

SERVICE MANUAL

SEGA®



DELUXE TYPE



IMPORTANT!

Before using this product, read this SERVICE MANUAL carefully to understand the contents stated herein. After reading this manual, be sure to keep it available nearby the product or somewhere convenient in order to be able to refer to it whenever necessary.

Manufactured in the UK by

SEGA®



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1. BEFORE USING THIS PRODUCT

To ensure the safe usage, be sure to read the following before using the product. The following instructions are intended for the use of QUALIFIED SERVICE PERSONNEL ONLY.

If any activity is carried out on the product, this should be done only after carefully reading and sufficiently understanding the instructions.

Only qualified service personnel should carry out maintenance on the product.

Depending on the potential risk, terms such as "WARNING!" "CAUTION" and "IMPORTANT!" are used where an explanation is given that requires special attention. SEGA is not responsible for injury or damage caused by use in a manner contrary to the instructions given in this document.

In order to prevent accidents warning stickers and printed instructions are applied in the places where a potentially hazardous situation relating to the product could arise. Be sure to comply with these warnings.



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



Indicates that mishandling the product by disregarding this caution will cause a potentially hazardous situation that can result in personal injury and or material damage.



This is cautionary information that should be complied with when handling the product. Indicates that mishandling the product by disregarding this will cause a potentially hazardous situation that may not result in personal injury but could damage the product.

IMPORTANT!

Be sure to turn off the power and disconnect from the mains supply before working on the machine.

Ensure that the correct fuses are fitted to the machine. Details of these are enclosed in the Service Manual.

Ensure that only qualified Service Engineers perform any maintenance work on the machine.

Specification changes, removal of equipment, conversion and/or additions not designated by SEGA are not permitted and will invalidate this product's CE conformity.

Warning labels or safety covers for personal protection etc, are component parts of the product. A potential hazard will be created if the machine is operated while any parts have been removed. Do not operate the product if any doors, lids or protective covers become damaged or lost. SEGA is not liable in any whatsoever for any injury and/or damage caused by specification changes not designated by SEGA.

Before installing the product, check for the Electrical Specification Sticker, SEGA products have a sticker on which the electrical specifications are detailed. Ensure that the product is compatible with the power supply voltage and frequency requirements of the location in which the machine is to be installed.

Install and operate the machine only in places where appropriate lighting is available, allowing warning stickers to be clearly read.

To ensure maximum safety for customers and operators, stickers and printed instructions describing potentially hazardous situations are applied to potentially hazardous locations. Ensure that the product's operating location has sufficient lighting to allow any warnings to be read. If any sticker or printed warning is removed or defaced, do not operate the machine until an identical item has replaced it.

Exercise great care when handling the monitor (applies only to product with monitor). Some of the monitor (TV) parts are subject to high-tension voltage. Even after turning the power off some components are liable to high-tension voltage. Only qualified service engineers should perform monitor repair and replacement.

In cases where commercially available monitors and printers are used, only the items relating to this product are contained in this manual. Some commercially available equipment will have functions and reactions not referred to in this manual. This manual should be read in conjunction with the specific manufacturer's manual for such equipment.

Descriptions contained herein may be subject to change without prior notification.

The contents described herein are fully prepared with due care. However, should any question arise or errors be found please contact **SEGA AMUSEMENTS EUROPE LTD**.

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The contents described herein are fully prepared with due care. However, should any question arise or errors be found please contact SEGA.

1.1. INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION



- Only QUALIFIED SERVICE PERSONNEL should carry out inspection.

Normally, at the time of shipment, SEGA products are in a state to allowing usage immediately after transporting to the location. Nevertheless, an irregular situation may arise during transportation preventing this. Before turning on the power, check the following points to ensure that the product has been transported safely.

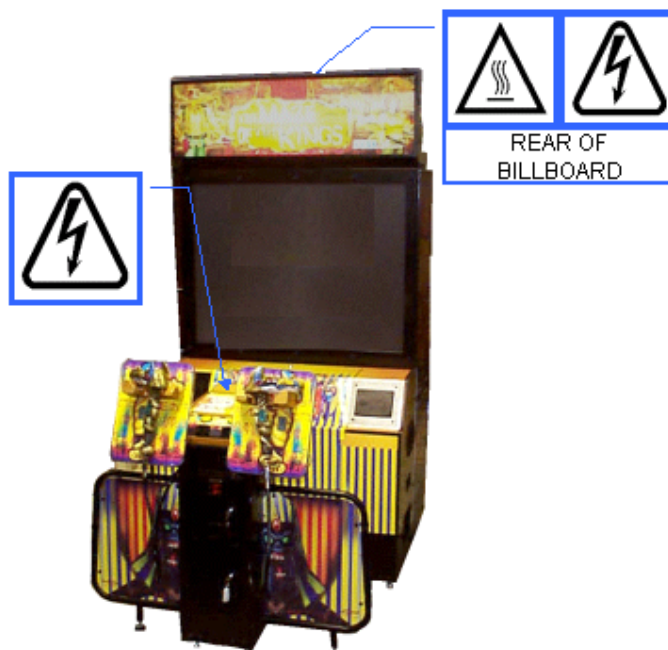
- Are there any dented parts or defects (cuts, etc.) on the external surfaces of the product.?
- Are castors and leg adjusters present and undamaged?
- Do the power supply voltage and frequency requirements meet with the local supply?
- Are all wiring connectors correctly and securely connected? Unless connected in the correct direction, connector connections cannot be made successfully. Do not insert connectors forcibly.
- Are all IC's of each IC BD firmly inserted?
- Does the power cord have any cuts or dents?
- Do fuses meet the specified rating?
- Are such units such as monitors, control equipment, IC BD, etc. firmly secured?
- Are all earth wires connected?
- Are all accessories available?
- Can all doors and lids be opened with the accessory keys and/or tools?

CONCERNING THE STICKER DISPLAY

SEGA product has stickers describing the product manufacture number (Serial Number) and electrical specification. If you require service assistance you will require the Serial Number. Identical machines may have different parts fitted internally. Only by quoting the Serial Number will the correct parts be identified.

CONCERNING WARNING STICKERS

SEGA product has warning displays on stickers, labels or printed instructions adhered/attached to or incorporated in the places where hazardous situations can arise. The warning displays are intended for the accident prevention of customers and service personnel.



SPECIFICATIONS

	<u>Without Pop Panel</u>	<u>With Pop Panel</u>
Installation Space (cm):	114 x 164.6	134.5 x 164.6
Height (cm):	224.8	258.8
Weight (kg):	247	
Power (Max):	1014 W	
Rated Voltage (V.AC):	230 VAC	
Rated Current:	2.1A	
Operating Temperature Range:	5-30°C	

Note: Descriptions in this manual are subject to change without prior notice.

2. INTRODUCTION TO THIS SERVICE MANUAL

SEGA ENTERPRISES LTD. supported by its experience in electronic high technology of VLSI's, microprocessors etc. and with a wealth of experience, has for more than 30 years been supplying various innovative and popular games to the world market. This Service Manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electro-mechanicals, servicing controls, spare parts, etc. as regards **Maze Of The Kings**, a new SEGA product. This manual is intended for those who have knowledge of electricity and technical expertise especially in IC's, CRT's, microprocessors etc. Carefully read this manual to acquire sufficient knowledge before working on the machine. Should there be any malfunction, non-technical personnel should under no circumstances touch the internal systems. Should such a situation arise contact our head office.

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3. INSTALLATION AND SERVICE INSTRUCTIONS



- Only QUALIFIED SERVICE PERSONNEL should carry out installation and commissioning.

3.1. HANDLING AND INSTALLATION 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.

The game must NOT be installed under the following conditions:

- Outside, the game is designed for indoor use only.
- In areas directly exposed to sunlight, high humidity, dust, excessive heat or extreme cold.
- In locations that would present an obstacle in the case of an emergency i.e. near fire equipment or emergency exits.
- On unstable surfaces or surfaces subject to vibration.
- Where liquids, other than routine cleaning, may come into contact with the game.

Important:

- Only Qualified Service Personnel should install this machine.
- Be sure to switch the supply power OFF and remove the mains supply plug from the machine before any work is carried out on the machine.
- Do not attempt to repair the PCB's (Printed Circuit Boards) yourself. This will void the warranty. The PCB's contain static sensitive devices that could be damaged.
- Always return a faulty part to your distributor with adequate packaging and protection.
- When removing the plug from the mains always grasp the plug not the cable.
- Do not use a fuse that does not meet the specified rating.
- Make sure all connections are secure before applying power.



- Ensure that the mains lead is not damaged. If the mains lead is damaged in any way there could be a danger of electric shock or a fire hazard.
- Ensure that the power supply is fitted with circuit protection. Using the power supply without circuit protection is a fire hazard.

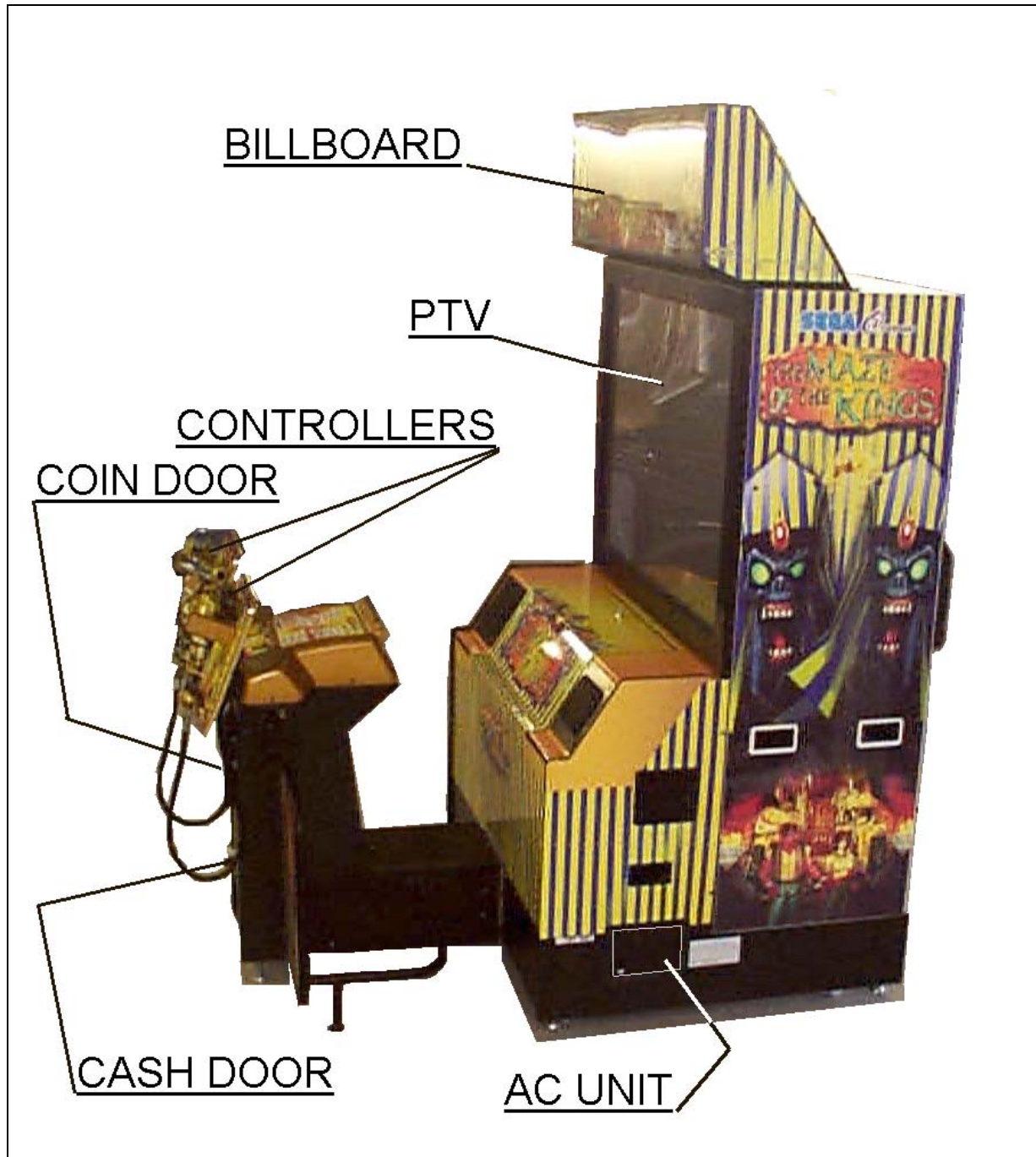
3.2. COIN HANDLING

Standard Sega machines are fitted with a SR3 coin mechanism, however, as a service to our customers Sega machines can be supplied with no coin mechanism or door allowing the customer to fit a coin handling option from the approved list. Fit only the coin handling arrangements detailed below and follow the instructions provided in section 3.7. Failure to fit the coin handling options detailed or failure to follow the installation instructions will render the machine, under the CE marking directive, void.

Approved coin handling options:

- Coin controls SR3
- Generic mechanical
- Mars (MS111B1 and ME115)
- SECI RM4-G20

3.3. NAME OF PARTS



	Width (cm)	Length (cm)	Height (cm)	Weight (kg)
PTV	114	53	158	91
BILLBOARD (With POP Panel)	114 (134.5)	40	40 (74)	19
MAIN CABI DX	114	96.8	93.9	87
GUN CABI	54.8	101	98.7	40
When Assembled	114 (134.5)	164.6	224.8 (258.8)	247

3.4. ACCESSORIES

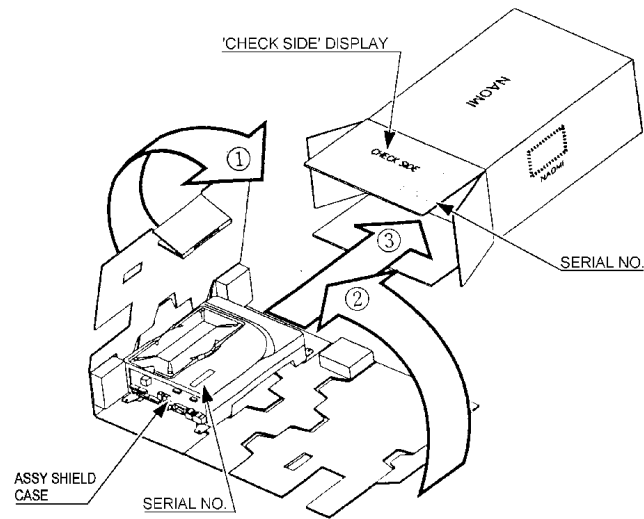
The machine is supplied with an installation kit. Please ensure the following parts are supplied:

ITEM	PART NO.	QTY	DESCRIPTION	COMPONENT REFERENCE
1	SPX-0520UK	1	ASSY BILLBOARD DX	
2	HOD-0006	2	L BRKT	
3	MAZ-0525UK	1	POP PANEL DX	
4	440-CS0186UK	1	STICKER C EPILEPSY MULTI	
5	SPX-0526UK	1	POP BRKT DX	
6	MAZ-2150UK	1	ASSY GUN HOLDER W/TETHER L	
7	MAZ-2160UK	1	ASSY GUN HOLDER W/TETHER R	
22	PK0309	1	CARTON BOX INST KIT MAZ DX	
23	SAECE-095	1	DECLARATION OF CONFORMITY	
24	MAZ-2002UK	1	INST PLATE MAZ DX MULTI	
101	290094	0.8	WRAP,BUBBLE(SM)	
201	030-000850-SB	4	M8X50 BLT W/S BLK	FENCE L+R-2EA
202	030-000830-SB	8	M8X30 BLT W/S BLK	FENCE L+R-4EA
203	029-F00625-0B	4	M6X25 SKT CSK BLK	
205	000-T00420-0B	4	M4X20 MSCR TH BLK	FENCE L+R-2EA
206	068-441616-0B	4	M4 WSHR 16OD FLT BLK	FENCE L+R-2EA
207	030-000840-SB	8	M8X40 BLT W/S BLK	(2)-8
208	068-852216-0B	24	M8 WSHR 22OD FLT BLK	(2)-8,FENCE L+R-6EA
209	030-000860-0B	4	M8X60 BLT BLK	F.CABI-4
401	420-6620UK	1	SERVICE MANUAL GD ROM SYS	
402	OS1019	2	SELF SEAL BAG 9X12.3/4	
403	420-6702-01UK	1	SERVICE MANUAL MAZ DX	
405	390-5160	1	LAMP WG B TYPE 6V 3W (C2R)	
406	509-5080	1	SW MICRO TYPE (SS-5GL2)	
413	514-5078-5000	1	FUSE 5X20 CERAMIC SB 5000MA	

3.5. SHIPPING THE GAME BOARD



- When returning the GAME BOARD for repair or replacement, be sure to package the entire ASSY SHIELD CASE in the original card transit box - THERE ARE NO USER-SERVICEABLE PARTS INSIDE.
- Failure to return the GAME BOARD in this manner may invalidate the warranty.

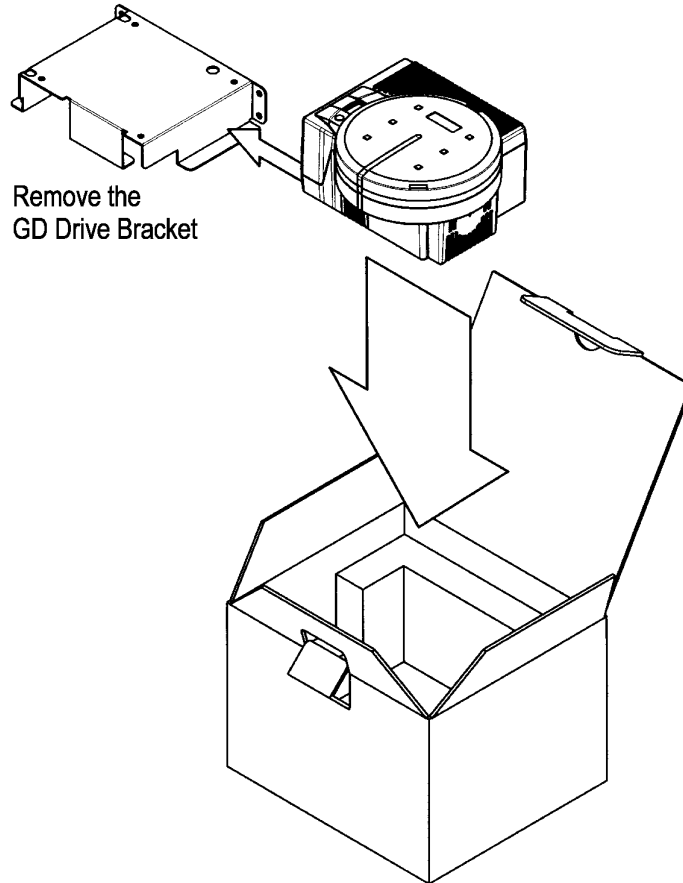


Pack the ASSY SHIELD CASE **ALONG WITH DIMM BOARD** in the original transit box as shown. Putting it upside down or packing otherwise in the manner not shown can damage the GAME BOARD and other parts.

3.6. SHIPPING THE GD-ROM DRIVE



- When returning the GD-ROM DRIVE for repair or replacement, be sure to package it in the original card transit box - THERE ARE NO USER-SERVICEABLE PARTS INSIDE.
- Ensure the GD-ROM Disk is removed and the GD-ROM Drive Lid is replaced on the unit, with fixing screw, before packaging. Also, remove the GD-ROM Drive Bracket and store with the four screws for reuse.
- Failure to return the GD-ROM DRIVE in this manner may invalidate the warranty.



3.7. ASSEMBLY INSTRUCTIONS



WARNING!



IMPORTANT!

- Perform the assembly by following the procedure herein stated. Failure to comply with the instructions, for example, inserting the plug into an outlet at a stage not mentioned in this manual can cause an electric shock
 - Assembling should be performed as per this manual. Since this is a complex machine, erroneous assembling can cause damage to the machine, or malfunction to occur.
 - Do not attempt to complete this work alone, a minimum of 2 people are required.
-
- Only QUALIFIED SERVICE PERSONNEL should carry out assembly.

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

STEP 1: ASSEMBLE THE MACHINE

STEP 2: LEG-LEVELLING PROCEDURE

STEP 3: COIN HANDLING INSTALLATION.

STEP 4: CONNECTION TO THE POWER SUPPLY

STEP 5: ASSEMBLY CHECK

Note that the parts contained within the installation kit are required for the assembly work.



CAUTION!

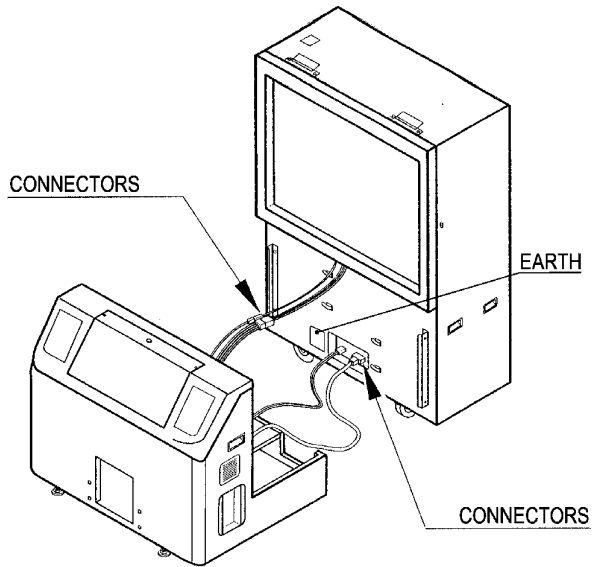
- Fit all fixings loosely first as detailed in step 1, then position all components before finally tightening fixings at step 4.

3.7.1. ASSEMBLE THE MACHINE

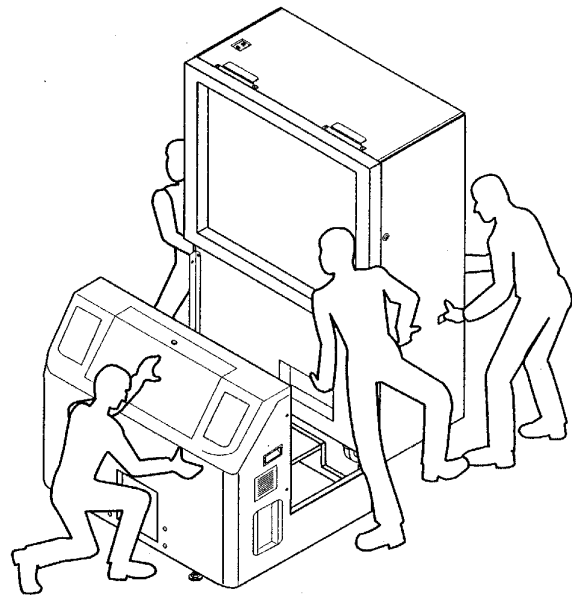
3.7.1.1. ASSEMBLE THE PTV

1. Place the PTV and PTV Cabinet in roughly their final position, in close enough proximity to make the connections shown.

It is imperative that the earth eyes are connected to the plate at the bottom of the PTV.

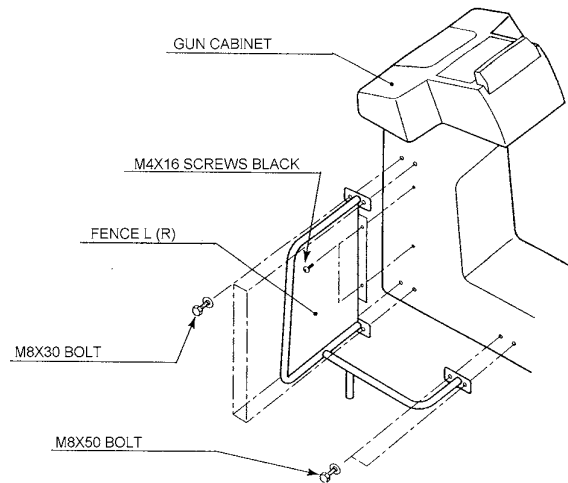


2. Lift the PTV forwards onto the PTV Cabinet, using a minimum of four workers to lift the PTV, plus a further worker to steady the PTV Cabinet. Use care during this exercise, as the PTV weighs in excess of 100kg.
3. Ensure the PTV is correctly seated on the PTV Cabinet.



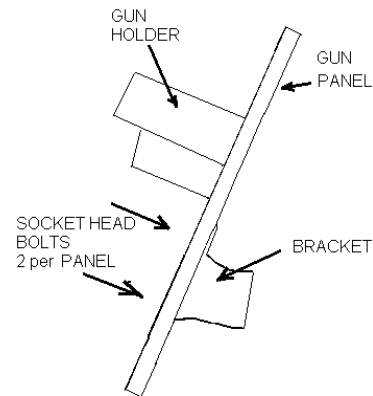
3.7.1.2. ATTACH THE GUARD RAILS

1. Remove the guardrails from their packaging.
2. Fit the rails to the gun cabinet as shown using the M8 bolts and the M4 screws provided.



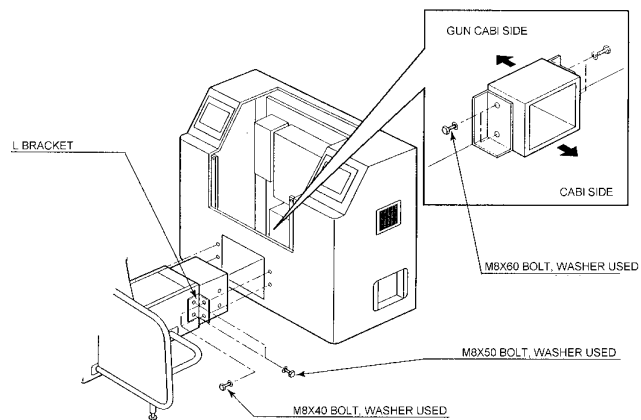
3.7.1.3. ATTACH GUN PANELS TO GUN CABINET

1. Secure Gun Panels to Bracket using (4) M6 x 25 Socket Head Countersink Black Bolts (Pt No.029-F00625-0B) [2 per Panel]

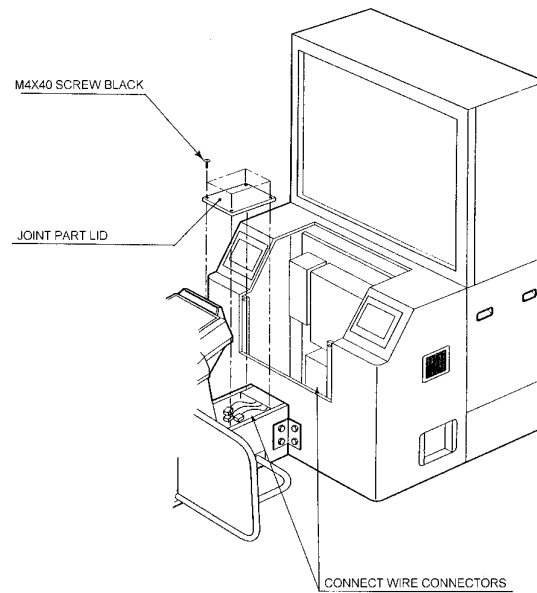


3.7.1.4. ATTACH THE GUN CABINET

1. After fitting the guard rails to the gun cabinet fit the gun cabinet to the main cabinet.
2. Slide the gun cabinet into the hole in the main cabinet as shown.
3. Fix the gun cabinet in position using the joint brackets and M8 bolts provided.



4. Once the cabinet is secure connect the connectors as shown.
5. Fit the cover in place using the M4x30 screws provided.



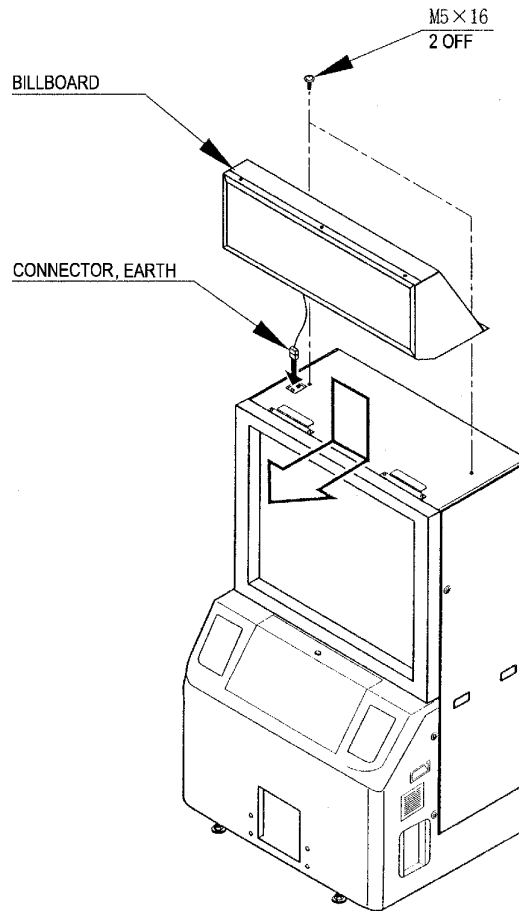
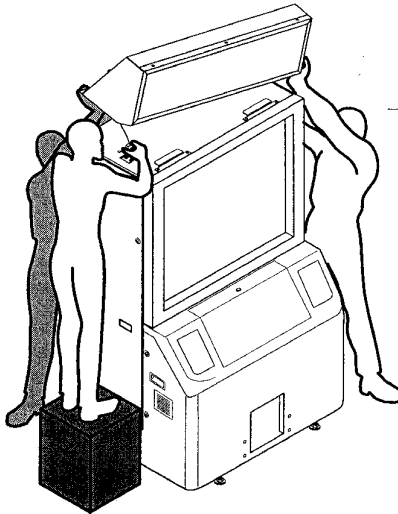
3.7.1.5. FIT POP PANEL TO BILLBOARD

1. Attach the Pop Panel Bracket (SPX-0526UK) to the top of the Billboard using the 3 Black M4x16 Truss Screws and Washers (supplied) at locations shown.
2. Fix the Pop Panel to the Bracket with 3 M4 x 16 Black Truss Screws and Washers.



3.7.1.6. FIT THE BILLBOARD TO THE PTV

1. Fix the billboard to the PTV as shown.
2. Be sure to fit the connector from the billboard to the PTV. **It is imperative that the earth eye is connected to the top plate of the PTV.**
3. Place the billboard onto the PTV and slide it forward under the catches
4. Fix the billboard in position using the 2 off M5x16 screws provided



When fitting the Billboard, be sure to use three people for safety.

3.7.2. LEG-LEVELLING PROCEDURE

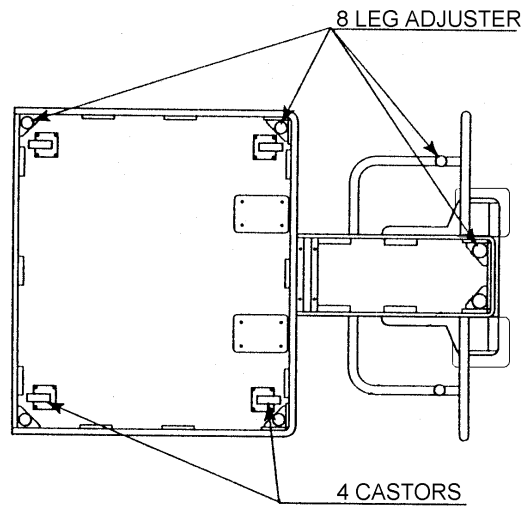
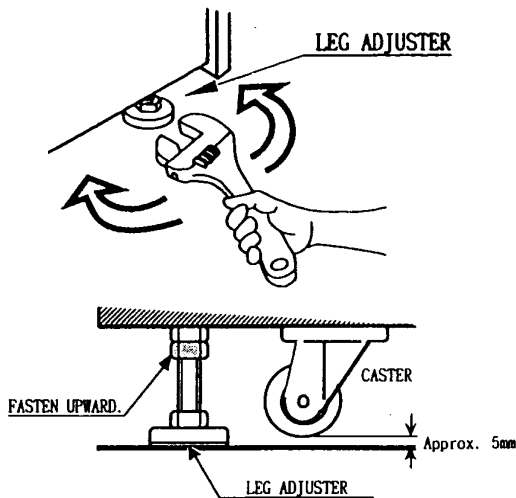


IMPORTANT!

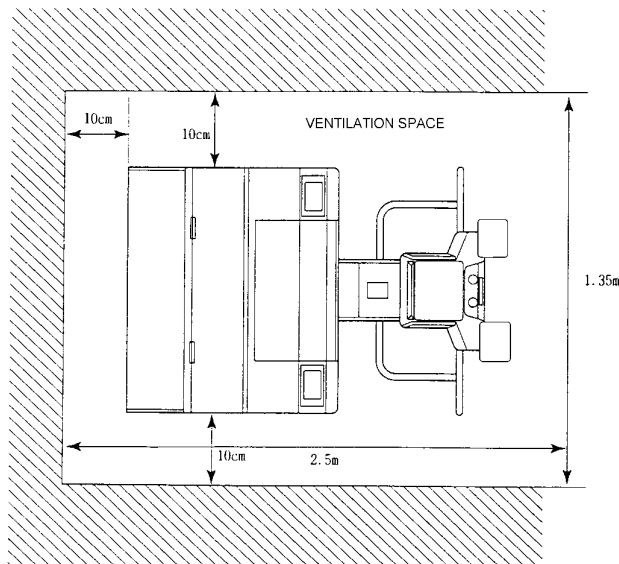
- This operation requires 2 people. Ensure that all leg adjusters are in contact with the floor otherwise the machine may move and cause injury.
- Only QUALIFIED SERVICE PERSONNEL should carry out this operation.

This machine has 4 castors and 8 leg adjusters. When the installation position is decided, unscrew the leg adjusters so that they raise each castor a minimum of 5mm from the floor. Make sure the machine is level.

1. Move the machine to its final position.
2. Adjust the leg adjusters as shown until the castors are approximately 5mm off the floor and the machine is level.



Ensure adequate ventilation is maintained as detailed below

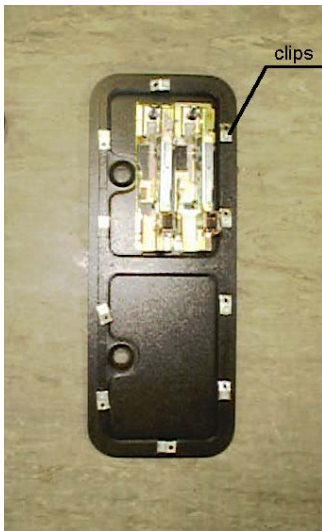


3.7.3. COIN HANDLING INSTALLATION.



- Only QUALIFIED SERVICE PERSONNEL should carry out this operation.

When fitting the coin mechanism to the door please refer to the specific manufacturers installation instructions for that coin mechanism. To fit the door to the machine, follow the procedure below.



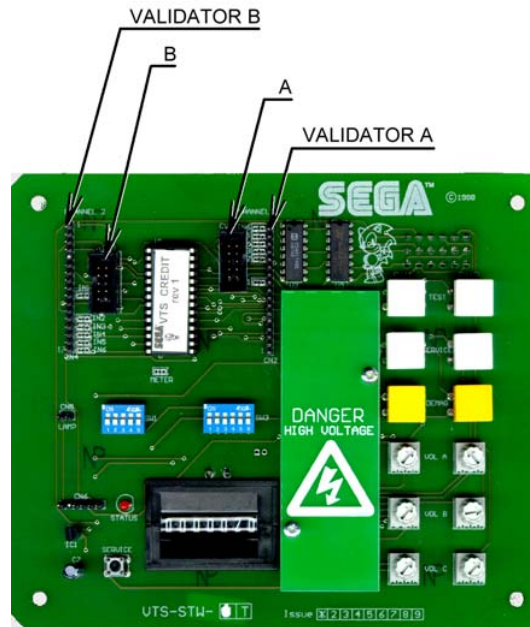
- Loosen all of the bolts on the frame that secure the clips.
- Turn all clips in towards the door.



- Position the door into the aperture in the machine.
- Turn the clips around so that they will hold the door in the machine.
- Tighten all of the bolts.

3.7.3.1.WIRING CONNECTIONS.

COIN MECH C220B	LOOM LM1006IDC LM1006LAMP-0.1	INSTALLATION <ul style="list-style-type: none"> • Attach the lamp holder to the bracket on the coin return button. • Attach one 15-way connector to the C220 coin mech. • Attach the other 15-way connector to Validator A on the credit board. • Attach the 2-way connector to 'LAMP' on the VTS board. • Fit the two lamp holders behind the coin return buttons. • Attach the blue cable and orange cable to one mech's micro-switch switch. • Attach the blue/green cable and orange/green cable to the other mech's micro-switch. • Attach the 2-way mate and lok plug to the 2-way mate and lok cap provided. • Attach one 15-way connector to Validator A and the other to Validator B on the credit board
GENERIC MECHANICALS	LM1008 LM1008-LAMP	<ul style="list-style-type: none"> • Fit the lamp holder to the bracket behind the coin return button. • Fit one of the 13-way connectors to the coin mech. • Fit the other 13-way connector to Validator A on the credit board. Note the 13-way connector is keyed and this key must coincide with the key on the credit board.
MARS MS111B1 MARS ME115	LM1007 LM1008-LAMP	<ul style="list-style-type: none"> • Attach the lamp holder to the bracket on the coin return button. • Attach the 2- connector to 'LAMP' on the VTS board. • Attach the validator's own loom to position A on the credit board
SECI, C120, SR3	OWN LOOM AND LM1006LAMP-0.1	<ul style="list-style-type: none"> • Attach the lamp holder to the bracket on the coin return button. • Attach the 2- connector to 'LAMP' on the VTS board. • Attach the validator's own loom to position A on the credit board



VTS credit board assembly

3.7.4. CONNECTION TO THE POWER SUPPLY

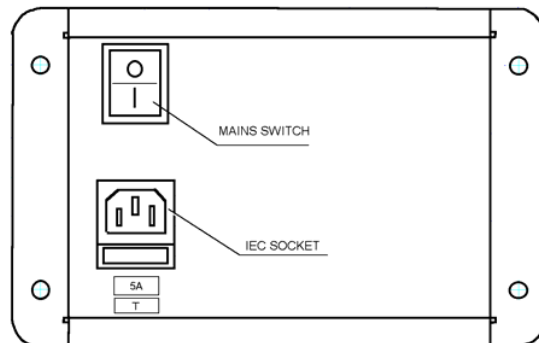


IMPORTANT!

- This operation may only be carried out once the machine has been completely assembled.
- Only QUALIFIED SERVICE PERSONNEL should carry out this operation.

Once the machine has been fully assembled and fixed in position it is ready to be connected to the power supply

1. The socket outlet shall be installed near the equipment and shall be easily accessible.
2. Insert the IEC plug into the IEC socket on the cabinet.
3. Insert the mains cord into the wall outlet
4. Switch on the power at the wall outlet.
5. Switch on the mains switch on the AC unit of the machine.



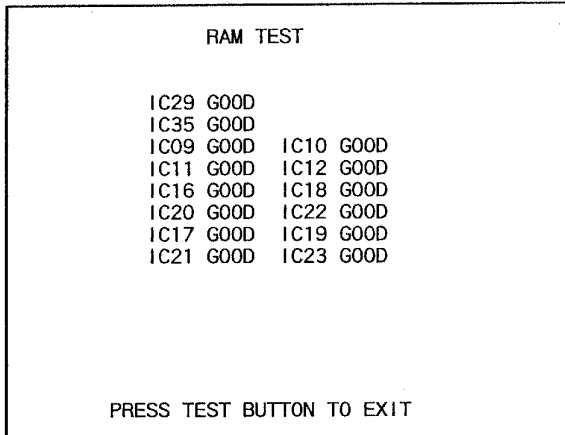
3.7.5. ASSEMBLY CHECK



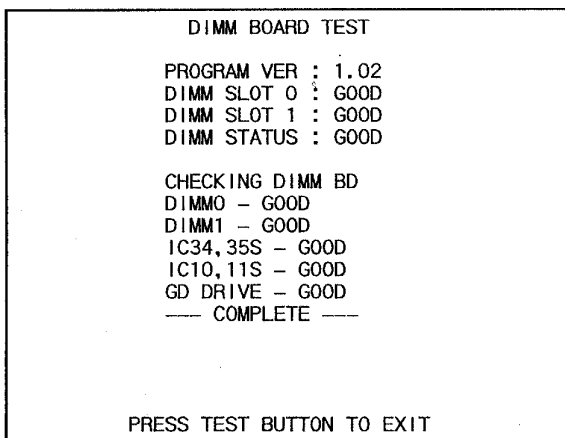
IMPORTANT!

- Only QUALIFIED SERVICE PERSONNEL should carry out this operation.

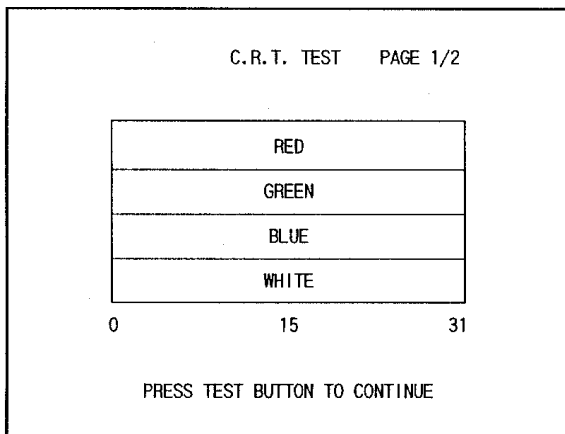
When the machine has been installed and power is applied, carry out the following checks in the TEST MODE to ensure that the machine has been assembled correctly and that there are no faults.



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

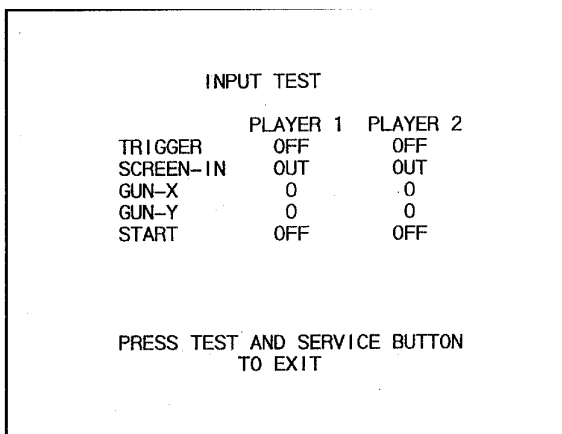
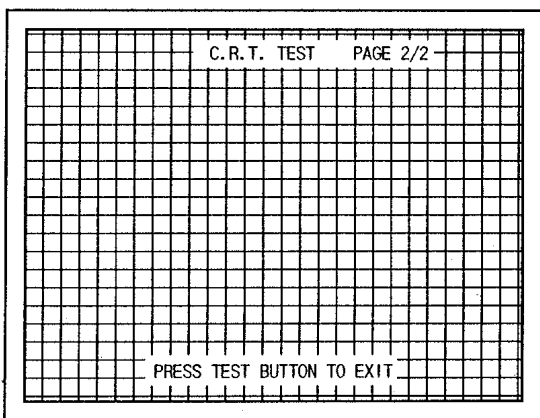


The DIMM BOARD TEST checks the functionality of the DIMM Board. The DIMM Board is satisfactory when GOOD is displayed as shown.

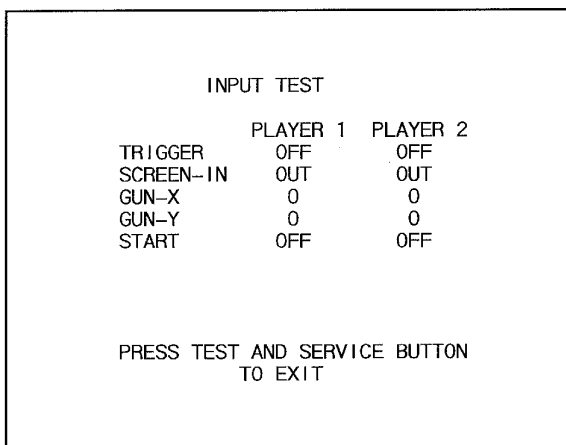


In the TEST mode menu select CRT TEST to check the image quality.

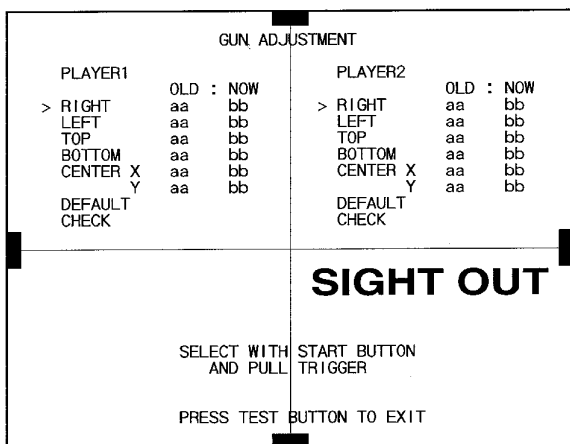
If necessary, adjust the image by referring to the PTV manual supplied.



Check the switch functions and connections by selecting INPUT TEST and actuating each switch, checking that 'ON' is displayed to indicate satisfactory operation.



Selecting PLAYER 1 or 2 should cause the relevant lamp to light if connections, etc., are satisfactory.



The GUN ADJUSTMENT parameters should now be set. Refer to section 5.2.9 for detailed instructions.

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

3.8. MOVING THE MACHINE

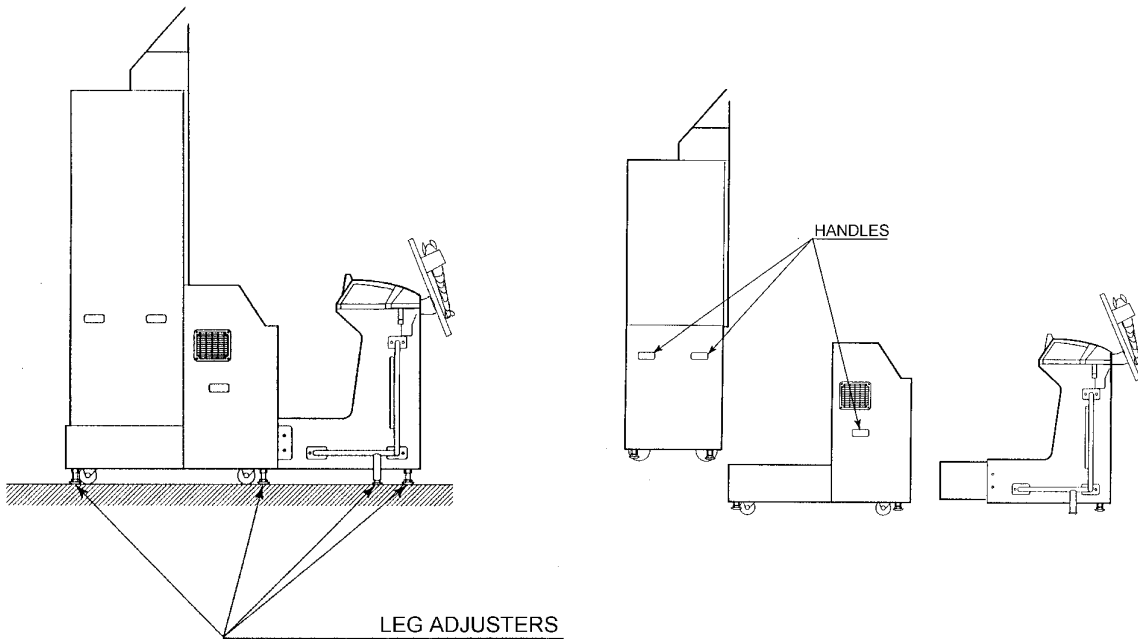


CAUTION!

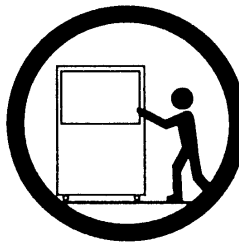


IMPORTANT!

- When moving the machine, be sure to remove the plug from the power supply. Moving the machine with the plug inserted can cause the power cord to be damaged, resulting in a fire or electric shock.
- When moving the machine, retract the leg adjusters fully and ensure the casters make contact with the floor. During movement pay careful attention so that the casters or leg adjusters do not damage any other cabling laid on the floor. Such damage could result in a fire or electric shock.
- Only QUALIFIED SERVICE PERSONNEL should carry out this operation.



- Do not handle the machine by its plastic parts as this may result in damage or injury.



3.9. FUSES



WARNING!



IMPORTANT!

- Never touch places other than those specified. Touching places other than those specified can cause electric shock and short circuit. Disconnect the machine from the supply before attempting the replacement of any fuse.

- Only QUALIFIED SERVICE PERSONNEL should replace FUSES.
- Only replace fuses with ones of the same value and type.

There are a number of fuses used on this machine to protect the user and the machine from damage. Only replace the fuse once you have removed the cause of its failure. Detailed below is a list of the fuses used, their location and if relevant PCB reference:

PART NUMBER	LOCATION	TYPE & DETAILS	QTY PER COCKPIT
514-5078-6300	838-11856CE-02 (F1)	5x20 HRC SB 6300mA	1
514-5078-4000	400-5397-01 (F1)	5x20 HRC SB 4000mA	1
514-5078-6300	838-13616 (F1)	5x20 HRC SB 6300mA	1
514-5078-5000	IEC INLET (EP1302)	5x20 HRC SB 5000mA	1

There are also fuses located on the Monitor PCB. Refer to the relevant Monitor manual supplied to reference these fuses.

3.10. REPLACEMENT OF FLUORESCENT LAMP AND OTHER LAMPS



WARNING!



IMPORTANT!

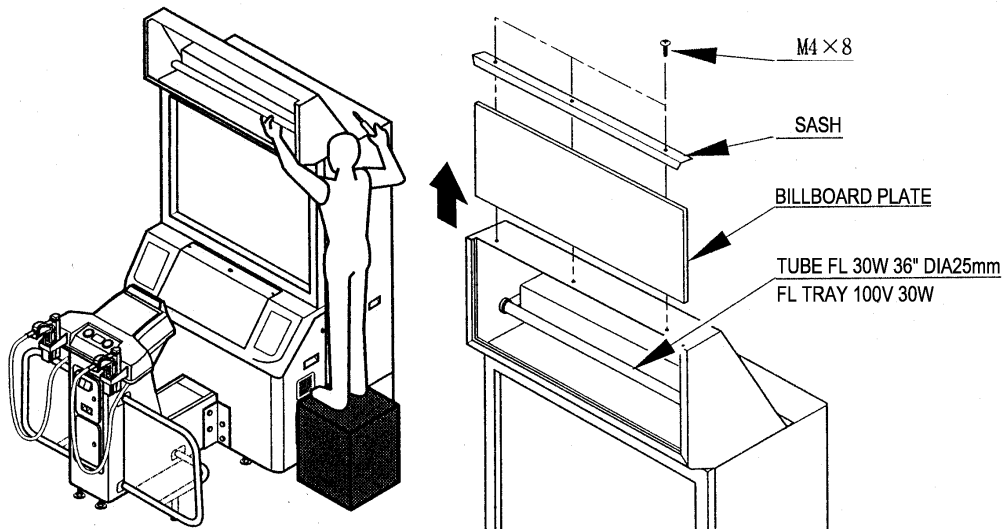
- Never touch places other than those specified. Touching places other than those specified can cause electric shock and short circuit. Disconnect the machine from the supply before attempting the replacement of any lamp.
 - Use a step to perform work on the Billboard. Ensure the step is secure to avoid injury.
 - The Fluorescent Lamp can get hot and cause burns. Allow the Lamp to cool before touching it.
-
- Only QUALIFIED SERVICE PERSONNEL should replace lamps.

3.10.1. FLUORESCENT LAMP REPLACEMENT

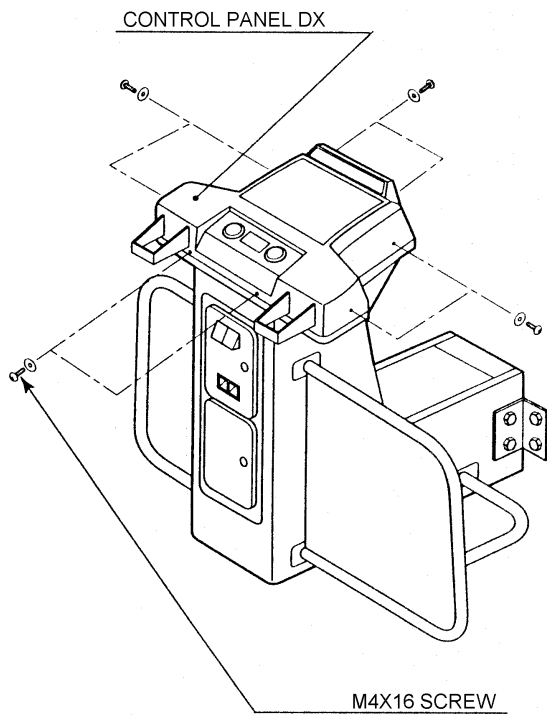
1. Remove Pop Panel (if fitted) and associated bracket by removing 3 x M4 Truss Screws.



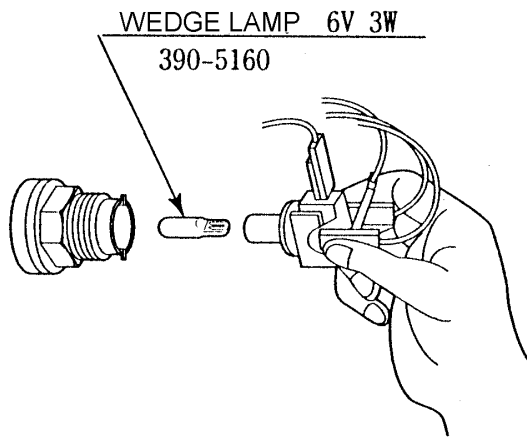
2. Remove the M4 Truss Screws to remove the Sash. Withdraw the Billboard Plate upwards.
3. To remove the Fluorescent Lamp, first remove both end connectors. Then withdraw the Lamp from the two clips, using care to avoid breakage.
4. Replacement of Lamp is in reverse order of removal.



3.10.2.LAMP REPLACEMENT



1. Remove the control panel cover as shown by removing the 8 screws holding it in position.
2. Carefully lift the control panel cover up until it is possible to disconnect the wire harness plugs attaching the start switches to the cabinet.
3. Turn the control panel cover over and remove the micro switch from the start switch as shown below.
4. Remove and replace the wedge lamp.
5. Reassemble the control panel cover to the gun cabinet.



3.11. TROUBLESHOOTING



- Only QUALIFIED SERVICE PERSONNEL should carry out these procedures.

If a problem occurs, first check the wiring connections.

PROBLEMS	CAUSE	COUNTERMEASURES
When the main switch is turned ON, the machine is not activated	The power is not ON. Incorrect power source/voltage. AC Unit CIRCUIT PROTECTION DEVICE (i.e. fuse) was activated due to an instantaneous overcurrent.	Firmly insert the plug into the outlet. Make sure that the power supply/voltage are correct. First, remove the cause of overcurrent and reinstate the circuit protection device to its original status. Then identify the cause of the fault on the item that caused the overcurrent & fix.
The colour image on the screen is incorrect	Incorrect monitor adjustment.	Make appropriate adjustments. SEE SECTION 3.7.5.
The on-screen image of the monitor sways and/or shrinks	The power source and voltage are not correct.	Make sure that the power supply and voltage are correct.
Sound is not emitted	Sound volume adjustment is not correct. Malfunctioning BD and Amp. Connector connection is incorrect	Adjust the volume setting on the VTS bracket. SEE SECTION 5.1.1 Perform Sound Test to check it. SEE SECTION 5.2.3. Check connector connection from Base to Speaker
Controller operation is not satisfactory	Sighting is inaccurate due to environmental conditions, etc. Micro-switch malfunctioning Sensor BD is malfunctioning	Adjust the gun sighting alignment. SEE SECTION 5.2.9 Replace the micro-switch. SEE SECTION 3.12.1 Replace the Sensor BD. SEE SECTION 3.12.2
The fluorescent lamp does not light up	Fluorescent lamp needs replacement The connector is disconnected	Replace the fluorescent lamp. SEE SECTION 3.10 Check connector connections in the billboard case.

3.12. CONTROLLER



- Only QUALIFIED SERVICE PERSONNEL should carry out these procedures.

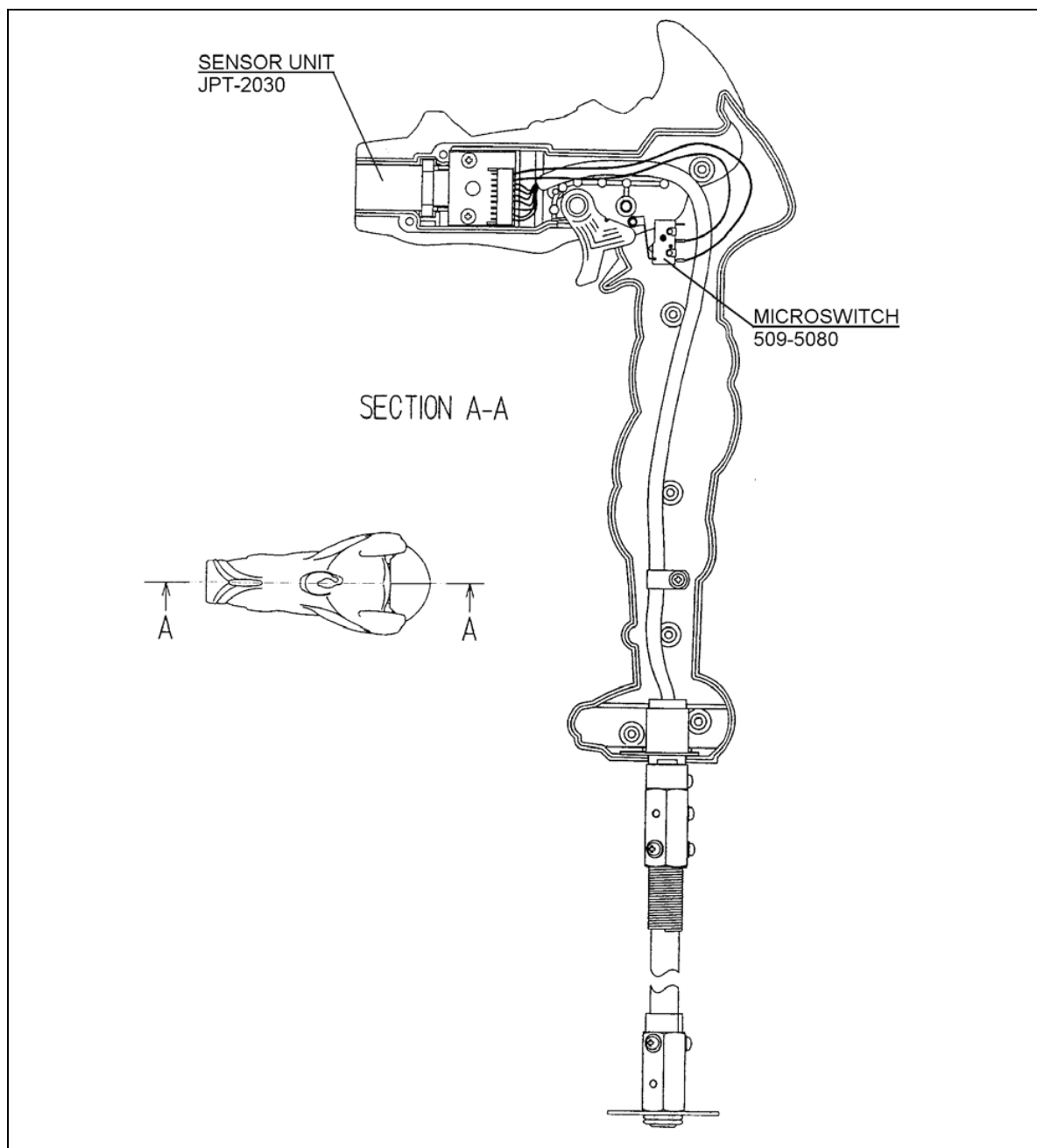
In cases where the controller's operation is not satisfactory or the controller sight deviates from the direction in which it is pointed, the controller's interior parts may have been damaged. Replace the parts by disassembling the controller by the following procedure. Also, be sure to perform the sighting check in the test mode when the controller parts are replaced. Refer to the diagram on the following page when working on the controllers.

3.12.1.REPLACING THE MICRO-SWITCH.

1. Disassemble the controller.
2. Pullout the micro-switch from COVER RIGHT
3. Take out the micro-switch by de-soldering it.
4. Bend the new micro-switch actuator as shown.
5. Solder the new micro-switch and assemble the controller.
6. By operating the trigger, check if the micro-switch can be turned ON/OFF correctly.

3.12.2.REPLACING THE SENSOR UNIT

1. Disassemble the controller unit.
2. Remove the sensor unit from the cover.
3. Replace with the new sensor unit.
4. Reassemble the controller unit.



3.13. GAMEBOARD



WARNING!



IMPORTANT!

- Turn off the mains power and remove the power cord before opening the machine.
- To prevent risk of shock or fire, be careful not to damage any wiring.
- The GAME BOARD should not require any work to be carried out upon it. All settings and tests can be achieved without access to the GAME BOARD.
- Take anti-static precautions to avoid damaging the electronic parts.
- All work to be carried out by QUALIFIED SERVICE PERSONNEL

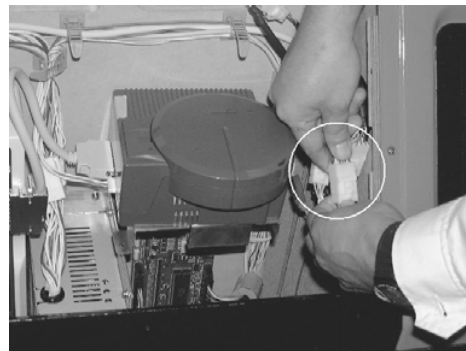
The GD-ROM Service Manual supplied with this product instructs you to remove the Key Chip when shipping the NAOMI Board. However, this product employs a dedicated NAOMI Board, therefore do not disassemble the NAOMI Board or remove the Key Chip.

3.13.1.REMOVING THE BOARD

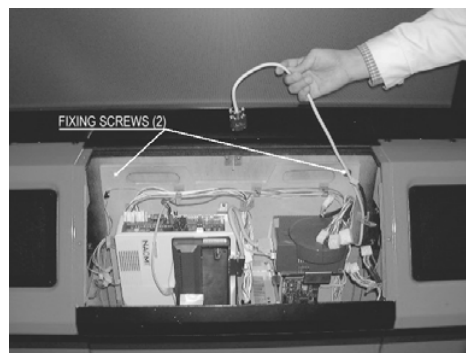


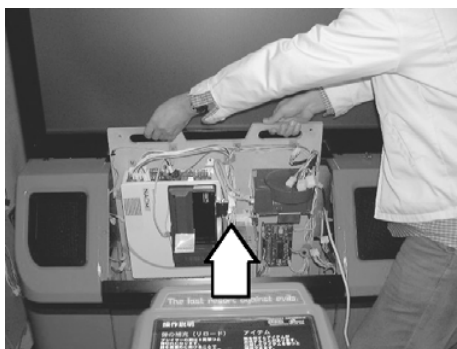
1. Turn off the power.
2. Remove the two screws and unlock the LID UPPER.

3. Disconnect all harnesses connected to the NAOMI Main Board assembly as circled below.

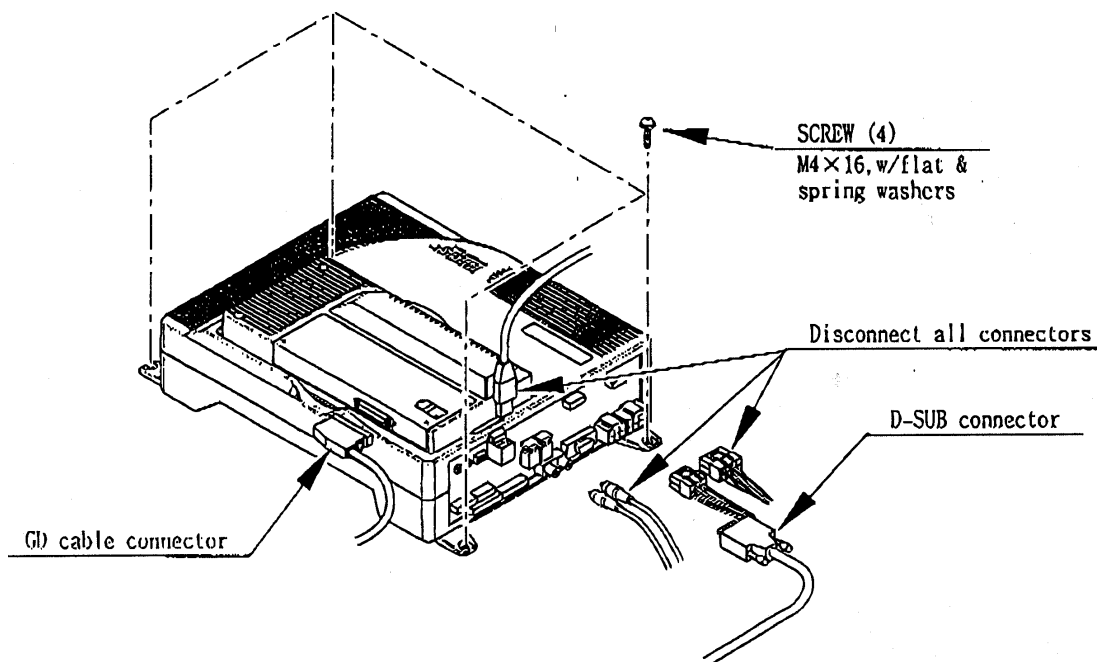


4. Remove the D-SUB connector from the filter board.
5. Remove the two screws securing the base to the cabinet and withdraw the main board assembly upwards out of the cabinet.





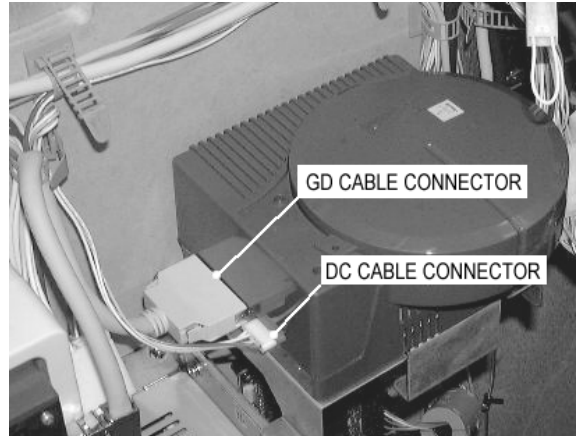
6. Remove all connectors from the filter board of the NAOMI Board. Also remove the GD cable connector from the DIMM Board.
7. Remove four screws securing the NAOMI Board to the base.



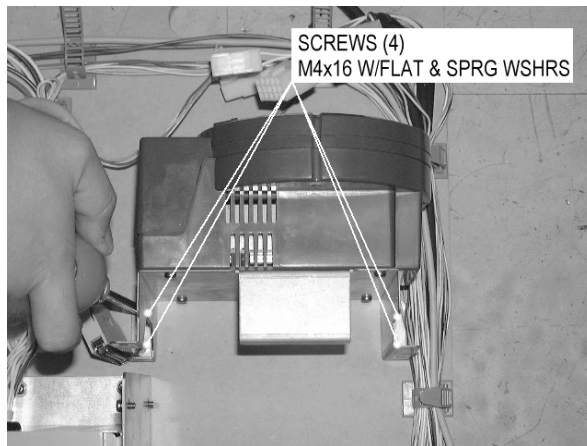
3.13.2.REMOVING THE GD-ROM DRIVE

Take out the ASSY MAIN BD from the PTV cabinet and remove the GD-ROM Drive from the ASSY MAIN BD as follows:

- i. Following the above procedure (steps 1 to 5), take out the ASSY MAIN BD.
2. Remove the GD cable connector and the power cord connector from the GD-ROM Drive.

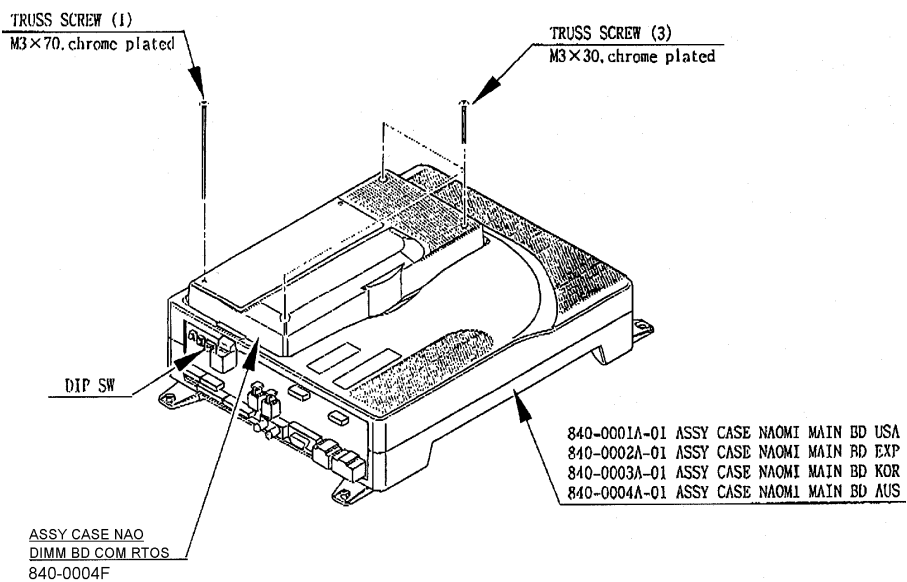


3. To remove the GD-ROM Drive, undo the four screws shown.



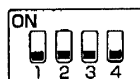
3.14. COMPOSITION OF THE GAME BOARD

ASSY CASE NAO GD SPY USA (840-0089D-01):USA
ASSY CASE NAO GD SPY EXP (840-0089D-02):EXPORT
ASSY CASE NAO GD SPY KOR (840-0089D-03):KOREA
ASSY CASE NAO GD SPY AUS (840-0089D-04):AUSTRALIA



DIP SW SETTING

In this product, set the DIP SW to OFF.



3.15. PERIODIC CHECK AND INSPECTION

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



WARNING!



IMPORTANT!

- Be sure to check annually to see if the power cords are damaged. The plug is securely inserted and that there is no dust in the interior of the machine or between the socket and the power cord. Using the product in an unclean condition may cause a fire or electric shock.
- Only QUALIFIED SERVICE PERSONNEL should carry out periodic checks.

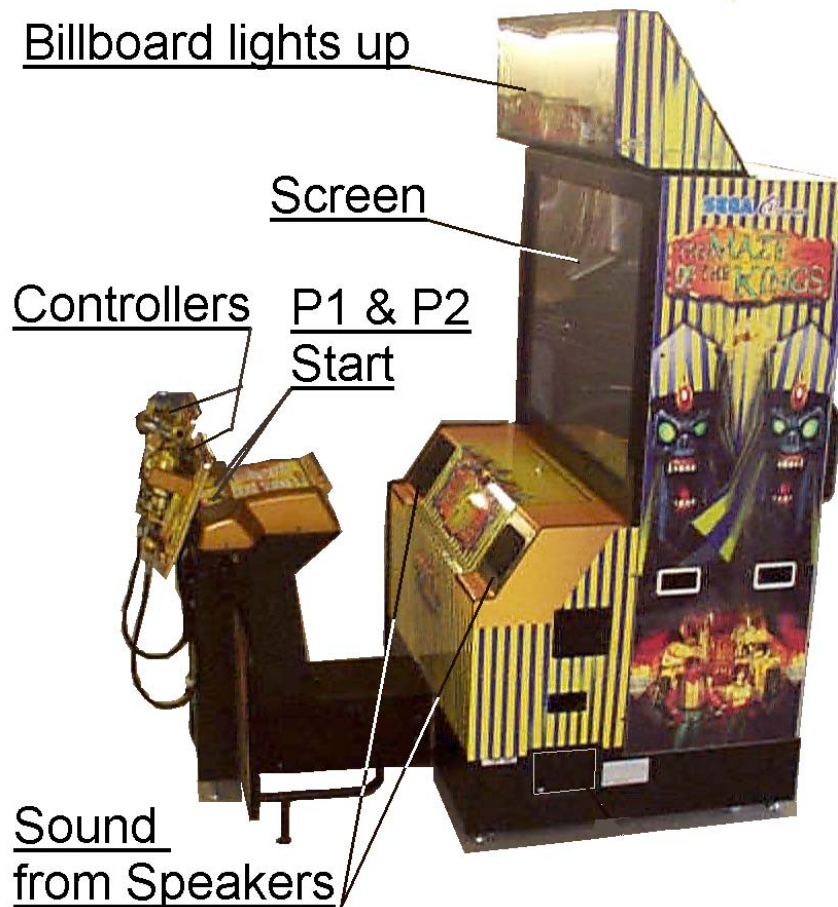
DESCRIPTION	WHAT TO CHECK	INTERVAL
MONITOR / PROJECTOR	Clean screen	Weekly
	Check adjustment	Monthly
GAME BD	Memory Test	Monthly
	Game Assignments	Monthly
INTERIOR	Clean (Do Not use water jet)	Annually
POWER SUPPLY CORD	Check condition	Annually
CABINET SURFACE	Clean (Do Not use water jet)	As required
CONTROL PANEL	Lamp operation	Monthly
	Check switch operation	Monthly
CONTROLLER (GUN)	Clean	As required
	Check sighting	Weekly
	Check switch operation	Monthly
COIN MECHANISM	Check SW (If Fitted)	Monthly

4. HOW TO PLAY

Use this section to confirm the machine is operating correctly; if the machine doesn't operate as described there may be a fault.

While power is connected, the billboard is continuously lit and demonstration footage and ranking data are displayed on the screen. This 'advertise' mode will be accompanied by sound from both speakers unless set otherwise in the TEST mode.

The 1P and 2P start buttons have integral lights that flash when a credit is inserted.



4.1. GAME CONTENTS

4.1.1. GAME OUTLINE

- This is an action adventure game with the theme of a giant treasure hunt.
- The players take on the role of treasure hunters, fighting their way through various traps and using their magic rods to defeat the guardians of the treasure.
- The game is made up of three stages.
- Two players can play simultaneously.

4.1.2. STORY

Somewhere among the pyramids, the world's last remaining secret treasure is sleeping. However, each time you set foot in the dungeon where it lies hidden, the route to the treasure changes...

Two treasure hunters with magic rods in hand.

Can they miraculously defeat the guardians and avoid countless traps to retrieve the hidden treasure?

4.1.3. PLAYER CHARACTERS



LINDA ROBERTS

Twenty-four years old.

A veteran adventurer whose quests have taken her around the world, she seeks the treasure of ancient ruins.

She possesses a courage and decisiveness unmatched by any man.



JAMES COOPER

Twenty-eight years old. A bright young man from the West Coast. This will be his first adventure.

He has talked the veteran character (female) into bringing him along against her will.

His lack of experience and simplicity of character often confound his partner.

4.1.4. SPECIAL CHARACTERISTICS OF THE GAME

1. Random Map System

This game adopts a random map system where the route changes each time the game is played. Under this system, the room layout and order of rooms to be passed through for each stage change every time the game is started.

2. Customisable Players

This game allows players to select rod effects and defence items. Using these functions, players are able to adequately prepare themselves for battle with difficult enemies and also to compensate for their partners' weak points.

3. Free Exchange of Items/Lives

During two-player mode, players can give lives to their partners or exchange rod effects.

4.1.5. HOW TO PLAY

4.1.5.1. Insert Coins

Insert coins and the credit display at the bottom of the screen will go up.

When enough coins have been inserted for a single-player game, the "INSERT COIN(S)" message at the bottom of the screen will change to "PRESS START BUTTON" and both Start buttons will flash.

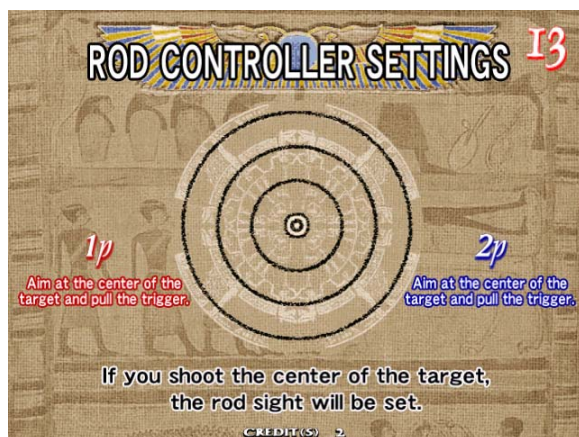
NB. Up to nine credits can be counted at a time. If additional coins are inserted they will not be counted as credits nor will they be returned. However, they will register on the data display and coin meter as having been inserted.

A player who wants to join a game in progress should insert coins during the game and press the Start button. If the number of credits remaining is enough, the Start button on the side not being played will flash. A player can join in during the game by pressing this button.

4.1.5.2. Rod Controller Settings

A player decides which side (left or right) to play by pressing the Start button on the desired side.

Press the Start button and the Rod Controller Settings screen will appear.



Players adjust the aim of the Gun Controllers by aiming and firing at the target in the center of the screen.

4.1.5.3. Rod Effects Selection

The following selection screen appears after the Gun Controllers have been adjusted.

1. Rod Effect Selection



Select the effect of the rod. Only one of the three effects can be selected.

- * LIGHT: This allows the most shots to be fired at once, but shot strength is correspondingly less powerful.
- * SPARK: This effect provides a balance between shot strength and frequency.
- * FIRE: This effect is the most powerful but allows the least number of shots.

2. Equipment Selection



Select equipment. Only one of the three items can be selected.

- * HELMET: Protects against flying enemies attacking from above.
- * JACKET: Protects against piercing attacks.
- * BRACELET: Protects against the fang and claw attacks of the mummies.

Each is only effective once.

They regain their effectiveness when Continue is selected.

3. Exchanging Lives (Two Player Mode Only)

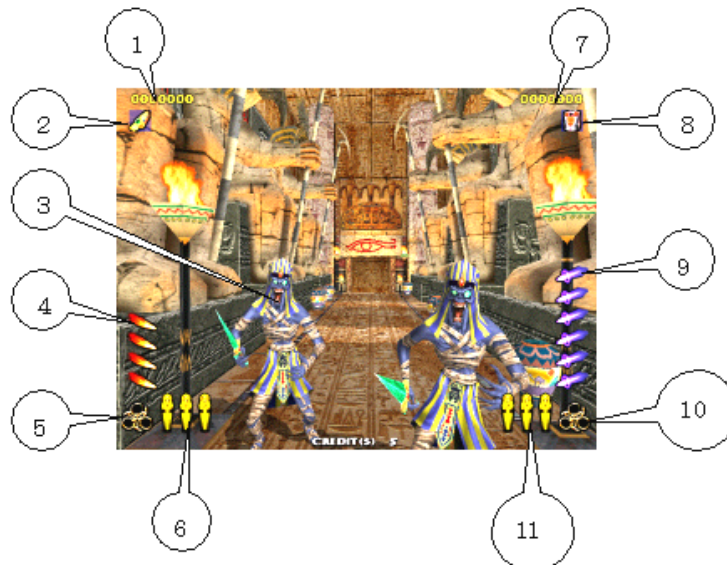


Players can give lives to and receive lives from a partner.

However, players cannot reduce their lives to zero.

4.1.5.4. Current Game Edition

- (1) Player One: Score
- (2) Player One: Equipment Selected
- (3) Enemies
- (4) Player One: Number of Rod Effects
- (5) Player One: Number of Stones
- (6) Player One: Number of Lives Remaining
- (7) Player Two: Score
- (8) Player Two: Equipment Selected
- (9) Player Two: Number of Rod Effects
- (10) Player Two: Number of Stones
- (11) Player Two: Number of Lives Remaining



Rod effects and lives for the Player One (on the left side) are displayed at the lower left of the screen.

Rod effects and lives for (Player Two) (on the right side) are displayed at the lower right of the screen.

Recharging the Rod

The rod loses its effectiveness after a certain period of time, depending on the effect that the player has chosen.

When the rod loses its effectiveness, the message RELOAD will be displayed on the screen.

To restore the effectiveness of the rod, the player should point the tip of the rod away from the screen.



Reload Display (Displayed When Bullets are Used Up)



Losing Lives

- ⊕ Each player possesses a certain number of lives.
- ⊕ The player loses a life each time they suffer an enemy attack (biting, clawing, slashing or hitting).
- ⊕ A sight appears each time players battle a boss character. Players lose one life if they fail to shoot the enemy down by the time the sight turns completely red.



SIGHT

Increasing Score

- ⊕ Score is increased when a player discovers treasure in pots or acquires treasure from enemy characters.
- ⊕ Complete the minigame in the last area of each stage to acquire even more treasure!

Decreased Score

Score decreases each time the game is continued.

Items

Items sometimes appear when players defeat enemies or smash pots.

Players can collect items by shooting them to increase their scores or gain lives.



Life

Collect one Life to increase the number of lives by one



Stones

Collect three Stones to increase the number of lives by one.



Treasure Item

This is enemy treasure.

Reveal the Treasure by defeating the enemy for bonus points.

Boss Battles

- ✧ Clear each stage by defeating the Boss character waiting at the end of the stage.
- ✧ To defeat the Boss character, the player must reduce its Life Meter to zero.



Treasure Hunt Minigame

- ✦ When the Boss character of each stage has been defeated, a minigame begins where players can acquire the Boss's treasure.
- ✦ During a minigame, follow the instructions that appear on the screen.
- ✦ Players can increase their scores by completing the minigame and acquiring the treasure.



Rankings

- ✦ The Stage Clear screen appears when the minigame ends.
- ✦ This screen displays players' rankings along with their scores for each stage.



4.1.5.5. Player Item Exchange (Two-player mode only)

- ⊕ Clear a stage during two-player mode and the Item Exchange screen is displayed.
(If a partner joined while a game was in progress, the partner's Item Selection screen will be displayed).
- ⊕ Players can exchange rod effects, equipment and lives.



4.1.5.6. Game Over

The following conditions result in GAME OVER:

- ii. Reduction of players' lives to zero.
- iii. Clearing of Stage Three.

4.1.5.7. Continue

To continue when a player's lives are reduced to zero, they must insert enough coins to continue and then press the Start button. If there are enough credits remaining to continue, the game can be continued by simply pressing the Start button.

4.1.5.8. Hi-Score

Players whose scores are in the top twenty can record their names.

4.1.6. Play Tips

- ① **Shoot the Treasure For Increased Points!**
Points increase with the number of successful shots on enemy treasure.
- ② **Stop Multiple Enemies in their Tracks!**
Simultaneous attacks by multiple enemies are extremely dangerous.
Be sure to create situations where they can be dealt with one-on-one.
- ③ **Aim at the Shoulders and Legs of Enemies With Shields!**
Enemies with shields may be encountered.
Shields deflect rod effects, so aim and fire at unshielded areas.

5. MAINTENANCE INSTRUCTIONS

5.1. EXPLANATION OF TEST AND DATA DISPLAY

Use the switches on the VTS to enter the TEST MODE. This will allow you to carry out post installation and periodic checks and adjustments. The following section details the function of each of the tests:



- Be very careful about entering TEST MODE. If the machine you wish to test is linked to other machines, exiting test on your machine will cause a network check to be carried out. This will disable all other machines linked to it.

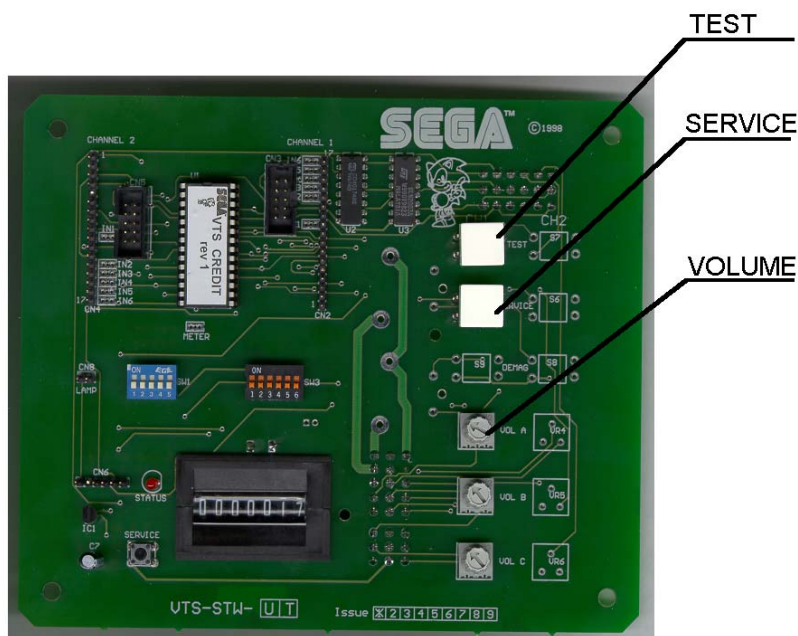
ITEM	DESCRIPTION / REFERENCES	INTERVAL
INSTALLATION OF THE MACHINE	<p>When the machine is installed perform the following checks:</p> <ul style="list-style-type: none">• Check to see that each setting is as per the standard settings input at the time of shipment. 3.7.5• In the INPUT TEST mode, check each switch. 5.2.9.1• In the OUTPUT TEST mode, check each of the lamps. 5.2.9.2• In the MEMORY TEST mode check all of the IC's on the IC BD. 5.2.1	Monthly
MEMORY	<ul style="list-style-type: none">• On the TEST MENU screen choosing the MEMORY TEST allows self-test to be performed. In this test RAM & ROM are tested. 5.2.1	Monthly
PERIODIC CHECKS	<p>Periodically perform the following</p> <ul style="list-style-type: none">• MEMORY TEST. 5.2.1• Ascertain each setting.• In the INPUT TEST mode, test the control devices. 5.2.9.1• In the OUTPUT TEST mode, check each of the lamps. 5.2.9.2	Monthly
CONTROL SYSTEM	<ul style="list-style-type: none">• In the INPUT TEST mode, check each switch and• Adjust or replace each switch and	Monthly
MONITOR	<ul style="list-style-type: none">• In the CRT TEST mode, check to ensure the monitor is adjusted correctly. 5.2.4	Monthly
	<ul style="list-style-type: none">• Clean screen - (switch off machine and remove the plug). Do not use a water jet.	Weekly
IC BOARD	<p>MEMORY TEST</p> <ul style="list-style-type: none">• In the SOUND TEST mode, check the sound related ROMs. 5.2.3	Monthly
DATA CHECK	<ul style="list-style-type: none">• Check such data as held in the bookkeeping screens, relating to number and length of plays. 5.2.9.5	Monthly
EXTERIOR MAINTENANCE	<ul style="list-style-type: none">• Clean surfaces	Monthly
COIN MECHANISM	<ul style="list-style-type: none">• Check switch operation (if fitted)	Monthly

5.1.1. VTS ASSEMBLY



CAUTION!

- Do not touch places other than those specified. Touching places not specified could cause an electric shock or short circuit.



Opening the Coin Chute door will reveal the VTS Assembly shown above. The function of each switch is as follows.

TEST BUTTON
(TEST SW)

Used to enter TEST mode. Also has function during TEST mode. Refer to the later section detailing TEST mode.

SERVICE BUTTON
(SERVICE SW)

Gives credits without registering on the coin counter. Also used during TEST mode.

DEMAG

Eliminates colour unevenness from the monitor screen.

VOLUME CONTROL FRONT

Adjusts the volume of the sound emitted from the speakers.

The control panel switches can also be used in the place of the VTS switches:

Note: There are three volume controls on the VTS, only the top volume control is used, the other two are spares.

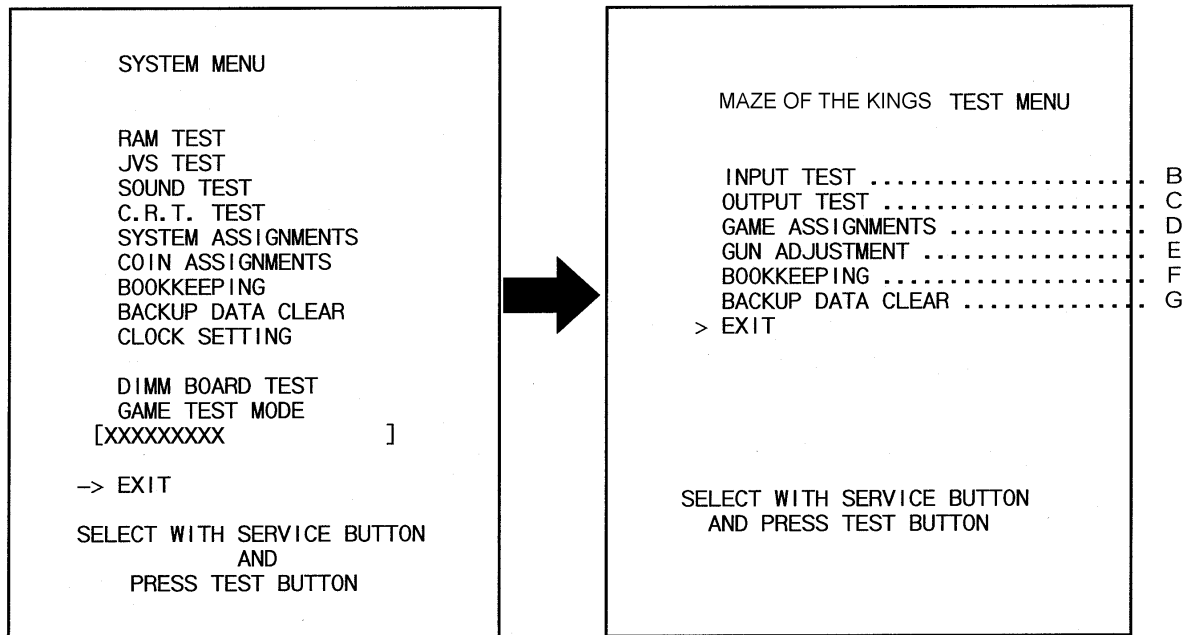
5.2. SYSTEM TEST MODE



- Any changes made in SYSTEM TEST MODE will only be stored once the EXIT command is chosen from the SYSTEM MENU. If the power is turned off before this, any changes made are ineffectual.
- Executing BACKUP DATA CLEAR in the SYSTEM TEST MODE does not clear the BOOKKEEPING data in the GAME TEST MODE.
- Entering the SYSTEM TEST MODE clears any coins less than one credit and the BONUS ADDER data.

The SYSTEM TEST MODE mainly allows for IC Board function checks, monitor adjustment, coin assignments, etc. Please also refer to the Monitor Service Manual supplied with this product. The following assignments, however, should be designated as follows for this product:

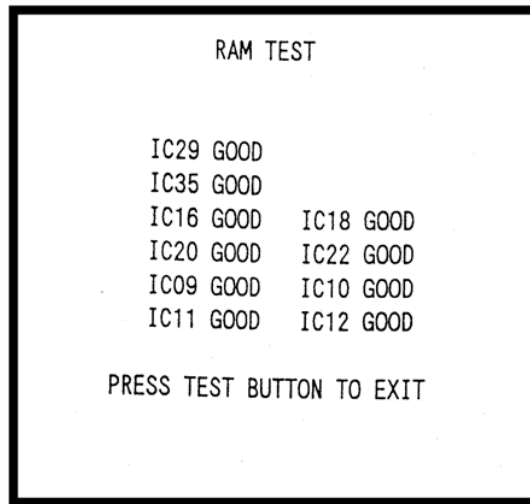
- CABINET TYPE: 1 PLAYER (S)
- MONITOR TYPE: HORIZONTAL
- COIN CHUTE TYPE: COMMON



- Press the TEST button to display the SYSTEM TEST MODE MENU.
- By pressing the SERVICE button, move the cursor (->) to the desired item and select with the TEST button.
- Use the SERVICE button to move the cursor and select the desired item with the TEST button.
- Select EXIT once changes are complete and press the TEST button to return to the normal mode.

5.2.1. RAM TEST

This allows the RAM functions to be checked on the Naomi Main Board. 'GOOD' is displayed for satisfactory RAMs, 'BAD' is displayed if any irregularities are found.



During test, 'TESTING NOW' is displayed. Press the TEST button to return to the Menu Mode.

5.2.2. JVS TEST

In this test, Specifications of the I/O Board connected to NAOMI can be checked, and INPUT TEST can be performed. First, I/O Board Specifications are displayed.

```

JVS TEST
INPUT TEST
NEXT NODE
-> EXIT
NODE 1/1
NAME SEGA ENTERPRISES, LTD.
I/O 838-18683
VER 1.04
98/12
CMD VER 1.1
JVS VER 2.0
COM VER 1.0
SWITCH 2PLAYER(S) 11BITS
COIN 2SLOT
ANALOG 8CH
ROTARY 0CH
KEYCODE 0
SCREEN X:0 Y:0 CH:0
CARD 0SLOT
HOPPER OUT 0CH
DRIVER OUT 8SLOT
ANALOG OUT 0CH
CHARACTER CHARA:0 LINE:0
BACKUP 0

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

```

(A)
(B)
(C)

Name and version of I/O BOARD.

Select with the SERVICE button and press the TEST button.

(A) INPUT TEST: Proceeds to the INPUT TEST of I/O BOARD being displayed.

(B) NEXT NODE: In the case where more than 2 I/O Boards are connected, proceeds to the next I/O Board.

(C) EXIT: Returns to the menu mode.

INPUT TEST SCREEN

```

JVS TEST
INPUT TEST
NEXT NODE
-> EXIT
NODE 1/1
SWITCH
SYSTEM 00000000
PLAYER1 00000000
00000000
PLAYER2 00000000
00000000
COIN
0000 0000
ANALOG
0000 0000 0000 0000
0000 0000 0000 0000

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

```

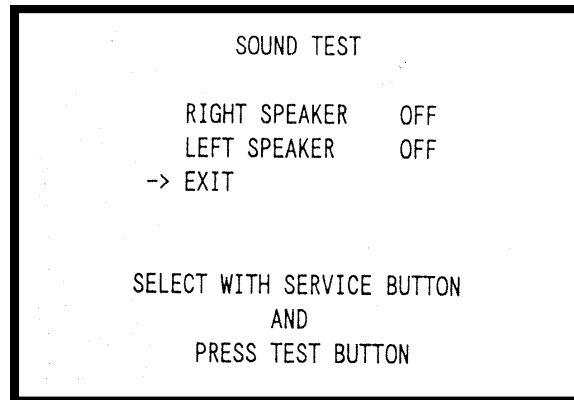
When INPUT is performed for the switches of Control Panel, etc., the value changes to 1 from 0.

If the Coin SW is inputted, the value momentarily changes to 1 from 0.

Analogue values are displayed between 0000 and FF00.

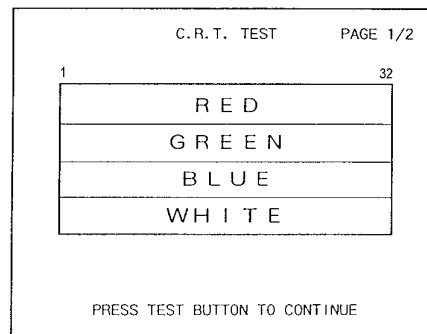
5.2.3. SOUND TEST

Sound Output test can be performed by emitting beeps from each speaker in turn.



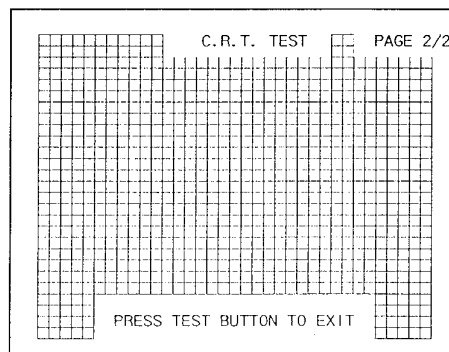
5.2.4. CRT TEST

A) RGB COLOUR ADJUSTMENT SCREEN - Allows monitor colour to be checked.



The red, green and blue colour bars are darkest at the leftmost end, becoming brighter towards the right in 31 graduations. Monitor brightness is satisfactory if the white colour bar is black at the leftmost end and white at the rightmost end. Press TEST button to proceed to the next page.

B) MONITOR SIZE ADJUSTMENT SCREEN - Allows monitor size to be checked.



Adjust so that the crosshatches do not go beyond the screen. Press TEST button to return to Menu Mode.

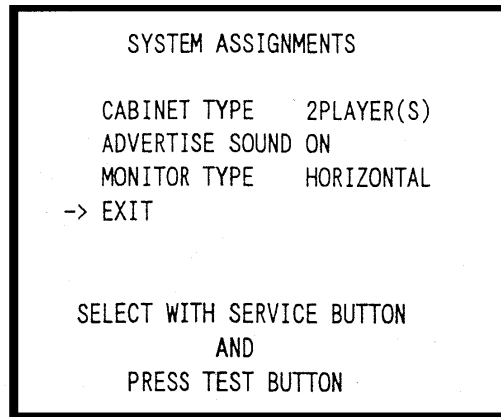
5.2.5. SYSTEM ASSIGNMENTS



- If the CABINET TYPE and MONITOR TYPE settings are unsuitable for the connected game, an error message is displayed after turning power on and upon finishing TEST mode, and the game is not playable.

Allows cabinet and board settings to be changed. Refer to Section 5.2.9.3 for changing the game related assignments such as game difficulty. Factory settings are shown in **BOLD** type.

1. Press the SERVICE button to move the cursor to the desired item.
2. Press the TEST button to change the setting.
3. Upon finishing the settings, move the cursor to EXIT and press the TEST button.

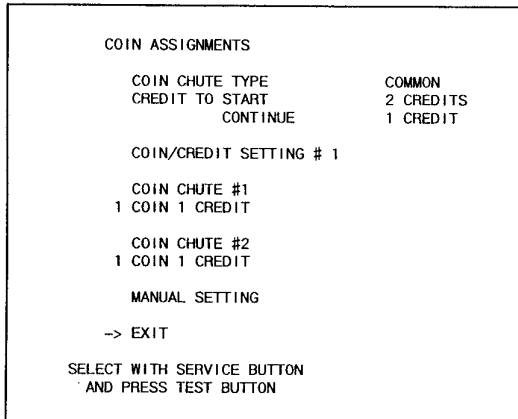


(A) CABINET TYPE (1PLAYER(S), **2PLAYER(S)**, 3PLAYER(S), 4PLAYER(S)) - set the number of players between one and four.

(B) ADVERTISE SOUND (**ON**, OFF) - Set whether ADVERTISE sound is to be emitted or not.

MONITOR TYPE (**HORIZONTAL**, VERTICAL) - sets the on-screen display to the orientation of the monitor. The TEST MODE allows the functioning of each part of the machine to be checked. In addition game configuration and coin configuration changes can be made within TEST MODE.

5.2.5.1.COIN ASSIGNMENTS



In this mode the setting of credit increments against coin insertion can be changed.

1. Press the service button to bring the arrow to the desired item.
2. Press the test button to change the setting.
3. When the settings are completed move the arrow to EXIT and press the TEST button.

COIN CHUTE TYPE (COMMON, INDIVIDUAL)

Set to COMMON

COMMON

Used for the type of cabinet whose coin acceptance is a common type for plural players. Regardless of the number of players COIN1/COIN2 ports are used.

INDIVIDUAL

Not used

CREDIT TO START

Sets the number of credits required to start a game.

CREDIT TO CONTINUE

Sets the number of credits required to continue a game.

CON/CREDIT SETTING (#1~2#27)

Sets the credit increase increment per coin insertion. There are 27 settings from #1 to #26 expressed in #credits as against #coins inserted. #27 refers to FREEPLAY.

5.2.5.2.COIN/CREDIT SETTING (COIN CHUTE COMMON TYPE)

SETTING	FUNCTIONING OF COIN CHUTE #1		FUNCTIONING OF COIN CHUTE #2	
SETTING #1	1 COIN	1 CREDIT	1 COIN	1 CREDIT
SETTING #2	1 COIN	2 CREDITS	1 COIN	1 CREDIT
SETTING #3	1 COIN	3 CREDIT	1 COIN	1 CREDIT
SETTING #4	1 COIN	4 CREDITS	1 COIN	1 CREDIT
SETTING #5	1 COIN	5 CREDITS	1 COIN	1 CREDIT
SETTING #6	1 COIN	2 CREDITS	1 COIN	2 CREDITS
SETTING #7	1 COIN	5 CREDITS	1 COIN	2 CREDITS
SETTING #8	1 COIN	3 CREDITS	1 COIN	3 CREDITS
SETTING #9	1 COIN	4 CREDITS	1 COIN	4 CREDITS
SETTING #10	1 COIN	5 CREDITS	1 COIN	5 CREDITS
SETTING #11	1 COIN	6 CREDITS	1 COIN	6 CREDITS
SETTING #12	2 COINS	1 CREDIT	2 COINS	1 CREDIT
SETTING #13	1 COIN	1 CREDIT	2 COINS	1 CREDIT
SETTING #14	1 COIN	2 CREDITS	2 COINS	1 CREDIT
SETTING #15	1 COIN 2 COINS	1 CREDIT 3 CREDITS	1 COIN 2 COINS	1 CREDIT 3 CREDITS
SETTING #16	1 COIN	3 CREDITS	1 COIN 2 COINS	1 CREDIT 3 CREDITS
SETTING #17	3 COINS	1 CREDIT	3 COINS	1 CREDIT
SETTING #18	4 COINS	1 CREDIT	4 COINS	1 CREDIT
SETTING #19	1 COIN 2 COINS 3 COINS 4 COINS	1 CREDIT 2 CREDITS 3 CREDITS 5 CREDITS	1 COIN 2 COINS 3 COINS 4 COINS	1 CREDIT 2 CREDITS 3 CREDITS 5 CREDITS
SETTING #20	1 COIN	5 CREDITS	1 COIN 2 COINS 3 COINS 4 COINS	1 CREDIT 2 CREDITS 3 CREDITS 5 CREDITS
SETTING #21	5 COINS	1 CREDIT	5 COINS	1 CREDIT
SETTING #22	1 COIN	2 CREDITS	3 COINS 5 COINS	1 CREDIT 2 CREDITS
SETTING #23	2 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS	2 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS
SETTING #24	1 COIN	3 CREDITS	2 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS
SETTING #25	1 COIN 2 COINS 3 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS 4 CREDITS 6 CREDITS	1 COIN 2 COINS 3 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS 4 CREDITS 6 CREDITS
SETTING #26	1 COIN	6 CREDITS	1 COIN 2 COINS 3 COINS 4 COINS 5 COINS	1 CREDIT 2 CREDITS 3 CREDITS 4 CREDITS 6 CREDITS
SETTING #27	FREE PLAY		FREE PLAY	

5.2.5.3.MANUAL SETTING

```

COIN ASSIGNMENTS

MANUAL SETTING

COIN TO CREDIT 1 COIN 1 CREDIT

BONUS ADDER          NO BONUS ADDER

COIN CHUTE #1 MULTIPLIER
1 COIN COUNT AS 1 COIN
COIN  1  2  3  4  5  6  7  8  9
CREDIT 1  2  3  4  5  6  7  8  9

COIN CHUTE #2 MULTIPLIER
1 COIN COUNT AS 1 COIN
COIN  1  2  3  4  5  6  7  8  9
CREDIT 1  2  3  4  5  6  7  8  9

-> EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
  
```

The credits incremental increase settings as against coin insertion are shown in more detail than above. Note that when this MANUAL setting is performed the COIN/CREDIT setting becomes ineffective.

COIN TO CREDIT

Determines COIN/CREDIT setting.

BONUS ADDER

This sets how many COINs should be inserted to obtain one service coin.

COIN CHUTE #1/#2 MULTIPLIER

This sets how many tokens one coin represents.

MANUAL SETTING

COIN TO CREDIT	1 COIN	1 CREDIT
	2 COINS	1 CREDIT
	3 COINS	1 CREDIT
	4 COINS	1 CREDIT
	5 COINS	1 CREDIT
	6 COINS	1 CREDIT
	7 COINS	1 CREDIT
	8 COINS	1 CREDIT
	9 COINS	1 CREDIT

BONUS ADDER	NO BONUS ADDER
	2 COINS GIVE 1 EXTRA COIN
	3 COINS GIVE 1 EXTRA COIN
	4 COINS GIVE 1 EXTRA COIN
	5 COINS GIVE 1 EXTRA COIN
	6 COINS GIVE 1 EXTRA COIN
	7 COINS GIVE 1 EXTRA COIN
	8 COINS GIVE 1 EXTRA COIN
	9 COINS GIVE 1 EXTRA COIN

COIN CHUTE MULTIPLIER	1 COIN COUNTS AS 1 COIN
	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

5.2.6. BOOKKEEPING

Selecting this mode allows the BOOKKEEPING data to be accessed via a sequence of two pages. Press the TEST button is pressed, the following page appears. On the third page, pressing the TEST button re-enters the MENU mode.

BOOKKEEPING 1/2	
TOTAL TIME	
OD 00H 00M 00S	
CREDIT 1	0
CREDIT 2	0
COIN 1	0
COIN 2	0
TOTAL COIN	0
COIN CREDIT	0
SERVICE CREDIT	0
TOTAL CREDIT	0
PRESS TEST BUTTON TO CONTINUE	

Number of items displayed depends on the setting of CABINET TYPE in SYSTEM ASSIGNMENTS.

BOOKKEEPING 2/2			
P1 SEQ 1	0	P2 SEQ 1	0
P1 SEQ 2	0	P2 SEQ 2	0
P1 SEQ 3	0	P2 SEQ 3	0
P1 SEQ 4	0	P2 SEQ 4	0
P1 SEQ 5	0	P2 SEQ 5	0
P1 SEQ 6	0	P2 SEQ 6	0
P1 SEQ 7	0	P2 SEQ 7	0
P1 SEQ 8	0	P2 SEQ 8	0
P3 SEQ 1	0	P4 SEQ 1	0
P3 SEQ 2	0	P4 SEQ 2	0
P3 SEQ 3	0	P4 SEQ 3	0
P3 SEQ 4	0	P4 SEQ 4	0
P3 SEQ 5	0	P4 SEQ 5	0
P3 SEQ 6	0	P4 SEQ 6	0
P3 SEQ 7	0	P4 SEQ 7	0
P3 SEQ 8	0	P4 SEQ 8	0
PRESS TEST BUTTON TO EXIT			

5.2.7. BACKUP DATA CLEAR

This allows the BOOKKEEPING data to be cleared. The GAME ASSIGNMENTS settings, and the contents of BOOKKEEPING in the SYSTEM TEST mode are unaffected by this command.

BACKUP DATA CLEAR

YES (CLEAR)
-> NO (CANCEL)

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

When clearing, use the SERVICE BUTTON to bring the cursor to YES (CLEAR) and press the TEST BUTTON. When the data has been cleared, COMPLETED will be displayed.

If clearing of data is not desired, select NO (CANCEL) to return to the MENU MODE.

5.2.8. CLOCK SETTING

This allows YEAR, MONTH, DAY, HOUR and MINUTE settings to be made.

CLOCK SETTING

1998 12/02 14:30 33 WED

YEAR
MONTH
DAY
HOUR
MINUTE
-> EXIT

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

Select the desired item with the SERVICE button and press the TEST button to increase the value. Upon finishing the SETTING, bring the cursor to EXIT and press the TEST button to return to the Menu Mode.

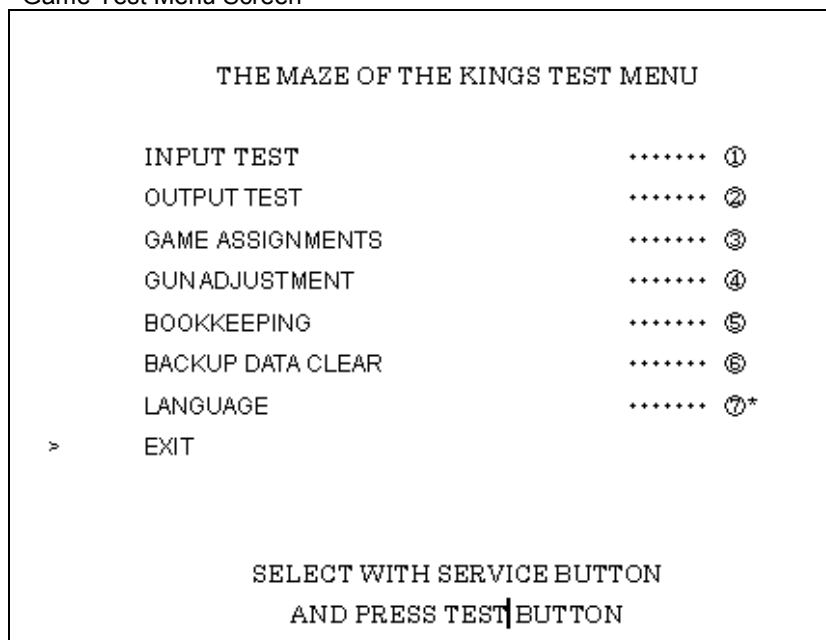
5.2.9. GAME TEST MODE

Select GAME TEST MODE from the System Menu screen to display the Game Test Menu screen.

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

Press the TEST Button to enter the selected item.

Game Test Menu Screen



After making changes, be sure to select EXIT and press the TEST Button in order to enable the new settings.

Move the cursor to EXIT and press the TEST Button to return to the System Menu screen.

*: For overseas version other than US, Australia, and Korea.

5.2.9.1.INPUT TEST

Select INPUT TEST to display the following screen and check the status of input devices. This test should be used periodically to check that each input device is functioning correctly.

INPUT TEST Screen

INPUT TEST		
	PLAYER 1	PLAYER 2
TRIGGER	OFF	OFF
SCREEN-IN	OUT	OUT
GUN-X	0	0
GUN-Y	0	0
START	OFF	OFF
SERVICE	OFF	
TEST	OFF	
PRESS TEST AND SERVICE BUTTON		
TO EXIT		

Pull the gun's trigger. If it is functioning correctly, the TRIGGER indicator will switch from OFF to ON.

Point the barrel of the gun at the screen. If the gun is functioning correctly, the SCREEN-IN indicator will switch from OUT to IN and the indicators to the right of GUN-X and GUN-Y will display values within the 0 - ff range.

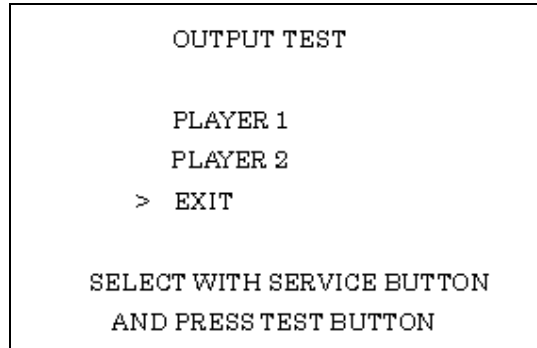
Press the START switch/button. If functioning correctly, the START indicator will switch from OFF to ON.

Press the SERVICE and TEST Buttons simultaneously to return to the Game Test Menu screen.

5.2.9.2.OUTPUT TEST

Select OUTPUT TEST to display the following screen and check the status of each lamp. This test should be used periodically to check that the lamps are functioning correctly.

OUTPUT TEST Screen



Select the item to be tested. If the connections are functioning correctly, the "1P" and "2P" buttons will flash when PLAYER 1 and PLAYER 2 are selected.

Move the cursor to EXIT and press the TEST Button to return to the Game Test Menu screen.

5.2.9.3.GAME ASSIGNMENTS

Select GAME ASSIGNMENTS to display the current game settings and make changes.

GAME ASSIGNMENTS Screen

GAME ASSIGNMENTS	
	EASY HARD
GAME DIFFICULTY	■ ■ ■ ■ □ □ □ □
BOSS DIFFICULTY	■ ■ ■ ■ □ □ □ □
SHIFTING DIFFICULTY	■ ■ ■ ■ □ □ □ □
	LARGE SMALL
COLLISION SIZE	■ ■ ■ ■ □ □ □ □
LIFE	3
>EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

- * GAME DIFFICULTY (Default setting: 4)
Alters difficulty level of the game. Choose from eight levels.
- * BOSS DIFFICULTY (Default setting: 4)
Alters difficulty level of BOSS battles for each stage. Choose from eight levels.
- * SHIFTING DIFFICULTY (Default setting: 4)
Alters rate at which level of difficulty increases as the game progresses. Choose from eight levels.
- * COLLISION SIZE (Default setting: 4)
Alters collision impact of enemy characters that appear throughout the game. Choose from eight levels.
- * LIFE (Default setting: 3)
INITIAL LIFE (Number of lives given to players at the start of the game). Players can be given from three to eight initial lives.

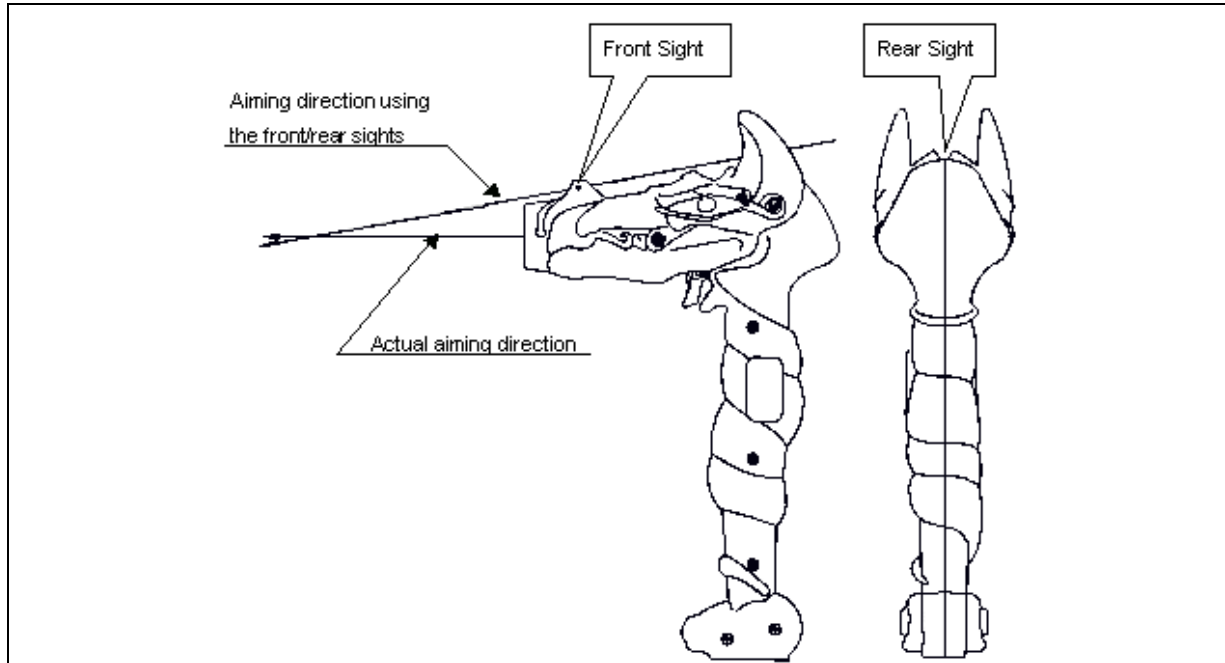
Changes to settings are not enabled until Test Mode is exited. After changing settings, be sure to exit Test Mode.

After changing the settings, select the EXIT and press the TEST Button to return to the Game Test Menu screen.

5.2.9.4.GUN ADJUSTMENT



- Although the Front Sight and the Rear Sight are attached to this Gun (Rod) Controller, it is not for uniting aim like an actual gun. Even if adjusted using these Sights, the aiming direction is not exact.



Select GUN ADJUSTMENT to display the following screen. Five aiming correction values (screen centre, right limit, left limit, top and bottom) can be set from this screen. Set the five correction values in the following way: Aiming the Gun Controller in the specified direction, select 1P using the 1P Start Button and 2P using the 2P Start Button. When the Gun Controller is in the desired position, pull the trigger to set the new values.

GUN ADJUSTMENT Screen

GUN ADJUSTMENT			
<div style="text-align: center;">PLAYER1</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <div style="text-align: right;">> RIGHT</div> <div style="text-align: right;">LEFT</div> <div style="text-align: right;">TOP</div> <div style="text-align: right;">BOTTOM</div> <div style="display: flex; justify-content: space-between;"> <div style="text-align: right;">CENTER X</div> <div style="text-align: right;">Y</div> </div> <div style="text-align: right;">DEFAULT</div> <div style="text-align: right;">CHECK</div> </div> <div style="width: 50%;"> <div style="text-align: center;">OLD : NOW</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">aa</div> <div style="width: 10%; text-align: center;">:</div> <div style="width: 45%;">bb</div> </div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> </div> </div>	<div style="text-align: center;">PLAYER2</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <div style="text-align: right;">> RIGHT</div> <div style="text-align: right;">LEFT</div> <div style="text-align: right;">TOP</div> <div style="text-align: right;">BOTTOM</div> <div style="display: flex; justify-content: space-between;"> <div style="text-align: right;">CENTER X</div> <div style="text-align: right;">Y</div> </div> <div style="text-align: right;">DEFAULT</div> <div style="text-align: right;">CHECK</div> </div> <div style="width: 50%;"> <div style="text-align: center;">OLD : NOW</div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">aa</div> <div style="width: 10%; text-align: center;">:</div> <div style="width: 45%;">bb</div> </div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> <div style="display: flex; justify-content: space-between;">aa bb</div> </div> </div>		
<div style="font-size: 2em; font-weight: bold; margin-bottom: 10px;">SIGHT OUT</div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">SELECT WITH AND PULL</div> <div style="text-align: center;">START BUTTON TRIGGER</div> </div> <div style="text-align: center; margin-top: 10px;">PRESS TEST BUTTON TO EXIT</div>			

* RIGHT aa bb

Sets the right horizontal limit correction value.

The left indicator (aa) shows the previous value and the right indicator (bb) shows the newly-input value. Point the Gun Controller at the right edge of the screen, aiming at the square mark, and pull the trigger to set the correction value. Vertical movement has no effect on the values in this case.

* TOP aa bb

Sets the upper vertical limit correction value.

The left indicator (aa) shows the previous value and the right indicator (bb) shows the newly-input value. Point the Gun Controller at the upper edge of the screen, aiming at the square mark, and pull the trigger to set the correction value. Horizontal movement has no effect on the values in this case.

* BOTTOM aa bb

Sets the lower vertical limit correction value.

The left display (aa) shows the previous value and the right display (bb) shows the newly-input value. Point the Gun Controller at the lower limit of the screen, aiming at the square mark, and pull the trigger to set the correction value. Horizontal movement has no effect on the values in this case.

* CENTER X aa bb Y aa bb

Sets the center correction value.

X indicates the horizontal and Y indicates the vertical. The left display (aa) shows the previous value and the right display (bb) shows the newly-input value.

Point the Gun Controller at the center of the screen, aiming at the square mark, and pull the trigger to set the correction value.

* LEFT aa bb

Sets the left horizontal limit correction value.

The left display (aa) shows the previous value and the right display (bb) shows the newly-input value.

Point the Gun Controller at the left edge of the screen, aiming at the square mark, and pull the trigger to set the correction value. Vertical movement has no effect on the values in this case.

- * **DEFAULT**
Returns correction values to their default settings.
- * **CHECK**
Select CHECK and point the Gun Controller at the screen. Use the two round cursors that appear at the top of the screen (red for Player 1 and blue for Player 2) to check the aim.
- * **SIGHT OUT**
SIGHT OUT message appears when you point the Gun Controller to outside the screen.

Changes to settings are not enabled until the Test Mode is exited. After changing settings, be sure to exit Test Mode.

After changing the settings, select EXIT and press the TEST Button to return to the Game Test Menu screen.

5.2.9.5. BOOKKEEPING

Selecting BOOKKEEPING displays the two following screens of operating status data.

Pressing the TEST Button toggles between the first (BOOKKEEPING 1/2) and second (BOOKKEEPING 2/2) screens.

BOOKKEEPING Screen (1/2)

BOOKKEEPING 1/2	
NUMBER OF GAMES	0
PLAY TIME	0D 00H 00M 00S
AVERAGE PLAY TIME	00H 00M 01S
LONGEST PLAY TIME	00H 00M 02S
SHORTEST PLAY TIME	00H 00M 03S
PRESS TEST BUTTON TO CONTINUE	

- **NUMBER OF GAMES:** Indicates the total number of plays.
- **PLAY TIME:** Indicates the sum of the play times of Players 1 and 2.
- **AVERAGE PLAY TIME:** Total play time divided by number of games played.
- **LONGEST PLAY TIME:** Indicates the longest game play time.
- **SHORTEST PLAY TIME:** Indicates the shortest game play time.

Press the TEST Button to display the BOOKKEEPING 2/2 screen.

BACKUP DATA CLEAR Screen

BOOKKEEPING 2/2		
TIME HISTOGRAM		
0M00S - 0M29S	0	
0M30S - 0M59S	0	
1M00S - 1M29S	0	
1M30S - 1M59S	0	
2M00S - 2M29S	0	
2M30S - 2M59S	0	
3M00S - 3M29S	0	
3M30S - 3M59S	0	
4M00S - 4M29S	0	
4M30S - 4M59S	0	
5M00S - 5M29S	0	
5M30S - 5M59S	0	
6M00S - 6M29S	0	
6M30S - 6M59S	0	
7M00S - 7M29S	0	
7M30S - 7M59S	0	
8M00S - 8M29S	0	
8M30S - 8M59S	0	
9M00S - 9M29S	0	
9M30S - 9M59S	0	
OVER 10M00S	0	
PRESS TEST BUTTON TO EXIT		

PLAY TIME HISTOGRAM shows the number of plays and their respective play times. This histogram should be referred to when setting the Game Difficulty.

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

5.2.9.6.BACKUP DATA CLEAR

Select BACKUP DATA CLEAR to clear the contents of BOOKKEEPING and Ranking Data.

BACKUP DATA CLEAR Screen

BACKUP DATA CLEAR
YES (CLEAR)
> NO (CANCEL)
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

To clear data, use the SERVICE Button to move the cursor to YES (CLEAR) and then press the TEST Button.

When the data has been cleared, the message "COMPLETED" will be displayed.

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

Move the cursor to NO (CANCEL) and press the TEST Button to return to the Game Test Menu screen without clearing the data.

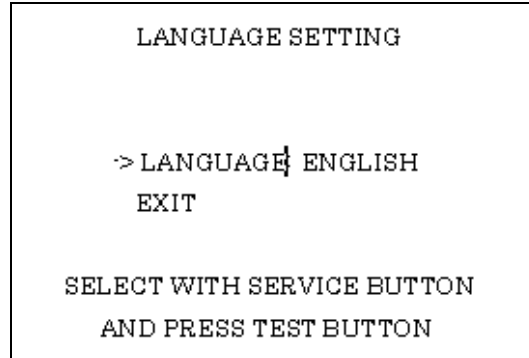
Note that this operation does not affect the settings of the GAME ASSIGNMENTS and the GUN ADJUSTMENT.

Using the BACKUP DATA CLEAR function from this screen will not affect coin/credit data. To clear coin/credit data, use the BACKUP DATA CLEAR function in SYSTEM TEST MODE.

5.2.9.7.LANGUAGE (For overseas version other than US, Australia, and Korea)

Select LANGUAGE to display the following screen and choose the language displayed on the screen message. Five languages (English/French/German/Italian/Spanish) are selectable. (Default setting: English)

LANGUAGE Screen



Use the SERVICE Button to move the cursor to LANGUAGE and press the TEST Button to choose your favourite language.

Move the cursor to EXIT and press the TEST Button to return to the Game Test Menu screen.

6. COIN MECH INSTALLATION AND CREDIT BOARD SET UP

6.1. INTRODUCTION

Game credits between the Coin Mechanism and the game board for this machine are controlled by a *VTS* board. This electronic circuit allows the price of play to be set for a range of different countries. These functions are set on Dual In Line (DIL) PCB mounted switches.

SW1 is used to set the currency (or coin ratio) and SW3 the price of play. Refer to the Tables on the following pages for the correct settings for your environment.

The *VTS* board pictured below is mounted in the Coin Chute Tower.

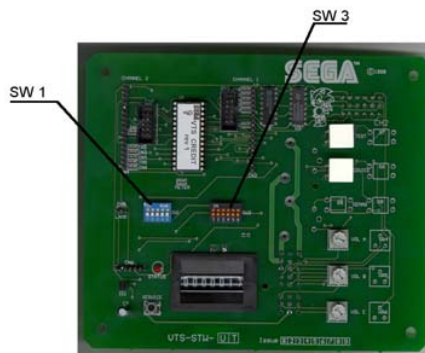
The *VTS* board is connected to the coin validator and lamps via a dedicated wiring harness depending upon the coin validator used:

Wiring Harness	Validator	
LM1006	Coin Controls	(15 way connector)
LM1007	Mars	(13 way connector)
LM1008	Mechanical	See note 2
N/A	NRI	See note 1

Notes

1. If NRI mechanisms are to be used, these should be ordered with the highest denomination coin on coin path #1 and the lowest denomination on coin path #4. The *VTS* board should be then be set up for either the UK or Switzerland settings. A minimum connecting lead length of 600mm is required.
2. Mechanical coin mechanisms may be connected in parallel allowing two identical mechanisms to be fitted.

The VTS Board



Credit Board Mode Settings Switch 3																			
Country	Setting	Switch 3 Setting						Coin Validator Programming								C120/SR3 Only			
		SW1	SW2	SW3	SW4	SW5	SW6	COIN1	COIN2	COIN3	COIN4	COIN5	COIN6	COIN7	COIN8	COIN9	COIN10	COIN11	COIN12
UK	Coin Controls C220 Parallel	OFF	OFF	OFF	OFF			£1	50p new	20p	10p	-	50p old	-	-				
UK	Coin Controls C220 Binary	ON	OFF	OFF	OFF			£1	50p new	20p	10p	-	50p old	-	£2				
UK	Coin Controls C220 Binary	OFF	ON	OFF	OFF			£1	50p new	20p	10p	-	£2	-	50p old				
UK	Coin Controls SR3 Parallel	ON	ON	OFF	OFF			£1	50p new	20p	10p	-	£2	-	50p old	-	-	-	-
UK Euro	Coin Controls SR3 Parallel	OFF	OFF	ON	OFF			£2 €2	£1 €1	50p new 50¢	20p 20¢	10p 10¢	-	-	-	50p old	-	-	-
UK	Mars ME/MS 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			-	50BFr	20BFr	5BFr								
Holland	Parallel	OFF	OFF	OFF	ON			-	5NLG	2.5NLG	1NLG								
Austria	SR3 Parallel	ON	OFF	OFF	ON			20Sch	10Sch	5Sch	1Sch								
Spain	Coin Controls C220 Binary	OFF	ON	OFF	ON			500Pta	200Pta	100Pta	50Pta	25Pta	200Pt old	50Pta old	25Pta old				
Spain	SR3/NRI Parallel	ON	ON	OFF	ON			500Pta	200Pta	100Pta	50Pta	25Pta	-	-	200Pta	-	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 €1	100Es 50¢	50Es	-	-	-	-	-				
	TBA					OFF		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											
						ON		TBA											
	Channels						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.
- For Germany (DM), France (Fr) & Switzerland (SFr), use the appropriate existing setting shown above (from another country) that matches the coin ratios programmed into your coin mech.
- Set SW 3 on the VTS /Excel board as shown in the table above corresponding to the country required.

6.1.1. PRICE OF PLAY SETTINGS UK

	Price	Bonus			DIL Switch 1				
					Switch 1	Switch 2	Switch 3	Switch 4	Switch 5
1	10p	No Bonus			OFF	OFF	OFF	OFF	OFF
2	10p	6 = 50p			ON	OFF	OFF	OFF	OFF
3	20p	No Bonus			OFF	ON	OFF	OFF	OFF
4	20p	3 = 50p	6 = £1	12 = £2	ON	ON	OFF	OFF	OFF
5	30p	No Bonus			OFF	OFF	ON	OFF	OFF
6	30p	1.66 = 50p	4 = £1	8 = £2	ON	OFF	ON	OFF	OFF
7	30p	2 = 50p	4 = £1		OFF	ON	ON	OFF	OFF
8	30p	AMLD *	3 = £1	6 = £2	ON	ON	ON	OFF	OFF
9	40p	No Bonus			OFF	OFF	OFF	ON	OFF
10	40p	1.25 = 50p	3 = £1	6 = £2	ON	OFF	OFF	ON	OFF
11	50p	No Bonus			OFF	ON	OFF	ON	OFF
12	50p		3 = £1	6 = £2	ON	ON	OFF	ON	OFF
13	50p		2 = £1	5 = £2	OFF	OFF	ON	ON	OFF
14	60p	No Bonus			ON	OFF	ON	ON	OFF
15	60p		2 = £1	4 = £2	OFF	ON	ON	ON	OFF
16	80p	No Bonus			ON	ON	ON	ON	OFF
17	80p	1.25 = £1	2 = £1.50	2.5 = £2	OFF	OFF	OFF	OFF	ON
18	£1	No Bonus			ON	OFF	OFF	OFF	ON
19	£1		3 = £2		OFF	ON	OFF	OFF	ON
20	£1		2 = £2	5 = £4	ON	ON	OFF	OFF	ON
21	£1.50	No Bonus			OFF	OFF	ON	OFF	ON
22	£1.50		2 = £2		ON	OFF	ON	OFF	ON
23	£2	No Bonus			OFF	ON	ON	OFF	ON
24	£2			3 = £5	ON	ON	ON	OFF	ON
25	£3	No Bonus			OFF	OFF	OFF	ON	ON
26	£3			2 = £5	ON	OFF	OFF	ON	ON
27	£5	No Bonus			OFF	ON	OFF	ON	ON
28	£5			3 = £10	ON	ON	OFF	ON	ON
29	£7.50	No Bonus			OFF	OFF	ON	ON	ON
30	£7.50			2 = £10	ON	OFF	ON	ON	ON
31	£10	No Bonus			OFF	ON	ON	ON	ON
32	Free Play				ON	ON	ON	ON	ON

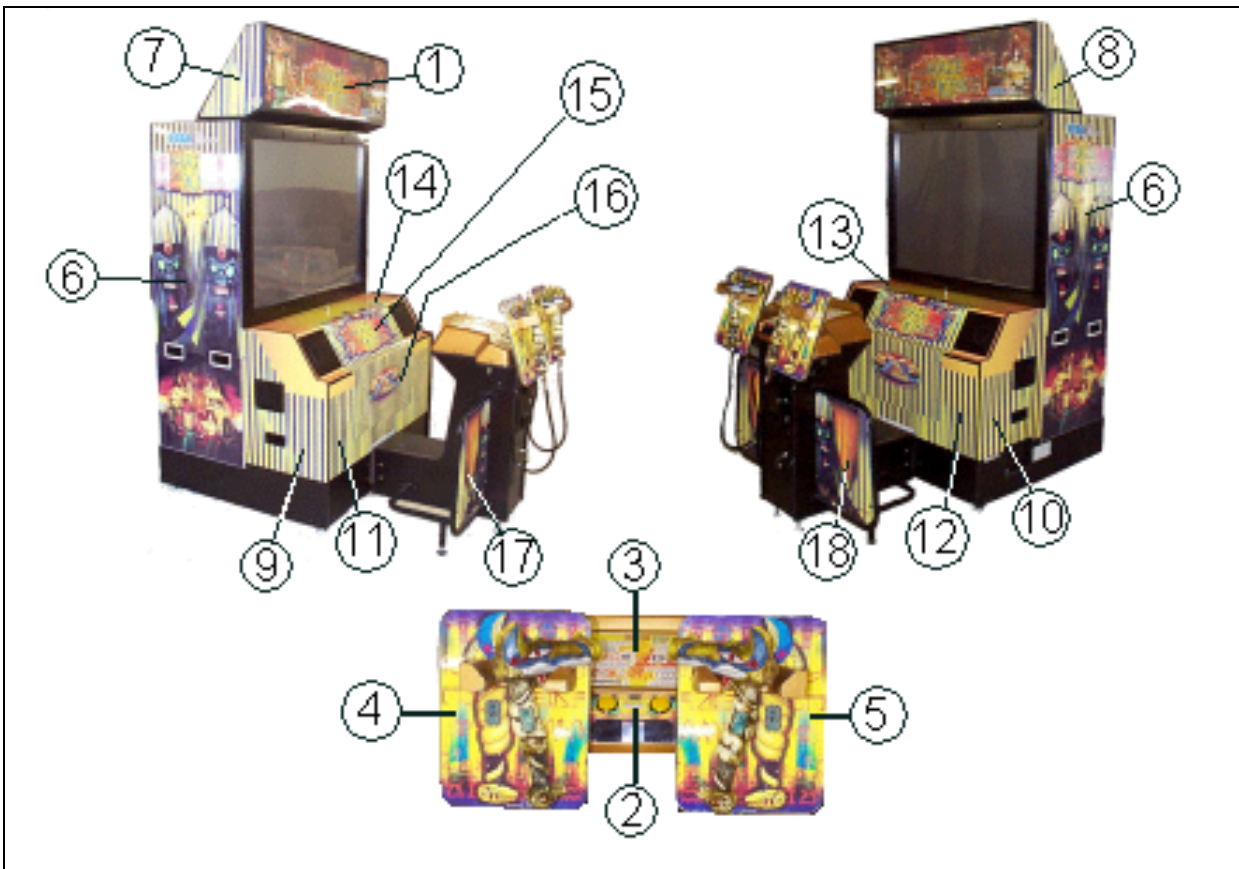
6.1.2. PRICE OF PLAY SETTINGS EURO

	Price	Bonus			DIL Switch 1				
					Switch 1	Switch 2	Switch 3	Switch 4	Switch 5
1	10¢	No Bonus			OFF	OFF	OFF	OFF	OFF
2	10¢	6 = 50¢			ON	OFF	OFF	OFF	OFF
3	20¢	No Bonus			OFF	ON	OFF	OFF	OFF
4	20¢	3 = 50¢	6 = €1	12 = €2	ON	ON	OFF	OFF	OFF
5	30¢	No Bonus			OFF	OFF	ON	OFF	OFF
6	30¢	1.66 = 50¢	4 = €1	8 = €2	ON	OFF	ON	OFF	OFF
7	30¢	2 = 50¢	4 = €1		OFF	ON	ON	OFF	OFF
8	30¢	AMLD *	3 = €1	6 = €2	ON	ON	ON	OFF	OFF
9	40¢	No Bonus			OFF	OFF	OFF	ON	OFF
10	40¢	1.25 = 50¢	3 = €1	6 = €2	ON	OFF	OFF	ON	OFF
11	50¢	No Bonus			OFF	ON	OFF	ON	OFF
12	50¢		3 = €1	6 = €2	ON	ON	OFF	ON	OFF
13	50¢		2 = €1	5 = €2	OFF	OFF	ON	ON	OFF
14	60¢	No Bonus			ON	OFF	ON	ON	OFF
15	60¢		2 = €1	4 = €2	OFF	ON	ON	ON	OFF
16	80¢	No Bonus			ON	ON	ON	ON	OFF
17	80¢	1.25 = £1	2 = €1.50	2.5 = €2	OFF	OFF	OFF	OFF	ON
18	€1	No Bonus			ON	OFF	OFF	OFF	ON
19	€1		3 = €2		OFF	ON	OFF	OFF	ON
20	€1		2 = €2	5 = €4	ON	ON	OFF	OFF	ON
21	€1.50	No Bonus			OFF	OFF	ON	OFF	ON
22	€1.50		2 = €2		ON	OFF	ON	OFF	ON
23	€2	No Bonus			OFF	ON	ON	OFF	ON
24	€2			3 = €5	ON	ON	ON	OFF	ON
25	€3	No Bonus			OFF	OFF	OFF	ON	ON
26	€3			2 = €5	ON	OFF	OFF	ON	ON
27	€5	No Bonus			OFF	ON	OFF	ON	ON
28	€5			3 = €10	ON	ON	OFF	ON	ON
29	€7.50	No Bonus			OFF	OFF	ON	ON	ON
30	€7.50			2 = €10	ON	OFF	ON	ON	ON
31	€10	No Bonus			OFF	ON	ON	ON	ON
32	Free Play				ON	ON	ON	ON	ON

6.1.3. PRICE OF PLAY SETTINGS Austria-Czech-Denmark-Norway-Israel-France2

	Price	Bonus			Switch 1				
					Switch 1	Switch 2	Switch 3	Switch 4	Switch 5
1	1	No Bonus			OFF	OFF	OFF	OFF	OFF
2	1			11 = 10	ON	OFF	OFF	OFF	OFF
3	1		6 = 5		OFF	ON	OFF	OFF	OFF
4	2	No Bonus			ON	ON	OFF	OFF	OFF
5	2			6 = 10	OFF	OFF	ON	OFF	OFF
6	2		3 = 5		ON	OFF	ON	OFF	OFF
7	3	No Bonus			OFF	ON	ON	OFF	OFF
8	3			4 = 10	ON	ON	ON	OFF	OFF
9	3		2 = 5		OFF	OFF	OFF	ON	OFF
10	4	No Bonus			ON	OFF	OFF	ON	OFF
11	4		3 = 10		OFF	ON	OFF	ON	OFF
12	5	No Bonus			ON	ON	OFF	ON	OFF
13	5			3 = 10	OFF	OFF	ON	ON	OFF
14	6	No Bonus			ON	OFF	ON	ON	OFF
15	6			4 = 20	OFF	ON	ON	ON	OFF
16	8	No Bonus			ON	ON	ON	ON	OFF
17	10	No Bonus			OFF	OFF	OFF	OFF	ON
18	10			3 = 20	ON	OFF	OFF	OFF	ON
19	20	No Bonus			OFF	ON	OFF	OFF	ON
20	20			3 = 50	ON	ON	OFF	OFF	ON
21	30	No Bonus			OFF	OFF	ON	OFF	ON
22	30			2 = 50	ON	OFF	ON	OFF	ON
23	50	No Bonus			OFF	ON	ON	OFF	ON
24	50			3 = 100	ON	ON	ON	OFF	ON
32	Free Play				ON	ON	ON	ON	ON

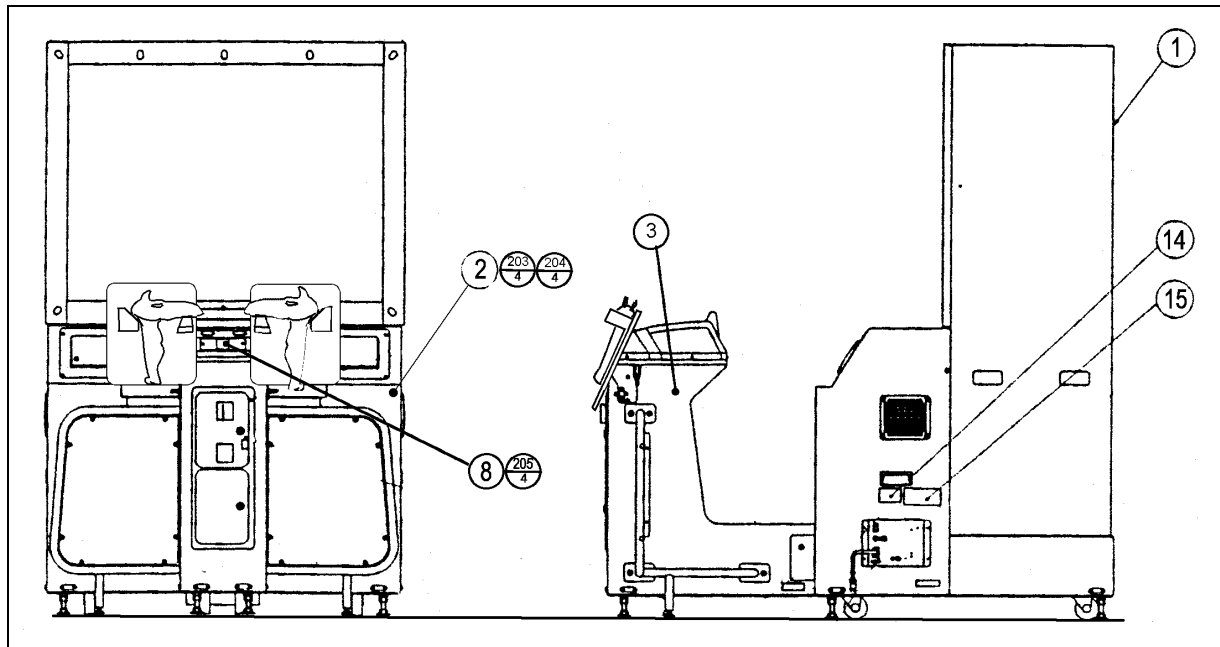
7. DESIGN RELATED PARTS



	Part No.	Description
1	MAZ-0522UK	BILLBOARD PLATE
	MAZ-0523UK	POP PANEL DX (FITTED ON TOP OF BILLBOARD – NOT SHOWN)
2	MAZ-2001-B	BUTTON SHEET MAZ DX
3	MAZ-2002UK	INST PLATE MAZ DX MULTI
4	MAZ-2154-BUK	STICKER GUN PLATE L
5	MAZ-2164-AUK	STICKER GUN PLATE R
6	SPX-0501UK	STICKER PTV SIDE
7	SPX-0524UK	STICKER BBD SIDE L
8	SPX-0525UK	STICKER BBD SIDE R
9	SPX-1003UK	STICKER CABI L
10	SPX-1004UK	STICKER CABI R
11	SPX-1005UK	STICKER CABI FRONT L
12	SPX-1007UK	STICKER CABI FRONT R
13	SPX-1008UK	STICKER CABI TOP L
14	SPX-1009UK	STICKER CABI TOP R
15	SPX-1061UK	STICKER LID UPPER
16	SPX-1071UK	STICKER LID LOWER
17	SPX-1151UK	GUARD PLATE L
18	SPX-1161UK	GUARD PLATE R

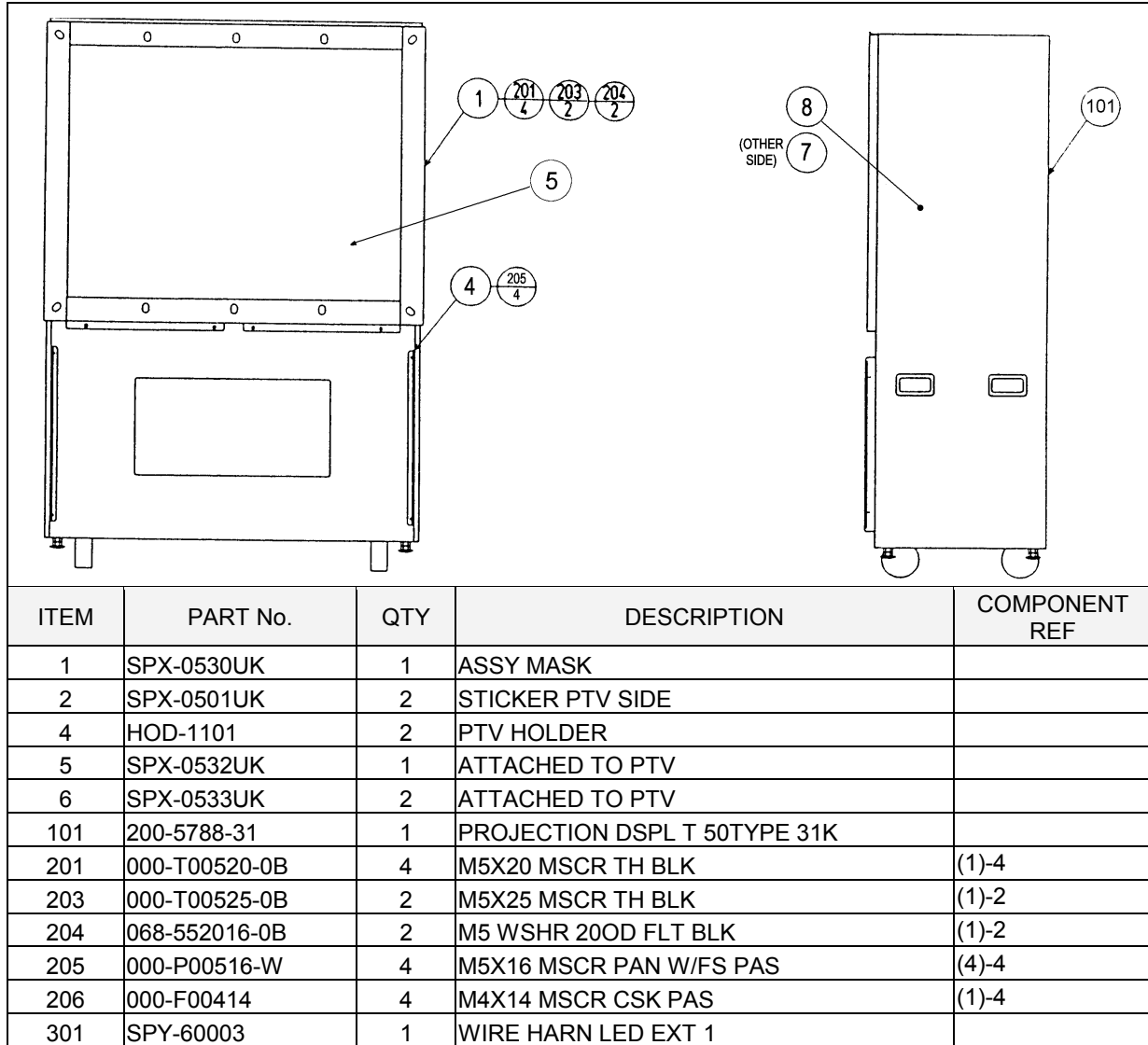
8. PARTS LIST

8.1. SPX-0000UK TOP ASSY SPHINX DX

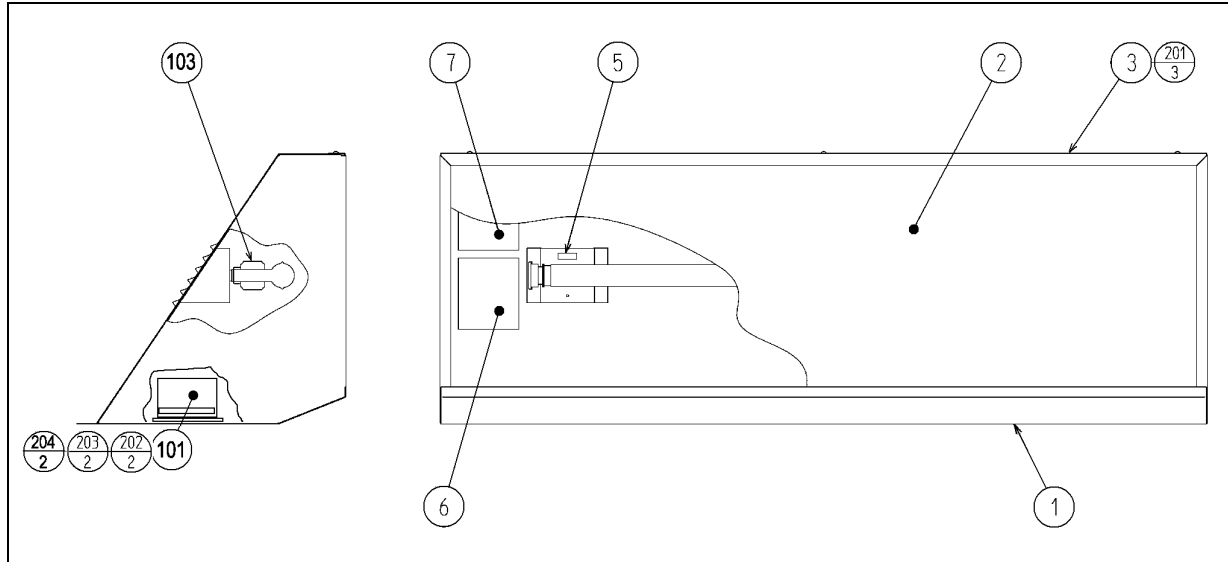


ITEM	PART No.	QTY	DESCRIPTION	COMPONENT REF.
1	SPX-0500UK	1	ASSY PTV	
2	SPX-1000UK	1	ASSY PTV CABI DX	
3	SPX-1100UK	1	ASSY CONTROLLER CABINET	
8	HOD-2003	1	DENOMI PLATE	
9	SGM-4346	1	POLY COVER 1200X1200X1300	
10	SGM-4426	1	POLY COVER 800X750X900	
14	421-7987-MAZ-D	1	STICKER ELEC SPEC MAZ DX	NEXT TO AC UNIT
15	421-7988-91UK	2	STICKER SERIAL NUMBER UK	NEAR AC,CCT
16	LB1102	1	STICKER DANGEROUS VOLTAGE	ON MAIN LID
19	421-7020UK	2	STICKER CAUTION FORK	
23	SPX-INST-DX	1	ASSY INST KIT SPX DX	
24	PK0180	1	PALLET CABI HOD DELUXE	
25	PK0310	1	SLEEVE CTRL CABI MAZ DX	
26	PK0178	1	PALLET GUN CABI	
27	PK0311	1	SLEEVE GUN CABI MAZ DX	
28	PK0117	1	PALLET PTV TOSH ZMB	
29	PK0312	1	SLEEVE PTV MAZ	
30	LB1046	1	LABEL TESTED FOR ELEC.SAFETY	
203	000-T00530-0B	4	M5X30 MSCR TH BLK	(2)-4
204	068-552016-0B	4	M5 WSHR 20OD FLT BLK	(2)-4
205	000-T00416-0C	4	M4X16 MSCR TH CRM	(8)-4

8.2. SPX-0500UK ASSY PTV

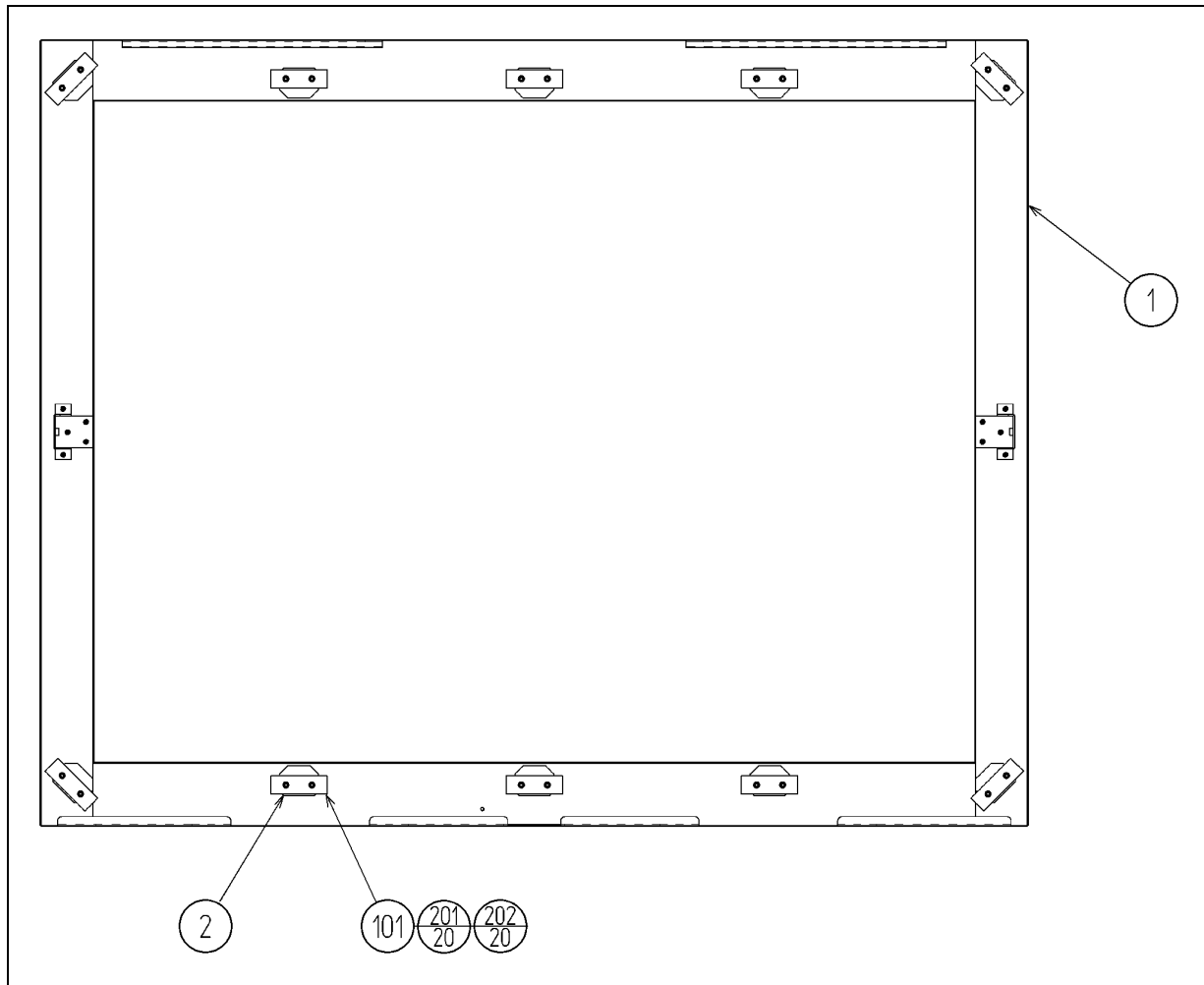


8.3. SPX-0520UK ASSY BILLBOARD DX



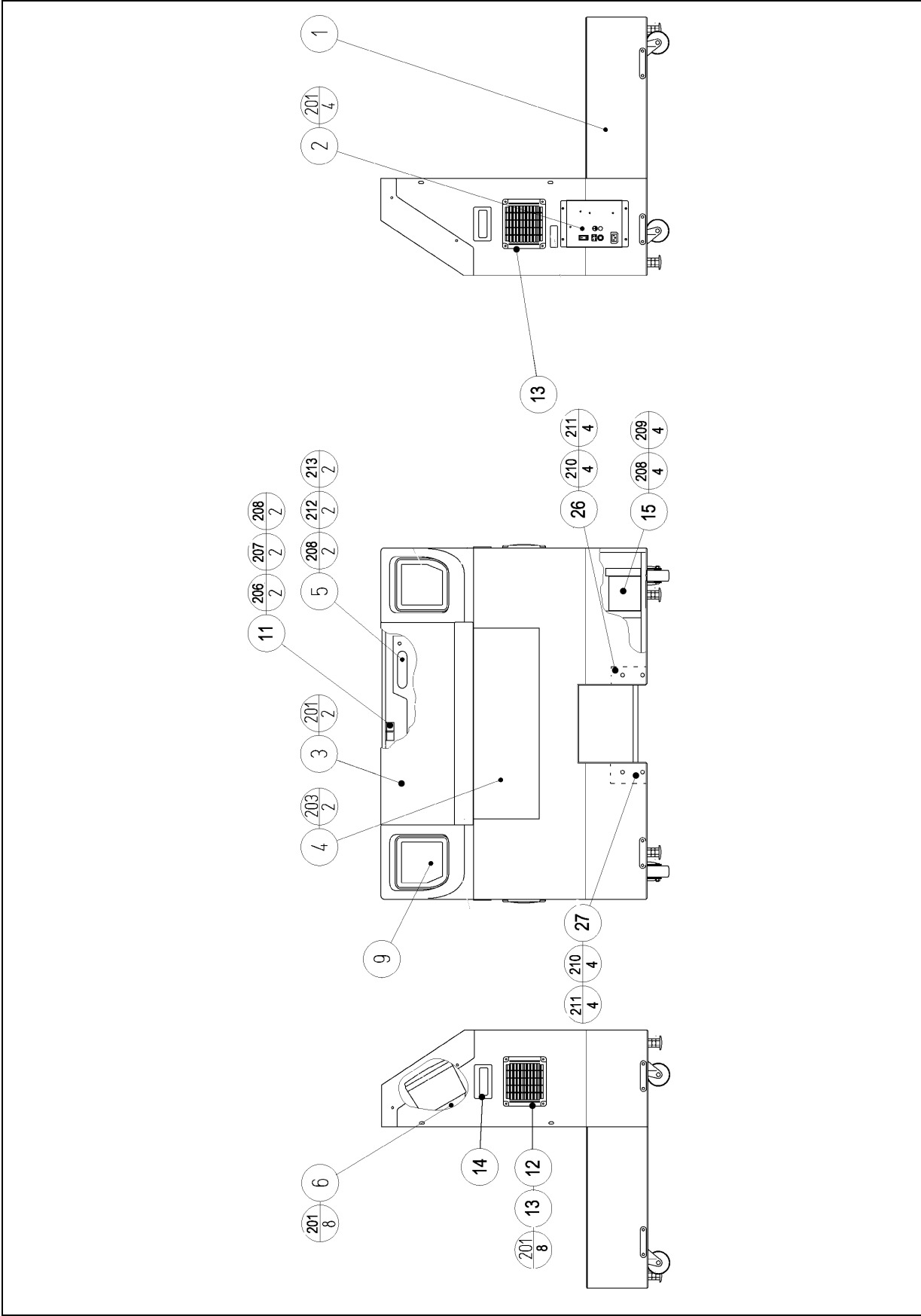
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REF
1	POD-0521UK	1	BILLBOARD BOX	
2	MAZ-0522UK	1	BILLBOARD PLATE	
3	POD-0523	1	BILLBOARD SASH	
5	421-7501-16	1	STICKER 110V 30W	
6	LB1102	1	STICKER DANGEROUS VOLTAGE	
7	LB1104	1	STICKER CAUTION, HOT SURFACE	
8	SPX-0524UK	1	STICKER BBD SIDE L	
9	SPX-0525UK	1	STICKER BBD SIDE R	
101	390-5695-30-AUK 0	1	FL TRAY 100V 30W	
103	LT1014	1	TUBE FL 30W 36" DIA25MM	
201	000-T00412-0B	3	M4X12 MSCR TH BLK	(3)-3
202	050-F00400	3	M4 NUT FLG SER PAS	(101)-2,EARTH
203	068-441616	2	M4 WSHR 160D FLT PAS	(101)-2
204	000-P00412	2	M4X12 MSCR PAN PAS	(101)-2,TERRY CLIPS
301	NCR-60420UK	1	WIRE HARN FL	

8.4. SPX-0530UK ASSY MASK



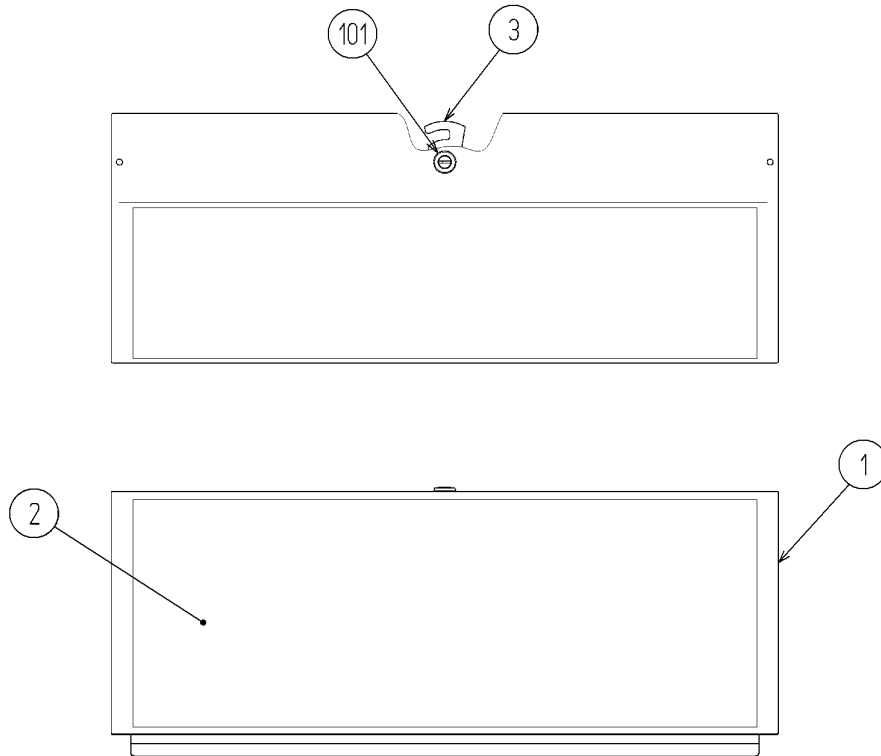
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REF
1	HOD-1151	1	MASK BASE	
2	JPT-1082	10	IR COVER	
3	SPX-0532UK	1	PROTECT SCREEN PTV	
4	SPX-0533UK	2	RETAINING BRKT HORIZ PTV	
101	838-13145-02	10	LED BD GUN SENSE HOD	
201	050-U00300	20	M3 NUT NYLOK PAS	(101)-20
202	068-330808-PN	20	M3 WSHR 80D FLT NYLON	(101)-20
203	050-F00400	1	M4 NUT FLG SER PAS	EARTH-1
301	SPY-60024	7	WIRE HARN MASK SHORT	
302	SPY-60025	2	WIRE HARN MASK LONG	
303	SPY-60026	1	WIRE HARN MASK INTO	
304	600-9120-44K	1	WIRE HARN EARTH 1200MM M4/M4	MASK TO AC BRKT

8.5. SPX-1000UK ASSY PTV CABI DX



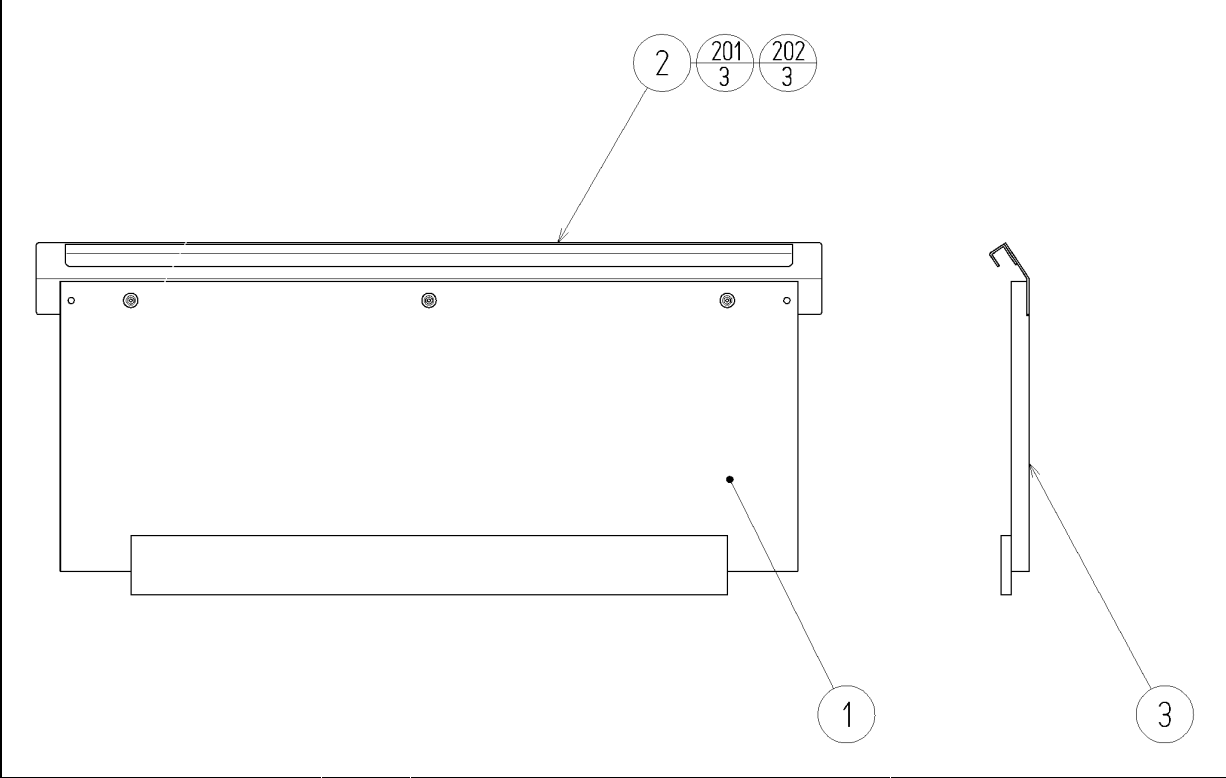
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REF
1	SPX-1002UK	1	PTV CABINET	
2	HOD-1020UK	1	ASSY AC UNIT UK	
3	SPX-1060UK	1	ASSY LID UPPER	
4	SPX-1070UK	1	ASSY LID LOWER	
5	SPX-4000UK	1	ASSY MAIN BD DX	
6	HOD-1070UK	2	ASSY SPEAKER UK	
9	SPX-1010UK	2	SPEAKER COVER	
11	HOD-1003	1	LOCKING BRKT HOD	
12	HOD-1530UK	1	ASSY FAN UNIT UK	
13	253-5460-01	2	AIR VENT BLACK	
14	253-5396-91	2	CABINET HANDLE	
15	SPY-4100UK	1	ASSY PWR SPLY	
26	HOD-1007	1	JOINT BRKT R	
27	HOD-1008	1	JOINT BRKT L	
28	SPX-1003UK	1	STICKER CABI L	See DESIGN RELATED PARTS
29	SPX-1004UK	1	STICKER CABI R	
30	SPX-1005UK	1	STICKER CABI F L	
31	SPX-1007UK	1	STICKER CABI F R	
32	SPX-1008UK	1	STICKER CABI TOP L	
33	SPX-1009UK	1	STICKER CABI TOP R	
101	354081	5	TWIST LOK BHKL-450-4	
102	280-A00964-WX	4	ROUTER TWIST D09 SO6.4	
201	000-T00420-0B	22	M4X20 MSCR TH BLK	(2)-4,(3)-2,(13)-8,(6)-8
203	000-P00420-W	2	M4X20 MSCR PAN W/FS PAS	(4)-2
206	000-P00425-W	2	M4X25 MSCR PAN W/FS PAS	(11)-2
207	050-F00400	2	M4 NUT FLG SER PAS	(11)-2
208	068-441616-0B	8	M4 WSHR 16OD FLT BLK	(11)-2,(15)-4,(5)-2
209	000-P00430-W	4	M4X30 MSCR PAN W/FS PAS	(15)-4
210	030-000840-SB	8	M8X40 BLT W/S BLK	(26,27)-4
211	068-852216-0B	4	M8 WSHR 22OD FLT BLK	(26,27)-4
212	032-000530	2	M5X30 BLT WING PAS	(5)-2
213	068-551616	2	M5 WSHR 16OD FLT PAS	(5)-2
301	SPY-60011UK	1	WIRE HARN TOWER EXT 1	
302	SPY-60012UK	1	WIRE HARN START EXT 1	
303	SPY-60013UK	1	WIRE HARN RECEIVER EXT	

8.6. SPX-1060UK ASSY LID UPPER



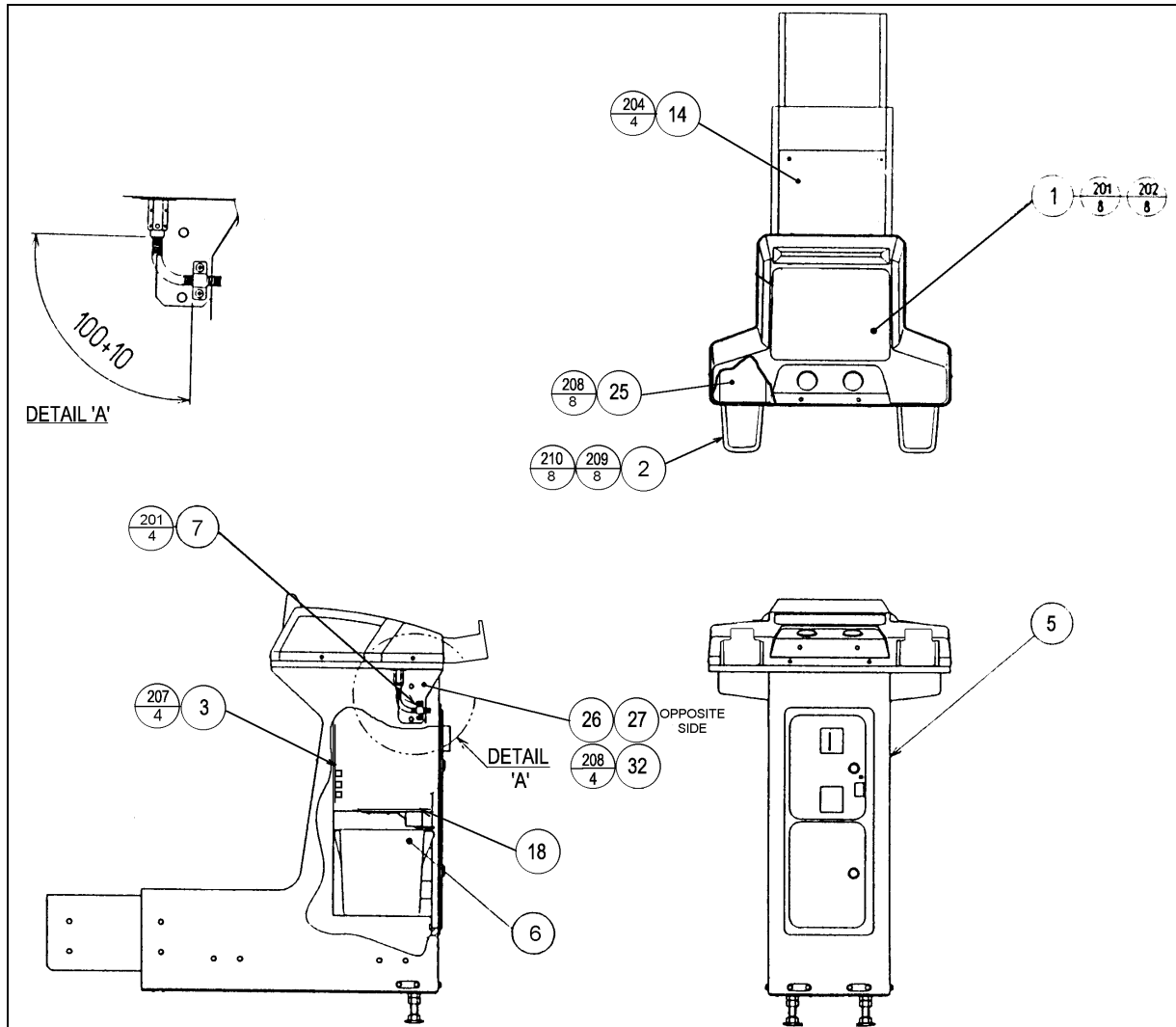
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REF
1	HOD-1051-A	1	FRONT LID U BLANK	
2	SPX-1061UK	1	STICKER LID UPPER	
3	TH1015UK	1	LOCKING TONGUE UK	
101	220-5575UK	1	LOCK	

8.7. SPX-1070UK ASSY LID LOWER



ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	HOD-1061-AUK	1	FRONT LID L BLANK	
2	HOD-1062-A	1	FRONT LID BRKT BLANK	
3	SPX-1071UK	1	STICKER LID LOWER	
201	050-F00400	3	M4 NUT FLG SER PAS	(2)-3
202	060-F00400-0B	3	M4 WSHR FORM A FLT BLK	(2)-3

8.8. SPX-1100UK ASSY CONTROLLER CABINET

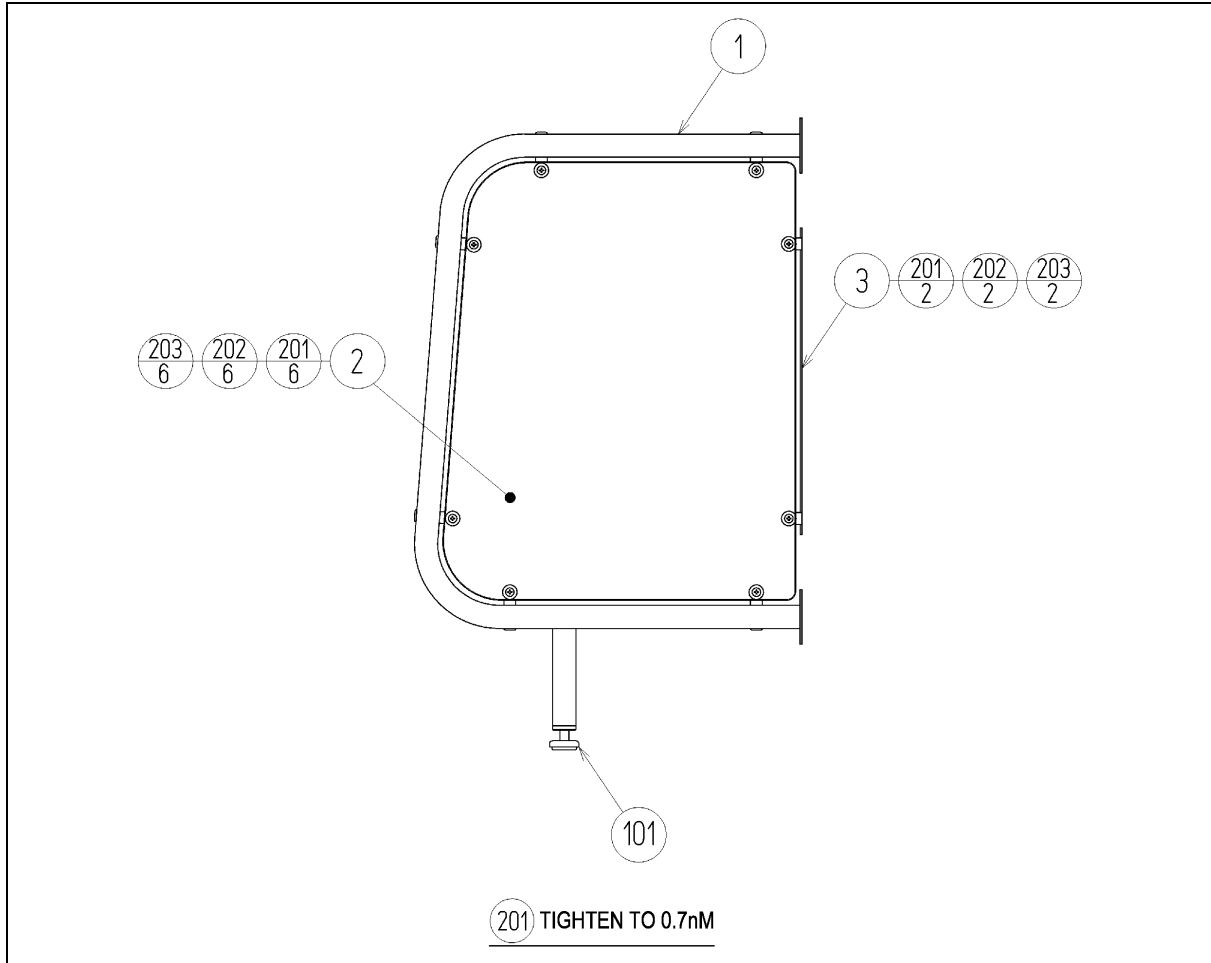


ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	SPX-2000UK	1	ASSY CTRL PANEL DX	
2	MAZ-1102	2	HOLDER	
3	VTS-HOD-D	1	VTS BOARD HOD	
5	HOD-1302UK	1	GUN HOLDER CABI	
6	253-5366	1	CASH BOX	
7	JPT-3101	2	TUBE CLAMP	
12	MAZ-2100	2	CONTROL UNIT	NOT SHOWN
14	HOD-1304	1	JOINT PART LID	
18	DUT-0302UK	1	COIN PATH PLATE	
25	SPY-1106	2	HOLDER BRKT	
26	HOD-1307-A	1	SIDE BRKT L BLANK	
27	HOD-1308-A	1	SIDE BRKT R BLANK	
30	SPX-1150UK	1	ASSY FENCE L	BUBBLE WRAP SEPARATELY
31	SPX-1160UK	1	ASSY FENCE R	BUBBLE WRAP SEPARATELY
32	105-5216	2	CHAIN BRKT	
201	000-T00416-0B	12	M4X16 MSCR TH BLK	(1)-8,(7)-4
202	068-441616-0B	8	M4 WSHR 16OD FLT BLK	(1)-8

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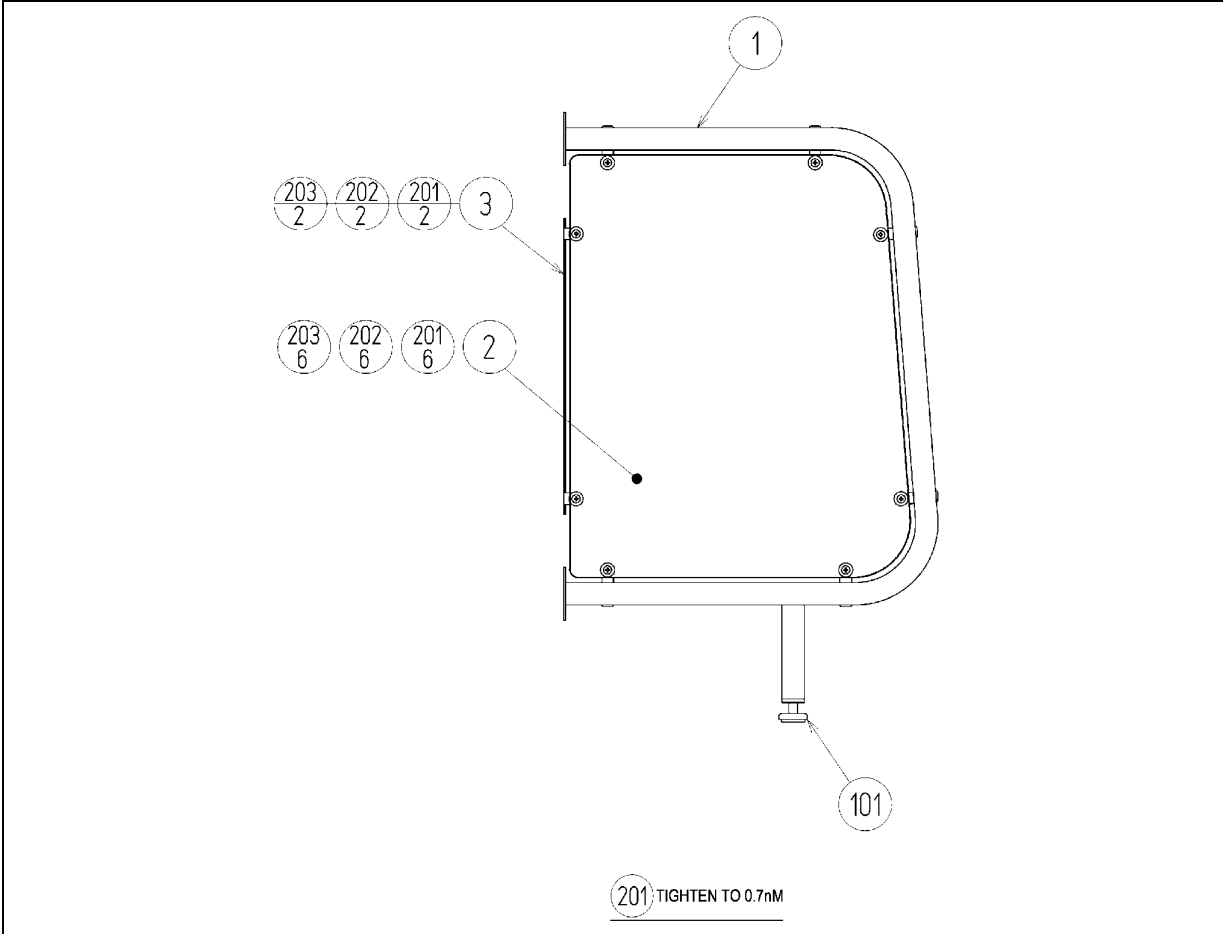
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
203	008-T00430-0B	8	M4X30 TMP PRF TH BLK	
204	000-T00440-0B	4	M4X40 MSCR TH BLK	(14)-4
207	000-P00420-W	9	M4X20 MSCR PAN W/FS PAS	(3)-4,(18)-5
208	030-000630-SB	12	M6X30 BLT W/S BLK	(25)-8,(26,27)-4
209	030-000616-SB	8	M6X16 BLT W/S BLK	(2)-8
210	060-F00600-0B	8	M6 WSHR FORM A FLT BLK	(2)-8
211	000-P00408-W	2	M4X8 MSCR PAN W/FS PAS	EARTHS-2
212	008-T00408-0C	4	M4X8 TMP PRF TH CRM	
301	SPY-60014UK	1	WIRE HARN TOWER EXT 2	
302	SPY-60015	1	WIRE HARN START EXT 2	
303	SPY-60016	1	WIRE HARN EXT 2	
304	600-9220-44K	1	WIRE HARN EARTH 2200MM M4/M4 K	LH GUN HOLDER TO AC BRKT
305	600-9040-44K	1	WIRE HARN EARTH 400MM M4/M4 K	LH GUN HOLDER TO RH GUN HOLDER

8.9. SPX-1150UK ASSY FENCE L



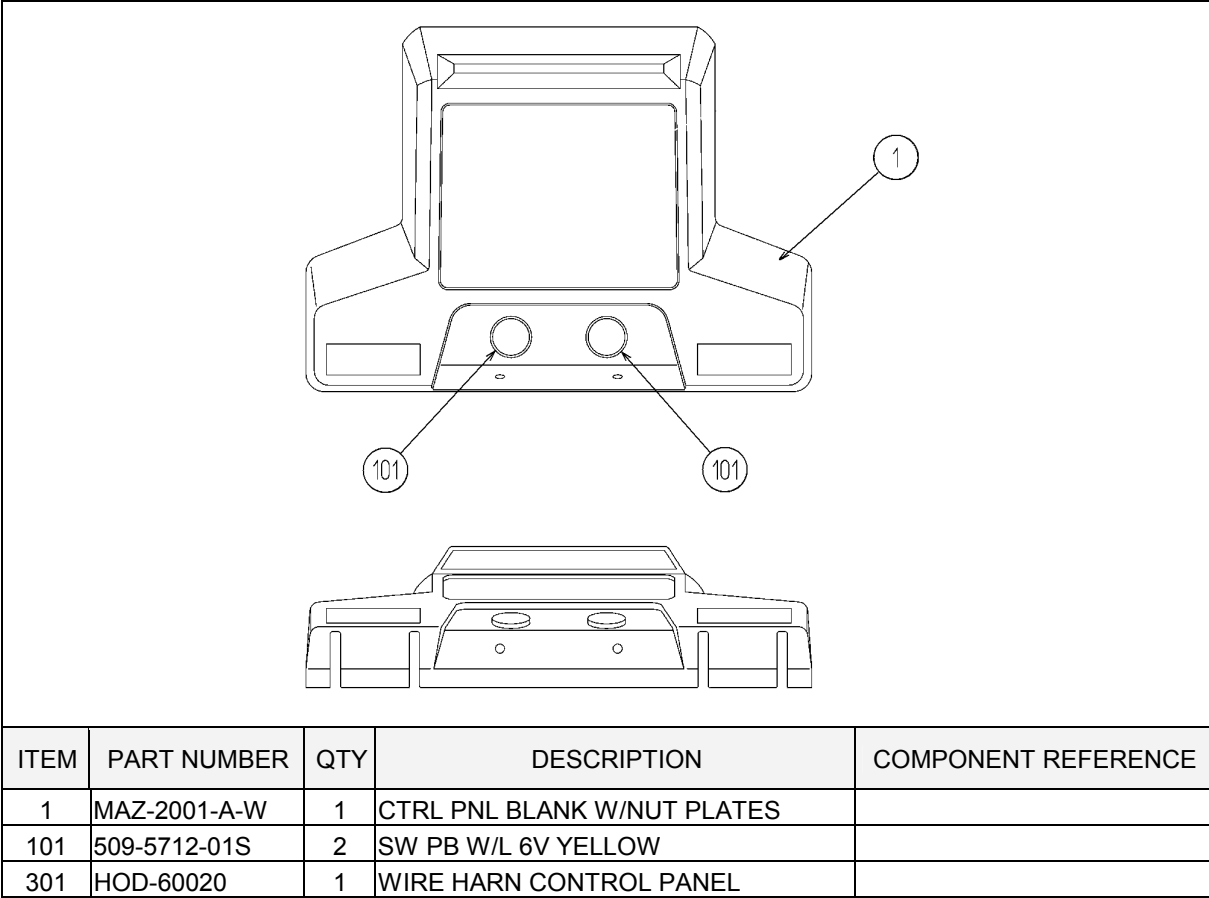
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	HOD-1351	1	PIPE L	
2	SPX-1151UK	1	STICKER FENCE L	
3	HOD-0004UK	2	PLATE HOLDER	
101	601-6076-OBUK	1	LEG ADJUSTER 32MM BLACK	
201	000-T00412-0B	8	M4X12 MSCR TH BLK	(2)-6,(3)-2
202	068-441616-0B	8	M4 WSHR 16OD FLT BLK	(2)-6,(3)-2
203	050-C00400-3B	8	M4 NUT DOME TYPE 3 BLK	(2)-6,(3)-3

8.10. SPX-1160UK ASSY FENCE R

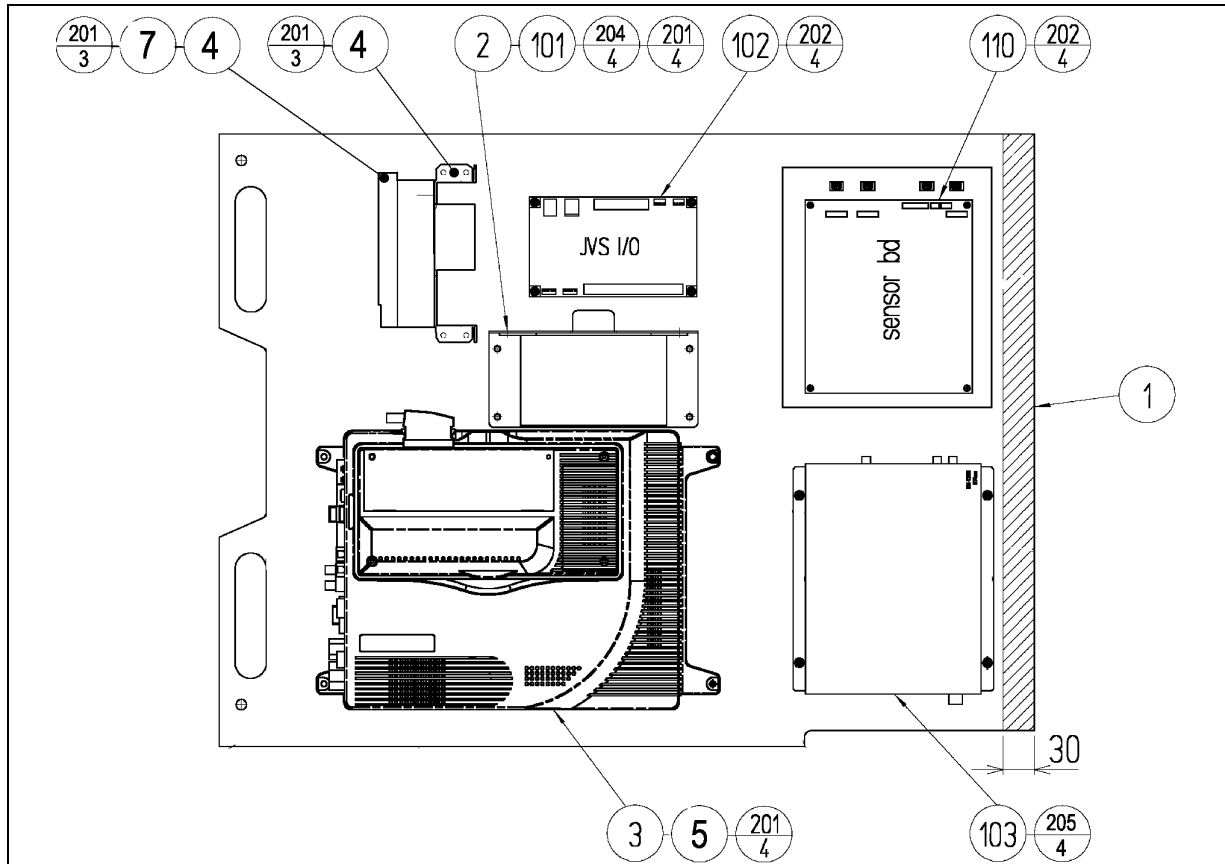


ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	HOD-1361	1	PIPE R	
2	SPX-1161UK	1	STICKER FENCE R	
4	HOD-0004UK	2	PLATE HOLDER	
101	601-6076-OBUK	1	LEG ADJUSTER 32MM BLACK	
201	000-T00412-0B	8	M4X12 MSCR TH BLK	(2)-6,(3)-2
202	068-441616-0B	8	M4 WSHR 16OD FLT BLK	(2)-6,(3)-2
203	050-C00400-3B	8	M4 NUT DOME TYPE 3 BLK	(2)-6,(3)-3

8.11. SPX-2000UK ASSY CTRL PANEL DX



8.12. SPX-4000UK ASSY MAIN BD DX



No wiring to be routed in hatched area

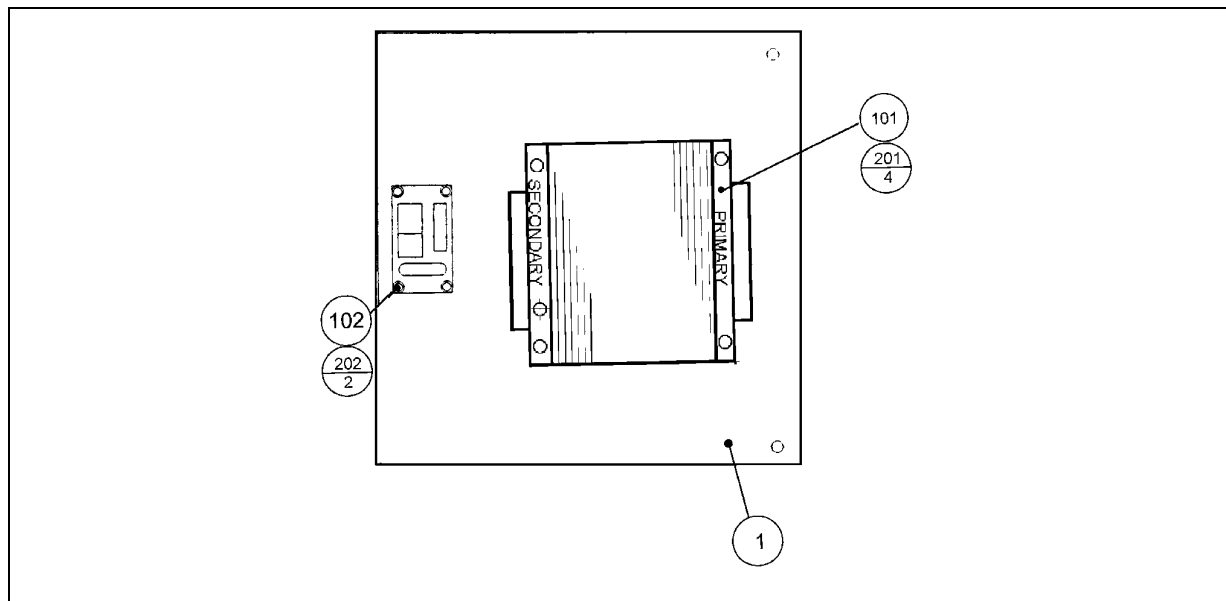
ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	SPY-4001UK	1	WOODEN BASE MAIN BD DX	
2	TMB-4003	1	SW REGU BRKT	
3	840-0089D-02	1	ASSY CASE NAO RTOS DIMM BD EXP	
4	105-5435	1	GD DRIVE BRKT STD	
5	LB1101	1	LABEL WARNING BATTERY	
6	610-0617	1	GD-ROM DRIVE UNIT NAOMI	
7	610-0624-0022	1	GD SOFT KIT MAZ	
8	LB1111	1	STICKER PLEASE RECYCLE	
101	400-5397-01	1	SW REGU FOR JVS VA	
102	837-13551-92	1	I/O CONTROL BD FOR JVS	
103	838-13616	1	AUDIO POWER AMP 2CH	
104	280-A00964-WX	7	ROUTER TWIST D09 SO6.4 WOOD X	
105	354081	6	TWIST LOK BHKL-450-4	
106	354083	6	(A)TWIST N LOK BHKL-750-4	
110	838-13143-08	1	IC BD GUN SENSE PY	
201	000-P00416-W	11	M4X16 MSCR PAN W/FS PAS	(2)-4,(3)-4,(4)-3
202	012-P00325	8	N4X1" S/TAP PAN PAS	(102)-4,(110)-4
204	000-P00408-W	4	M4X8 MSCR PAN W/FS PAS	(101)-4
205	012-P03512-F	4	N6X1/2" S/TAP FLG PAS	(103)-4
206	012-P00410-F	4	N8X3/8" S/TAP FLG PAS	(6)-4

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ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
301	SPY-60010UK	1	WIRE HARN HIGH FRQNCY JUMPER	CN1 ON IC BD GUN SENSE SPY
302	600-7159-039	1	WIRE HARN JVS PWR 039CM	
303	SPY-60009	1	WIRE HARN CTRL BD RECEIVER	
304	SPY-60002UK	1	WIRE HARN AC MAIN BD	
305	SMB-60013	1	WIRE HARN SPEAKER L	
306	SMB-60014	1	WIRE HARN SPEAKER R	
307	SPY-60005	1	WIRE HARN AUDIO L	
308	SPY-60006	1	WIRE HARN AUDIO R	
309	SPY-60007UK	1	WIRE HARN SW CONTROL	
310	600-7009-2500	1	ASSY RGB CA D-SUB 15P 2500MM	
313	600-7141-100	1	CABLE JVS TYPE A-B 100CM	
315	600-7242-250	1	CABLE SCSI ST-L TYPE1 250MM	

8.13. SPY-4100UK ASSY PWR SPLY

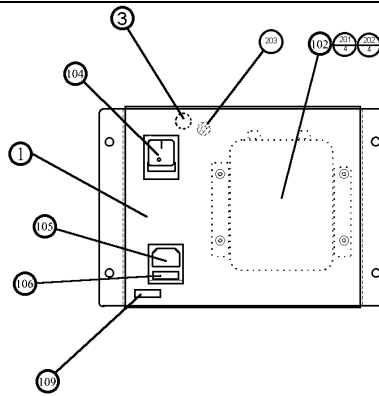


ITEM	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	HOD-4101UK	1	WOODEN BASE PWR SPLY	
101	560-5422UK	1	XFMR NOB	
102	838-11856CE-02	1	CONN BD W/FUSE 6.3A CE	
201	000-P00416-W	4	M4X16 MSCR PAN W/FS PAS	(XFMR)-4
202	012-P00325	2	N4X1" S/TAP PAN PAS	(CONN BD)-2
301	SPY-60004UK	1	WIRE HARN AC-CONN BD	

8.14. SPX-INST-DX ASSY INST KIT SPX DX

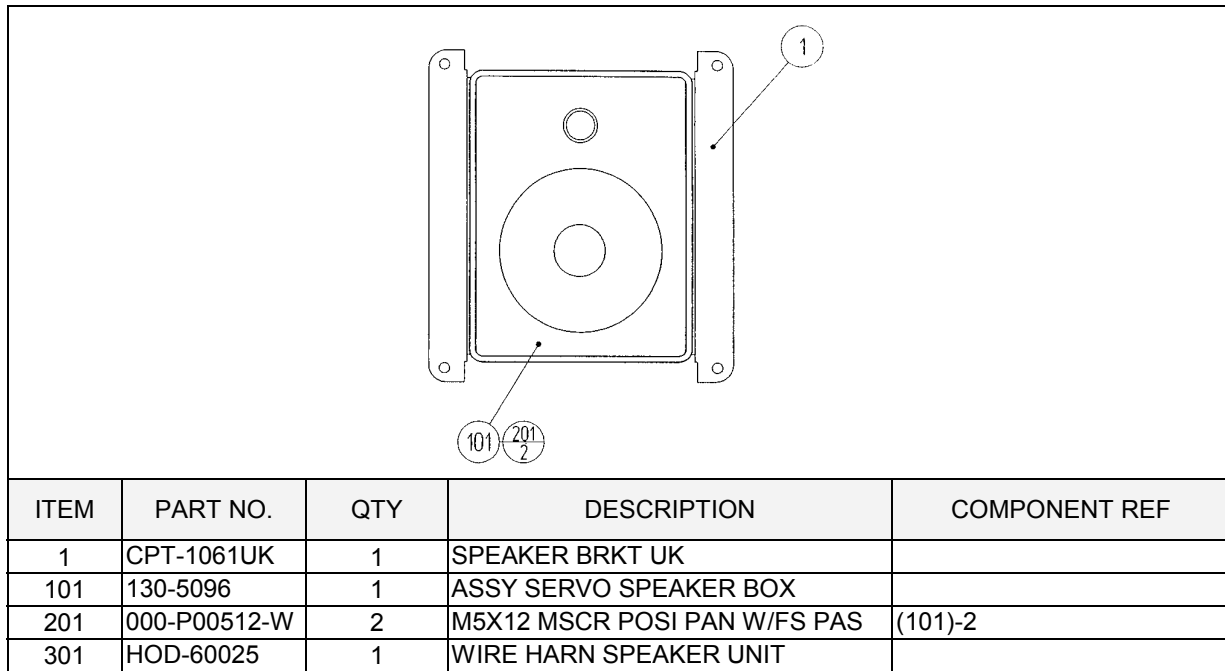
ITEM	PART NO.	QTY	DESCRIPTION	COMPONENT REFERENCE
1	SPX-0520UK	1	ASSY BILLBOARD DX	
2	HOD-0006	2	L BRKT	
3	MAZ-0525UK	1	POP PANEL DX	
4	440-CS0186UK	1	STICKER C EPILEPSY MULTI	
5	SPX-0526UK	1	POP BRKT DX	
6	MAZ-2150UK	1	ASSY GUN HOLDER W/TETHER L	
7	MAZ-2160UK	1	ASSY GUN HOLDER W/TETHER R	
22	PK0309	1	CARTON BOX INST KIT MAZ DX	
23	SAECE-095	1	DECLARATION OF CONFORMITY	
24	MAZ-2002UK	1	INST PLATE MAZ DX MULTI	
101	290094	0.8	WRAP,BUBBLE(SM)	
201	030-000850-SB	4	M8X50 BLT W/S BLK	FENCE L+R-2EA
202	030-000830-SB	8	M8X30 BLT W/S BLK	FENCE L+R-4EA
203	029-F00625-0B	4	M6X25 SKT CSK BLK	
205	000-T00420-0B	4	M4X20 MSCR TH BLK	FENCE L+R-2EA
206	068-441616-0B	4	M4 WSHR 16OD FLT BLK	FENCE L+R-2EA
207	030-000840-SB	8	M8X40 BLT W/S BLK	(2)-8
208	068-852216-0B	24	M8 WSHR 22OD FLT BLK	(2)-8,FENCE L+R-6EA
209	030-000860-0B	4	M8X60 BLT BLK	F.CABI-4
401	420-6620UK	1	SERVICE MANUAL GD ROM SYS	
402	OS1019	2	SELF SEAL BAG 9X12.3/4	
403	420-6702-01UK	1	SERVICE MANUAL MAZ DX	
405	390-5160	1	LAMP WG B TYPE 6V 3W (C2R)	
406	509-5080	1	SW MICRO TYPE (SS-5GL2)	
413	514-5078-5000	1	FUSE 5X20 CERAMIC SB 5000MA	

8.15. HOD-1020UK ASSY AC UNIT

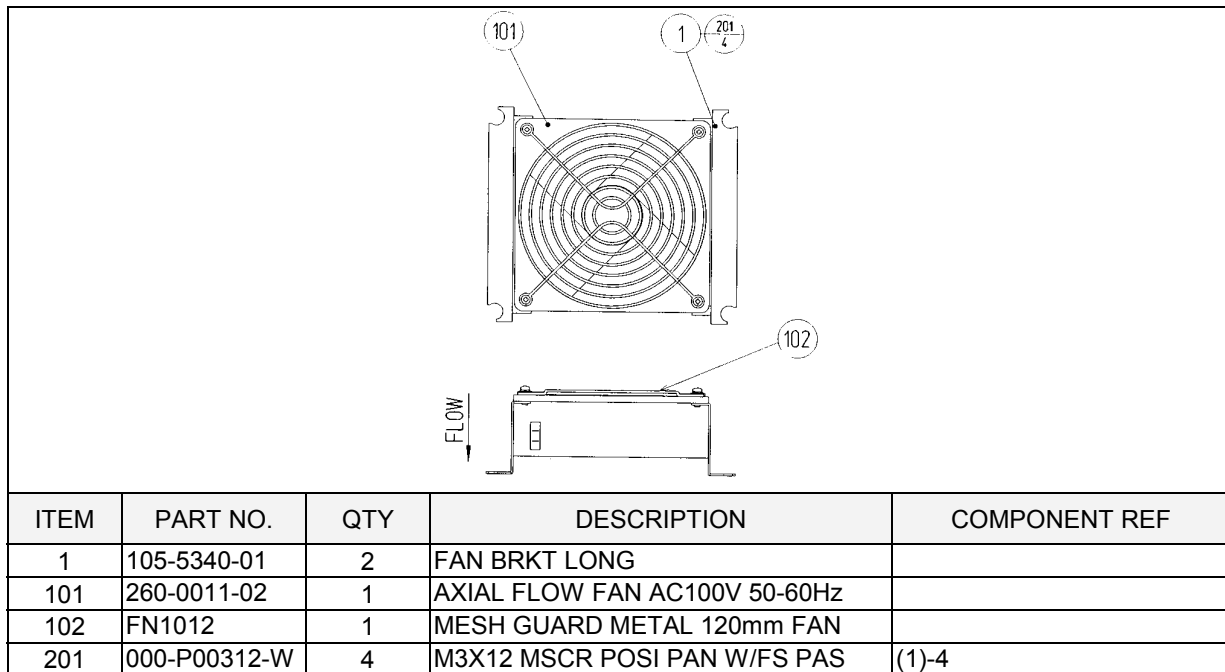


INDENT	PART NO.	QTY	DESCRIPTION	COMPONENT REF
1	HOD-1021UK	1	AC BRKT UK	
3	LB1096	1	STICKER PROTECTIVE EARTH	(EARTH STUD)
102	EP1379	1	FILTER EMI 10A ARCOTRONICS	
104	SW1109	1	SWITCH ROCKER 250V AC	
105	EP1302	1	EUROSOCKET FUSED 10A 250Vac	
106	514-5078-5000	1	FUSE 5X20 CERAMIC SB 5000mA	
107	310-5029-D508	0.04	HEAT SHRINK SLEEVING 50.8DIA	
109	421-6595-5000-T	1	STICKER FUSE 5000mA TYPE T	
201	000-P00308	4	M3X8 MSCR POSI PAN PAS	(102)-4
202	060-F00300	4	M3 WSHR FORM A FLT PAS	(102)-4
203	050-F00400	2	M4 NUT FLG	EARTH STUD
301	600-6911-049UK	1	WIRE HARN AC BRKT (JPT)	
302	600-7118-002UK	1	WIRE HARN AC OUT (PRIMARY)	
303	600-9040-45U	1	WIRE HARN EARTH 400mm M4/M5	AC BRKT - XFMR

8.16. HOD-1070UK ASSY SPEAKER



8.17. HOD-1530 ASSY FAN UNIT



9. APPENDIX A - ELECTRICAL SCHEMATIC

9.1. WIRE COLOURS

THE WIRE COLOUR CODE IS AS FOLLOWS:

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

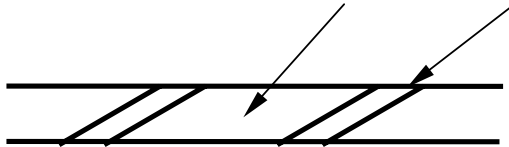
Wires other than those of any of the colours listed above will be displayed by 2 alphanumeric characters:

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

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

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

[Example] 51----- WHITE/RED = WHITE wire with RED stripes



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

K:	AWG18, UL1015
L:	AWG20, UL1007
None	AWG22, UL1007

9.2. ELECTRICAL SCHEMATIC

The following pages contain the electrical schematic for this machine.

LOCATE A3 SCHEMATIC DRAWING 1 HERE

LOCATE A3 SCHEMATIC DRAWING 2 HERE

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