



AIR TRIX DELUXE MANUAL

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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 **QUALIFIED SERVICE PERSONNEL ONLY**. 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.



WARNING!

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



CAUTION!

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



IMPORTANT!

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.

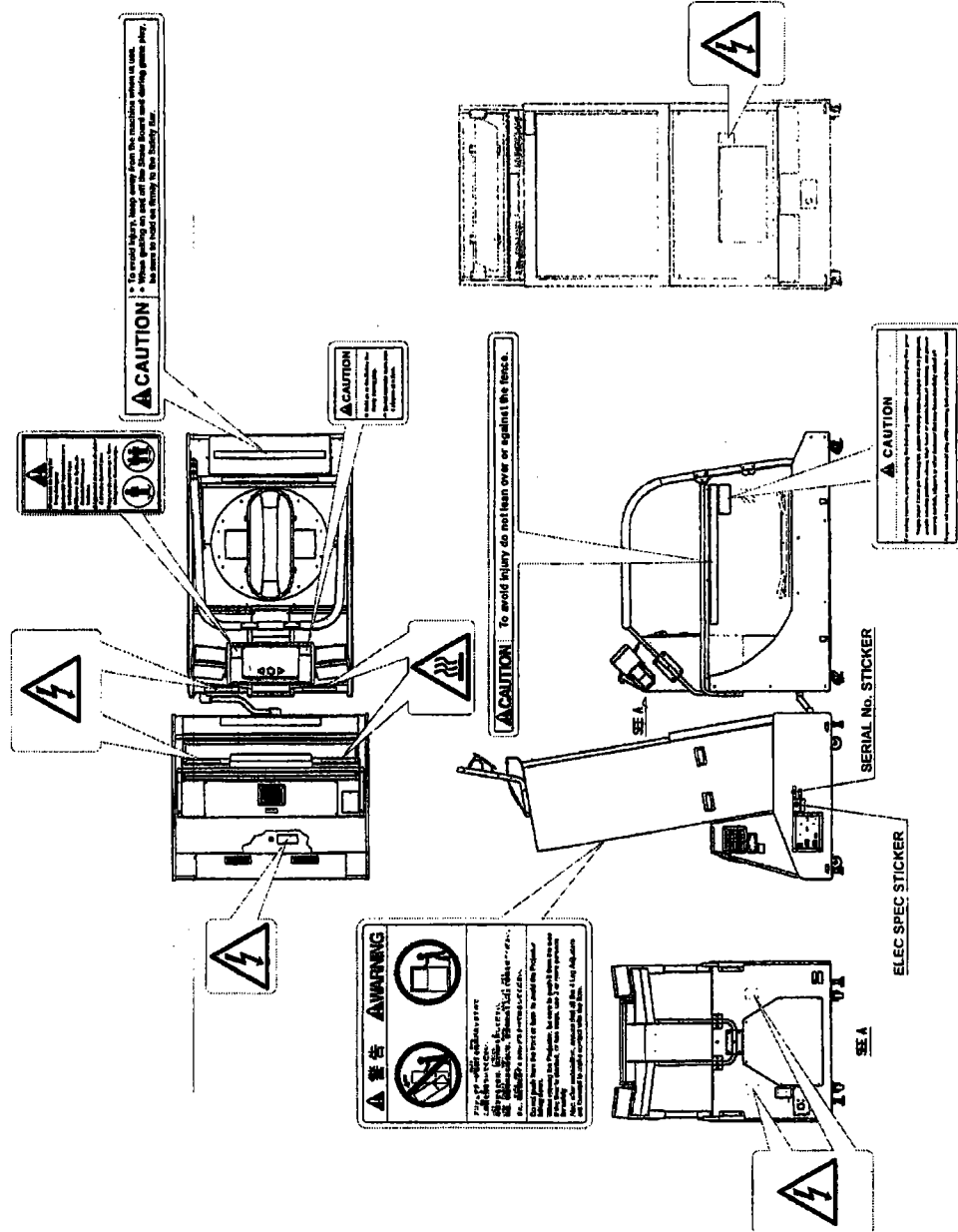
- Are there any dented parts or defects (cuts, etc.) on the external surfaces of the product?
- Are castors and leg adjusters present and undamaged?
- Do the power supply voltage and frequency requirements meet with the local supply?
- Are all wiring connectors correctly and securely connected? Unless 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	
Installation Space (mm):	1315W x 2845D
Height (mm):	2298
Weight (kg):	535 (approx.)
Power, Max:	Rated Voltage (V.AC): 230V 50Hz
	Rated Current (A): 2.6A
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, 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, electromechanicals, servicing controls, spare parts, etc. as regards **AIR TRIX**, 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 interior systems. Should such a situation arise contact the nearest branch listed below or our head office.

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3. INSTALLATION AND SERVICE INSTRUCTIONS



IMPORTANT!

- Installation and commissioning should only be carried out by **QUALIFIED SERVICE PERSONNEL**.
- 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.

3.1. 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.

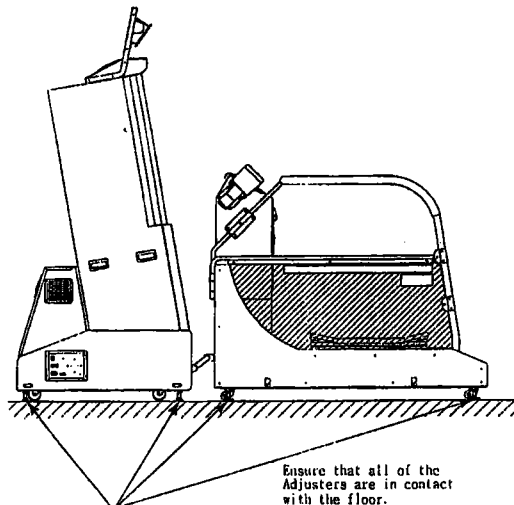
The game must NOT be installed under the following conditions:

- 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.

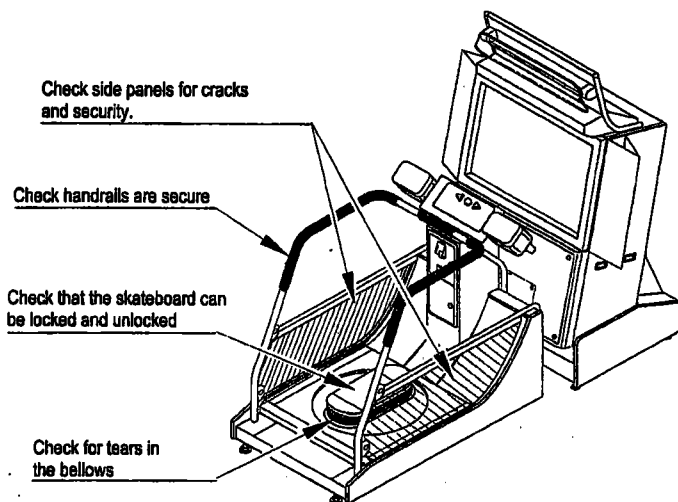
Important:

- 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.

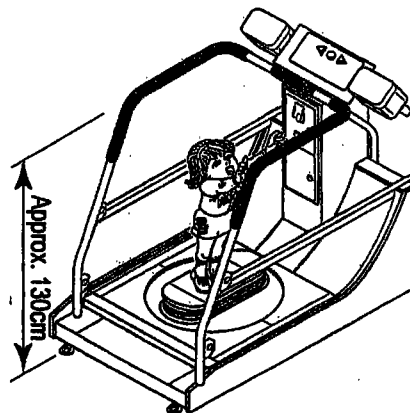
- Ensure all of the adjusters are in contact with the floor.



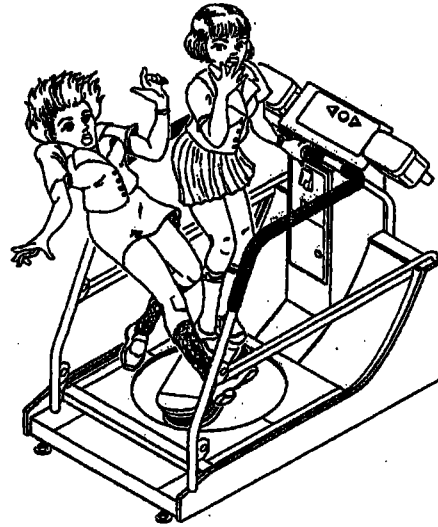
- Ensure all hazard preventative parts are fitted and secure. Carry out a test to ensure the skateboard can be locked and unlocked.



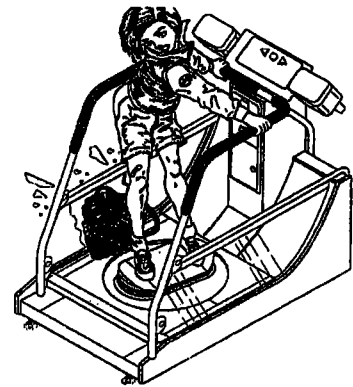
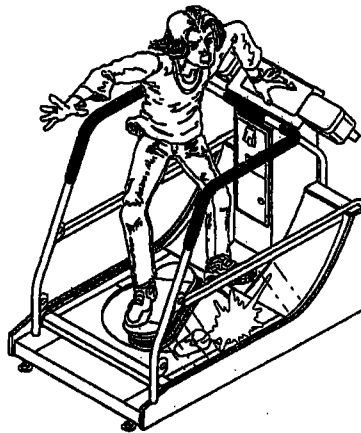
- Players must be able to reach the safety handrail when on the skateboard. The height of the handrail is 130cm, therefore persons under 130cm must not play.
- Players should wear flat soled shoes; wearing high heeled shoes or similar may be hazardous.



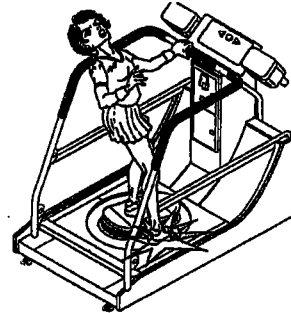
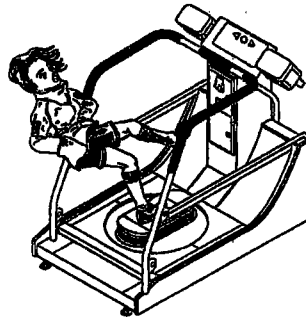
- This machine is designed to be used by one player at any time.



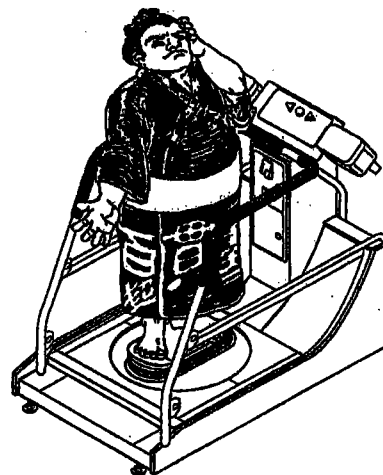
- Do not allow any objects to be placed on the machine, especially beverages and other liquids which may cause an electric shock hazard if spilled into the machine.



- Injury may result in the player not holding on to the safety handrail during play, or by standing on one leg.



- Players weighing 150kg or above must not play this game.



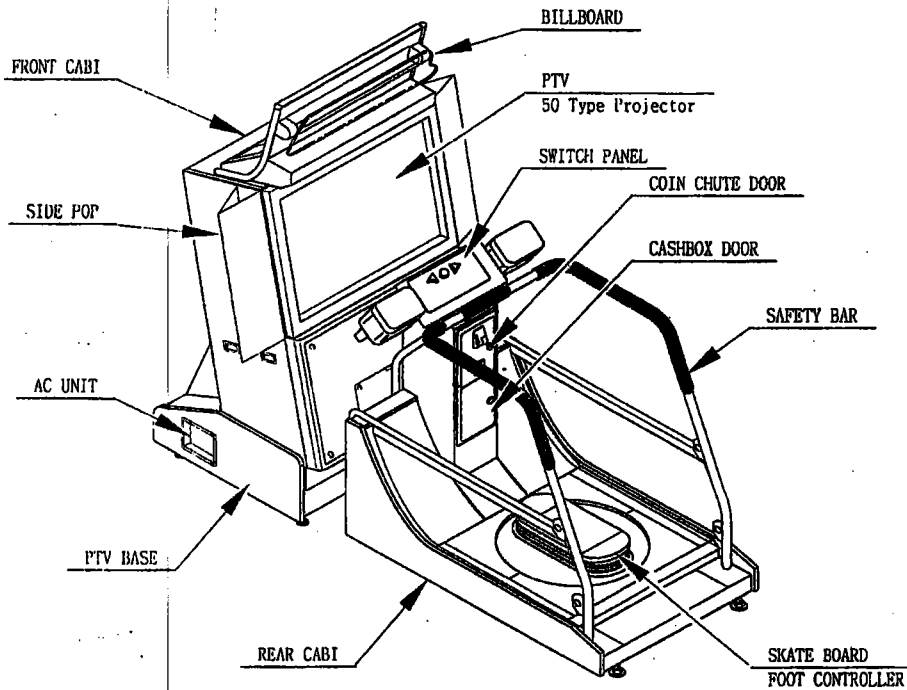
3.2. COIN HANDLING

Standard Sega machines are fitted with a C120 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/C220
- Generic mechanical
- Mars (MS111B1 and ME115)
- SECI RM4-G20

3.3. NAME OF PARTS



WIRE HARN DC TUBE

	Width (mm)	Length (mm)	Height (mm)	Weight (kg, approx.)
PTV	1140	555	1670	119
PTV BASE	1190	1020	785	70
BILLBOARD	1128	440	400	20
MAIN CABINET	990	1620	1140	256
When Assembled	1740	2740	2325	467

3.4. ACCESSORIES

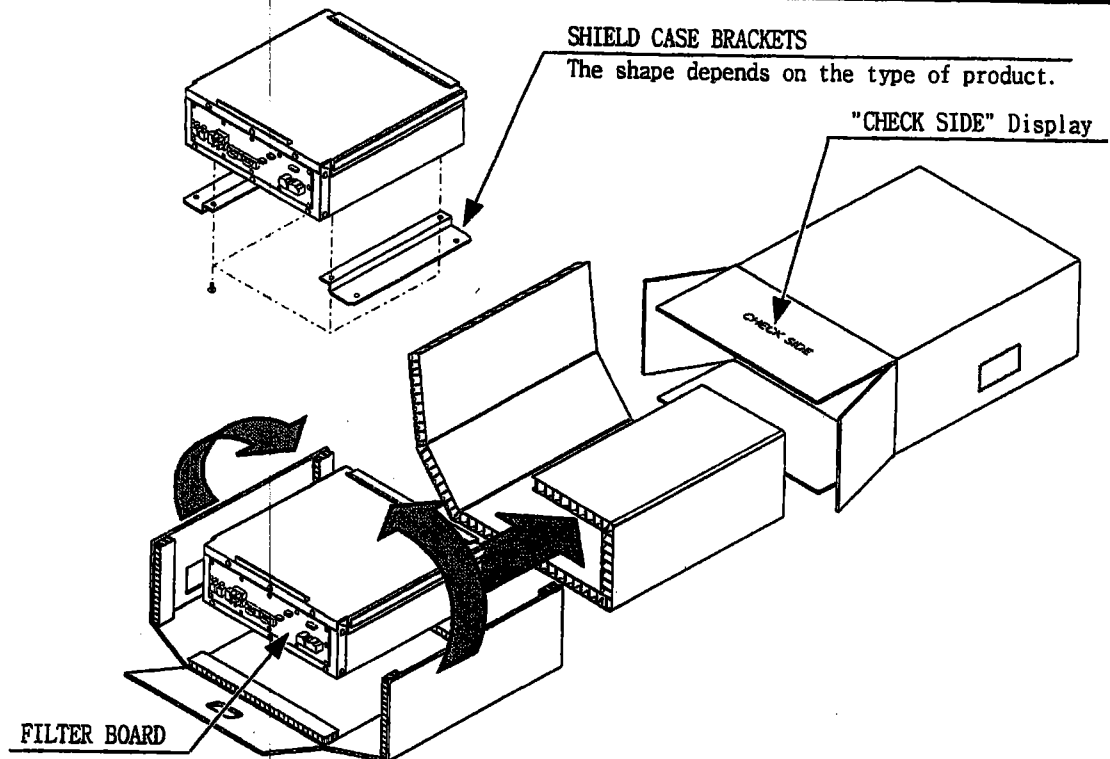
The machine is supplied with an installation kit. Please ensure the following parts are supplied:

Indent #	Part No.	Description	Component Ref	Qty
2	ATR-1220UK	ASSY BILLBOARD		1
7	ATR-0002UK	PLAY INSTR SH ATR MULTI		1
17	440-CS0122-EG	STICKER C FENCE ENG		2
18	440-CS0122-FR	STICKER C FENCE FRN		2
19	440-CS0122-GM	STICKER C FENCE GRM		2
20	440-CS0122-IT	STICKER C FENCE ITL		2
21	440-CS0122-SP	STICKER C FENCE SPN		2
22	440-CS0231-EG	STICKER C PANEL ATR ENG		4
23	440-CS0231-FR	STICKER C PANEL ATR FRN		4
24	440-CS0231-GM	STICKER C PANEL ATR GRM		4
25	440-CS0231-IT	STICKER C PANEL ATR ITL		4
26	440-CS0231-SP	STICKER C PANEL ATR SPN		4
27	440-CS0232UK	STICKER C ATR A MULTI		1
28	440-CS0233-EG	STICKER C ATR B ENG		1
29	440-CS0233-FR	STICKER C ATR B FRN		1
30	440-CS0233-GM	STICKER C ATR B GRM		1
31	440-CS0233-IT	STICKER C ATR B ITL		1
32	440-CS0233-SP	STICKER C ATR B SPN		1
33	440-CS0234UK	STICKER C STEP ATR MULTI		1
203	000-T00540-0C	M5X40 MSCR TH CRM	(2)-2	2
204	000-P00412-WB	M4X12 MSCR PAN W/FS BLK	(2)-1 EARTH,(301)-4	5
205	000-T00420-0B	M4X20 MSCR TH BLK	(301)-1	4
206	050-F00400	M4 NUT FLG SER PAS	(301)-2	2
301	ATR-60030UK	WIRE HARN DC TUBE		1
401	PK0274	CARTON BOX ATR DX INST K		1
402	OS1019	SELF SEAL BAG 9X12.3/4		2
403	420-6614-01UK	SERVICE MANUAL ATR DX		1
405	390-5160	LAMP WG B TYPE 6V 3W (C2	SPARE	1
411	220-5484	VOL CONT B-5K OHM	SPARE	1
412	SAECE-070	DECLARATION OF CONFORMIT		1

3.5. HOW TO USE THE GAME BOARD TRANSIT BOX

STOP
IMPORTANT!

- 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.



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 otherwise in the manner not shown can damage the GAME BOARD and parts.

3.6. 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.
- Assembly should only be carried out by **QUALIFIED SERVICE PERSONNEL**.

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

STEP 1 ASSEMBLING THE PTV

STEP 2 ASSEMBLING THE PTV TO REAR CABINET

STEP 3 SECURING IN PLACE

STEP 4 TURNING ON THE POWER

STEP 5 ASSEMBLY CHECK

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

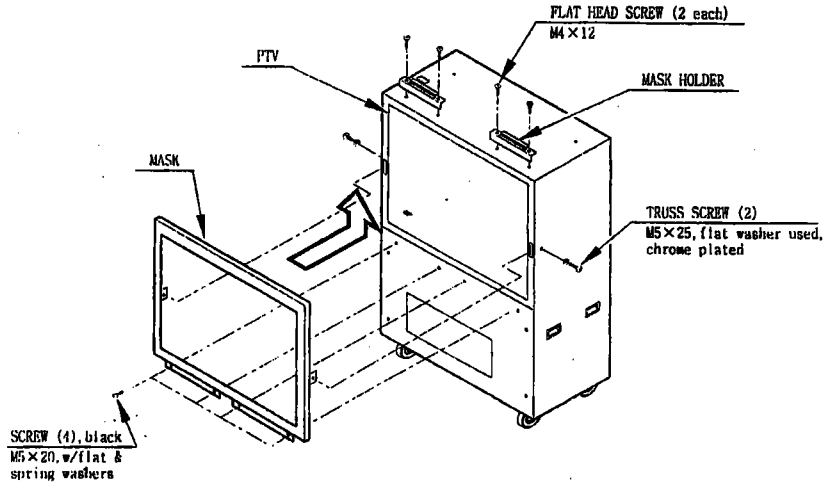
3.6.1. ASSEMBLING THE PTV



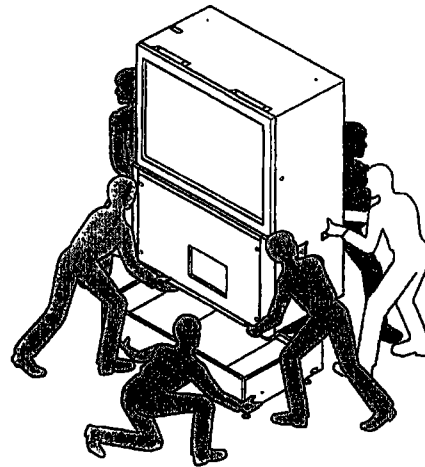
IMPORTANT!

- Be sure to connect all connectors correctly.
- Be sure to connect all earth wires correctly as instructed.
- **Steps 1 to 7 inclusive have been done during manufacture, however they should be checked before continuing with step 8.**

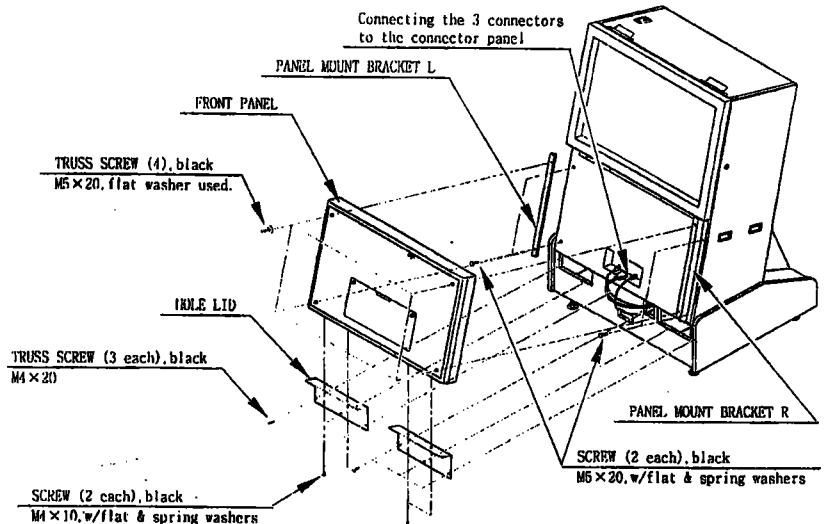
1. Fix the two mask holders onto the PTV top panel with two countersunk head screws in each.
2. Insert the TV Mask as shown, and fix with six screws



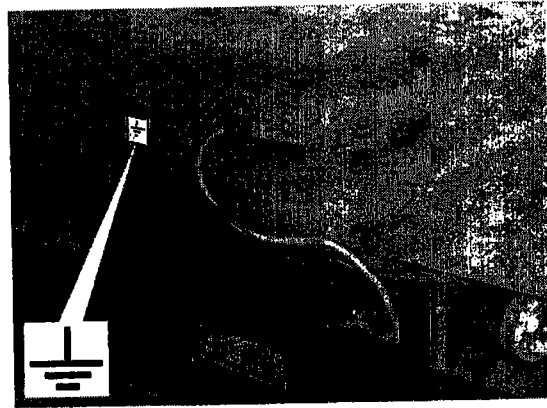
3. Mount the PTV onto the PTV Base. The PTV weighs approximately 100kg, so use at least four workers to lift the PTV, with additional workers to hold the PTV Base in position (or raise the castors off the floor by winding down the PTV Base leg adjusters).



4. Install Panel Mount Bracket L and R to the front of the PTV using two screws in each.



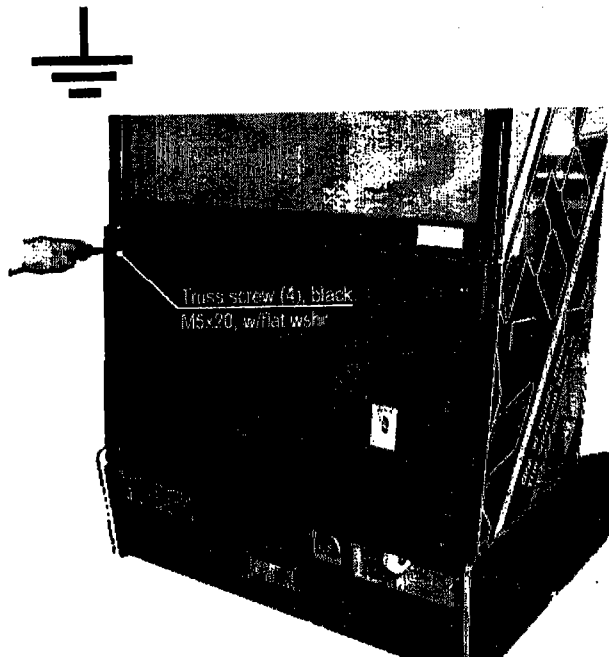
5. Connect the three loose connectors (two for power supply, one for video signal) in the PTV base to the PTV connector panel. The connectors must be oriented correctly when inserted to prevent breakage. The video connector has two securing screws which must be tightened after insertion.



VERY IMPORTANT:

Be sure that the earth wire of the harness is connected to the secondary earth point at the panel to the left of the PTV. This connection provides earth continuity to the Billboard. There is a sticker as below to denote the secondary earth point:

6. Install the Front Panel to the front of the PTV. Use the four truss screws for securing.



7. Install the two Hole Lids to the bottom of the front panel. Each Hole Lid is secured with two screws into the Front Panel and three truss head screws into the PTV Base.

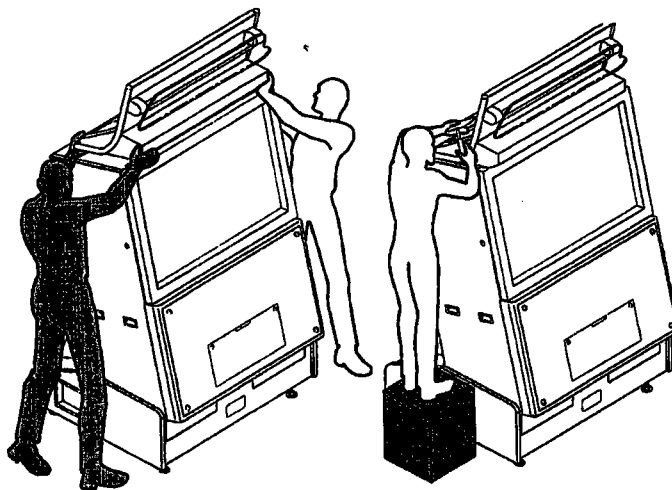
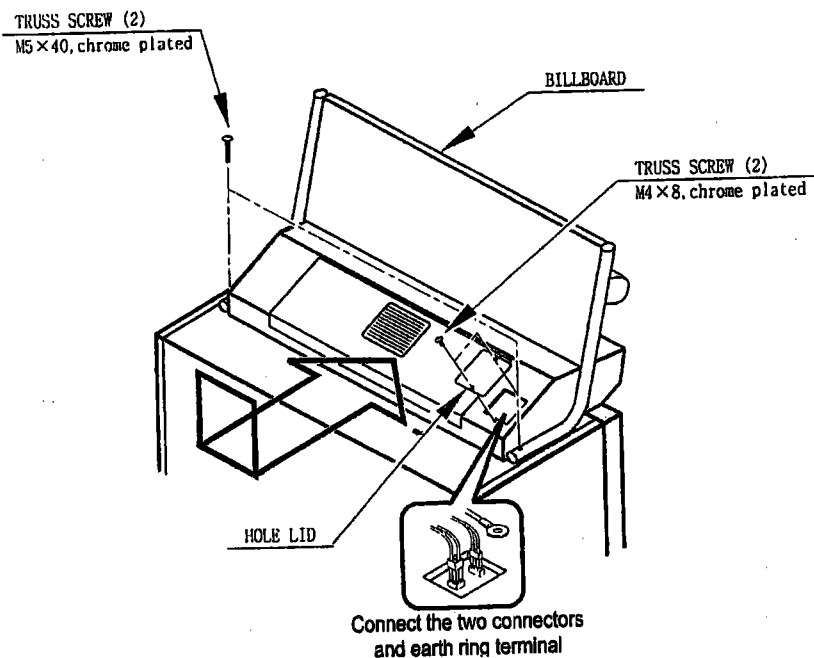


8. The Billboard should be installed using two workers. First, place the Billboard on top of the PTV.
9. Engage the Billboard onto the brackets at the front, and secure using the two M5x40 screws provided at the rear. A suitable step should be used when working on the Billboard.
10. Undo the two M4 screws securing the Hole Lid to the Billboard, and remove the Hole Lid.
11. Connect the two loose harnesses in the Billboard into the two connectors in the top of the PTV. Ensure correct orientation when inserting connectors.

VERY IMPORTANT:

Be sure that the earth wire from the Billboard is connected to the top of the Billboard plate using the M4 screw provided (item 204 of the Installation Kit; see section 3.4). This connection provides earth continuity to the Billboard.

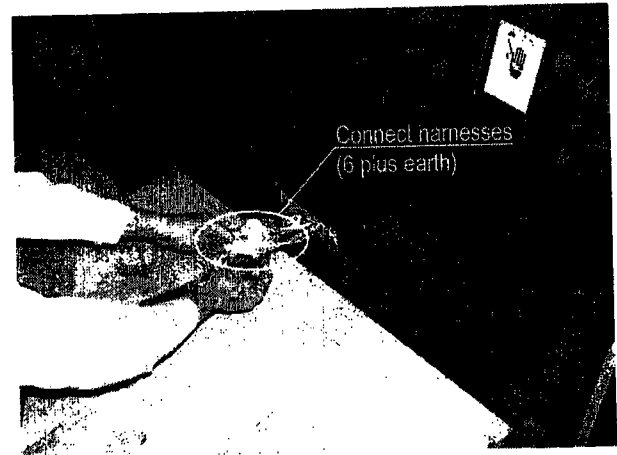
12. Reinstall the Hole Lid using the screws removed earlier.



Use at least two workers to position the Billboard and use a secure step to access the top of the PTV.

3.6.2. ASSEMBLING THE PTV TO THE REAR CABINET

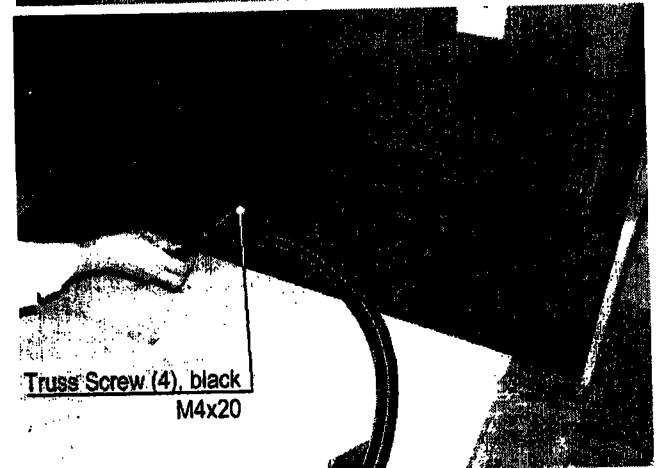
1. Move the Skateboard Cabinet and PTV together, close enough to facilitate connection of the Wire Harn DC Tube. Draw the six loose harnesses and earth wire from the PTV Cabinet.
2. Connect the harnesses in the Wire Harn DC Tube to the harnesses in the PTV Cabinet. Each connector has a different number of pins and must be oriented correctly to prevent breakage.



3. The Wire Harn DC Tube plate has a stud used to secure the earth wire. Fix the earth with an M4 flange nut.



4. Fix the Wire Harn DC Tube plate to the PTV cabinet using the four truss screws. Ensure the wiring is not trapped at this point.

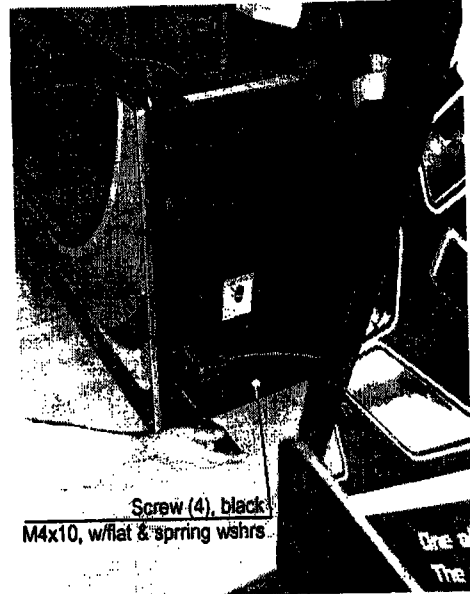


5. Ensure the cabinets are close enough to allow connection of the Wire Harn DC Tube to the Skateboard Cabinet.
6. Draw out the six loose harnesses and the earth wire from the Skateboard Cabinet.

7. Connect the Wire Harn DC Tube connectors to those in the Skateboard Cabinet, as detailed in step 2 above.
8. The Wire Harn DC Tube plate has a stud used to secure the earth wire. Fix the earth with an M4 flange nut.



9. Install the Wire Harn DC Tube plate to the Rear Cabinet using the four screws. Again, take care not to trap the wiring.



3.6.3. SECURING IN PLACE

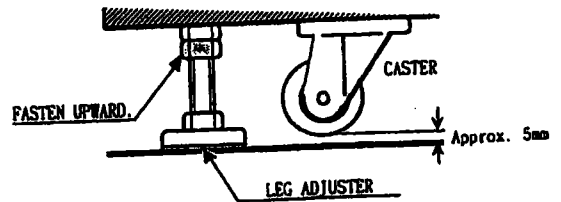
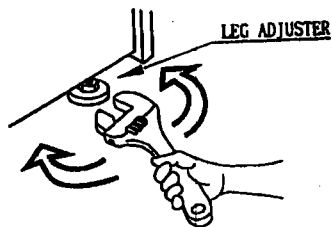
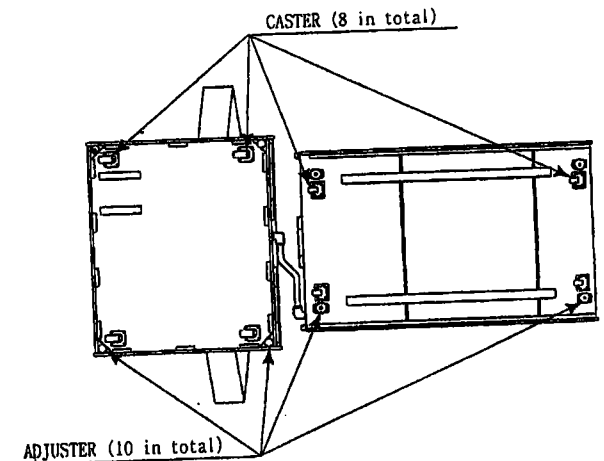


- Make sure all of the leg adjusters are in contact with the floor. If they are not the machine may move and cause injury. This operation requires 2 people.

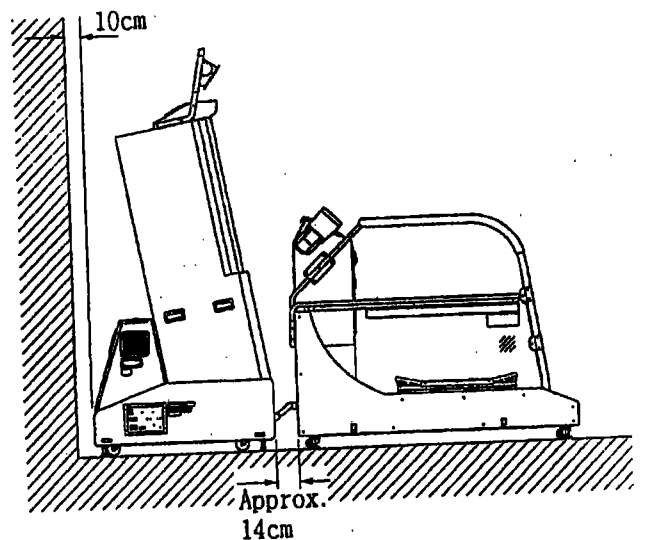
- This operation should only be carried out by QUALIFIED SERVICE PERSONNEL.

This machine has eight castors (four for the PTV base, four for the Rear Cabinet) and eight leg adjusters (four for the PTV base, four for the Rear Cabinet). 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. The machine shall only be installed on a horizontal, level surface.

1. Transport the product to the installation position. When installing near a wall, be sure to leave enough space to allow the player to get in the machine.
2. Make all of the adjusters contact the floor by adjusting their height using a wrench ensuring the machine is kept level.
3. After making adjustments secure the leg adjuster in place by fastening the adjuster nut upwards.



4. Ensure adequate ventilation is provided between the cabinet and wall surface. Additionally, position the Rear Cabinet approximately 14cm from the PTV Base.

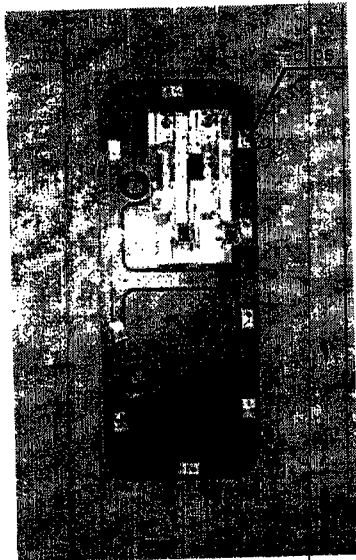


3.6.4. COIN HANDLING INSTALLATION.

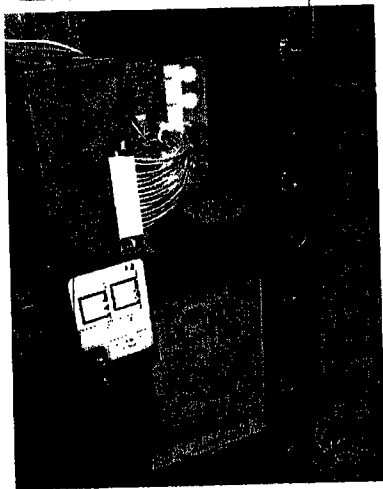


- This operation should only be carried out by QUALIFIED SERVICE PERSONNEL.

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 which 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.

3.6.4.1 WIRING CONNECTIONS.

COIN MECH
C220B

LOOM
LM1006IDC
LM1006LAMP-0.1

INSTALLATION

- 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 microswitch switch.
- Attach the blue/green cable and orange/green cable to the other mech's microswitch.
- 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
- 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.
- 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

GENERIC
MECHANICALS

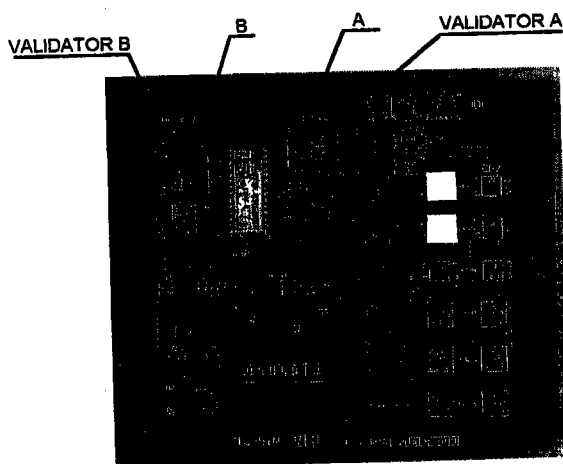
LM1008
LM1008-LAMP

MARS MS111B1
MARS ME115

LM1007
LM1008-LAMP

SECI, C120

OWN LOOM AND
LM1006LAMP-0.1



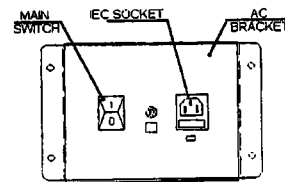
3.6.5. CONNECTING THE POWER.



IMPORTANT!

- Be sure that the machine is not already connected to the mains supply before attempting this operation
- This operation should only be carried out by **QUALIFIED SERVICE PERSONNEL.**

1. Insert the mains lead into the wall socket.
2. Insert the IEC plug into the IEC socket on the AC bracket.
3. Switch on the power supply at the wall.
4. Switch on the mains switch on the AC bracket.

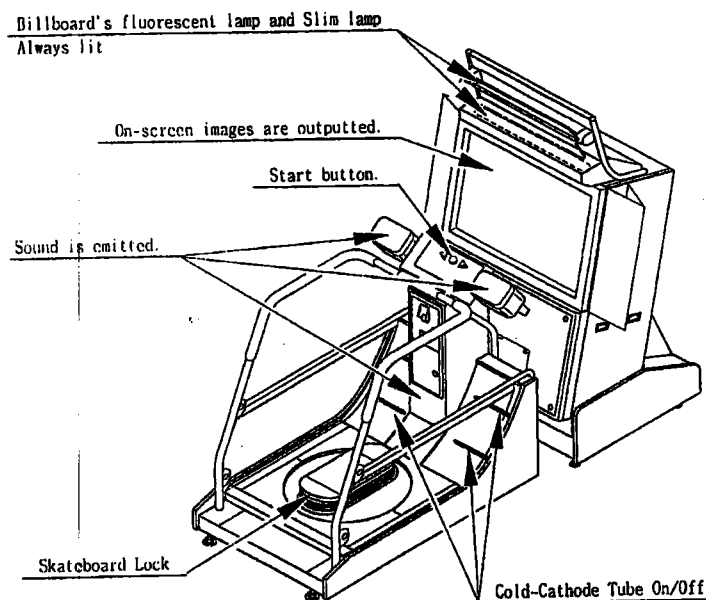


When power is supplied, the BILLBOARD fluorescent and slim tube will light, and the screen will display the system start up sequence.

On completion, ADVERTISE mode will begin, emitting sound from the speakers if this option is set in TEST mode. During ADVERTISE mode the four cold-cathode tubes to the left and right of the Rear Cabinet will turn on and off.

Turning off the power will not erase data such as full credits and score information, but data relating to inserted coins less than the value of one credit, and the Bonus Adder, will be lost. If power is restored with enough credits for play remaining, the Start button will flash.

The Skateboard is locked in its central position until after money has been inserted and the Start button has been pressed.



3.6.6. ASSEMBLY CHECK

STOP
IMPORTANT!

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

In the TEST mode ensure the assembly has been made correctly by performing the following checks (refer to section 5.1.2).

RAM TEST				
IC15	IC16	IC17S	IC18S	GOOD
IC22	IC23	IC24S	IC25S	GOOD
IC28	IC29S			GOOD
IC41				GOOD
IC42				GOOD
IC44	IC45S	IC46	IC47S	GOOD
IC91S	IC92S			GOOD
IC98				GOOD
OPTIONAL SOUND BOARD: IC2				GOOD
PRESS TEST BUTTON TO EXIT				

Selecting the RAM test on the test mode menu causes the on-board memory to be tested. The game board is satisfactory if the display beside each IC No. shows GOOD

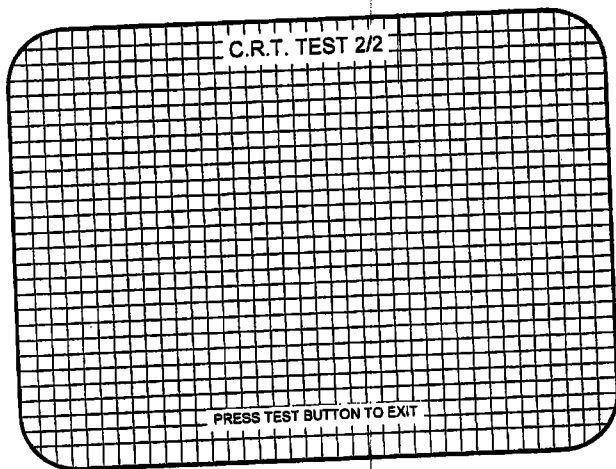
SOUND TEST	
MAIN SPEAKER LEFT	
MAIN SPEAKER RIGHT	
EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

Select SOUND test to test sound BD and wiring connections. Check that the sound is satisfactory from each speaker and the speaker volume is appropriate.

C.R.T. TEST 1/2 C.R.T. TEST	
RED	
GREEN	
BLUE	
WHITE	
PRESS TEST BUTTON TO CONTINUE	

In the TEST mode select CRT test to check the screen is satisfactory.

Although the projector has been set up before shipment at the factory check to see if the screen needs adjustment.



INPUT TEST	
NODE	1/1
BUTTON	
START	OFF
LEFT	OFF
RIGHT	OFF
UP	OFF
DOWN	OFF
SERVICE	OFF
TEST	OFF
VOLUME	
YAW 80	
LEFT [REDACTED]	RIGHT
ROLL 80	
LEFT [REDACTED]	RIGHT

PRESS TEST AND SERVICE BUTTON TO EXIT

Select the INPUT test to display the screen shown. Press or operate each switch in turn to check its operation.

The YAW and ROLL volumes can also be checked; refer to section 5.1.4.5 for further details.

OUTPUT TEST	
LEFT UPEER LAMP	OFF
LEFT LOWER LAMP	OFF
RIGHT UPEER LAMP	OFF
RIGHT LOWER LAMP	OFF
START LAMP	OFF
LOCK MECHA	OFF
> EXIT	

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

In the output test mode carry out lamp tests to ensure that each lamp is working correctly.

Perform the above tests at the time of monthly inspection.

3.6.7. MOVING THE MACHINE

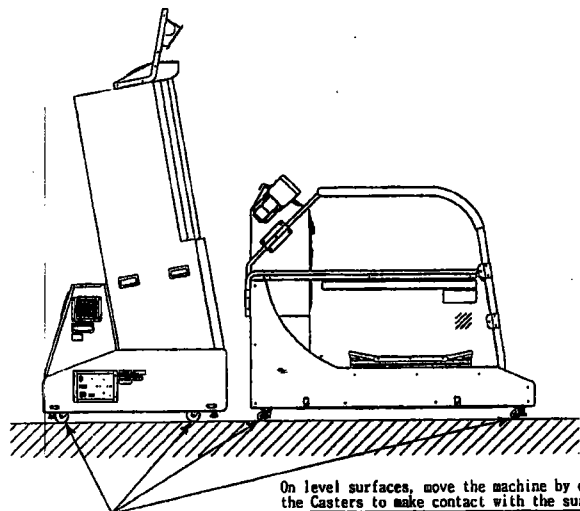


CAUTION!



IMPORTANT!

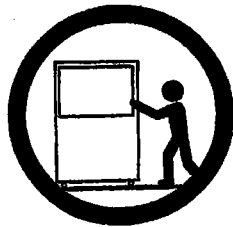
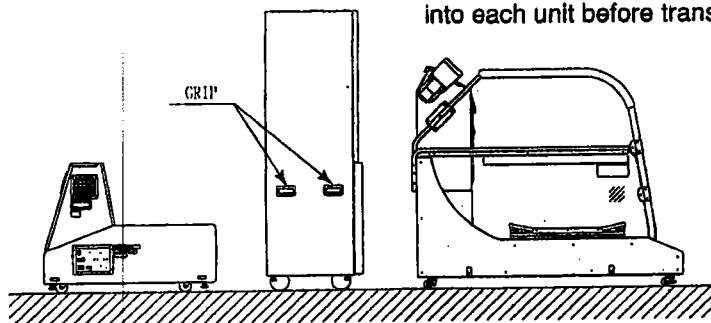
- When moving the machine be sure to remove the plug from the power supply. Moving the machine with the plug inserted can cause the power cord to be damaged, resulting in a fire or electric shock.
- When moving the machine, retract the leg adjusters fully and ensure the casters make contact with the 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.
- This operation should only be carried out by **QUALIFIED SERVICE PERSONNEL**.



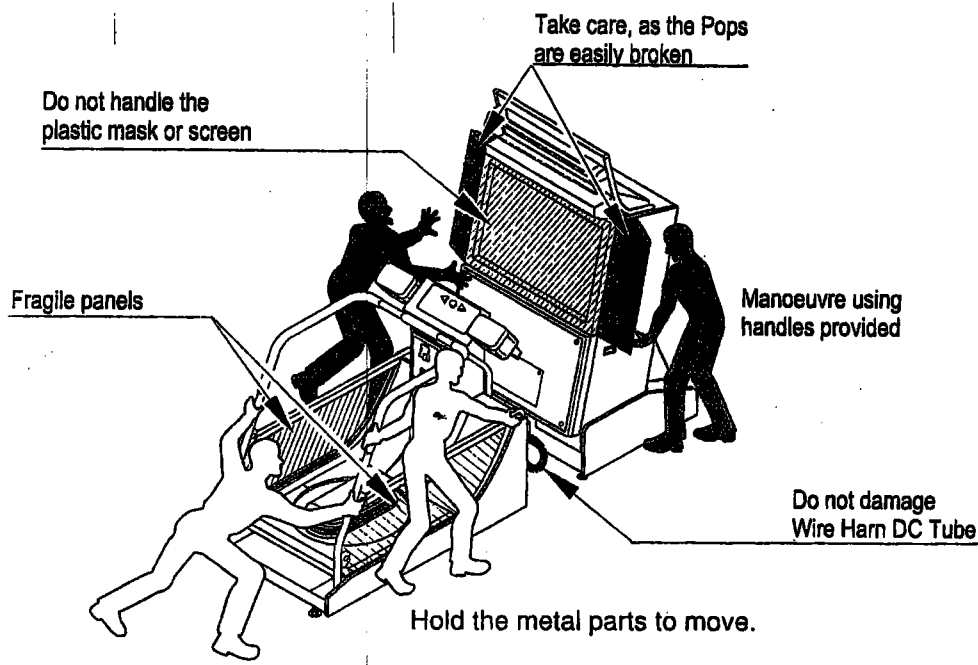
On level surfaces, move the machine by causing the Casters to make contact with the surfaces.



When transporting the product in places with steps or step-like differences in grade, disassemble into each unit before transporting.



Do not push the PTV from the front or back; always push the PTV from the side.



Do not handle the plastic mask or screen

Take care, as the Pops are easily broken

Fragile panels

Manoeuvre using handles provided

Do not damage Wire Harn DC Tube

Hold the metal parts to move.

Manoeuvre the machine using hand grips, base and safety handrail. Do not use force on any fragile plastic parts (illustrated).

3.7. 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.

- FUSES should only be replaced by QUALIFIED SERVICE PERSONNEL.
- Fuses should only be replaced with one of the same type and rating.

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
514-5078-5000	IEC INLET (EP1302)	5x20 HRC SB 5000mA	1
514-5078-6300	838-11856CE-02 (F1)	5x20 HRC SB 6300mA	1
514-5078-4000	400-5397-01 (F1)	5x20 HRC SB 4000mA	1
514-5078-3150	838-13616 (F1&F2)	5x20 HRC SB 3150mA	2
514-5078-6300	610-0609 (F1)	5x20 HRC SB 6300mA	1
514-5033-3150	400-5421-05012(F11)	5x20 glass T 125V 3.15A	1
514-5033-3150	400-5421-03024(F11)	5x20 glass T 125V 3.15A	1

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

3.8. MAINTENANCE OF CONTROLLER MECHANISM UNIT



IMPORTANT!

The following work must only be carried out by qualified service personnel.

3.8.1. ADJUSTING OR REPLACING THE ROLL/YAW VR



WARNING!

- Be careful not to touch areas other than those specified.
- Be careful not to damage wiring.
- This work must only be carried out by qualified service personnel
- The controller mechanism is a trap hazard. Serious injury may result if hands, etc., are trapped in the mechanism.

The Skateboard (Controller) is equipped with the following operational input devices: ROLL and YAW detection Volume Controls and a kicking sensor. Verify satisfactory operation of these devices at least once monthly. If the operability is poor, and is not rectified by adjusting the volume setting in TEST MODE, the cause may be meshing failure of the Volume Gears, or failure of the Volume altogether.

This section also covers lubrication of the controller mechanism.

3.8.1.1. ADJUSTING/REPLACING THE ROLL VOLUME

The Volume Control used to detect the ROLL direction (tilt) of the skateboard is located under the skateboard towards the rear.

The following procedure requires a Phillips screwdriver for M4 screws, a flat tipped screwdriver for M3 screws, and a 11mm A/F spanner.

1. Turn off power.
2. Remove the six Bellows Holders securing the bellows located under the skateboard. Remove the two screws.



3. Remove the two truss screws located on the top surface of Floor Board Rear.



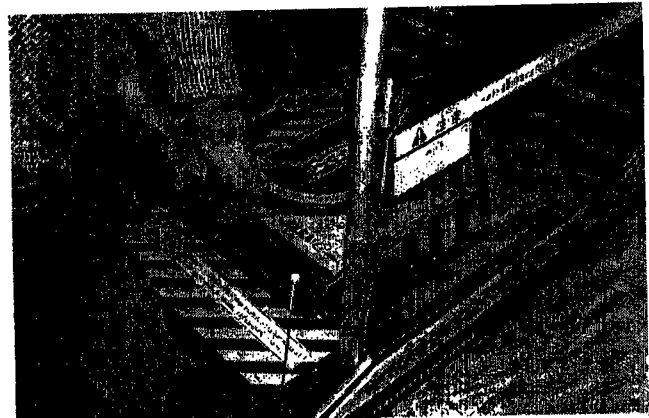
TRUSS SCREW (2), black
M4x25, w/flat wshr

4. Remove the three truss screws from the back of the Rear Cabinet.



TRUSS SCREW (3), chrome
M4x8

5. Remove the Floor Board Rear. The ROLL Volume Control Mechanism Assembly can be accessed by raising the bellows.

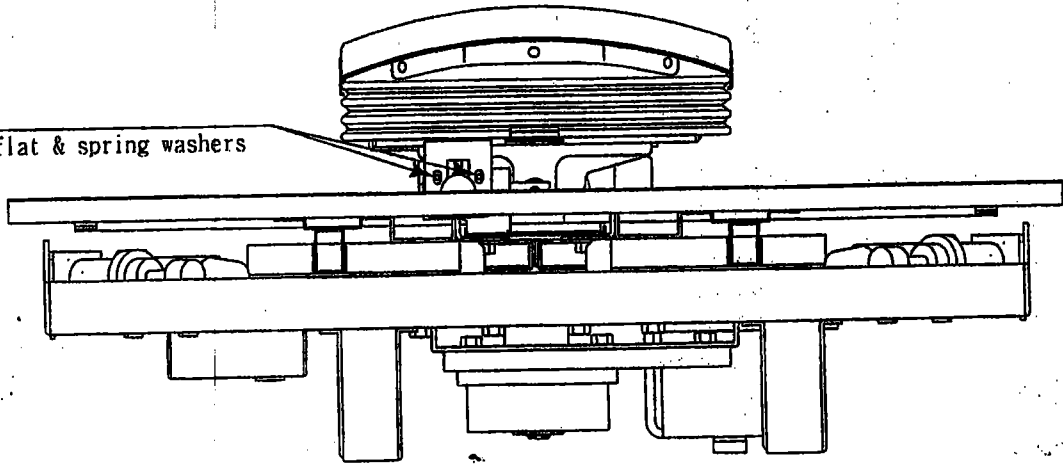


FLOOR BOARD REAR

3.8.1.1.1.ADJUSTING PROCEDURE

1. Loosen the two screws securing the ROLL VR Holder.

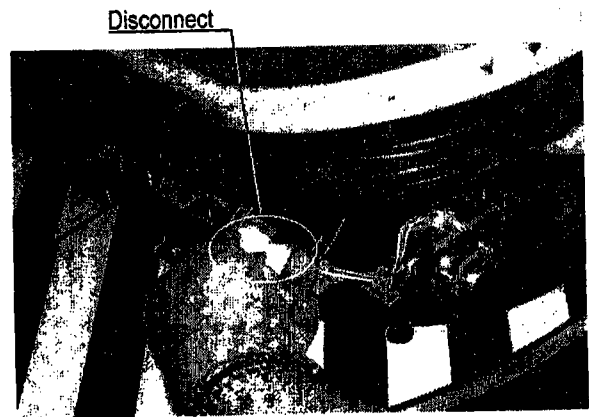
SCREW (2)
M4×8, w/flat & spring washers



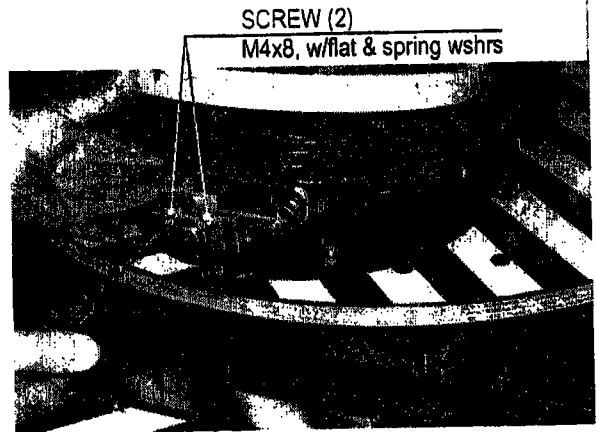
2. Make adjustments to the volume so that the D-Cut (flat face) side of the volume shaft faces upwards when the skateboard is in its central (horizontal) position.
3. Retighten the two screws.
4. With power on, check the volume values in TEST mode (see section 5.1.4).

3.8.1.1.2.REPLACING PROCEDURE

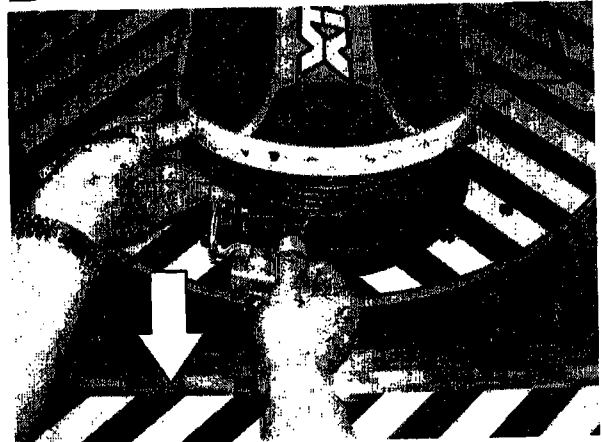
1. Disconnect the Volume Control and release any clamps securing the wires.



2. Remove the two screws securing the ROLL VR Holder.



3. Remove the ROLL VR Holder with the Volume Control still fitted.



4. Loosen the two cheese-head machine screws securing the crank.

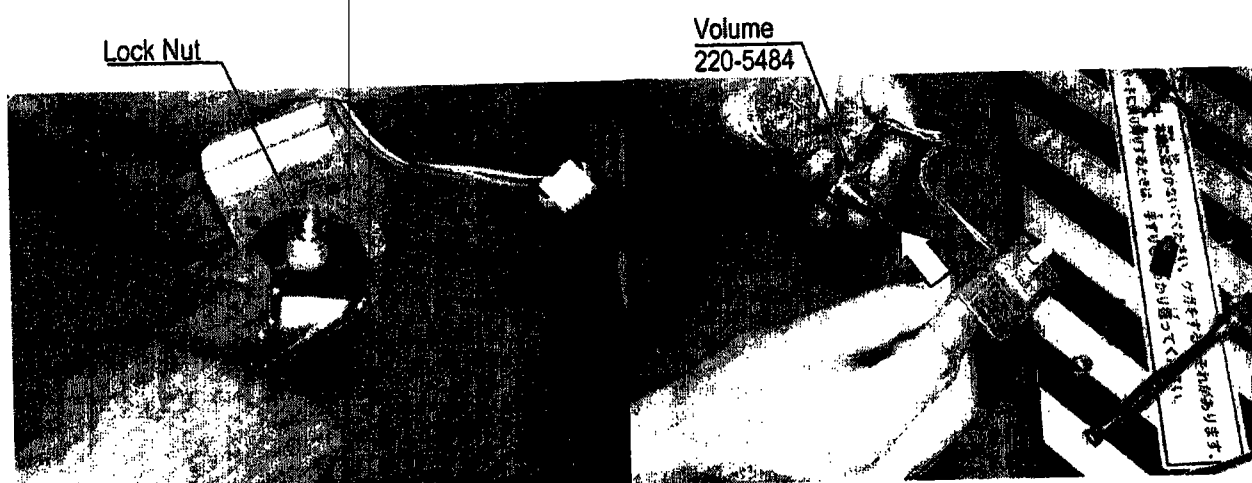


CHEESE HEAD
SCREW (2)
M3x6

5. Pull the crank from the Volume Control shaft.



6. Remove the locking nut securing the Volume Control to the ROLL VR Holder.



7. Install the new Volume Control to the ROLL VR Holder and secure the crank. Refer to 3.8.1.1 when refitting the ROLL VR Holder.
8. Connect the Volume Control and secure the wire firmly, ensuring the wire isn't disturbed by the mechanism at either limit of its travel.
9. With power on, check the volume values in TEST mode (see section 5.1.4).

3.8.1.2.ADJUSTING/REPLACING THE YAW VOLUME

The Volume Control used to detect the YAW direction (swivel) of the skateboard is located under Table Lid L to the left of the skateboard when facing the screen.

The following procedure requires a Phillips screwdriver for M4 screws, a flat tipped screwdriver for M3 screws, and a 11mm A/F spanner.

1. Turn off power.
2. Remove the two screws securing Table Lid L, located to the left of the skateboard.



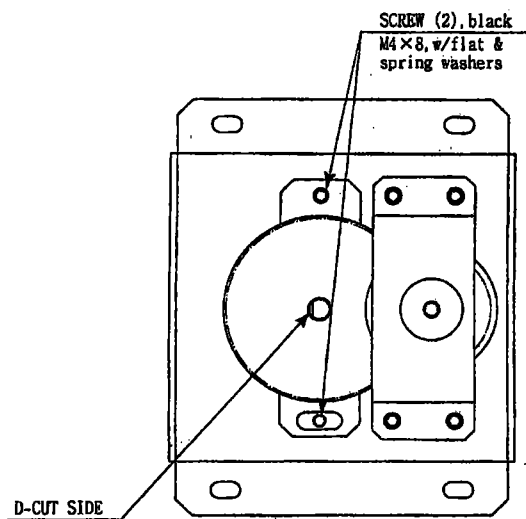
SCREW (2), black
M4x20, w/flat & sprg wshrs

3. Table Lid L can be removed by sliding it towards the skateboard. The YAW Volume Control Mechanism Assembly can be accessed by removing Table Lid L.



3.8.1.2.1.ADJUSTING PROCEDURE

1. Loosen the two screws securing the YAW VR Holder.
2. Make adjustments to the volume so that the D-Cut (flat face) side of the volume shaft faces left when the skateboard is in its central (straight) position.
3. Retighten the two screws.
4. With power on, check the volume values in TEST mode (see section 5.1.4).



3.8.1.2.2.REPLACING PROCEDURE

1. Disconnect the Volume Control and release any clamps securing the wires.
2. Remove the two screws securing the YAW VR Holder.
3. Remove the YAW VR Holder with the Volume Control still fitted.



4. Loosen the two cheese-head machine screws securing the gear.

CHEESE HEAD SCREW
M3x6

CHEESE HEAD SCREW
M3x6

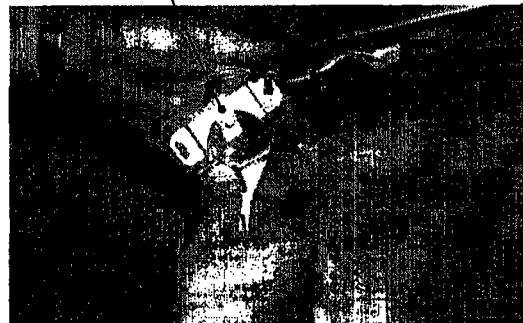


5. Pull the gear from the Volume Control shaft.



6. Remove the locking nut securing the Volume Control to the YAW VR Holder.

Lock Nut



10. Install the new Volume Control to the YAW VR Holder and secure the gear. Refer to 3.8.1.2 when refitting the YAW VR Holder.

Volume
220-5484



11. Connect the Volume Control and secure the wire firmly, ensuring the wire isn't disturbed by the mechanism at either limit of its travel.
12. With power on, check the volume values in TEST mode (see section 5.1.4).

3.8.2. GREASING



WARNING!



CAUTION!



IMPORTANT!

- The following are general precautions to be employed when handling grease. They must be used in conjunction with safety information supplied with the grease and local guidelines or regulations.
- Grease is inflammable and should not be exposed to fire or ignition sources.
- Grease must not be misused or ingested; keep out of reach of children.
- In order to prevent electric shock turn power off before performing work.
- Perform the greasing operations herein in a well-ventilated area.
- Wear eye protection to prevent grease entering the eye. Should grease enter the eye, rinse in clean water and seek medical advice.
- Wear protective gloves to prevent skin irritation. Should grease come into contact with the skin, wash thoroughly with soap and water.
- Grease may cause sickness and diarrhoea if ingested. Persons ingesting grease should be taken for immediate medical attention. Do not induce vomiting.
- Refer to local legislation when disposing of grease or empty containers, as regulations pertaining to its disposal may be in force. If in doubt, contact the supplier of the grease.
- Use only the designated type of grease. Refer to its storage instructions before storing to prevent deterioration, etc.
- Only grease designated areas. Do not apply grease to other areas as this can cause malfunctioning.
-

Grease the Swing Bearing once a month using the grease specified in the procedure. In addition, grease the Volume Control's gear teeth and crank, and the pinion gears of the skateboard's locking mechanism.

3.8.2.1. GREASING THE SWING BEARING



CAUTION!



IMPORTANT!

- When greasing the swing bearing, move the skateboard fully clockwise or anticlockwise to allow grease to reach every part of the bearing. When rotating the skateboard in this manner, hold the handrail for safety.
- Use the type of grease specified below. This type of grease is used during manufacture of the product; subsequent use of any other type of grease may cause a chemical reaction, thereby damaging the machine.
- Use a suitable grease gun to inject the grease. The grease gun must be used in the correct manner.
- The required quantity of grease is 16g. Using more than this will not have adverse effect.

To grease the swing bearing, prepare the following:

- Grease Gun containing lithium complex grease (e.g. Shell EP-1, Castrol LMX)
(Use Sega part number 540-0064 GREASE GUN KH-120 or an equivalent part).
- Protective gloves and goggles
- Phillips screwdriver for M4 screws
- Master key for machine.

1. Remove Table Lid R, which is located to the right of the skateboard when facing the PTV. Remove the two securing screws.



SCREW (2), black
M4x20, w/flat & spring wshrs

2. Table Lid R is removed by sliding towards the skateboard.

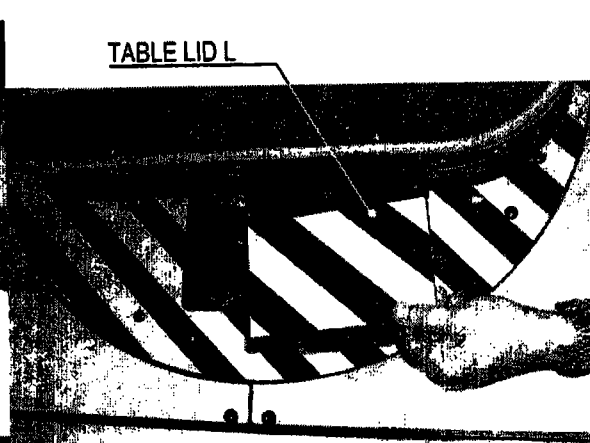
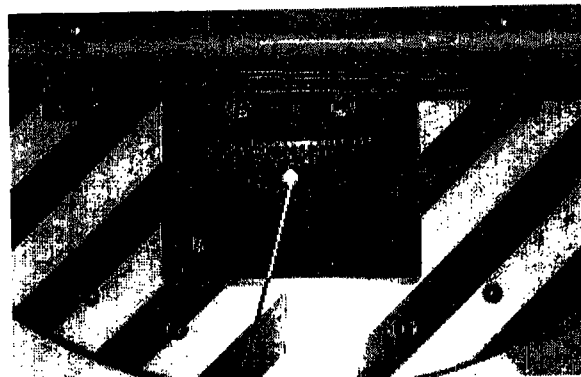


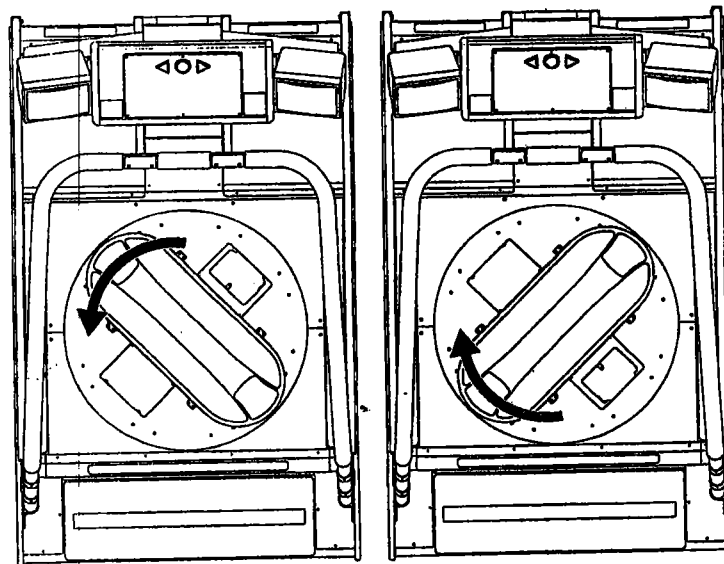
TABLE LID L

3. Once Table Lid R is removed, the grease nipple can be seen.



GREASE NIPPLE

4. With the skateboard turned either fully clockwise or anticlockwise, push the grease gun onto the grease nipple.



5. A total of 8g of grease should be injected at this point, corresponding to around eight full pumps of the grease gun lever.
6. Turn the skateboard to the opposite extent of its travel and secure it there.
7. Inject around 8g of grease into the nipple.
8. Turn the skateboard to each extent several times to distribute the grease throughout the bearing.

When the swing bearing is next greased, discard the grease in the nozzle by pumping it out, as it may be contaminated by air or moisture. Remember to dispose of grease in an appropriate manner as advised above.

3.8.2.2.GREASING THE VOLUME CONTROL MECHANISM ASSY



IMPORTANT!

- Be sure to use a good quality, synthetic lubricant. Using a mineral-based lubricant will cause damage to the plastic parts.
- Do not apply lubricant to parts other than those specified. Doing so may cause damage or deterioration of parts.

- Grease must be applied to the gear teeth of the Volume Control Mechanism Assembly and sliding surfaces of the crank once every three months. Use good quality synthetic grease: best results are obtained by using a spray grease with an extension tube on the nozzle.
1. Access the Volume Control Mechanism Assembly by following the instructions in sections 3.8.1.1 and 3.8.1.2.
 2. Apply grease to the meshing gear teeth and the sliding surfaces of the crank mechanism.
 3. The gears of the YAW Volume Control Mechanism Assembly are of a two-step type. Apply grease also to the meshing gear teeth at the lower step.



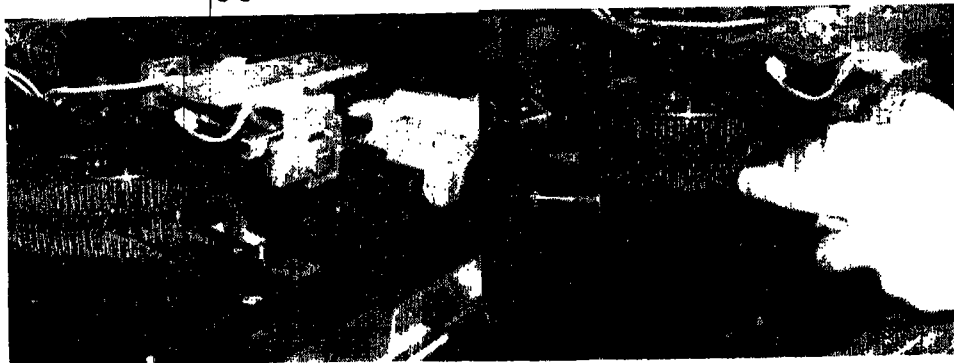
3.8.2.3.GREASING THE PINION GEARS



IMPORTANT!

- Be sure to use a good quality, synthetic lubricant. Using a mineral-based lubricant will cause damage to the plastic parts.
- Do not apply lubricant to parts other than those specified. Doing so may cause damage or deterioration of parts.

- The pinion gears are used to lock the skateboard. Grease the gear teeth once every three months. Use good quality synthetic grease: best results are obtained by using a spray grease with an extension tube on the nozzle.
1. Access the Volume Control Mechanism Assembly by following the instructions in sections 3.8.1.1.
 2. Apply grease to the meshing gear teeth.



In the photograph, for convenience the turntable has been removed to allow the pinion gears to be seen. However, the grease can be applied without removing the gears.

3.8.3. REPLACEMENT OF THE BELLOWS

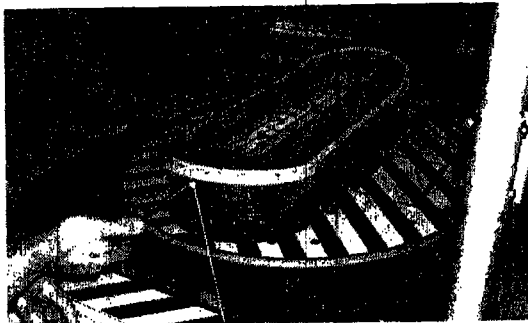


WARNING!

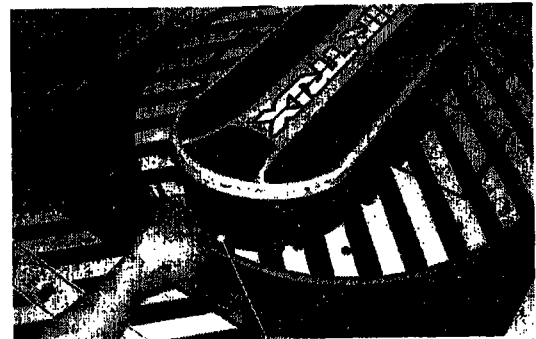
- If the bellows have become damaged or worn, replace them immediately. It is dangerous to operate the machine with the bellows damaged or omitted.

To replace the bellows, first prepare the following tools:

- Phillips screwdriver for M4 screws
 - 13mm A/F socket wrench or spanner
1. Turn off power.
 2. Remove the three screws from each of the two end and two side bellows sashes securing the bellows to the skateboard.

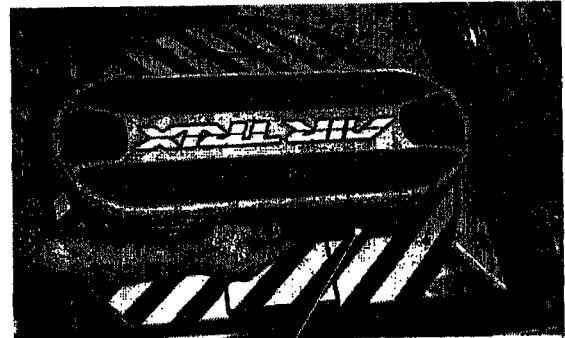


SCREW (3 each), black
M4x12, w/flat & spring wshrs



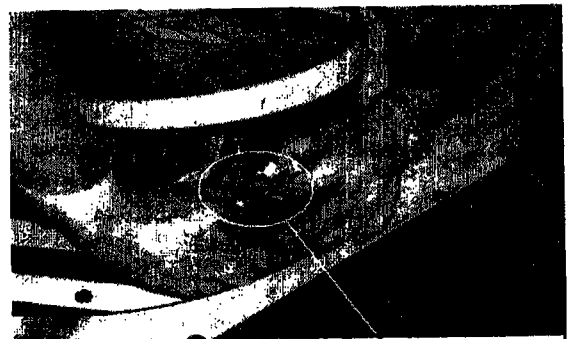
BELLOWS END SASH

SCREW (3 each), black
M4x12, w/flat & spring wshrs



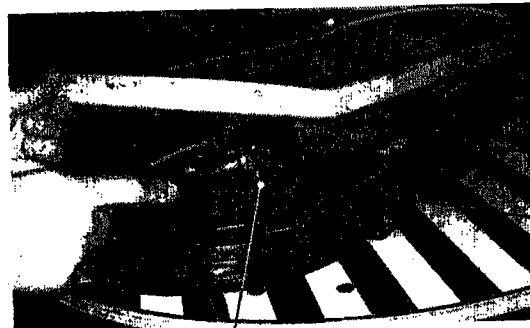
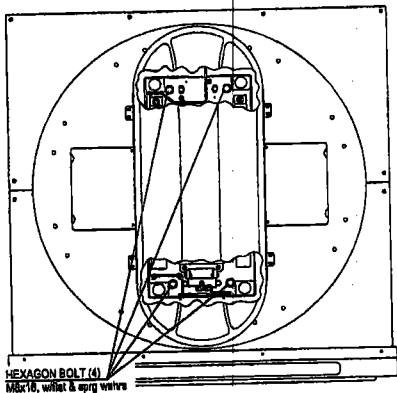
BELLOWS SIDE SASH

3. Release a total of six hooks (three per side) and lower the bellows.
4. Disconnect the harnesses shown. Release any clamps securing the harnesses.

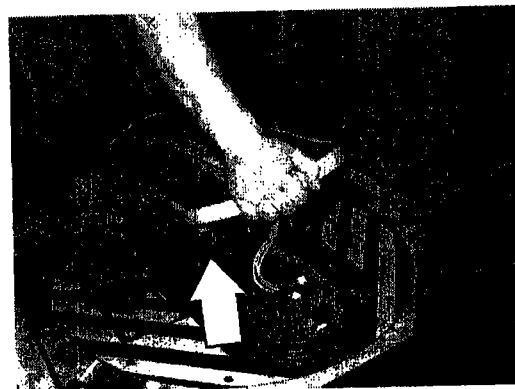


Disconnect

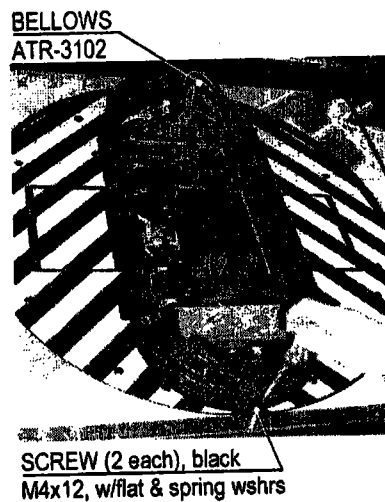
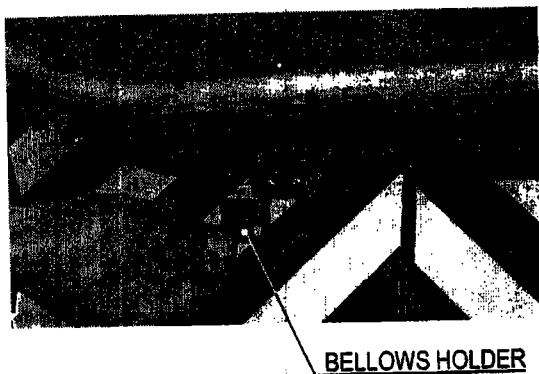
5. Remove the four hex bolts securing the skateboard.



6. Remove the skateboard taking care not to damage any wiring.



7. Remove the six Bellows Holders securing the bottom of the bellows. Remove the two screws from each of the holders.
8. Replace the bellows.



3.9. REPLACEMENT OF FLUORESCENT LAMP AND OTHER LAMPS



WARNING!



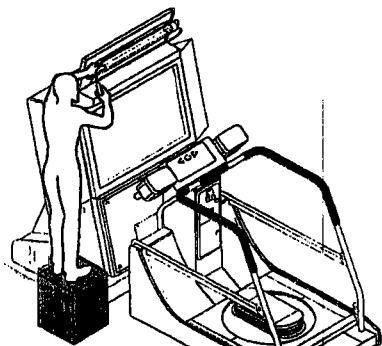
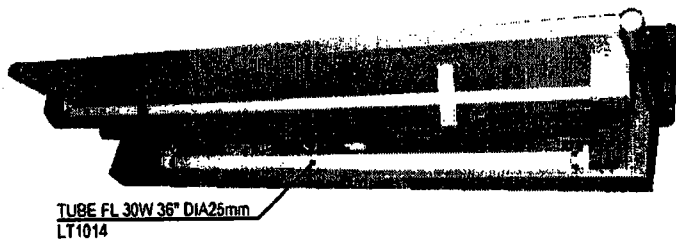
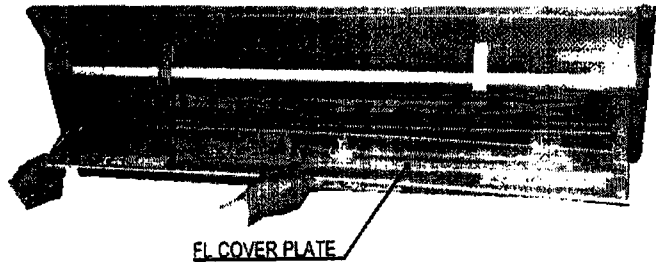
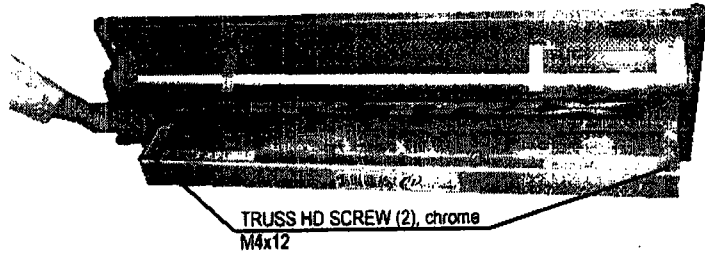
IMPORTANT!

- 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.

- Lamps should only be replaced by QUALIFIED SERVICE PERSONNEL.

3.9.1. BILLBOARD FLUORESCENT LAMP REPLACEMENT

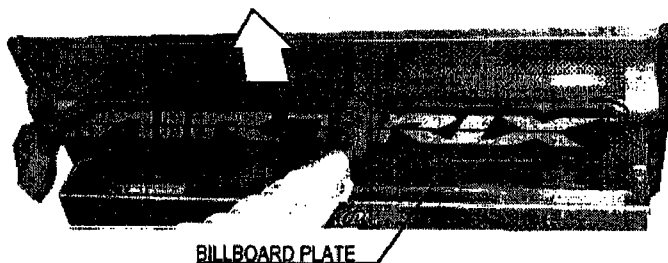
1. Turn off power.
2. Use a secure step to access the billboard. Remove the two truss head screws from the FL Cover Plate.
3. Draw out the FL Cover Plate.
4. Replace the Fluorescent lamp.



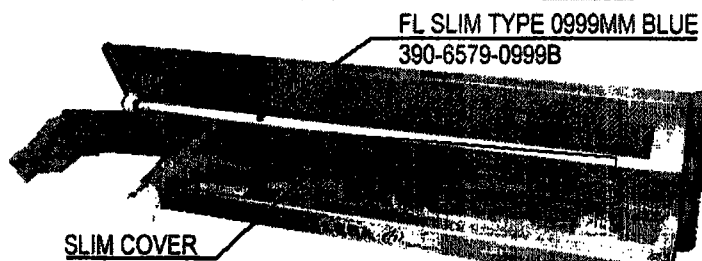
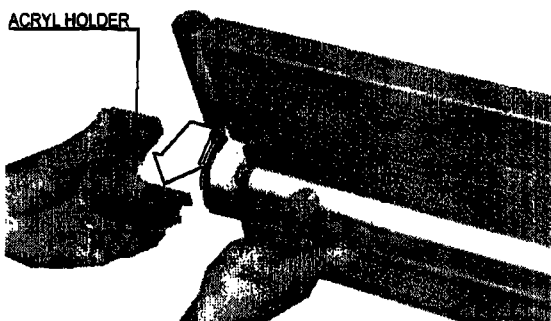
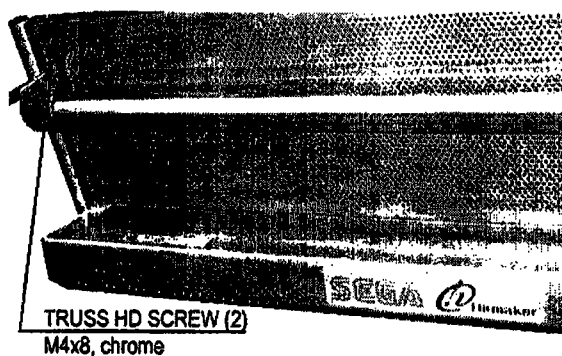
When performing work,
prepare a step.

3.9.2. BILLBOARD SLIM TUBE REPLACEMENT

1. Turn off power.
2. Use a secure step to access the billboard. Remove the two truss head screws from the Billboard Plate.
3. Draw out the Billboard Plate upwards.

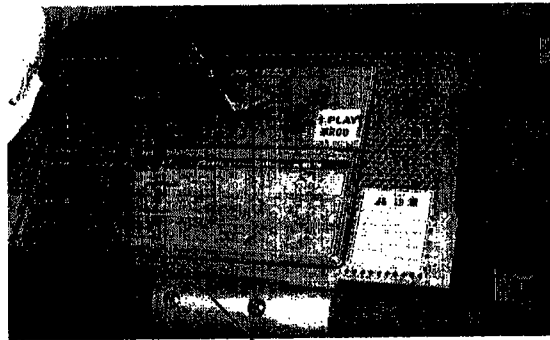


4. Remove either the left or right Acryl Holders by removing its two M4 truss head screws. The Slim Cover can be removed by pulling it out sideways. Take care here as the Slim Cover is fragile.
5. Replace the Slim Tube.



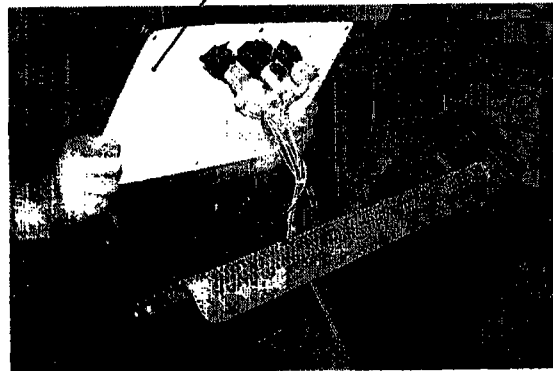
3.9.3. START BUTTON LAMP REPLACEMENT

1. Turn off power.
2. Take out six screws to remove the Switch Panel, withdrawing far enough only to access the switch mechanisms of each button. Take care not to damage the wiring.



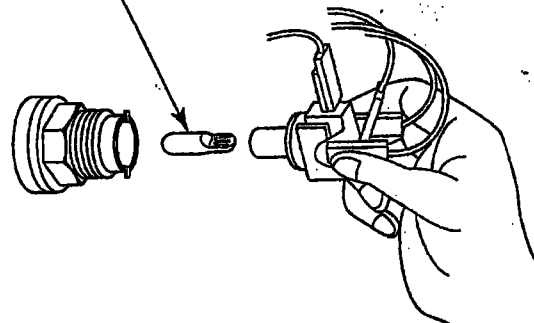
TRUSS HD SCREW (6)
M4x10, chrome

SWITCH PANEL



3. Select the lamp to be replaced, grasp the switch mechanism and pull out of the button body.
4. The lamp (bulb) is removed by pulling straight out. Do not turn.

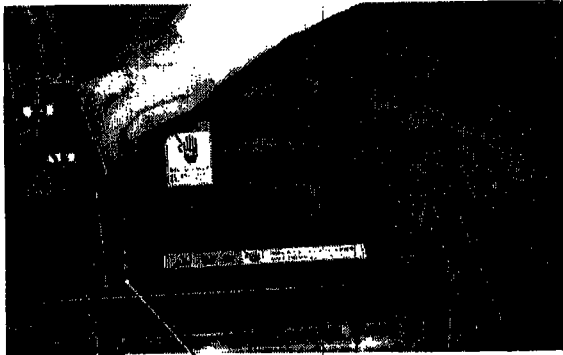
LAMP 6V 3W (WEDGE BULB)
390-5160



3.9.4. REAR CABINET COLD CATHODE TUBE REPLACEMENT

The rear cabinet is equipped with two Cold Cathode Tubes in lamp units located either side of the coin chute door. To replace a Cold Cathode Tube, the lamp unit on that side must be removed from the cabinet.

1. Turn off power.
2. Remove the two truss head screws to release the Lamp Sash Upper.



TRUSS HD SCREW (2), black
M4x8

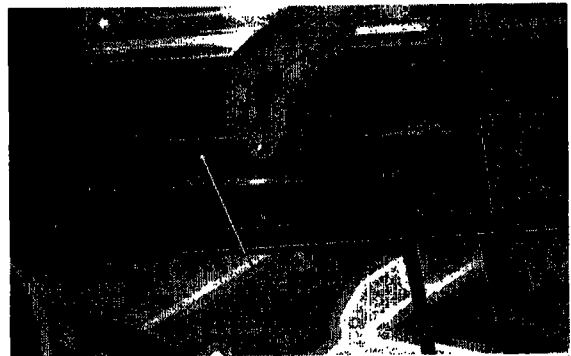


LAMP SASH UPPER

3. Remove the two truss head screws to release the Lamp Sash Lower.



TRUSS SCREW (2), black
M4x8



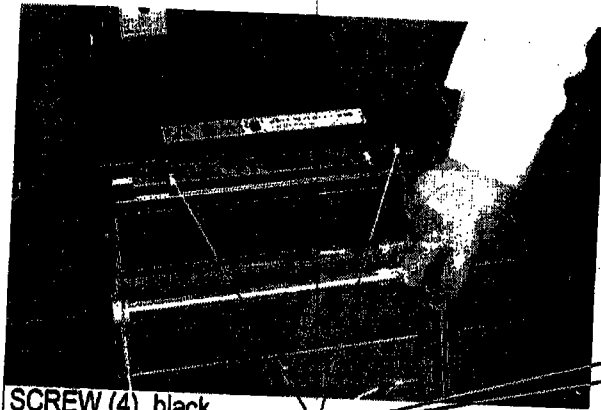
LAMP SASH LOWER

4. Remove the lamp panel by pulling it out downward. Use care at this point as the panel can be broken by mishandling.

LAMP PANEL



5. Remove the four screws securing the lamp unit.



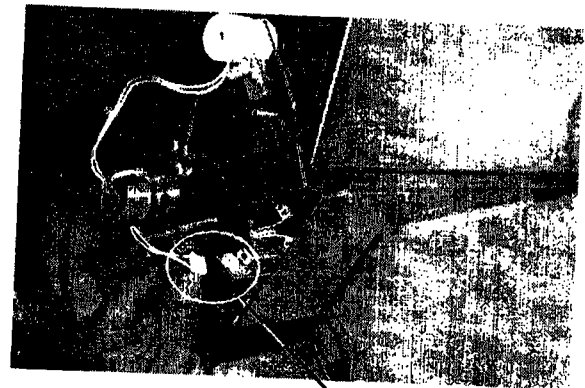
SCREW (4), black
M4x10, w/flat & sprg wshrs



6. Tilt the lamp unit far enough to facilitate disconnection of the loom.
7. Remove the lamp unit entirely.



8. Disconnect the Cold Cathode Tube, and remove the connector from the Inverter Board. Note that the ferrite cores on the outputs of the boards (shown here) are not fitted on the CE version of this product.

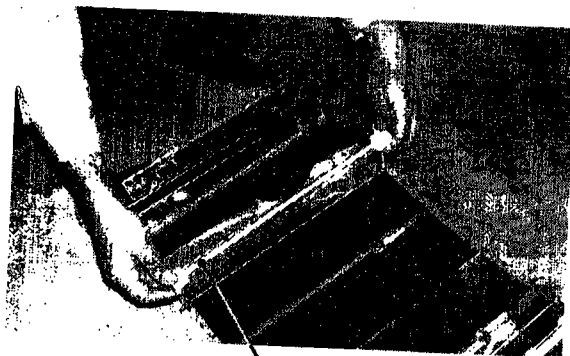


9. Remove the flange nuts from each end of the faulty tube.

M4 FLANGE NUT (one ea.)



10. Remove the Cold Cathode Tube from the lamp unit and replace.



COLD CATHODE TUBE
390-6697-BL

3.9.5. COLD CATHODE TUBE INVERTER BOARD

If a fault exists after fitting a new Cold Cathode Tube, suspect failure of the Inverter Board, which is located on the rear of the lamp unit behind its respective Cold Cathode Tube.

1. Remove the lamp unit as detailed in the previous section.
2. Unfasten and disconnect the wiring connected to the Inverter Board.

Disconnect



3. Remove the Inverter Board bracket from the lamp unit by removing the four screws.



SCREW (4)
M4x8, w/fit & sprg wshr

4. Remove the Inverter Board from the bracket by removing the two screws, and fit the replacement board.

INVERTER BOARD 838-14010-01



SCREW (2)
M3x10, w/fit & sprg wshr

3.10. TROUBLESHOOTING



IMPORTANT!

- 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 over current.	First, remove the cause of over current and reinstate the circuit protection device to its original status. Then identify the cause of the fault on the item which caused the over current & fix.
No image on PTV screen and Fluorescent Lamp is not lit, although sound is emitted.	Poor/no connection between PTV and Front Cabinet.	Check connections. 3.6
The colour image on the screen is incorrect.	Incorrect monitor adjustment.	Make appropriate adjustments. See the monitor manual
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. 5.1.1
	Malfunctioning BD and Amp.	Perform Sound Test to check it. 5.1.2.4
	Connector connection is incorrect.	Check connector connection from Base to Speaker.
Foot Controller operation is unsatisfactory.	VR position deviated.	Adjust in the test mode. 5.1.4.5
	VR malfunctioning.	Replace the VR. 3.8.1
	GEAR engagement is not correct.	Adjust the engagement of GEAR. 3.8.1
Controller can't be unlocked.	Poor connection between Front and Rear Cabinets.	Fit connector securely.
Foot Controller is noisy in operation	Insufficient lubrication of, or foreign body in, mechanism.	Grease mechanism or remove any dirt or foreign body. 3.8.2.1

The FLUORESCENT LAMP does not light up.	FLUORESCENT LAMP needs replacement.	Replace. 3.9.1
	The connector is disconnected.	Check connections. 3.6
Poor operation of the Cold Cathode Tube.	Poor connection between Front and Rear Cabinets.	Check connections. 3.6
	Cold Cathode Tubes need replacement.	Replace. 3.9.4
	Failure of Inverter Board.	Replace. 3.9.5

3.11. SYSTEM ERROR MESSAGES

When the power is connected, or TEST MODE is exited, an error message may be displayed on the screen if a) a system related failure is detected, or b) a setting doesn't conform to the specifications of the product. If an error message is displayed, the game cannot be played.

ERROR 1:	Main Board's serial number is incorrect or unrecognisable. Ship Main Board to distributor for repair.
ERROR 2:	ROM Board's serial number is incorrect or unrecognisable. Ship ROM Board to distributor for repair.
ERROR 3:	Serial ID cannot be set on the Main Board. Reset the system by turning the power off and on. If error reappears, ship to distributor for repair.
ERROR 4:	Monitor type is set incorrectly. Set monitor type in SYSTEM ASSIGNMENTS.
ERROR 5:	Display mode is set incorrectly. Set display mode in SYSTEM ASSIGNMENTS.
ERROR 6:	Area code is not compatible between the Main Board and the game software saved in the ROM Board. Cannot be solved by resetting.
ERROR 7:	Cabinet type is set incorrectly. Set cabinet type in SYSTEM ASSIGNMENTS.
ERROR 8:	Jumper set incorrectly on ROM Board. Ship ROM Board to distributor for repair.

In normal operation, an error display is usually due to a setting error on the SYSTEM MENU screen. A system error may occur when a system related part (Game Board, etc.) is replaced with one used by other games.

3.12. GAME BOARD



WARNING!



CAUTION!



IMPORTANT!

- Turn off the mains power and remove the power cord before opening the machine.

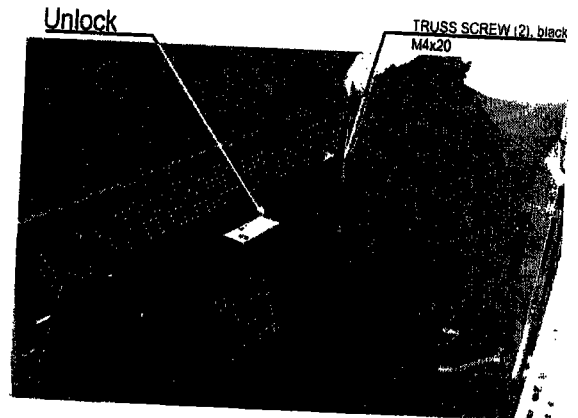
- The IC Board can be damaged by static electricity. Take anti static precautions (touching grounded metallic surfaces, etc.) before commencing work on the IC Board.

- 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.
- All work to be carried out by **QUALIFIED SERVICE PERSONNEL**. This board contains no user-serviceable parts.

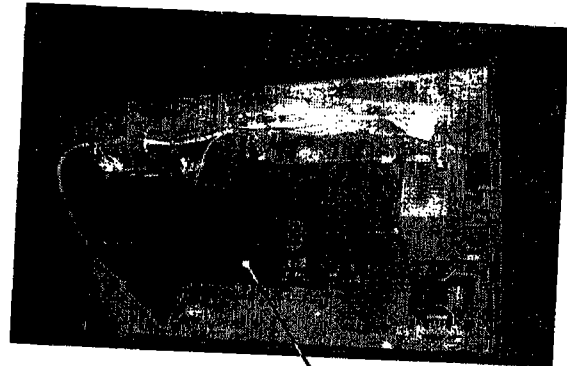
3.12.1. REMOVING THE GAME BOARD

The Game Board and other IC Boards are located on the back of the Front Cabinet.

1. Turn the power off.
2. Remove the two screws from the Back Door and unlock to access the Game Board.

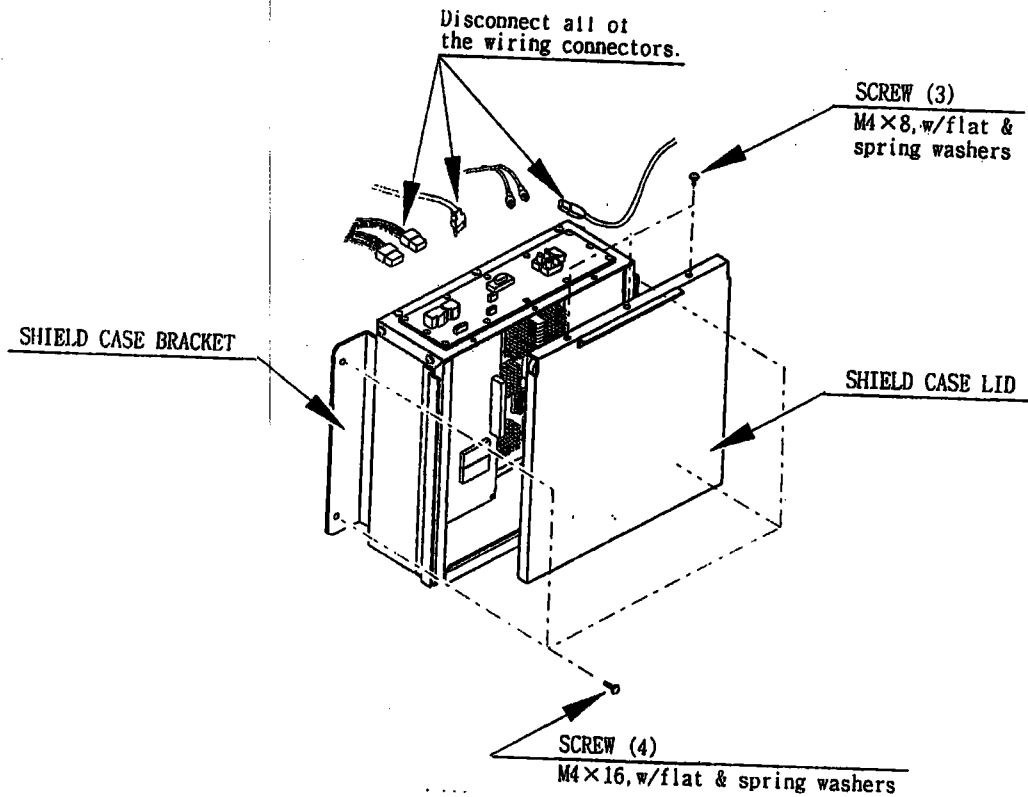


3. Remove the three screws securing the Shield Case Lid. Remove the Lid to access the Game Board.



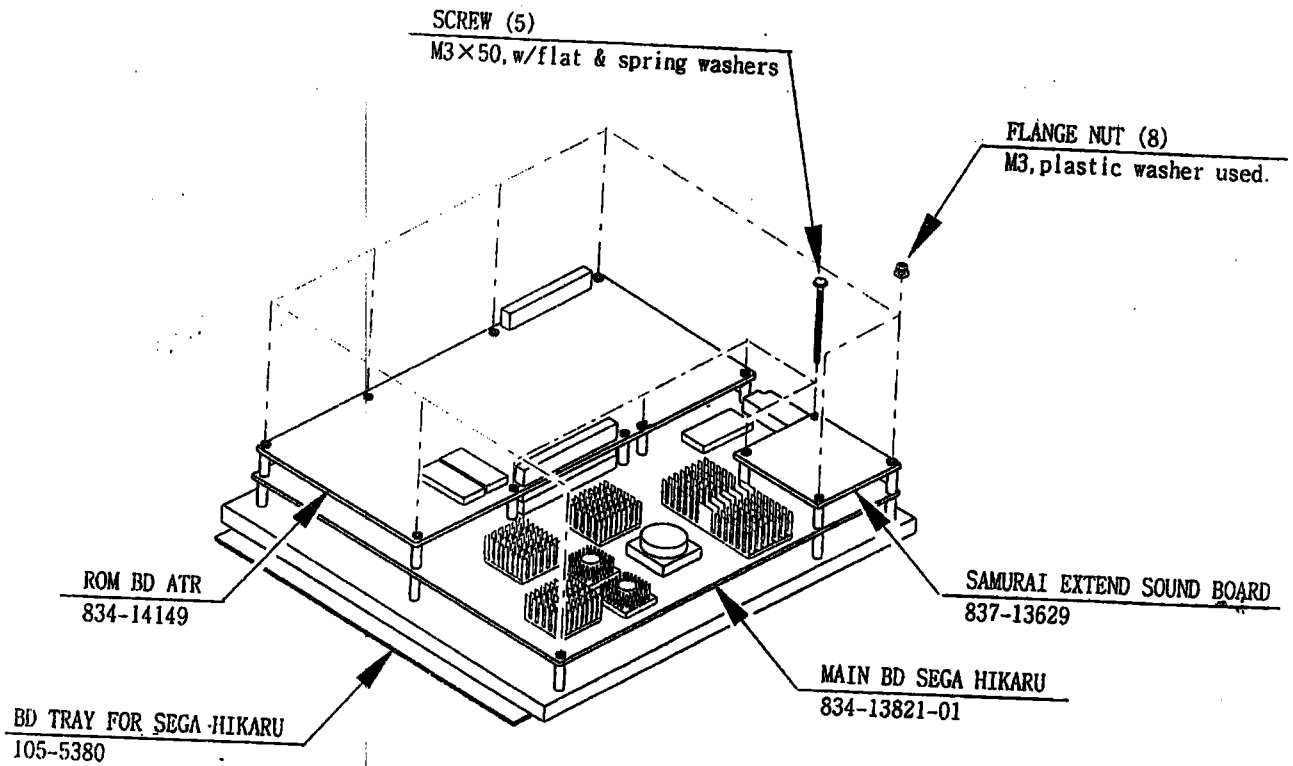
SHIELD CASE

4. Disconnect all connectors from the Filter Board of the Shield Case.
5. Remove the four screws securing the Shield Case to the wooden base. The Shield Case can be removed from the cabinet.
6. Remove the two Shield Case Brackets which are secured by two screws each, pack the Shield Case in the original packaging and return to the distributor from which this product was purchased, or your authorised service centre.



3.12.1.1.COMPOSITION OF THE GAME BOARD

GAME BOARD ATR (833-14150)



ROM BD	
JUMPER SETTINGS	
JP3	2-3
JP4	2-3
JP5	2-3
JP6	2-3
MAIN BD	
JUMPER SETTINGS	
JP4	1-2
JP5	1-2
JP6	1-2
JP7	1-2
JP8	2-3
JP9	2-3
JP10	1-2
JP11	2-3

3.13. 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 monthly 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.

- Periodic checks should only be carried out by **QUALIFIED SERVICE PERSONNEL.**

DESCRIPTION	WHAT TO CHECK	INTERVAL
CABINET	Adjuster contact with floor	Daily
SKATEBOARD	Check the VR value and kick sensor	Monthly
	Greasing of swing bearing	Monthly
	Greasing the Volume Control gears, crank and pinion gears.	Tri-monthly
	Inspect and clean around the Turntable (see next page).	Tri-monthly
MONITOR / PROJECTOR	Clean screen (do not use water jet).	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
COIN MECHANISM	Check SW (If Fitted)	Monthly

3.13.1. TURNTABLE – INSPECTION AND CLEANING

Every three months the Floor Boards should be removed from around the Turntable and any debris removed from the area. Clean by brushing or vacuuming dirt and dust from around the turntable.

1. Turn off the power.
2. Remove a total of eight M4x25 black and three M4x8 chrome truss screws. The Front and Rear Floor Boards can be removed to provide cleaning access under and around the turntable.
3. Reassemble in reverse order.



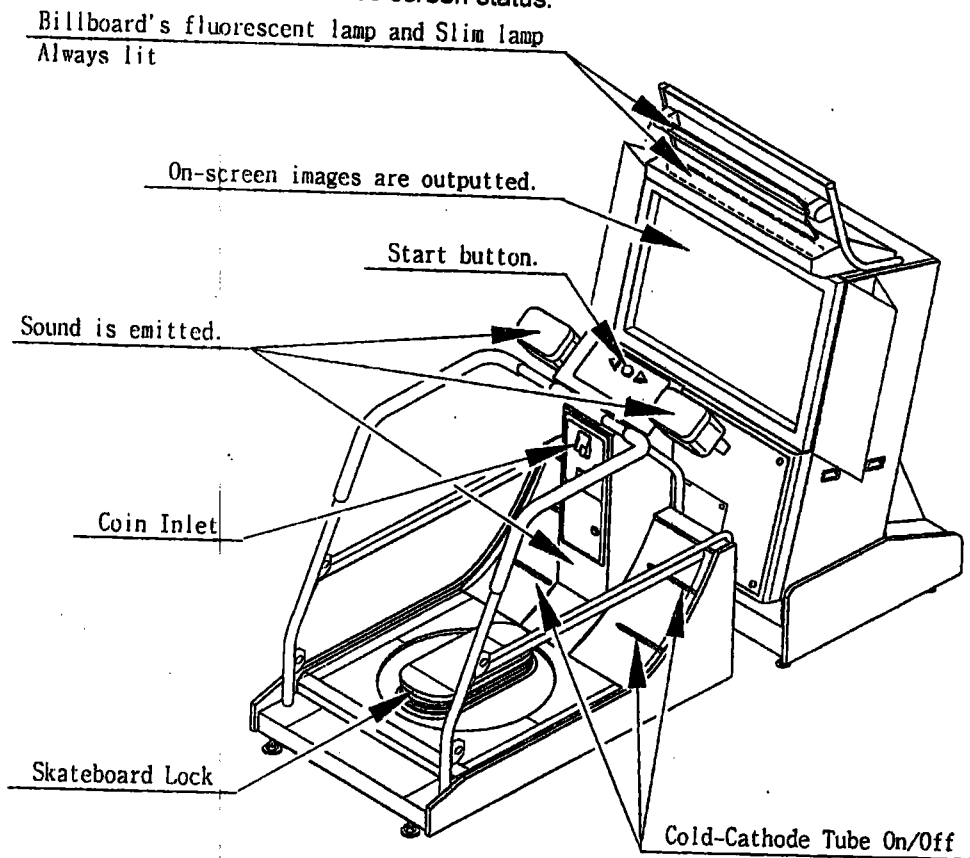
TRUSS SCREW (3)
M4x8, chrome

TRUSS SCREW (8 total). bk
M4x25, w/fit wshr

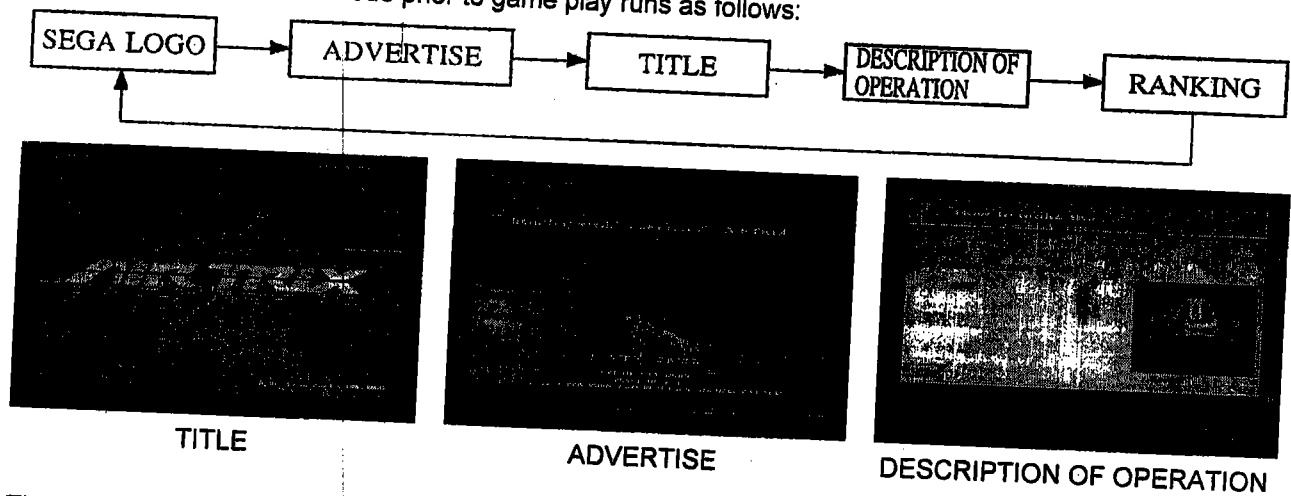
4. HOW TO PLAY

Refer to the following list to ascertain that the product is functioning correctly. If not, use this manual to rectify the fault before proceeding.

- While the machine is energised, the Billboard Fluorescent and Slim Lamp should be continuously lit.
- The Cold Cathode Tubes should flash depending of the Advertise screen status.
- The screen plays demonstration video images and score ranking data.
- Sounds are emitted from the left and right speakers and the super woofer in the bottom of the coin chute tower.
- Use TEST MODE to set the Advertise screen status.



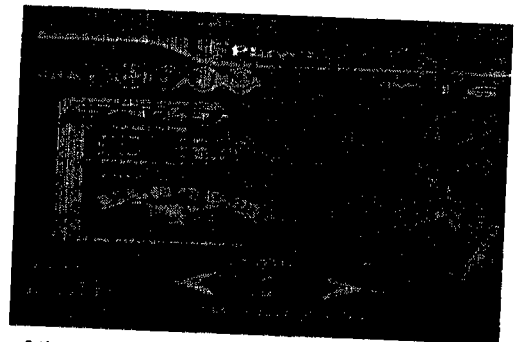
The on-screen Advertise Mode prior to game play runs as follows:



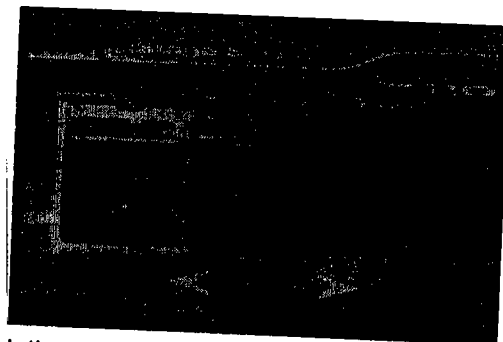
The Skateboard is unlocked just before the game starts. It will only turn left or right once money is inserted and the start button is pressed.

How to play:

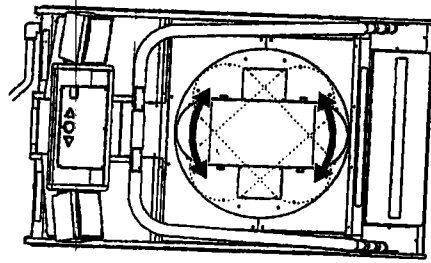
1. Get on the Skateboard.
2. When enough coins are inserted for one play, the Start button flashes. Pressing the Start button results in the Select Player screen appearing. The button stops flashing.
3. Select a player from the five available using the left/right select buttons. Confirm with the Start button. The numbers at top right indicate the remaining selection time. Each character performs differently in certain areas.



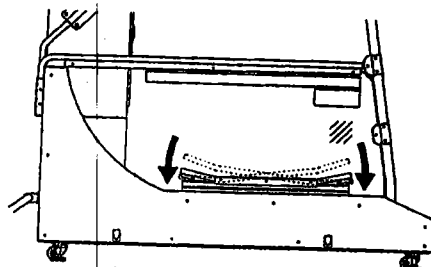
4. Next is Stage Select. Use the select buttons to pick one of the three stages. These stages are split over two modes: Tutorial and Score Attack. One stage is available in Tutorial mode, and two are available in Score Attack mode.
 - Tutorial Mode (Left)
Helps the player learn and practise three basic tricks.
 - Score Attack Mode (centre, right)
Allows the player to compete against the clock and earn coins for executing tricks.
5. There is a time limit for selection of stage shown at top right. If the time runs out the stage currently highlighted will be selected.



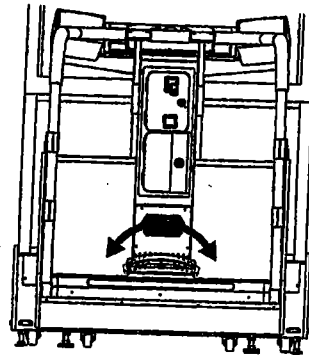
6. Once the stage is determined, the game starts. A warning; "Release the lock of the controller board" will appear before the Skateboard lock is released and can be swung left and right.



Spin (swing) Input

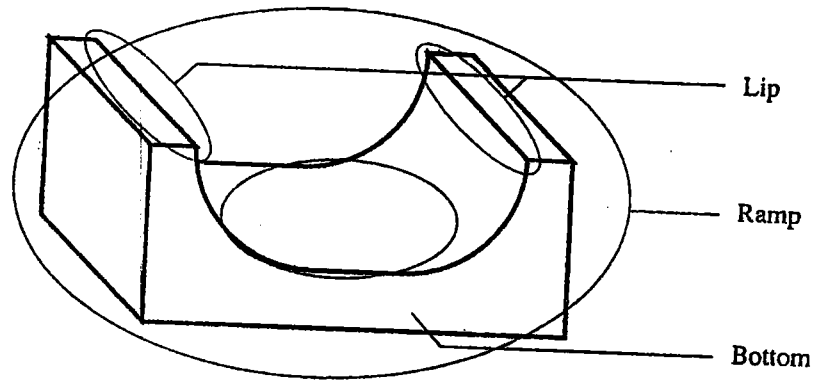


Backward and forward inputting

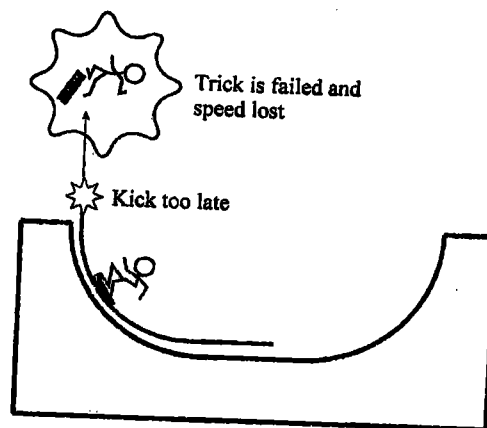
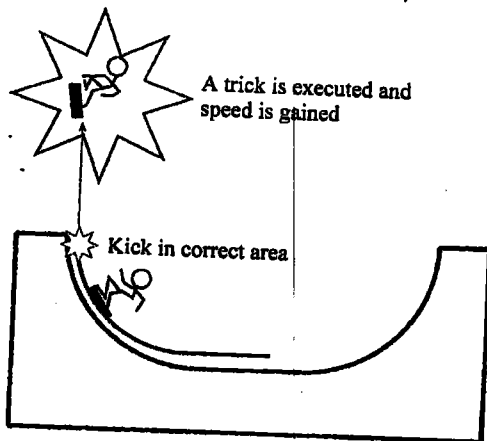


Curving (inclining) Input

Lean the board in the desired direction while in the bottom of the ramp or spin the board to sharpen the turn.



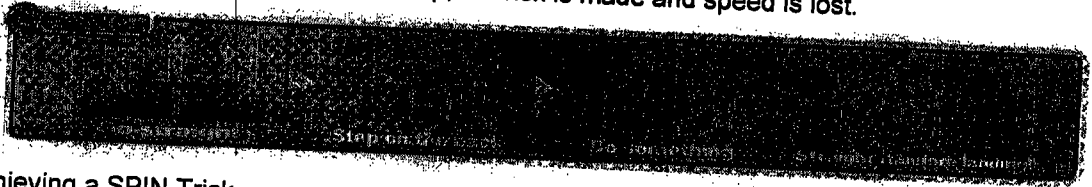
7. The aim is to get a high score by executing tricks in the air. Tricks are achieved by moving the Controller Board at the lip of the ramp.



Different tricks are achieved by kicking in different directions.

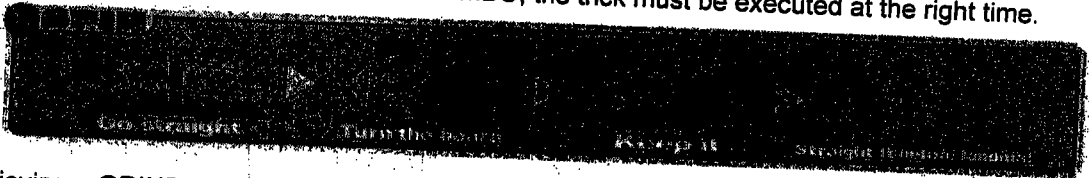
- **Achieving a COMBO Trick**

Kick the tail of the Skateboard just before the lip of the ramp. Once successful, add more kicks while airborne to make a COMBO trick. The key to making COMBO trick is to add just enough kicks for the duration of the air; too many and the trick is failed and speed will be lost (or the character will bail). If the tail is kicked outside of the area before the lip, no trick is made and speed is lost.



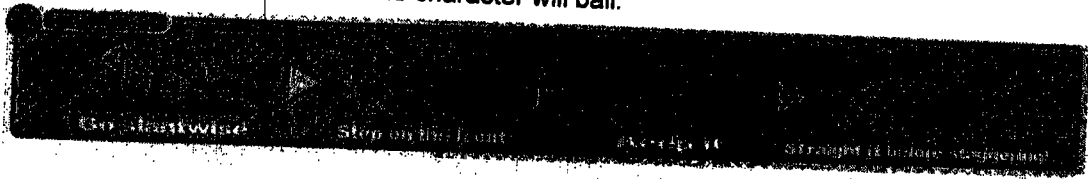
- **Achieving a SPIN Trick**

Spin and hold the board left or right just before the lip of the ramp. Once successful, the character will spin in the air as long as the position of board is held, but the board must be straightened before re-entering the ramp or the character will bail. As with the COMBO, the trick must be executed at the right time.

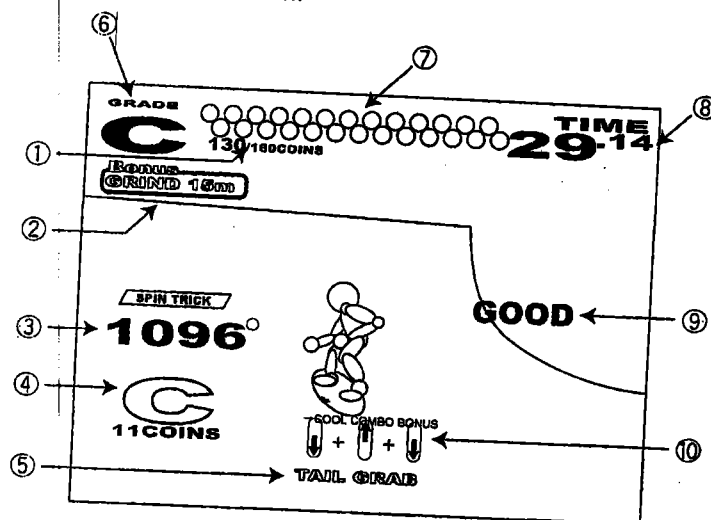


- **Achieving a GRIND**

To grind the lip, approach diagonally and kick the nose of the board just before the lip. If successful, the character will travel along the lip on the board's trucks (a grind). Moving the board while grinding results in variations of the trick, straighten the board to re-enter the ramp. Longer grinds get more points, but be careful not to run out of momentum as the character will bail.



8. During play the screen is laid out as shown:



1. Number of Coins Acquired

Displays the number of coins acquired, and the number required to achieve the next grade.

2. Bonus Title

Win bonus coins by making the trick displayed in this box. The trick varies each time the character grades up.

3. Trick

Displays the category and details of the trick achieved.

4. Evaluation of Trick

The system grades the trick achieved, and shows number of coins awarded for it.

5. Trick Name

Displays the name of the current trick.

6. Grade

Displays the current grade. This rises as coins are collected.

7. See 1.

8. Remaining Time

Until the end of the stage.

9. Kick Evaluation

Appears when kick timing is good.

10. Cool COMBO Bonus

Displays details of the COMBO trick in progress.

9. When the time expires, the game is over.

10. After the game ends, position the board pointing forwards to allow it to lock.

11. If a high score is achieved, the player will be prompted to enter three initials. Select letters by scrolling through them with the left/right select buttons, and confirm with the start button. On choosing three letters, select END.

12. According to the settings in TEST mode, a password will be displayed on Game Over (Score Attack Mode only). Record the password and submit it to the home page <http://www.hitmaker.co.jp/AIRTRIX> to appear in the World Rankings. Skip the Password Screen by pressing Start.

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:



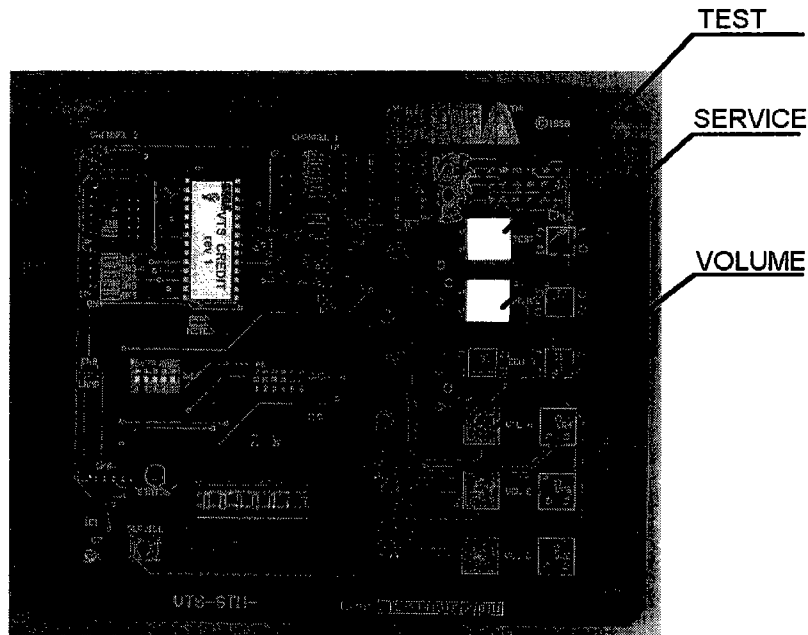
- Settings changed in TEST MODE are only effective if TEST MODE is exited correctly. If power is interrupted before exiting, any changes made will be ineffective.
- Executing BACKUP DATA CLEAR in the SYSTEM TESTMODE doesn't clear the BOOKKEEPING data in GAME TEST MODE.
- Entering TEST MODE clears any fractional number of coins less than one credit, and BONUS ADDER data.

ITEM	DESCRIPTION/REFERENCE	INTERVAL
INSTALLATION OF THE MACHINE	When the machine is installed perform the following checks: <ul style="list-style-type: none"> • Check to see that each setting is as per the standard settings input at the time of shipment. 3.6.6 • In the INPUT TEST mode, check each switch and VR. 5.1.4.2 • In the OUTPUT TEST mode, check each of the lamps. 5.1.4.3 • In the MEMORY TEST mode check all of the IC's on the IC BD. 5.1.3.8 	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 and IC's on the IC Board are tested. 5.1.3.8 	Monthly
PERIODIC CHECKS	Periodically perform the following <ul style="list-style-type: none"> • MEMORY TEST. 5.1.3.8 • Ascertain each setting. • In the INPUT TEST mode, test the control devices. 5.1.4.2 • In the OUTPUT TEST mode, check each of the lamps. 5.1.4.3 	Monthly
CONTROL SYSTEM	<ul style="list-style-type: none"> • In the INPUT TEST mode, check each switch and VR. 5.1.4.2 • Adjust or replace each switch and VR. 3.8.1 	Monthly
MONITOR	<ul style="list-style-type: none"> • In the CRT TEST mode, check to ensure the PTV is adjusted correctly. 5.1.2.5 • Clean screen (switch off machine and remove the plug). 	Monthly Weekly
IC BOARD	<ul style="list-style-type: none"> • MEMORY TEST. 5.1.2.2 • In the SOUND TEST mode, check the sound related ROMs. 5.1.2.4 	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. 5.1.4.6 	Monthly
COIN MECHANISM	<ul style="list-style-type: none"> • Check switch operation (if fitted) 	Monthly

5.1.1. VTS ASSEMBLY



- 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.

VOLUME FRONT (VOL A)
VOLUME WOOFER (VOL B)
VOL C

Adjusts the volume of the left and right speakers.
Adjusts the volume of the woofer.
Not used.

5.1.2. SYSTEM TEST MODE

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.

5.1.2.1. SYSTEM TEST MODE MENU

```
SYSTEM MENU
XXXXXXXXVERSION

RAM TEST
JVS TEST
SOUND TEST
C. R. T. TEST
SYSTEM ASSIGNMENTS
COIN ASSIGNMENTS
BOOKKEEPING
BACKUP DATA CLEAR
ROMBD TEST
CLOCK SETTING
GAME TEST MODE
> EXIT

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
```

Press the TEST BUTTON to bring up the screen shown to the left.

Press the SERVICE BUTTON to move downwards through the list. The current selection is shown by the arrow.

Press the TEST BUTTON to activate the selected test.

To finish TEST MODE, move the arrow to EXIT and press the TEST.

5.1.2.2. RAM TEST

```
RAM TEST

IC15 IC16 IC17S IC18S GOOD
IC22 IC23 IC24S IC25S GOOD
IC28 IC29S GOOD
IC41 GOOD
IC42 GOOD
IC44 IC45S IC46 IC47S GOOD
IC91S IC92S GOOD
IC98 GOOD

OPTIONAL SOUND BOARD:
IC2 GOOD

PRESS TEST BUTTON TO EXIT
```

The memory test mode is for automatically checking the on-board memory IC functioning. "GOOD" is displayed for normal IC's and "BAD" for abnormal IC's

- When the test is completed, if the results are as shown on the left then the Game Board is satisfactory.
- The test should take approximately thirty seconds to complete. If the test exceeds this time the board may have malfunctioned.
- After finishing the test press the TEST BUTTON or START BUTTON to exit.

5.1.2.3. JVS TEST

```

                JVS TEST
                INPUT TEST
                > EXIT

NODE           1/1
NAME           SEGA ENTERPRISES,LTD.;I/O BD JVS;
               837-13551 ;Ver1.00;98/10

CMD VER       1.1
JVS VER       2.0
COM VER       1.0
SWITCH        2PLAYERS 13BITS
COIN          2SLOTS
ANALOG        8CH
DRIVER OUT    6CH

                SELECT WITH SERVICE BUTTON
                AND
                PRESS TEST BUTTON

```

- In this test, functioning of the I/O Board connected to the Game Board is displayed, and INPUT TEST can be performed. Select EXIT to return to the MENU screen, or select INPUT TEST to display the second screen.

```

                JVS TEST
                > DISPLAY CONFIG
                EXIT

NODE           1/1
SWITCH
  SYSTEM -----
  PLAYER1 -----
  PLAYER2 -----
COIN
  SLOT1 0000  SLOT2 8000
ANALOG
  CH1 6300 CH2 5A00 CH3 7D00 CH4 8100
  CH5 1F00 CH6 1D00 CH7 1F00 CH8 2000

                SELECT WITH SERVICE BUTTON
                AND
                PRESS TEST BUTTON

```

When an INPUT is made, the switch value changes from _ to 1.

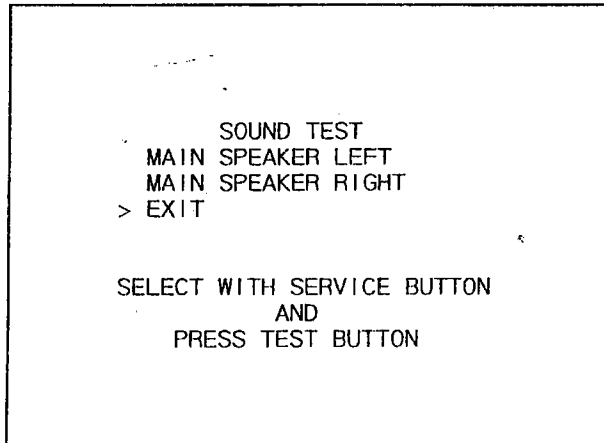
Select EXIT to return to the MENU screen.

5.1.2.4. SOUND TEST

Select the sound test to check the status of the amplifiers, sound boards and speakers.

Press the SERVICE button or view change button to move the arrow to the desired test item.

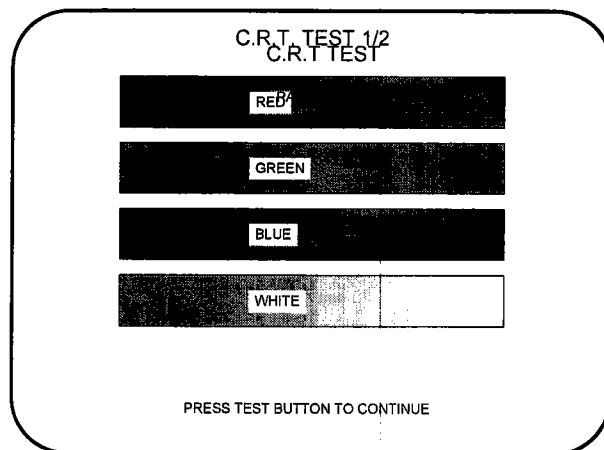
Press TEST button to output the sound.



- Select the sound source with SERVICE.
- On pressing TEST, the test sound is emitted from the selected source.

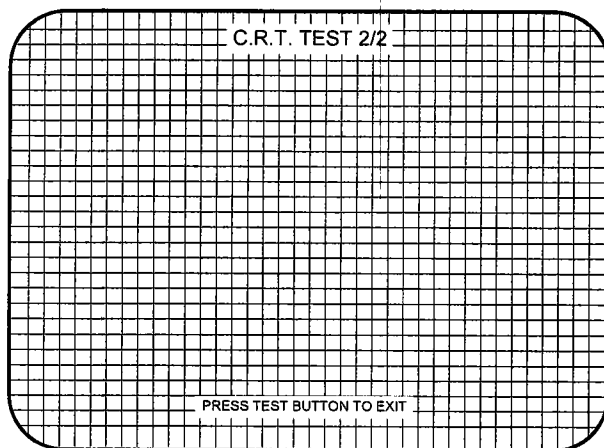
Select EXIT to return to MENU screen.

5.1.2.5. C.R.T TEST



Selecting CRT test allows the projector adjustment to be checked for colour and distortion.

Press the test or start button to have the second CRT test screen appear.



5.1.3. SYSTEM ASSIGNMENTS

Allows system options to be set. Select required setting with **SERVICE** button, confirm with **TEST** button. Default settings are indicated in parentheses.

SYSTEM ASSIGNMENTS	
CABINET TYPE	1PLAYER
ADVERTISE SOUND	ON
MONITOR TYPE	HORIZONTAL
DISPLAY MODE	AUTOSCAN
SERVICE TYPE	COMMON
COMMUNICATION MODE	MASTER
> EXIT	

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

- **CABINET TYPE** specifies Control Panel and number of Coin Chutes. The number of players displayed in **BOOKKEEPING** varies in accordance with the value displayed here. (**1PLAYER**)
- **ADVERTISE SOUND** allows the sound emission to be turned (**ON**) or OFF during **ADVERTISE MODE**.
- **MONITOR TYPE** changes the orientation of the image on the screen (**HORIZONTAL**)
- **DISPLAY MODE** sets the monitor's display frequency. If a setting other than (**AUTOSCAN**) is selected and **EXIT** is chosen, the display frequency is changed to the selected setting.
- **SERVICE TYPE** sets the functioning of the **SERVICE** button, should several **SERVICE** buttons exist.
INDIVIDUAL: Service credit is applied to the machine on which the **SERVICE** button is pressed.
(COMMON): Service credit is applied to all machines when **SERVICE** button is pressed.

5.1.3.1.COIN ASSIGNMENTS

```
COIN ASSIGNMENTS
COIN CHUTE TYPE      COMMON
COIN/CREDIT SETTING #1
COIN CHUTE #1
    1COIN 1CREDIT

COIN CHUTE #2
    1COIN 1CREDIT

MANUAL SETTING
SEQUENCE SETTING
> EXIT

SELECT WITH SERVICE BUTTON
    AND
    PRESS TEST BUTTON
```

Select the coin assignments mode to set the coin to credit ratios.

This can be any of the pre-set values or can be done manually.

5.1.3.2.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	

5.1.3.3.COIN/CREDIT SETTING (COIN CHUTE INDIVIDUAL TYPE)

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

5.1.3.4.MANUAL SETTING

```

COIN ASSIGNMENTS
MANUAL SETTING

COIN TO CREDIT          1
BONUS ADDER             0
COIN CHUTE #1 MULTIPLIER
1 COINCOUNT AS 1COIN
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 COINCOUNT AS 1COIN
COIN   1  2  3  4  5  6  7  8  9
CREDIT 1  2  3  4  5  6  7  8  9

SEQUENCE SETTING
> EXIT

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
    
```

Select manual setting to manually set the coin to credit ratios.

The available combinations are detailed below.

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

5.1.3.5. SEQUENCE SETTING

Selecting SEQUENCE SETTING allows the number of credits required to start the game to be set. Each sequence can be set between 1 and 5. Select EXIT to return to the first screen.

```
COIN ASSIGNMENTS
SEQUENCE SETTING

SEQUENCE1 *CREDIT
SEQUENCE2 *CREDIT
SEQUENCE3 *CREDIT
SEQUENCE4 *CREDIT
SEQUENCE5 *CREDIT
SEQUENCE6 *CREDIT
SEQUENCE7 *CREDIT
SEQUENCE8 *CREDIT
> EXIT

[XXXXXXXXXXXXXXXXXX]
[ SEGA ENTERPRISES, LTD. ]
DESCRIPTION OF SEQUENCE
SEQ1 TO START
SEQ2 TO CONTINUE
SEQ3 TO MAKE CARD
SEQ4 NOT USED
SEQ5 NOT USED
SEQ6 NOT USED
SEQ7 NOT USED
SEQ8 NOT USED

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
```

5.1.3.6. BOOKKEEPING

```
BOOKKEEPING PAGE#1

TOTAL TIME      55H27M13S
COIN1           16 SERVICE1      5
COIN2           4 SERVICE2      0
CREDIT          10

TOTAL COIN      20
COIN CREDIT     10
SERVICE CREDIT 5
TOTAL CREDIT    15

PRESS SERVICE BUTTON TO ANOTHER PAGE
PRESS TEST BUTTON TO EXIT
```

```
BOOKKEEPING PAGE#2

PLAYER1
SE01         1
SE02         0
SE03         1
SE04         0
SE05         0
SE06         0
SE07         0
SE08         0

PRESS SERVICE BUTTON TO ANOTHER PAGE
PRESS TEST BUTTON TO EXIT
```

This mode consists of 2 pages that allow the data relating to credit and game play time to be checked.

In page 1 press SERVICE to proceed to page 2, in page 2 press TEST to return to the test menu.

- Total time is displayed as XXH XXM XXS and no date will be displayed after exceeding 24 hours.
- The displays for number of coin and number of service vary depending on the CABINET TYPE set in SYSTEM ASSIGNMENTS. Number of credit displays 1 if COIN CHUTE TYPE is set to COMMON in COIN ASSIGNMENTS. If COIN CHUTE TYPE is set to INDIVIDUAL, the applicable number in CABINET TYPE setting will be displayed.
- On the second screen, each sequence displays the frequency of functioning.

5.1.3.7. BACKUP RAM CLEAR

```
BACKUP RAM CLEAR

YES (CLEAR)
> NO (CANCEL)

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON
```

Clears the contents of bookkeeping. When clearing bring the arrow to "YES (CLEAR)" and press the test button. When the data has been cleared "COMPLETED" will be displayed. Bring the arrow to "NO (CANCEL)" and press the test button to return to the menu mode.

Note that this does not clear the contents of BOOKKEEPING in GAME TEST MODE. For this, use the BACKUP DATA CLEAR in GAME TEST MODE.

5.1.3.8.ROM BD TEST

In this test, Game Board ROM is checked. If GOOD is displayed, it is satisfactory. The IC number, TYPE, BYTE and WORD refer to the checksum of each unit. Press TEST to exit.

ROMBD TEST
[XXXXXXXXXXXX]
[XXXXXXXXXXXXXXXXXXXXXXXXXXXX]

NO.	TYPE	RESULT	BYTE	WORD
IC29	32M	----	xxxx	xxxx
IC30	32M	----	xxxx	xxxx
IC31	128M	GOOD	xxxx	xxxx
....
IC50	128M	GOOD	xxxx	xxxx

PRESS TEST BUTTON TO EXIT

5.1.3.9. CLOCK SETTING

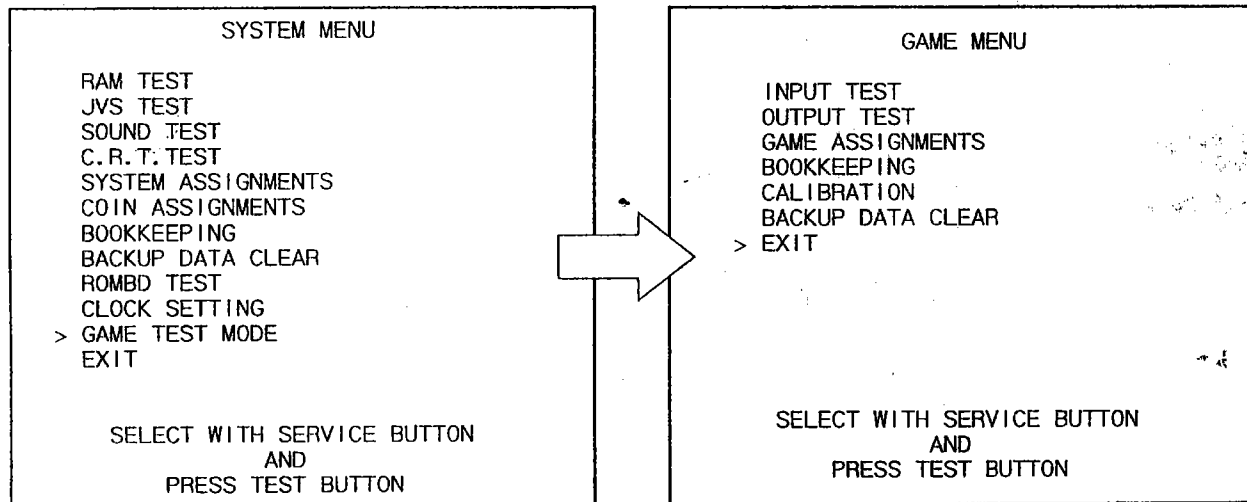
YEAR, MONTH, DAY, HOUR and MINUTE are set for SEGA HIKARU BOARD. Select the desired item with SERVICE button and press TEST to increase the value. Select EXIT to return to MENU mode.

CLOCK SETTING					
2000	7/ 7	7: 7	7	FRI	
	YEAR	MONTH	DAY	HOUR	MINUTE
				SECOND	
				-> EXIT	
				CANCEL	
				2000	7/ 7 7: 7 ** FRI
SELECT WITH SERVICE BUTTON					
AND					
PRESS TEST BUTTON					

5.1.4. GAME TEST MODE





Use GAME TEST MODE for settings pertaining to SEGA HIKARU BOARD.

5.1.4.1. GAME MENU



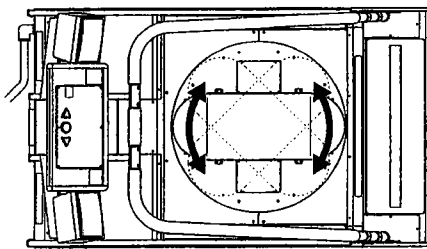
Select items with the SERVICE (or START on the CONTROL PANEL) button and press TEST to confirm.
Select EXIT to return to the SYSTEM TEST MENU.

5.1.4.2.INPUT TEST

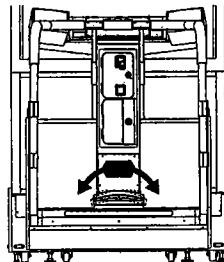
INPUT TEST	
NODE	1/1
BUTTON	
START	OFF
LEFT	OFF
RIGHT	OFF
UP	OFF
DOWN	OFF
SERVICE	OFF
TEST	OFF
VOLUME	
YAW	80
LEFT	
RIGHT	
ROLL	80
LEFT	
RIGHT	
PRESS TEST AND SERVICE BUTTON TO EXIT	

This test performs checks on each input, and should be carried out regularly to ensure correct operation of each input. Making an input results in the display changing to ON, while operating the YAW and ROLL devices results in the corresponding value changing on the screen. Press TEST and SERVICE button simultaneously to EXIT.

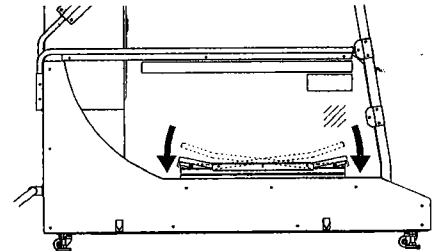
YAW and ROLL are analogue inputs that detect the left/right swing and tilt of the skateboard respectively. UP and DOWN inputs are switches that detect kicking of the nose and tail of the skateboard.



YAW



ROLL



UP, DOWN

When the Volume is centred (i.e. the Skateboard is level and points forwards), the Volume value is set to $80H \pm 08$, and if operating the Skateboard gives a corresponding variation of the Volume value, then play will be satisfactory.

If the Volume value deviates greatly from 80 ± 08 or doesn't vary in correspondence with the operation of the Skateboard, then play will be unsatisfactory and may result in damage to the Volume. Calibrate the Volume as detailed later in this chapter, adjust the gear engagement, or replace the Volume (section 3.8.1).

5.1.4.3.OUTPUT TEST



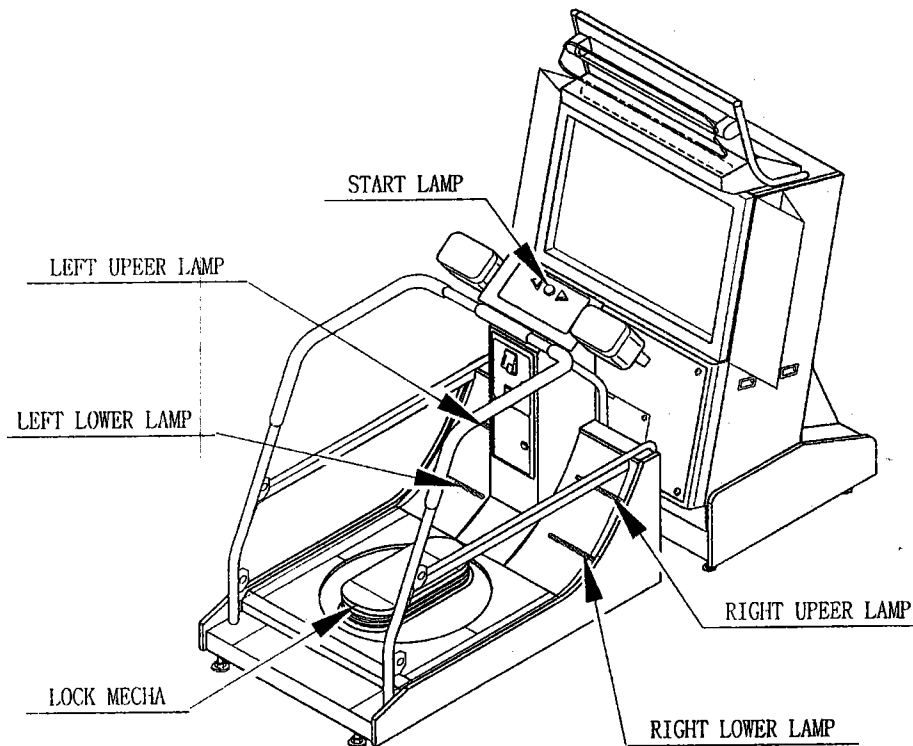
CAUTION!

- Use care as the Skateboard is unlocked during this test. Entering this mode with a person on the Skateboard may result in injury.

OUTPUT TEST	
LEFT UPEER LAMP	OFF
LEFT LOWER LAMP	OFF
RIGHT UPEER LAMP	OFF
RIGHT LOWER LAMP	OFF
START LAMP	OFF
LOCK MECHA	OFF
> EXIT	

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

Operation of each output unit can be checked. Select an item with the SERVICE button, and press the TEST button. The corresponding output should operate (ie the lamp illuminates or the Skateboard locks). Press TEST button to exit.



5.1.4.4.GAME ASSIGNMENTS

Use this mode to configure the game. Select the desired item with SERVICE button and confirm with TEST button. Select EXIT to return to GAME TEST MENU.

GAME ASSIGNMENTS	
STAGE SELECT	TUTORIAL FIRST
WEB RANKING	ON
LANGUAGE	ENGLISH
> EXIT	

SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

- STAGE SELECT: Select which option is highlighted when the STAGE SELECT SCREEN is displayed. Select from SCORE ATTACK FIRST or TUTORIAL FIRST.
- WEB RANKING:
 - ON: The URL of the home page is displayed during advertising, or the password for the home page is displayed on game over.
 - OFF: Neither the URL nor the password is displayed.
- LANGUAGE: Select from FRANÇOIS, ESPAÑOL, ITALIANO, and ENGLISH.

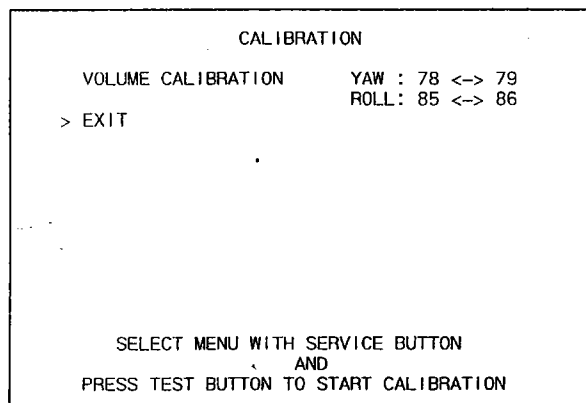
5.1.4.5.CALIBRATION



- Use care as the Skateboard is unlocked during this test. Entering this mode with a person on the Skateboard may result in injury.

- When the Volume is adjusted or replaced, be sure to set the Volume value using the CALIBRATION mode.

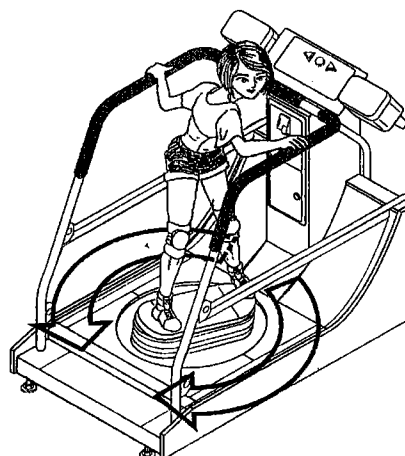
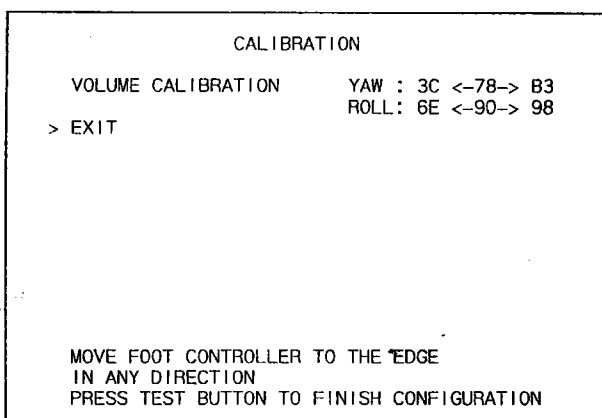
Selecting CALIBRATION from the menu displays the following screen. The sensitivity of the YAW and ROLL operations of the Skateboard can be set in this mode.



How to set Volume:

1. Use SERVICE to select VOLUME CALIBRATION on the screen above. The screen changes to the one below.
2. Standing on the Skateboard, set the minimum and maximum values of the Volume control by operating the Skateboard over the range of its YAW (left/right swing) and ROLL (left/right tilt) directions. If a large input width is set, the Skateboard will be difficult to turn in the game, and vice-versa.
3. Press SERVICE to exit VOLUME CALIBRATION.
4. Select EXIT to return to the Menu Screen.

If the Volume Control value is not set to 80H ± 08 when the Skateboard has no swing or tilt applied, the Volume Control may need adjusting or replacing. See Section 3.8.1.



5.1.4.6. BOOKKEEPING

The BOOKKEEPING screens show operation data of game play time, etc. Press the TEST button to return to the GAME MENU screen.

BOOKKEEPING	
NUMBER OF GAME	0
TUTORIAL	0
SET-A	0
SET-B	0
PLAY TIME	0H 0M 0S
SHOTEST TIME	0M 0S
LONGEST TIME	0M 0S
AVERAGE TIME	0M 0S
CHARACTER COUNT	
JAKE	0
SPIDEY	0
KYATIE	0
LINDA	0
TONY	0
PRESS TEST BUTTON TO EXIT	

- NUMBER OF GAMES: Total number of plays.
- TUTORIAL: Number of plays of the tutorial stage.
- SET A/SET B: Number of plays of A and B stage.
- PLAY TIME: Total play time.
- CHARACTER COUNT: Number of times each character has been selected.

5.1.4.7. BACKUP DATA CLEAR

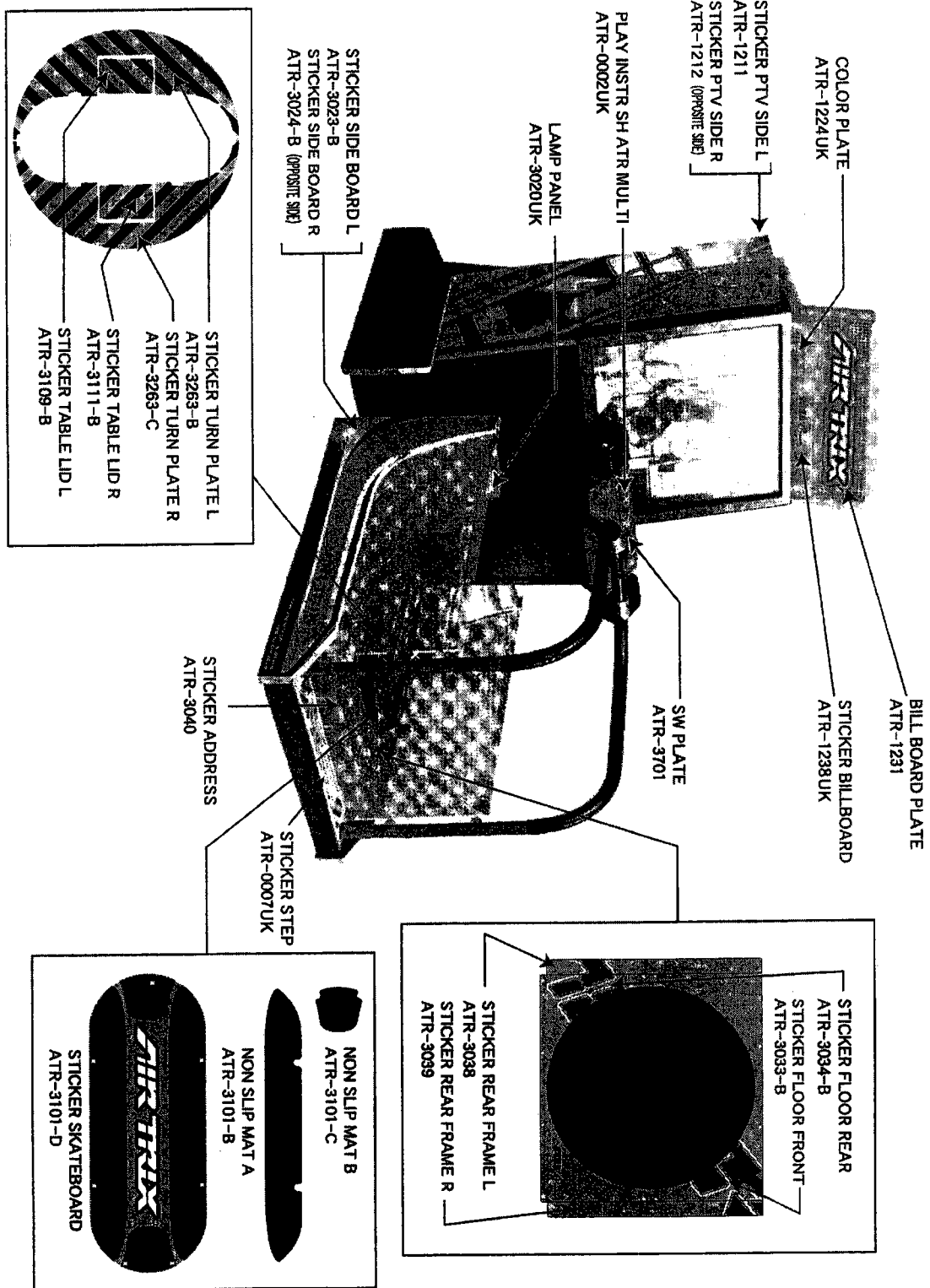
BACKUP DATA CLEAR
YES (CLEAR)
> NO (CANCEL)
SELECT WITH SERVICE BUTTON
AND
PRESS TEST BUTTON

To clear the contents of BOOKKEEPING and to initialise the high-score, select YES with the SERVICE button and press the TEST button. "COMPLETED" is displayed when the data has been cleared.

Only the bookkeeping data from the GAME TEST MODE, not the SYSTEM MENU, will be cleared.

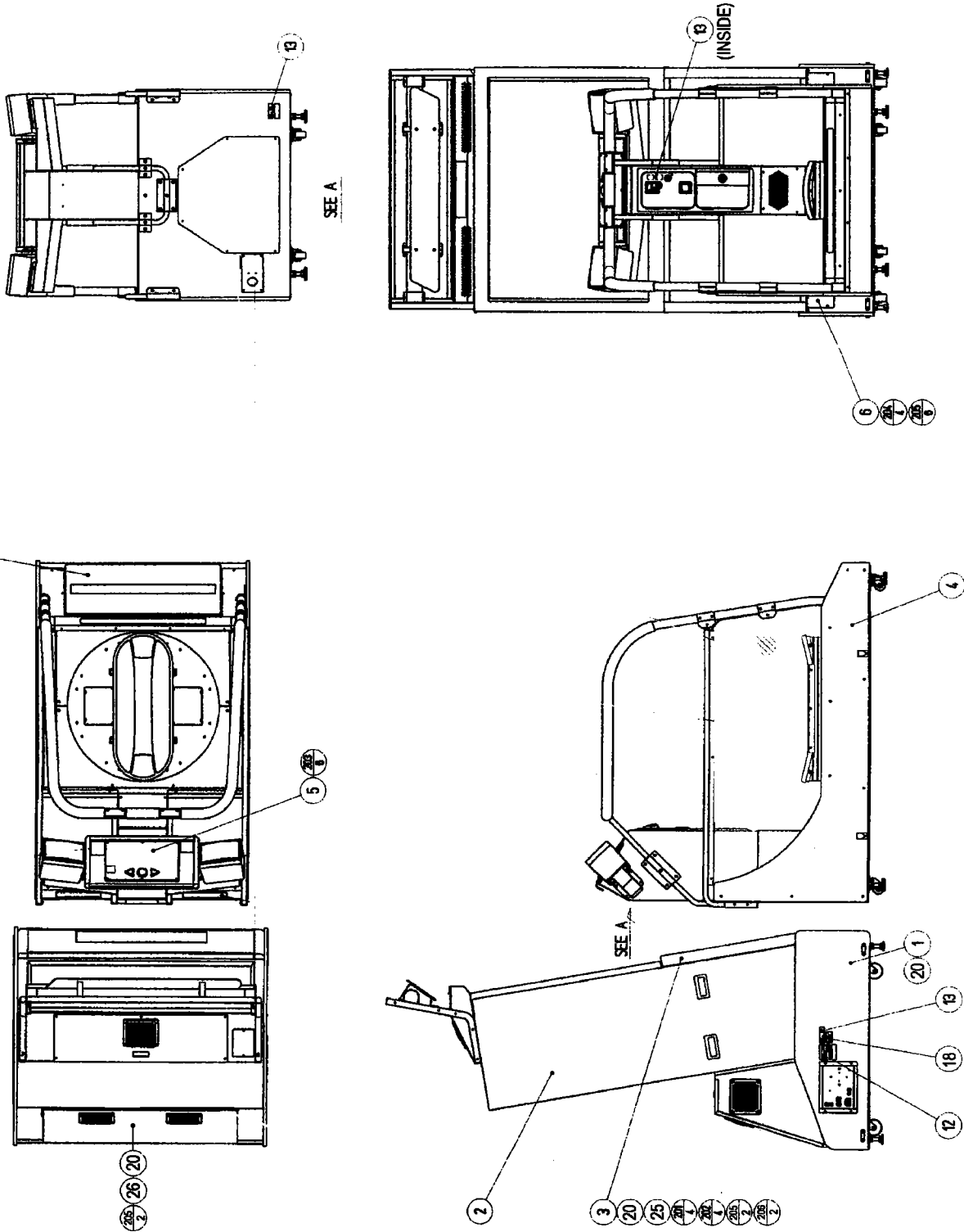
To exit this screen without clearing data, select NO with the SERVICE button and press the TEST button.

6. DESIGN RELATED PARTS



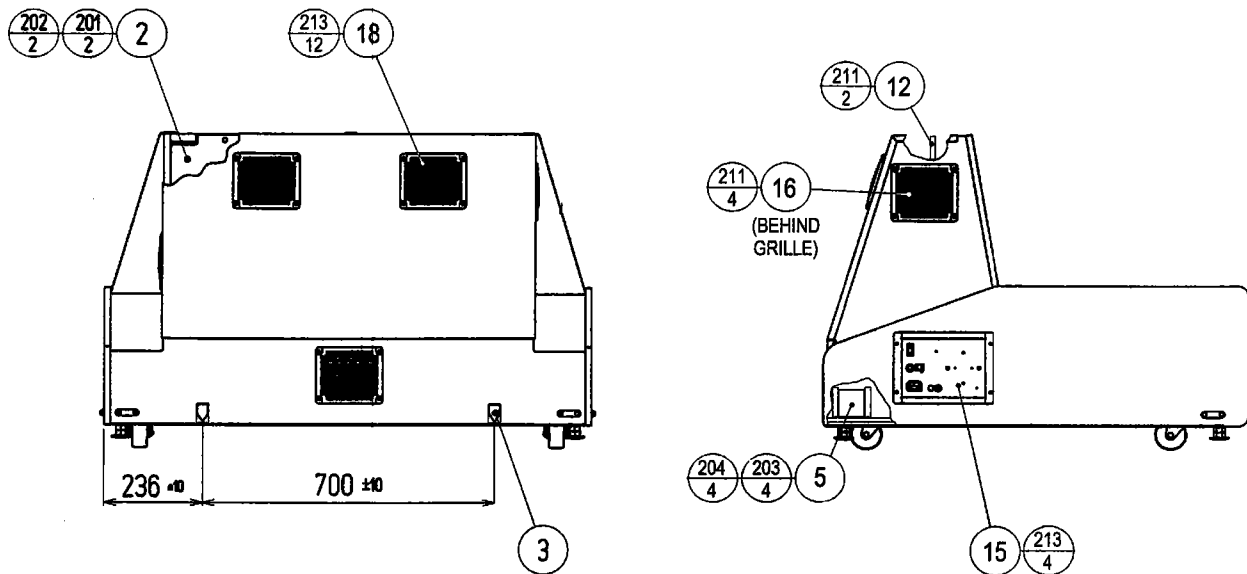
7. PARTS LIST

7.1. ATR-0000UK TOP ASSY AIR TRIX DX



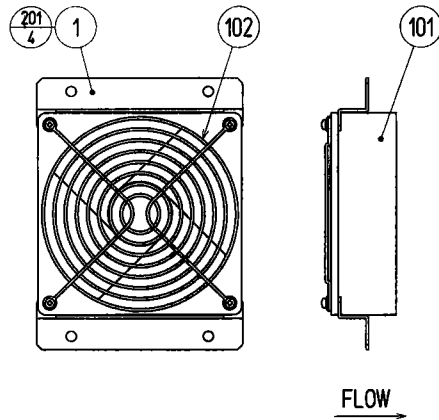
Indent #	Part No.	Description	Component Ref	Qty/assy
1	ATR-1000UK	ASSY FRONT CABI		1
2	ATR-1200UK	ASSY PTV		1
3	ATR-1300UK	ASSY FRONT PANEL		1
4	ATR-3000UK	ASSY REAR CABI		1
5	ATR-3700	ASSY SW PANEL		1
6	ATR-0001	HOLE LID		2
8	ATR-INST-DX	ASSY INST KIT AIR TRIX D		1
12	421-7987-ATR-D	STICKER ELEC SPEC ATR DX	NEXT TO AC UNIT	1
13	421-7988-91UK	STICKER SERIAL NUMBER UK	AC UNIT, INSIDE CCT, REAR CABI	3
15	SGM-4306	POLY COVER 1100X1200X100		1
16	SGM-4469	POLY COVER 1000X1700 X 1		1
18	LB1046	LABEL TESTED FOR ELEC. S	NEXT TO AC UNIT	1
20	LB1102	STICKER DANGEROUS VOLTAG	(25)-1, (26)-1, INSIDE CABI	3
21	PK0275	PALLET ATR FRONT CABI		1
22	PK0276	SLEEVE ATR FRONT CABI		1
23	PK0277	PALLET ATR REAR CABI		1
24	PK0278	SLEEVE ATR REAR CABI		1
25	ATR-1302UK	FRONT LID		1
26	ATR-1070UK	ASSY BACK DOOR		1
29	ATR-0007UK	STICKER STEP		1
201	000-T00520-0B	M5X20 MSCR TH BLK	(3)-4	4
202	068-552016-0B	M5 WSHR 20OD FLT BLK	(3)-4	4
203	000-T00410-0C	M4X10 MSCR TH CRM	(5)-6	6
204	000-P00412-WB	M4X12 MSCR PAN W/FS BLK	(6)-4	4
205	000-T00420-0B	M4X20 MSCR TH BLK	(6)-6,(25)-2,(26)-2	10
206	068-441616-0B	M4 WSHR 16OD FLT BLK	(25)-2	2
207	050-F00400	M4 NUT FLG SER PAS	(26E)-1	1

7.2. ATR-1000UK ASSY FRONT CABI



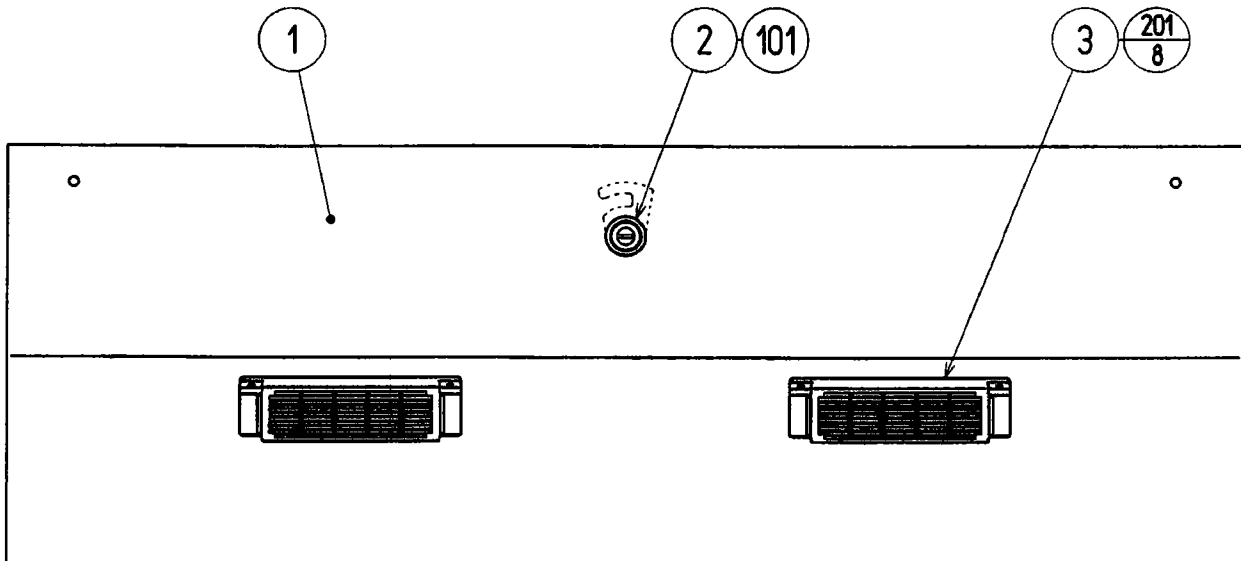
Indent #	Part No.	Description	Component Ref	Qty/assy
2	ATR-4000UK	ASSY MAIN BD		1
3	421-7020UK	STICKER CAUTION FORK	ON WOODEN CABI @ BACK	2
5	ATR-4100UK	ASSY XFMR ATR		1
11	ATR-1002UK	FRONT CABI		1
12	ASK-1152	LOCK BRKT		1
15	HOD-1020UK	ASSY AC UNIT UK		1
16	ATR-1060	ASSY FAN UNIT		1
18	253-5460-01	AIR VENT BLACK		3
101	280-A00964-WX	ROUTER TWIST D09 SO6.4 W		6
102	280-A01264-WX	ROUTER TWIST D12 SO6.4 W		9
103	280-A02064-WX	ROUTER TWIST D20 SO6.4 W		8
201	000-P00530-S	M5X30 MSCR PAN W/S PAS	(2)-2	2
202	068-552016	M5 W\$HR 20OD FLT PAS	(2)-2	2
203	030-000630-S	M6X30 BLT W/S PAS	(5)-4	4
204	068-652016	M6 WSHR 20OD FLT PAS	(5)-4	4
205	050-F00400	M4 NUT FLG SER PAS	BACK DOOR EARTH STUD	1
211	000-P00416-W	M4X16 MSCR PAN W/FS PAS	(12)-2,(16)-4	6
213	000-T00416-0B	M4X16 MSCR TH BLK	(15)-4,(18)-12	16
301	600-7009-2500	ASSY RGB CA D-SUB 15P 25		1
302	ATR-60024UK	WIRE HARN EXT COIN FRONT		1
303	ATR-60025	WIRE HARN EXT INTERFACE		1
304	ATR-60026	WIRE HARN EXT BRAKE FRON		1
305	ATR-60027	WIRE HARN CONT PNL FRONT		1
306	ATR-60028	WIRE HARN LAMP FRONT		1
307	ATR-60022UK	WIRE HARN EXT AC		1

7.3. ATR-1060 ASSY FAN UNIT



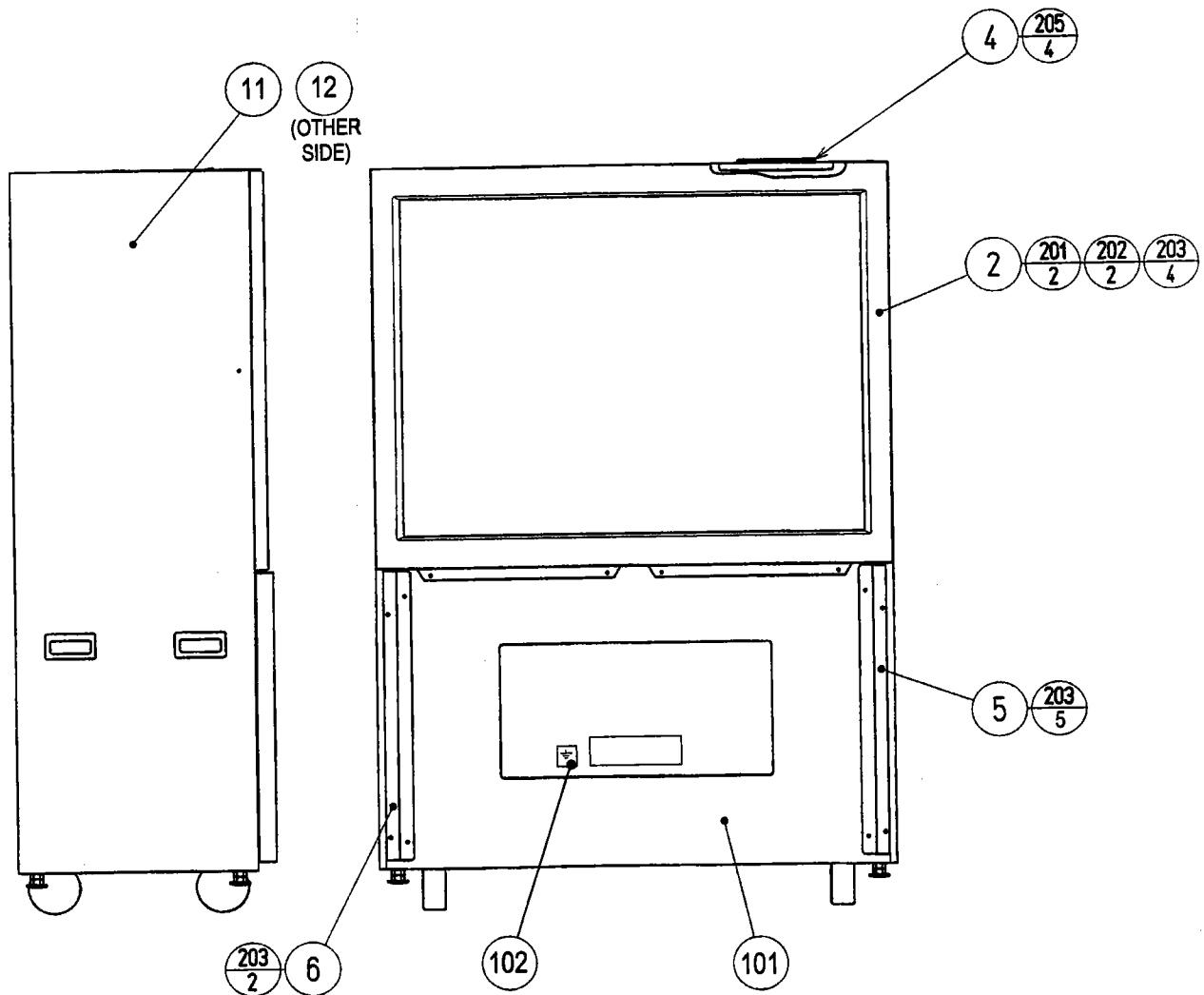
Indent #	Part No.	Description	Component Ref	Qty/assy
1	ATR-1061	FAN BRKT		2
101	260-0011-02	AXIAL FLOW FAN AC100V 50		1
102	FN1012	MESH GUARD METAL 120mm F		1
201	000-P00312-W	M3X12 MSCR PAN W/FS PAS	(1)-4	4

7.4. ATR-1070UK ASSY BACK DOOR



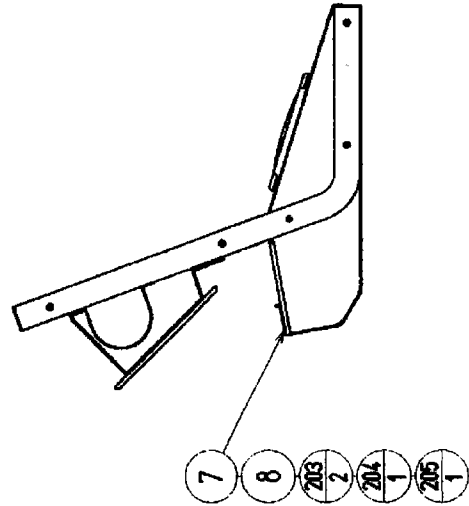
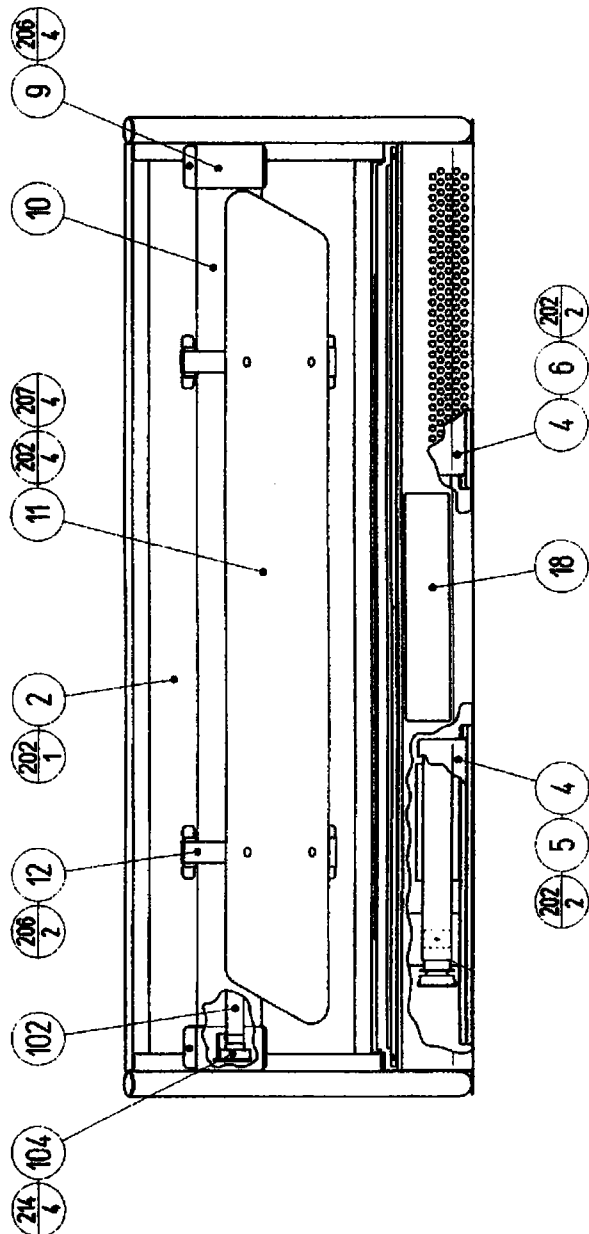
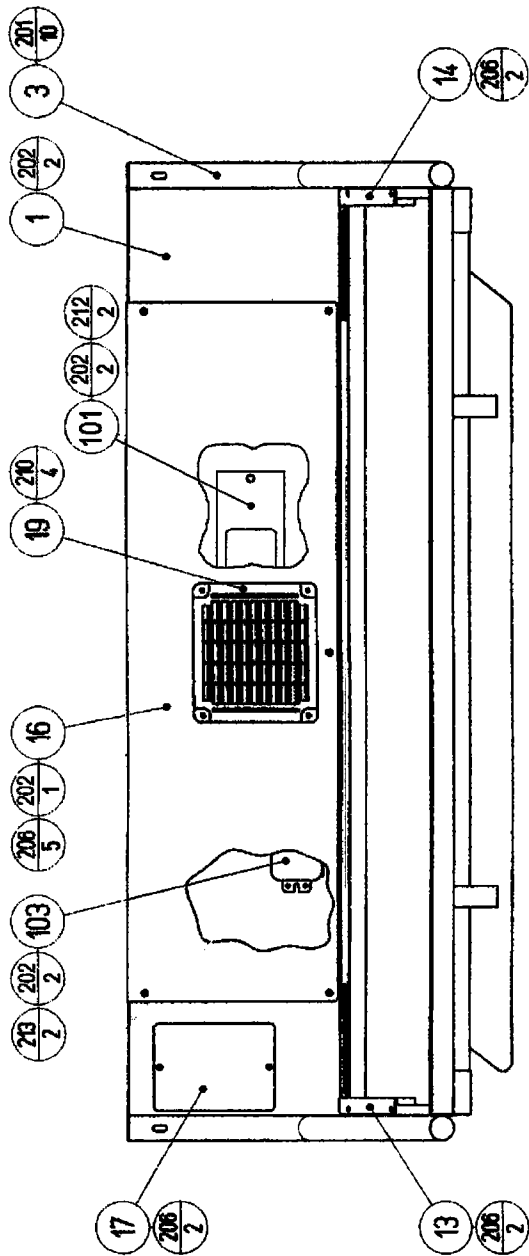
Indent #	Part No.	Description	Component Ref	Qty/assy
1	ATR-1071UK	BACK DOOR		1
2	TH1015UK	LOCKING TONGUE UK		1
3	253-5460-01	AIR VENT BLACK		2
101	220-5575UK	LOCK		1
201	000-T00408-0B	M4X8 MSCR TH BLK	(3)-8	8

7.5. ATR-1200UK ASSY PTV



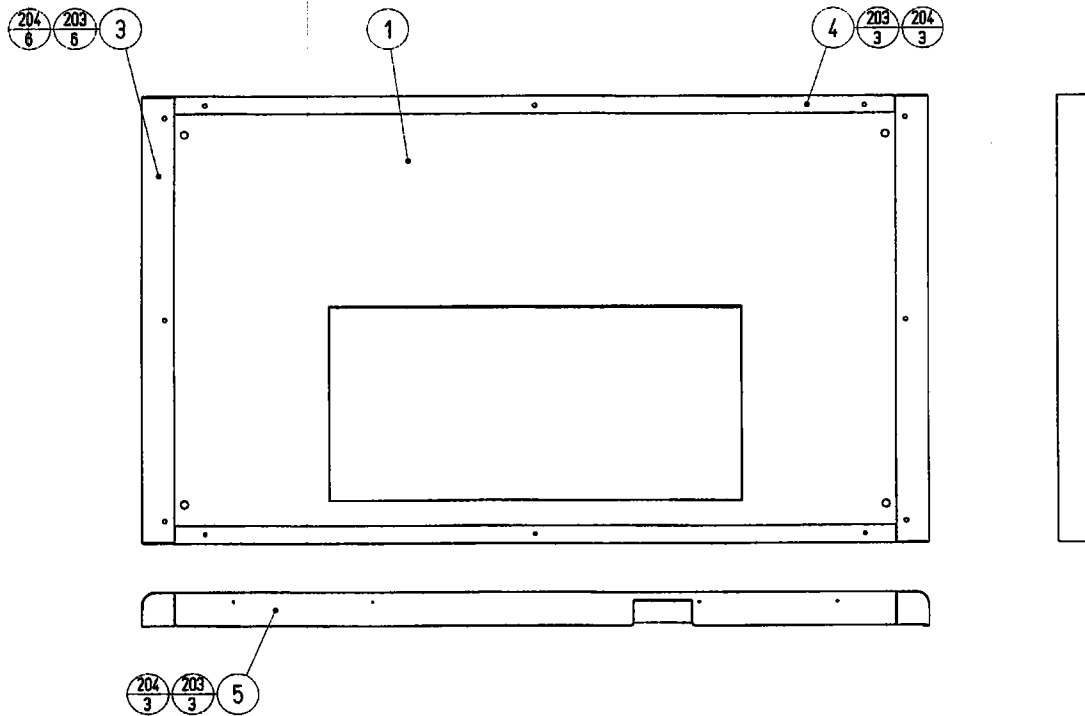
Indent #	Part No.	Description	Component Ref	Qty/assy
2	MGL-1150	ASSY MASK		1
4	RAL-0501	MASK HOLDER		2
5	DYN-0501	PANEL MOUNT BRKT L		1
6	DYN-0502	PANEL MOUNT BRKT R		1
11	ATR-1211	STICKER PTV SIDE L		1
12	ATR-1212	STICKER PTV SIDE R		1
101	200-5788-31	PROJECTION DSPL T 50TYPE		1
102	LB1097	STICKER EARTH GROUND	(101)-1 ON EARTH PLATE TO LEFT	1
201	000-T00525-0B	M5X25 MSCR TH BLK	(2)-2	2
202	068-552016-0B	M5 WSHR 20OD FLT BLK	(2)-2	2
203	000-P00520-WB	M5X20 MSCR PAN W/FS BLK	(2)-4,(5)-5,(6)-2	8
205	000-F00412	M4X12 MSCR CSK PAS	(4)-4	4

7.6. ATR-1220UK ASSY BILLBOARD



Indent #	Part No.	Description	Component Ref	Qty /assy
1	ATR-1221UK	BILLBOARD BASE		1
2	ATR-1222UK	BACK PANEL		1
3	ATR-1223	BILLBOARD PIPE		2
4	ATR-1224UK	COLOUR PLATE		2
5	ATR-1225	HOLDER L		1
6	ATR-1226	HOLDER R		1
7	ATR-1227	PLATE SASH		1
8	ATR-1228UK	FL COVER PLATE		1
9	ATR-1229UK	ACRYL HOLDER		2
10	ATR-1230UK	SLIM COVER		1
11	ATR-1231	BILLBOARD PLATE		1
12	ATR-1232	PLATE HOLDER		2
13	ATR-1233	WIRE COVER L		1
14	ATR-1234	WIRE COVER R		1
16	ATR-1236UK	BILLBOARD LID		1
17	ATR-1237UK	HOLE LID		1
18	ATR-1238	STICKER BILLBOARD		1
19	253-5460-01	AIR VENT BLACK		1
21	421-7501-16	STICKER 110V 30W	NEXT TO FL BALLAST	1
22	LB1104	STICKER CAUTION, HOT SUR	BACK LID, SASH	2
23	LB1102	STICKER DANGEROUS VOLTAG	BACK LID, SASH	2
101	390-5695-30-AUK	FL TRAY 100V 30W		1
102	390-6579-0999B	FL SLIM TYPE 0999MM BLUE		1
103	182-5078-AB-CE	COIL BALLAST AB-116 CE		1
104	214-0223-03	FL SOCKET W/CONN (INSULA		2
107	LT1014	TUBE FL 30W 36" DIA25mm		1
108	280-A02000-A	ROUTER TWIST D20 ADH		3
109	280-A01200-A	ROUTER TWIST D12 ADH		7
201	000-P00540-0C	M5X40 MSCR PAN CRM	(3)-10	10
202	050-F00400	M4 NUT FLG SER PAS	(1,2,16)1,(5,6,101,103)2,(11)4	15
203	000-T00412-0C	M4X12 MSCR TH CRM	(7)-2	2
204	050-U00400	M4 NUT NYLOK PAS	(8)-1	1
205	060-F00400	M4 WSHR FORM A FLT PAS	(8)-1	1
206	000-T00408-0C	M4X8 MSCR TH CRM	(9)-4,(12,13,14,17)-2,(16)-5	17
207	031-000414-0C	M4X14 CRG BLT CRM	(11)-4	4
210	000-T00408-0B	M4X8 MSCR TH BLK	(19)-4	4
212	068-441616	M4 WSHR 16OD FLT PAS	(101)-2	2
214	000-P00408-W	M4X8 MSCR PAN W/FS PAS	(104)-4	4
301	ATR-60092UK	WIRE HARN FL SLIM		1
302	ATR-60420UK	WH FL FAT		1
303	600-9020-44U	WIRE HARN EARTH 200mm M4	BBD BASE TO LID	1

7.7. ATR-1300UK ASSY FRONT PANEL

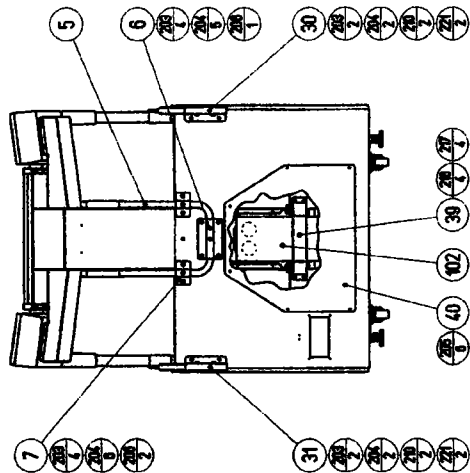
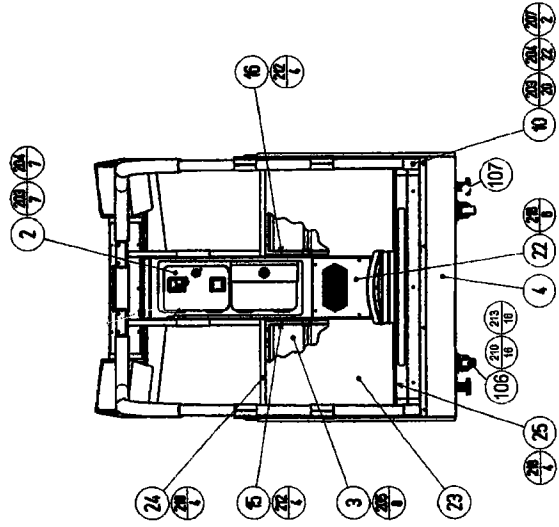
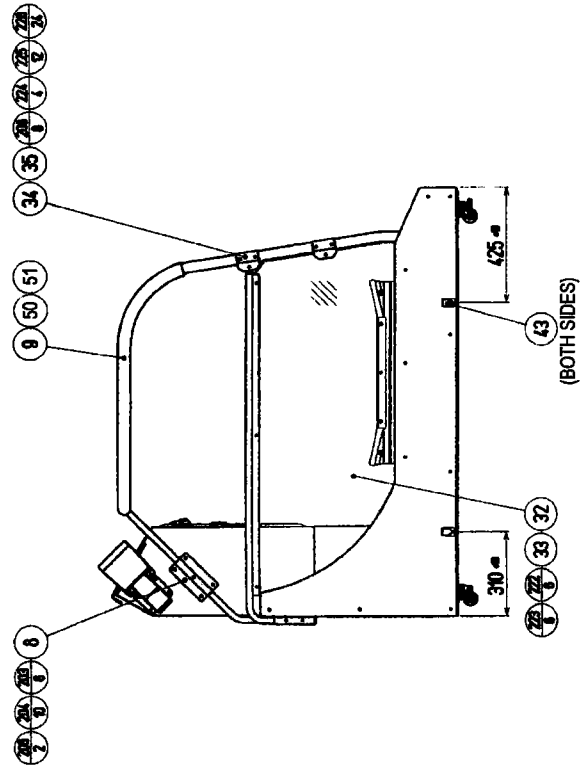
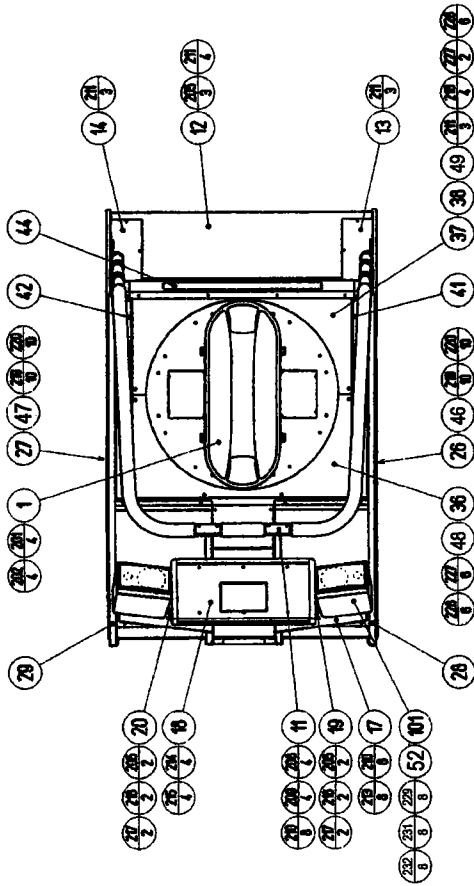


Ident	Part No.	Description	Component Ref	Qty/assy
1	ATR-1301UK	FRONT PANEL		1
3	EZT-0603	SIDE BRKT		2
4	EZT-0604	BRKT UPPER		1
5	ATR-1303	BRKT LOWER		1
6	LB1102	STICKER DANGEROUS VOLTAG		1
203	050-F00500	M5 NUT FLG SER PAS	(3)-6,(4)-3,(5)-3	12
204	068-552016	M5 WSHR 20OD FLT PAS	(3)-6,(4)-3,(5)-3	12

7.8. ATR-3000UK ASSY REAR CABI

Torque settings (nominal)

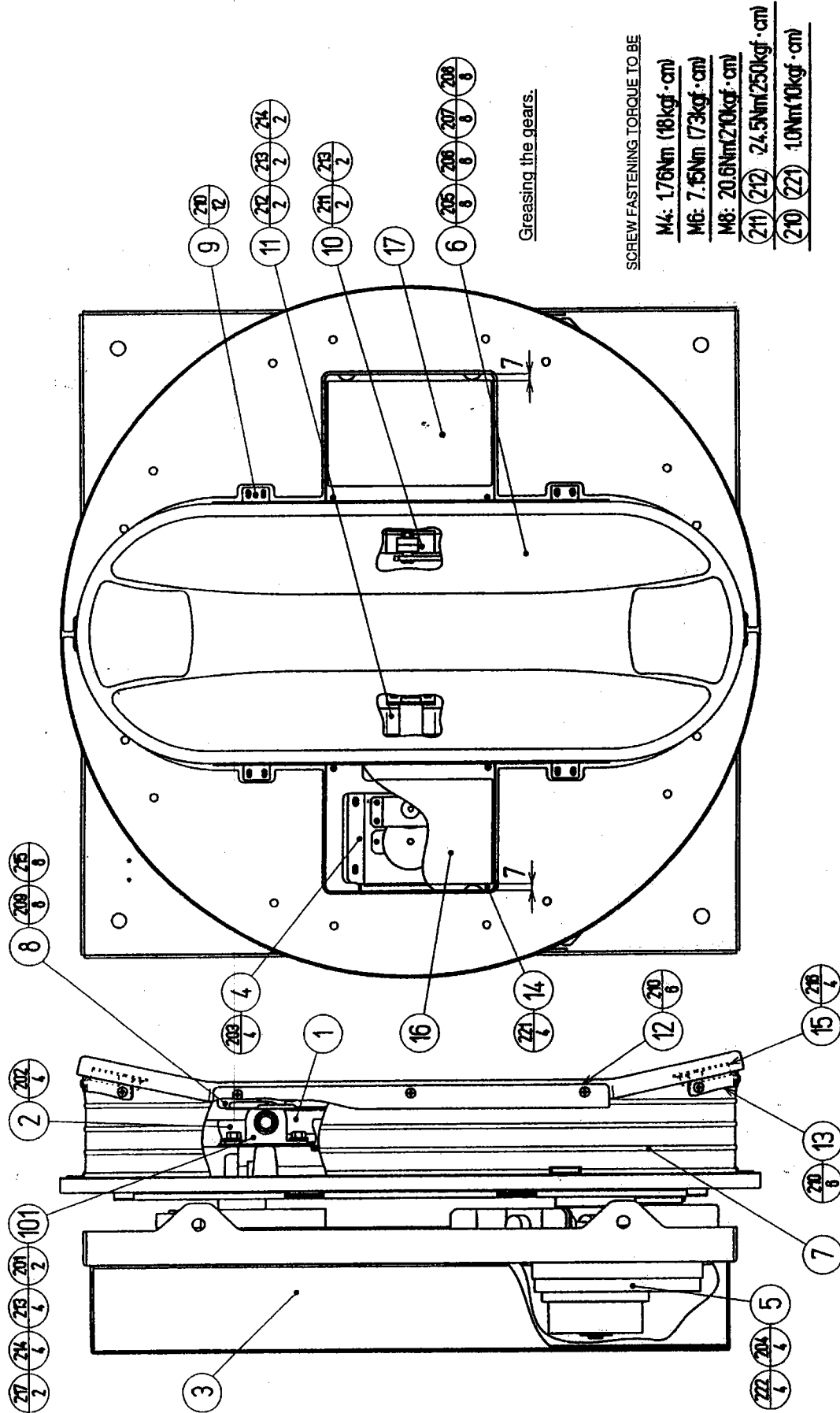
M4	1.76N·m (16Kgf·cm)
M5	1.95N·m (20Kgf·cm)
M5	3.43N·m (35Kgf·cm)
M6	3.92N·m (40Kgf·cm)
M6	5.88N·m (60Kgf·cm)
M6	8.33N·m (85Kgf·cm)
M8	19.6N·m (200Kgf·cm)
M10	34.3N·m (350Kgf·cm)



Indent #	Part No.	Description	Component Ref	Qty /assy
1	ATR-3100-T	ASSY MECHA		1
2	ATR-3500UK	ASSY TOWER		1
3	ATR-3600UK	ASSY LAMP UNIT		2
4	ATR-3001UK	REAR FRAME		1
5	ATR-3002	SUPPORT PIPE		1
6	ATR-3003	PIPE HOLDER FRONT A		1
7	ATR-3004	PIPE HOLDER FRONT B		2
8	ATR-3005	PIPE HOLDER SIDE		2
9	ATR-3006-AUK	STAND PIPE BLANK		1
10	ATR-3007	PIPE HOLDER REAR		2
11	ATR-3008	PIPE HOLDER BRKT		2
12	ATR-3009	STEP BRKT		1
13	ATR-3010	PIPE LID L		1
14	ATR-3011	PIPE LID R		1
15	ATR-3012	INNER BOARD L		1
16	ATR-3013	INNER BOARD R		1
17	ATR-3014UK	SPEAKER HOLDER		2
18	ATR-3015	CNT PANEL		1
19	ATR-3016	STAY L		1
20	ATR-3017	STAY R		1
22	ATR-3019	BASS BRKT		1
23	ATR-3020UK	LAMP PANEL		2
24	ATR-3021	LAMP SASH UPPER		2
25	ATR-3022	LAMP SASH LOWER		2
26	ATR-3023-A	SIDE BOARD L BLANK		1
27	ATR-3024-A	SIDE BOARD R BLANK		1
28	ATR-3025	SIDE PIPE L		1
29	ATR-3026	SIDE PIPE R		1
30	ATR-3027	SIDE PIPE HOLDER L		1
31	ATR-3028	SIDE PIPE HOLDER R		1
32	ATR-3029UK	SIDE GUARD PANEL		2
33	ATR-3030	SIDE PANEL HOLDER		2
34	ATR-3031	SIDE PIPE BRKT A		4
35	ATR-3032	SIDE PIPE BRKT B		4
36	ATR-3033-A	FLOOR BOARD FRONT BLANK		1
37	ATR-3034-A	FLOOR BOARD REAR BLANK		1
38	ATR-3035	FLOOR BRKT		1
39	ATR-3036	WOOFER HOLDER		1
40	ATR-3037	LID REAR		1
41	ATR-3038	STICKER REAR FRAME L		1
42	ATR-3039	STICKER REAR FRAME R		1
43	421-7020UK	STICKER CAUTION FORK	ON SIDES - 2 EA SIDE	4
44	ATR-3040	STICKER ADDRESS		1
46	ATR-3023-B	SIDE STICKER SIDE BOARD	(26)-1	1
47	ATR-3024-B	SIDE STICKER SIDE BOARD	(27)-1	1
48	ATR-3033-B	STICKER FLOOR FRONT	(36)-1	1
49	ATR-3034-B	STICKER FLOOR REAR	(37)-1	1
50	ASL-3027-B	PIPE TUBE L	(9)-2 USE LUBRICANT!	2
51	ATR-3006-C	PIPE TUBE S	(9)-1 USE LUBRICANT!	1
52	ATR-3041UK	SPKR SECURITY BRKT		4
101	130-5228	SPEAKER BOX 4OHM 40W		2
102	130-5097	SPEAKER BOX SUPER WOOFER		1
103	280-ER1900-A	P-CLIP RATCHET D19 ADH		25

106	601-6056UK	CASTOR 50 SWIVEL (70X70X	(4)-4	4
107	601-5882UK-01	LEG ADJUSTER M16X70 D70	(4)-4	4
108	LB1097	STICKER EARTH GROUND	ON OUTSIDE OF (4) NEAR TO STUD	1
109	OS1098	CRIMP BELL END SMALL	(102)-2	2
201	030-001025-S	M10X25 BLT W/S PAS	(1)-4	4
202	068-A52820	M10 WSHR 28OD FLT PAS	(1)-4	4
203	030-000820-SB	M8X20 BLT W/S BLK	(2)-7,(6)-4,(7)-4,(8)-8,(10)-20,(30)-2,(31)-2	47
204	060-F00800-0B	M8 WSHR FORM A FLT BLK	(2)-7,(6)-5,(7)-6,(8)-10,(10)-22,(30)-2,(31)-2	54
205	000-P00412-WB	M4X12 MSCR PAN W/F S BLK	(3)-8,(12)-3,(19,20)-2,(40)-6	21
206	030-000840-SB	M8X40 BLT W/S BLK	(6)-1,(7)-2,(8)-2	5
207	030-000860-SB	M8X60 BLT W/S BLK	(10)-2	2
208	031-000650-0C	M6X50 CRG BLT CRM	(11)-4,(35)-8	12
209	050-C00600-3B	M6 NUT DOME TYPE 3 BLK	(11)-4	4
210	060-F00600-0B	M6 WSHR FORM A FLT BLK	(11,17)-8,(30,31)-2,(106)-16	36
211	000-T00408-0C	M4X8 MSCR TH CRM	(12)-4,(13)-3,(14)-3,(38)-3	13
212	000-P00516-W	M5X16 MSCR PAN W/F S PAS	(15)-4,(16)-4	8
213	030-000616-SB	M6X16 BLT W/S BLK	(17)-8,(106)-16	24
214	050-U00500	M5 NUT NYLOK PAS	(18)-4	4
215	060-F00500	M5 WSHR FORM A FLT PAS	(18)-4	4
216	050-U00400	M4 NUT NYLOK PAS	(19)-2,(20)-2,(38)-4,(39)-4	12
217	060-F00400	M4 WSHR FORM A FLT PAS	(19)-2,(20)-2,(39)-4	8
218	000-T00408-0B	M4X8 MSCR TH BLK	(22)-6,(24)-4,(25)-4	14
219	030-000630-SB	M6X30 BLT W/S BLK	(26)-10,(27)-10	20
220	068-652016-0B	M6 WSHR 20OD FLT BLK	(26)-10,(27)-10	20
221	030-000635-SB	M6X35 BLT W/S BLK	(30)-2,(31)-2	4
222	000-T00412-0B	M4X12 MSCR TH BLK	(33)-6	6
223	050-C00400-3B	M4 NUT DOME TYPE 3 BLK	(33)-6	6
224	000-T00620-0C	M6X20 MSCR TH CRM	(35)-4	4
225	050-C00600-3C	M6 NUT DOME TYPE 3 CRM	(35)-12	12
226	060-F00600-0C	M6 WSHR FORM A FLT CRM	(35)-24	24
227	000-T00425-0B	M4X25 MSCR TH BLK	(36)-6,(37)-2	8
228	068-441616-0B	M4 WSHR 16OD FLT BLK	36)-6,(37)-2,(38)-6	14
229	012-P00512-0B	N10X12" S/TAP PAN BLK	(101)-8	8
231	008-T00508-0B	M5X8 TMP PRF TH BLK	(52)-8	8
232	008-T00412-0B	M4X12 TMP PRF TH BLK	(52)-8	8
301	ATR-60040	WIRE HARN LAMP REAR		1
302	ATR-60041UK	WIRE HARN EXT COIN REAR		1
303	ATR-60043	WIRE HARN EXT SPEAKER RE		1
304	ATR-60042	WIRE HARN EXT CONT PNL R		1
305	ATR-60044	WIRE HARN INTERFACE REAR		1
306	ATR-60081	WIRE HARN WOOFER		1

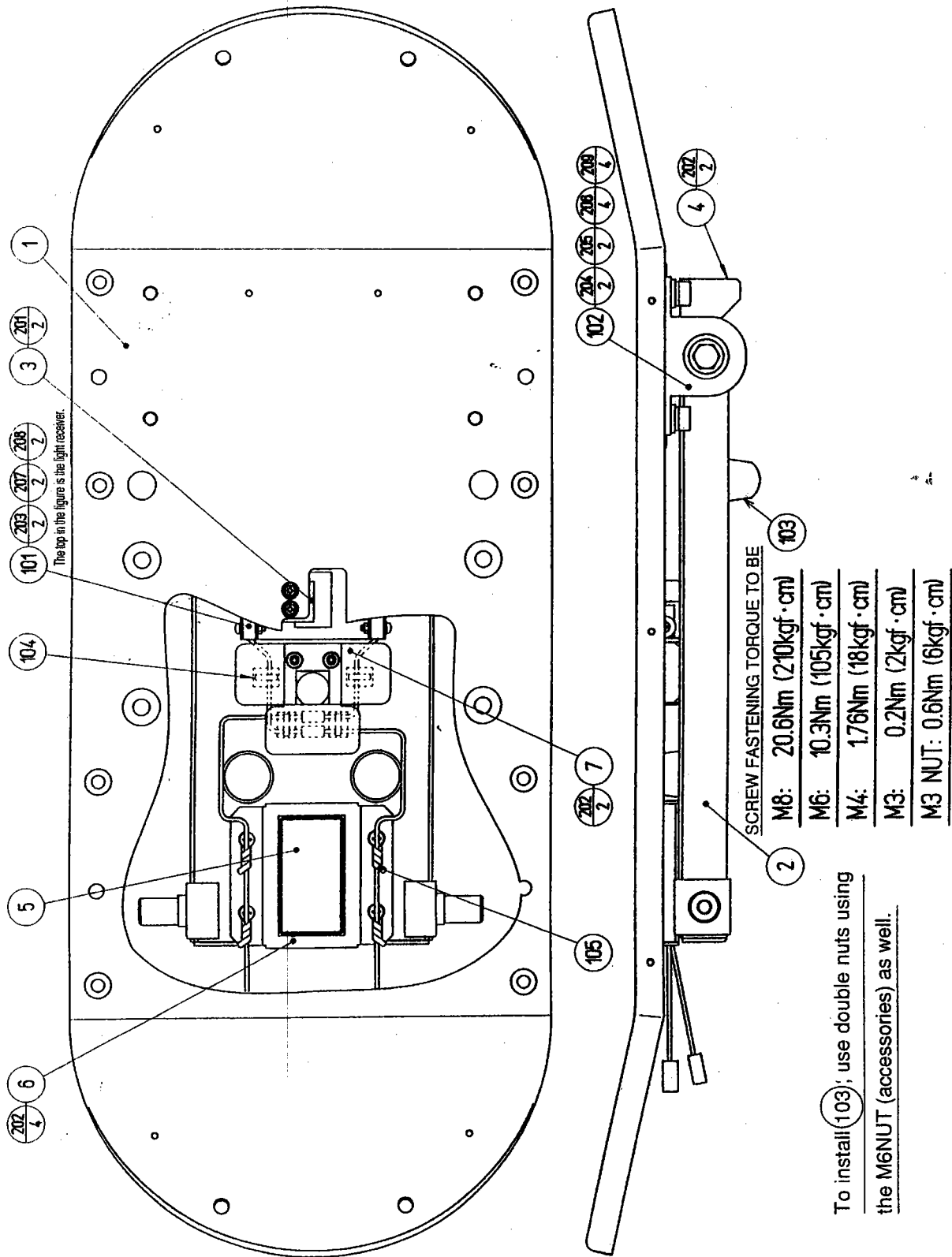
7.9. ATR-3100 ASSY MECHA



Greasing the gears.

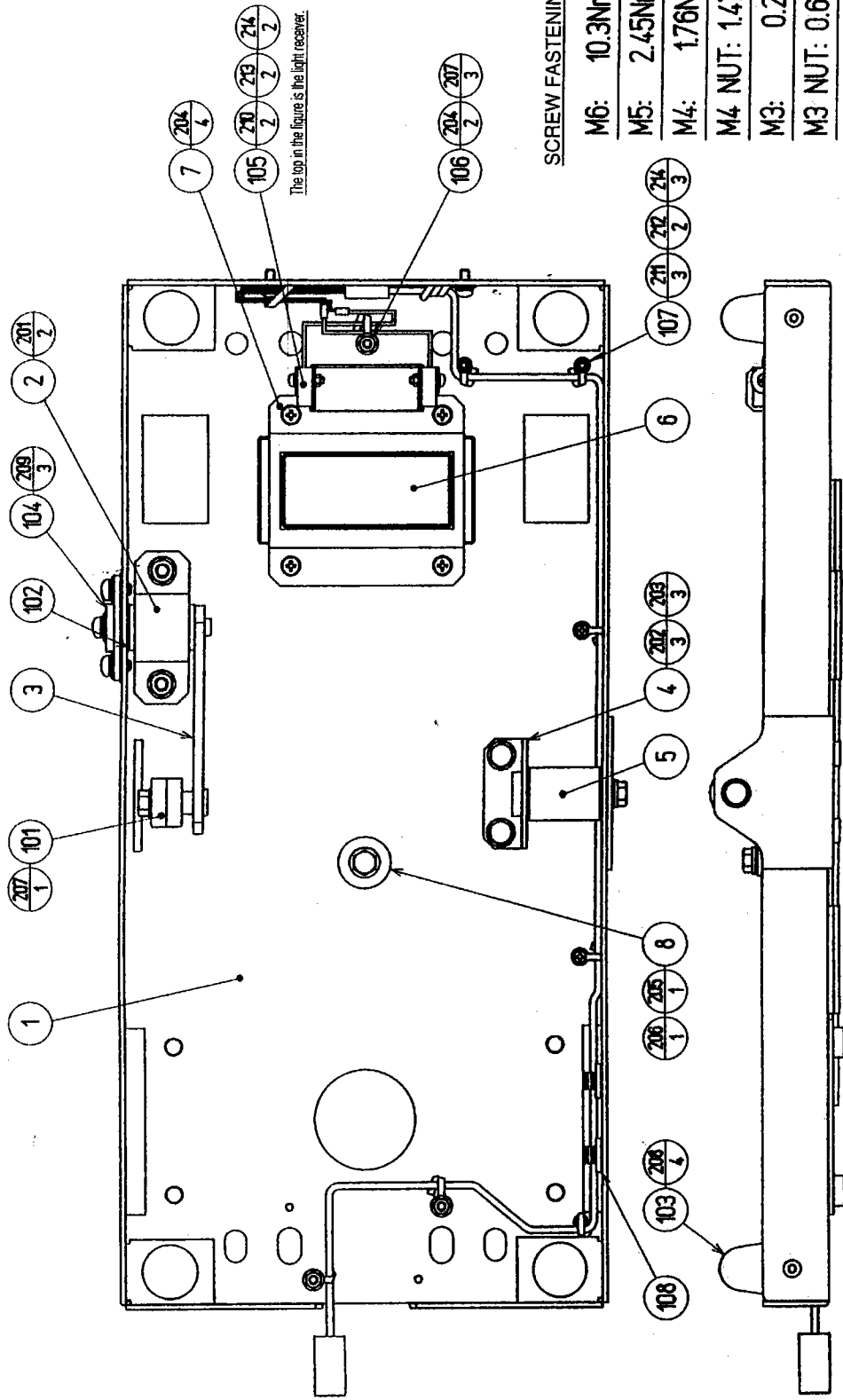
ITEM NO.	PART NO.	DESCRIPTION
1	ATR-3150	ASSY BOARD
2	ATR-3200	ASSY ROLLING BASE
3	ATR-3250	ASSY SWING MECHA
4	ATR-3300	YAWING SENSOR UNIT
5	ATR-3350	BRAKE UNIT
6	ATR-3101	BOARD
7	ATR-3102	BELLOWS
8	ATR-3103	SIDE BELLOWS BRKT
9	ATR-3104	BELLOWS HOLDER
10	ASL-3105	HOOK
11	ASL-3106	STOPPER UPPER HOLDER
12	ATR-3107	SIDE BELLOWS SASH
13	ATR-3108	END BELLOWS SASH
14	ATR-3109-A	TABLE LID BLANK
15	ATR-3110	BELLOWS END BRKT
16	ATR-3109-B	STICKER TABLE LID L
17	ATR-3111-B	STICKER TABLE LID R
101	100-5302	BEARING 15
102	280-5009-01	CORD CLAMP 21
103	280-5275-SR10	CORD CLAMP SR10
104	601-0460	PLASTIC TIE BELT 100MM
201	030-000816-S	HEX BLT W/S M8 × 16
202	030-000816-W	HEX BLT W/FS M8 × 16
203	000-P00408-W	M SCR PH W/FS M4 × 8
204	030-000825-S	HEX BLT W/S M8 × 25
205	031-000620-0B	CRG BLT BLK M6 × 20
206	060-F00600	FLT WSHR M6
207	060-S00600	SPR WSHR M6
208	050-H00600	HEX NUT M6
209	000-T00410-0B	M SCR TH BLK M4 × 10
210	000-P00412-WB	M SCR PH W/FS BLK M4 × 12
211	FAS-200014	HEX SKT H CAP SCR BLK OZ M8 × 45
212	020-000825-OZ	HEX SKT H CAP SCR BLK OZ M8 × 25
213	060-S00800	SPR WSHR M8
214	050-H00800	HEX NUT M8
215	050-H00400	HEX NUT M4
216	000-P00410-W	M SCR PH W/FS M4 × 10
217	068-852216	FLT WSHR 8.5-22 × 1.6
218	060-F00400	FLT WSHR M4
219	060-S00400	SPR WSHR M4
220	000-P00408	M SCR PH M4 × 8
221	000-P00420-WB	M SCR PH W/FS BLK M4 × 20
222	DYN-1019	FLT WASHER M8
301	ATR-60051	WH BOARD
302	ATR-60052	WH BRAKE
303	ATR-60053X	WH EXT SWING VOL
306	ATR-60103	WH EARTH BOARD TUBE

7.10. ATR-3150 ASSY BOARD



ITEM NO.	PART NO.	DESCRIPTION
1	ATR-3151	BOARD BASE
2	ATR-3152	UPPER BASE
3	ASL-3153	SW PLATE A
4	ATR-3154	SW PLATE B
5	ATR-3155	STOPPER B
6	ATR-3156	STOPPER BRKT B
7	ATR-3157	WIRE COVER
101	370-5232-01	PHOTO SENSOR OMT-01L-SS
102	100-5302	BEARING 15
103	601-5564	STOPPER
104	280-5275-SR10	CORD CLAMP SR10
105	280-5207	HARNESS LUG CC-1005
201	000-P00308-W	M SCR PH W/FS M3 × 8
202	000-P00408-W	M SCR PH W/FS M4 × 8
203	000-P00314-S	M SCR PH W/S M3 × 14
204	030-000816-S	HEX BLT W/S M8 × 16
205	068-852216	FLT WSHR 8.5-22 × 1.6
206	020-000820-OZ	HEX SKT H CAP SCR BLK OZ M8 × 20
207	250-5421	FLT WSHR 3.5-12 T=1.0
208	050-H00300	HEX NUT M3
209	060-S00800	SPR WSHR M8
301	ATR-60061	WH PHOT FRONT

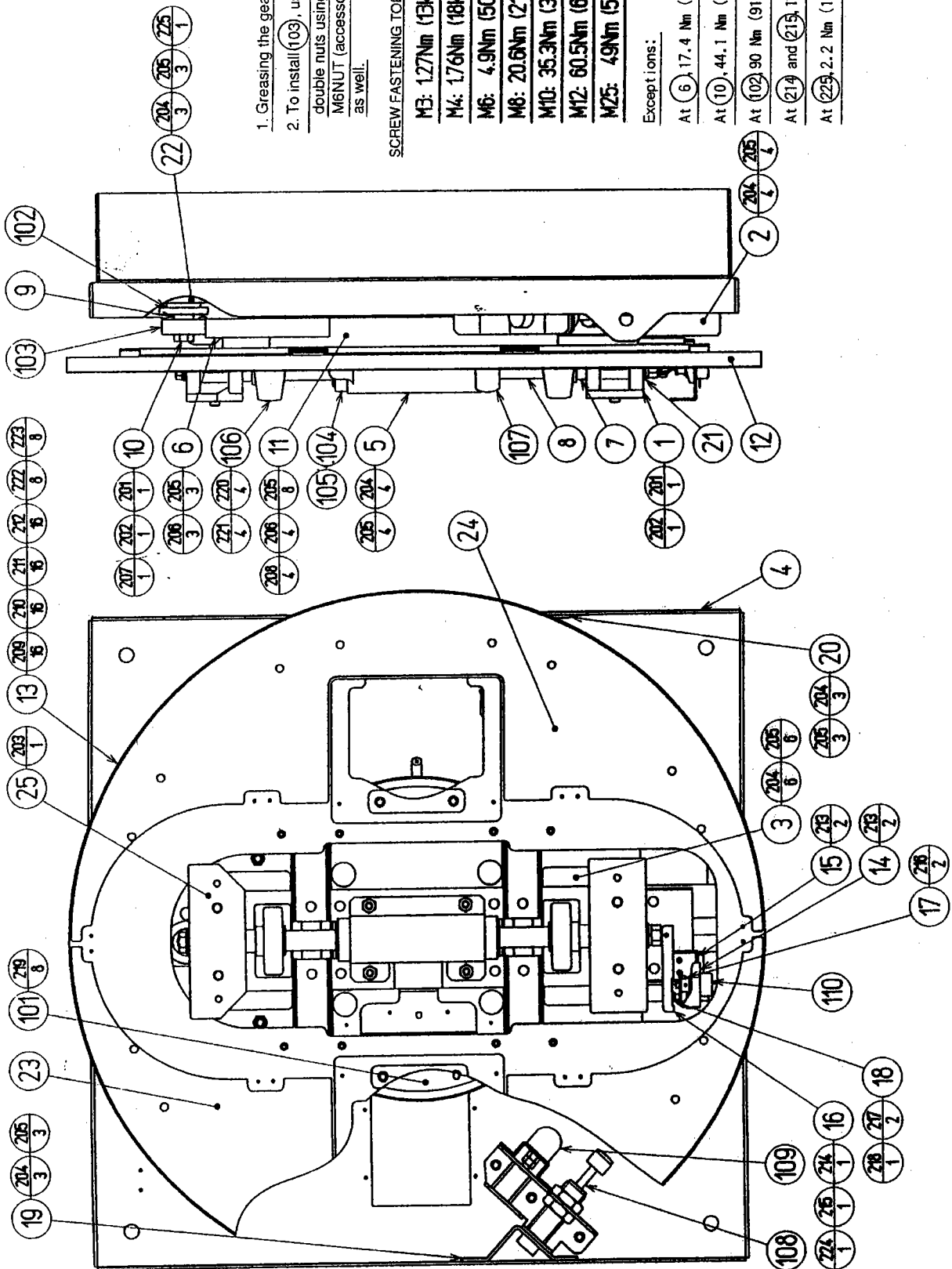
7.11. ATR-3200 ASSY ROLLING BASE



To install (103), use double nuts using the M6NUT (accessories) as well.

ITEM NO.	PART NO.	DESCRIPTION
1	ATR-3201X	ROLLING BASE
2	ASL-3204	UPPER ROSTA HOLDER
3	ATR-3205	ROSTA ARM
4	ASL-3206X	HOLDER UPPER
5	ASL-3207	STOPPER UPPER
6	ASL-3208	STOPPER A
7	ATR-3209X	STOPPER BRKT A
8	ASL-3210	SWING STOPPER RUBBER
101	100-5018	BEARING BALL 8
102	601-9354	ROSTA
103	601-5564	STOPPER
104	100-5386	BEARING 10
105	370-5232-01	PHOTO SENSOR OMT-01L-SS
106	280-5207	HARNES LUG CC-1005
107	280-5288	HARNES LUG CC-1003
108	280-6632	CORD CLAMP MSC-2
201	050-F00600	FLG NUT M6
202	030-000616-S	HEX BLT W/S M6 × 16
203	060-F00600	FLT WSHR M6
204	000-P00408-W	M SCR PH W/FS M4 × 8
205	030-000612-S	HEX BLT W/S M6 × 12
206	068-652016	FLT WSHR 6.5-20 × 1.6
207	050-F00400	FLG NUT M4
208	050-H00600	HEX NUT M6
209	000-P00510-W	M SCR PH W/FS M5 × 10
210	000-P00314-S	M SCR PH W/S M3 × 14
211	060-S00300	SPR WSHR M3
212	000-P00308-W	M SCR PH W/FS M3 × 8
213	250-5421	FLT WSHR 3.5-12 T=1.0
214	050-H00300	HEX NUT M3
301	ATR-60062	WH PHOT REAR
302	600-6897-073	WIRE HARN FRONT SENSOR

7.12. ATR-3250 ASSY SWING MECHA



1. Greasing the gears.
2. To install (103), use double nuts using the M6NUT (accessories) as well.

SCREW FASTENING TORQUE TO BE

- M3: 1.27Nm (13kgf·cm)
- M4: 1.76Nm (18kgf·cm)
- M6: 4.9Nm (50kgf·cm)
- M8: 20.6Nm (210kgf·cm)
- M10: 35.3Nm (360kgf·cm)
- M12: 60.5Nm (617kgf·cm)
- M25: 49Nm (500kgf·cm)

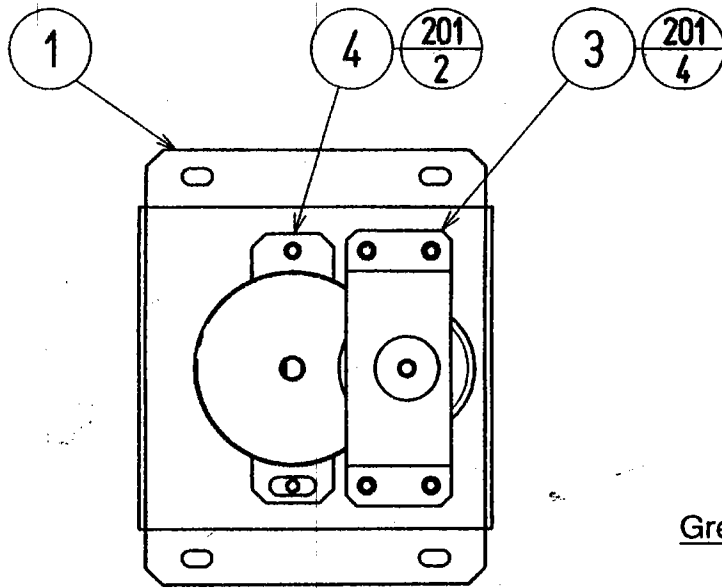
Exceptions:

- At (6), 17.4 Nm (178 kgf·cm)
- At (10), 44.1 Nm (450 kgf·cm)
- At (102), 90 Nm (918 kgf·cm)
- At (214) and (215), 137 Nm (14 kgf·cm)
- At (225), 2.2 Nm (125 kgf·cm)

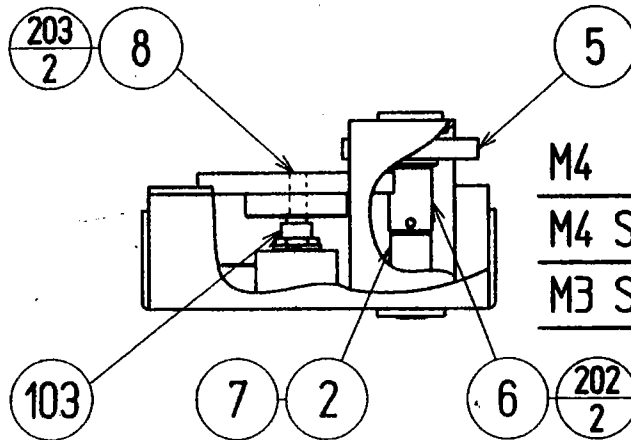
ITEM NO.	PART NO.	DESCRIPTION
1	ASL-3251	MOUNT BLOCK
2	ATR-3252	STOP BASE
3	ATR-3253	SWING BASE
4	ATR-3254X	MECHA BASE
5	ATR-3255	ROLL ROSTA HOLDER
6	ATR-3256	CENTERING CAM
7	ATR-3257X	ROLL COLLAR
8	ATR-3258	ROLL SHAFT
9	ATR-3259	FOLLOWER COLLAR
10	ATR-3260X	FOLLOWER SHAFT
11	ATR-3261	TABLE FRAME
12	ATR-3262	TURN TABLE
13	ATR-3263-A	TURN PLATE BLANK
14	ATR-3264	ROLL VR HOLDER
15	ATR-3265	ROLL VR BRKT
16	ATR-3266	PIN GUIDE
17	ATR-3267	PIN CRANK
18	ATR-3268	ROLL PIN
19	ATR-3269	STOPPER BRKT L
20	ATR-3270	STOPPER BRKT R
21	ASL-3308	SPL WASHER M12
22	ATR-3271	CENTERING FIXER
23	ATR-3263-B	STICKER TURN PLATE L
24	ATR-3263-C	STICKER TURN PLATE R
25	ATR-3251	MOUNT BLOCK ATR
101	100-5388	TURN BEARING 336
102	601-11016	ROSTA SE-27
103	100-5387	ROLLER 15
104	601-8458	ROSTA 22 DR-S27X100
105	601-8596	ROSTA 22
106	100-5274	BEARING 20
107	601-5564	STOPPER
108	601-11019	SHOCK ABSORBER FK-2525-C-SE4
109	601-11005	STOPPER RI-30HD
110	220-5484	VOL CONT B-5K OHM
111	280-5008	CORD CLAMP 15
112	280-5009-01	CORD CLAMP 21
113	280-5169	CORD CLAMP TL-20S
114	280-5275-SR10	CORD CLAMP SR10
115	310-5029-F20	SUMITUBE F F 20MM

ITEM NO.	PART NO.	DESCRIPTION
201	050-H01200	HEX NUT M12
202	060-S01200	SPR WSHR M12
203	FAS-300015	HEX BLT W/S M12 × 20
204	030-000820-S	HEX BLT W/S M8 × 20
205	060-F00800	FLT WSHR M8
206	030-000830-S	HEX BLT W/S M8 × 30
207	060-F01200	FLT WSHR M12
208	030-000850-S	HEX BLT W/S M8 × 50
209	031-000625-OB	CRG BLT BLK M6 × 25
210	060-F00600	FLT WSHR M6
211	060-S00600	SPR WSHR M6
212	050-H00600	HEX NUT M6
213	000-P00408-W	M SCR PH W/FS M4 × 8
214	000-P00418-W	M SCR PH W/FS M4 × 18
215	050-H00400	HEX NUT M4
216	028-C00306-P	SET SCR CH CUP P M3 × 6
217	060-F00300	FLT WSHR M3
218	065-E00200	E RING 2MM
219	030-000840-S	HEX BLT W/S M8 × 40
220	FAS-290002	HEX SKT SCR BH BLK M10 × 16
221	060-S01000	SPR WSHR M10
222	030-000625-S	HEX BLT W/S M6 × 25
223	068-652016	FLT WSHR 6.5-20 × 1.6
224	000-P00406-W	M SCR PH W/FS M4 × 6
225	030-000870-S	HEX BLT W/S M8 × 70
301	ATR-60060	WH ROLL VOL

7.13. ATR-3300 YAWING SENSOR UNIT



Greasing the gears.

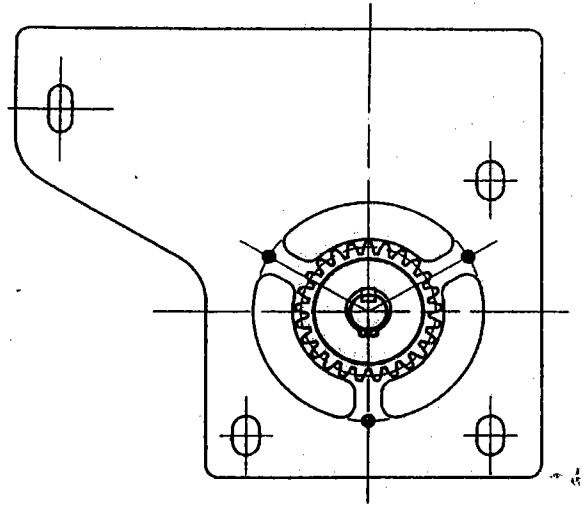
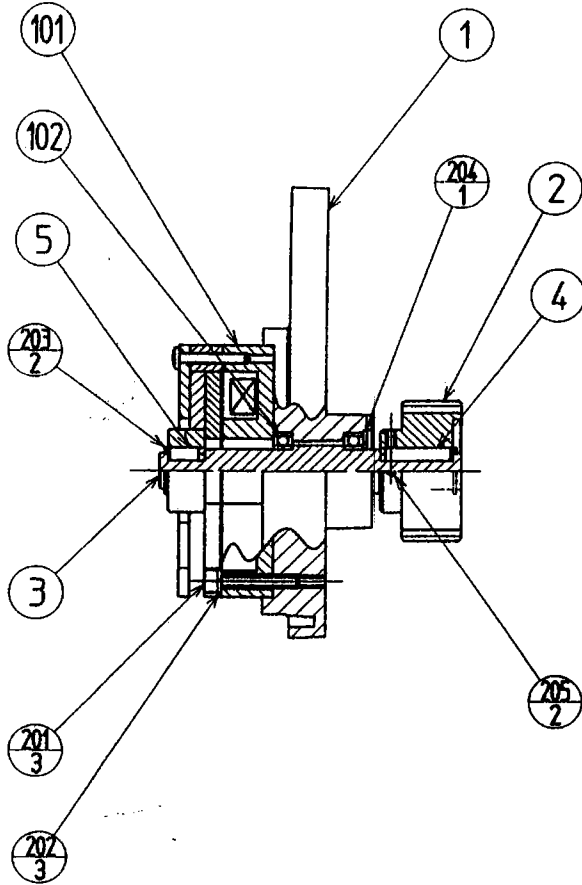


SCREW FASTENING TORQUE TO BE

M4	1.76N · m(18kgf · cm)
M4 SET SCR	2.45N · m(25kgf · cm)
M3 SET SCR	1.27N · m(13kgf · cm)

ITEM NO.	PART NO.	DESCRIPTION
1	ATR-3301	YAW SENSE BOX
2	ATR-3302	REDUCTION SHAFT
3	ATR-3303	SHAFT HOLDER
4	ATR-3304	YAW VOL HOLDER
5	ATR-3305	GEAR 18 M2
6	ATR-3306	GEAR 15 MO. 75
7	ATR-3307	KEY 2 × 2 × 24
8	601-6296-91	GEAR 75B
103	220-5484	VOL CONT B-5K OHM
104	280-0419	HARNESS LUG
105	310-5029-F20	SUMITUBE F F 20MM
201	000-P00408-W	M SCR PH W/FS M4 × 8
202	028-C00306-P	SET SCR CH CUP P M3 × 6
203	028-C00416-P	SET SCR CH CUP P M4 × 16
301	ATR-60050	WH SWING VOL

7.14. ATR-3350 BRAKE UNIT



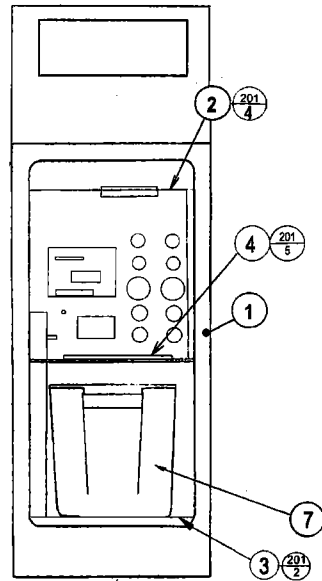
SCREW FASTENING TORQUE TO BE

M5:3.7Nm

M4:1.8Nm

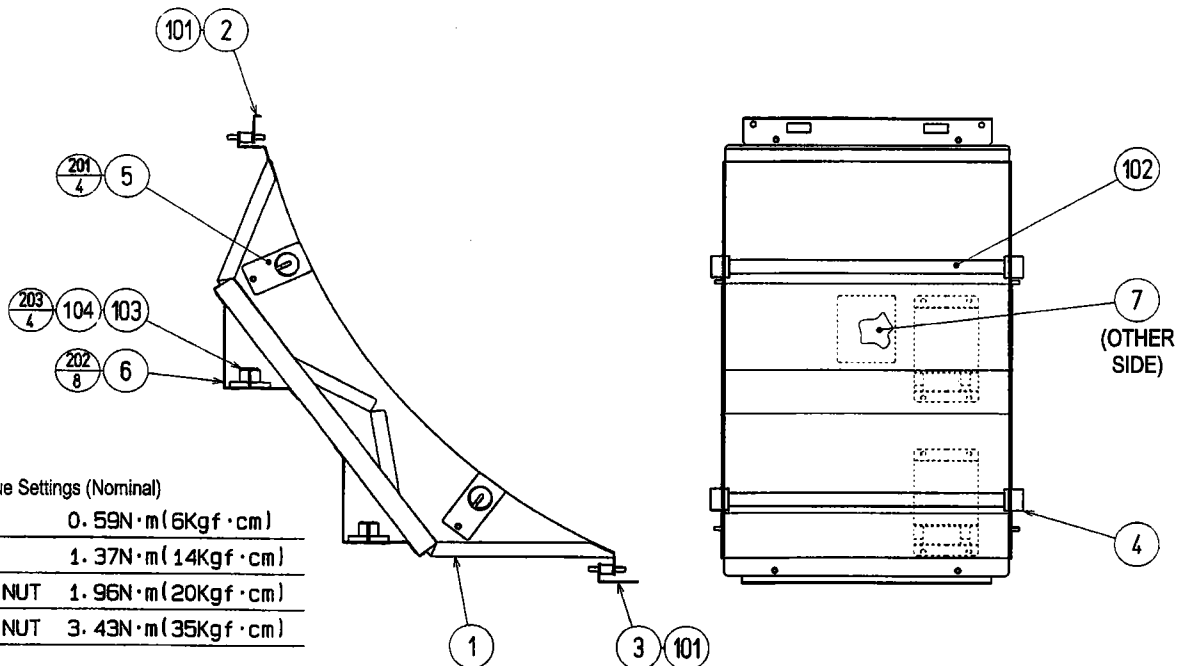
ITEM NO.	PART NO.	DESCRIPTION
1	ATR-3351	BRAKE BASE
2	ASL-3352	PINION GEAR 25
3	ATR-3353	BRAKE SHAFT
4	ASL-3354	KEY 5 × 5 × 24
5	ASK-3606	KEY 5 × 5-10.5
101	601-10806	BRAKE BXH-08
102	100-5229	BEARING 17
201	020-000530-OZ	HEX SKT H CAP SCR BLK OZ M5 × 30
202	060-S00500	SPR WSHR M5
203	065-S014S0-Z	STP RING BLK OZ S14
204	065-A030H0-Z	STP RING BLK OZ H30
205	028-A00408-P	SET SCR HEX SKT CUP P M4 × 8

7.15. ATR-3500UK ASSY TOWER



Indent #	Part No.	Description	Component Ref	Qty /assy
1	ATR-3501UK	COIN CHUTE TOWER		1
2	VTS-HOD-D	VTS BOARD HOD		1
3	ATR-3551UK	TOWER FLOOR		1
4	DUT-0302UK	COIN PATH PLATE		1
7	253-5366	CASH BOX		1
201	000-P00408-W	M4X8 MSCR PAN W/FS PAS	(2)-4,(3)-2,(4)-5	11
301	ATR-60070	WIRE HARN SPEAKER TOWER		1
302	ATR-60071UK	WIRE HARN COIN TOWER		1
303	ATR-60072	WIRE HARN CONT PNLT TOWE		1

7.16. ATR-3600UK ASSY LAMP UNIT

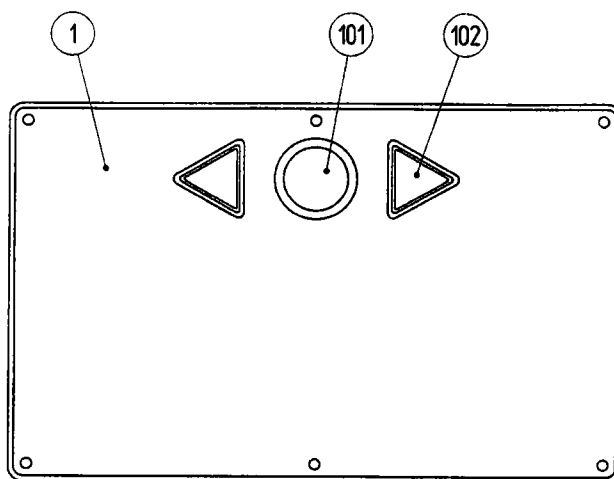


Torque Settings (Nominal)

M3	0.59N·m(6Kgf·cm)
M4	1.37N·m(14Kgf·cm)
M4 NUT	1.96N·m(20Kgf·cm)
M5 NUT	3.43N·m(35Kgf·cm)

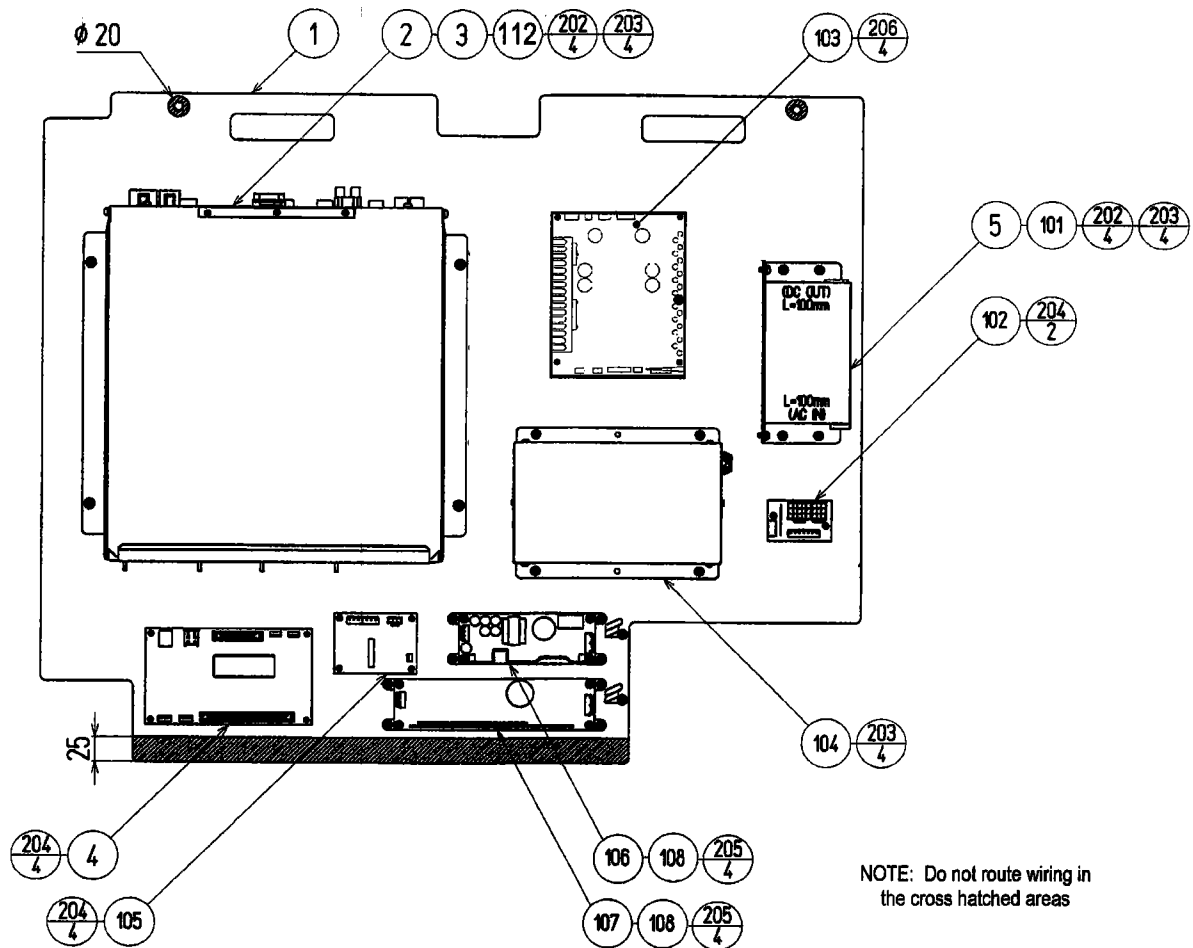
Indent #	Part No.	Description	Component Ref	Qty /assy
1	ATR-3601UK	LAMP BASE		1
2	ATR-3602	DAMPER BRKT UPPER		1
3	ATR-3603	DAMPER BRKT LOWER		1
4	ATR-3604	LAMP HOLDER		4
5	ATR-3605	HOLDER BRKT		4
6	ATR-3606	INVERTER BRKT		2
7	LB1102	STICKER DANGEROUS VOLTAG	(1)-1	1
101	601-8288	RUBBER DAMPER		4
102	390-6697-BL	CCFL TUBE W/PIPE L=330 B		2
103	838-14010-01	CCFL INV S-12617C-7M W/L		2
104	EP1364	FERRITE CORE ROUND CABLE	INVERTER INPUT WIRES: 2 TURNS	1
201	050-F00400	M4 NUT FLG SER PAS	(5)-4	4
202	000-P00408-W	M4X8 MSCR PAN W/FS PAS	(6)-8,(EARTH)-1	9
203	000-P00310-W	M3X10 MSCR PAN W/S PAS	(103)-4	4
301	ATR-60082	WH LAMP	NOTE: WH TO BE WOUND TWICE	1
302	600-9040-44U	WIRE HARN EARTH 400MM M4	LAMP BASE TO REAR BASE	1

7.17. ATR-3700 ASSY SW PANEL



Indent #	Part No.	Description	Component Ref	Qty /assy
1	ATR-3701	SW PLATE		1
101	509-5712-04	SW PB W/L 6V ORANGE		1
102	509-5499-03-LN	SW PB TRIANGLE YELLOW W/		2
103	601-0460	CABLE TIE 100mm		1
302	ATR-60080	WIRE HARN CONT PANEL		1

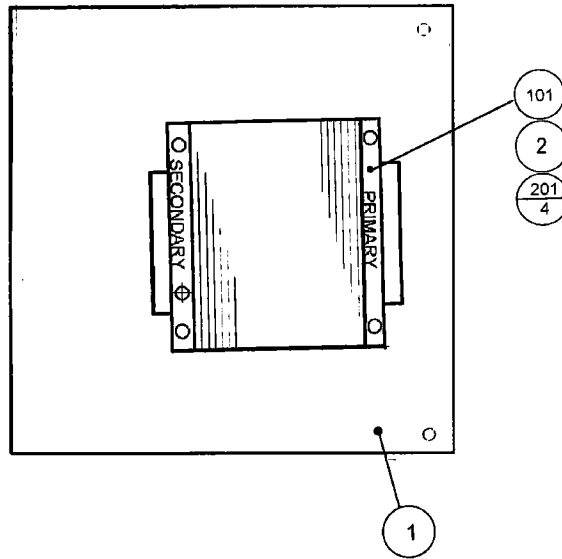
7.18. ATR-4000UK ASSY MAIN BD



Indent #	Part No.	Description	Component Ref	Qty/assy
1	ATR-4001UK	WOODEN BASE		1
2	ATR-4050	ASSY SHIELD CASE ATR		1
3	105-5382	SHIELD CASE BRKT		2
4	837-13551-92	I/O CONTROL BD FOR JVS		1
5	APC-4002	SW REGU BRKT		1
101	400-5397-01	SW REGU FOR JVS VA		1
102	838-11856CE-02	CONN BD W/FUSE 6.3A CE		1
103	838-13616	AUDIO POWER AMP 2CH		1
104	610-0609	LOWPASS AMP 4OHM 40W		1
105	839-1073-03	SSR BD 1 DC 2A		1
106	400-5421-03024	SW REGU LCA30S-24		1
107	400-5421-05012	SW REGU LCA50S-12		1
108	OS1071	FEET P.C.B PKT OF 4	(106)-1 PK, (107)-1 PK OF 4	2
109	280-A00964-WX	ROUTER TWIST D09 SO6.4 W		8
110	280-A01264-WX	ROUTER TWIST D12 SO6.4 W		11
111	280-A02064-WX	ROUTER TWIST D20 SO6.4 W		7
112	LB1111	STICKER PLEASE RECYCLE		1
202	000-P00408-W	M4X8 MSCR PAN W/FS PAS	(2)-4,(101)-4	8
203	000-P00416-W	M4X16 MSCR PAN W/FS PAS	(3)-4,(5)-4,(104)-4	12
204	012-P00325	N4X1" S/TAP PAN PAS	(4)-4,(102)-2,(105)-4	10
205	012-P03516	N6X5/8" S/TAP PAN PAS	(108)-8	8
206	012-P03512-F	N6X1/2" S/TAP FLG PAS	(103)-4	4

301	ATR-60021UK	WIRE HARN AC OUT XFMR		1
303	ATR-60002UK	WIRE HARN AC OUT		1
304	ATR-60003UK	WIRE HARN AC		1
305	ATR-60004	WIRE HARN EXT DC MAIN BD		1
306	ATR-60005UK	WIRE HARN VOL AND SOUND		1
307	ATR-60006	WIRE HARN CENTER LINE		1
308	ATR-60007	WIRE HARN SOUND LINE		1
309	600-7159-070	WIRE HARN JVS PWR 070CM		1
310	600-7141-100	CABLE JVS TYPE A-B 100CM		1
311	ATR-60010	WIRE HARN A/D		1
312	ATR-60011UK	WIRE HARN I/O		1
313	ATR-60012	WIRE HARN DC24V		1
314	ATR-60202UK	WIRE HARN AUDIO POWER-IN		1
315	ATR-60013	WIRE HARN BRAKE OUT		1

7.19. ATR-4100UK ASSY XFMR ATR

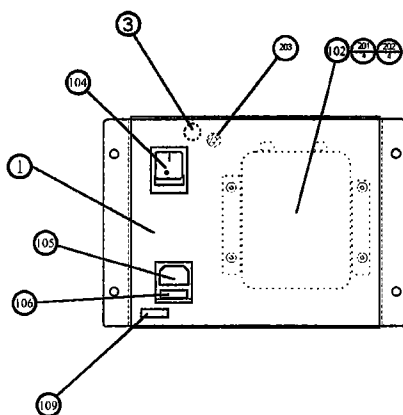


Indent #	Part No.	Description	Component Ref	Qty/assy
1	HOD-4101UK	WOODEN BASE PWR SPLY		1
2	LB1102	STICKER DANGEROUS VOLTAGE	(101)-1	1
101	560-5377UK	TRANSFORMER ATR DX		1
201	000-P00416-W	M4X16 MSCR PAN W/FS PAS	(101)-4	4

7.20. ATR-INST-DX ASSY INST KIT AIR TRIX DX

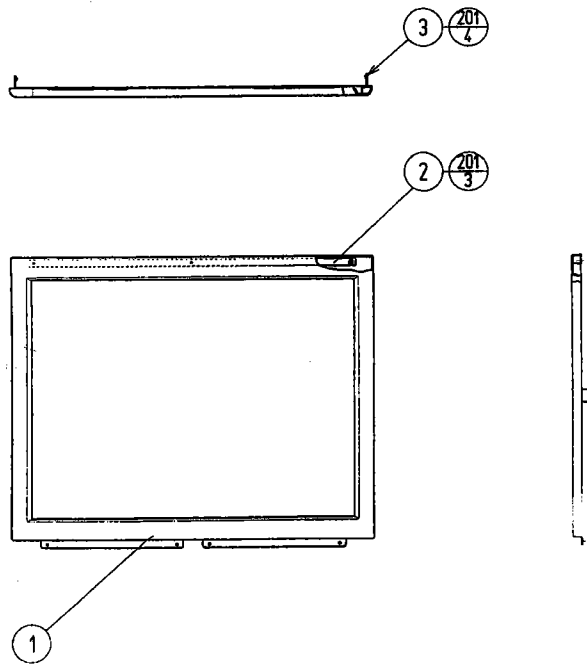
Indent #	Part No.	Description	Component Ref	Qty
2	ATR-1220UK	ASSY BILLBOARD		1
7	ATR-0002UK	PLAY INSTR SH ATR MULTI		1
17	440-CS0122-EG	STICKER C FENCE ENG		2
18	440-CS0122-FR	STICKER C FENCE FRN		2
19	440-CS0122-GM	STICKER C FENCE GRM		2
20	440-CS0122-IT	STICKER C FENCE ITL		2
21	440-CS0122-SP	STICKER C FENCE SPN		2
22	440-CS0231-EG	STICKER C PANEL ATR ENG		4
23	440-CS0231-FR	STICKER C PANEL ATR FRN		4
24	440-CS0231-GM	STICKER C PANEL ATR GRM		4
25	440-CS0231-IT	STICKER C PANEL ATR ITL		4
26	440-CS0231-SP	STICKER C PANEL ATR SPN		4
27	440-CS0232UK	STICKER C ATR A MULTI		1
28	440-CS0233-EG	STICKER C ATR B ENG		1
29	440-CS0233-FR	STICKER C ATR B FRN		1
30	440-CS0233-GM	STICKER C ATR B GRM		1
31	440-CS0233-IT	STICKER C ATR B ITL		1
32	440-CS0233-SP	STICKER C ATR B SPN		1
33	440-CS0234UK	STICKER C STEP ATR MULTI		1
203	000-T00540-0C	M5X40 MSCR TH CRM	(2)-2	2
204	000-P00412-WB	M4X12 MSCR PAN W/FS BLK	(2)-1 EARTH,(301)-4	5
205	000-T00420-0B	M4X20 MSCR TH BLK	(301)-1	4
206	050-F00400	M4 NUT FLG SER PAS	(301)-2	2
301	ATR-60030UK	WIRE HARN DC TUBE		1
401	PK0274	CARTON BOX ATR DX INST K		1
402	OS1019	SELF SEAL BAG 9X12.3/4		2
403	420-6614-01UK	SERVICE MANUAL ATR DX		1
405	390-5160	LAMP WG B TYPE 6V 3W (C2	SPARE	1
411	220-5484	VOL CONT B-5K OHM	SPARE	1
412	SAECE-070	DECLARATION OF CONFORMIT		1

7.21. HOD-1020UK ASSY AC UNIT



Indent #	Part No.	Description	Component Ref	Qty /assy
1	HOD-1021UK	AC BRKT UK		1
3	LB1096	STICKER PROTECTIVE EARTH	(EARTH STUD)	1
102	EP1379	FILTER EMI 10A ARCOTRONICS		1
104	SW1109	SWITCH ROCKER 250V AC		1
105	EP1302	EUROSOCKET FUSED 10A 250Vac		1
106	514-5078-5000	FUSE 5X20 CERAMIC SB 5000mA		1
107	310-5029-D508	HEAT SHRINK SLEEVING 50.8DIA		0.04
109	421-6595-5000-T	STICKER FUSE 5000mA TYPE T		1
201	FX0399	M3X8 MSCR POSI PAN BZP	(102)-4	4
202	FX0263	M3 WSHR FORM A FLT BZP	(102)-4	4
203	050-F00400	M4 NUT FLG	EARTH STUD	2
301	600-6911-049UK	WIRE HARN AC BRKT (JPT)		1
302	600-7118-002UK	WIRE HARN AC OUT (PRIMARY)		1
303	600-9040-45U	WIRE HARN EARTH 400mm M4/M5	AC BRKT - XFMR	1

7.22. MGL-1150 ASSY MASK



Indent #	Part No.	Description	Component Ref	Qty /assy
1	MGL-1102	TV MASK		1
2	MGL-1151	SLIT PLATE		1
3	MGL-1152	MASK SIDE HOLDER	(1)-2 EACH SIDE	2
201	FX0318	N6X1/2" S/TAP POSI CSK B	(2)-3	3
202	FS1017	M4X8 MSCR POSI CSK BNP	(3)-4	4

8. APPENDIX A - ELECTRICAL SCHEMATIC

8.1. WIRE COLOURS

THE WIRE COLOUR CODE IS AS FOLLOWS:

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

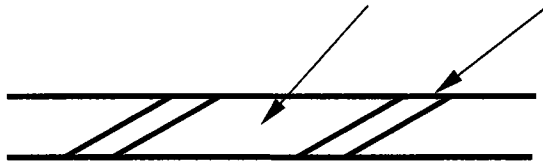
Wires other than those of any of the colours listed above will be displayed by 2 alphanumeric characters:

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

8.2. ELECTRICAL SCHEMATIC

The following pages contain the electrical schematic for this machine.