SERVICE MANUAL





Incorporating



UPRIGHT TYPE





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



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1. BEFORE USING THIS PRODUCT

To ensure the safe usage of the product, be sure to read the following before using the product. The following instructions are intended for the use of <u>QUALIFIED SERVICE PERSONNEL ONLY</u>. After carefully reading and sufficiently understanding the instructions should any activity be carried out on the product. Only qualified service personnel should carry out maintenance on the product.

Terms such as WARNING!, CAUTION, and IMPORTANT! Are used where an explanation is given which requires special attention, depending on the potential risk. SEGA is not responsible for injury or damage caused by use in a manner contrary to the instructions stated 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 which can result in death or serious injury. Indicates that mishandling the product by disregarding this caution will cause a potentially hazardous situation which can result in personal injury and or material damage.



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

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

Ensure that the correct fuse(s) is fitted to the machine.

Details of the correct fusing of the machine 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 addition, not designated by SEGA are not permitted and will invalidate this product's CE conformity.

The parts of the product also include any warning labels or safety covers for personal protection etc. A potential hazard will be created if the machine is operated while any parts have been removed. Should any doors, lids or protective covers be damaged or lost, do not operate the product. 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 both customers and operators, stickers and printed instructions describing potentially hazardous situations are applied to places where accidents could occur. Ensure that where the product is operated 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 it has been replaced by an identical item.

When handling the monitor, be very careful. (Applies only to product with monitor)

Some of the monitor (TV) parts are subject to high tension voltage. Even after turning off the power some components are still occasionally subject to high tension voltage. Monitor repair and replacement should be performed by qualified service engineers only.

In cases where commercially available monitors and printers are used only the contents relating to this product are stated in this manual. Some commercially available equipment has functions and reactions not stated in this manual. Read this manual in conjunction with the specific manual of 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.

1.1. INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION



Inspection should only be carried out by QUALIFIED SERVICE PERSONNEL.

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.

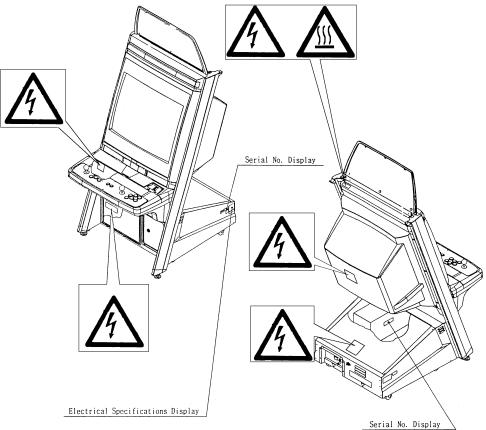
- Are then any dented parts or defects (cuts, etc.) on the external surfaces of the product?
- Are castors and leg adjusters present and undamaged?
- Do the power supply voltage and frequency requirements meet with the local supply?
- Are all wiring connectors correctly and securely connected? Unless 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	
Installation Space (cm):	76 (W) x 98 (D)	
Height (cm):	175	
Weight (kg):	Approx. 117	
Power, Max: 322W	Rated Voltage (VAC):	230
	Rated Current (A):	1.4A – NAOMI
		2.0A - LINDBERBH
Operating Temperature Range	5 - 40°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, have 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 **ROUTE 66 Standard**, 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 the nearest branch listed below, or our head office.

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Telephone: +44 (0) 1372 731820 Fax: +44 (0) 1372 731849

3. INSTALLATION AND MAINTENANCE INSTRUCTIONS



Installation and maintenance should only be carried out by QUALIFIED SERVICE PERSONNEL.

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:

- This machine should only be installed by Qualified Service Personnel.
- 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.

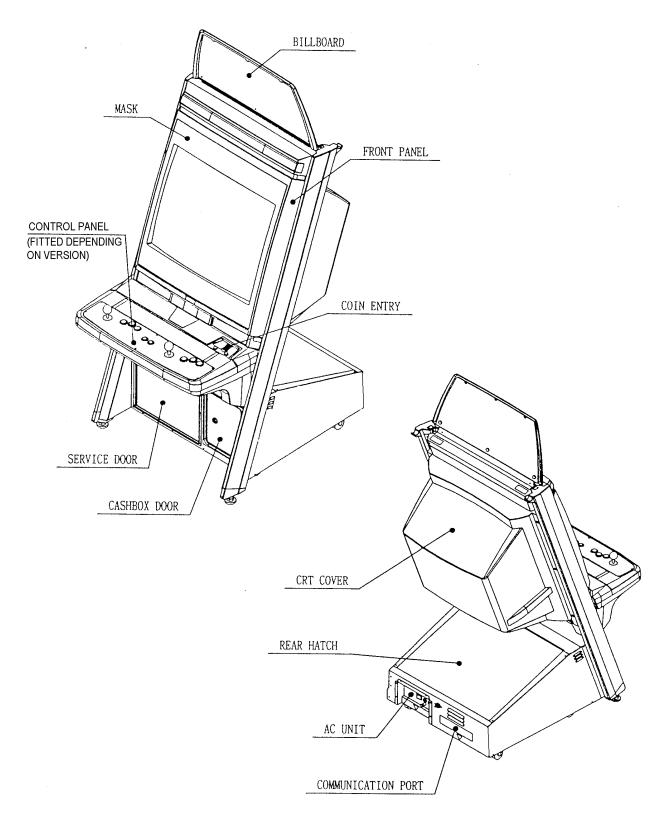
3.2. COIN HANDLING

Standard Sega machines are fitted with a C120/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 4. 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 C120 and SR3 (Indirect Reject)
- Generic mechanical
- SECI RM4-G20

3.3. NAME OF PARTS



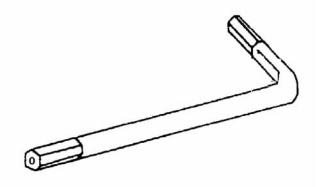
	Width (cm)	Length (cm)	Height (cm)
CABINET	76	98	180
When Assembled	76	98	210

3.4. ACCESSORIES

	Please ensure the following parts are supplied:
I be machine is supplied with an installation kit	Diagon angura tha following parts are supplied:
דווכ ווומכווווכ וא אטטווכט אונו מד וואמומוטטר או.	. בובמסב בווסטוב וווב וטווטשוווט טמווס מוב סטטטוובט.

No.	PART NUMBER	QTY	DESCRIPTION
1	RND-0069	1	PLAY INST SH VT3 MULTI
2	RND-0070	1	SUN INSTR SH VT3
3	RND-0071	1	DISPLAY CARD VT3 (ATTACHED TO NOA-1300)
7	PK0209	1	INST KIT BOX NOB COM
8	OS1019	2	SELF SEAL BAG 9X12.3/4
9	421-VT3	2	PACKING LABEL
101	540-0006-01	1	WRENCH M4 TMP PRF
102	540-0015-01	1	WRENCH M6 TMP PRF
103	514-5078-5000	1	FUSE 5X20 CERAMIC SB 5000MA
106	509-COIN-NOB	1	SW MICRO COIN ROUTE .250 TAB
108	440-CS0186UK	1	STICKER C EPOLEPSY MULTI
401	420-6455-02UK	1	SERVICE MANUAL NAOMI LBG
402	SAECE-XXX	1	DECLATATION OF CONFORMITY
403	420-5827-PFX	1	SERVICE MANUAL SANWA PFX
404	420-6455-MECH	1	INSTRUCTION SHEET MECH'L NOB
405	RND-0073	1	SERVICE MANUAL VT3
408	LM1227	1	UK MAINS LEAD 10A W/ PLUG
409	LM1246	1	EURO MAINS LEAD 10A
410	601-11691	1	CARTON BOX LBG

THIS BOX ALSO CONTAINS THE BILLBOARD ASSEMBLY (NOA-1300) AND FIXING SCREWS (T00408-OC, QTY 3). **MONITOR VARIANTS ~ SERVICE MANUAL AS APPROPRIATE.



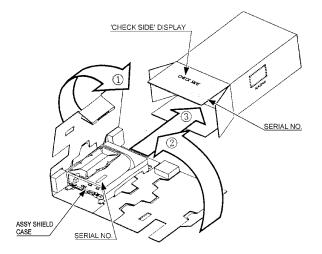
Items 101 & 102 - Tamperproof TORX wrench.



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.

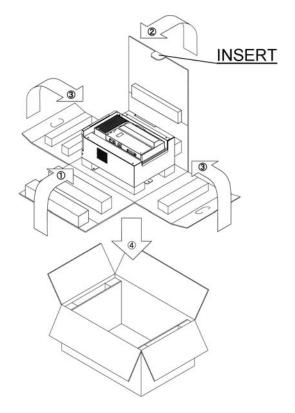
Failure to return the GAME BOARD in this manner may invalidate the warranty.

Note: Game Board packaging may vary



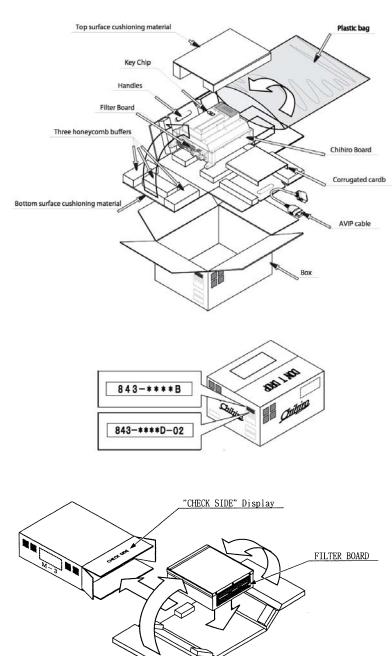
NAOMI

Wrap the ASSY SHIELD CASE with the packaging material and put it in the original transit box as shown. Putting it upside down or packing other than as shown can damage the GAME BOARD and parts.



TRIFORCE

Fold the packing supplies in the order indicated by the numbers shown in the figure. Package the SHIELD CASE and place it inside the CARTON BOX. Packaging the unit in the wrong direction or in a fashion other than that shown in the figure may cause damage to the GAME BOARD and/or other parts.



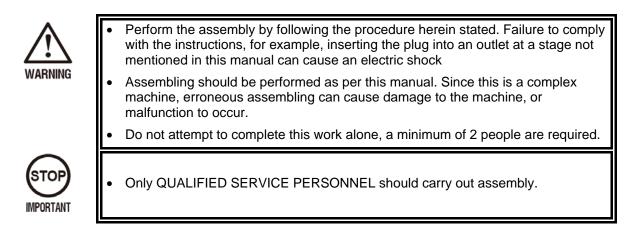
<u>CHIHIRO</u>

- 1. Wrap the Chihiro Board in a plastic bag.
- 2. Place it on top of the bottom surface cushioning material. Turn the Filter Board to face the side with the three honeycomb buffers. Packing it in the opposite direction may cause damage to the Filter Board.
- 3. Insert corrugated cardboard into the space between the lateral honeycomb buffers of the bottom surface cushioning material and stow the AVIP cable inside.
- 4. Place the Chihiro Board wrapped in the bottom surface cushioning material into the carton box. Use the handles on the bottom surface cushioning material.
- 5. Place the upper surface cushioning material on top of the Chihiro Board. Be sure to align it in the right direction, as it will not fit otherwise.
- 6. Close the top of the carton box and seal it tightly with adhesive tape.

LINDBERGH

- 1. Wrap the LINDBERGH Board in a plastic bag.
- 2. Place the LINDBERGH into the outer packaging and fold around Game Board as shown.
- 3. Slide the unit into the carton and seal.

3.5. ASSEMBLY INSTRUCTIONS



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

- STEP 1 INSTALLING THE BILLBOARD
- STEP 2 SECURING IN PLACE (LEG ADJUSTER ADJUSTMENT)

STEP 3 CONNECTION TO THE POWER SUPPLY

Note that the parts contained within the installation kit are required for the assembly work. The following tools will be required when installing this machine:

 \bigcirc WRENCH (for M16 hexagon bolt)

J	

Phillips type screwdriver

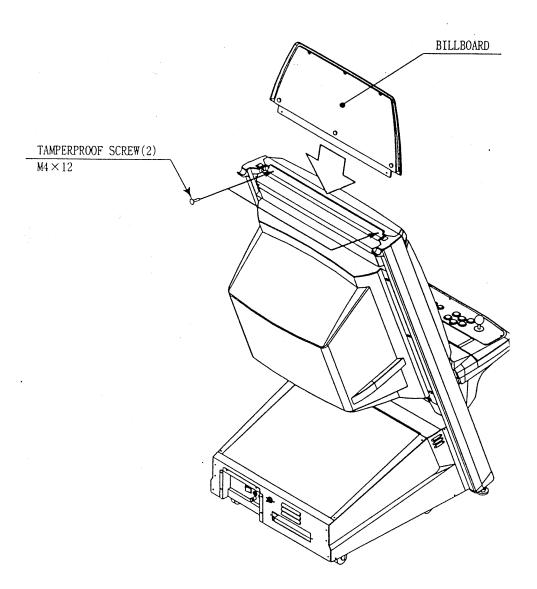
WRENCH (FOR M4 TAMPERPROOF SCREW)

3.5.1. INSTALLING THE BILLBOARD



• Only QUALIFIED SERVICE PERSONNEL should carry out this operation.

- 1. Insert ASSY BILLBOARD to the top part of the cabinet
- 2. Secure with the two Tamperproof screws



3.5.2. SECURING IN PLACE (LEG ADJUSTER ADJUSTMENT)



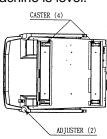
IMPORTANT

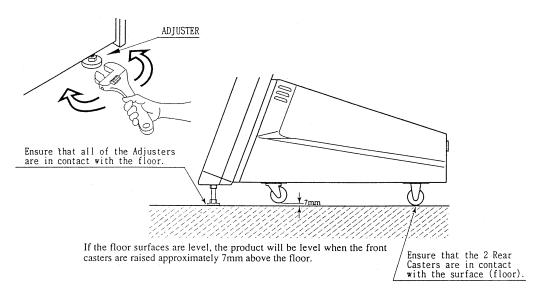
Make sure all of the leg adjusters are in contact with the floor. If they are not the machine may move and cause injury. This operation requires 2 people.

 This operation should only be carried out by QUALIFIED SERVICE PERSONNEL.

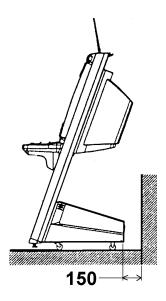
This machine has four castors and two leg adjusters. When the installation position is decided, unscrew the leg adjusters so that they raise both front castors 7mm from the floor. Make sure the machine is level.

- 1. Move the product into the installed position.
- 2. Unscrew the adjusters until they are in contact the floor, and use a wrench to turn them further until the front castors are raised approximately 7mm above the floor.
- 3. Tighten the locknut on the leg adjusters upwards to lock the legs in position.





Ensure adequate ventilation is maintained as detailed below:



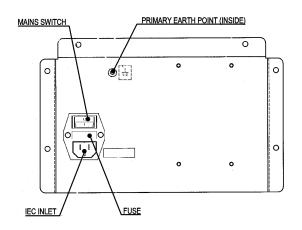
3.5.3. CONNECTION TO THE POWER SUPPLY



IMPORTANT

Be sure that the machine is not connected to the mains supply before attempting this operation

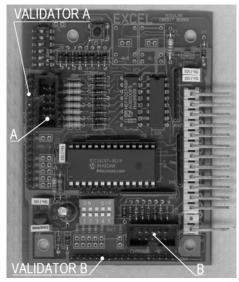
- This operation should only be carried out by QUALIFIED SERVICE PERSONNEL.
- 1. The AC Unit is located on the right hand side of the base unit, when viewing the screen (as shown in section 3.3). It houses the IEC inlet, mains switch and fuse, laid out in one of the following assemblies:



- 2. Ensure that all of the machine's wires have been connected in accordance with the preceding sections and that the mains switch is OFF.
- 3. Check that the operating voltage of the mains supply matches the machine (section 1.1).
- 4. Insert the IEC lead into the IEC inlet and the mains plug into a wall socket. If applicable, switch the wall socket ON.
- 5. Stand clear of the machine and switch the mains switch ON.

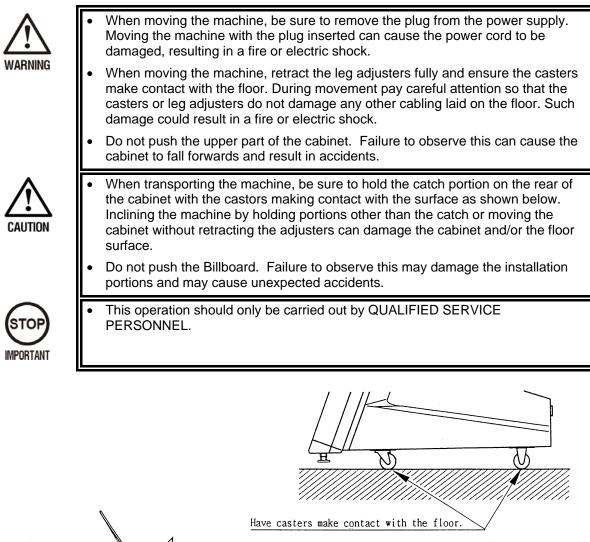
3.5.4. CREDIT BOARD WIRING TO COIN MECH

COIN MECH	LOOM	INSTALLATION
C220B	LM1006 OR	Attach one 15way connector to the C220 coin mech.
(TOP ENTRY) LM1006IDC		 Attach the other 15 way connector to Validator A on the credit board.
GENERIC MECHANICALS	LM1008	• Attach the blue cable and orange cable to one mech's microswitch.
		 Attach the blue/green cable and orange/green cable to the other mech's microswitch.
		 Attach one 15 way connector to Validator A and the other to Validator B on the credit board
SECI, C120, SR3	OWN LOOM	Attach the loom to position A on the credit board

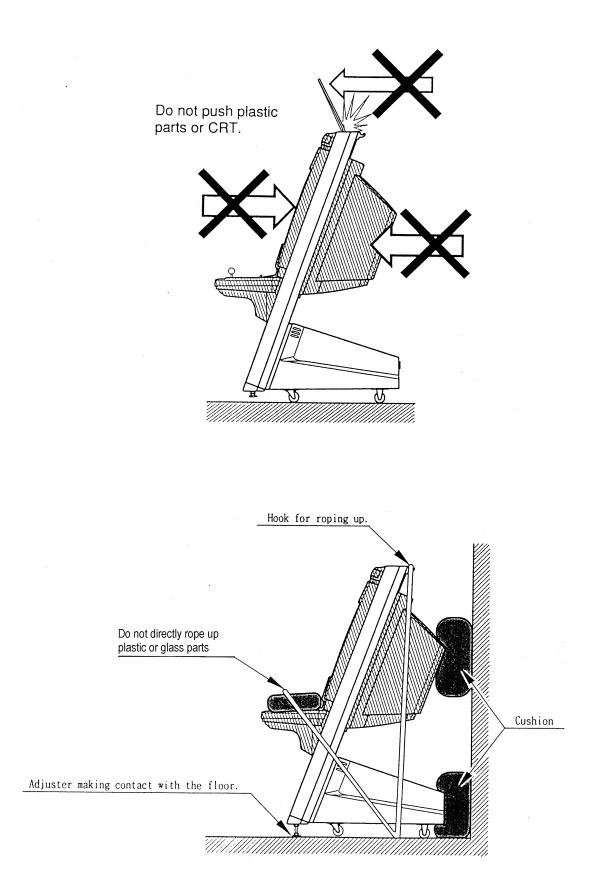


'EXCEL' TYPE CREDIT BOARD

3.6. MOVING THE MACHINE

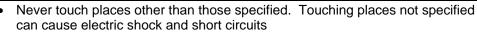


Do not push the upper part of the cabinet. Failure to observe this can cause the cabinet to fall forwards and result in accidents.



3.7. INTERNAL SWITCHES AND COIN METERS



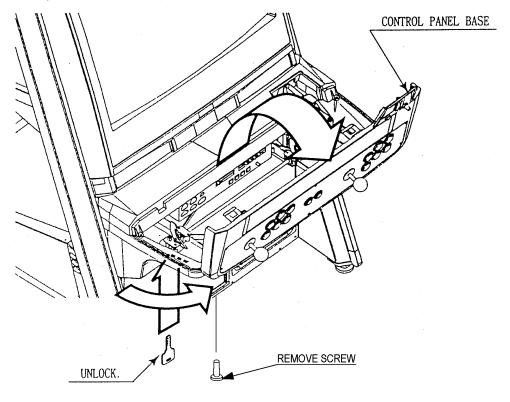


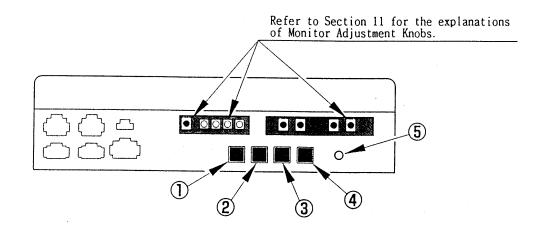


• Be careful not to damage wiring. Damaged wiring can cause electric shock and short circuits.

Adjust to the optimum sound volume considering the environmental requirements of the installation location.

The Control Panel Base can be opened by unlocking as shown below. Internal switches can be accessed when the Base is opened.





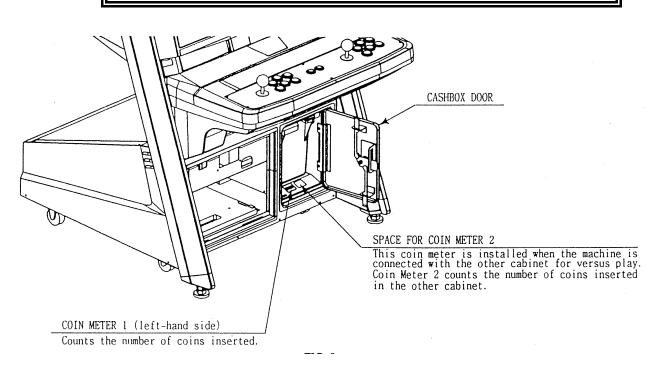
Push to enter Test Mode of Game BD.

- ① TEST SWITCH
- ② SERVICE SW 1
- ③ SERVICE SW 2
- ④ DEMAG. SWITCH
- SOUND VOLUME
- SERVICE CREDIT SW. Used without registering on the Coin Meter. SERVICE CREDIT SW. for 2 players, depending on the specific game. Removes on-screen colour deviation due to CRT magnetisation. Use this switch before monitor colour adjustment. Adjust the Speaker volume.

The Coin Meter is inside the CASHBOX DOOR.



If the COIN METER and the Game Board are electrically disconnected, game play is not possible.



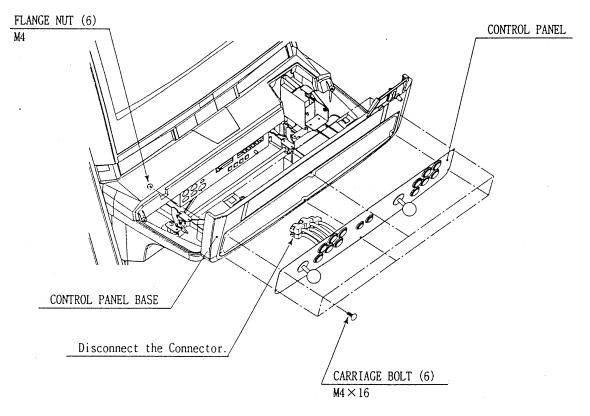


• Before starting work, ensure that the cabinet is isolated from the mains by switching off and removing the IEC mains lead from the wall outlet.

• Be careful not to damage wiring. Damaged wiring can cause electric shock and short circuits.

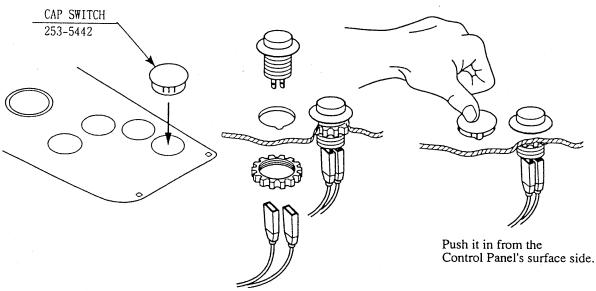
3.8.1. REPLACING THE CONTROL PANEL

- 1. Power OFF the machine and remove the IEC lead from the wall outlet.
- 2. Unlock the lock on the underside of the Control Panel Base, and open the Panel.
- 3. There are six connectors on the monitor side in the Base interior. Disconnect all of the six connectors. Depending on the game used, however, not all of the six connectors mat have been connected.
- 4. By removing the six sets of Carriage Bolts and Flange Nuts, the Control Panel can be removed from the Base. At this time, be very careful so as not to damage the wiring.



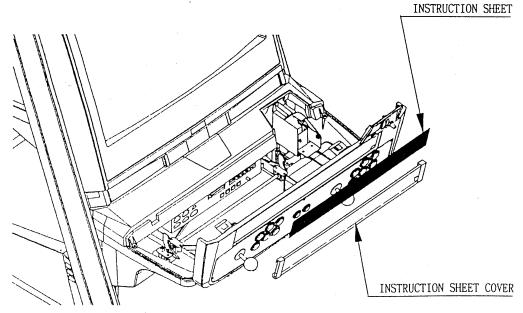
3.8.2. BUTTON REMOVAL

When changing to a game with less Operation Buttons, remove the unnecessary buttons from the Control Panel and install the Cap Switches to the button cut-outs

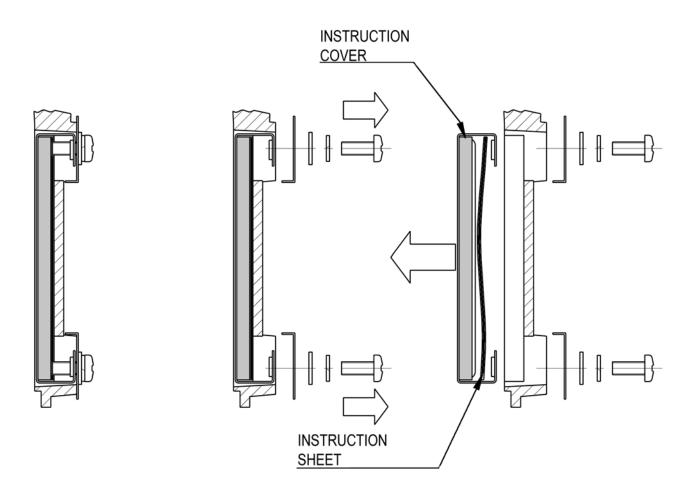


3.8.3. REPLACING THE INSTRUCTION SHEET

- 1. Power OFF the machine and remove the IEC lead from the wall outlet.
- 2. Unlock the lock on the underside of the Control Panel Base, and open the Panel.



- 3. While supporting the glass Instruction Cover to prevent it falling out, remove the four screws and clips on the rear of the Instruction Cover.
- 4. Remove the Instruction Cover to allow replacement of the Instruction Sheet.
- 5. Place Instruction Sheet in the recess on the Control Panel Base. Re-fit the Instruction Cover.
- 6. Fit the four clips and screws as detailed below.



3.9. REPLACEMENT OF FLUORESCENT LAMP AND OTHER LAMPS



- 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.
- When performing work, be sure to turn power off. Working with power on can cause an electric shock or short circuit.

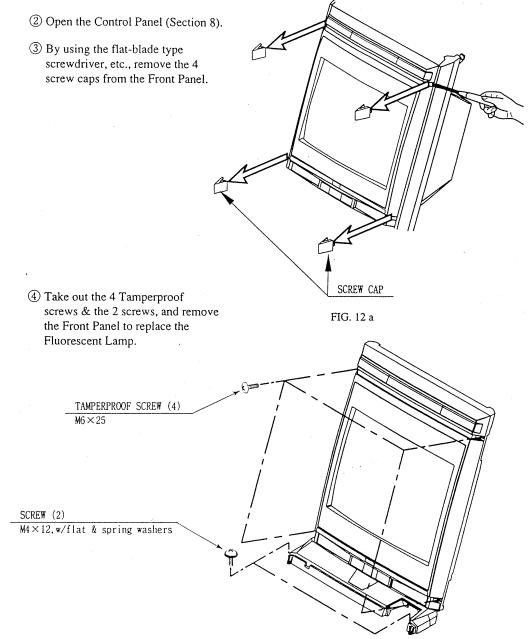




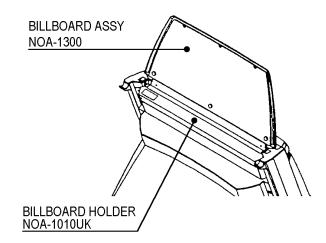
Lamps should only be replaced by QUALIFIED SERVICE PERSONNEL.

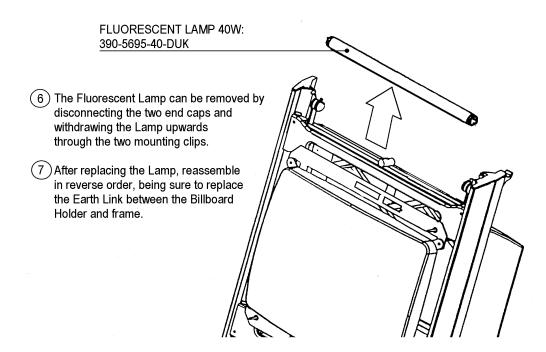
3.9.1. FLUORESCENT LAMP REPLACEMENT

① Turn power OFF by using the Main SW of AC Unit or the SUB PWR SPLY SW inside the SERVICE DOOR.



(5) Remove the Billboard Assy from the Billboard Holder by removing the two fixing screws. Remove the Billboard Holder from the machine by first disconnecting the Earth Link between the Billboard Holder and frame, and removing the four fixing screws.





3.10. GAME BOARD

• When performing work, be sure to turn power off. Working with power on can cause an electric shock or short circuit.

 Be careful not to damage wiring. Damaged wiring can cause an electric shock or short circuit.

• The voltage/amperage ratings for the Game Board are 3.3V 12A, 5.0V 10A and 12V 2A. To avoid risk of fire, never use any board with supply requirements exceeding the above.

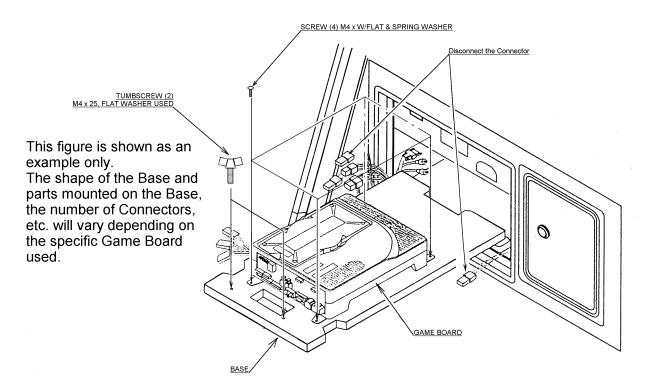
• When replacing the Game Board with one not of JAMMA standard, be sure to use only the harness supplied by the manufacturer of the Game Board. Using other harnesses constitutes a fire risk.

In this manual, only NAOMI SHIELD CASE removal is explained. When using other Game Boards such and LINDBERGH, the removal process is similar whereby all the connections on the face of the Game Board must be removed before extracting the 2x thumbscrews and pulling out the wooden base.

3.10.1.TAKING OUT THE GAME BOARD

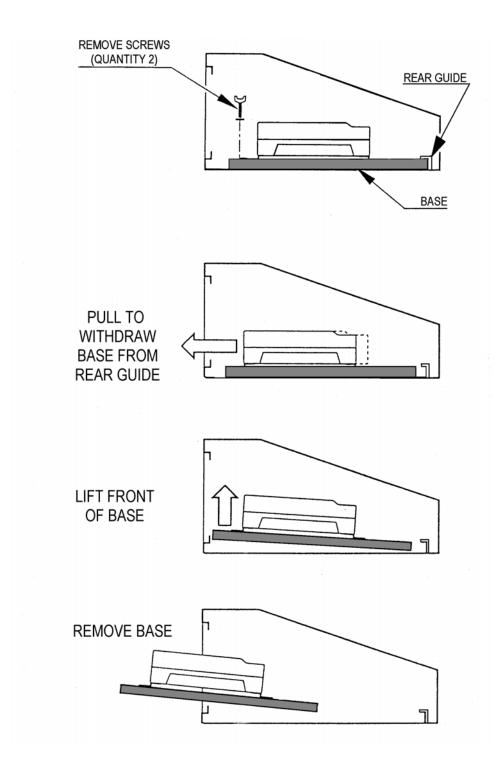
To take out the game board (NAOMI SHIELD CASE), remove together with the wooden base on which the Game Board is mounted.

- 1. Turn power OFF by removing the IEC lead from the wall socket.
- 2. Disconnect all of the connectors connected to the Shield Case Filter Board. Also disconnect all of the connectors connected to the devices other than the Shield Case on the base. The number of connectors varies on the specific game.





3. Remove the screws securing the wooden Base and remove it from the cabinet together with the Shield Case, as detailed below. Be careful not to damage wiring during removal.

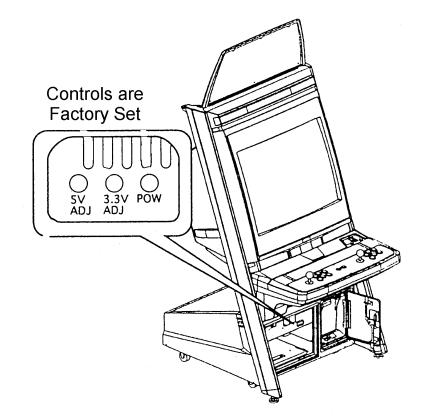


4. Take out the four screws and remove the Shield Case.

3.11. GAME BOARD POWER SUPPLY VOLTAGE ADJUSTMENT VOLUME



The Voltage Adjustments shown below are factory set and must **NOT BE CHANGED**. Changing the setting without a justifiable reason can damage the IC Board and cause malfunctioning.



3.12. TROUBLESHOOTING



 These procedures should only be carried out by QUALIFIED SERVICE PERSONNEL.

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.	Firmly insert the plug into the outlet.
	Incorrect power source/voltage.	Make sure that the power supply/voltage are correct.
	AC Unit CIRCUIT PROTECTION DEVICE (ie; fuse) was activated due to an instantaneous overcurrent.	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 which caused the overcurrent & fix.
The colour image on the screen is incorrect	Incorrect monitor adjustment.	Make appropriate adjustments. Refer to the Monitor Service Manual supplied with this product.
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.	Adjust the volume setting on the VTS bracket. Refer to the Monitor Service Manual supplied with this product.
	Malfunctioning BD and Amp.	Perform Sound Test to check it. Refer to the Monitor Service Manual supplied with this product.
	Connector connection is incorrect	Check connector connection from Base to Speaker
The fluorescent lamp does not light up	Fluorescent lamp needs replacement	Replace the fluorescent lamp. Refer to the Monitor Service Manual supplied with this product.
	The connector is disconnected	Check connector connections in the billboard case. Refer to the Monitor Service Manual supplied with this product.



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.

FUSES should only be replaced by QUALIFIED SERVICE PERSONNEL.

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
514-5078-3150	STEREO AMP REF. F1, F2	5x20mm CERAMIC SB 3.15A	2
514-5078-6300	SWITCH REG REF. F1	5x20mm CERAMIC SB 6.3A	1
514-5078-10000	IEC INLET REF. F1	5x20mm CERAMIC SB 10A	1
514-5078-6300	CONN. BD. REF. F1	5x20mm CERAMIC SB 6.3A	1

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

3.14. COIN SELECTORS



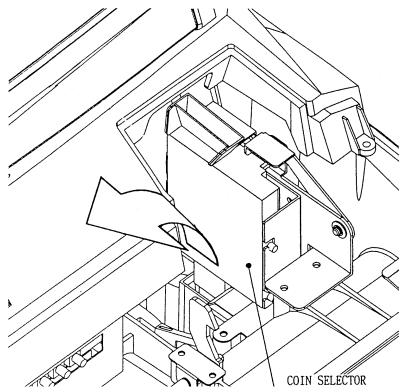
Before starting work, ensure that the cabinet is isolated from the mains by switching off and removing the IEC mains lead from the wall outlet.

Be careful not to damage wiring. Damaged wiring can cause electric shock and short circuits.

3.14.1.COIN CONTROLS SR3 (TOP ENTRY)

3.14.1.1. TAKING OUT THE COIN MECH.

Open the Control Panel Base to gain access to the Coin Selector, located on the right-hand side inside the Control Panel. Lift the clamp on the top of the Selector, and remove the Selector by pulling out diagonally upward.



3.14.1.2. CLEARING A COIN JAM

If a coin is not rejected when the REJECT button is pressed, open the Control Panel Base as described previously and open the Selector Gate. After removing the jammed coin, put a normal coin in and check to see that the Selector functions correctly.

3.15. MAINTENANCE INSTRUCTIONS

3.15.1.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	INTERVAL
INSTALLATION OF THE MACHINE	When the machine is installed perform the following checks:	Monthly
	 Check to see that each setting is as per the standard settings input at the time of shipment. 	
	• In the INPUT TEST mode, check each switch and V.R.	
	• In the OUTPUT TEST mode, check each of the lamps.	
	 In the MEMORY TEST mode check all of the IC's on the IC BD. 	
MEMORY	 On the TEST MENU screen choosing the MEMORY TEST allows self test to be performed. In this test RAM & ROM are tested. 	Monthly
PERIODIC CHECKS	Periodically perform the following	Monthly
	MEMORY TEST.	
	Ascertain each setting.	
	In the INPUT TEST mode, test the control devices.	
	• In the OUTPUT TEST mode, check each of the lamps.	
CONTROL SYSTEM	In the INPUT TEST mode, check each switch and V.R.	Monthly
	 Adjust or replace each switch and V.R. 	
MONITOR	 In the C.R.T. TEST mode, check to ensure the monitor is adjusted correctly 	Monthly
	Clean screen (switch off machine and remove the plug)	Weekly
IC BOARD	MEMORY TEST	Monthly
	 In the SOUND TEST mode, check the sound related ROMs 	
DATA CHECK	 Check such data as held in the bookkeeping screens, relating to number and length of plays 	Monthly
EXTERIOR	Clean surfaces	Monthly
MAINTENANCE	Lubricate seat sliders	
COIN MECHANISM	Check switch operation (if fitted)	Monthly

4. COIN MECH INSTALLATION AND CREDIT BOARD SET UP

INTRODUCTION

Game credits between the Coin Mechanism and the game board for this machine are controlled by a credit 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.

4.1. EXCEL CREDIT BOARD OPTION SETTINGS

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.

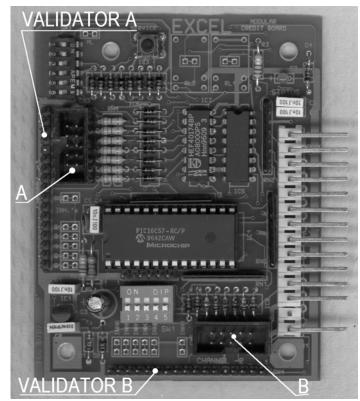
The Excel board pictured below is mounted in the Control Panel..

The *Excel* board is connected to the coin validator 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

<u>Notes</u>

- 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 *Excel* 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 Excel Board

									Credit Boa	rd Mode Se	ettings Sw	itch 3								
Country	Setting	Switch 3 Setting						Coin Validator Programmi									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		ТВА					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							
	Channels					ON		TBA	a al a											
	Channels						OFF	Direct Mode 2 channel Mode					<u> </u>							
							ON	∠ cnanne	ei ivioae											

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.

	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	Fre	e Play			ON	ON	ON	ON	ON		

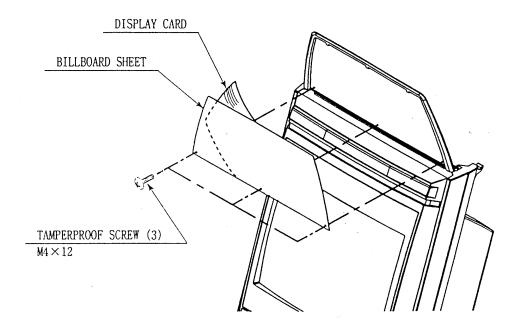
4.1.1. PRICE OF PLAY SETTINGS UK

	Price		Bonus			D	L Switch	n 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	Fre	e Play			ON	ON	ON	ON	ON

4.1.2. PRICE OF PLAY SETTINGS EURO

5. REPLACING THE DISPLAY CARD

Depending on the specific game, the Display Card to be installed into the Billboard may not exist. In this case, use the POP SHEET instead.



6. PERIODIC CHECK AND INSPECTION

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



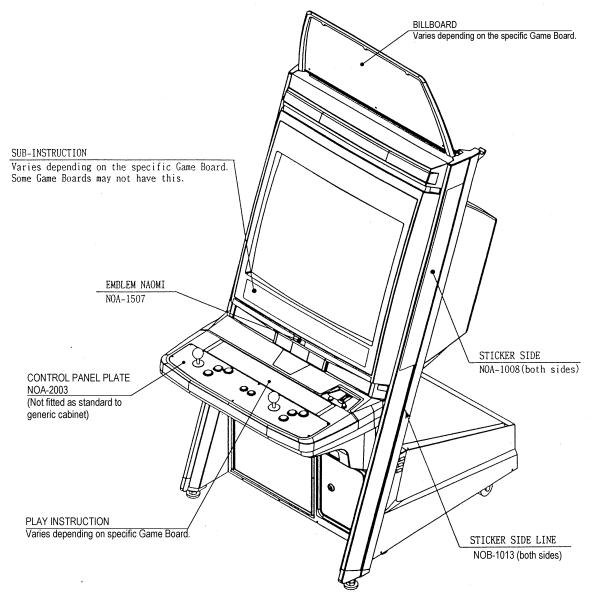
Be sure to check annually to see if the power cords are damaged, the plug is securely inserted and that there is no dust in the interior of the machine or between the socket and the power cord. Using the product in an unclean condition may cause a fire or electric shock.

DESCRIPTION	WHAT TO CHECK	INTERVAL
CABINET	Check Adjusters' contact with surface	Daily
MONITOR	Cleaning CRT face	Weekly
	Check settings	Monthly
GAME BD	Setting check	Monthly
CONTROL PANEL	Input test	Monthly
Speaker, sound	Sound test, check volume adjustment	Monthly
COIN SELECTOR	Coin insertion test	Monthly
	Cleaning	Tri-Monthly
POWER SUPPLY CORD	Check condition	Annually
INTERIOR	Clean (Do Not use water jet)	Annually
CABINET SURFACE	Clean (Do Not use water jet)	As required

6.1. CLEANING THE CABINET SURFACES

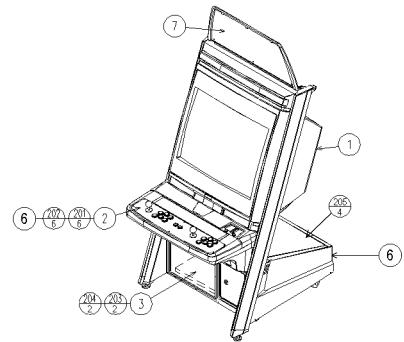
When the cabinet surfaces are badly soiled, remove stains with a soft cloth dipped in water or chemical detergent (diluted with water) and squeezed dry. To avoid damaging surface finish, do not use such solvents as thinner, benzene, etc. (other than ethyl alcohol), abrasives or bleaching agents. DO NOT USE A WATER JET.

7. DESIGN RELATED PARTS



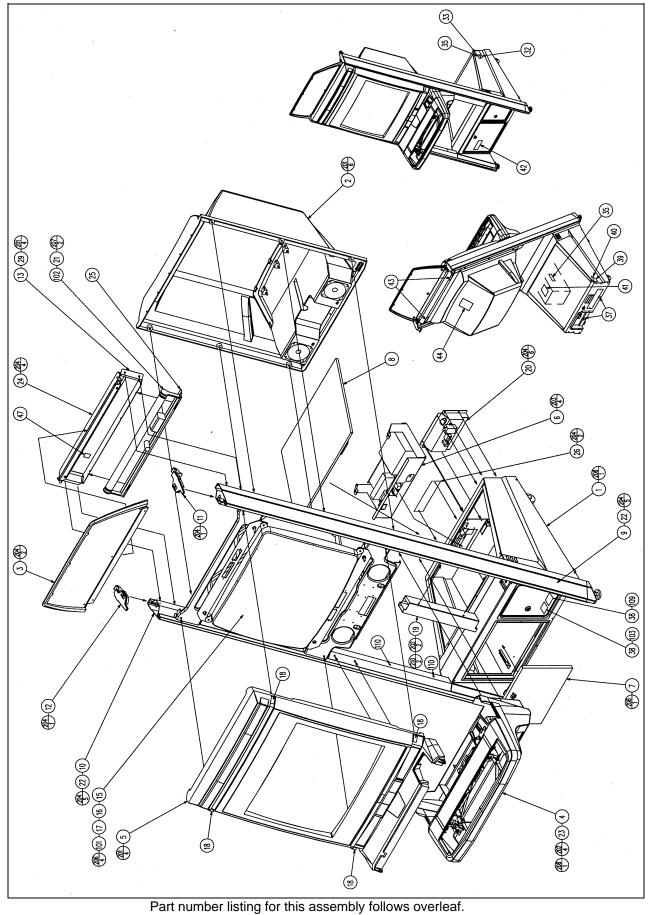
8. PARTS LIST

8.1. NOB-0000*UK TOP ASSY NAOMI CABI COM



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOB-000**UK	1	ASSY UR CABI TOP ENTRY COM	
2	NOB-INST-***	1	ASSY INSTALLATION KIT NOB	[NOT SHOWN]
3	RND-0068	1	WOODEN BASE MAIN	
4	NOA-***UK	1	ASSY CNTRL PANEL 2L6B ST	
6	421-7988-91UK	2	STICKER SERIAL NUMBER UK	NEXT TO AC UNIT, INSIDE C.PNL
7	PK0121	1	POLY COVER 750X1100X1800	[NOT SHOWN]
8	PK0201	1	PALLET NOB U/R	[NOT SHOWN]
9	PK0208	1	SLEEVE NOB U/R COM	[NOT SHOWN]
10	LB1046	1	LABEL TESTED FOR ELEC. SAFETY	
201	031-000416-0C	6	M4X16 CRG BLT CRM	(4)-6
202	050-F00400	6	M4 NUT FLG SER PAS	(4)-6
203	032-000425	2	M4X25 BLT WING PAS	(3)-2
204	FX0301	2	M4 WSHR 16OD FLT BZP	(3)-2
205	008-T00412-OC	4	M4X12 MSCR TMP PRF CRM	REAR HATCH - 4

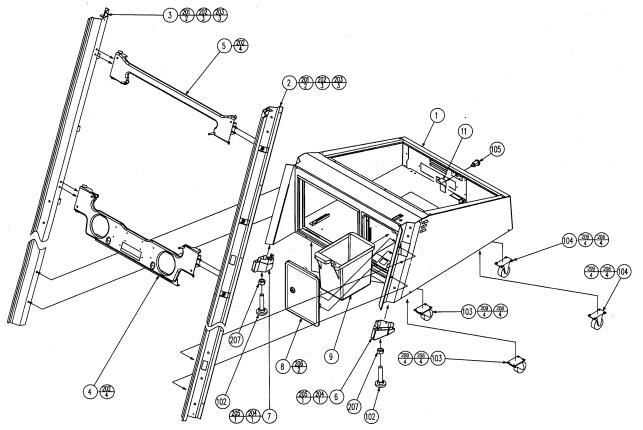
NB: Where an asterisk "*" appears in a part number or description, it indicates that the part or assembly is subject to change, depending on the game variant purchased.



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOB-1100UK	1	ASSY FRAMEWORK UR	
2	NOA-1200UK	1	ASSY CRT COVER	
3	NOA-1300	1	ASSY BILLBOARD	
4	NOA-VT3UK	1	ASSY CONTROL BOX W/CC EU	
5	NOA-1500HUK	1	ASSY FRONT PANEL	
6	NOA-4000UK OR		ASSY ELEC NAOMI	
	NOB-4010UK OR	1	ASSY ELEC NAOMI 2	
	NOA-4030UK		ASSY ELEC LBGH	
7	NOA-1750UK	1	ASSY SERVICE DOOR	
8	NOA-1801UK	1	REAR HATCH	FIX DOWN AT TOP ASSY
9	NOB-1001UK	1	FRAME COVER UR R	
10	NOB-1002UK	1	FRAME COVER UR L	
11	NOA-1003	1	ENDCAP R	
12	NOA-1004	1	ENDCAP L	
13	NOA-1005UK	1	REAR COVER UPPER	
15	280-5112 OR		BUSH FOR NANAO MONITOR	
	280-6617 OR	4		(101)-4
	280-6643		BUSH FOR SANWA PFX	
16	280-5113	4	COLLAR FOR NANAO MONITOR	(101)-4
18	NOA-1006	4	SCR CAP	
19	NOB-1007UK	1	COIN CHUTE UR	
20	NOB-1700UK OR	1	ASSY AC UNIT	
	NOB-1710UK	I		
22	NOA-1008	2	STICKER SIDE	
23	NOA-1009	2	WSHR PLATE	(4)-2
24	NOA-1010UK	1	BILLBD HOLDER	
25	NOA-1011	1	FL BRKT	
26	NOA-1116	1	LID COMMUNI PORT	
27	NOB-4100UK OR	1	ASSY XFMR	
	RND-4100UK	1	ASSY XFMR LBGH	
28	NOB-1013	2	STICKER SIDE LINE NOB	
29	NOB-1117UK	1	WATER GUARD CE	
37	421-7020UK	2	STICKER CAUTION FORK	AT BACK OF BASE BOX
41	LB1102	5	STICKER DANGEROUS VOLTAG	BASE LID, DOOR, CRT, FL, CP COVERS
42	LB1104	1	STICKER CAUTION, HOT SUR	FL COVER
43	NOB-0005UK	1	KICK STRIP	
101	200-5827	1	ASSY CLR DSPL 29TYPE 31K 100V	OR
101	200-5827-N	1	ASSY CLR DSPL 29TYPE 31K 100V	OR
101	200-5927	1	ASSY CLR DSPL 29TYPE 31K 2934	OR
101	200-5949	1	ASSY CLR DSPL 29TYPE 31K UK	OR
101	200-5950	1	ASSY CLR DSPL 29TYPE 31K 100V	
102	390-5695-40-CUK	1	FL TRAY 110V 40W (T12)	
103	220-5643UK	1	COIN METER SMALL 12V	CLIP-IN
114	390-5695-40-DUK	1	FL TUBE 40W 600L 1.5"DIA	
115	OS1098	2	CRIMP BELL END SMALL	(103)-2
116	280-A02048-PM	5	ROUTER TWIST D20 SO4.8 P	
117	280-A02000-A	4	ROUTER TWIST D20 ADH	
118	280-A01248-PM	12	ROUTER TWIST D12 SO4.8 P	
119	280-A01200-A	3	ROUTER TWIST D12 ADH	
120	280-A00900-A	2	ROUTER TWIST D9 ADH	
121	OS1230	1.18	FOAM STRIP 2mm X 10mm	2X0.59M TO 8
122	601-0460	10	CABLE TIE 100mm	10-(29)
123	280-K00600-0W	2	DRIVE FASTENER M6 WHITE	BASE BOX ABOVE COIN DOOR
201	008-T00625-OC	14	M6X25 MSCR TMP PRF TH CR	(2)-6,(5)-4,(13)-4
202	030-000620-S	6	M6X20 BLT W/S PAS	(4)-4,(19)-2
203	000-P00408	2	M4X8 MSCR PAN PAS	FL TUBE CLIPS - 2

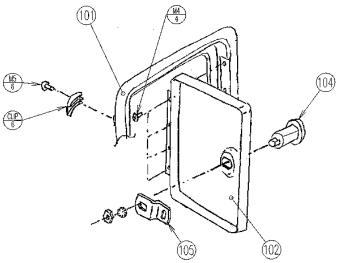
204	008-T00412-OC	35	M4X12 MSCR TMP PRF CRM	
206	050-F00600	4	M6 NUT FLG SER PAS	(101)-4
208	008-T00430-0C	2	M4X30 MSCR TMP PRF TH CR	TNG STOPPER CP & REAR LID
209	030-000630-S	4	M6X30 SET W/S PAS	(27)-4
210	068-651616	4	M6 WSHR 16OD FLT PAS	(27)-4
211	000-P00408-W	6	M4X8 MSCR POSI PAN W/FS	(25)-2,EARTHS-4
214	000-P00416-W	4	M4X16 MSCR POSI PAN W/FS	(5)-2,(11)-1,(12)-1
215	068-652516	4	M6 WSHR 250D FLT PAS	(101)-4
216	050-F00400	5	M4 NUT FLG	(102)-2,EARTHS-3
217	050-F00500	3	M5 NUT FLG SER PAS	FRAME EARTHS - 3
218	010-P00408	4	M4X8 TAPTITE POSI PAN	(6)-4
219	060-F00400	4	M4 WSHR FORM A FLT PAS	(6)-4
220	000-P00612-W	1	M6X12 MSCR PAN W/FS PAS	(323)-1
221	050-F00500	1	M5 NUT FLG SER PAS	(323)-1
301	NOB-6001UK	1	ASSY WIRE L	
302	NOB-6002UK	1	ASSY WIRE R	
311	600-7159-070	1	WIRE HARN JVS PWR 070CM	
313	600-7009-250	1	ASSY RGB CA D-SUB 15P 25	
319	600-9010-44K	1	WIRE HARN EARTH 100mm M4	BBOARD HOLDER TO FL BASE
320	NOB-60201UK	1	WIRE HARN FL NOB	
321	600-9070-45K	1	WIRE HARN EARTH 700mm M4	BASE LID TO XFMR
322	600-9080-45K	1	WIRE HARN EARTH 800mm M4	BASE TO RH FRAME (BOTTOM)
323	600-9025-56U	1	WIRE HARN EARTH 250mm M5	MONITOR CHASSIS TO RH FRAME

8.3. NOB-1100UK ASSY FRAMEWORK UR



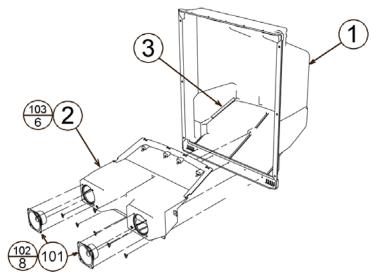
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOB-1601UK	1	BASE BOX UK VERSION	
2	NOB-1101UK	1	MAIN FRAME UR R	
3	NOB-1102UK	1	MAIN FRAME UR L	
4	NOA-1111X	1	LOWER BEAM	
5	NOA-1112X	1	UPPER BEAM	
6	NOA-1113	1	HOOF R	
7	NOA-1114	1	HOOF L	
8	NOB-1950UK	1	ASSY SFMD WHITE (FLAT	
			DOOR)	
9	253-5366	1	CASH BOX	
11	NOA-1115UK	1	TNG REAR HATCH	
102	601-5699X	2	LEG ADJUSTER BOLT	
			M16x75	
103	601-10461UK	2	CASTOR 50 SWIVEL	FRONT
104	601-10462UK	2	CASTOR 50 FIXED	REAR
105	220-5575UK	1	LOCK	
201	050-F00600	4	M6 NUT FLG SER PAS	(2)-2,(3)-2
202	030-000620-S	14	M6X20 BLT W/S PAS	(2,3)-3,(4,5)-4
203	068-652016	6	M6 WSHR 20OD FLT PAS	(2)-3,(3)-3
204	FX0302	2	M5 NUT FLG SER BZP	(6)-1,(7)-1
205	000-P00408-W	2	M4X8 MSCR POSI PAN W/FS	(6)-1,(7)-1
207	050-H01600	2	M16 NUT PAS	(102)-2
208	FAS-200004	16	M6X14 MSCR SKT CAP BNP	(103,4)-8EA
209	FX0398	16	M6 WSHR SPR BNP	(103,4)-8EA

8.4. NOB-1950UK ASSY SFMD WHITE (FLAT DOOR)



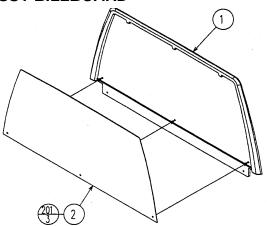
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
101	220-5725-03	1	FRAME SINGLE MINI W/O PA	CLAMPS & SCREWS IN BAGS
102	220-5725-04	1	DOOR SINGLE MINI FLAT, NO	
104	220-5574UK	1	LOCK KEYED DIFFERENT	(102)-1
105	PTR-1951UK	1	CAM CRANKED 6mm, LENGTH	(104)-1

8.5. NOA-1200UK ASSY CRT COVER



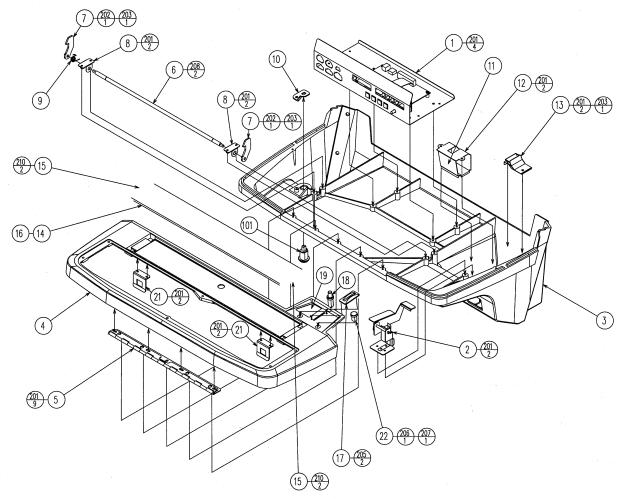
No.	ITEM NUMBER	QTY	DESCRIPTION	COMPONENT REF
1	NOA-1201UK	1	CRT COVER	
2	NOA-1202	1	SPEAKER BOX	
3	RND-0037	0.38	TAPE SPEAKER BOX 2 S	
101	130-5205	2	SPEAKER 40HM 10W 100	
102	000-P00410-W	8	M4X10 MSCR PAN W/FS	(101)-8,
103	340042	6	RIVET BULBEX 3/16 BF	(2)-6
301	NOA-60031	1	WIRE HARN SPEAKER L	[NOT SHOWN]
302	NOA-60032	1	WIRE HARN SPEAKER R	[NOT SHOWN]

8.6. NOA-1300 ASSY BILLBOARD



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1301	1	BILLBOARD PLATE	
2	NOA-1302UK	1	BILLBOARD SHEET	
201	008-T00408-OC	3	M4X8 MSCR TMP PRF TH CRM	(2)-3

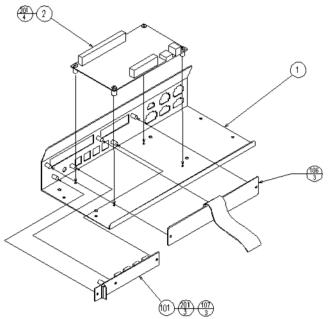
8.7. NOB-1400UK ASSY CONTROL BOX W/CC EUR



Part number listing for this assembly follows overleaf.

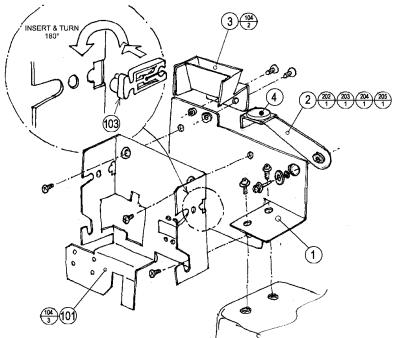
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1450UK	1	ASSY I/O UNIT	
2	NOA-1480UK	1	ASSY COIN MECH	C120 / SR3 / 31/2" MECH, OR:
2	NOB-1480UK	1	ASSY COIN ELEC	C220B
3	NOA-1401	1	CONTROL BOX LOWER	
4	NOA-1402	1	CONTROL BOX UPPER	
5	CQN-1055X	1	HINGE	
6	NOA-1403	1	SHAFT	
7	HOT-1520	2	LATCH N	
8	HOT-1504	2	LATCH HOLDER	
9	NOA-1404	1	TOR SPRING	
10	HOT-1505UK	1	LKG TNG	(101)-1
11	NOA-1405	1	FLAP	
12	NOA-1406X	1	REJECT COVER	OR NOB-1406
13	NOA-1407UK	1	TRANSIT CHUTE UK	OR NOB-1407
14	HOT-1508	1	INSTRUCTION COVER	
15	NOA-1419	2	BRKT INST COVER	(14)-2
16	NOA-1420	4	L WASHER	(15)-4
17	220-5428UK	1	COIN ENTRY CE	
18	250-5043	1	REJECT BUTTON ASSEMBLY	
19	NOA-1412	1	STICKER DENOMI BLANK FOR	
20	NOA-1414	1	LID TRANSIT CHUTE	
21	NOA-1415	2	LOCK BRKT	
22	NOA-1418	1	DUMMY BTN	
23	421-10064UK	1	STICKER I/O UNIT	
25	NOB-1417UK	1	ACCEPTOR BRKT	
26	EP1380	1	CREDIT BOARD EXCEL	
101	220-5575UK	1	LOCK	
102	280-A00900-A	3	ROUTER TWIST D9 ADH	
103	280-A01200-A	3	ROUTER TWIST D12 ADH	
104	280-A02000-A	3	ROUTER TWIST D20 ADH	
105	280-L01640-PS	4	STANDOFF 16mm 4mm PANEL	(25)-4
201	000-P00410-W	27	M4X10 MSCR POSI PAN W/FS	(1,8,21,16)-4,(24)-2,(5)-9
202	FX0212	2	M6 NUT BZP	(7)-2
203	FX0255	2	M6 WSHR SPR BZP	(7)-2
205	012-P03506-F	2	N6X1/4" S/TAP POSI FLG B	(17)-2
206	000-P00410-W	1	M4X10 MSCR POSI PAN W/FS	(201)
207	FX0301	1	M4 WSHR 16OD FLT BZP	(22)
301	NOB-60101UK	1	WIRE HARN COIN NOB	

8.8. NOA-1450UK ASSY I/O UNIT



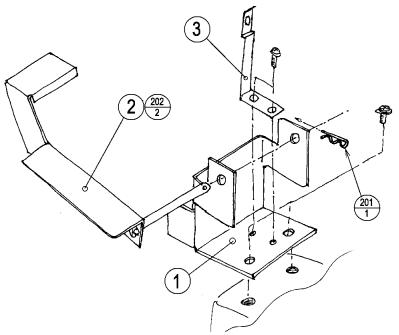
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1451UK	1	I/O BASE	
2	837-13551-92	1	I/O CONTROL BD FOR JVS	
3	NOA-1117UK	1	WATER GUARD	(1)-1
101	838-13739	1	SW BD NAOMICABINET	
102	280-A02048-PM	1	ROUTER TWIST D20 SO4.8 P	[NOT SHOWN]
103	280-A01248-PM	5	ROUTER TWIST D12 SO4.8 P	[NOT SHOWN]
104	280-A00900-A	2	ROUTER TWIST D9 ADH	[NOT SHOWN]
106	280-L00940-PM	3	STANDOFF 9L 4mm HOLE PAN	(MONITOR REMOTE BOARD)-3
107	280-L00709-OS	3	STANDOFF 7OD 4ID 9L	(101)-3
201	000-P00320-W	7	M3X20 MSCR POSI PAN W/FS	(2)-4,(101)-3
301	NOA-60021	1	WIRE HARN ANALOG	[NOT SHOWN]
			CONTROL	
302	NOA-60022UK	1	WIRE HARN SW CONTROL	[NOT SHOWN]
303	NOA-60023	1	WIRE HARN I/O BD PWR	[NOT SHOWN]
304	NOA-60024	1	WIRE HARN SPEAKER L	[NOT SHOWN]
305	NOA-60025	1	WIRE HARN SPEAKER R	[NOT SHOWN]

8.9. NOA-1480UK ASSY COIN MECH

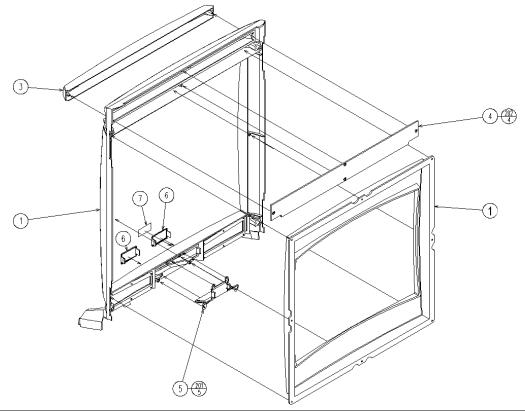


No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1481XUK	1	BASE COIN SELECTOR	
2	NOA-1482	1	LINK COIN CHUTE	
3	NOA-1483	1	UPPER COIN CHUTE	
4	NOA-1484UK	2	ADHESIVE INSULATING PAD	
101	220-5086-AUK	1	MECH CADDY BASE	
103	220-5086-CUK	2	MECH CLIP	
104	000-F00408	5	M4X8 MSCR CSK PAS	(3)-2,(101)-3
202	000-P00308	1	M3X8 MSCR PAN PAS	(2)-1
203	060-S00300	1	M3 WSHR SPR PAS	(2)-1
204	060-L00300	1	M3 WSHR LOCK PAS	(2)-1
205	060-F00400	1	M4 WSHR FORM A FLT PAS	(2)-1

8.10. NOB-1480 ASSY COIN SELECTOR UNIT 220

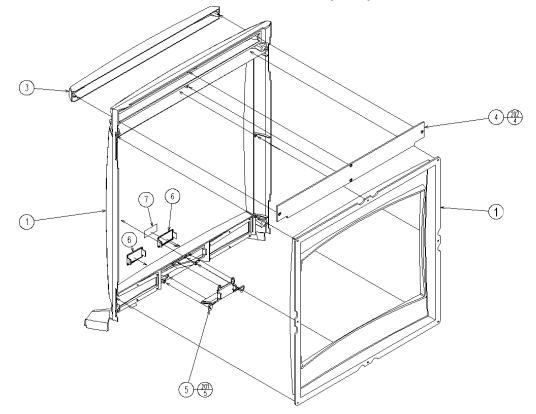


No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOB-1481UK	1	BASE COIN SELECTOR	
2	NOB-1482	1	LINK COIN SELECTOR 220	
3	NOB-1484	1	L HOOK	
201	045-0037	1	DIA6 SNAP PIN	
202	000-P00408-W	2	M4X8 MSCR PAN W/FS PAS	(3)-2



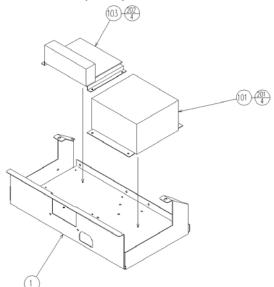
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1500UK-S1	1	ASSY FRONT PANEL NF	NOA-1501 + NOA-1502X AS AN
				ASSY
3	NOA-1503	1	LIGHT COVER	
4	NOA-1504UK	1	PRISM PLATE	
5	NOA-1505	1	LID GCS	
6	NOA-1506	2	LID VMS	CLIP-IN
7	NOA-1507	1	EMBLEM NAOMI	
201	000-P00412-W	5	M4X12 MSCR POSI PAN W/FS	(5)-5
202	012-P03516	4	N6X5/8" S/TAP PAN PAS	(4)-4

8.12. NOA-1500HUK ASSY FRONT PANEL (LBG)



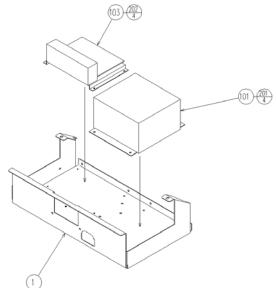
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1500UK-01	1	ASSY FRONT PANEL PF	NOA-1501 + NOA-1502-03 AS AN ASSY
3	NOA-1503	1	LIGHT COVER	
4	NOA-1504UK	1	PRISM PLATE	
5	NOA-1505	1	LID GCS	
6	NOA-1506	2	LID VMS	CLIP-IN
7	NOA-1507	1	EMBLEM NAOMI	
201	000-P00412-W	5	M4X12 MSCR POSI PAN W/FS	(5)-5
202	012-P03516	4	N6X5/8" S/TAP PAN PAS	(4)-4

8.13. NOA-4030UK ASSY ELEC (LBG)



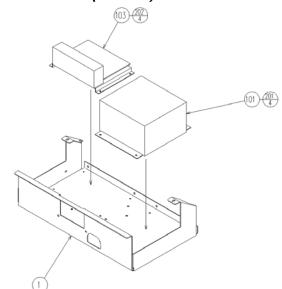
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	AMK-0162UK	1	ELEC BASE	
2	AMK-0163UK	1	ELEC BKT	[NOT SHOWN
101	400-5457-01	1	SW REGU ATX	
103	838-13616-91	1	AUDIO POWER AMP 2CH	
107	280-A02048-PM	4	ROUTER TWIST D20 SO4.8 P	[NOT SHOWN]
108	601-6231-B095	1	EDGE TRIM NEW TYPE 0.91t	BACK EDGE IN MIDDLE [NOT
				SHOWN]
110	280-A01248-PM	2	ROUTER TWIST D12 SO4.8 P	[NOT SHOWN]
111	280-A02000-A	1	ROUTER TWIST D20 ADH	
201	010-P00408	4	M4X8 TAPTITE POSI PAN	(101)-4
202	010-P00308	4	M3X8 TAPTITE POSI PAN BZ	(103)-4
303	NON-60010UK	1	WIRE HARN SW REGU INT	[NOT SHOWN]
304	NOA-60011UK	1	WIRE HARN LBG I/O NAOMI	[NOT SHOWN]
305	NOB-60202UK	1	WIRE HARN AUDIO POWER-IN	[NOT SHOWN]
306	NON-60012UK	1	WH PSU LBG NAOMI UR	[NOT SHOWN]

8.14. NOA-4010UK ASSY ELEC (NAOMI 2)



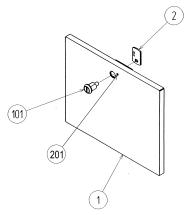
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-4001X	1	ELEC BASE	
101	400-5397-01	1	SW REGU FOR JVS	
103	838-13616	1	AUDIO POWER AMP 2CH	
107	280-A02048-PM	4	ROUTER TWIST D20 SO4.8 P	[NOT SHOWN]
108	601-6231-B095	1	EDGE TRIM NEW TYPE 0.91t	BACK EDGE IN MIDDLE [NOT SHOWN]
110	280-A01248-PM	2	ROUTER TWIST D12 SO4.8 P	[NOT SHOWN]
111	280-A02000-A	1	ROUTER TWIST D20 ADH	
201	010-P00408	4	M4X8 TAPTITE POSI PAN	(101)-4
202	010-P00308	4	M3X8 TAPTITE POSI PAN BZ	(103)-4
303	NOB-60013UK	1	WIRE HARN SW REGU INT	[NOT SHOWN]
304	NOA-60014	1	WIRE HARN I/O BD PWR	[NOT SHOWN]
305	NOB-60202UK	1	WIRE HARN AUDIO POWER-IN	[NOT SHOWN]
306	600-7159-039	1	WIRE HARN JVS PWR 039CM	[NOT SHOWN]

8.15. NOA-4010UK ASSY ELEC (NAOMI)



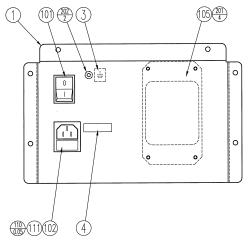
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-4001X	1	ELEC BASE	
101	400-5397	1	SW REGU FOR JVS	
103	838-13616	1	AUDIO POWER AMP 2CH	
107	280-A02048-PM	4	ROUTER TWIST D20 SO4.8 P	[NOT SHOWN]
108	601-6231-B095	1	EDGE TRIM NEW TYPE 0.91t	BACK EDGE IN MIDDLE [NOT SHOWN]
110	280-A01248-PM	2	ROUTER TWIST D12 SO4.8 P	[NOT SHOWN]
111	280-A02000-A	1	ROUTER TWIST D20 ADH	
201	010-P00408	4	M4X8 TAPTITE POSI PAN	(101)-4
202	010-P00308	4	M3X8 TAPTITE POSI PAN BZ	(103)-4
303	NOB-60013UK	1	WIRE HARN SW REGU INT	[NOT SHOWN]
304	NOA-60014	1	WIRE HARN I/O BD PWR	[NOT SHOWN]
305	NOB-60202UK	1	WIRE HARN AUDIO POWER-IN	[NOT SHOWN]
306	600-7159-039	1	WIRE HARN JVS PWR 039CM	[NOT SHOWN]

8.16. NOA-1750UK ASSY SERVICE DOOR



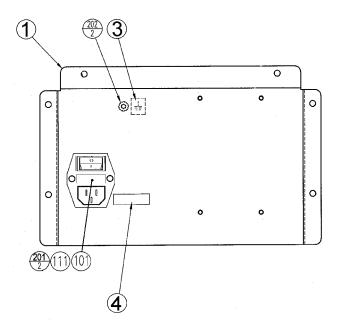
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOA-1751UK	1	SERVICE DOOR	
2	DP-1167UK	1	TNG LKG UK	
101	220-5575UK	1	LOCK	
201	008-T00430-0C	1	M4X30 MSCR TMP PRF TH CR	INSERT HALF WAY SO TNG OPENS

8.17. NOB-1700UK ASSY AC UNIT (Pre 2001)



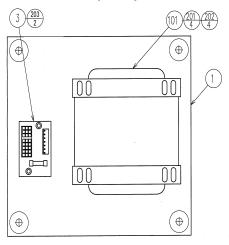
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOB-1701UK	1	AC BRKT	
3	LB1096	1	STICKER PROTECTIVE EARTH	NEXT TO EARTH STUD ON INSIDE
4	421-6595-5000-T	1	STICKER FUSE 5000mA TYPE	NEXT TO IEC INLET ON OUTSIDE
101	SW1021	1	SWITCH ROCKER 250V AC	
102	EP1302	1	EUROSOCKET FUSED 10A 250	
105	EP1379	1	FILTER EMI 10A ARCOTRONI	
110	310-5029-D508	0.05	HEAT SHRINK SLEEVING 50.	(102)-0.05m
111	514-5078-5000	1	FUSE 5X20 CERAMIC SB 500	(102)-1
201	000-P00308-W	4	M3X8 MSCR POSI PAN W/FS	(105)-4
202	050-F00400	2	M4 NUT FLG	EARTH - 2
301	NOB-60001UK	1	WIRE HARN AC BRKT (NOB)	
302	NOB-60004UK	1	WIRE HARN AC OUT	
303	600-9030-45K	1	WIRE HARN EARTH 300mm M4	AC BRKT TO XFMR
304	600-9080-45K	1	WIRE HARN EARTH 800mm M4	BASE TO RH FRAME (BOTTOM)
305	600-9025-44K	1	WIRE HARN EARTH 250mm M4	AC BRKT TO BASE

8.18. NOB-1710UK ASSY AC UNIT NEW



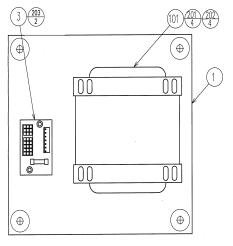
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	NOB-1711UK	1	AC BRKT NEW	
3	LB1096	1	STICKER PROTECTIVE EARTH	NEXT TO EARTH STUD ON INSIDE
4	421-6595-5000-T	1	STICKER FUSE 5000mA TYPE	NEXT TO IEC INLET ON OUTSIDE
101	EP1381	1	FILTER IEC & SW 6A ROXBU	
111	514-5078-5000	1	FUSE 5X20 CERAMIC SB 500	(102)-1
201	000-F00316	2	M3X16 MSCR CSK PAS	(101)-2
202	050-F00400	2	M4 NUT FLG SER PAS	EARTH - 2
301	NOB-60004UK	1	WIRE HARN AC OUT	
303	600-9030-45K	1	WIRE HARN EARTH 300mm M4	AC BRKT TO XFMR
305	600-9025-44K	1	WIRE HARN EARTH 250mm M4	AC BRKT TO BASE
306	600-9015-4FK	1	WIRE HARN EARTH 150mm	FILTER TO PRIMARY EARTH POINT

8.19. RND-4100UK ASSY XMFR (LBG)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	RND-4101UK	1	XFMR BASE LBG	
3	838-11856CE-02	1	CONN BD W/FUSE 6.3A CE	
101	560-LBGH-02UK	1	XFMR LBG 230-100V/17V	
201	000-P00416-W	4	M4X16 MSCR POSI PAN W/FS	
202	068-441616	4	M4 WSHR 16OD FLT PAS	(101)-4
203	012-P00325	2	N4X1" S/TAP PAN PAS	(3)-2

8.20. NOB-4100UK ASSY XMFR (COM)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	RND-4101UK	1	XFMR BASE LBG	
3	838-11856CE-02	1	CONN BD W/FUSE 6.3A CE	
101	560-LBGH-02UK	1	XFMR LBG 230-100V/17V	
201	000-P00416-W	4	M4X16 MSCR POSI PAN W/FS	
202	068-441616	4	M4 WSHR 16OD FLT PAS	(101)-4
203	012-P00325	2	N4X1" S/TAP PAN PAS	(3)-2

8.21. RND-6001UK ASSY WIRE L (LBG)

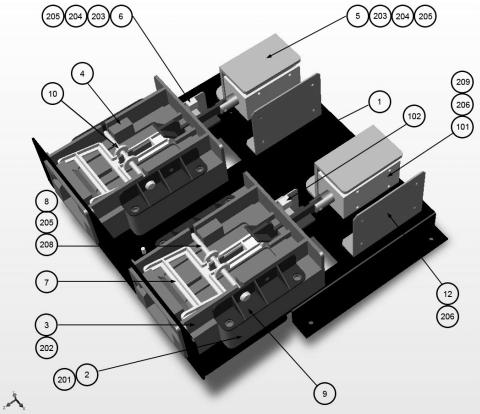
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
101	601-0460	10	CABLE TIE 100mm	
201	280-N01610-0B	0.4	SLIT HARN WRAP 16mm DIA	
301	NOB-60043	1	WIRE HARN PWR I/O BD	
302	NOB-60044	1	WIRE HARN SOUND VOL	
303	NOB-60045	1	WIRE HARN SPEAKER L	
304	NOB-60046	1	WIRE HARN SPEAKER R	
305	600-7158-0100	1	CA AUDIO RCA TO RCA 2CH	
306	600-9075-45K	1	WIRE HARN EARTH 750mm M4	I/O BASE TO LH FRAME (TOP)
307	600-9055-45K	1	WIRE HARN EARTH 550mm M4	BASE TO LH FRAME (BOTTOM)
308	600-7141-250	1	CABLE JVS TYPE A-B 250CM	
309	600-7187-	1	WH SERIAL A	(VT3)
	3000UK			

8.22. NOB-6002UK ASSY WIRE R

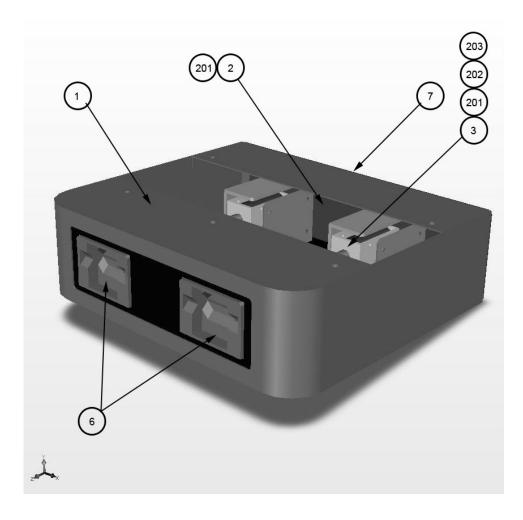
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
301	NOB-60041UK	1	WIRE HARN AC EXT UK	

No	PART NUMBER	DESCRIPTION	QTY
1	RND-1403	RW BASE	1
2	TBA-1662	RW GUIDE LOWER	2
3	TBA-1663	RW GUIDE UPPER	2
4	CFB-1664	ROLLER	2
5	CFB-1665	SOL BASE	2
6	CFB-1666	SENSOR BRKT	2
7	TBA-1667	LOCK ARM	2
8	TBA-1668	SHAFT	2
9	TBA-1669	SHAFT GUIDE	4
10	125-5225	TOR SPRING LOCK ARM	2
11	440-WS0179-JP	STICKER WITH HI TEMP M	1
12	RND-1404	BRKT BOARD	2
101	610-0685	SOLENOID UNIT	2
102	370-5161	PHOTO INTERUPTER	2
103	601-11132-91	IC CARD READER HW210 (NOT SHOWN – FITTED ON UNDERSIDE)	2
104	839-1233	SERIAL CONVERTER BOARD (NOT SHOWN)	2
105	OS1230	FOAM STRIP 2MM X 10MM	.25
201	FAS-120001	TAP SCR #2 TH BLK 4X10	8
202	000-P00410-W	M4X10 MSCR PAN W/S PAS	8
203	050-H00400	M4 NUT PAS	8
204	060-S00400	M4 WASHER SPRING PAS	10
205	060-F00400	M4 WASHER FORM A FLT PAS	8
206	000-P00308-W	M3X8 MSCR PAN W/S PAS	8
207	FAS-120017	TAP SCR #2 TH 3X6	2
208	065-E00300	DIA3 E RING	8
209	000-P00320-W	M3X20 MSCR PAN W/S PAS	2
301	600-7324-23UK	WH SERIAL CONV BD & RW (NOT SHOWN)	2

8.23. RND-1425 – ASSY CARD R/W (IF FITTED)



No	PART NUMBER	DESCRIPTION	QTY	
1	RND-1405	RW BOX	1	
2	RND-1402	PLATE REAR	1	
3	RND-1425	ASSY TWIN BASE CARD RW		
6	CTF-1153UK	STICKER IC CARD	2	
7	421-11873UK	STICKER CE		
201	008-T00408-0C	M4X8 TMP PRF TH CRM		
202	068-441616-0C	M4 WSHR 16OD FLT CRM		
203	060-S00400	M4 WSHR SPR PAS 4		



8.24. NOB-INST-VT3 ASSY INSTALLATION KIT NOB

No.	PART NUMBER	QTY	DESCRIPTION
1	RND-0069	1	PLAY INST SH VT3 MULTI
2	RND-0070	1	SUN INSTR SH VT3
3	RND-0071	1	DISPLAY CARD VT3 (ATTACHED TO NOA-1300)
7	PK0209	1	INST KIT BOX NOB COM
8	OS1019	2	SELF SEAL BAG 9X12.3/4
9	421-VT3	2	PACKING LABEL
101	540-0006-01	1	WRENCH M4 TMP PRF
102	540-0015-01	1	WRENCH M6 TMP PRF
103	514-5078-5000	1	FUSE 5X20 CERAMIC SB 5000MA
106	509-COIN-NOB	1	SW MICRO COIN ROUTE .250 TAB
108	440-CS0186UK	1	STICKER C EPOLEPSY MULTI
401	420-6455-02UK	1	SERVICE MANUAL NAOMI LBG
402	SAECE-XXX	1	DECLATATION OF CONFORMITY
403	420-5827-PFX	1	SERVICE MANUAL SANWA PFX
404	420-6455-MECH	1	INSTRUCTION SHEET MECH'L NOB
405	RND-0073	1	SERVICE MANUAL VT3
408	LM1227	1	UK MAINS LEAD 10A W/ PLUG
409	LM1246	1	EURO MAINS LEAD 10A
410	601-11691	1	CARTON BOX LBG

NB: This assembly is non-game specific and is superseded when a dedicated game is shipped. See game specific manual for full details of installation kit items.

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, UL1015L: AWG20, UL1007None AWG22, UL1007

9.2. ELECTRICAL SCHEMATIC

The following pages contain the electrical schematic for this machine.

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