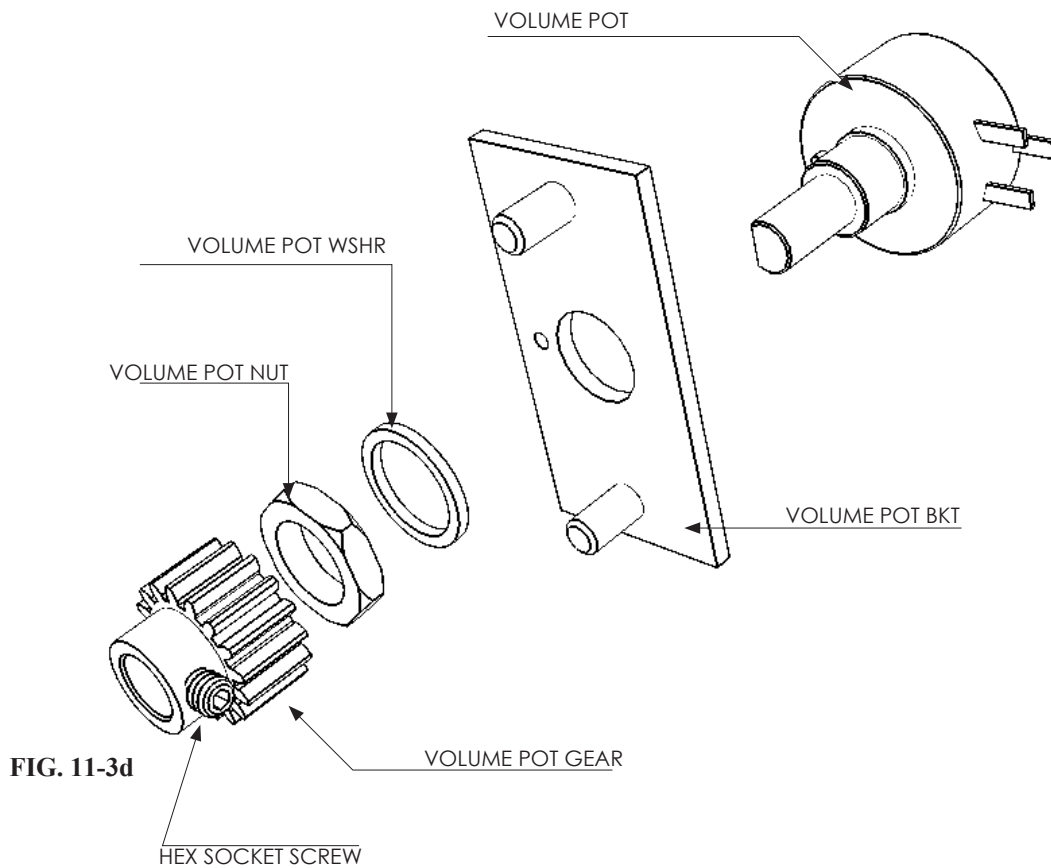


FIG. 11-3c



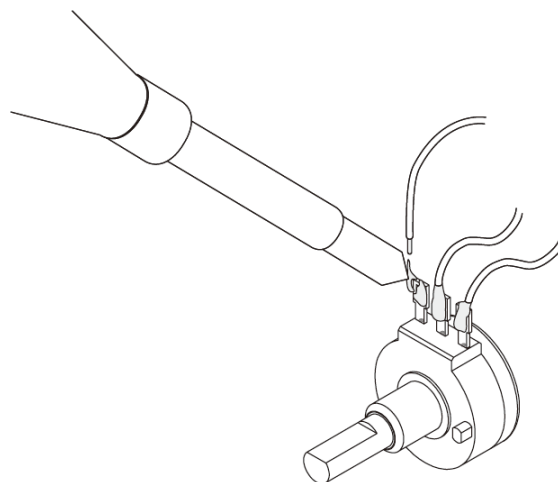
**4** Loosen the single hexagonal grub screw on the volume pot gear and remove the gear.

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



**6** 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.

**7** 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.



- 8 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.
- 9 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.
- 10 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.

### Greasing

## 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.

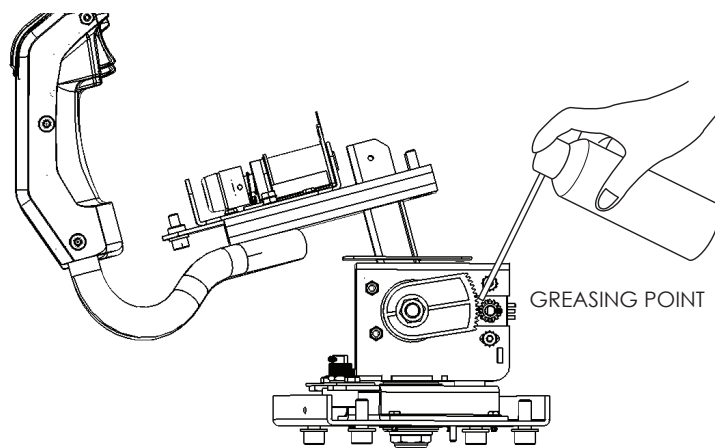


FIG. 11-3f

## 11-4 REPLACING THE TRIGGER SWITCH

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.

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

**2** 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).



FIG. 11-4a

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



FIG. 11-4b

- 4** 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.



FIG. 11-4c

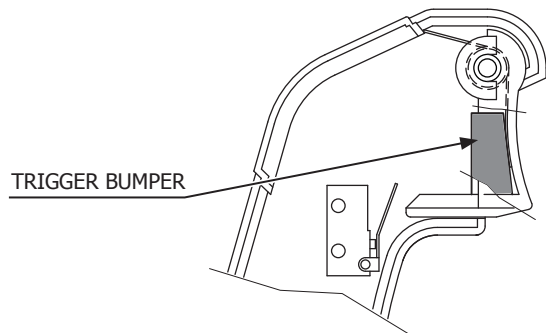


FIG. 11-4d

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



FIG. 11-4e

- 6** 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.
- 7** Use the soldering iron to remove the wire soldered to the microswitch terminal.
- 8** Pass the wire through each of the heat shrink tubes.
- 9** 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.

---

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

---

**11** Insert the microswitch into the left grip and attach it.

---

**12** 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.

---

**13** Reattach the Control Unit to the cabinet.

---

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

---

## 11-5 REPLACING THE FEEDBACK COIL

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.

### 11 CONTROL UNIT

- 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

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

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

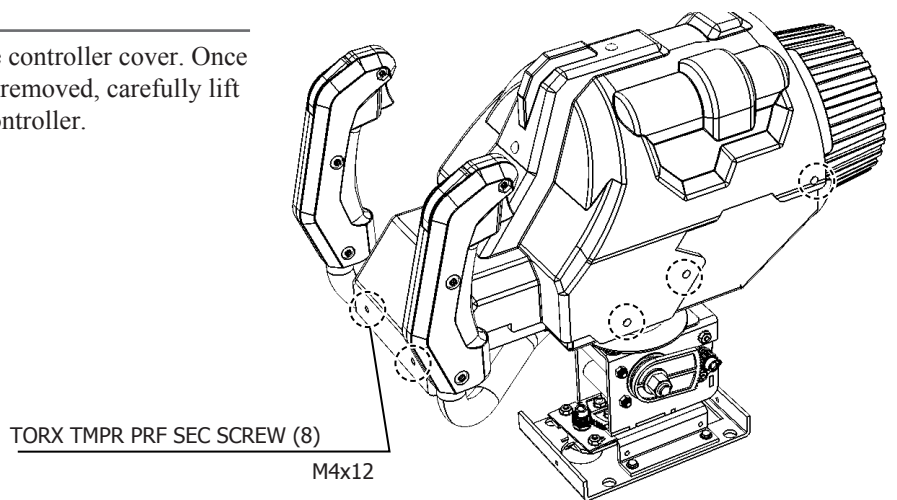


FIG. 11-5a

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

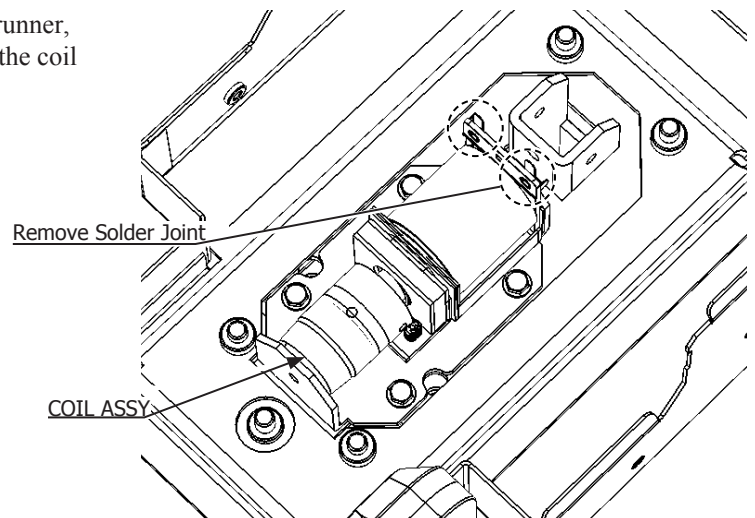


FIG. 11-5b

*Note: This image has been modified to easy illustration*

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

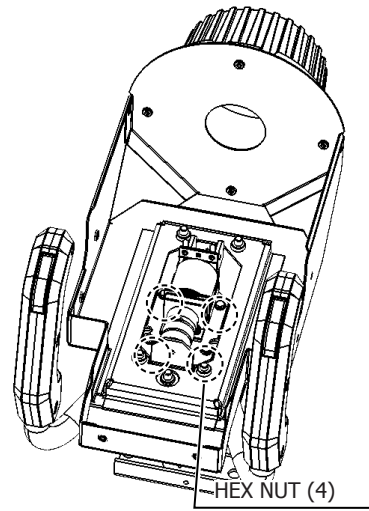


FIG. 11-5c

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

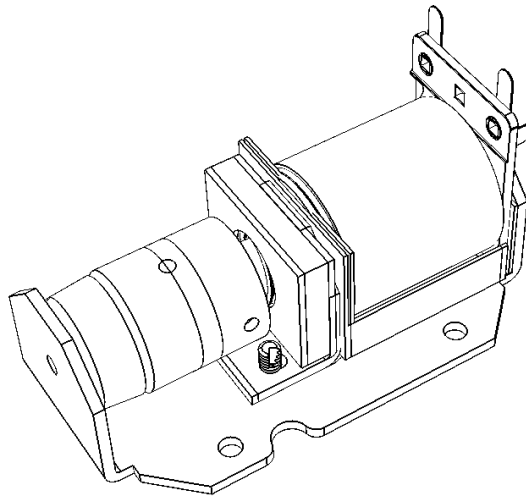


FIG. 11-5d

## 12 COIN HANDLING

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.

### 12-1 CLEANING THE COIN SELECTOR

#### **STOP** IMPORTANT

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

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

- 1 Turn the power for the machine OFF. Open the Coin Chute Door
- 2 Remove the Coin Selector from the Coin Chute Door
- 3 Open the gate and dust off by using a soft brush (Small soft Paint Brush, etc.)

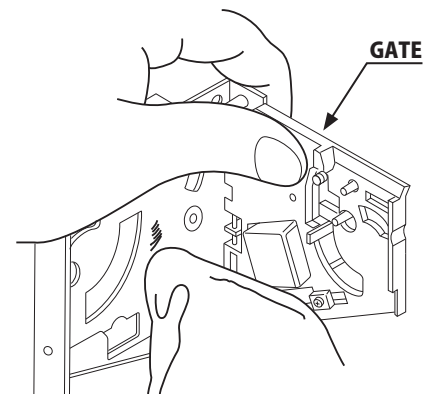


FIG. 12-1a



## CLEANING THE COIN SELECTOR (MECHANICAL).

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

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

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

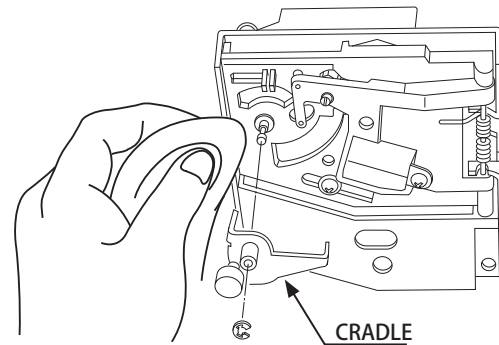


FIG. 12-1b

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

### Coin Insertion Test

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

Does the Coin Meter count satisfactorily?

Does the coin drop into the cashbox correctly?

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

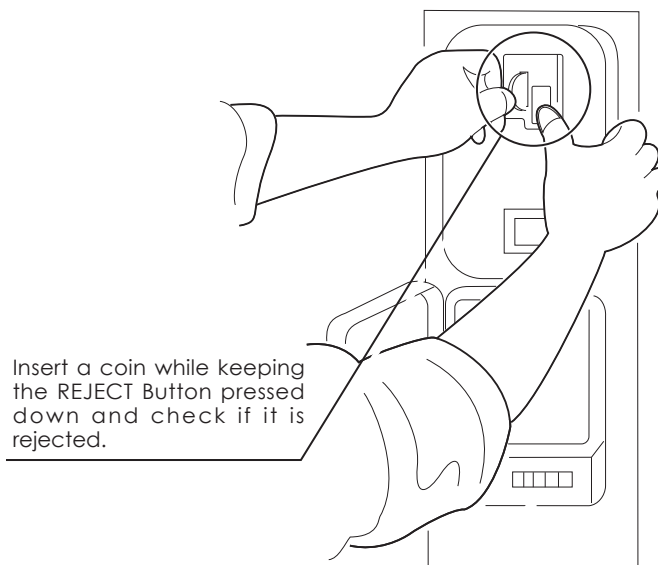


FIG. 12-1c

## CLEANING THE COIN SELECTOR (SR3/

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

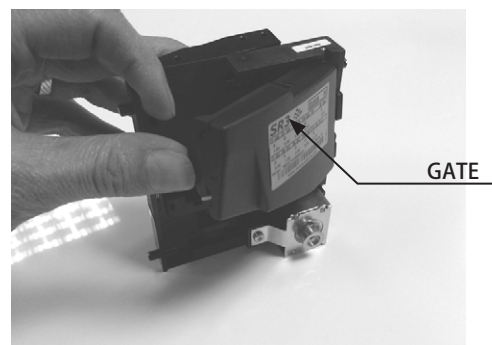


FIG. 12-1d

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

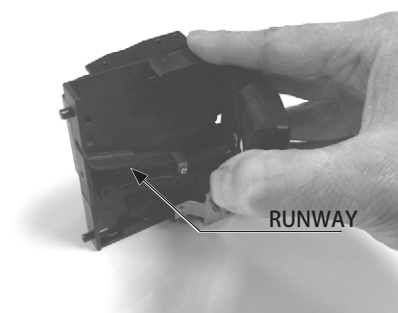


FIG. 12-1e

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

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



FIG. 12-1f

## 12-2 FAULT FINDING

### Fault Finding

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

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

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

## 12-3 ADJUSTING THE PRICE OF PLAY (EXCEL)

### 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.

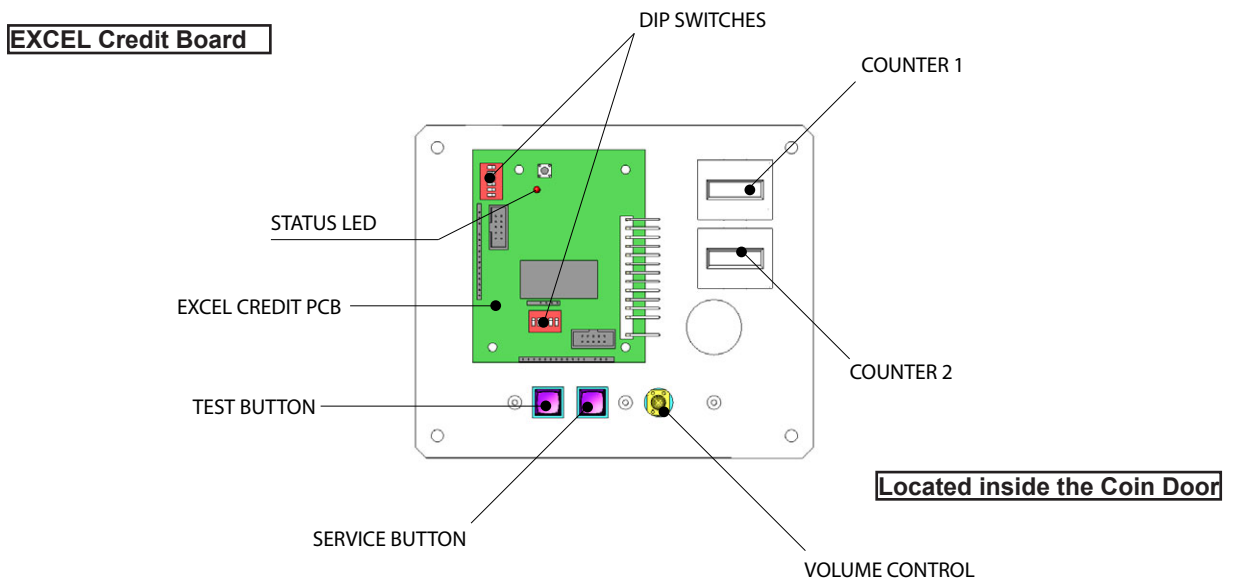
- The price of play is determined by the configuration of switches located on either an EXCEL board or VTS board. The type of board used is determined by product location. Switch settings for both types of board remain the same.

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 DIL 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)

## 12-4 ADJUSTING THE PRICE OF PLAY (VTS)

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.

### VTS Board

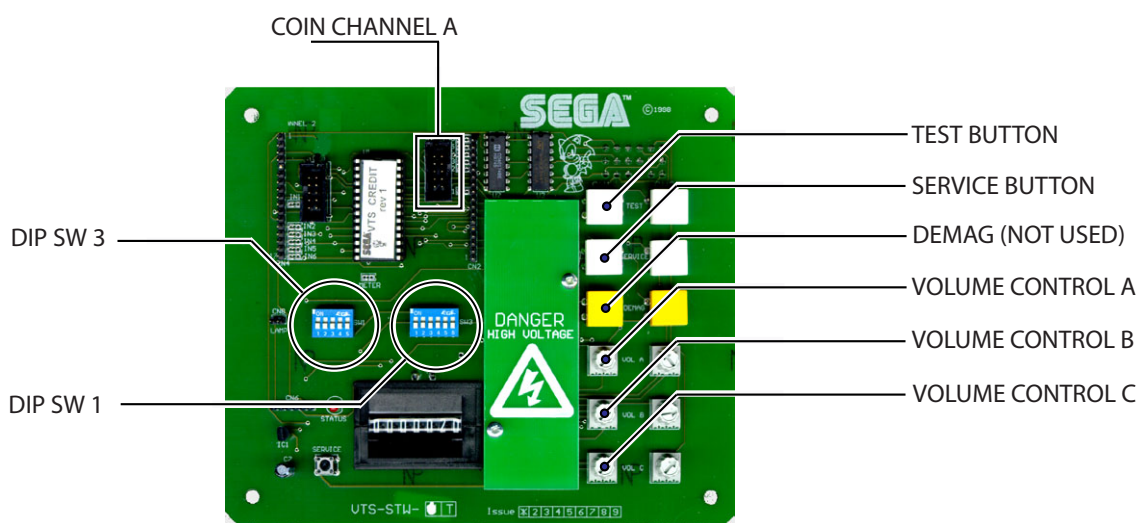


FIG. 12-4a

Located inside the Coin Door

### 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

**REGIONAL AND ACCEPTOR SETTINGS (SW3)**

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

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

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

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

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

	Price	Bonus					DIL Switch 1				
							1	2	3	4	5
1	10p	50p = 5 plays	£1 = 10 plays	£2 = 20 plays		OFF	OFF	OFF	OFF	OFF	
2	10p	50p = 6 plays @ 8.33p per play	£1 = 12 plays @ 8.33p per play	£2 = 24 plays @ 8.33p per play		ON	OFF	OFF	OFF	OFF	
3	20p	50p = 2.5 plays	£1 = 5 plays	£2 = 10 plays		OFF	ON	OFF	OFF	OFF	
4	20p	50p = 3 plays @ 16.66p per play	£1 = 6 plays @ 16.66p per play	£2 = 12 plays @ 16.66p per play		ON	ON	OFF	OFF	OFF	
5	30p	50p = 1.66 plays	£1 = 3.33 plays	£2 = 6.66 plays		OFF	OFF	ON	OFF	OFF	
6	30p	50p = 1.66 plays	£1 = 4 plays @ 25p per play	£2 = 8 plays @ 25p per play		ON	OFF	ON	OFF	OFF	
7	30p	50p = 2 plays @ 25p per play	£1 = 4 plays @ 25p per play	£2 = 8 plays @ 25p per play		OFF	ON	ON	OFF	OFF	
8	30p	50p = 2 plays @ 25p per play	£1 = 3 plays @ 33.33p per play	£2 = 6 plays @ 33.33p per play		ON	ON	ON	OFF	OFF	
9	40p	50p = 1.25 plays	£1 = 2.5 plays	£2 = 5 plays		OFF	OFF	OFF	ON	OFF	
10	40p	50p = 1.25 plays	£1 = 3 plays @ 33.3p per play	£2 = 6 plays @ 33.3p per play		ON	OFF	OFF	ON	OFF	
11	50p	50p = 1 play	£1 = 2 plays	£2 = 4 plays		OFF	ON	OFF	ON	OFF	
12	50p	50p = 1 play	£1 = 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 plays	£30 = 3 play		OFF	ON	ON	ON	ON	
32		Free Play					ON	ON	ON	ON	ON

STERLING PRICE OF PLAY SETTINGS (SW1)

**EURO PRICE OF PLAY SETTINGS (SW1)**

	Price	Bonus					DIL Switch 1				
							1	2	3	4	5
1	10¢	50¢ = 5 plays	€1 = 10 plays	€2 = 20 plays		OFF	OFF	OFF	OFF	OFF	
2	10¢	50¢ = 6 plays @ 8.33p 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	



## 13 REPLACING LAMPS AND LIGHTING

### ⚠ WARNING

- When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.
- You may get burned by a hot fluorescent lamp or other lamps. Pay full attention to the lamps when performing the work.
- Be sure to use lamps of the designated rating. Using lamps of undesignated rating can cause a fire or malfunctioning.
- There is the danger of short circuits or smoke generation due to deterioration of insulation in lighting fixtures resulting from age deterioration. Check for anomalies such as the following: Does it smell like something is burning? Is there socket discoloration? Are any lamps being replaced frequently? Do lamps not go on properly?

### ⚠ CAUTION

The Coin Door Lamp utilises a 12v 1.2w Wedge Bulb. It is important that you replace this bulb or any other bulb of that of the same voltage and rating. Failing to observe this caution may result in PCB failure or possible fire hazard.

### 13-1 COIN DOOR LAMP

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

Lamp Housing

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.

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.

Type: Wedge Bulb - 12v, 1.2w

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

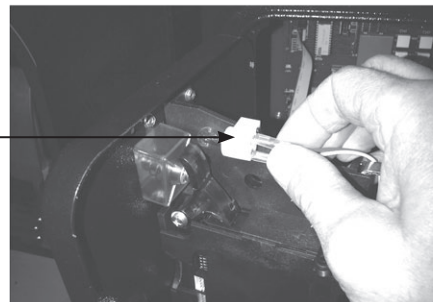


FIG. 13-1a

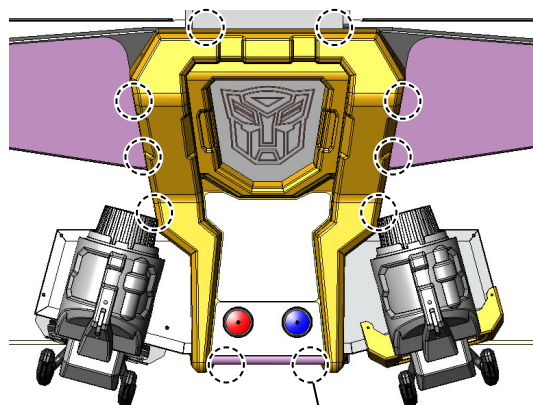


FIG. 13-1b

## 13-2 START BUTTON LAMP

**1** Turn off the power.

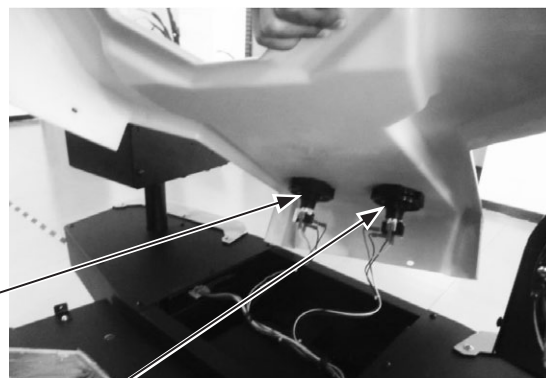
**2** Remove the (10) Internal Hex screw which secure the Control Panel Cover. Carefully lift the Control Panel Cover up to gain access to the Player 1 and Player 2 Start Buttons. Unclip the buttons from their respective housings and remove.



INTERNAL HEX SCREW (10 ea.), black  
M4x12

FIG. 13-2a

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



PLAYER 2 START BUTTON  
509-0001-BL

PLAYER 1 START BUTTON  
509-0001-RE

FIG. 13-2b

**4** 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.



LAMP AND SWITCH  
HOUSING

FIG. 13-2c

- 5** 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

LAMP AND SWITCH HOUSING

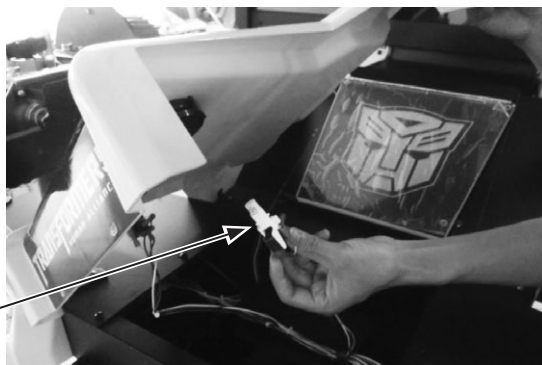


FIG. 13-2d

- 6** 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,

BULB WEDGE TYPE  
12v 1.2W

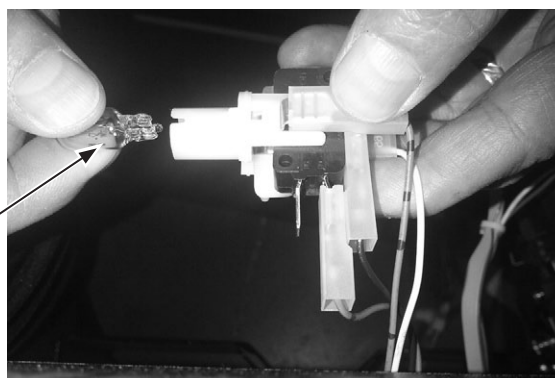


FIG. 13-2e

## 14 PERIODIC INSPECTION

### 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.

### 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.

**TABLE 14 PERIODIC INSPECTION TABLE**

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

**Cleaning the Cabinet Surfaces**

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

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

## 15 TROUBLESHOOTING

### 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.

**TABLE 15 TROUBLESHOOTING TABLE**

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.)

## 16 GAME BOARD

### WARNING

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

### STOP 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.



## 16-1 HOW TO REMOVE GAME BOARD

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

- 1 Turn off the power.
- 2 Remove the door release fixings (Phillips (2)) and unlock and remove the door.

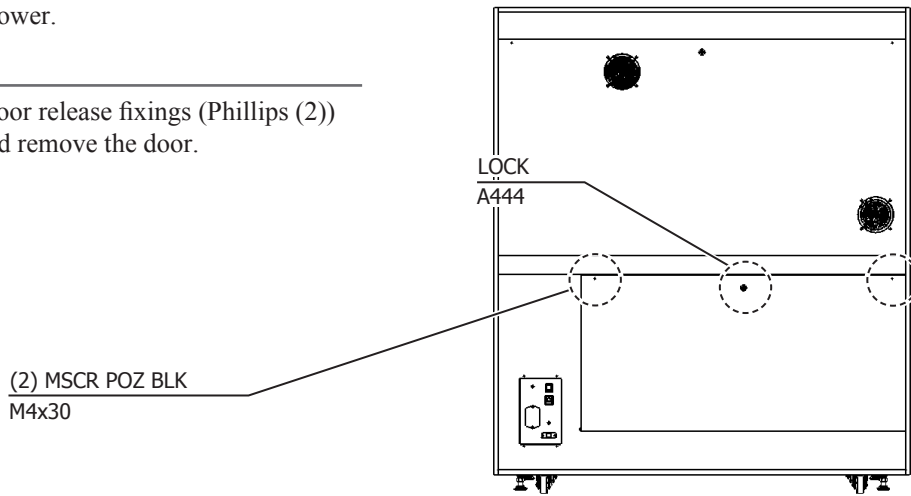


FIG. 16-1a

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

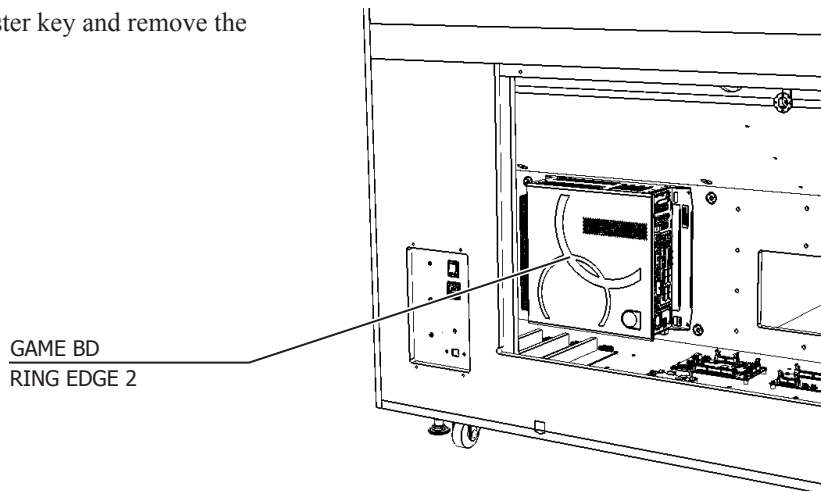


FIG. 16-1b

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

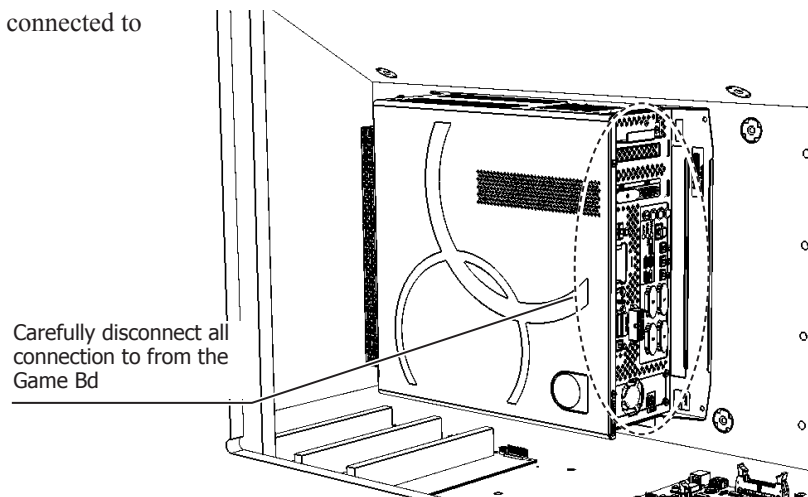


FIG. 16-1c

- 5 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.

MSCR PH PAN PAS (4)  
M4x12

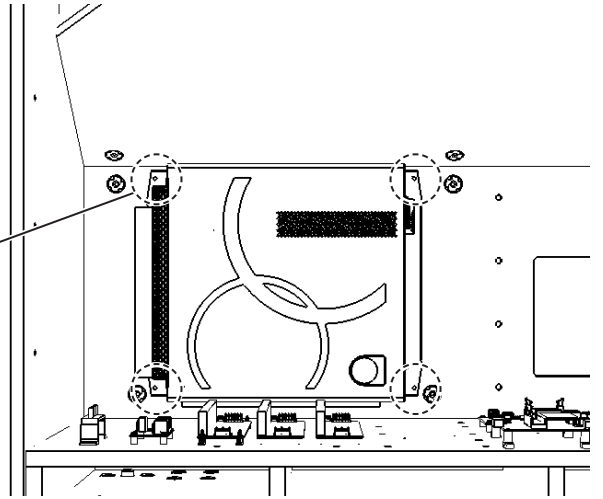


FIG. 16-1d

- 6 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.

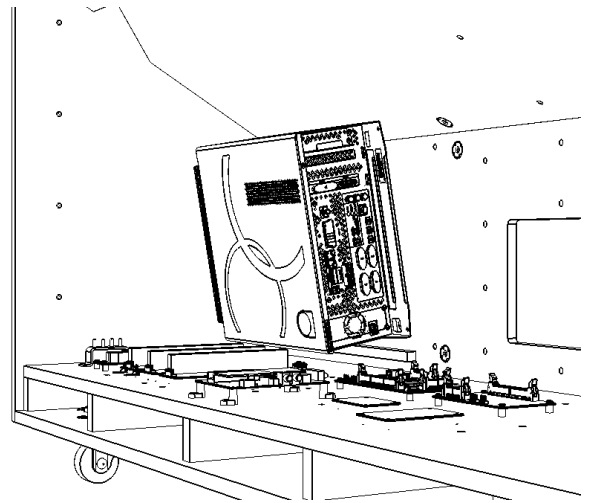


FIG. 16-1e

## 16-2 COMPOSITION OF THE GAME BOARD

### 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.

ASSY CASE RGE2 W 2GB EXP (846-5001D-12)

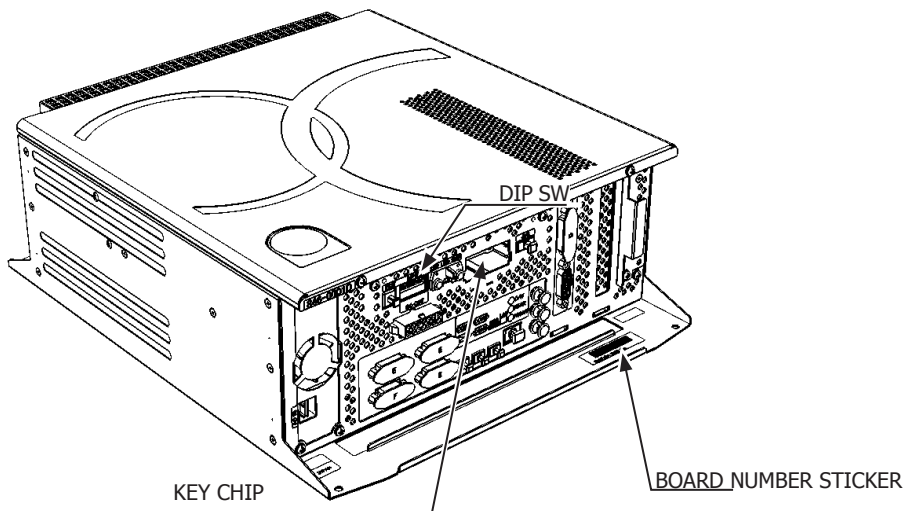


FIG. 16-2a

### DIP SW SETTING

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

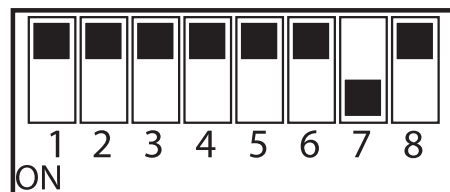


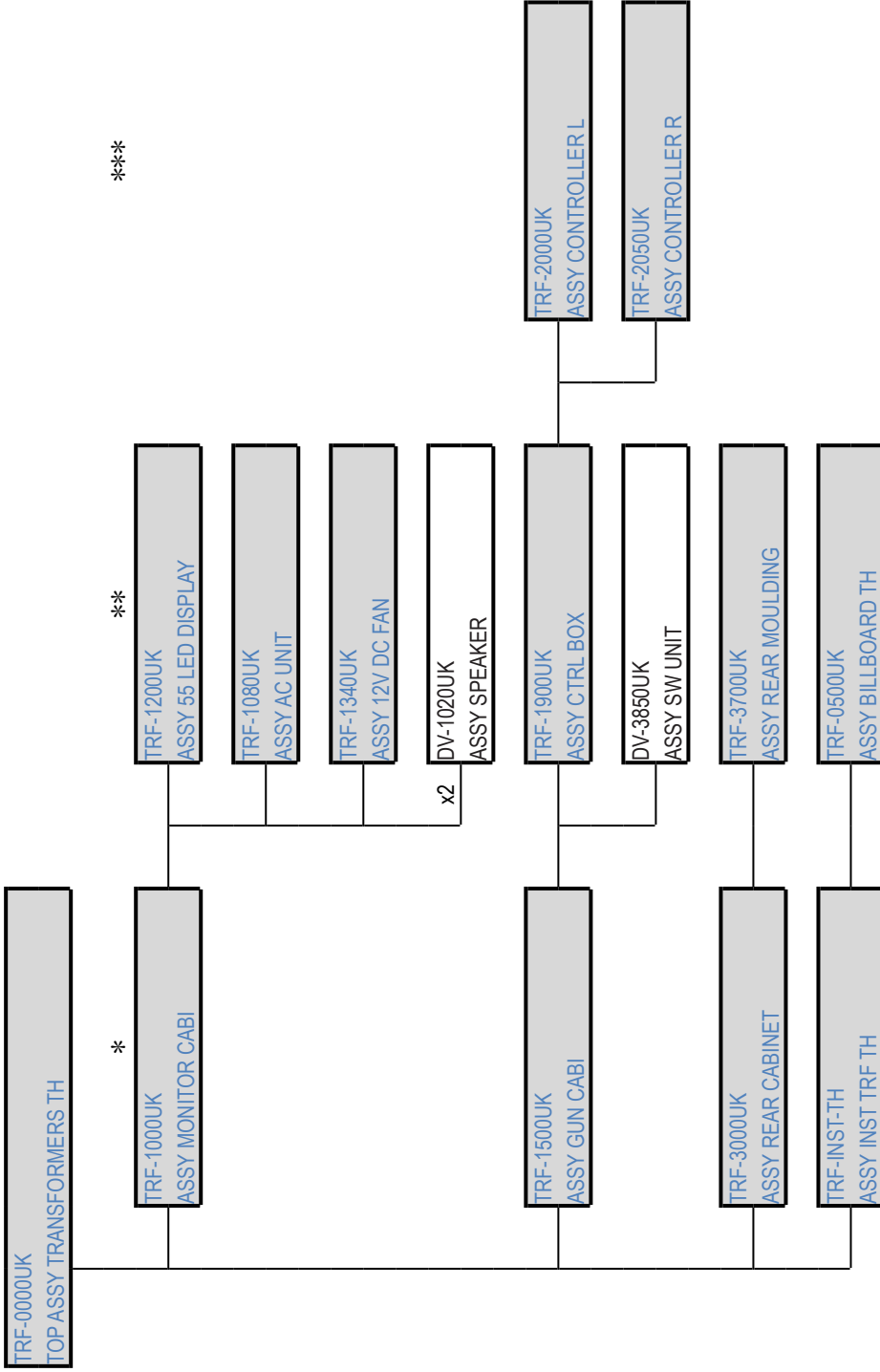
FIG. 16-2b

# 17 DESIGN RELATED PARTS

For the warning display stickers, refer to Section 1.

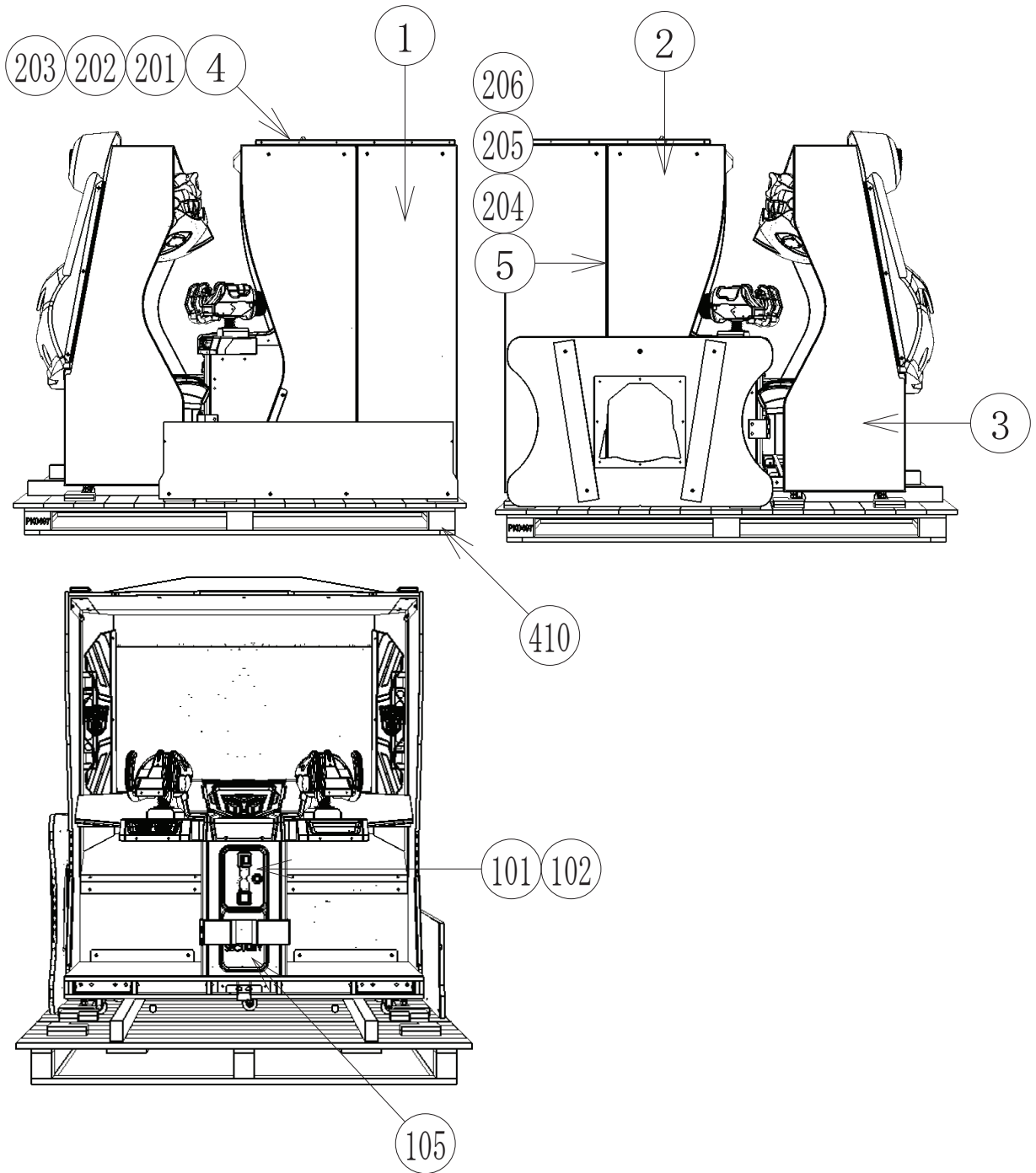


TOP ASSY TRANSFORMERS THEATRE BOM STRUCTURE



① TOP ASSY TRANSFORMERS TH (TRF-0000UK)

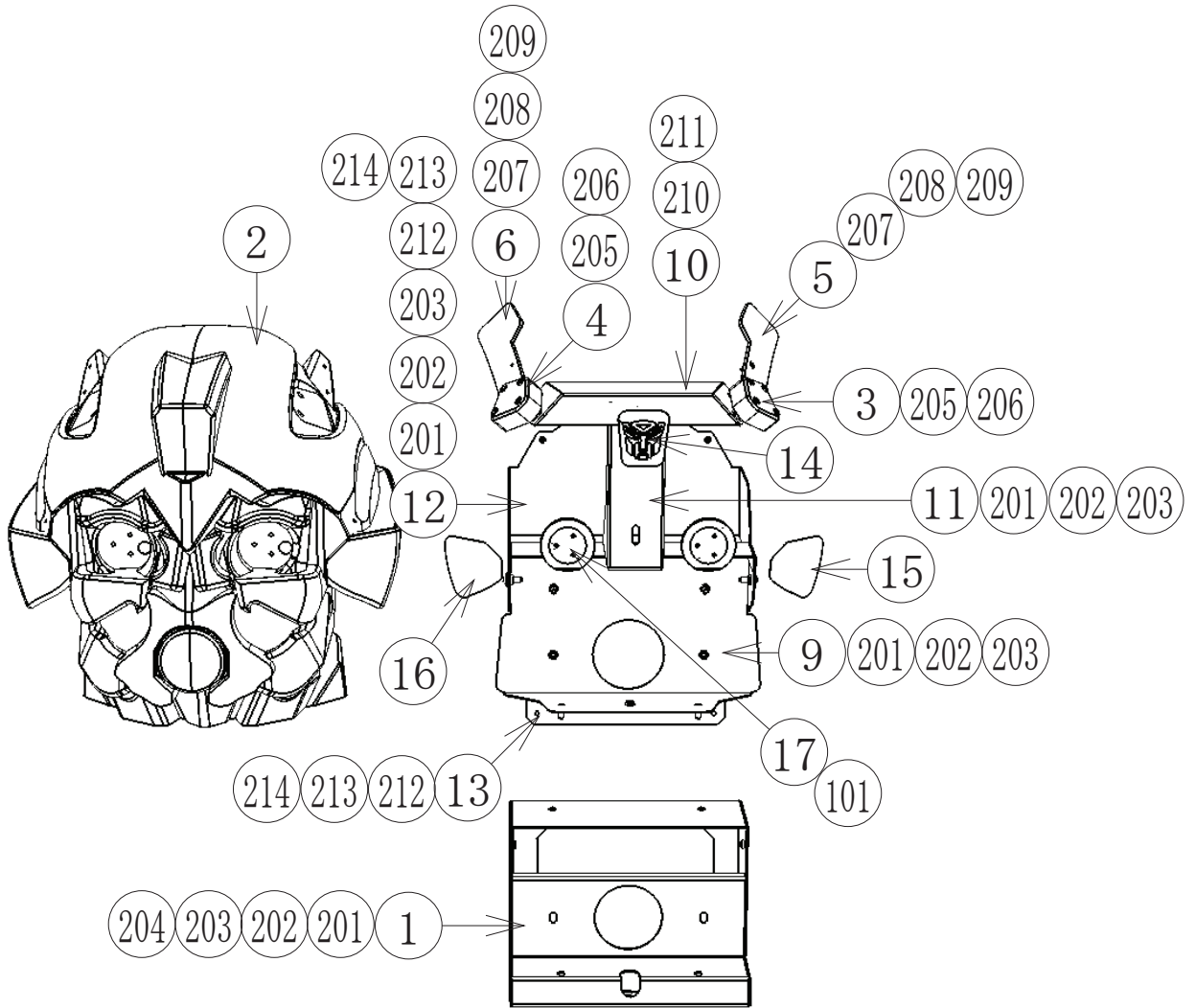
(D-1/2)



① TOP ASSY TRANSFORMERS TH (TRF-0000UK)

(D-2/2)

ITEM NO	PART NO	DESCRIPTION	QTY
*1	TRF-1000UK	ASSY MONITOR CABI	1
*2	TRF-1500UK	ASSY GUN CABI	1
*3	TRF-3000UK	ASSY REAR CABINET	1
*4	TRF-0001UK	BRKT CORNER JOINT BRIDGING	2
*5	TRF-0002UK	PLATE COVER JOINT GAP	2
*20	421-7988-91UK	STICKER SERIAL NUMBER UK	2
*21	421-7020UK	STICKER CAUTION FORK	4
*22	LB1102	STICKER DANGEROUS VOLTAGE	3
*23	LB1046	LABEL TESTED FOR ELEC. SAFETY	1
*24	LB1130	LABEL WEEE WHEELIE BIN	1
*101	220-5374-01	DOOR DFMD W/FR&LOCK C120 UNIV	1
*102	220-5575UK	LOCK (J9117) KEY TO LIKE 22MM W CAM	1
*103	OS1247	ALUMINIUM STICKY CLIP ASK-3	3
*104			1
*105	220-5727-01B	DOOR CASH H.S. STS	1
*201	029-B00830-0B	M8X30 SKT BH BLK	8
*202	060-S00800-0B	M8 WSHR SPR BLK	8
*203	068-852216-0B	M8 WSHR 22OD FLT BLK	8
*204	029-B00412-0B	M4X12 SKT BH BLK	10
*205	060-S00400-0B	M4 WSHR SPR BLK	10
*206	068-441616-0B	M4 WSHR 16OD FLT BLK	10
*401	TRF-INST-TH	ASSY INST TRF TH	1
*410	PK0497	PALLET TRF TH	1
*411	PK0484	SHRINK WRAP DV DX	1

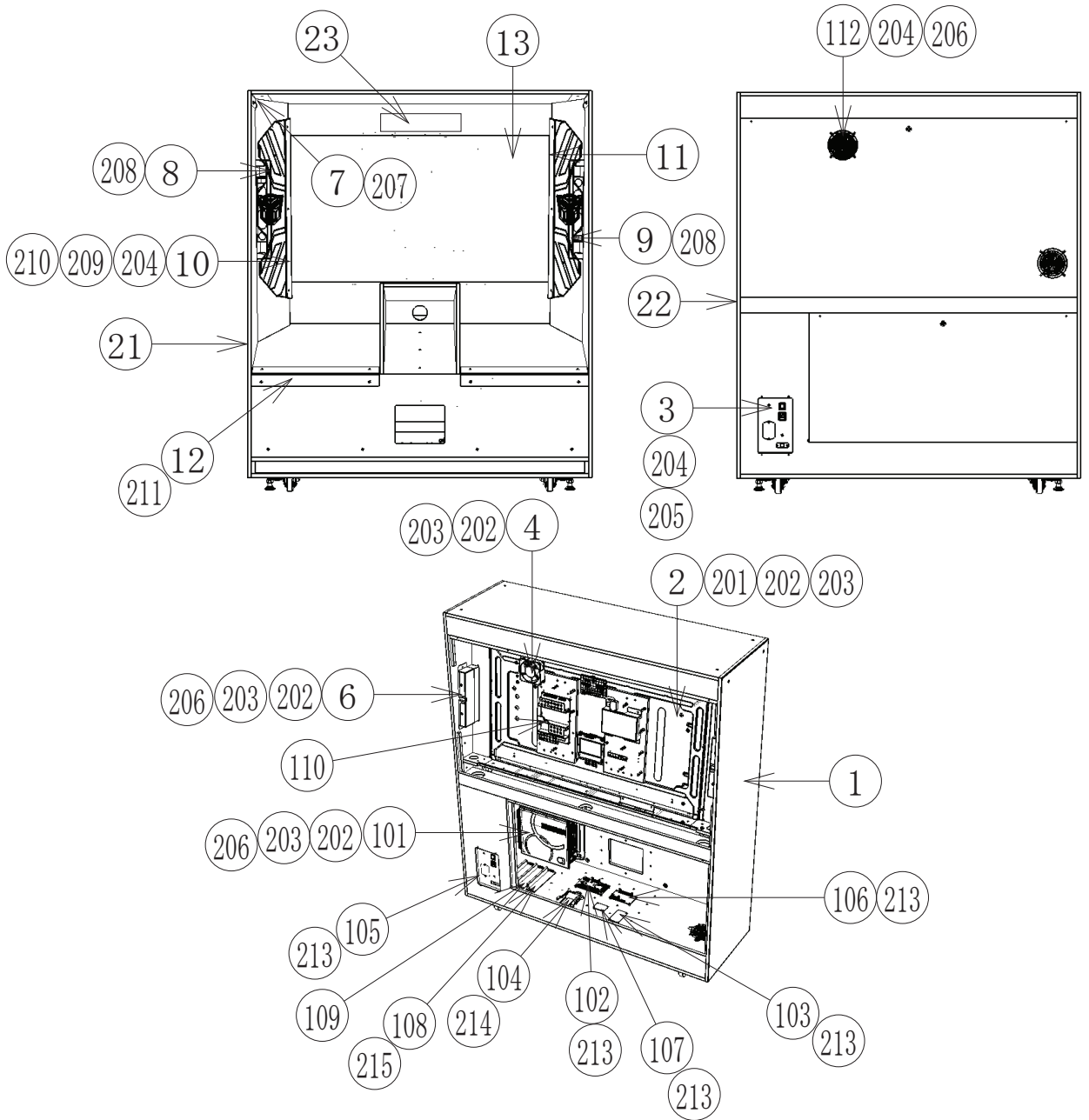




② ASSY BILLBOARD (TRF-0500UK)

(D-2/2)

ITEM NO	PART NO	DESCRIPTION	QTY
***1	TRF-0501UK	BASE BB HEAD	1
***2	TRF-0502UK	ASSY BB HEAD	1
***3	TRF-0502-EUK	BB BLOCK L	1
***4	TRF-0502-FUK	BB BLOCK R	1
***5	TRF-0502-GUK	BB LEVER L	1
***6	TRF-0502-HUK	BB LEVER R	1
***9	TRF-0505UK	BRKT CLOSING HEAD BTM	1
***10	TRF-0506UK	BRKT CROSS BRACE	1
***11	TRF-0507UK	BRKT BRACE JOIN	1
***12	TRF-0508UK	BRKT CLOSING HEAD BACK	1
***13	TRF-0509UK	PLATE COVER	1
***14	TRF-0510UK	DECAL BADGE 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	BILLBOARD LED	2
***201	029-B00620-0B	M6X20 SKT BH BLK	10
***202	060-S00600-0B	M6 WSHR SPR BLK	10
***203	068-652016-0B	M6 WSHR 200D FLT BLK	14
***204	050-F00600	M6 NUT FLG SER PAS	4
***205	029-B00540-0B	M5X40 SKT BH BLK	8
***206	029-B00512-0B	M5X12 SKT BH BLK	8
***207	000-F00420	M4X20 MSCR CSK PAS	4
***208	068-441616	M4 WSHR 160D FLT PAS	4
***209	050-F00400	M4 NUT FLG SER PAS	4
***210	068-552016	M5 WSHR 200D FLT PAS	4
***211	050-F00500	M5 NUT FLG SER PAS	4
***212	029-B00412-0B	M4X12 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

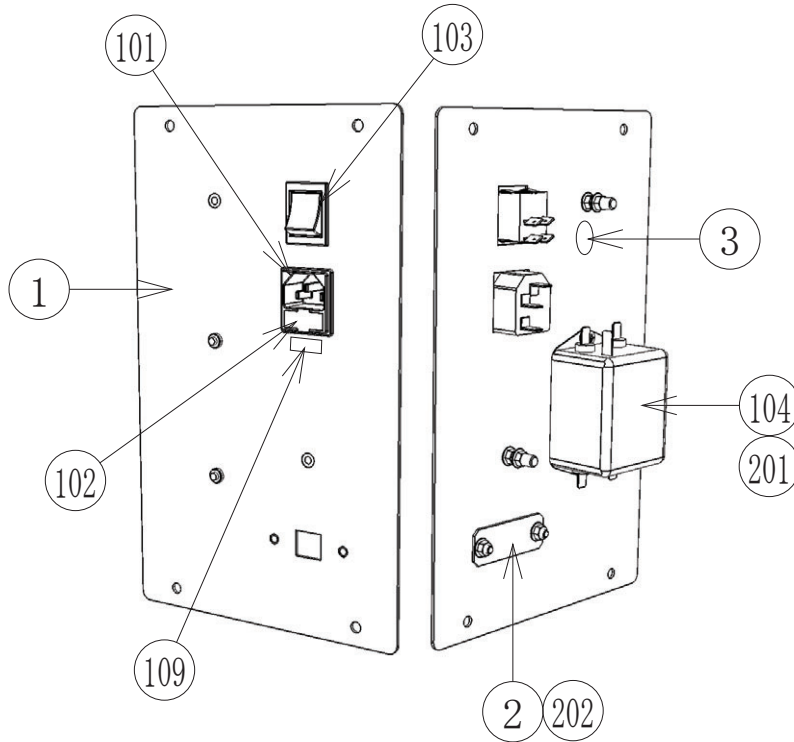


ITEM NO	PART NO	DESCRIPTION	QTY
**1	TRF-1002UK	ASSY FRONT CABINET	1
**2	TRF-1200UK	ASSY 55 LED DISPLAY	1
**3	TRF-1080UK	ASSY AC UNIT	1
**4	TRF-1340UK	ASSY 12V DC FAN	1
**5			1
**6	DV-1020UK	ASSY SPEAKER	2
**7	TRF-1003UK	BRKT CORNER JOINT TOP	2
**8	TRF-1011UK	PLATE MON SIDE L	1
***1	TRF-1011-AUK	PLATE MON SIDE L BLANK	1
**9	TRF-1012UK	PLATE MON SIDE R	1
***1	TRF-1012-AUK	PLATE MON SIDE R BLANK	1
**10	TRF-1013UK	BRKT MON SIDE LIGHT	2
**11	TRF-1014UK	SPACER MON SIDE LIGHT	2
**12	TRF-1015UK	BRKT KICK SLOPING SHELF	2
**13	TRF-1209UK	GLASS LED 55 SCREEN PROTECT	1
**14	CFB-4003-01UK	EARTH PLATE	1
**21	TRF-1051UK	STICKER FRONT CABI LH SIDE	1
**22	TRF-1052UK	STICKER FRONT CABI RH SIDE	1
**23	RND-0160	LOGO GENERIC BLUE LARGE	1
**101	846-5001D-12	ASSY CASE RGE2 W 2GB EXP	1
**102	837-14572	I/O CONTROL BD 3 FOR JVS COM	1
**103	837-14981-01	IC BD EXP 8 OUTPUT RS232	1
**104	838-14515-A09	SOUND AMP ANALOG IN	1
**105	838-14551-02UK	AC DISTRIBUTION BD	2
**106	838-0005-XUK	I/O BD SAE	1
**107	838-0012UK	LAMP DRV BRD	1
**108	400-075-012-01	PSU 12VDC 75W MW LPS-75-12	1
**109	400-075-024-01	PSU 24VDC 50W MW LPS-50-24	1
**110	400-283-51224	PSU 55" LED DPS-283APA-ESS5	1
**111	EP1424	LED CONTROLLER	1
**112	FN1012	FAN GUARD METAL 120MM (FG-12)	5
**113	280-L00811-OS	STANDOFF 7.94OD 3.56ID 11.11L	8
**114	OS1011	PCB FEET	8
**201	000-P00420	M4X20 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	M4X25 SKT BH BLK	22
**205	050-F00400	M4 NUT FLG SER PAS	4
**206	000-P00412	M4X12 MSCR PAN PAS	14
**207	020-F00830-0B	M8X30 SKT CSK BLK	4
**208	008-OS0412	M4X12 TMP PRF STN	4
**209	060-S00400-0B	M4 WSHR SPR BLK	6
**210	068-441616-0B	M4 WSHR 160D FLT BLK	6
**211	020-000820-0Z	M8X20 SKT CAP OZ	8
**212	012-P00416-FZ	N8X5/8" S/TAP FLG 0Z	2
**213	012-P00325	N4X1" S/TAP PAN PAS	20
**214	012-P03512-F	N6X1/2" S/TAP FLG PAS	6
**215	012-P00312	N4X1/2" S/TAP PAN PAS	8

③ ASSY MONITOR CABINET (TRF-1000UK)

(D-3/3)

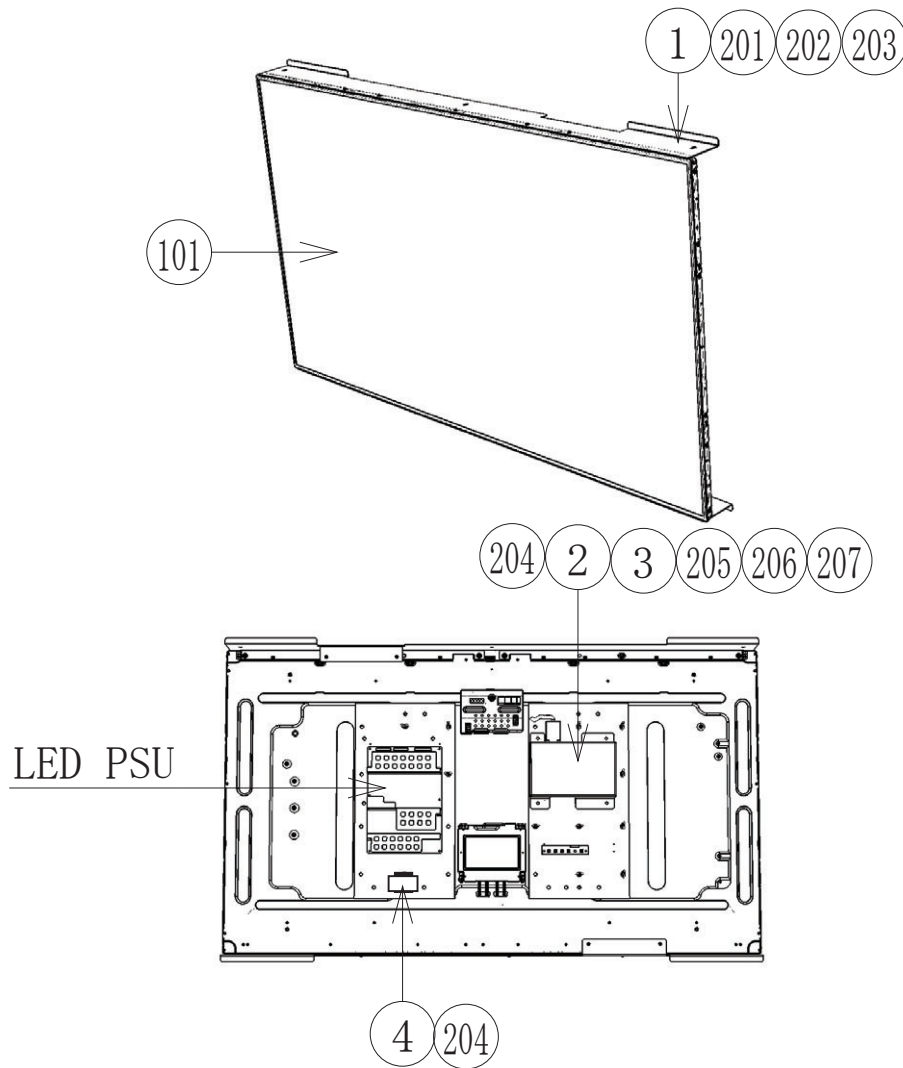
ITEM NO	PART NO	DESCRIPTION	QTY
**301	TRF-60002UK	WH AC DIST	1
**302	TRF-60003UK	WH 24V DC DIST	1
**303	TRF-60005UK	WH 12V DIST	1
**304	TRF-60006UK	WH I/O	1
**305	TRF-60008UK	WH LED DRIVER	1
**306	TRF-60009UK	WH AUDIO FRONT	1
**307	TRF-60014UK	WH SIDE PANEL ILLUMINATION	1
**308	TRF-60016UK	WH LED DRIVER OUT	1
**309	390-2012-RGB	LED FLX STRIP RGB 5MTR	1.6
**310	BE-6001UK	WH LED CLIP	2
**311	TRF-60024UK	WH DBA EXTN	1



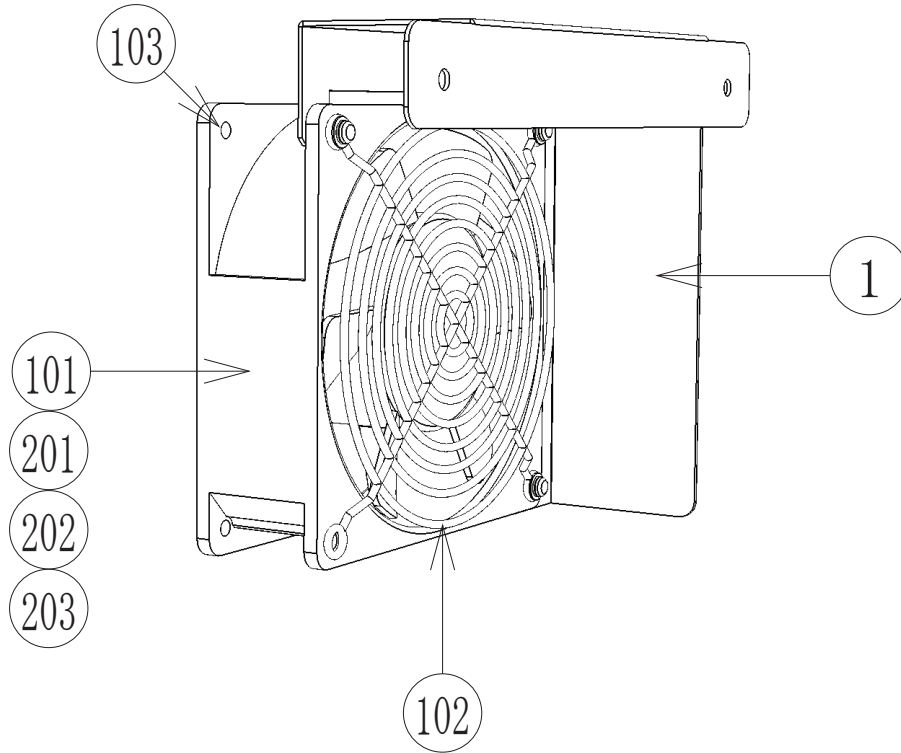
ITEM NO	PART NO	DESCRIPTION	QTY
***1	DV-1081UK	PLATE AC	1
***2	ST-0403UK	PLATE AC CAP	1
***3	LB1096	STICKER PROTECTIVE EARTH	1
***101	EP1302	EUROSOCKET FUSED 10A 250VAC	1
***102	514-5078-5000	FUSE 5X20 CERAMIC SB 5000mA	2
***103	SW1109	SWITCH ROCKER 250V AC	1
***104	EP1419	FILTER SCHAFFNER 2030-16-06	1
***108	310-5029-D508	HEAT SHRINK SLEEVING 50.8DIA	4
***109	LB1126-5-250	FUSE LABEL 5A 250V	1
***201	000-P00408	M4X8 MSCR PAN PAS	2
***202	050-F00400	M4 NUT FLG SER PAS	4
***203	060-S00400	M4 WSHR SPR PAS	4
***301	TRF-60001UK	WH AC IN	1

5 ASSY 55 LED DISPLAY (TRF-1200UK)

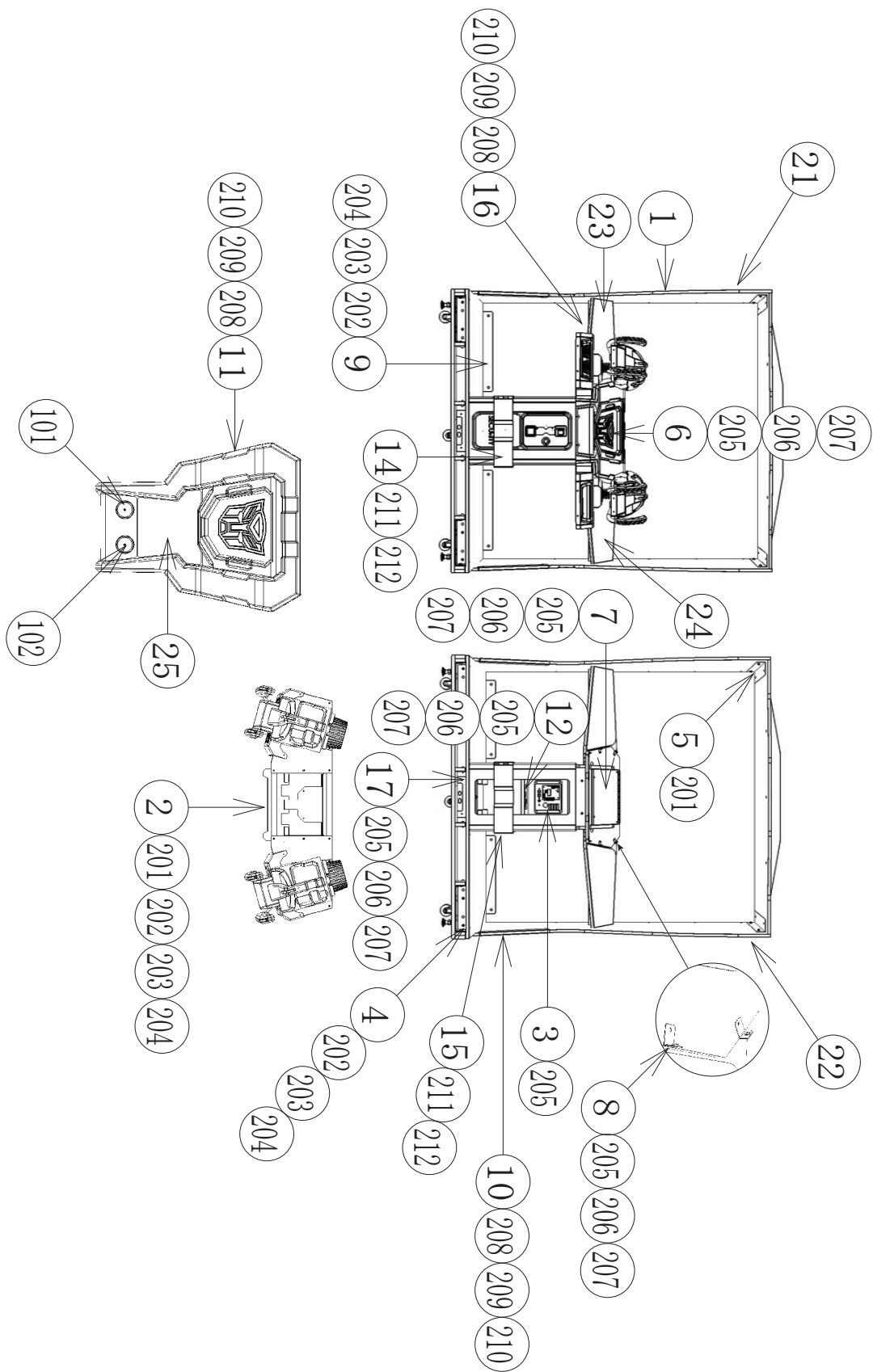
(D-1/1)



ITEM NO	PART NO	DESCRIPTION	QTY
***1	TRF-1206UK	BRKT LED MOUNT	2
***2	TRF-1207UK	COVER PRISMA BD DMODUL	1
***3	TRF-1210UK	PNL PRISMA BD DMODUL MNT 55	2
***4	TRF-1211UK	BRKT LED INLET	1
***101	200-6055-02-AUO	55" LED AUO P550HVN02.0	1
***102	280-A01264-WX	ROUTER TWIST D12 SO6.4 WOOD X	8
***103	280-L00811-OS	STANDOFF 7.94OD 3.56ID 11.11L	12
***201	000-P00306	M3X6 MSCR PAN PAS	10
***202	060-S00300	M3 WSHR SPR PAS	12
***203	060-F00300	M3 WSHR FORM A FLT PAS	12
***204	012-P00410-F	N8X3/8" S/TAP FLG PAS	6
***205	020-000620-0Z	M6X20 SKT CAP OZ	4
***206	060-S00600	M6 WSHR SPR PAS	4
***207	068-652016	M6 WSHR 200D FLT PAS	4
***208	000-P00312	M3X12 MSCR PAN PAS	2
***209	012-P00320	N4X3/4" S/TAP PAN PAS	12



ITEM NO	PART NO	DESCRIPTION	QTY
***1	GST-1008UK	BRKT FAN	1
***101	260-0012-01UK	FAN DC 12V AXIAL	1
***102	FN1012	FAN GUARD METAL 120MM (FG-12)	2
***103	OS1195	RIVET SNAP SR-4080B	5
***201	000-P00312	M3X12 MSCR PAN PAS	3
***202	060-S00300	M3 WSHR SPR PAS	3
***203	060-F00300	M3 WSHR FORM A FLT PAS	3

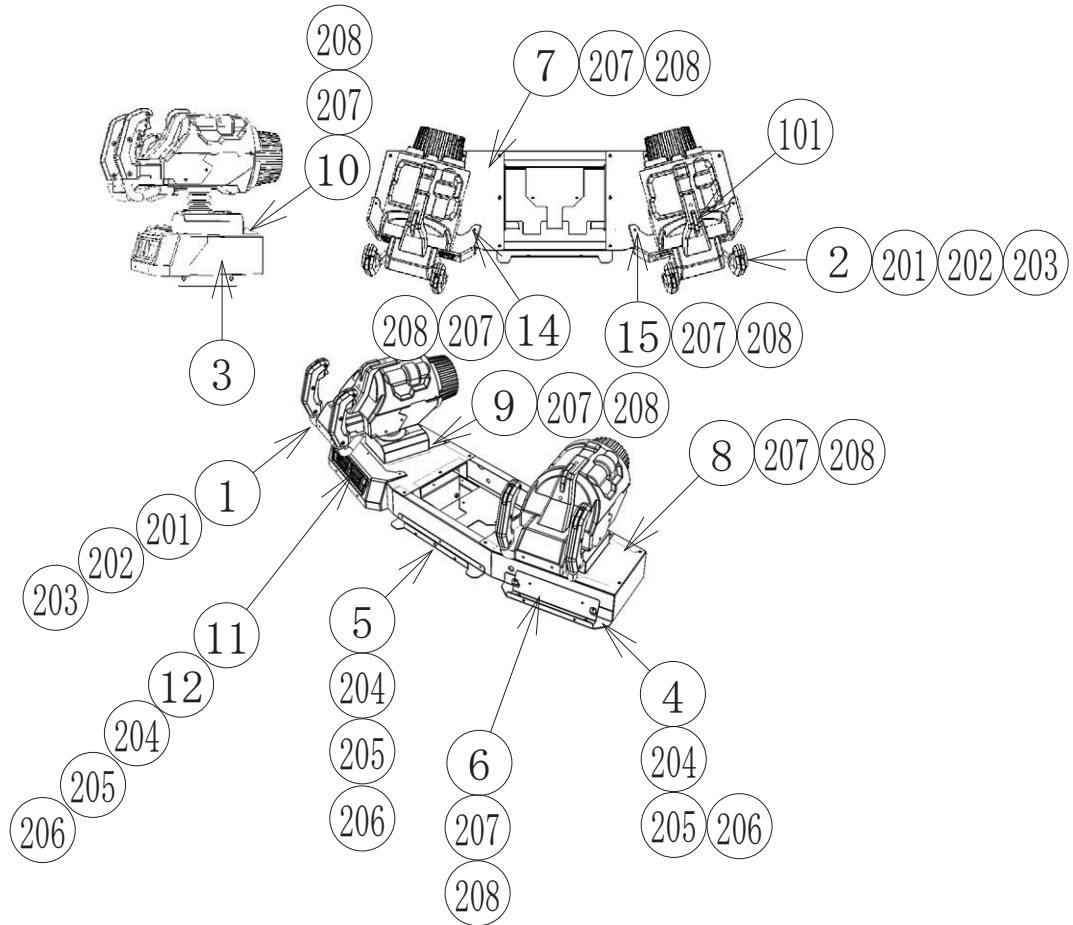




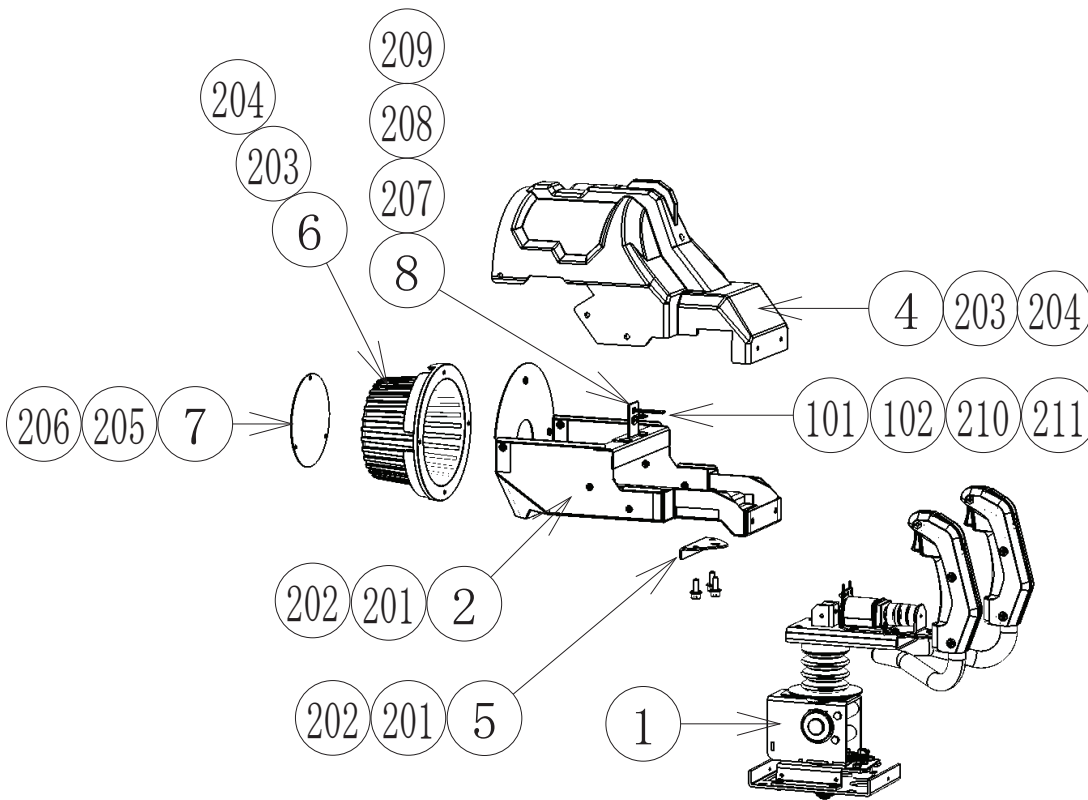
ITEM NO	PART NO	DESCRIPTION	QTY
**1	TRF-1502UK	ASSY MID CABINET	1
**2	TRF-1900UK	ASSY CTRL BOX	1
**3	DV-3850UK	ASSY SW UNIT	1
**4	TRF-0003UK	BRKT JOINT BRIDGE SECURE	2
**5	TRF-1003UK	BRKT CORNER JOINT TOP	2
**6	TRF-1511UK	PLATE AUTOBOT	1
**7	TRF-1512UK	BRKT MTG PLATE AUTOBOT	1
**8	TRF-1513UK	BRKT MTG CONPANE COVER	6
**9	TRF-1514UK	PLATE JOINT LOWER MON GUN CABI	2
**10	TRF-1515UK	BRKT KICK CHEEK	2
**11	601-12955-001	CONPANE COVER UL-HB	1
**12	DUT-0302UK	COIN PATH PLATE	1
**13	PP1087	BOX CASH FOR MINI DOOR	1
**14	LGI-0304UK	LOCKING HASP	1
**15	LGI-0305UK	BRKT PADLOCK	1
**16	TRF-1516UK	COVER FOOTWELL LIGHT	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 BOX L	1
**24	TRF-1554UK	STICKER CTRL BOX R	1
**25	TRF-1913UK	STICKER PLAY INSTR	1
**101	509-0001-BL	BTN 12V 1.2W BLU S'POINT CPBL	1
**102	509-0001-RE	BTN 12V 1.2W BLU S'POINT CPBL	1
**201	020-F00830-0B	M8X30 SKT CSK BLK	12
**202	030-000830	M8X30 BLT PAS	12
**203	060-S00800	M8 WSHR SPR PAS	12
**204	068-852216	M8 WSHR 220D FLT PAS	12
**205	000-P00420	M4X20 MSCR PAN PAS	25
**206	060-S00400	M4 WSHR SPR PAS	21
**207	060-F00400	M4 WSHR FORM A FLT PAS	21
**208	029-B00412-0B	M4X12 SKT BH BLK	18
**209	060-S00400-0B	M4 WSHR SPR BLK	18
**210	068-441616-0B	M4 WSHR 16OD FLT BLK	18
**211	050-U00800	M8 NUT NYLOK PAS	8
**212	060-F00800	M8 WSHR FORM A FLT PAS	8
**301	TRF-60004UK	WH REAR SPKR EXTN	1
**302	TRF-60011UK	WH COIN HANDLING	1
**303	TRF-60012UK	WH CTRL PNL BUTTONS ILLUM	1
**304	TRF-60015UK	WH DBA	1
**305	TRF-60017UK	WH FLOOR ASSY	1
**306	390-2012-RGB	LED FLX STRIP RGB 5MTR	1.3
**307	BE-6001UK	WH LED CLIP	3
**308	LM1006LOR	LOOM COIN MECH LAMP	1

⑨ ASSY CTRL BOX (TRF-1900UK)

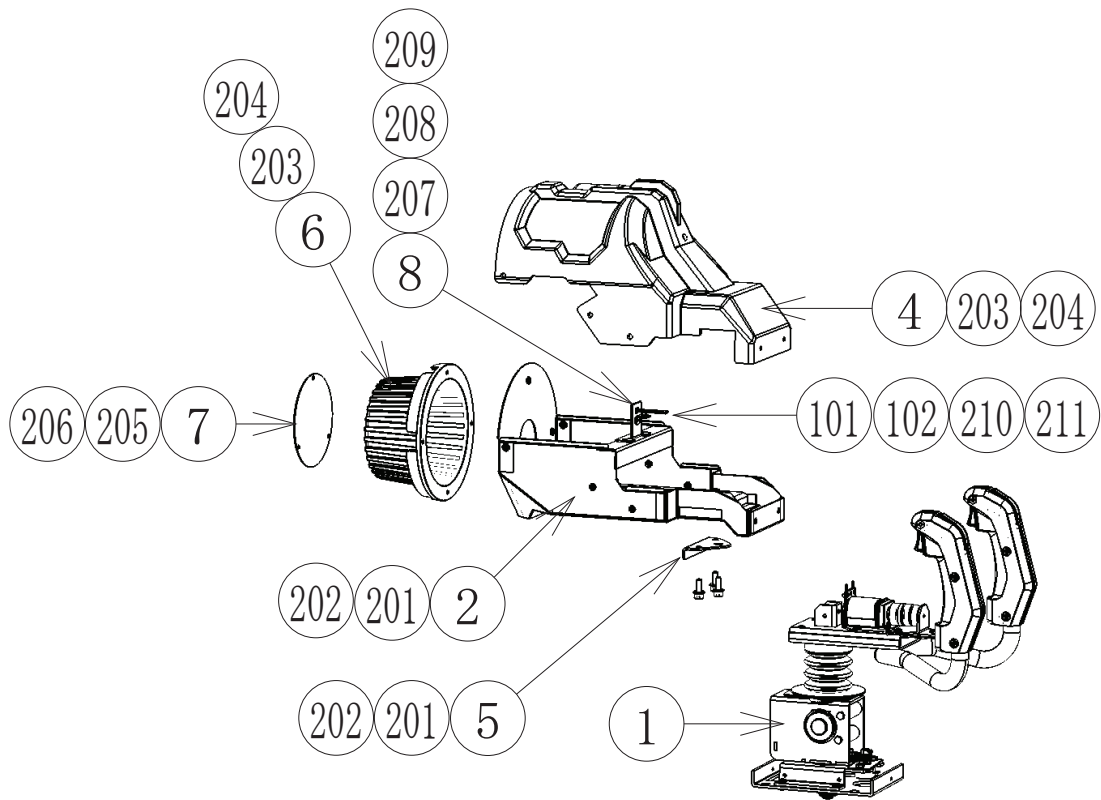
(D-1/1)



ITEM NO	PART NO	DESCRIPTION	QTY
***1	TRF-2000UK	ASSY CONTROLLER L	1
***2	TRF-2050UK	ASSY CONTROLLER R	1
***3	TRF-1901UK	CTRL PNL UNDER	1
***4	TRF-1902UK	BRKT CTRL PNL FRONT OUTER	2
***5	TRF-1903UK	BRKT CTRL PNL FRONT CENTRE	1
***6	TRF-1904UK	BRKT BRAKE LIGHT MTG	2
***7	TRF-1905UK	LID CTRL FRONT L	1
***8	TRF-1906UK	LID CTRL FRONT 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 LIGHT INNER	2
***14	601-12955-003	GUN UNDER COVER L UL-HB	1
***15	601-12955-004	GUN UNDER COVER R UL-HB	1
***101	601-12955-007	GUN UNDER LED	2
***201	020-000820-0Z	M8X20 SKT CAP OZ	8
***202	060-F00800	M8 WSHR FORM A FLT PAS	8
***203	060-S00800	M8 WSHR SPR PAS	8
***204	000-P00412	M4X12 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	M4X12 SKT BH BLK	30
***208	068-441616-0B	M4 WSHR 160D FLT BLK	30
***301	TRF-60013UK	WH CONTROLLERS	1



ITEM NO	PART NO	DESCRIPTION	QTY
***1	DV-2001-01UK	CONT CHASSIS W/BLK HANDLE	1
***2	TRF-2002UK	BASE GUN	1
***4	601-12955-002	GUN COVER	1
***5	PV-2005UK	BRKT MTG PEASHOOTER	1
***6	601-12955-005	GUN MUZZLE COVER UL-HB	1
***7	TRF-2006UK	PLATE MUZZLE CLOSING	1
***8	TRF-2007UK	BRKT LIGHT MTG INTERNAL	1
***101	601-12955-008	GUN UPPER LED 1P RED	1
***102	280-L00605-OS	STANDOFF 6.35OD 3.56ID 4.76L	1
***201	020-000616-OZ	M6X16 SKT CAP OZ	5
***202	060-S00600	M6 WSHR SPR PAS	5
***203	060-F00600	M6 WSHR FORM A FLT PAS	5
***204	008-OS0412	M4X12 TMP PRF STN	12
***205	000-P00408	M4X8 MSCR PAN PAS	3
***206	060-S00400	M4 WSHR SPR PAS	3
***207	000-P00412	M4X12 MSCR PAN PAS	2
***208	060-S00400	M4 WSHR SPR PAS	2
***209	060-F00400	M4 WSHR FORM A FLT PAS	2
***210	000-P00312	M3X12 MSCR PAN PAS	1
***211	068-330808-PN	M3 WSHR 8OD FLT NYLON	1
***301	TRF-60020UK	WH GUN ILLUMINATION	1



ITEM NO	PART NO	DESCRIPTION	QTY
***1	DV-2001-01UK	CONT CHASSIS W/BLK HANDLE	1
***2	TRF-2002UK	BASE GUN	1
***4	601-12955-002	GUN COVER	1
***5	PV-2005UK	BRKT MTG PEASHOOTER	1
***6	601-12955-005	GUN MUZZLE COVER UL-HB	1
***7	TRF-2006UK	PLATE MUZZLE CLOSING	1
***8	TRF-2007UK	BRKT LIGHT MTG INTERNAL	1
***101	601-12955-009	GUN UPPER LED 2P BLUE	1
***102	280-L00605-OS	STANDOFF 6.35OD 3.56ID 4.76L	1
***201	020-000616-OZ	M6X16 SKT CAP OZ	5
***202	060-S00600	M6 WSHR SPR PAS	5
***203	060-F00600	M6 WSHR FORM A FLT PAS	5
***204	008-OS0412	M4X12 TMP PRF STN	12
***205	000-P00408	M4X8 MSCR PAN PAS	3
***206	060-S00400	M4 WSHR SPR PAS	3
***207	000-P00412	M4X12 MSCR PAN PAS	2
***208	060-S00400	M4 WSHR SPR PAS	2
***209	060-F00400	M4 WSHR FORM A FLT PAS	2
***210	000-P00312	M3X12 MSCR PAN PAS	1
***211	068-330808-PN	M3 WSHR 8OD FLT NYLON	1
***301	TRF-60020UK	WH GUN ILLUMINATION	1

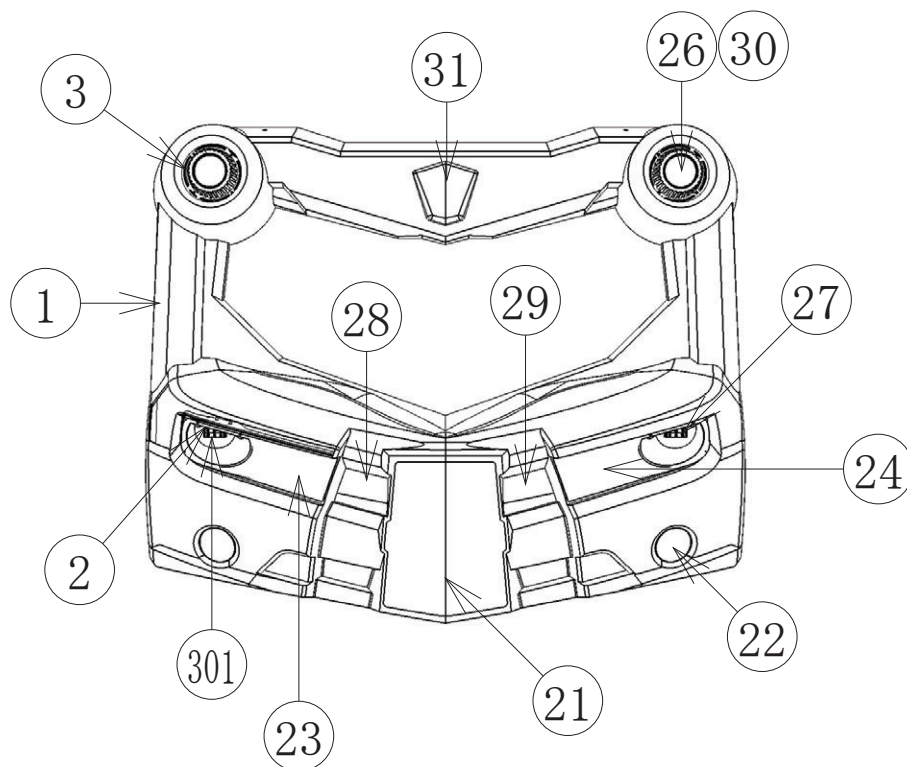


12 ASSY REAR CABINET (TRF-3000UK)

(D-2/3)

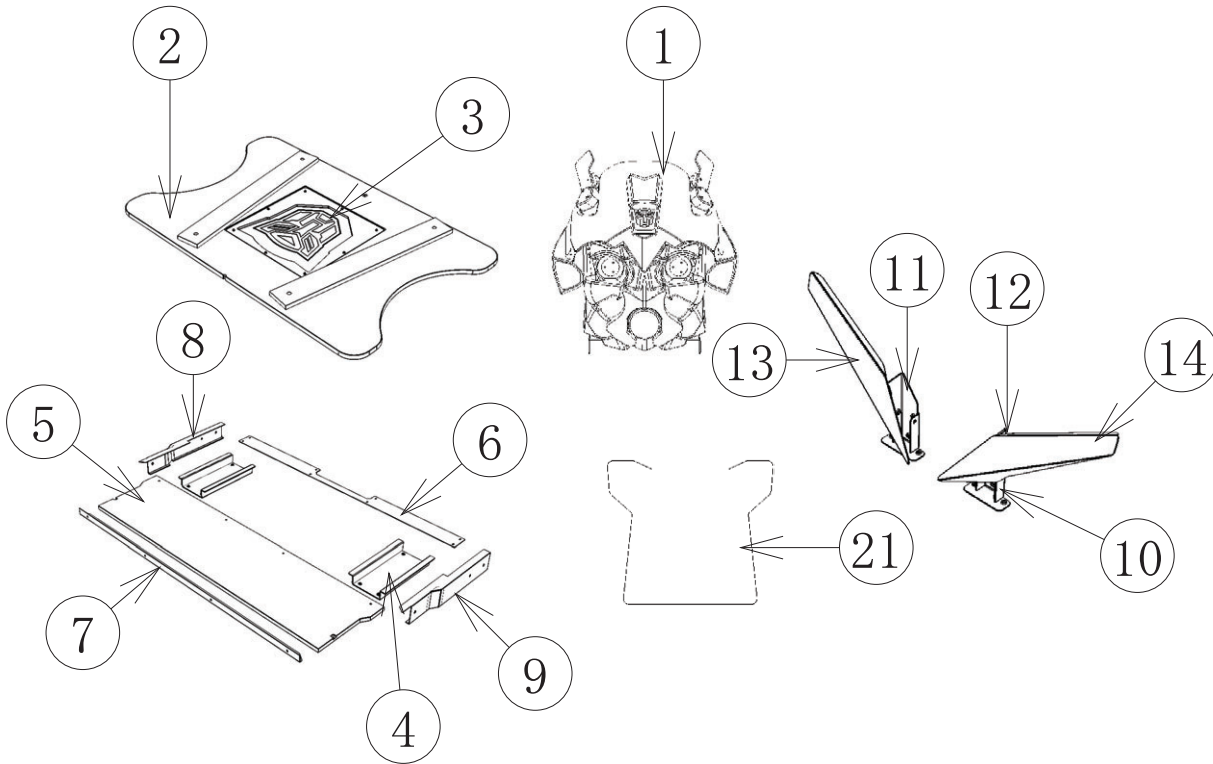
ITEM NO	PART NO	DESCRIPTION	QTY
**1	TRF-3002UK	ASSY REAR CABINET	1
**2	TRF-3700UK	ASSY REAR MOULDING	1
**3	TRF-0003UK	BRKT JOINT BRIDGE SECURE	2
**4	TRF-3003UK	SEAT MOUNT TRAY	2
**5	TRF-3004UK	BRKT SEAT MOUNT BTM	2
**6	TRF-3005UK	BRKT SECURE VAC INNER L	1
**7	TRF-3006UK	BRKT SECURE VAC INNER R	1
**8	TRF-3007UK	BRKT SECURE VAC OUTER	2
**9	TRF-3008UK	BRKT SEAT JOINT FRONT	1
**10	TRF-3009UK	REAR WINDOW	1
**11			2
**12	TRF-3011UK	BRKT SECURE VAC UPPER	2
**13	TRF-3012UK	BRKT SECURE VAC LOWER	1
**14	TRF-3013UK	REAR DOWNLIGHT L	1
**15	TRF-3014UK	REAR DOWNLIGHT R	1
**16	TRF-3015UK	BRKT SUPP BILLBOARD	1
**17	TRF-3016UK	BRKT CONDUIT	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	WOOFER 4OHM 80W SIVER RNE	1
**102	130-04030-E	SPKR ELIP 4OHM 30W VIS DX4x6P	2
**103	253-5550UK-21YM	PAN SEAT W LOGO SEGA YELL MOTTLE	2
**104	EP1424	LED CONTROLLER	1
**201	020-000820-OZ	M8X20 SKT CAP OZ	22
**202	029-B00620-0B	M6X20 SKT BH BLK	10
**203	060-S00600-0B	M6 WSHR SPR BLK	18
**204	068-652016-0B	M6 WSHR 200D FLT BLK	18
**205	030-000830	M8X30 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-OZ	M8X40 SKT CAP OZ	4
**209	030-000630	M6X30 BLT PAS	6
**210	029-B00430-0B	M4X30 SKT BH BLK	8

ITEM NO	PART NO	DESCRIPTION	QTY
**211	060-S00400-0B	M4 WSHR SPR BLK	8
**212	068-441616-0B	M4 WSHR 16OD FLT BLK	8
**213	029-B00830-0B	M8X30 SKT BH BLK	5
**214	030-000640	M6X40 BLT PAS	2
**215	000-F00420	M4X20 MSCR CSK PAS	4
**216	000-P00408	M4X8 MSCR PAN PAS	10
**217	068-441616	M4 WSHR 160D FLT PAS	14
**218	000-P00416	M4X16 MSCR PAN PAS	4
**219	060-S00400	M4 WSHR SPR PAS	4
**220	012-P03512-F	N6X1/2" S/TAP FLG PAS	2
**301	TRF-60010UK	WH AUDIO REAR	
**302	TRF-60018UK	WH SPEAKER LINK	1
**303	TRF-60019UK	WH REAR MOULDING	2
**305	TRF-60022UK	WH RGB LED SPLITTER	1
**307	390-2012-RGB	LED FLX STRIP RGB 5MTR	1
**308	BE-6001UK	WH LED CLIP	2.5
**309	TRF-60025UK	LED CONTROL OUT	2



ITEM NO	PART NO	DESCRIPTION	QTY
***1	TRF-3701-AUK	REAR VAC BLANK	1
***2	TRF-3709UK	BRKT DIFFUSER MTG	2
***3	601-12955-005	GUN MUZZLE COVER UL-HB	2
***21	TRF-3702UK	STICKER CENTRE	1
***22	TRF-3703UK	STICKER FOGLIGHT	2
***23	TRF-3705UK	COVER HEADLIGHT L	1
***24	TRF-3706UK	COVER HEADLIGHT R	1
***26	TRF-3710-AUK	LED LENS INSERT BLANK	2
***27	TRF-3711UK	LED SPACER	2
***28	TRF-3713UK	STICKER GRILLE MID L	1
***29	TRF-3714UK	STICKER GRILLE 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





ITEM NO	PART NO	DESCRIPTION	QTY
**1	TRF-0500UK	ASSY BILLBOARD THX	1
**2	TRF-0004UK	PANEL ROOF	1
**3	TRF-0005UK	INSERT ROOF	1
**4	TRF-0051UK	JOINT BRIDGE	2
**5	TRF-0052UK	JOINT FLOOR	1
**6	TRF-0054UK	JOINT SASH FRONT	1
**7	TRF-0056UK	JOINT SASH REAR	1
**8	TRF-0058UK	JOINT SASH SIDE L	1
**9	TRF-0059UK	JOINT SASH SIDE R	1
**10	TRF-0006UK	BRKT BASE LAPEL	2
**11	TRF-0007UK	SUPPORT LAPEL L	1
**12	TRF-0008UK	SUPPORT 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 PLUG	1
**102	LM1246	EUROLEAD 10A EUROPEAN SOCKET	1

ITEM NO	PART NO	DESCRIPTION	QTY
**201	029-B00830-0B	M8X30 SKT BH BLK	7
**202	060-S00800-0B	M8 WSHR SPR BLK	8
**203	068-852216-0B	M8 WSHR 22OD FLT BLK	8
**204	029-B00840-0B	M8X40 SKT BH BLK	5
**205	029-B00412-0B	M4X12 SKT BH BLK	4
**206	060-S00400-0B	M4 WSHR SPR BLK	8
**207	068-441616-0B	M4 WSHR 16OD FLT BLK	8
**208	030-000840	M8X40 BLT PAS	10
**209	060-S00800	M8 WSHR SPR PAS	8
**210	068-852216	M8 WSHR 22OD FLT PAS	8
**211	000-P00420	M4X20 MSCR PAN PAS	2
**212	060-S00400	M4 WSHR SPR PAS	2
**213	060-F00400	M4 WSHR FORM A FLT PAS	2
**214	008-0S0420	M4X20 TMP PRF STN	8
**215	068-441616-0C	M4 WSHR 16OD FLT CRM	8
**216	029-B00425-0B	M4X25 SKT BH BLK	4
**217	030-000640	M6X40 BLT PAS	4
**218	060-S00600	M6 WSHR SPR PAS	4
**219	068-652016	M6 WSHR 20OD FLT PAS	4
**220	029-B00620-0B	M6X20 SKT BH BLK	6
**221	060-S00600-0B	M6 WSHR SPR BLK	6
**222	068-652016-0B	M6 WSHR 20OD FLT BLK	6
**401			1
**402	420-0021UK	MANUAL TRANSFORMERS TH	1
**403	OS1019	SELF SEAL BAG 9X12.3/4	1
**404	253-5644-063BG	KEY CHIP RGE2 TC1	1
**405	610-0816-5026	DVD SOFT KIT TC1 JESRFIGSPTR	1
**406	SAECE-xxx	DECLARATION OF CONFORMITY	1

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

## 19 WIRE COLOUR CODE TABLE

### WARNING

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

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

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

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

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

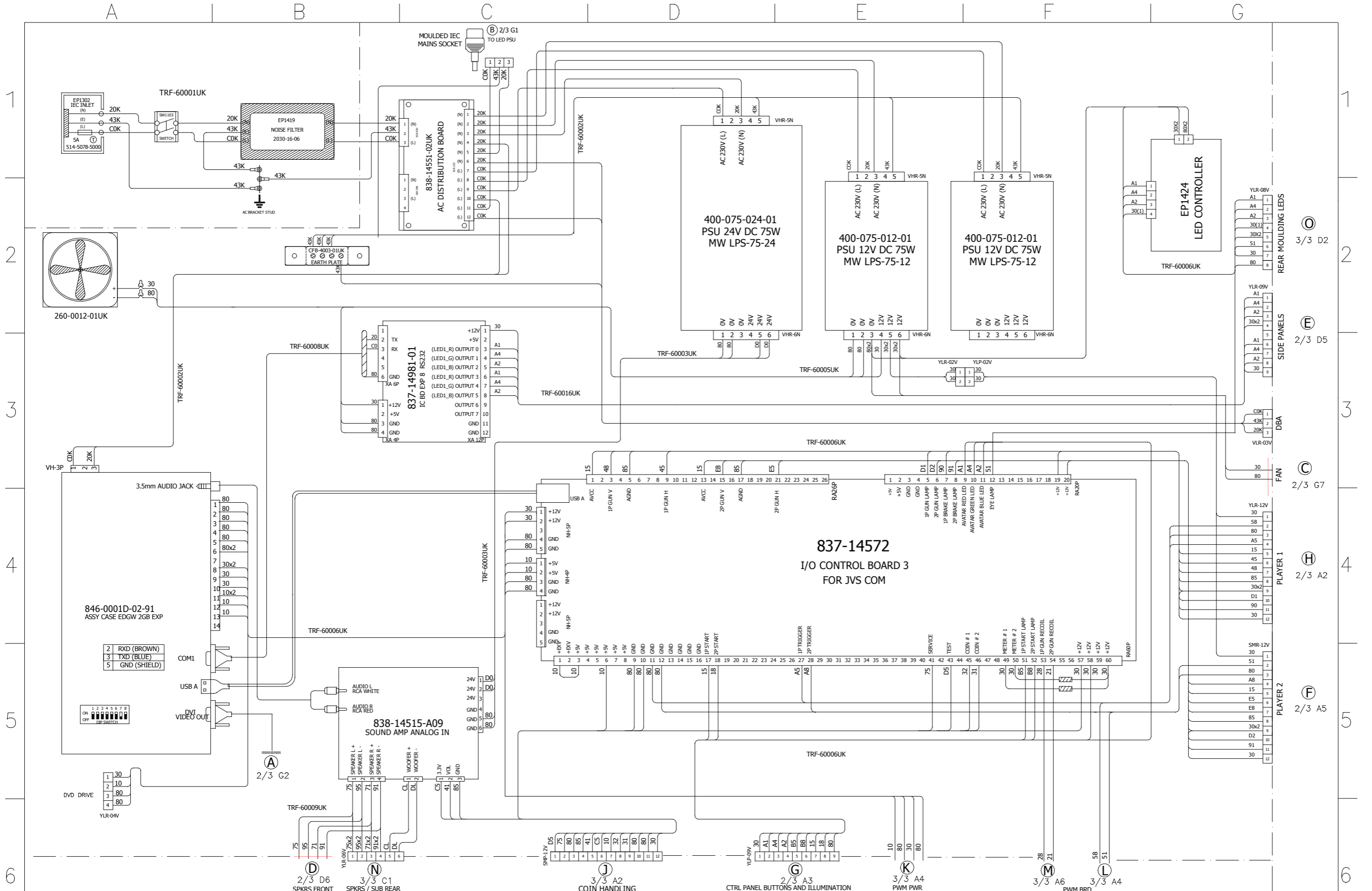
Note 1: If the right-hand side numeral is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.

<Example> 51.....WHITE/RED



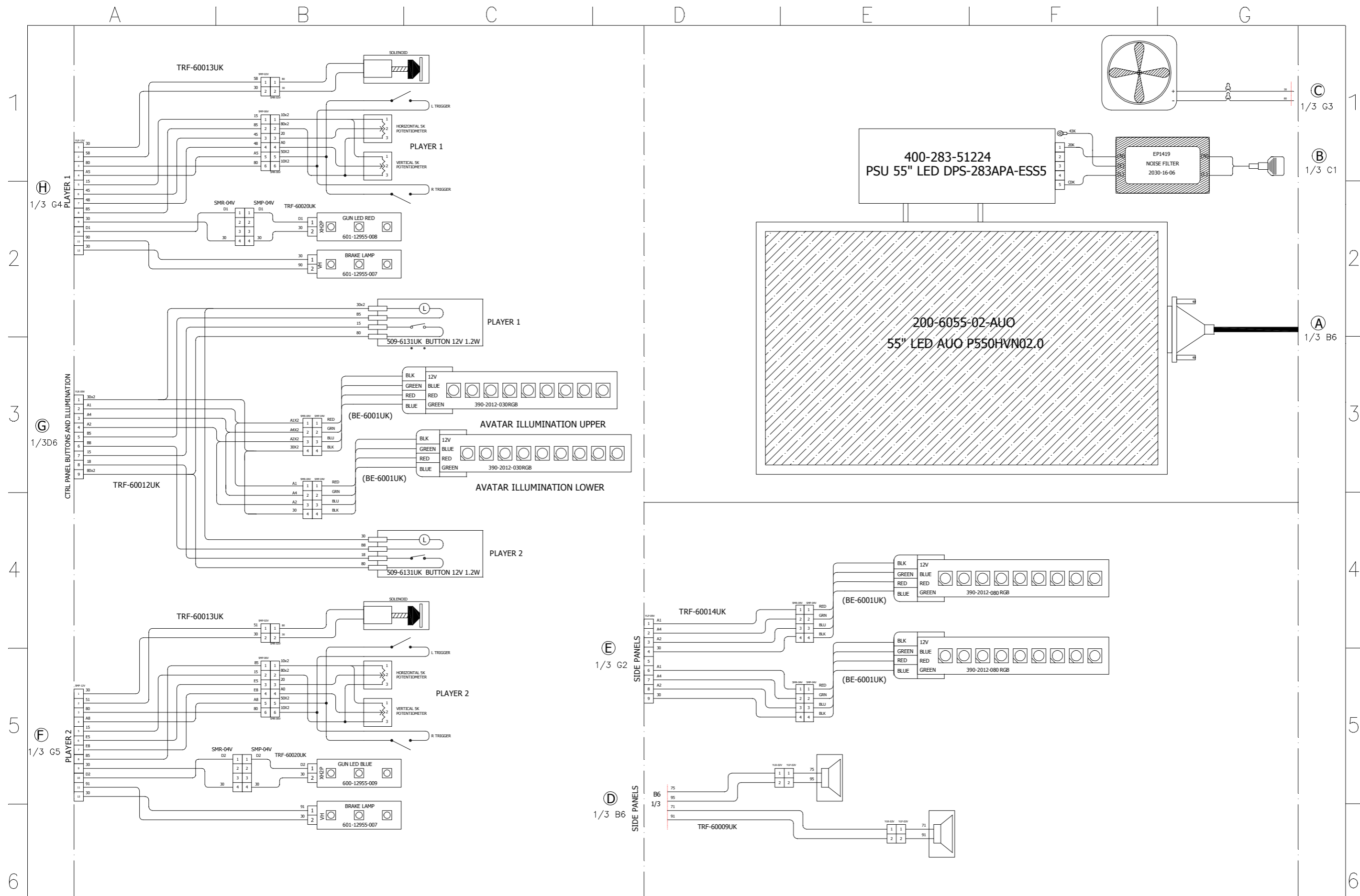
Note 2: The character following the wire color code indicates the size of the wire.

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



ALTERATION	DESCRIPTION	PART NUMBER	DESCRIPTION	ORIGINAL SIZE
8	BLACK	4-3	EARTH WIRE	ORIGINAL SIZE 1 A2 3
7	ORANGE	?	AWG18 UL1672	
6	WHITE	?	AWG20 UL1672	
5	GREEN	U	AWG16 UL1015	
4	BROWN	K	AWG18 UL1015	
3	YELLOW	L	AWG20 UL1007	
2	BLUE	AWG22	UL1007	
1	PINK	AWG24	UL1007	
	GRAY			
	RED			

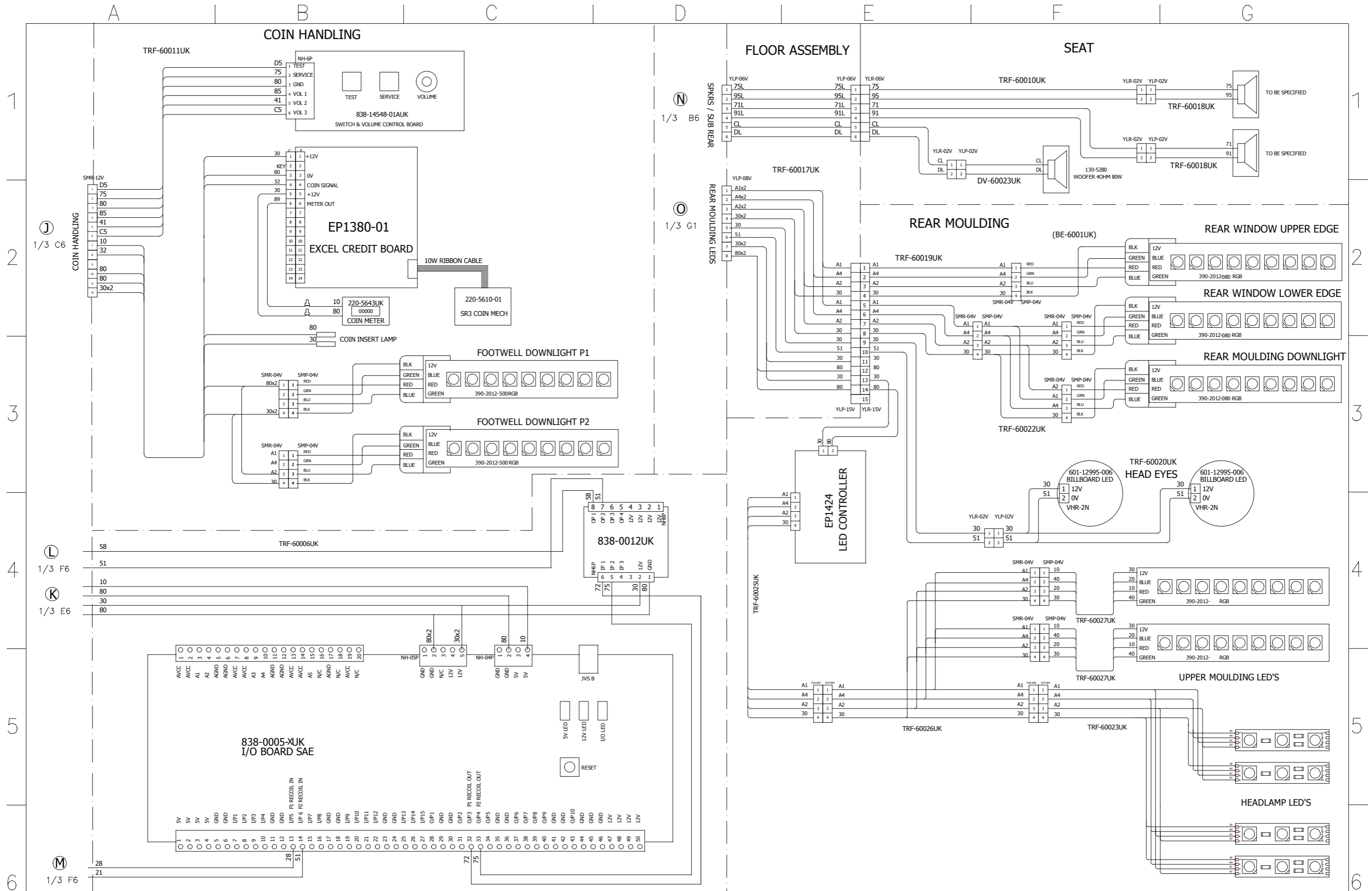
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ALTERATION		PART NUMBER		DESCRIPTION	
8	BLACK	E	LIGHT GREEN	4-3	EARTH WIRE
7	ORANGE	F	PURPLE	?	XWS28 011832
6	WHITE	D	BROWN	U	AWG16 UL1015
4	GREEN	C	SKY BLUE	K	AWG18 UL1015
3	YELLOW	B	PINK	L	AWG20 UL1007
2	BLUE	A	GRAY	AWG22	UL1007
1	RED	9		T	AWG24 UL1007

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ORIGINAL SIZE 2 A2 3



B	BLACK		4-3	EARTH WIRE
7	ORANGE	LF	AWG18	UL1672
5	WHITE	DF	AWG20	UL1672
4	GREEN	OD	AWG16	UL1015
3	YELLOW	IB	AWG18	UL1015
2	BLUE	A	AWG20	UL1007
1	RED	9	AWG22	UL1007
		9	AWG24	UL1007

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 ORIGINAL SIZE 3 A2 3

