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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.



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



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



### **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**



**IMPORTANT!**

- 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.

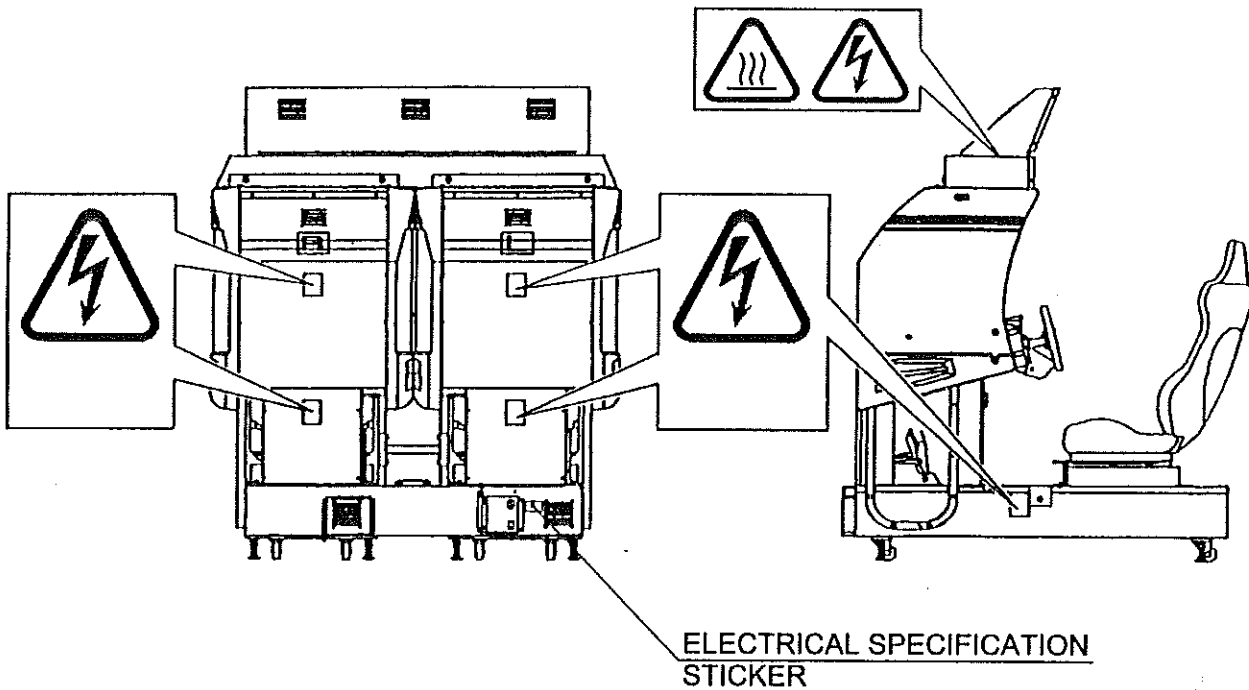
- Are there any dented parts or defects (cuts, etc.) on the external surfaces of the product?
- Are castors and leg adjusters present and undamaged?
- Do the power supply voltage and frequency requirements meet with the local supply?
- Are all wiring connectors correctly and securely connected? Unless 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 (cm):	164 x 170
Height (cm):	192
Weight (kg):	Approx. 513
Power, Max:	Rated Voltage (V.AC): 230
	Rated Current (A): 5

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 LE MANS TWIN, 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.

### **SEGA AMUSEMENTS EUROPE LTD./ SEGA SERVICE CENTRE**

Unit 2 Industrial Estate,

Leigh Close,

New Malden,

Surrey,

KT3 3NL,

England.

Telephone: +44(0) 181 336 2256

Fax: +44(0) 181 336 1715

### **SEGA SPAIN**

C/ Playa De Liencres,

2-Edificio 3 Londres,

Europa Empresarial Ctra,

National IV KM.24,

28230 Las Rozas

Madrid

Spain

Telephone: +34(1) 6315000

Fax: +34(1) 6400689

### 3. INSTALLATION AND SERVICE INSTRUCTIONS



**IMPORTANT!**

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

#### 3.1. HANDLING AND INSTALLATION PRECAUTIONS

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

**The game must NOT be installed under the following conditions:**

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

**Important:**

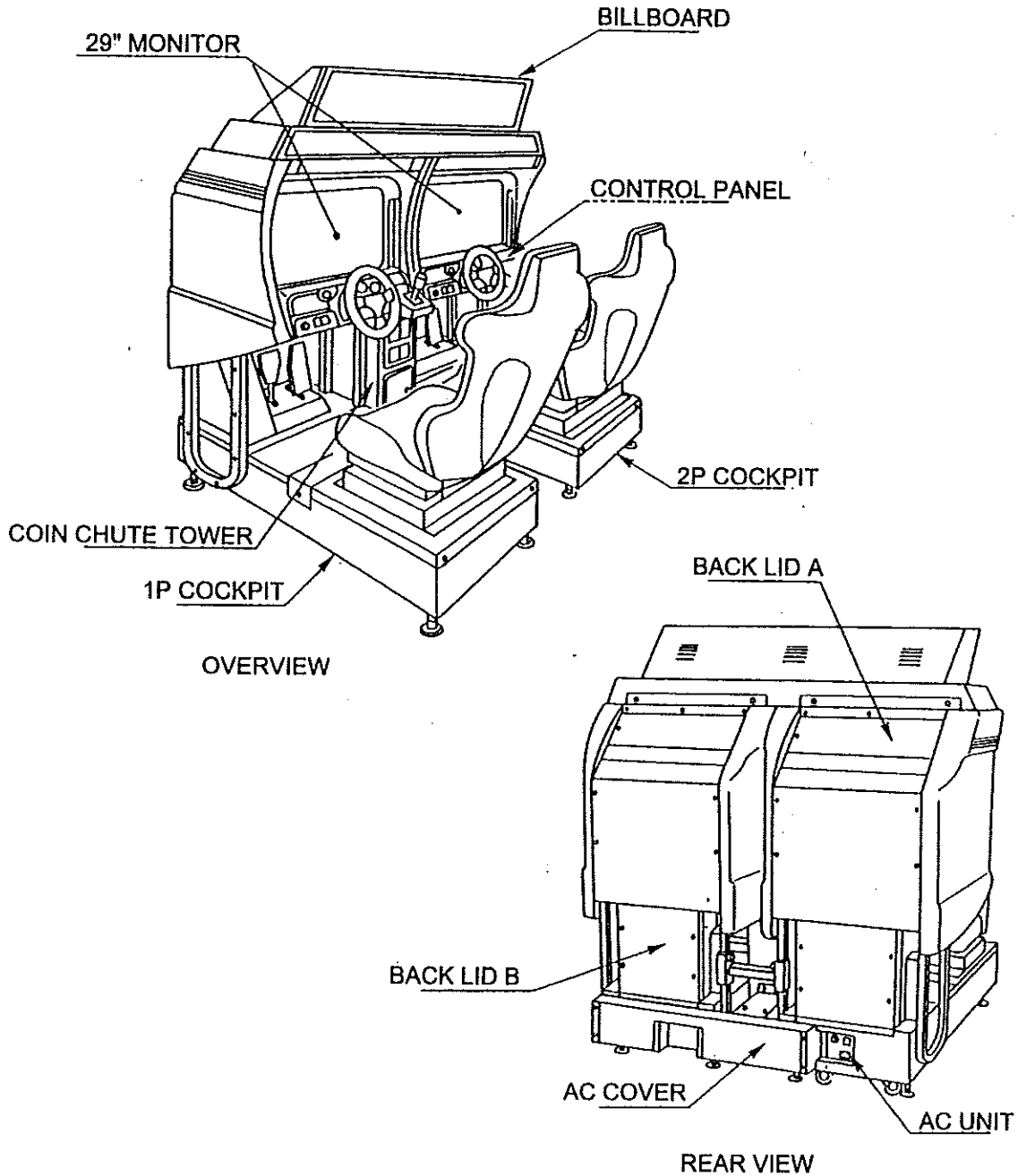
- This machine should only be installed by Qualified Service Personnel.
- Be sure to switch the supply power OFF and remove the mains supply plug from the machine before any work is carried out on the machine.
- Do not attempt to repair the PCB's (Printed Circuit Boards) yourself. This will void the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



**IMPORTANT!**

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

### 3.2. NAME OF PARTS



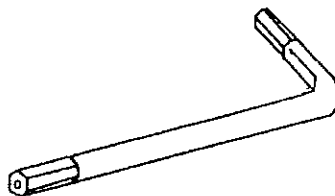
	Width (cm)	Length (cm)	Height (cm)	Weight (kg)
COCKPIT (per seat)	82	164.5	152	Approx. 231
COIN CHUTE TOWER	30.5	33	57	Approx. 13.5
BILLBOARD	160	46	40.5	Approx. 30
When Assembled	163.2	170	192	Approx. 513



### 3.3. ACCESSORIES

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

No.	PART NUMBER	QTY	DESCRIPTION
1	LMN-0200UK	1	ASSY BILLBOARD LMN
2	DYN-0300UK	1	ASSY COIN CHUTE TOWER UK
3	DYN-0500UK	1	ASSY WIRE COVER UK
4	DYN-0013UK	1	JOINT PIPE
5	DYN-0014UK	2	BILLBOARD HOLDER DAYTONA
6	DYN-0006XUK	1	AC COVER B
7	DYN-0018UK	1	AC COVER C
8	DYN-0019UK	1	AC COVER D
9	RAL-XXXX-14UK	1	TIE BRACKET RALLY
10	600-6275-0500	2	CABLE FIBER OPTIC 5mm x 500cm
11	SAECE015	1	CERT OF CONFORMANCE LMN
12	420-6322-02UK	1	SERVICE MANUAL LMN TWIN
13	OS1019	1	SELF SEAL BAG 9X12.3/4
14	PK0122	1	CARTON INST KIT LMN TWIN
15	420-5395-24-1SA	1	SERVICE MANUAL SANWA SAMSUNG
101	421-9588	1	SEAT NUMBER NO. 3-8 LMN
102	509-5704	1	SW MICRO TYPE (OMRON K3L 13)
103	540-0006-01	1	WRENCH M4 TMP PRF
104	540-0007-01	1	WRENCH M5 TMP PRF
105	220-5484	1	VOL CONT B-5K OHM
106	540-0009-01	1	WRENCH M8 TMP PRF
107	390-5167	2	LAMP 110V 30W
201	030-000825-SB	16	M8X25 BLT W/S BNP
202	FS1031	4	M8 WSHR 25OD FLT BNP
203	030-000820-S	4	M8X20 BLT W/S PAS
204	000-P00408-WB	10	M4X8 MSCR POSI PAN W/FS BNP
205	FX0400	12	M8 WSHR FORM A FLT BNP
206	FX0011	3	M4 NUT FLG SER BZP
207	FX0258	4	M8 WSHR 22OD FLT BZP
208	FX0431	5	M4X12 MSCR POSI PAN BNP
209	FX0404	5	M4 WSHR SPR BNP
210	FS1009	5	M4 WSHR FORM A FLT BNP

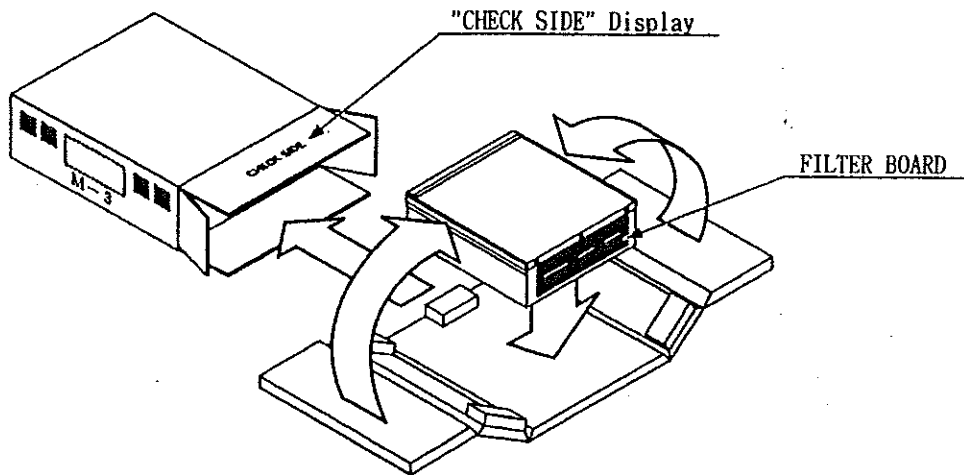


Items 103, 104 & 106 - Tamper-proof TORX wrenches.

**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.

### 3.4. ASSEMBLY INSTRUCTIONS



- 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 7 item sequence

- STEP 1 ASSEMBLING THE COCKPIT**
- STEP 2 SECURING IN PLACE (LEG ADJUSTER ADJUSTMENT)**
- STEP 3 INSTALLING THE BILLBOARD**
- STEP 4 INSTALLING THE AC COVERS (WIRING COVERS)**
- STEP 5 CONNECTION TO THE POWER SUPPLY**
- STEP 6 TURNING THE POWER ON**
- STEP 7 ASSEMBLY CHECK**

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



- Fit all fixings loosely first as detailed in step 1, then position all components before finally tightening fixings at step 2.

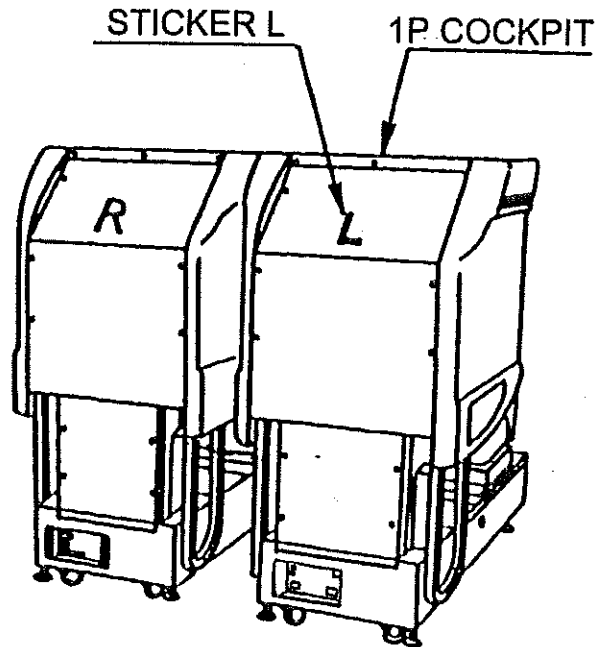
### 3.4.1. ASSEMBLING THE COCKPIT



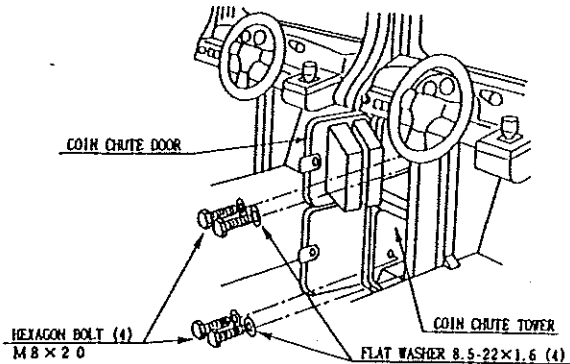
**IMPORTANT!**

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

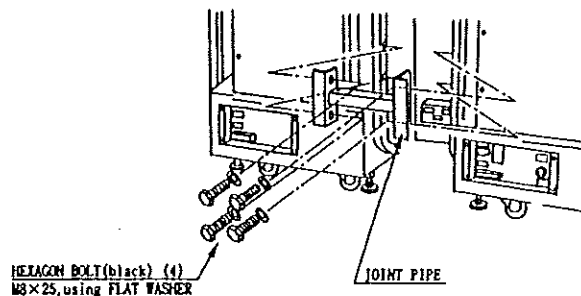
1. Place the two cockpits side by side. Position the 1P cabinet, which has the IEC inlet at the left hand side when viewed facing the back of the monitor. **STICKER L** is attached to the back of the 1P cabinet and **STICKER R** on the back of the 2P cabinet



2. Install the coin chute tower in between both cabinets. Open the coin chute door and the cash door and secure with the 4 hexagon bolts from inside the doors. At this time, make sure the bolts are only loosely fitted.



3. Install the joint pipe on the rear-side of both cabinets by securing with 4 hexagon bolts, at this time loosely.



### 3.4.2. SECURING IN PLACE (LEG ADJUSTER ADJUSTMENT)

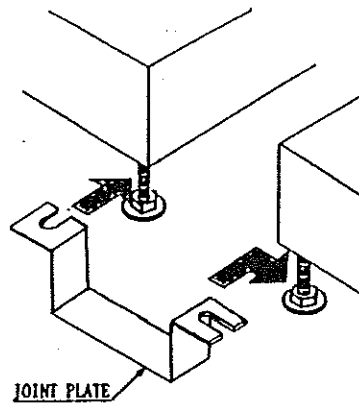
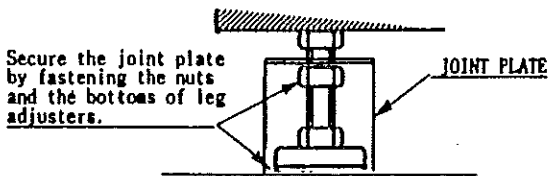
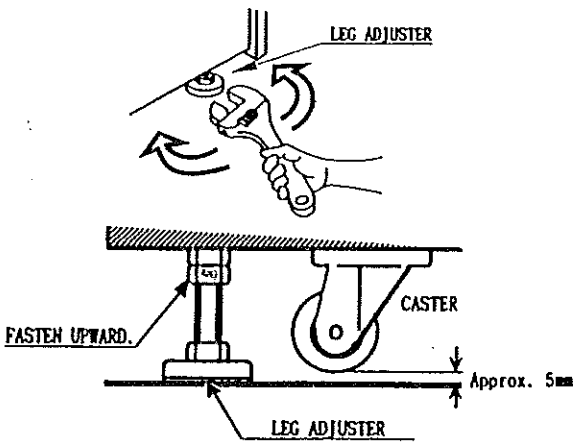
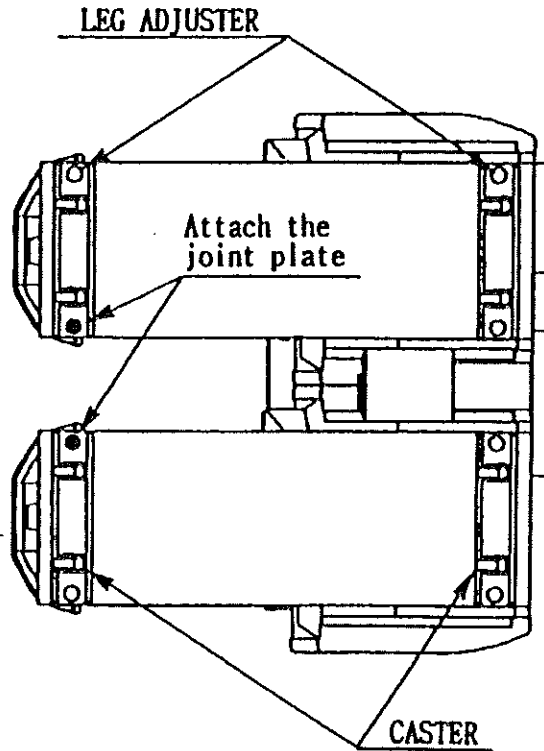


**IMPORTANT!**

- Make sure all of the leg adjusters are in contact with the floor. If they are not the machine may move and cause injury. This operation requires 2 people.
- This operation should only be carried out by QUALIFIED SERVICE PERSONNEL.

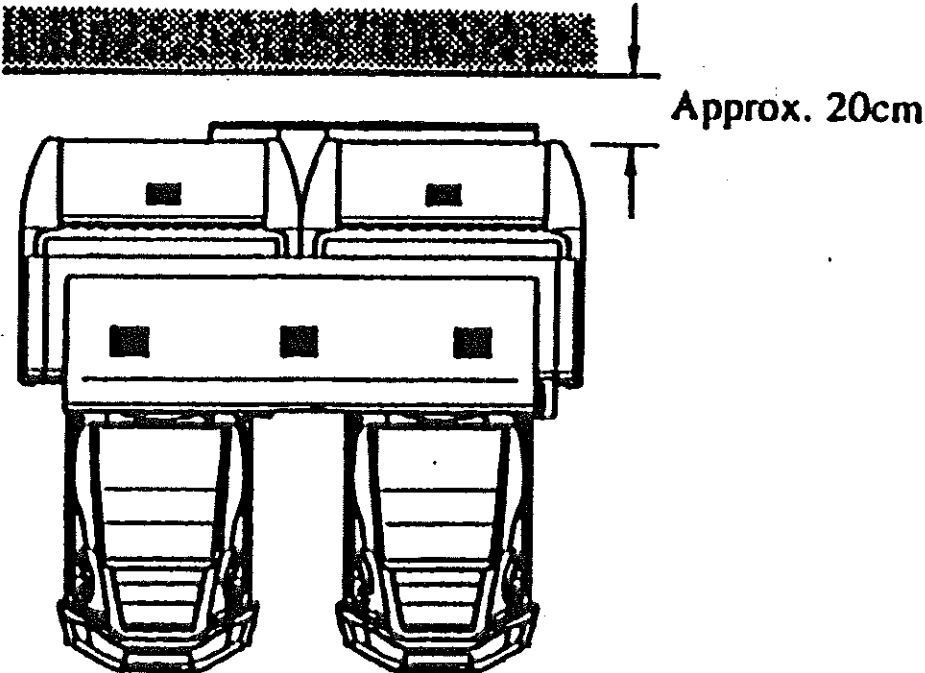
This machine has eight castors and eight leg adjusters. When the installation position is decided. Unscrew the leg adjusters so that they raise each caster a minimum of 5mm from the floor. Make sure the machine is level.

1. Move the machine to the installation position. When installing against or close to a wall, be sure to allow an adequate space to allow the player access to the machine.
2. Make the leg adjusters contact the floor. Adjust using a spanner as shown below so that a minimum of 5mm exists between the casters and the floor. Make additional adjustment so that the machine is level.
3. Slide the joint plate onto the shafts of the indicated leg adjusters. Tighten the lock nut on all 8 leg adjusters. This will secure the joint plate.



After securing the leg adjuster bolts, fully tighten all bolts temporarily attached in STEP 1 above.

Ensure adequate ventilation is maintained as detailed below



### 3.4.3. INSTALLING THE BILLBOARD



CAUTION!

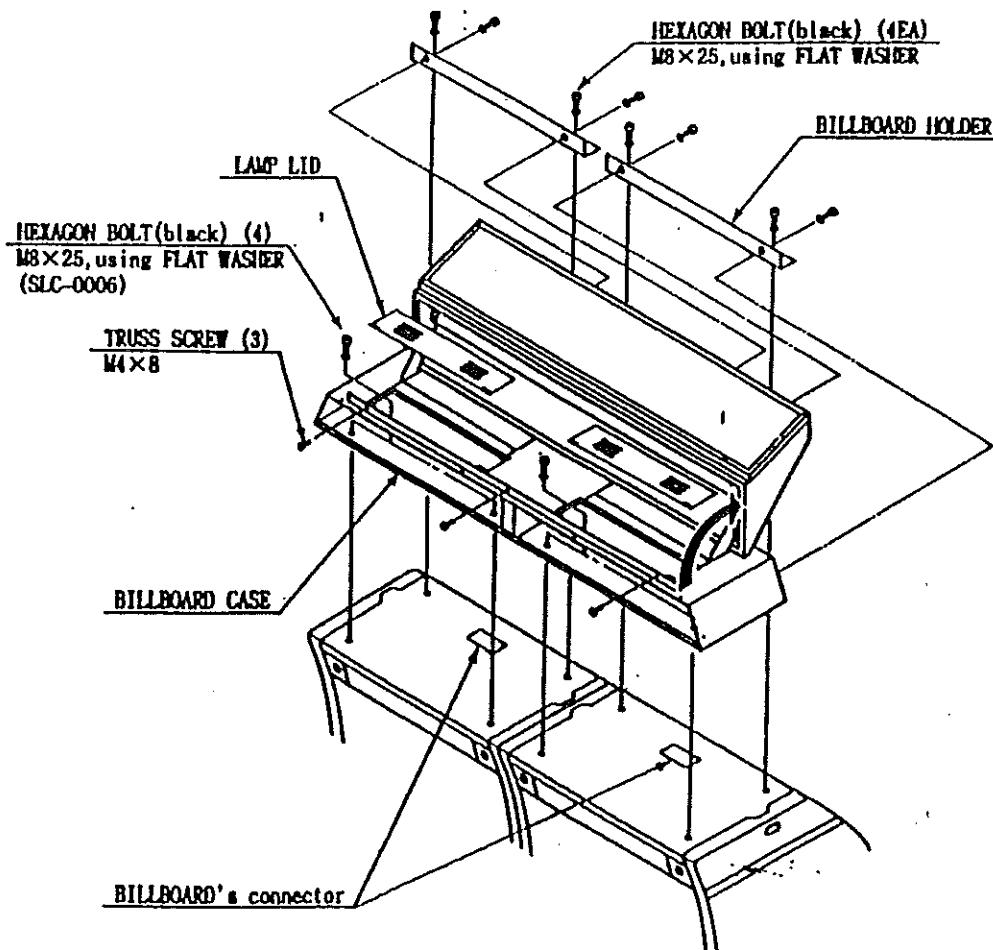


IMPORTANT!

- One person alone cannot perform the installation of the billboard assembly. Seek assistance before attempting this operation
- This operation should only be carried out by QUALIFIED SERVICE PERSONNEL.

When this part is delivered the billboard plate is fitted to the upper billboard assembly. Ensure the machine has been installed as in the previous section before starting this assembly.

1. Remove the screws holding the Corner Edge Upper in position. Remove the Corner Edge Upper and place it and the screws in a safe place.
2. Carefully slide out the Upper Billboard Plate. This part is easily damaged. Place it in a safe place.
3. Remove the 3 truss head screws holding the Billboard Assembly together. Lift up the Upper Billboard and remove the 2 Lamp Lids.
4. Place the Billboard Assembly on to the two Cockpits. Secure in place using 4 hexagon bolts. Take care not to damage the Lamp Units. You may find it easier to temporarily remove the Lamp Units.
5. Connect the 3 electrical connectors to the Roof Lids of the cockpits.
6. Securely attach the earth lead to the earthing stud in the 1P cockpit roof.
7. Fit the 2 Billboard Holders to the rear of the Billboard Assembly and secure to the Roof Lids using a total of 8 hexagon bolts.



ASSEMBLING THE BILLBOARD

### 3.4.4. INSTALLING THE AC COVERS (WIRING COVERS)

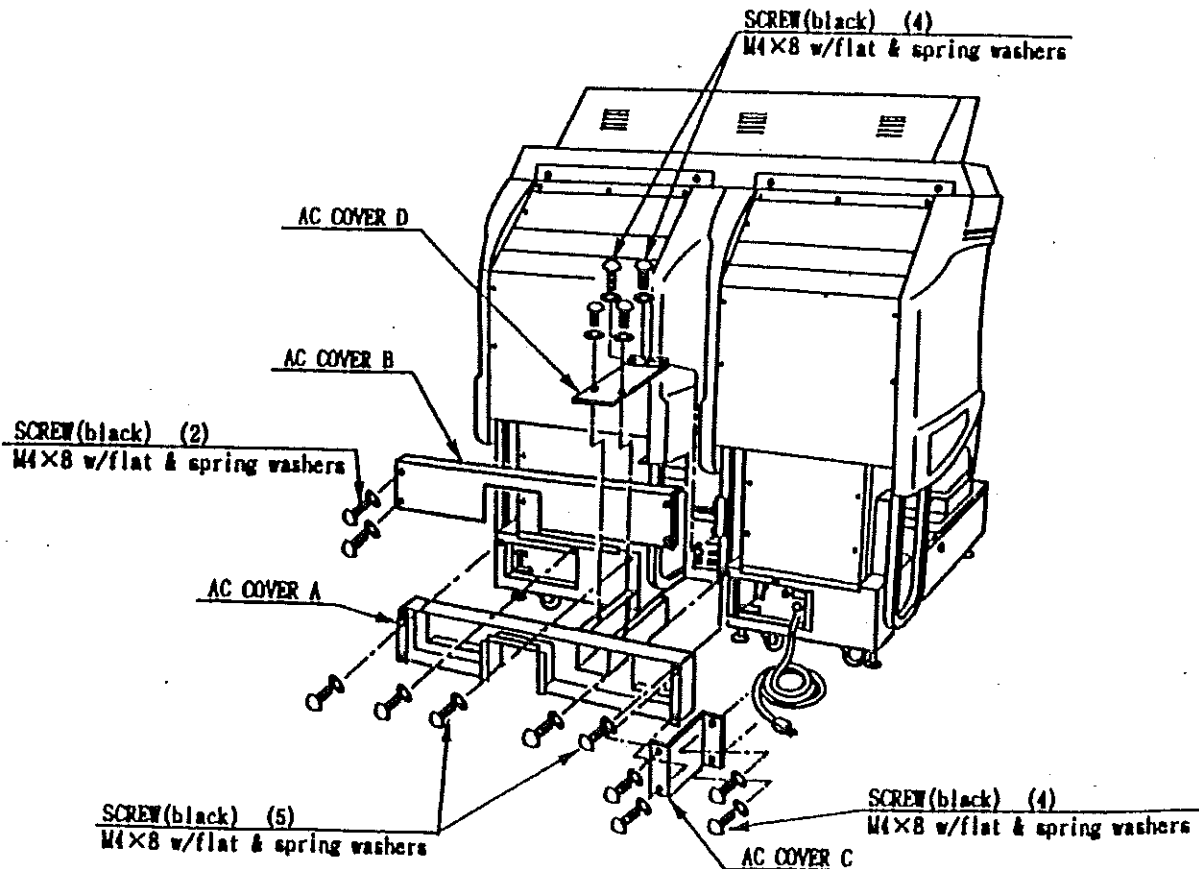


**IMPORTANT!**

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

The AC Wire Covers is used for protecting the interconnecting wiring and the fibre optic cables. When carrying out this operation be very careful so as not to trap any wire between the covers. Pay attention when handling the fibre optic cables as excessive bending may cause damage.

1. Attach AC Cover A to the rear of the cabinet using 5 screws.
2. Make all the wiring connections between the two cockpits and the Coin Chute Tower. The wiring connectors are colour coded and cannot be fitted into the wrong size connectors. Do not force any connectors together.
3. Connect the earth wires between the two AC Brkts, the AC Covers and the Coin Chute Tower.
4. Insert the fibre optic cables into the fibre optic connectors. Ensure that the "RX" connection on the 1P cockpit is connected to the "TX" connector on the 2P cockpit. The other fibre optic connects the "TX" connector of the 1P cockpit to the "RX" connector of the 2P cockpit.
5. Insert AC Cover B into AC Cover A from above and secure using 2 screws. Be sure not to trap any cables.
6. Secure AC Cover C and AC Cover D using 4 screws each.





### 3.4.5. CONNECTION TO THE POWER SUPPLY



WARNING!

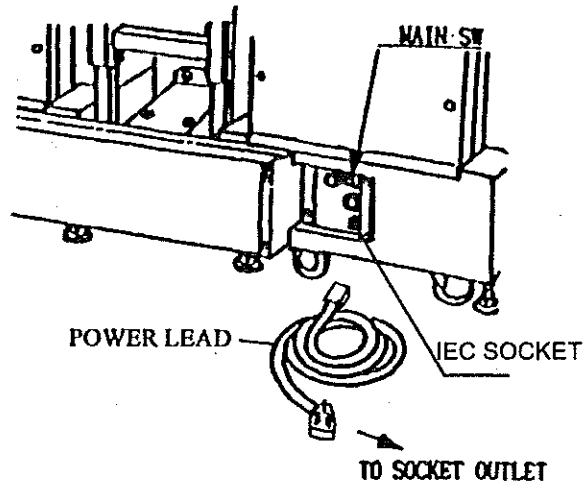


IMPORTANT!

- This operation may only be carried out once the machine has been completely assembled.

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

The AC Unit is located on the rear of the 1P cockpit. Using the power lead supplied connect this to the mains socket at the wall.



### 3.4.6. TURNING THE POWER ON



**IMPORTANT!**

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

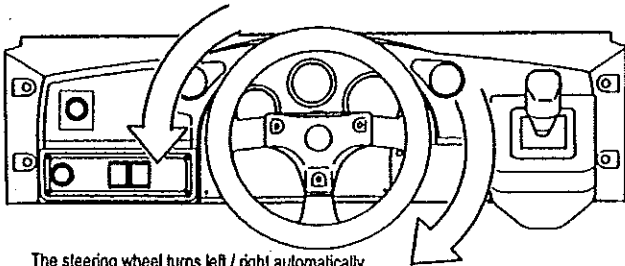
Turning the AC Units main switch on will cause the machine to start the **POWER ON** check and the **NETWORK** check automatically.

With the **POWER ON** check, the steering wheel will move, then centre. In this check the values of the V.R. inside the control panel are checked. If the steering is touched or prevented from moving during this check then the reaction system will be removed. There will be no feedback to the player during gameplay.

During the **POWER ON** check each cockpit will display the Game Assignments relating to that cockpit.

If the **POWER ON** check does not follow the above procedure, switch off the machine, wait a few second and switch the power back on.

During **NETWORK** check "**NETWORK CHECKING**" flashes on the screen. When the **NETWORK** check is finished the **DEMO** mode will appear on the screen. After 10 seconds, if the **NETWORK** check is not complete, check the fibre optic cable connections.



The steering wheel turns left / right automatically.

```
COMM MODE: XXXXX  
COMM SIZE: XXXX  
COMM NODE: XXXX  
NODE ID: XXXX  
RECV STAT: XXXX  
SEND STAT: XXXX  
  
EPROM ST: XXXX
```

CHECKING NETWORK

### 3.4.7. ASSEMBLY CHECK



**IMPORTANT!**

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

In the TEST MODE, ensure that the assembly has been completed satisfactorily and the IC BD is functioning correctly (refer to Section 5.2)

Perform the following tests:

#### MEMORY TEST

**MEMORY TEST**

<ROM>

IC 01 GOOD	IC 02 GOOD	IC 03 GOOD	IC 04 GOOD
IC 05 GOOD	IC 06 GOOD	IC 07 GOOD	IC 08 GOOD
IC 09 GOOD	IC 10 GOOD	IC 11 GOOD	IC 12 GOOD
IC 17 GOOD	IC 18 GOOD	IC 19 GOOD	IC 20 GOOD

<RAM>

IC 17 GOOD	IC 18 GOOD	IC 94 GOOD
------------	------------	------------

PRESS TEST BUTTON TO EXIT

Selecting the MEMORY TEST on the TEST MENU screen tests the on-board memory automatically.

The status of the Game Board is satisfactory if all of the ICs show GOOD.

#### INPUT TEST

**INPUT TEST**

PLAYER 1

UP	OFF
DOWN	OFF
BUTTON#1	OFF
BUTTON#2	OFF
START	OFF
COIN CHUTE#1	OFF
COIN CHUTE#2	OFF
SERVICE	OFF
TEST	OFF
DIPSWITCH	8 7 6 5 4 3 2 1
VOLUME	OFF OFF OFF OFF OFF OFF OFF OFF
AD_17C	-----V-----
AD_22B	-----V-----
AD_302	-----V-----

PRESS TEST BUTTON TO EXIT

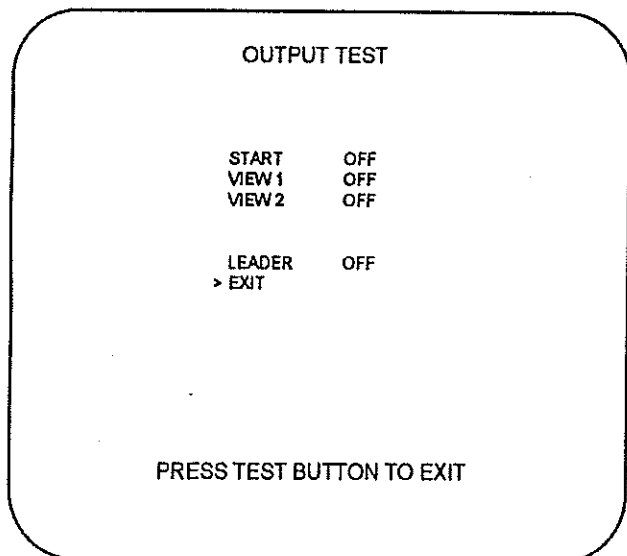
Selecting the INPUT TEST on the TEST MENU screen enters the menu to test the VRs and switches.

Press each switch to check its operation. If the display changes to "ON" when the switch is activated, the wiring connections are satisfactory.

Check the display of the VR value for the steering wheel, and accelerator & brake pedals. If the VR values are not satisfactory, some adjustment is required.

Refer to Sections 3.6.1 & 3.6.2.

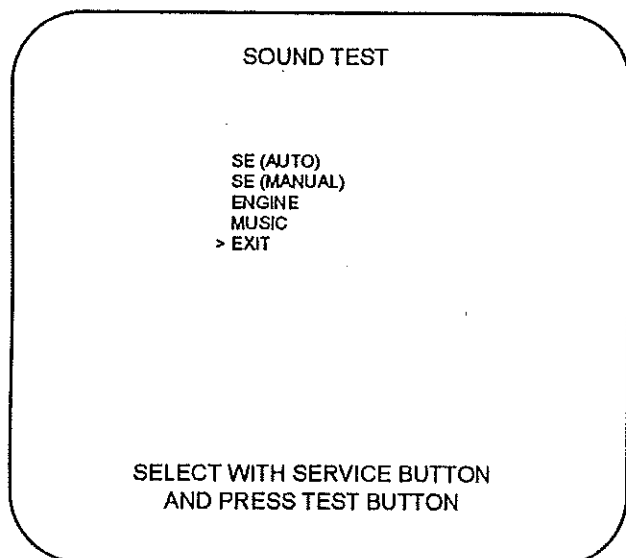
## OUTPUT TEST



Selecting the OUTPUT TEST on the TEST MENU screen enters the menu to test the lamps.

Perform lamp tests to ensure the connections to the lamps and the lamps themselves are working satisfactorily.

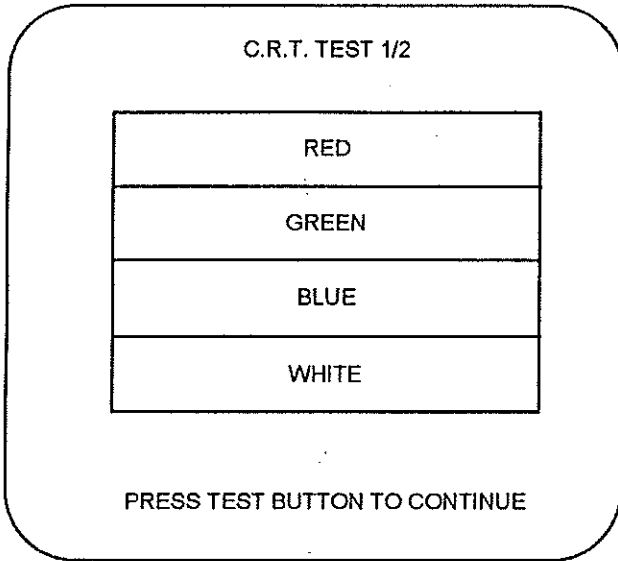
## SOUND TEST



Selecting the SOUND TEST on the TEST MENU screen enters the menu to test that the audio system connections and the sound ROMS are working satisfactorily.

Check that sound is being emitted from each speaker correctly and that the sound volume is appropriate.

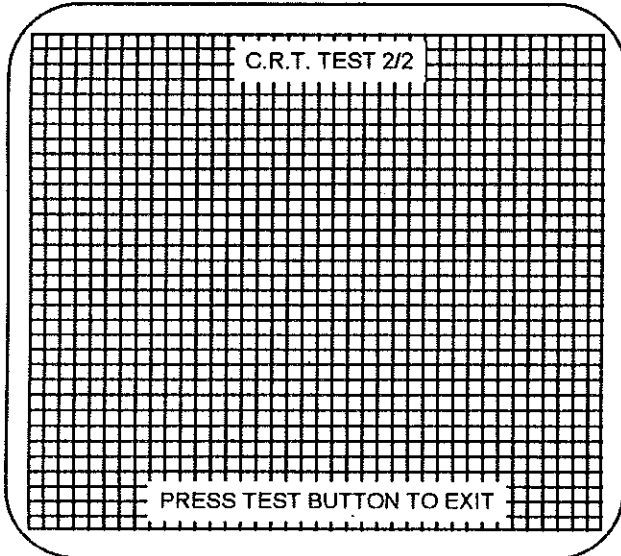
## C.R.T. TEST



Selecting the C.R.T. TEST on the TEST MENU screen enters the menu used to help adjust the monitor.

Although the monitor is set up at the time of shipment from the factory, it may be necessary to adjust the settings as environmental conditions can affect the picture. Refer to the Service Manual relevant to the monitor (supplied with this game) if adjustments are required.

Use the Demagnetising Switch on the VTS assembly to remove any colour distortions from the screen (refer to Section 5.1).



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

### 3.4.8. MOVING THE MACHINE

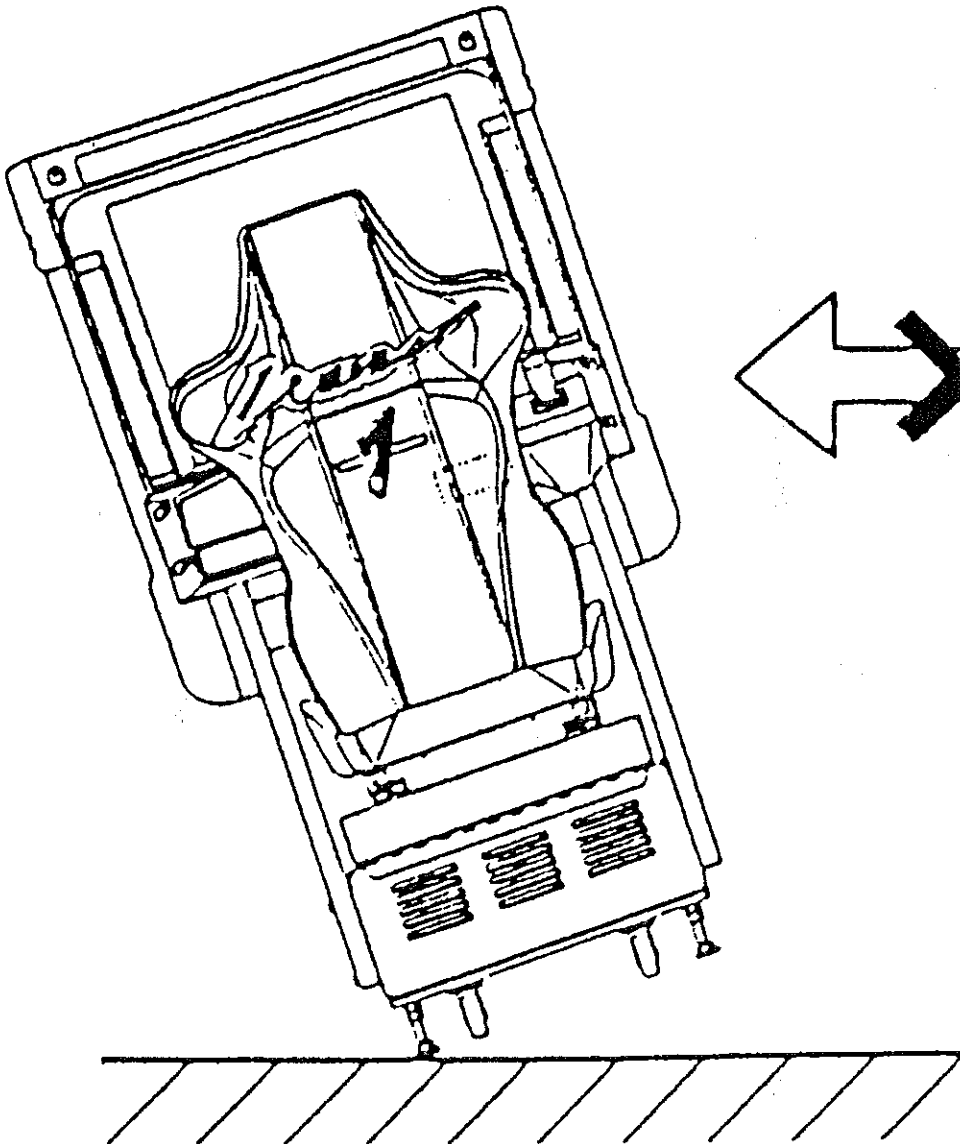


CAUTION!



IMPORTANT!

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



### 3.5. 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.

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 P.C.B. reference:

PART NUMBER	LOCATION	TYPE & DETAILS	QTY
838-11966	Motor Drive BD, Ref F1	7A 250V 32mm T Glass	1 per BD
838-11855(CE)-01	Conn, SSR BD, Ref F1	5A 250V 20mm T Glass	1 per BD
838-11650~	Eq. Pwr Amp, Ref F1	6A 250V 20mm T Glass	1 per BD
400-5330-02	Sw Regu M3, Ref F1	4A 250V 20mm T Ceramic	1 per BD
514-5078-10000	EP1302, IEC inlet	10A 250V 20mm T Ceramic	1 per Game
514-5078-5000	EP1334, fuse holder on AC Bracket	5A 250V 20mm T Ceramic	1 per AC bracket
514-5080-10000UK	600-6907-02UK WIRE HARN 12.5V FUSE EXT on LMN-4500UK	10A 250V 32mm T Ceramic	1 per wire harness

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

## 3.6. MAINTENANCE

### 3.6.1. HANDLE MECHA



CAUTION!

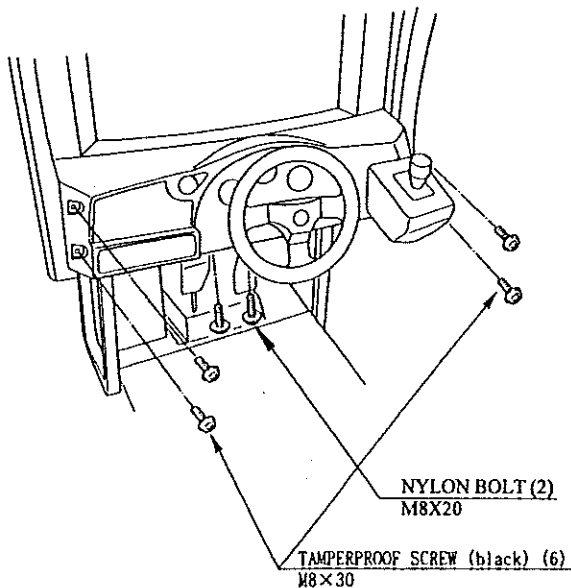


IMPORTANT!

- This unit is a heavy item weighing approximately 23kg. Be sure to take care when performing this task.
- Immediately after the game is finished, the motor may still be very hot. When performing this work, wait for the motor to cool off.
- This operation should only be carried out by **QUALIFIED SERVICE PERSONNEL**.

Using the test mode, if the Steering Wheel's V.R. variations are not within the allowable limit, the V.R. installation position requires adjustment or the V.R. needs replacement. Also be sure to apply grease every 3 months.

#### 3.6.1.1. REMOVING THE HANDLE MECHA



1. Turn the POWER switch OFF.
2. Remove a total of 4 tamperproof screws from both sides of the Control Panel and 2 nylon hexagonal bolts from underneath the Control Panel.
3. Wiring connectors are connected inside the Control Panel. Carefully withdraw the Control Panel in a manner so as not to damage the wiring.
4. Disconnect the wiring connectors.



### 3.6.1.2.REPLACING AND ADJUSTING THE V.R.



**WARNING!**



**IMPORTANT!**

- Never touch places other than those specified. Touching places other than those specified can cause electric shock and short circuit.
- After the replacement or adjustment of the V.R. be sure to set the Centre of Steer in the DRIVE BOARD TEST.
- This operation should only be carried out by **QUALIFIED SERVICE PERSONNEL.**

#### 3.6.1.2.1.TO CHECK THE VALUE OF THE V.R.

The Steering Wheel's RH side V.R. is for the Game Board & Drive Control, and the LH side V.R. is for the Motor Drive Board. Check the V.R. value on the Test Mode screen.

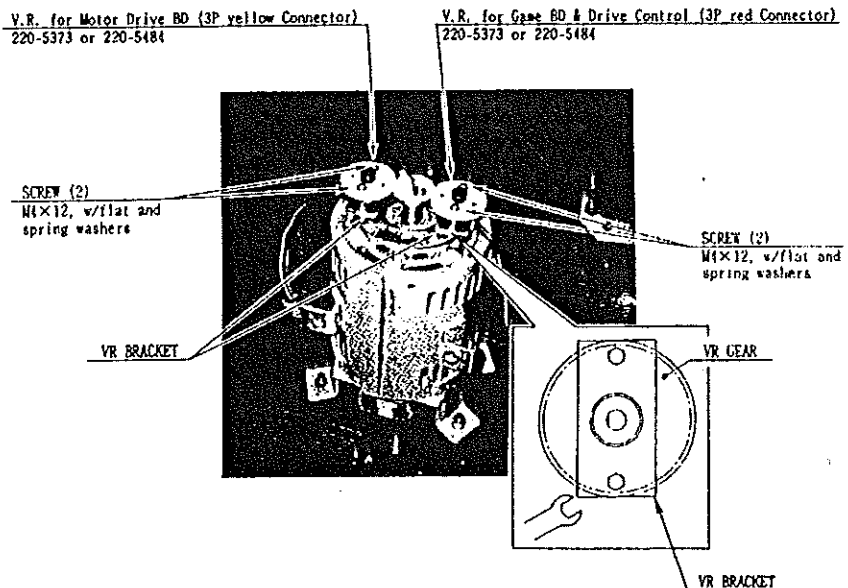
Normally, the V.R. value for the Game Board & Drive Control is shown on the Test Mode screen. To check the V.R. value for the Motor Drive Board, follow the procedure below.

1. Remove the Control Panel.
2. Disconnect the wiring connectors (3P yellow, 3P red) of both Variable Resistors.
3. Swap over the wiring connectors so that the V.R. for the Motor Drive is connected into the Game Board & Drive Control input.
4. The Steering Wheel value on the INPUT TEST mode screen in the Test Mode will be the V.R. value for the Motor Drive Board.
5. After making V.R. adjustments, re-connect the connectors in the original manner.

	Left	Centre Position	Right
For Game Board & Drive Control	less than 30H	7DH ~ 83H	more than C0H
For Motor Drive Board	less than 30H	7DH ~ 83H	more than C0H

#### 3.6.1.2.2.TO REPLACE THE V.R.

1. Use a 1.5mm A/F hex key to release the gear wheel from the V.R. shaft and slide off.
2. Release the VR Bracket from the main ring on the Mecha assembly.
3. Release the jam nut holding the V.R. onto the VR Bracket.
4. After replacement, check the V.R. value setting in the Test mode.



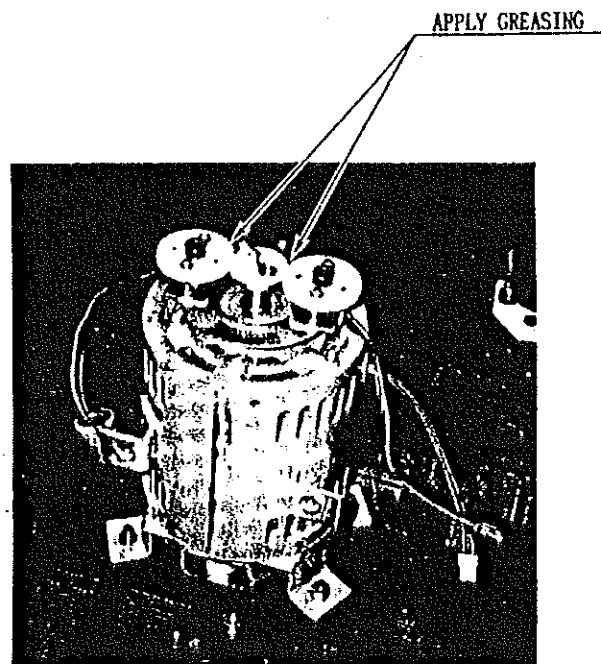
### 3.6.1.2.3. TO ADJUST THE V.R.

1. Using a spanner, loosen the 2 hexagon bolts holding the VR Bracket onto the main ring on the Mecha assembly.
2. Move the VR Bracket away from the centre shaft's gear so that the teeth un-mesh.
3. Adjust the rotation of the free V.R. to obtain the correct value shown above.
4. Mesh the gears back together so that ~0.5mm of backlash is obtained and tighten the VR Bracket's fixing screws.
5. After adjustment, check the V.R. value setting in the Test mode.

### 3.6.1.3. GREASING

Apply greasing to the gear portions once every 3 months.

(Recommended grease: 090-0044 GREASE NET 300g ~ Shell Auto Grease)

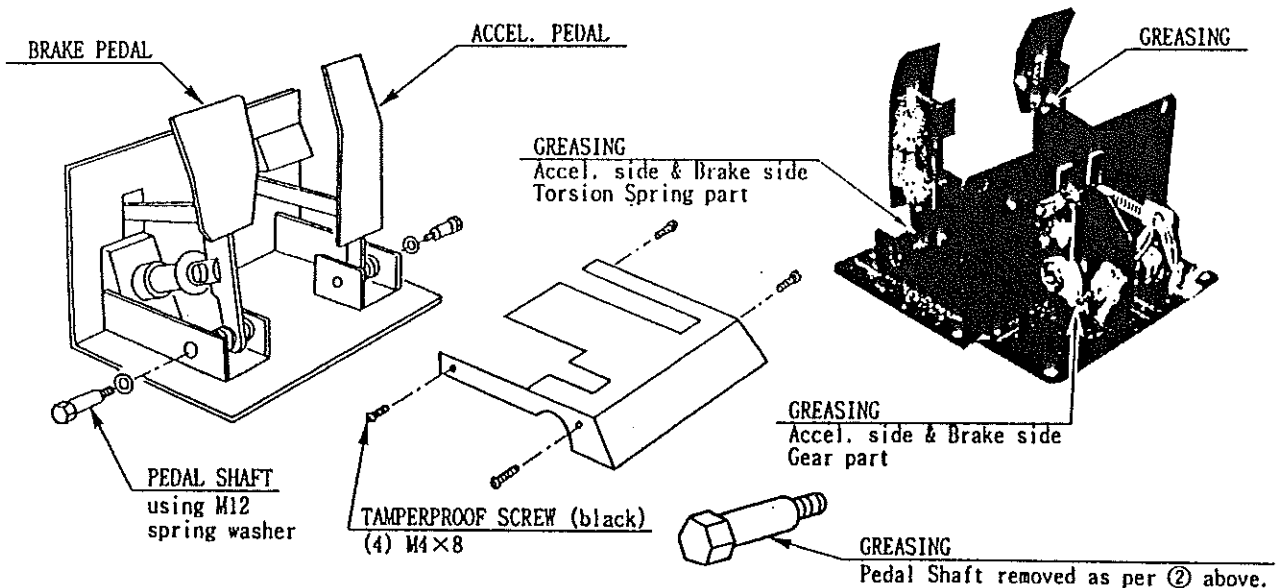


### 3.6.2.2.ADJUSTMENT OF THE V.R.

1. Loosen the 2 screws that secure the VR bracket and swing out so as to un-mesh the gears.
2. Adjust the VR so that the lower limit for the pedal is obtained (seen in INPUT TEST).
3. Mesh the gears together so that a maximum of  $\pm 0.5\text{mm}$  backlash is obtained.
4. Tighten the fixing screws.
5. Check the upper and lower VR values in INPUT TEST and adjust again if necessary so that the limits are obtained.

### 3.6.2.3.GREASING

1. Remove the 4 Hex bolts holding the ACCEL & BRAKE ASSY onto the pedal base and withdraw carefully.
2. Disconnect the wiring connectors, remove the earth tag and move the assembly to a place where it may be worked on easily.
3. Remove the 4 tamper-proof screws that secure the PEDAL COVER and move it forward to gain access to the inside.
4. Remove the PEDAL SHAFT from its housing at the base of both the Accelerator and Brake pedals. Be careful as the pedals have a heavy-duty torsion spring acting on them and this will throw the pedals forwards unless restrained.
5. Lubricate each part and reassemble, taking care with the pedal springs. Replacement is the reverse of removal. Be sure to reconnect the earth tag.



### 3.6.3. SHIFTER



CAUTION!



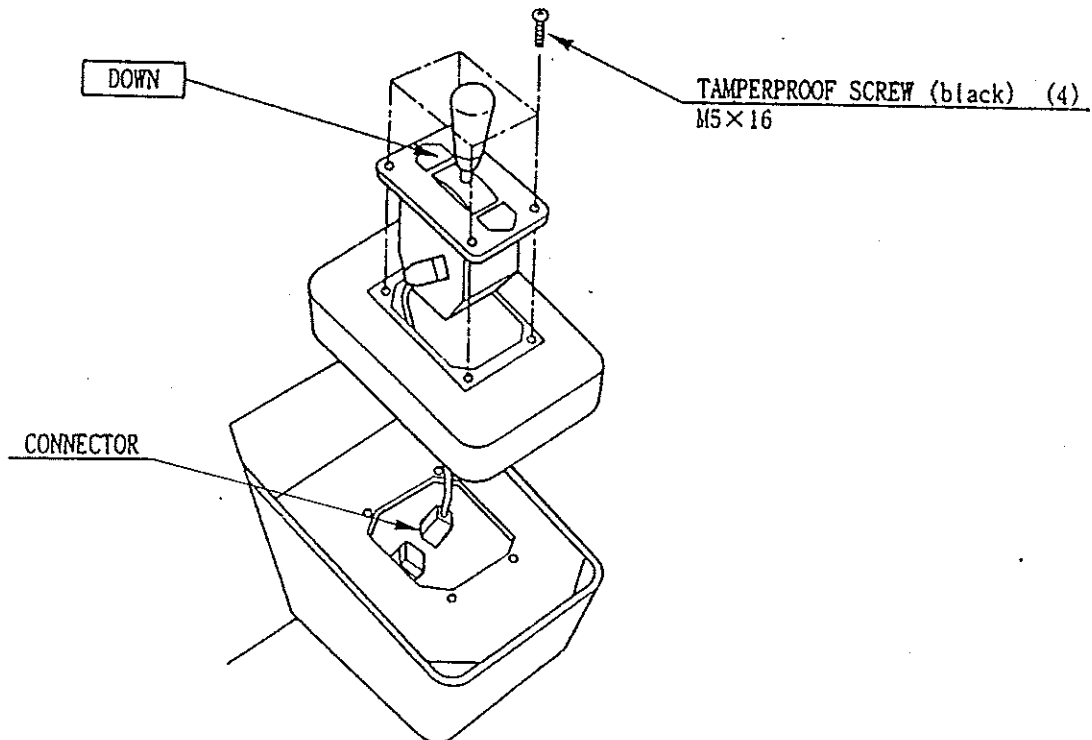
IMPORTANT!

- 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.

If the shifter's microswitch requires replacement, follow the procedure below to replace it:

1. Turn off power to the machine and remove the plug from the wall socket.
2. Remove the four screws and lift out the shifter.
3. Disconnect the wiring connector and the earth tag to the shifter.
4. Replacement is the reverse of removal. Be sure to re-connect the earth tag and position the shifter so that the test DOWN is above the shift lever.



To replace the microswitch, proceed as follows:

1. Disconnect the wiring connectors from the switch to be replaced.
2. Remove the 2 tapping screws to remove the microswitch.

Be sure to apply lubrication as directed in the service interval section. Refer to Section 3.10.

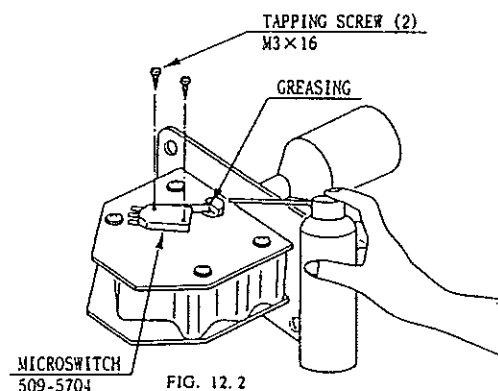


FIG. 12.2

### 3.6.4. REPLACEMENT OF FLUORESCENT LAMP AND OTHER LAMPS



WARNING!

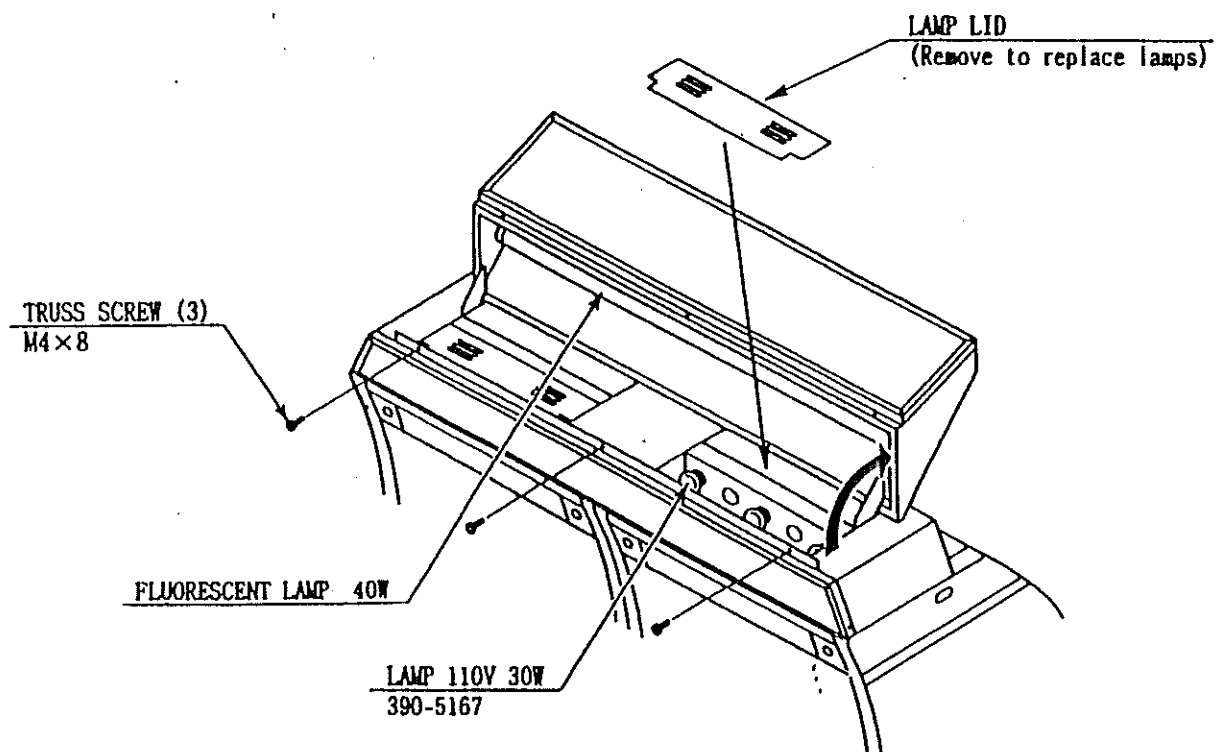


IMPORTANT!

• 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.

Open the billboard as shown to replace the fluorescent lamps and leader lamps.



### 3.7. 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 overcurrent.	First, remove the cause of overcurrent and reinstate the circuit protection device to its original status. Then identify the cause of the fault on the item which caused the overcurrent & fix.
The colour image on the screen is incorrect	Incorrect monitor adjustment.	Make appropriate adjustments. Refer to the monitor service manual supplied with the machine.
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. Section 5.1.
	Malfunctioning BD and Amp.	Perform Sound Test to check it. Section 5.2.
	Connector connection is incorrect	Check connector connection from Base to Speaker
Operation of Accel & Brake Pedals are not satisfactory	V.R. position deviated	Adjust V.R. value in the test mode. Sections 5.2 & 3.6.2.
	VR malfunctioning	Replace the V.R. Section 3.6.2.
	ADJUST GEAR's engagement is not correct	Adjust the engagement of ADJUST GEAR. Section 3.6.2.
SHIFT LEVER doesn't operate satisfactorily	Switch malfunctioning	Replace the switch. Section 3.6.3
Steering Wheel reaction strength is incorrect. Deviation of Centre	Power ON check not performed correctly.	Turn off power and then turn it back on again. Complete the power on check
	VR position deviated..	Adjust V.R. value in the test mode. Section 3.6.1.
	V.R. malfunctioning	Replace V.R. Section 3.6.1.
Steering Wheel reaction strength is insufficient	Reaction Mecha's secular change	Change Drive Control BD DIP SW setting. Section 3.8.3.
No Steering Wheel Reaction	Connector Connection is incorrect	Check connector connection from Base to Handle.
	The Motor Drive BD fuse is blown due to momentary overload	Replace the Motor Drive BD Fuse. Section 3.8.4
The fluorescent lamp does not light up	Fluorescent lamp needs replacement	Replace the fluorescent lamp. Section 3.6.4.
	The connector is disconnected	Check connector connections in the billboard case. Section 3.6.4.
The LEADER lamp does not light up	The lamp needs replacement.	Replace the lamp. Section 3.6.4.
	The connector is disconnected	Check connector connections in the billboard case. Section 3.6.4.
Interactive play is not possible	Communication cable is disconnected	Connect the cable.
	Cable connections are not correct	Connect the cable correctly. Section 3.9.
	Settings for communication play are not correct	Ensure that GAME ASSIGNMENTS settings are correct. Sections 5.1. & 3.9.3.

### 3.8. GAMEBOARD AND DRIVE CONTROL BOARD



WARNING!



IMPORTANT!

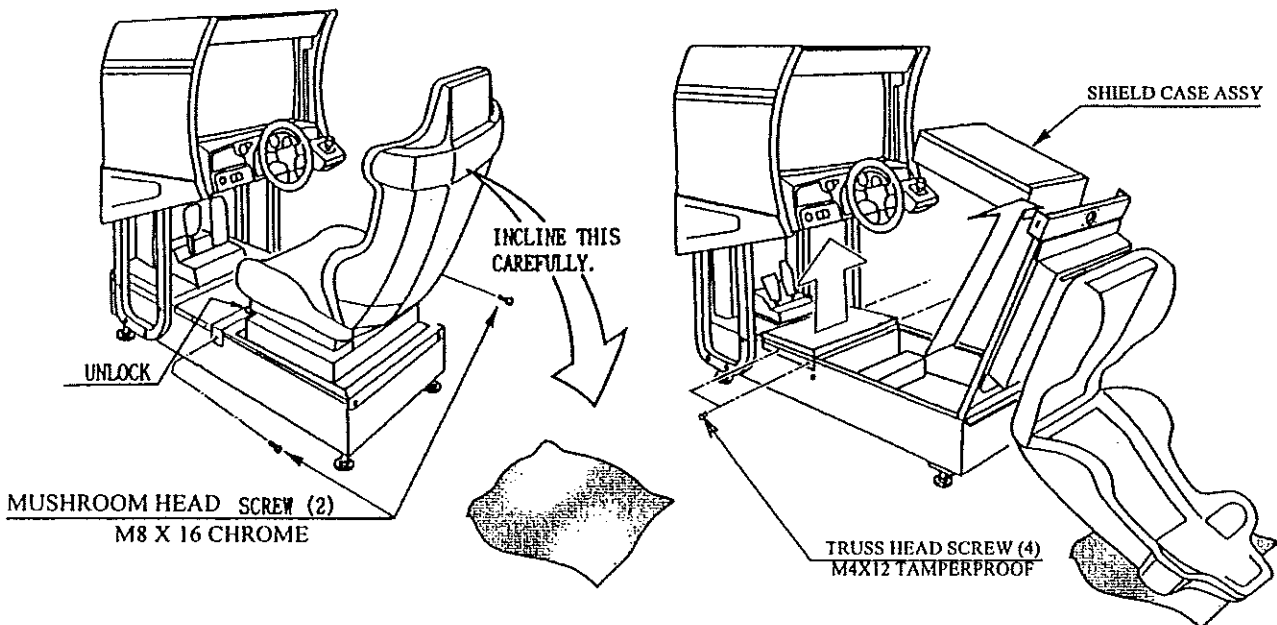
- Turn off the mains power and remove the power cord before opening the machine.

- 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

#### 3.8.1. REMOVING THE GAME BOARD

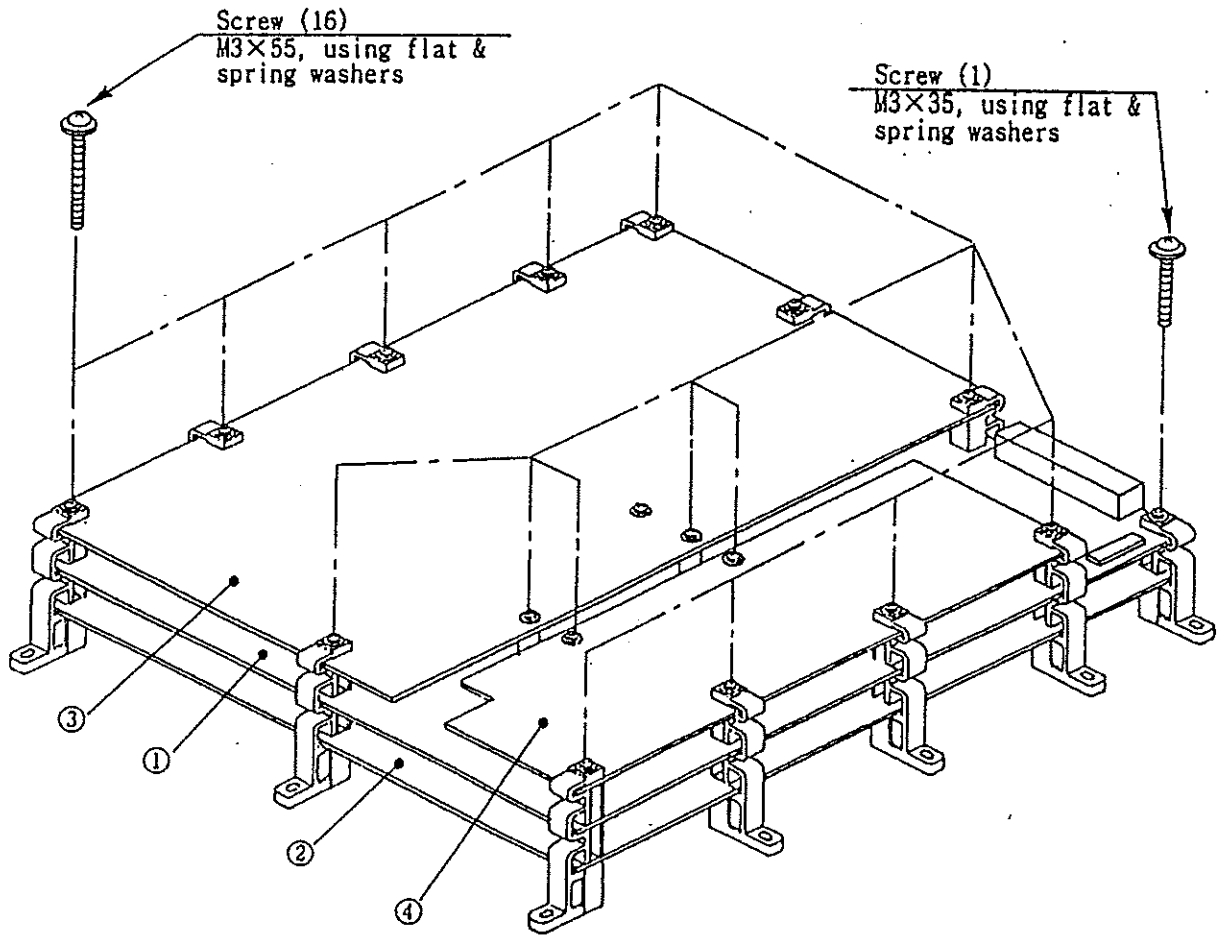
To remove the GAME BOARD use the following procedure.

- Turn the power to the machine off and remove the plug from the wall outlet.
- Remove the two M8x16 Mushroom Head Tamperproof screws from the rear floor.
- Remove the 4 screws from the lock cover.
- Using the key supplied unlock the rear floor.
- Lift the seat unit up and rotate it backwards. Lay a protective covering on the floor before you allow the seat unit to rest on the floor.
- Disconnect the wiring connections and the fibre optics from the FILTER BOARD.
- Remove the 4 screws holding the SHIELD CASE ASSY in place.
- Withdraw the SHIELD CASE partially from the base and turn over gently.
- Remove the 4 screws holding the SHIELD CASE BRKTS from the underside of the SHIELD CASE.
- Disconnect the earth tag.
- Lift the SHIELD CASE gently out. Always package the entire ASSY SHIELD CASE (LMN-4600) in the original card transit box - THERE ARE NO USER-SERVICEABLE PARTS INSIDE.



### 3.8.2. COMPOSITION OF THE GAME BOARD

#### GAME BOARD LE MANS 24 (833-13159)



ITEM NUMBER	PART NUMBER	DESCRIPTION
1	837-12874	MODEL 3 STEP 1.5 CPU BOARD
2	837-12875	MODEL 3 STEP 1.5 VIDEO BOARD
3	834-13160	ROM BD LEMANS 24
4	837-11861	MODEL 3 COMM BD COM



### 3.8.3. DRIVE CONTROL BOARD DIP 1 SETTING

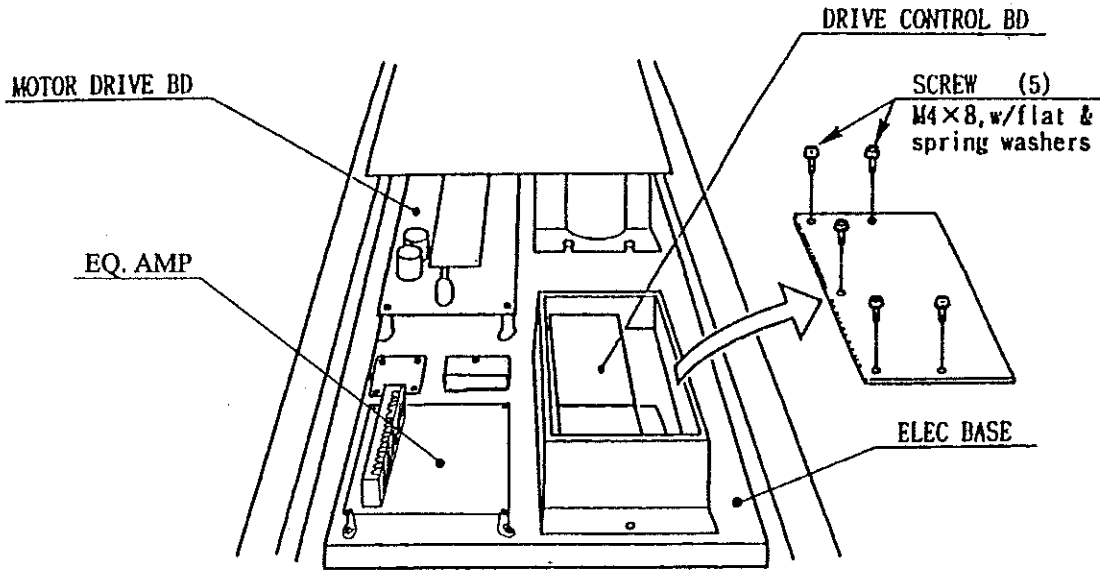


**IMPORTANT!**

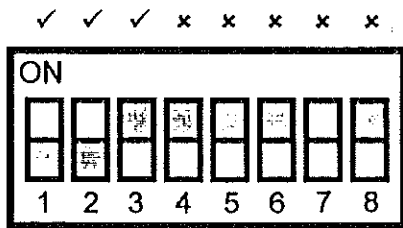
- The Drive Control Board is held in the small shield case underneath the front floor. Only change the DIP settings on position 1, 2 & 3 of DIP 1. Do not change the DIP settings on DIP 2.
- All work to be carried out by QUALIFIED SERVICE PERSONNEL.

The Steering Wheel's reaction force is controlled by the position of the first 3 switches on DIP 1.

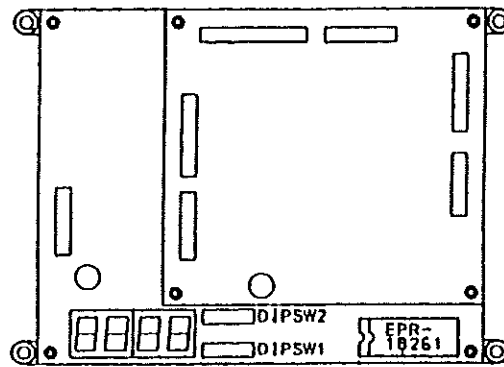
1. To gain access to the Drive Control Board, remove the front floor as described in Section 3.8.1, then remove the 5 screws and slide off the small shield case lid.



2. The Steering Wheel reaction force is determined by the binary switch position pattern as described in the table below:



**DIP 1**



DRIVE CONTROL BD (838-11967)

POSITION 1	POSITION 2	POSITION 3	REACTION FORCE
OFF	OFF	OFF	LIGHT
ON	OFF	OFF	↑ FACTORY SETTING ↓
OFF	ON	OFF	
ON	ON	OFF	
OFF	OFF	ON	
ON	OFF	ON	
OFF	ON	ON	
ON	ON	ON	
ON	ON	ON	

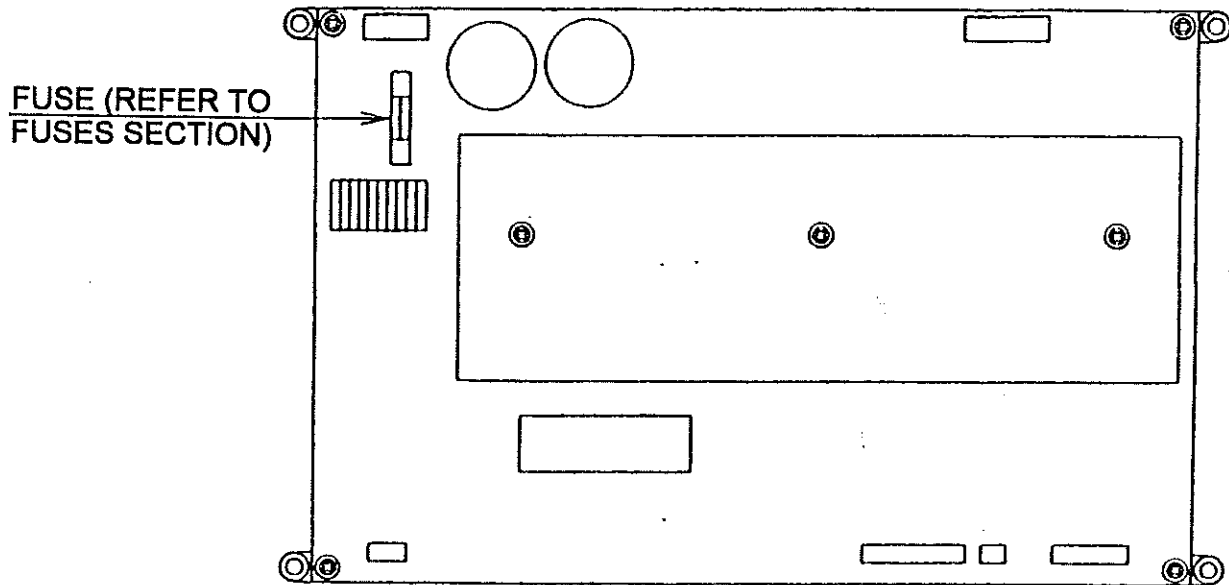
### 3.8.4. REPLACEMENT OF MOTOR DRIVE BD FUSE



**WARNING!**

- Switch off all power to the machine and remove the plug from the wall outlet.
- Be sure to use the specified rating of fuse (refer to Section 3.5)
- All work to be carried out by QUALIFIED SERVICE PERSONNEL.

Access is obtained as described in Section 3.8.3.



MOTOR DRIVE BD (838-11966)

### 3.9. COMMUNICATION PLAY



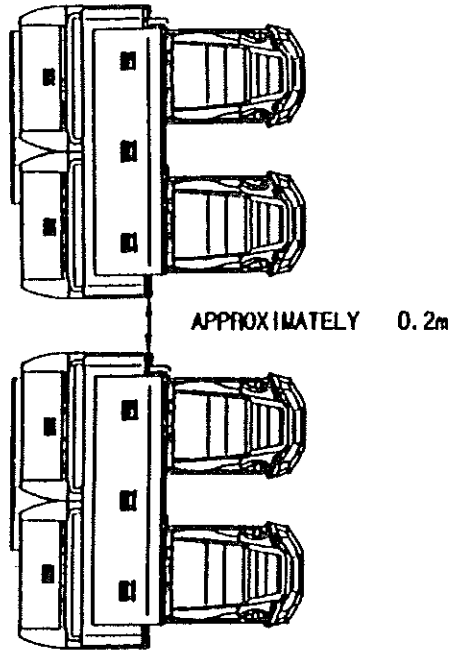
IMPORTANT!

- Linking machines should only be carried out by QUALIFIED SERVICE PERSONNEL.

For this game, 2 machines can be connected together, allowing a total of 4 simultaneous players.

#### 3.9.1. INSTALLATION PRECAUTIONS

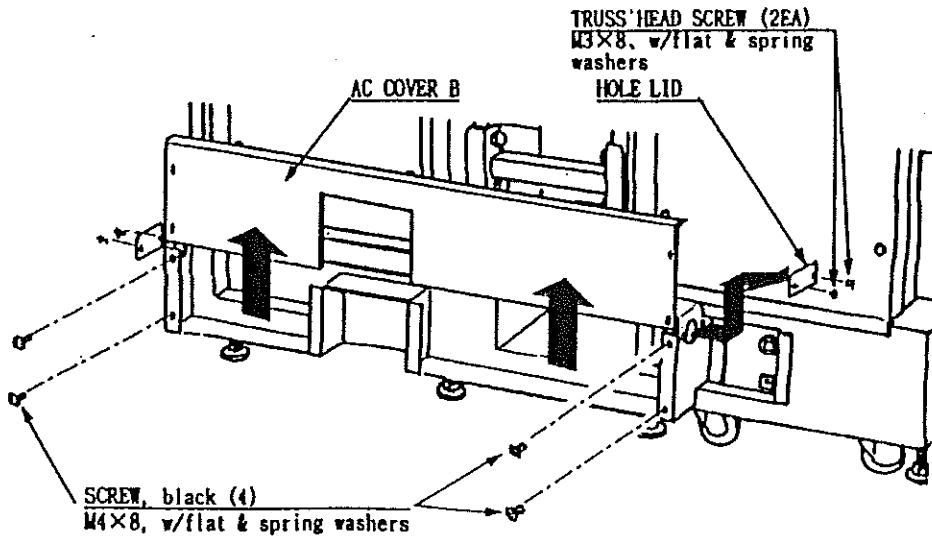
1. When linking a number of machines, be sure to supply sufficient power for the corresponding number of machines. The per unit standard is 230V (ac), 5A.
2. Due to the length of the communication cables the distance between each machine must be less than 0.2m



#### 3.9.2. CONNECTION OF THE COMMUNICATION CABLES

The following procedure is to be used when a twin machine needs to be connected to another twin machine

1. Remove AC COVER B by remove the 4 screws and sliding upwards.
2. Remove the HOLE LID nearest to the machine that is to be connected to by removing the two screws.
3. Feeding the fibre optic cable through the hole connect the machines together as per the following diagrams.

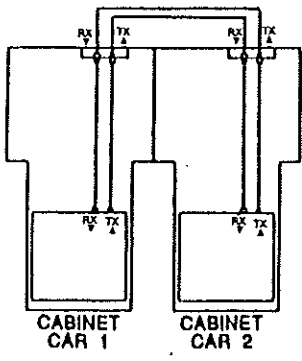




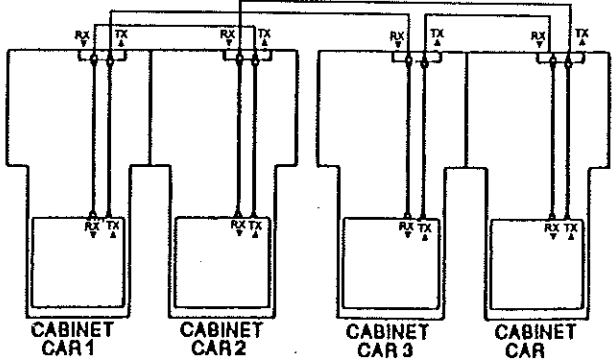
IMPORTANT!

• The fibre optic cables are used for communication purposes. Take extreme care. Excessive bending of these cables will cause unreparable damage to them.

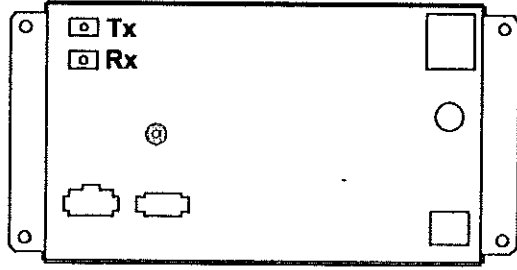
Rx Tx



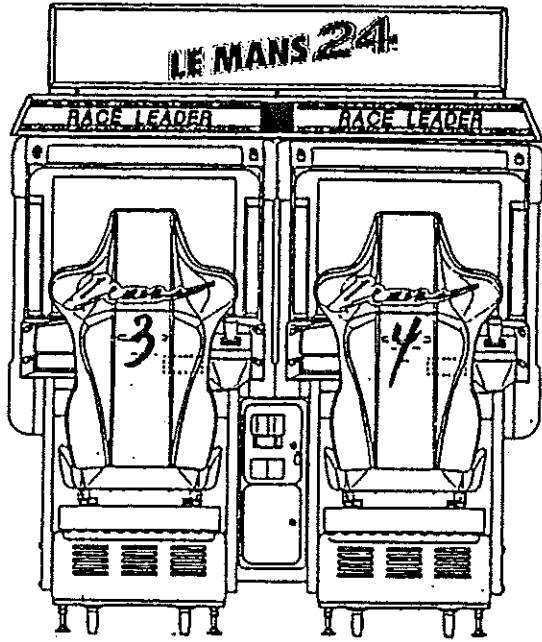
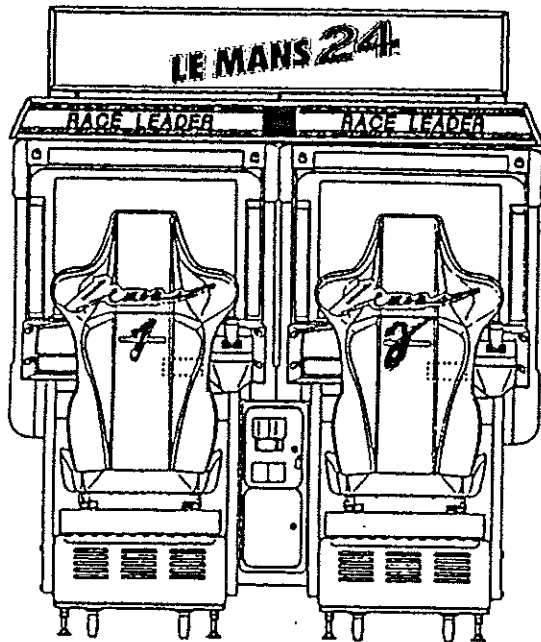
2P LINK



4P LINK



Apply Seat No. Stickers in a manner corresponding to 1,2,3 up to 4 from the leftmost machine.



### 3.9.3. SETTINGS FOR COMMUNICATION PLAY



**IMPORTANT!**

- **During linked play, if communications are interrupted, all games will be interrupted whilst a NETWORK CHECK is carried out.**

To set the machines up for linked play follow this procedure.

1. Put all machines to be linked into TEST MODE.
2. Select GAME ASSIGNMENTS of each machine.
3. Set the COMMUNICATION MODE of the leftmost machine to MASTER.
4. Set the COMMUNICATION MODE of all other machines to SLAVE.
5. Set the CAR NUMBER of the leftmost machine to 1, the next 2 and so on. Ensure no machines have the same CAR NUMBER.
6. Exit TEST MODE on all machines, a NETWORK CHECK will now be performed automatically.
7. If no problem is apparent all machines will now enter ADVERTISE MODE and linked play will be available.

### 3.9.4. COMMUNICATION PLAY TEST MODE

Communication play test mode:

Pressing the TEST BUTTON during the initialisation check at the time of turning the power on causes only that particular seat (where the TEST BUTTON was pressed) to enter test mode. Pressing the TEST BUTTON during normal operation causes all of the other seats to enter test mode as well. Exit from test mode at each seat. Exiting from the test mode causes that particular seat to start checking for a network automatically.

Network check:

The network check is performed at the time of turning the power on, or exiting from test mode. During the network check, if any seat is in test mode or has a communication wiring fault, non-linked independent play will be possible after 2 minutes of network checking. Communication play will not be possible until the fault is cured.

### 3.10. PERIODIC CHECK AND INSPECTION

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



**WARNING!**



**IMPORTANT!**

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

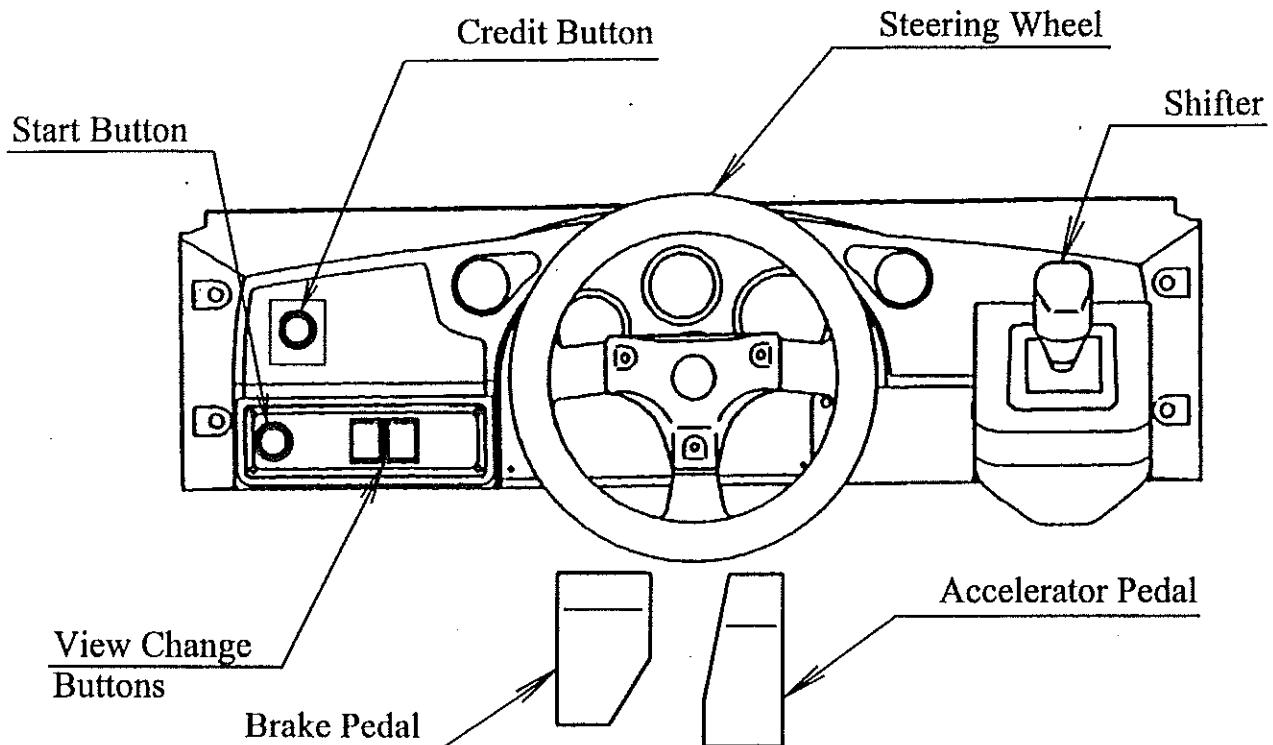
DESCRIPTION	WHAT TO CHECK	INTERVAL
HANDLE MECHA	Check the V.R. value	Monthly
	Check adjust gear engagement	Every 3 months
	Greasing of gears	Every 3 months
ACCELERATOR & BRAKE	Check the V.R. value	Monthly
	Check adjust gear engagement	Every 3 months
	Greasing of gears	Every 3 months
SHIFT LEVER	Check SW	Monthly
	Greasing	Every 3 months
MONITOR	Clean screen	Weekly
	Check adjustment	Monthly
SEAT	Rail greasing	Monthly
GAME BD	Memory Test	Monthly
	Game Assignments	Monthly
INTERIOR	Clean	Annually
POWER SUPPLY CORD	Check condition	Annually
CABINET SURFACE	Clean	As required
CONTROL PANEL	Lamp operation	Monthly
	Check switch operation	Monthly
COIN MECHANISM	Check SW (If Fitted)	Monthly

## 4. HOW TO PLAY

The following explanations apply when the product is functioning satisfactorily. Should there be any differences, there may be a fault. Look into the cause of the fault and eliminate the cause thereof to ensure satisfactory operation.

During the ADVERTISE mode, the View Change button and Start button Lamp light up periodically. When power to the machine is on, the Billboard's fluorescent lamp is always lit. The Leader Lamp (below the fluorescent lamp) flashes periodically. During the ADVERTISE mode, sound is emitted from all of the Speakers. <sup>Note 1</sup>

1. Get in the Cockpit. The seat can be adjusted in forwards and backwards. The Lever is located on the lower right (facing the screen) of the Seat. Pull this Lever to make adjustments.
2. Insert a coin(s). Number of coins is displayed on the lower left of the screen. Inserting one play worth of coin(s) causes the SELECT screen to be displayed. Up to 9 credits can be counted at one time. Coins inserted after counting 9 credits will neither be counted nor returned. Credits will not be displayed in the SELECT mode and during the game play (credits are displayed only during ADVERTISE mode).
3. The linked seats will accept entry anytime when coins are inserted into any seat (free entry system). However, this system does not allow for entering the Sprint Race.
4. Select your choice in order of COURSE, CAR, and TRANSMISSION. Turn the Steering Wheel to choose and make the selection by stepping on the Accelerator Pedal. When the selection mode is displayed, countdown starts. When countdown becomes zero, the type of car and transmission being selected will automatically be determined.



<COURSES> Select from among the following 3 courses:

- SARTHE COURSE interactive play : to compete in the 24 hour race mode.
- SARTHE COURSE Sprint Race : to finish the specified number of laps.
- CITY COURSE Sprint Race : to finish the specified number of laps.

<TYPE OF CAR> Select from among the following 6 types (details are stated below):

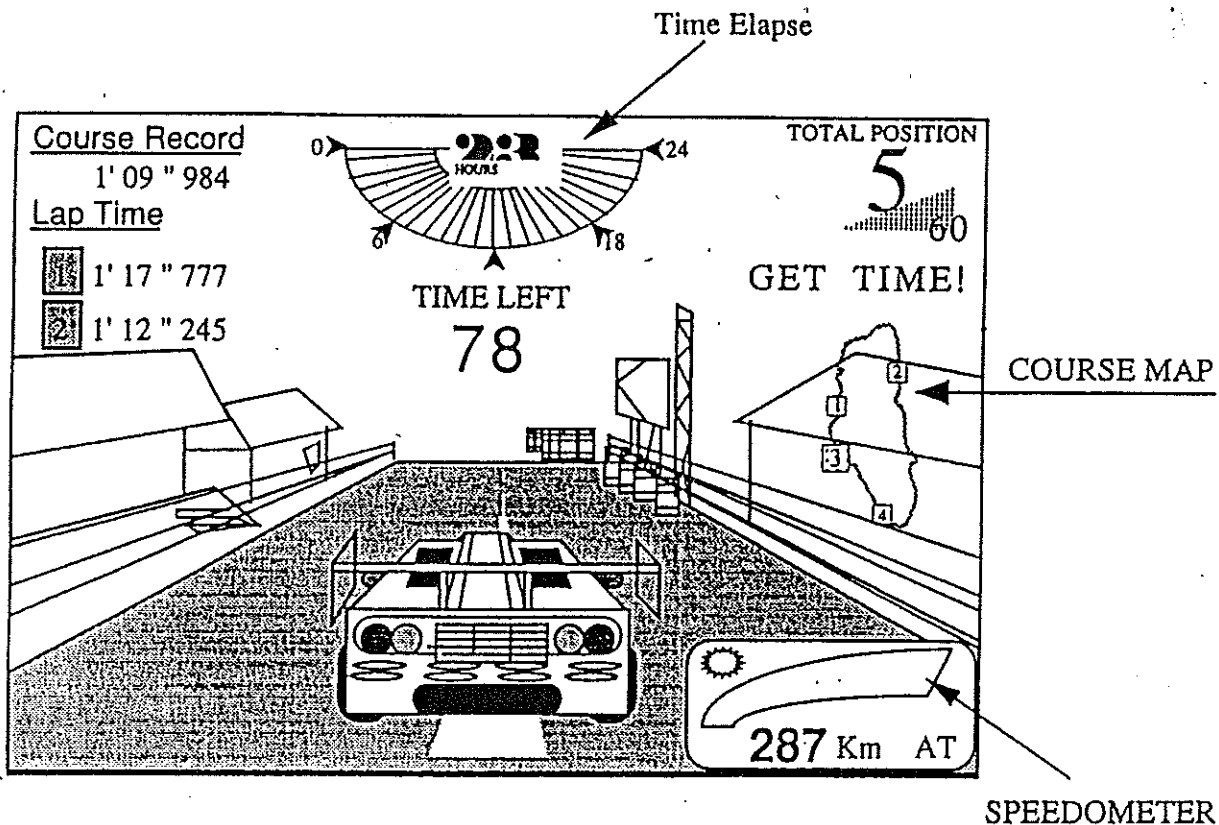
- NISMO GTR LM NISSAN
  - FERRARI F40 GTE
  - McLAREN BMW - F1 GTR
  - PORSCHE 911 GT1
  - SAUBER C9 - MERCEDES
  - MAZDA 787B
5. Select and decide between either AT (Automatic Transmission) or MT (Manual Transmission), and the race starts. (For the same type of car, the maximum speed in MT is slightly faster than in the case of AT.)
  6. When the race starts, the View Change buttons light up, indicating that the selection of view may be changed at any time. When participating in the race, every time passing the other car, that particular seat's Leader Lamp flashes. The steering wheel is subject to reaction and load forces in relation to the playing conditions (crashes, skidding, going off-course, etc). <sup>Note 2</sup>
  7. A new system is adopted for the increase and decrease of time. One factor is that BONUS TIME is awarded as in conventional games upon finishing a course lap. The other factor is that passing other cars (including CPU) increases time and on the contrary, the player car time decreases when other car passes the player car. The player can enjoy competing with the opponents by trying to increase his time and decrease the opponent's time.
  8. When the race starts, the limited time period decreases., Passing the other car including the CPU before time becomes 0 increases the player's time, and on the other hand, the player's time decreases if the other car passes his car. In addition, since BONUS TIME is awarded every time a course lap is finished, the player can continue game by increasing the remaining time as above.
  9. The race which has the communication race and sprint race is intended for the 24 hour race mode within the time limit, and also for finishing the specified number of laps.
  10. The race participants who finish the 24 hour race are allowed to take the BONUS COURSE. Finishing the Goal Line within the time limit ends the game. Also, the game is over when the limited time becomes 0 (this applies to all courses).
  11. After one game is finished, CONTINUE play worth of credits remaining enables the player to continue play from that status.
  12. If the player accomplishes a 24 hour race or finishes the specified number of laps, and if his results are excellent, he can register his name. Turn the steering wheel to the left and right to choose characters, and step on the Accelerator Pedal to determine the selection.

Note 1: During Advertise, setting to SOUND OUTPUT OFF is possible.

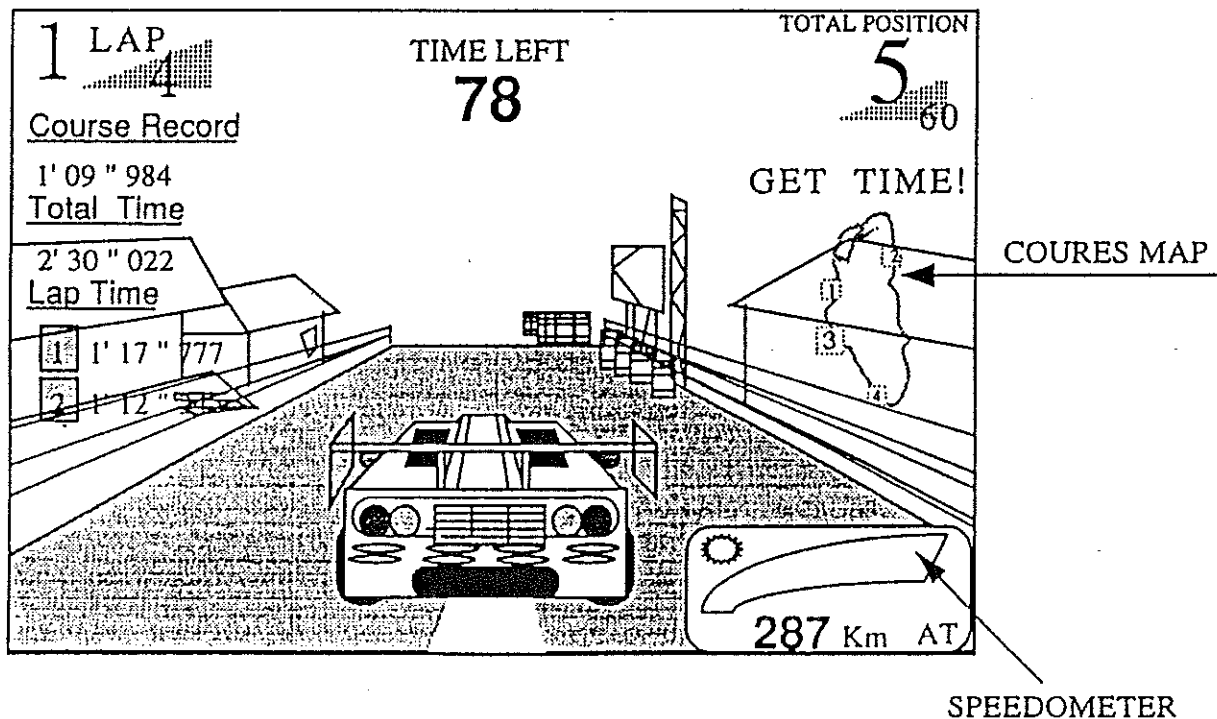
Note 2: Steering wheel load strength can be changed.



Sarthe Course (Interactive Play):



Sarthe Course, City Course (Sprint Courses):



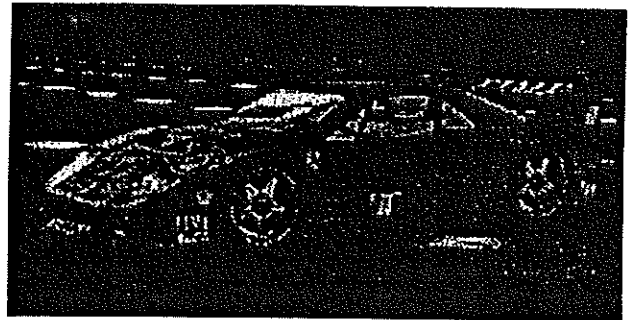
Racing Cars:

Basic handling characteristics of the 6 different cars:



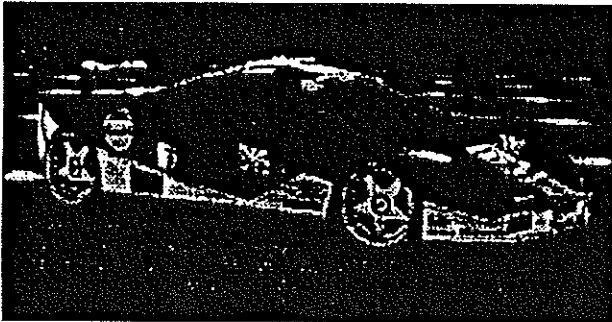
**NISMO GTR LM - NISSAN**

Best acceleration of all the cars, but most suitable for beginners.



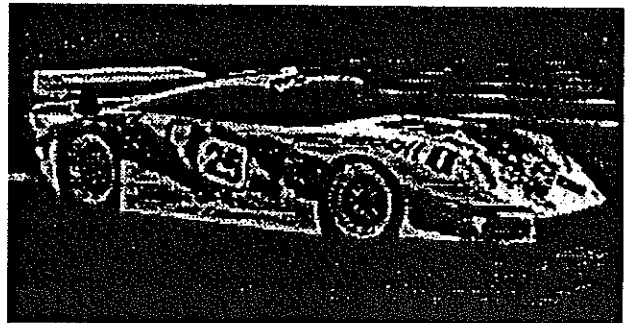
**FERRARI F40 GTE**

The most characteristic handling feature of this car is its easily-controlled four-wheel drift. Easy to drive.



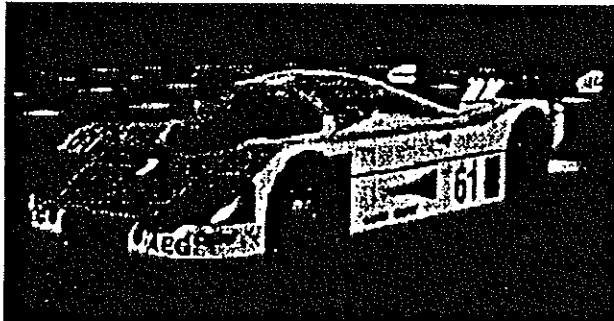
**McLAREN BMW - F1 GTR**

The best balanced car, enabling the player to really get the best from its driving experience.



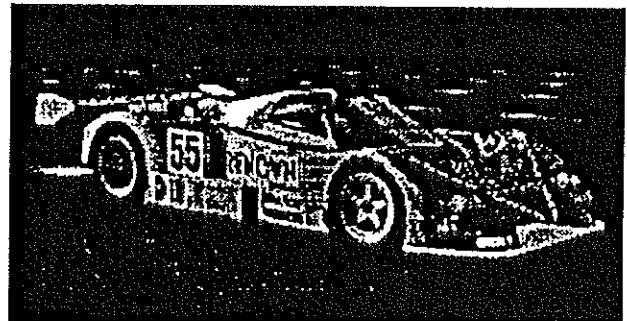
**PORSCHE 911 GT1**

A well-balanced supercar with a high top speed. Look out for those corners!



**SAUBER C9 - MERCEDES**

A high performance racer particularly suited to the expert player. The Merc is fast if driven skillfully.



**MAZDA 787B**

The most difficult car to drive well, but when it is, it is the fastest of the six.

## 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:



**IMPORTANT!**

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

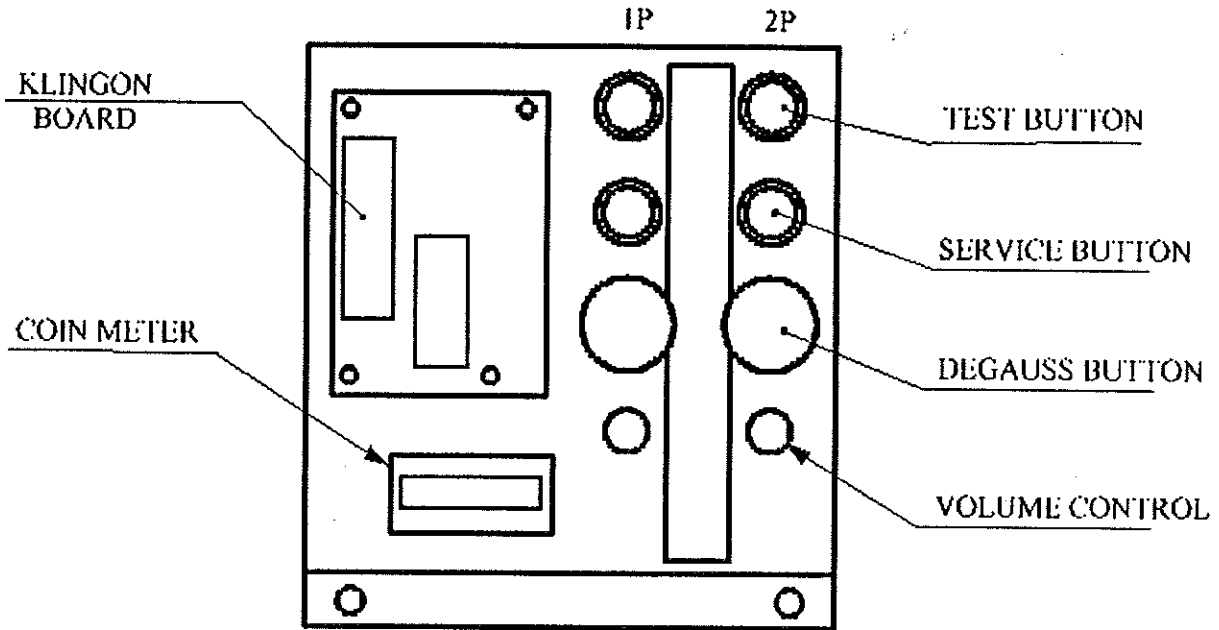
ITEM	DESCRIPTION	INTERVAL	REFERENCES
INSTALLATION OF THE MACHINE	<p>When the machine is installed perform the following checks:</p> <ul style="list-style-type: none"> <li>• Check to see that each setting is as per the standard settings input at the time of shipment.</li> <li>• In the INPUT TEST mode, check each switch and V.R.</li> <li>• In the OUTPUT TEST mode, check each of the lamps.</li> <li>• In the MEMORY TEST mode check all of the IC's on the IC BD.</li> </ul>	Monthly	5.2 5.2.2 5.2.3 5.2.1
MEMORY	<ul style="list-style-type: none"> <li>• On the TEST MENU screen choosing the MEMORY TEST allows self test to be performed. In this test RAM &amp; ROM are tested.</li> </ul>	Monthly	5.2.1
PERIODIC CHECKS	<p>Periodically perform the following</p> <ul style="list-style-type: none"> <li>• MEMORY TEST.</li> <li>• Ascertain each setting.</li> <li>• In the INPUT TEST mode, test the control devices.</li> <li>• In the OUTPUT TEST mode, check each of the lamps.</li> </ul>	Monthly	5.2.1 5.2 5.2.2 5.2.3
CONTROL SYSTEM	<ul style="list-style-type: none"> <li>• In the INPUT TEST mode, check each switch and V.R.</li> <li>• Adjust or replace each switch and V.R.</li> </ul>	Monthly	5.2.2 3.6
MONITOR	<ul style="list-style-type: none"> <li>• In the C.R.T. TEST mode, check to ensure the monitor is adjusted correctly</li> <li>• Clean screen (switch off machine and remove the plug)</li> </ul>	Monthly Weekly	5.2.5 5.4
IC BOARD	<p>MEMORY TEST</p> <ul style="list-style-type: none"> <li>• In the SOUND TEST mode, check the sound related ROMs</li> </ul>	Monthly	5.2.4
DATA CHECK	<ul style="list-style-type: none"> <li>• Check such data as held in the bookkeeping screens, relating to number and length of plays</li> </ul>	Monthly	5.2.9
EXTERIOR MAINTENANCE	<ul style="list-style-type: none"> <li>• Clean surfaces</li> <li>• Lubricate seat sliders</li> </ul>	Monthly	5.4
COIN MECHANISM	<ul style="list-style-type: none"> <li>• Check switch operation (if fitted)</li> </ul>	Monthly	5.3

### 5.1.1. VTS ASSEMBLY



CAUTION!

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



Opening the Coin Chute door will reveal the VTS Assembly shown above. The function of each switch is as follows. The controls on the left affect the 1P cockpit, those on the right the 2P.

- TEST BUTTON  
Used to enter TEST mode. Also has function during TEST mode. Refer to the later section detailing TEST mode.
- SERVICE BUTTON  
Gives credits without registering on the coin counter. Also used during TEST mode.
- DEGAUSS BUTTON  
Eliminates colour unevenness from the monitor screen.
- VOLUME CONTROL  
Adjusts the volume of the seat speakers.

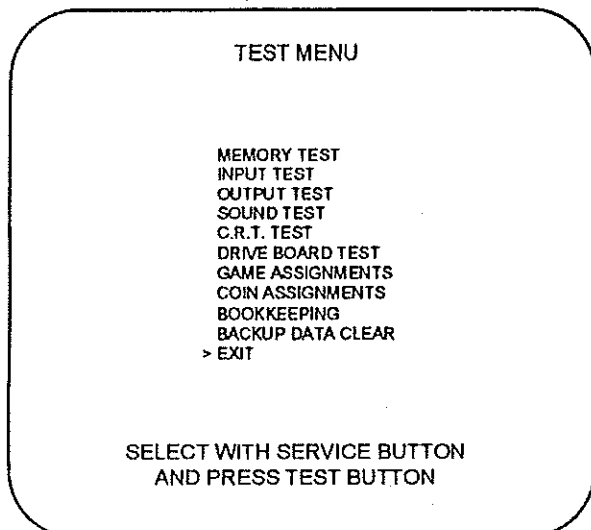
## 5.2. TEST MODE

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.



**IMPORTANT!**

- When setting changes are made within TEST MODE, be sure to exit from TEST MODE using the exit options. If you turn the power off and then on without having exited correctly the changes you made will not take effect.



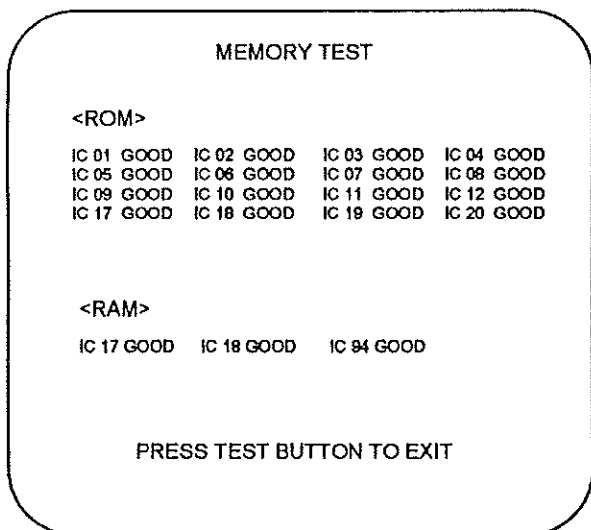
Press the TEST BUTTON to bring up the screen shown to the left.

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.

### 5.2.1. MEMORY TEST



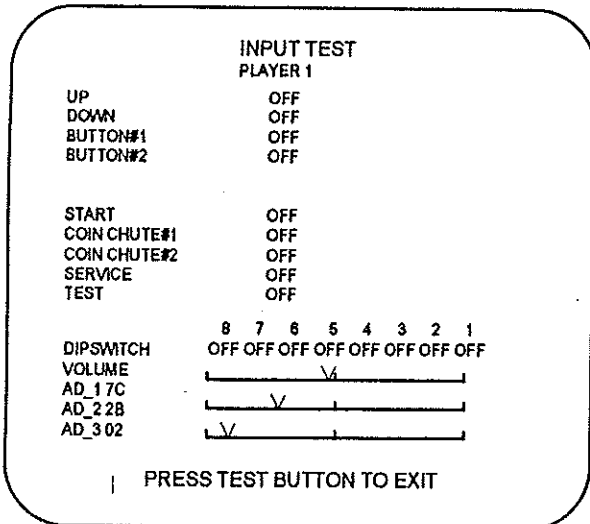
The MEMORY TEST is for checking the on-board memory ICs.

"GOOD" is displayed for normal ICs and "BAD" is displayed for faulty ICs.

When the test is complete, if the display is as shown on the left, it is satisfactory.

After finishing the test, press the TEST BUTTON to return to the TEST MENU.

### 5.2.2. INPUT TEST



Selecting the INPUT TEST displays the following screen and enables you to check the status of each switch and VR in the cabinet.

By pressing each switch, if the display on the right-hand side changes from OFF to ON, the switch is functioning and the wiring connections are satisfactory.

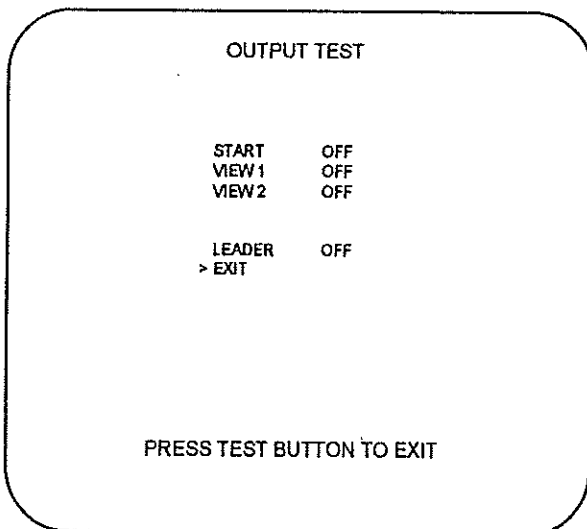
Pressing and releasing the TEST BUTTON returns to the TEST MENU.

(You must have "Cabinet type" in the GAME ASSIGNMENTS menu set to TWIN-NORMAL to see this screen. If you can see BUTTON#3 & BUTTON#4, change to this setting).

The following values are the control limits for the Steering Wheel, Brake and Accelerator pedals' VR. Turn the Steering Wheel and press on the Brake & Accelerator to check that the VR value and position on the test screen are smooth and within the limits specified. Refer to Section 3.6.1 & 3.6.2 for checking and adjusting VR positions.

HANDLE	CENTRE POSITION 80H ±02H	
	PEDAL RELEASED	PEDAL PRESSED
BRAKE	LESS THAN 30H	MORE THAN COH
ACCELERATOR	LESS THAN 30H	MORE THAN COH

### 5.2.3. OUTPUT TEST

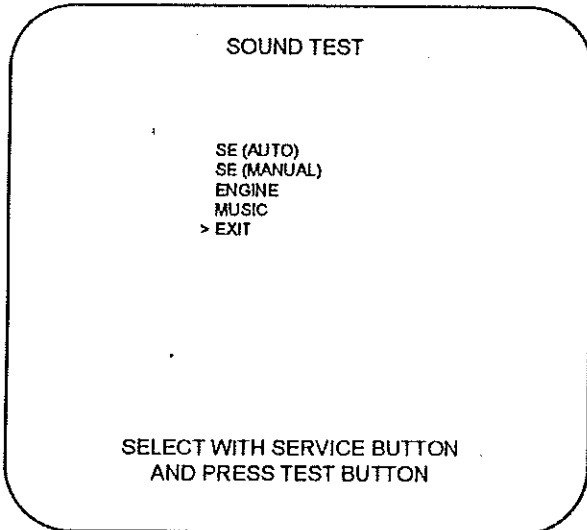


Selecting the OUTPUT TEST displays the following screen and enables you to check the status of each lamp in the cabinet.

By pressing each switch, if the display on the right-hand side changes from OFF to ON and the corresponding lamp lights, the lamp and wiring connections are satisfactory.

Select EXIT and press the TEST BUTTON to return to the TEST MENU.

#### 5.2.4. SOUND TEST



Selecting the SOUND TEST displays the following screen and enables you to check the cabinet's audio system.

Select the item and press the TEST BUTTON to hear the sample.

SE(AUTO): Sound effects are automatically played in sequence.

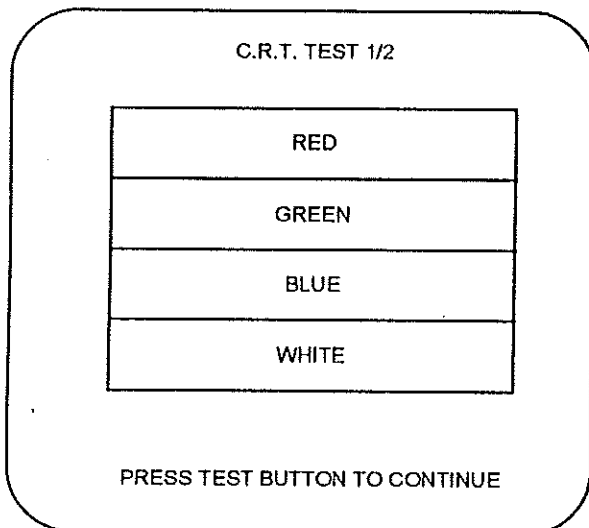
SE (MANUAL): Selected sound effects are played.

ENGINE: Selected car's engine sound is played.

MUSIC: Selected music is played.

Select EXIT and press the TEST BUTTON to return to the TEST MENU.

#### 5.2.5. C.R.T. TEST

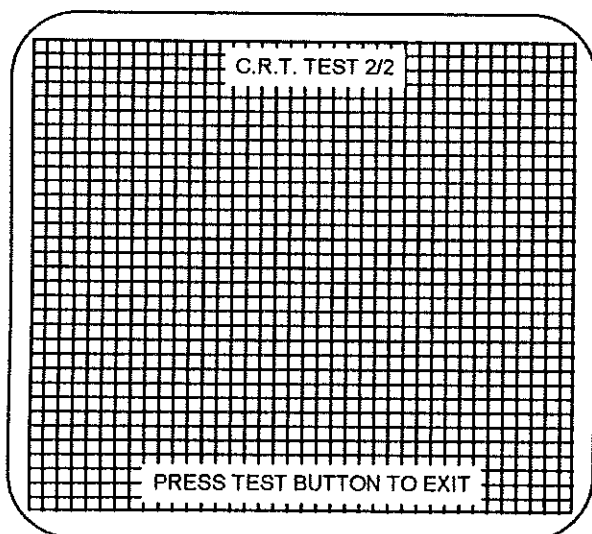


Selecting the C.R.T. TEST displays the following screen and enables you to check the monitor's adjustment.

Screen 1/2 enables colour adjustments to be made.

Make sure that each of the colour bars are darkest at the left-hand side and brightest at the right-hand side (the right-hand end of each colour bar should be sharp).

Press the TEST BUTTON to continue to the next screen.

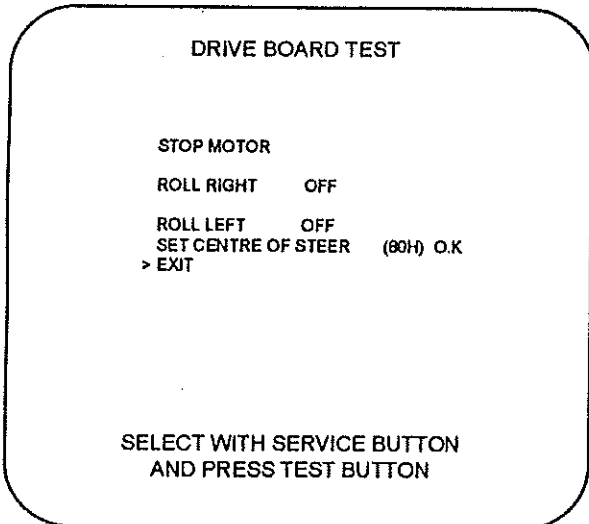


Screen 2/2 allows screen size, position and distortion to be checked.

Make sure that the cross-hatch lines are fully within the visible area of the screen and are spaced in equally from all four edges.

Press the TEST BUTTON to return to the TEST MENU.

## 5.2.6. DRIVE BOARD TEST



Selecting the DRIVE BOARD TEST displays the following screen and enables you to check the motor and set the centre steering position.

**STOP MOTOR:** Cuts reaction force to the motor. Select this option after having checked the ROLL functions.

**ROLL RIGHT:** Rolls the Steering Wheel fully to the right.

**ROLL LEFT:** Rolls the Steering Wheel fully to the left.

Press the TEST BUTTON to return to the TEST MENU.

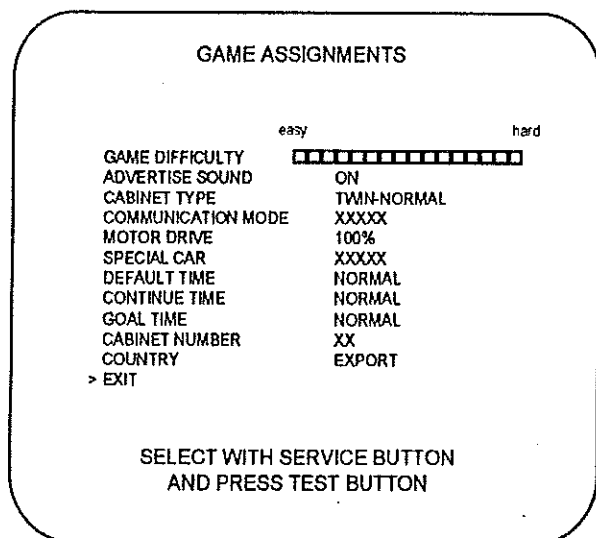
### SETTING THE STEERING WHEEL TO CENTRE

If the VR for steering position has been adjusted, it is sometimes necessary to fine-tune the centre setting for the Steering Wheel.

- Select SET CENTRE OF STEER with the SERVICE BUTTON.
- Turn the Steering Wheel so that it is in the centre position.
- Press the TEST BUTTON to store the current VR value as the centre of steer (make sure that the VR value displayed is between 7EH and 82H - if it is not, refer to Section 3.6.1 to adjust the VR position). If the centre position is accepted, OK is displayed.



## 5.2.7. GAME ASSIGNMENTS



Selecting GAME ASSIGNMENTS displays the following screen and enables you to set the cabinet up for linking, difficulty, etc.

Select the item with the SERVICE BUTTON.

Choose the desired setting using the TEST BUTTON.

Select EXIT and press the TEST BUTTON to return to the TEST MENU.

**NOTE: CHANGES TO THIS SCREEN ARE ONLY IMPLEMENTED BY SELECTING EXIT WITH THE TEST AND SERVICE BUTTONS FROM THIS MENU AND THE MAIN MENU INTO GAME MODE. TURNING THE POWER OFF AT THIS POINT WILL NOT SAVE ANY CHANGES.**

Game difficulty (opponent strength) can be set to one of 16 levels:

Sets the game to produce music when not in game-play mode to attract customers.

Must be set to TWIN-NORMAL for this game.

For interactive play, one of the cabinets (normally 1P) must be set to Master and the remaining to SLAVE. The GAME ASSIGNMENTS set on the MASTER cabinet are applied to all other cabinets linked to it as SLAVES.

If NO LINK is selected, then those cabinets will not link to the MASTER cabinet and will operate independently

The strength of the Steering Wheel reaction force between 50% & 100% in increments of 10%.

The car selected here is that which is shown as the default selection on the CAR SELECT screen in game mode. This particular car's performance will be enhanced.

If NONE is selected, the default selection will be the NISMO GTR LM - NISSAN and will not run with enhanced performance.

Sets the time limit from the start of the game

Sets the initialisation value of the time limit when the CONTINUE feature is used in game mode.

Sets the virtual 24 hours in game mode to a certain length of real time

When linked up with other cabinets, sets the numbers of the cabinets starting with number 1 at the most left-hand side. To use the cabinet as a live monitor, select SATTELITE (this makes that cabinet a live monitor station only and cannot be used for gameplay).

This option cannot be changed

- GAME DIFFICULTY (8/16)
- ADVERTISE SOUND (ON)
- CABINET TYPE (TWIN-NORMAL)
- COMMUNICATION MODE  
(1P = MASTER; 2P = SLAVE)

Note: The SLAVE cabinets' GAME ASSIGNMENTS menu will be truncated to CABINET TYPE, COMMUNICATION MODE & CABINET NUMBER.

- MOTOR DRIVE (100%)

Note: The reaction force is also set using DIP1 on the Drive Board.

- SPECIAL CAR (NONE)

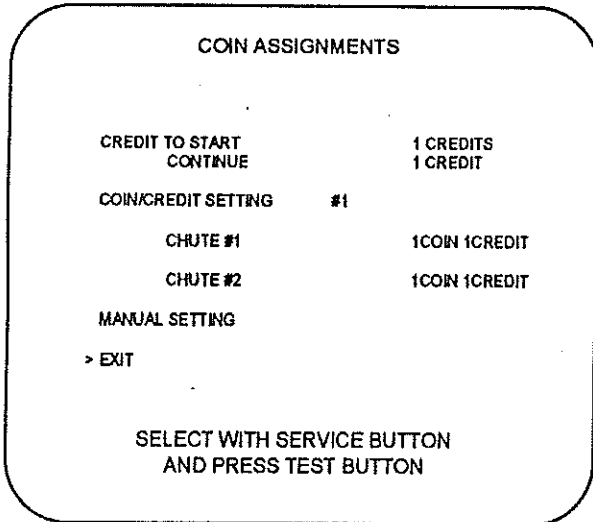
- DEFAULT TIME (NORMAL)
- CONTINUE TIME (NORMAL)

- GOAL TIME (NORMAL)

- CABINET NUMBER  
(LEFT . . . . . RIGHT)  
(1    2    3    4)

- COUNTRY (EXPORT)

## 5.2.8. COIN ASSIGNMENTS



Selecting COIN ASSIGNMENTS displays the following screen and enables you to set the number of credits to start and the basic number of coins and credits.

Select the item with the SERVICE BUTTON.

Choose the desired setting using the TEST BUTTON.

Select EXIT and press the TEST BUTTON to return to the TEST MENU.

**NOTE: CHANGES TO THIS SCREEN ARE ONLY IMPLEMENTED BY SELECTING EXIT WITH THE TEST AND SERVICE BUTTONS FROM THIS MENU AND THE MAIN MENU INTO GAME MODE. TURNING THE POWER OFF AT THIS POINT WILL NOT SAVE ANY CHANGES.**

- CREDIT TO START (1)
- CREDIT TO CONTINUE (1)

Number of credits required to start the game.

Number of credits required to continue the game.

The above 2 items are set by stepping through the options as set out below:

CREDIT TO START	(X) CREDIT(S)	1	2	3	3	4	4	4	5	5	5	5
CREDIT TO CONTINUE	(X) CREDIT(S)	1	1	1	2	1	2	3	1	2	3	4

- COIN / CREDIT SETTING (#1)
- MANUAL SETTING

Sets the CREDIT increase increment per coin insertion. There are 27 settings detailed in the table below.

This allows the CREDIT increment setting to be set more finely than with the COIN /CREDIT SETTING option. Refer to Section 5.2.8.3.

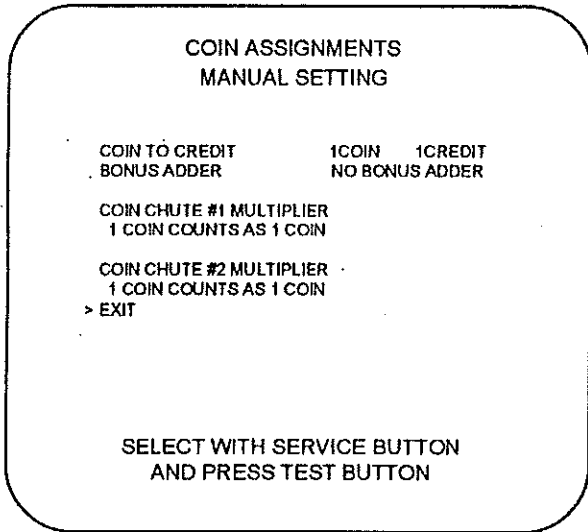
**5.2.8.1.COIN/CREDIT SETTING (COIN CHUTE COMMON TYPE)**

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

**5.2.8.2.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	

### 5.2.8.3.MANUAL SETTING



Selecting MANUAL SETTING displays the following screen.

Select the item with the SERVICE BUTTON.  
Choose the desired setting using the TEST BUTTON.

Select EXIT and press the TEST BUTTON to return to the TEST MENU.

- COIN TO CREDIT                      Determines COIN / CREDIT setting.
- BONUS ADDER                         This sets the number of coins to be inserted to obtain one service coin.
- COIN CHUTE MULTIPLIER            This sets how many tokens one coin represents.

#### MANUAL SETTING

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

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

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

## 5.2.9. BOOKKEEPING

```

BOOKKEEPING                                PAGE 1/2
COIN REPORT

COIN CHUTE #1          XXXXXXXXXXXX
COIN CHUTE #2          XXXXXXXXXXXX
TOTAL COINS            XXXXXXXXXXXX
COIN CREDITS           XXXXXXXXXXXX
SERVICE CREDITS       XXXXXXXXXXXX
TOTAL CREDITS          XXXXXXXXXXXX
NUMBER OF GAMES       XXXXXXXXXXXX
NUMBER OF CONTINUE    XXXXXXXXXXXX

TOTAL TIME             XXXXXXXXXXXX
PLAY TIME              XXXXXXXXXXXX
AVERAGE PLAY TIME    XXXXXXXXXXXX
LONGEST PLAY TIME     XXXXXXXXXXXX
SHORTEST PLAY TIME    XXXXXXXXXXXX

PRESS TEST BUTTON TO CONTINUE
    
```

Selecting BOOKKEEPING displays the following screen (1/2) and shows the game mode statistics.

Press the TEST BUTTON to continue to screen 2/2.

- COIN CHUTE #1,#2
- TOTAL COINS
- COIN CREDITS
- SERVICE CREDITS
- TOTAL CREDITS
- NUMBER OF GAMES
- NUMBER OF CONTINUE
- TOTAL TIME
- PLAY TIME
- AVERAGE PLAY TIME
- LONGEST PLAY TIME
- SHORTEST PLAY TIME

Number of coins put through each chute.

Total number of coins inserted.

Number of credits registered by inserting coins.

Credits registered by the SERVICE BUTTON.

Total number of credits (COIN + SERVICE).

Total number of plays.

Total number of continues.

The total energised time.

Total play time.

Average play time

Longest play time

Shortest play time

Screen 2/2 displays course, car and transmission selection statistics.

Press the TEST BUTTON to return to the TEST MENU.

```

BOOKKEEPING                                PAGE 2/2

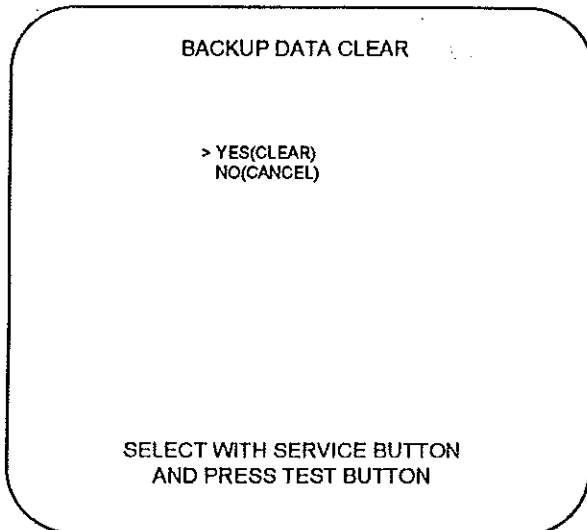
COURSE SELECT
SARTHE CIRCUIT        XX
SPRINT RACE           XX
CITY RACE             XX

SELECT CAR TYPE
NISMO GTR             XX
F-40                  XX
McLAREN F1 GTR       XX
PORSCHE 911          XX
MAZDA                 XX
SAUBER                XX

TRANSMISSION SELECT
AT                    XX
MT                    XX

PRESS TEST BUTTON TO EXIT
    
```

## 5.2.10.BACKUP DATA CLEAR



Selecting BACKUP DATA CLEAR displays the following screen and facilitates the resetting of the bookkeeping data and credits stored by the Game Board.

Select the item with the SERVICE BUTTON.

Choose the desired setting using the TEST BUTTON.

If selecting YES, COMPLETED will be displayed. Press the TEST BUTTON to return to the TEST MENU.

If selecting NO, press the TEST BUTTON to return to the TEST MENU.

- YES(CLEAR)
- NO(CANCEL)

Clears the contents of BOOKKEEPING and stored credits.

Cancels the operation.

## 5.3. COIN MECH INSTALLATION AND CREDIT BOARD SET UP

### 5.3.1. INTRODUCTION

Game credits between the Coin Mechanism and the game board for this machine are controlled by a *Klingon 2* board. This electronic circuit allows the price of play to be set for a range of different countries. These functions are set on Dual In Line (DIL) PCB mounted switches.

DIL-2 is used to set the currency (or coin ratio) and DIL-1 the price of play. Refer to the Tables on the following pages for the correct settings for your environment.

The *Klingon2* board pictured below is mounted on the VTS Bracket within the Coin Chute Tower.

The *Klingon2* board is connected to the coin validator and lamps via a dedicated wiring harness depending upon the coin validator used:

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

#### Notes

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



### 5.3.2. KLINGON 2 CREDIT BOARD OPTION SETTINGS

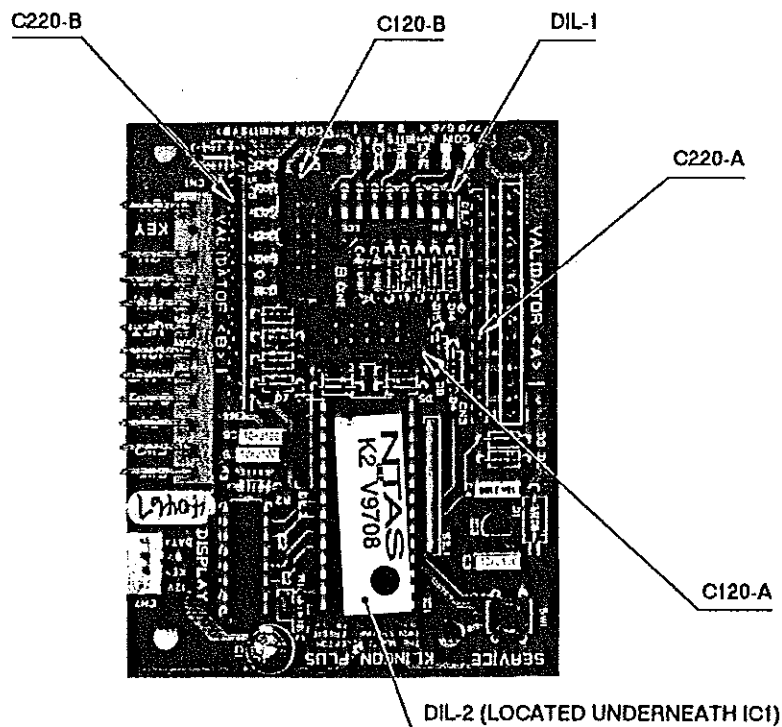
#### Universal Currency Settings - DIL Switch 2

4	3	2	1	Currency	C1	C2	C3	C4	C5	C6	C7	C8
↓	off	off	off	UK (p)	100	50	20	10	-	200	-	50(old)
↓	off	off	ON	Belgium (BFr)	-	50	20	5	-	-	-	-
↓	off	ON	off	Spain (Pta)	500	200	100	50	-	25	-	200(old)
↓	off	ON	ON	Germany (DM)	10	5	2	1	-	-	-	-
↓	ON	off	off	Netherlands (NLG)	-	5	2.5	1	-	-	-	-
↓	ON	off	ON	Portugal (Es)	100	50	-	-	-	-	-	-
↓	ON	ON	off	Austria (Sch)	20	10	5	1	-	-	-	-
↓	ON	ON	ON	Switzerland (SFr)	5	2	1	-	-	-	-	-
OFF	↑	↑	↑	Direct Mode	↑	↑	↑	↑	↑	↑	↑	↑
ON	↑	↑	↑	2 Channel Mode	↑	↑	↑	↑	↑	↑	↑	↑

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

Set DIL switches (DIL-1) SW-1 to SW-5 according to the option settings found in the relevant Price Of Play Settings Table on the following pages.

Set DIL switches (DIL-2) on the *Klingon 2* board located under the IC socket as shown in the table above. SW-4 must always be set 'ON'. Care must be exercised when removing IC-1 so as not to damage its lead-outs pins. After setting the switches return the IC to its socket with the package indent mark adjacent to the board edge.



The "Klingon 2" board.

### 5.3.2.1.PRICE OF PLAY SETTINGS UNIVERSAL

#### Universal Credit Settings - DIL Switch 1

Currency	Value of each U	Value of each Meter Pulse
UK	10 p	10 p
Belguim	5 BFr	5 BFr
Spain	25 Pta	25 Plas
Germany	1 DM	1 DM
Holland	½ NLG	½ NLG
Portugal	25 Es	25 Es
Austria	1 Sch	1 Sch
Switzerland	1 SFr	1 SFr

#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
1U						
1U	6 for 5U				ON	ON
2U	3 for 5U				ON	ON
3U				ON		
3U	2 for 5U			ON		ON
4U				ON	ON	
4U	3 for 10U			ON	ON	ON
5U			ON			
5U	5 for 20U		ON			ON
6U			ON		ON	
6U	2 for 10U		ON		ON	ON
8U			ON	ON		
8U	3 for 20U		ON	ON		
10U			ON	ON	ON	
10U	3 for 20U		ON	ON	ON	ON
12U		ON				
15U		ON				ON
20U		ON			ON	
25U		ON			ON	ON
30U		ON		ON		
35U		ON		ON		ON
40U		ON		ON	ON	
45U		ON		ON	ON	ON
50U		ON	ON			
Free		ON	ON	ON	ON	ON

#### Coin Mech Mode

#### DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OF	OF	Parallel

The price of play settings for each country can be worked out by combining the two tables above.

### 5.3.2.2.PRICE OF PLAY SETTINGS FOR THE UK (£ = Pound Sterling)

#### Parallel 4 Coin Validator

1	2	3	4
£1	50p new (50p) old	20p	10p

#### C220 Binary Mode Validator

1	2	3	4	5	6	7	8
£1	50p (new)	20p	10p		£2		50p (old)

#### C120 Validator

1	2	3	4	5	6
£1	50p new 50p old	20p	10p	n/u	£2

#### DIL Switch 2 (situated beneath NTAS chip)Settings

Mode	1	2	3	4
Direct Mode	OFF	OFF	OFF	OFF
2 Channel Mode	OFF	OFF	OFF	ON

#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
10p						
10p	6 for 50p					ON
20p					ON	
20p	3 for 50p				ON	ON
30p				ON		
30p	2 for 50p			ON		ON
40p				ON	ON	
40p	3 for £1			ON	ON	ON
50p			ON			
50p	5 for £2		ON			ON
60p			ON		ON	
60p	2 for £1		ON		ON	ON
80p			ON	ON		
80p	3 for £2		ON	ON		ON
£1			ON	ON	ON	
£1	3 for £2		ON	ON	ON	ON
£1.20		ON				
£1.50		ON				ON
£2.00		ON			ON	
£2.50		ON			ON	ON
£3.00		ON		ON		
£3.50		ON		ON		ON
£4.00		ON		ON	ON	
£4.50		ON		ON	ON	ON
£5.00		ON	ON			
Free Play		ON	ON	ON	ON	ON

#### Coin Mech Mode DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel

### 5.3.2.3.PRICE OF PLAY SETTINGS FOR BELGUIM (BFr = Belgian Franc)

#### Parallel 4 Coin Validator

1	2	3	4
	50	20	5

#### C220 Binary Mode Validator

1	2	3	4	5	6	7	8
	50	20	5				

#### C120 Validator

1	2	3	4	5	6
	50	20	5		

#### DIL Switch 2 Settings

Mode	4	3	2	1
Direct Mode	OFF	OFF	OFF	ON
2 Channel Mode	ON	OFF	OFF	ON

#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
5 BFr						
5 BFr	6 for 25 BFr					ON
10 BFr					ON	
10 BFr	3 for 25 BFr				ON	ON
15 BFr				ON		
15 BFr	2 for 25 BFr			ON		ON
20 BFr				ON	ON	
20 BFr	3 for 50 BFr			ON	ON	ON
25 BFr			ON			
25 BFr	5 for 100 BFr		ON			ON
30 BFr			ON		ON	
30 BFr	2 for 50 BFr		ON		ON	ON
40 BFr			ON	ON		
40 BFr	3 for 100 BFr		ON	ON		ON
50 BFr			ON	ON	ON	
50 BFr	3 for 100 BFr		ON	ON	ON	ON
60 BFr		ON				
75 BFr		ON				ON
100 BFr		ON			ON	
125 BFr		ON			ON	ON
150 BFr		ON		ON		
175 BFr		ON		ON		ON
200 BFr		ON		ON	ON	
225 BFr		ON		ON	ON	ON
250 BFr		ON	ON			
Free Play		ON	ON	ON	ON	ON

#### Coin Mech Mode DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel

### 5.3.2.4.PRICE OF PLAY SETTINGS FOR SPAIN (Pta = Peseta)

#### Parallel 4 Coin Validator

1	2	3	4
500	200 (200)	100	50 (50)

#### C220 Binary Mode Validator

1	2	3	4	5	6	7	8
500	200	100	50		25		(200)

#### C120 Validator

1	2	3	4	5	6
500	200 (200)	100	50 (50)		25 (25)

#### DIL Switch 2 Settings

Mode	4	3	2	1
Direct Mode	OFF	OFF	ON	OFF
2 Channel Mode	ON	OFF	ON	OFF

#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
25 Pta						
25 Pta	6 for 125 Pta					ON.
50 Pta					ON	
50 Pta	3 fo 125 Pta				ON	ON
75 Pta				ON		
75 Pta	2 for 125 Pta			ON		ON
100 Pta				ON	ON	
100 Pta	3 for 250 Pta			ON	ON	ON
125 Pta			ON			
125 Pta	5 for 500 Pta		ON			ON
150 Pta			ON		ON	
150 Pta	2 for 250 Pta		ON		ON	ON
200 Pta			ON	ON		
200 Pta	3 for 500 Pta		ON	ON		ON
250 Pta			ON	ON	ON	
250 Pta	3 for 500 Pta		ON	ON	ON	ON
300 Pta		ON				
375 Pta		ON				ON
500 Pta		ON			ON	
625 Pta		ON			ON	ON
750 Pta		ON		ON		
875 Pta		ON		ON		ON
1000 Pta		ON		ON	ON	
1125 Pta		ON		ON	ON	ON
1250 Pta		ON	ON			
Free Play		ON	ON	ON	ON	ON

#### Coin Mech Mode

#### DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel

### 5.3.2.5.PRICE OF PLAY SETTINGS FOR THE NETHERLANDS (NLG = Netherlands Guilder)

*Parallel 4 Coin Validator*

1	2	3	4
	5	2.5	1

*C220 Binary Mode Validator*

1	2	3	4	5	6	7	8
	5	2.5	1				

*C120 Validator*

1	2	3	4	5	6
	5	2.5	1		

*DIL Switch 2 Settings*

Mode	4	3	2	1
Direct Mode	OFF	ON	OFF	OFF
2 Channel Mode	ON	ON	OFF	OFF

*DIL Switch 1 Settings*

Per Game	Bonus	5	4	3	2	1
0.5 NLG						
0.5 NLG	6 for 2.5 NLG					ON
1 NLG					ON	
1 NLG	3 for 2.5 NLG				ON	ON
1.5 NLG				ON		
1.5 NLG	2 for 2.5 NLG			ON		ON
2 NLG				ON	ON	
2 NLG	3 for 5 NLG			ON	ON	ON
2.5 NLG			ON			
2.5 NLG	5 for 10 NLG		ON			ON
3 NLG			ON		ON	
3 NLG	2 for 5 NLG		ON		ON	ON
4 NLG			ON	ON		
4 NLG	3 for 10 NLG		ON	ON		ON
5 NLG			ON	ON	ON	
5 NLG	3 for 10 NLG		ON	ON	ON	ON
6 NLG		ON				
7.5 NLG		ON				ON
10 NLG		ON			ON	
12.5 NLG		ON			ON	ON
15 NLG		ON		ON		
17.5 NLG		ON		ON		ON
20 NLG		ON		ON	ON	
22.5 NLG		ON		ON	ON	ON
25 NLG		ON	ON			
Free Play		ON	ON	ON	ON	ON

*Coin Mech Mode*

*DIL Switch 1*

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel

### 5.3.2.6.PRICE OF PLAY SETTINGS FOR PORTUGAL (Es = Escudo)

#### Parallel 4 Coin Validator

1	2	3	4
100	50		

#### C220 Binary Mode Validator

1	2	3	4	5	6	7	8
100	50						

#### C120 Validator

1	2	3	4	5	6
100	50				

#### DIL Switch 2 Settings

Mode	4	3	2	1
Direct Mode	OFF	ON	OFF	ON
2 Channel Mode	ON	ON	OFF	ON

#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
25 Es						
25 Es	6 for 125 Es					ON
50 Es					ON	
50 Es	3 for 125 Es				ON	ON
75 Es				ON		
75 Es	2 for 125 Es			ON		ON
100 Es				ON	ON	
100 Es	3 for 250 Es			ON	ON	ON
125 Es			ON			
125 Es	5 for 500 Es		ON			ON
150 Es			ON		ON	
150 Es	2 for 250 Es		ON		ON	ON
200 Es			ON	ON		
200 Es	3 for 500 Es		ON	ON		ON
250 Es			ON	ON	ON	
250 Es	3 for 500 Es		ON	ON	ON	ON
300 Es		ON				
375 Es		ON				ON
500 Es		ON			ON	
625 Es		ON			ON	ON
750 Es		ON		ON		
875 Es		ON		ON		ON
1000 Es		ON		ON	ON	
1125 Es		ON		ON	ON	ON
1250 Es		ON	ON			
Free Play		ON	ON	ON	ON	ON

#### Coin Mech Mode

#### DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel

### 5.3.2.7.PRICE OF PLAY SETTINGS FOR AUSTRIA (Sch = Schilling)

#### Parallel 4 Coin Validator

1	2	3	4
20	10	5	1

#### C220 Binary Mode Validator

1	2	3	4	5	6	7	8
20	10	5	1				

#### C120 Validator

1	2	3	4	5	6
20	10	5	1		

#### DIL Switch 2 Settings

Mode	4	3	2	1
Direct Mode	OFF	ON	ON	OFF
2 Channel Mode	ON	ON	ON	OFF

#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
1 Sch						
1 Sch	6 for 5 Sch					ON
2 Sch					ON	
2 Sch	3 for 5 Sch				ON	ON
3 Sch				ON		
3 Sch	2 for 5 Sch			ON		ON
4 Sch				ON	ON	
4 Sch	3 for 10 Sch			ON	ON	ON
5 Sch			ON			
5 Sch	5 for 20 Sch		ON			ON
6 Sch			ON		ON	
6 Sch	2 for 10 Sch		ON		ON	ON
8 Sch			ON	ON		
8 Sch	3 for 20 Sch		ON	ON		ON
10 Sch			ON	ON	ON	
10 Sch	3 for 20 Sch		ON	ON	ON	ON
12 Sch		ON				
15 Sch		ON				ON
20 Sch		ON			ON	
25 Sch		ON			ON	ON
30 Sch		ON		ON		
35 Sch		ON		ON		ON
40 Sch		ON		ON	ON	
45 Sch		ON		ON	ON	ON
50 Sch		ON	ON			
Free Play		ON	ON	ON	ON	ON

#### Coin Mech Mode DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel



## 5.4. EXTERIOR MAINTENANCE



CAUTION!

- Before performing this work, be sure to switch off the machine and remove the plug from the wall outlet.
- Residual static electricity from the monitor screen may be discharged if cleaning is performed using cloths or fluids other than those specified. Leave 10 minutes between turning off the game before cleaning the screen to allow the static electricity to dissipate.

From time to time, the exterior of the cabinet will require cleaning. For the following parts, follow the instructions below:

### 5.4.1. CLEANING THE CABINET SURFACES

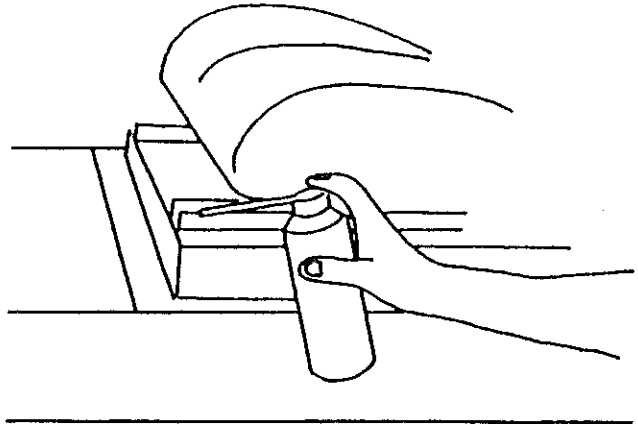
When the cabinet surfaces are badly soiled, remove stains with a soft cloth dipped in water or diluted (with water) chemical detergent and squeezed dry. To avoid damaging the surface finish, do not use solvents such as thinners, benzene (except ethyl alcohol) or abrasives, bleaching agents or chemical dust-cloths.

### 5.4.2. SEAT RAIL LUBRICATION

Move the seat to the back-stop and apply spray greasing as shown on the right according to the maintenance interval.

Use

After greasing, move the seat backwards and forwards a few times to distribute the grease evenly. Be sure to clean off any grease that may get onto the PROTECT RUBBERS attached to the seat rail or other exterior parts.



### 5.4.3. MONITOR SURFACE CLEANING



CAUTION!

- Before performing this work, be sure to switch off the machine and remove the plug from the wall outlet.
- Residual static electricity from the monitor screen may be discharged if cleaning is performed using cloths or fluids other than those specified. Leave 10 minutes between turning off the game before cleaning the screen to allow the static electricity to dissipate.
- Remove smears with a dry, soft cloth (flannel, etc). Do not use a coarse gauze, etc.
- To remove smears, use alcohol (Eg: ethanol). When using a chemical detergent, be sure to follow the instructions below:
  - Dilute chemical detergent with water and dip a soft cloth in, then wring thoroughly before wiping the smears off.
  - Do not use a chemical detergent containing abrasive, powder or bleaching agent.
  - Do not use alkaline chemical detergents such as "glass cleaner" or aggressive solvents such as thinners, etc.
- Do not rub or scratch the CRT face with hard items such as scrubbing brushes, etc as this may remove the surface coatings.

### 5.3.2.8.PRICE OF PLAY SETTINGS FOR SWITZERLAND (SFr = Swiss Franc)

#### Parallel 4 Coin Validator

1	2	3	4
5	2	1	

#### C220 Binary Mode Validator

1	2	3	4	5	6	7	8
5	2	1					

#### C120 Validator

1	2	3	4	5	6
5	2	1			

#### DIL Switch 2 Settings

Mode	4	3	2	1
Direct Mode	OFF	ON	ON	ON
2 Channel Mode	ON	ON	ON	ON

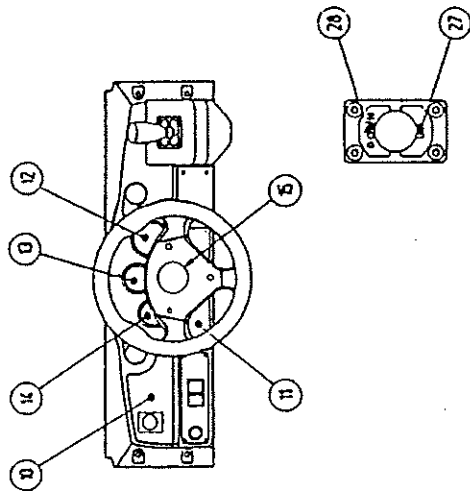
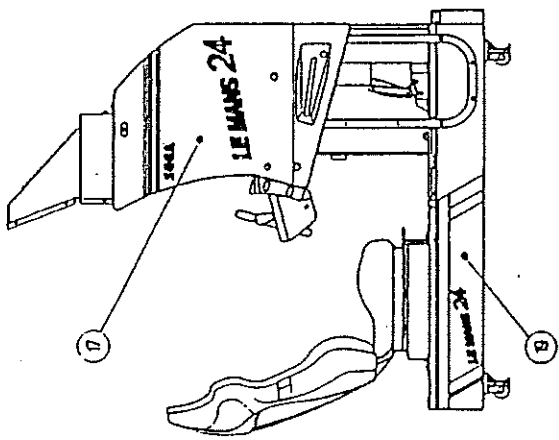
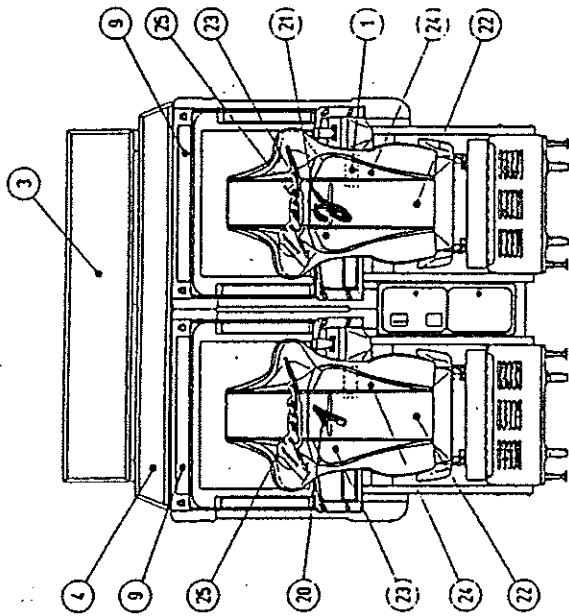
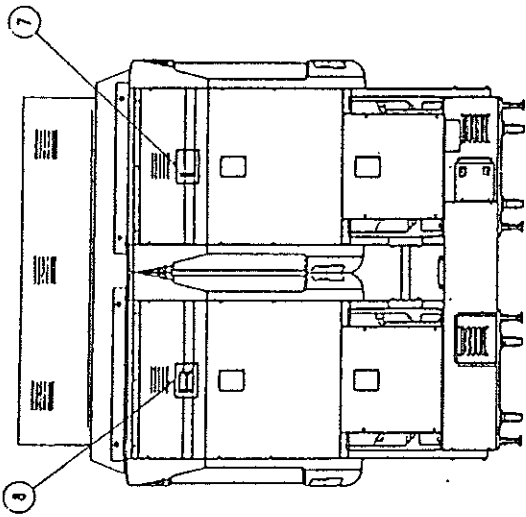
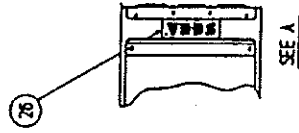
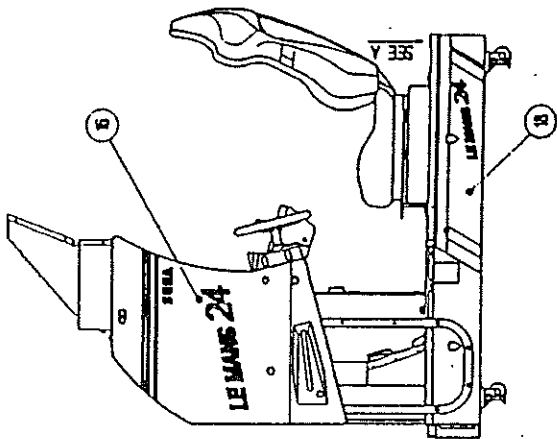
#### DIL Switch 1 Settings

Per Game	Bonus	5	4	3	2	1
1 SFr						
1 SFr	6 for 5 SFr					ON
2 SFr					ON	
2 SFr	3 for 5 SFr				ON	ON
3 SFr				ON		
3 SFr	2 for 5 SFr			ON		ON
4 SFr				ON	ON	
4 SFr	3 for 10 SFr			ON	ON	ON
5 SFr			ON			
5 SFr	5 for 20 SFr		ON			ON
6 SFr			ON		ON	
6 SFr	2 for 10 SFr		ON		ON	ON
8 SFr			ON	ON		
8 SFr	3 for 20 SFr		ON	ON		ON
10 SFr			ON	ON	ON	
10 SFr	3 for 20 SFr		ON	ON	ON	ON
12 SFr		ON				
15 SFr		ON				ON
20 SFr		ON			ON	
25 SFr		ON			ON	ON
30 SFr		ON		ON		
35 SFr		ON		ON		ON
40 SFr		ON		ON	ON	
45 SFr		ON		ON	ON	ON
50 SFr		ON	ON			
Free Play		ON	ON	ON	ON	ON

#### Coin Mech Mode DIL Switch 1

6	7	8	
n/u	ON	ON	Binary
n/u	OFF	OFF	Parallel

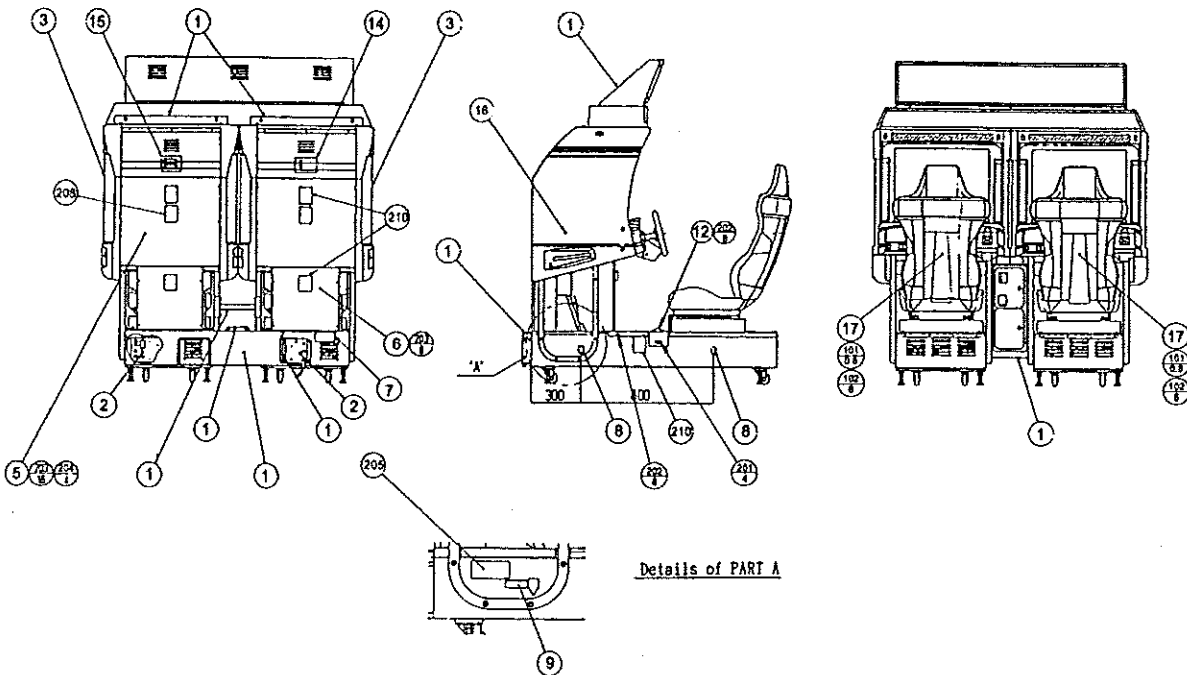
# 6. DESIGN RELATED PARTS



No.	PART No.	DESCRIPTION
1	DYN-0010UK	DENOMI PLATE
3	423-0301UK	BILLBOARD PLATE LMN
4	423-0275UK	BILLBOARD PLATE LOWER STC
7	421-8543	STICKER CABINET L
8	421-8544	STICKER CABINET R
9	422-0620-01	SUB INSTR SH LMN ENG
10	422-0619-02	PLAY INSTR SH LMN MARS
11	RAL-1205-A	METER PANEL
12	DYN-1214-C	DESIGN PL TACO MTR TWIN
13	DYN-1214-D	DESIGN PL OIL MTR TWIN
14	DYN-1214-E	DESIGN PL WATER MTR TWIN
15	INY-1203-B	SHEET EMBLEM
16	LMN-1031-A	SIDE STICKER 1P L LMN
17	LMN-1046-A	SIDE STICKER 2P L LMN
18	LMN-1501-A	STICKER BASE L LMN
19	LMN-1501-B	STICKER BASE R LMN
20	LMN-1601-F	SEAT NUMBER 1 LMN
21	LMN-1701-A	SEAT NUMBER 2 LMN
22	LMN-1601-B	STICKER SEAT LINE LMN
23	LMN-1601-C	STICKER SEAT BACK L LMN
24	LMN-1601-D	STICKER SEAT BACK R LMN
25	LMN-1601-E	STICKER SEAT CALLIGRAPHY LMN
26	LMN-1504UK	STICKER BASE LID UK
27	421-9160	DESIGN PLT SHIFT UP
28	421-9161	DESIGN PLT SHIFT DOWN

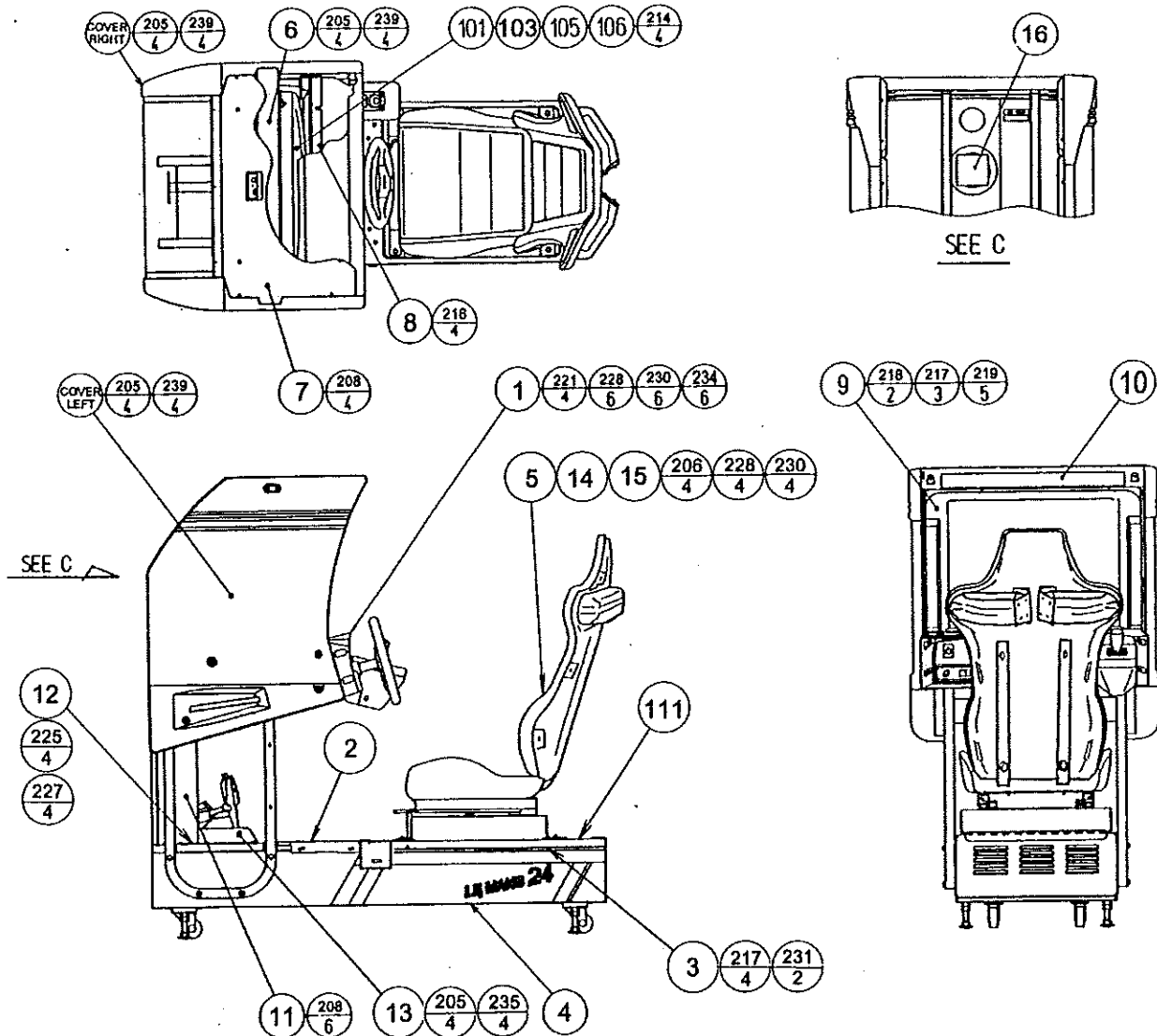
## 7. PARTS LIST

### 7.1. TOP ASSY LMN TWIN (LMN-00002UK)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	LMN-INST-KIT	1	ASSY LMN INST KIT	
2	LMN-6000UK	1	ASSY AC HANDING KIT	
3	LMN-11002UK	2	ASSY COCKPIT LMN TWIN	
4	LMN-7000UK	1	ASSY MONITOR HANDING KIT	
5	INY-0004	2	BACK LID INY	
6	DYN-0008XUK	2	BACK LID B UK	
7	421-7987UK-LMN-T	1	STICKER ELEC SPEC	NEXT TO MAIN AC BRKT
8	421-7020UK	4	STICKER CAUTION FORK	
9	421-7988-91UK	3	STICKER SERIAL NUMBER UK	
10	PK0034	2	PALLET WOODEN RALLY	
11	PK0123	2	CARTON LEMANS TWIN	
12	RAL-XXXX-13UK	2	LOCK COVER UK	
13	PK0037	2	BAG PLASTIC RALLY	
14	421-8543UK	1	STICKER CABINET L UK	MAIN BACK LID CENTRE
15	421-8544UK	1	STICKER CABINET R UK	SUB BACK LID
16	SDW-0001UK	12	BLIND CAP UK	1P-6(LHS),2P-6(RHS)
17	LMN-5500UK	1	ASSY HANDING KIT	
101	OS1220	1.6	FOAM STRIP 8mmSQ ADHESIVE	0.8 ~ EACH SEAT BACK
102	280-5297	12	SCRIVET 8 1K31	
201	008-B00820-OC	4	M8X20 MSCR TMP PRF BH CRM	REAR FLOORS
202	008-T00412-OC	16	M4X12 MSCR TMP PRF CRM	FRONT FLOORS,(12)-8
203	000-P00408-WB	26	M4X8 MSCR POSI PAN W/FS BNP	(5)-18,(6)-8
204	FX0410	4	M4X12 TAPTITE POSI PAN PAS	(5)-4
205	LB1046	2	LABEL TESTED FOR ELEC. SAFETY	MAIN-1,SUB-1
208	LB1103	2	STICKER CAUTION	
210	LB1102	6	STICKER DANGEROUS VOLTAGE	(5)-2,(6)-2,R FLOOR -2

## 7.2. ASSY COCKPIT LMN TWIN (LMN-11002UK)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	STC-12002	1	ASSY CONTROL PANEL TWIN ENG	
2	MSB-2030UK	1	ASSY FLOOR FRONT UK	
3	DYN-2040UK	1	ASSY FLOOR REAR	
4	LMN-21001UK	1	ASSY MAIN BASE LMN	
5	LMN-1600UK	1	ASSY SEAT TWIN	
6	INY-1016UK	1	MONITOR SUPPORT UK	
7	DYN-1015XUK	1	ROOF LID	
8	DYN-1017UK	1	MASK HOLDER	
9	TTR-1067UK	1	MONITOR MASK FST	
10	422-0620-01	1	SUB INSTR SH LMN ENG	
11	DYN-1013XUK	1	WIRE COVER BOX UK	
12	DYN-2016XUK	1	PEDAL BASE UK	
13	DYN-1300-T1	1	BRAKE & ACCEL ASSY	
14	RAL-2007	1	RUBBER HOLDER R TWIN	
15	RAL-2008	1	RUBBER HOLDER L TWIN	
16	LB1102	1	STICKER DANGEROUS VOLTAGE	(101)-1 ON NECK BOARD

(Continued...)

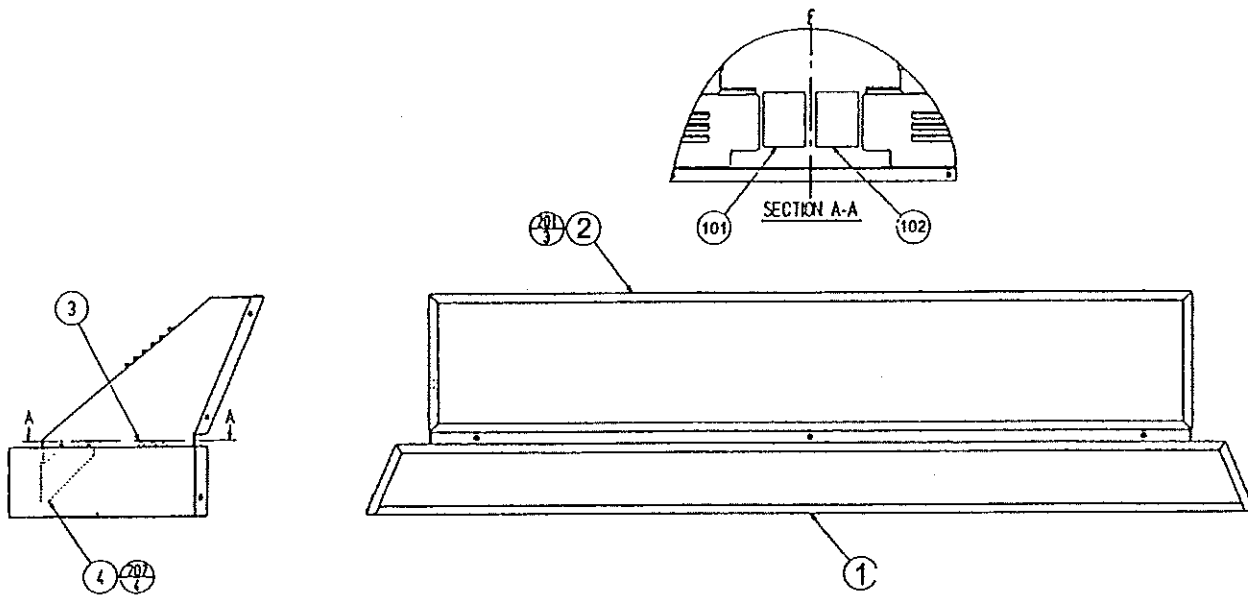
101	200-5395-24-1SA	1	29 CRT ASSY FOR TERMINAL	
102	OS1174	10	CABLE TIE, NYLON 100mm	
103	PP1001	4	COLLAR FOR NANA0 MONITOR	
104	280-A02000-A	9	ROUTER TWIST D20 ADH	
105	280-5112UK	4	BUSH FOR FST TV	
106	FX0012	4	M6 WSHR 25OD FLT BZP	(101)-4
107	280-A01200-A	10	ROUTER TWIST D12 ADH	
109	601-6231-C100	2	EDGING NEW TYPE	(101)-2
110	601-6231-D100	1	EDGING NEW TYPE	(101)-1
111	LMN-1504UK	1	STICKER BASE LID UK	
115	PP1106	0.2	PROTECT TUBE SPIRAL 6mm BLACK	WIRES NEXT TO FAN 200mm
116	280-A01248-PM	12	ROUTER TWIST D12 SO4.8 PAN MED	
117	280-A01548-PM	2	ROUTER TWIST D15 SO4.8 PAN MED	
205	FX0400	16	M8 WSHR FORM A FLT BNP	MON COV-8, (6)-4,(13)-4
206	FX0445	4	M8X45 SET BNP	(5)-4
208	000-P00408-WB	14	M4X8 MSCR POSI PAN W/FS BNP	(7)-4,(11)-6
212	FX0011	4	M4 NUT FLG SER BZP	EARTHS-4
214	FX0013	4	M6 NUT FLG SER BZP	(101)-4
216	FX0437	4	M5X12 MSCR CSK POSI BZP	(8)-4
217	000-T00512-OB	7	M5X12 MSCR POSI TH BNP	(9)-3,(3)-4 HINGE
218	000-T00530-OB	2	M5X30 MSCR POSI TH BNP	(9)-2
219	FS1027	5	M5 WSHR 19OD FLT BNP	(9)-5
221	008-B00830-OB	4	M8X30 MSCR TMP PRF BH BNP	(1)-4 FRONT
225	030-000616-SB	6	M6X16 BLT W/S BNP	(12)-6
227	FS1018	6	M6 WSHR FORM C FLT BNP	(12)-6
228	FS1014	10	M8 WSHR FORM C FLT BNP	(1)-6,(5)-4
230	FS1019	10	M8 WSHR SPR BNP	(1)-6,(5)-4
231	FX0302	2	M5 NUT FLG SER BZP	(3)-2, HINGE/FAN
232	OS1199	2	CLIP "P" ADHESIVE 25X25MMX15MM	
233	OS1136	2	CLIP ADHESIVE 28X28MM X 10MM	
234	FAS-300009	2	M8X20 BLT PVC	(1)-2 UNDERNEATH
235	030-000816-SB	4	M8X16 BLT W/S BNP	(13)-4
236	FX0431	4	M4X12 MSCR POSI PAN BNP	AC UNIT-4,
237	FX0404	4	M4 WSHR SPR BNP	AC UNIT-4
238	FS1009	4	M4 WSHR FORM A FLT BNP	AC UNIT-4,
239	030-000830-SB	12	M8X30 BLT W/S BNP	MON COV-12
241	FX0011	1	M4 NUT FLG SER BZP	EARTH-SEAT BASE
242	FX0449	1	M4 WSHR TOOTH EXT CSK BZP	EARTH-SEAT BASE
301	600-6634-21	1	WIRE HARN MONITOR	
302	600-6634-23	1	WIRE HARN EXT CONT PNL B	
303	600-6634-28	1	WIRE HARN EXT VOLUME B	
304	600-6634-29	1	WIRE HARN SHIELD	
306	600-6634-34UK	1	WIRE HARN EXT BILLBOARD UK	
307	600-6373-77-91	1	WIRE HARNESS PLAYER SEL EXT B	
308	LM9111	2	LOOM EARTH 300mm	MON SUP ROOF,PED BASE
309	LM9611	1	LOOM EARTH 1000mm	MON STAND MON SUPPORT
310	LM9511	1	LOOM EARTH 750mm	MON STAND TO BASE STUD
315	600-6373-78	1	WIRE HARNESS PLAYER SEL SW	(1)-1
317	LM9512	2	LOOM EARTH 750mm	CP>>MON STAND,SHIFTER>>CP

### 7.3. ASSY INSTALLATION KIT LMN (LMN-INST-KIT)

No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	LMN-0200UK	1	ASSY BILLBOARD LMN	
2	DYN-0300UK	1	ASSY COIN CHUTE TOWER UK	
3	DYN-0500UK	1	ASSY WIRE COVER UK	
4	DYN-0013UK	1	JOINT PIPE	
5	DYN-0014UK	2	BILLBOARD HOLDER DAYTONA	
6	DYN-0006XUK	1	AC COVER B	
7	DYN-0018UK	1	AC COVER C	
8	DYN-0019UK	1	AC COVER D	
9	RAL-XXXX-14UK	1	TIE BRACKET RALLY	
10	600-6275-0500	2	CABLE FIBER OPTIC 5mm x 500cm	
11	SAECE015	1	CERT OF CONFORMANCE LMN	
12	420-6322-02UK	1	SERVICE MANUAL LMN TWIN	
13	OS1019	1	SELF SEAL BAG 9X12.3/4	
14	PK0122	1	CARTON INST KIT LMN TWIN	
15	420-5395-24-1SA	1	SERVICE MANUAL SANWA SAMSUNG	
101	421-9588	1	SEAT NUMBER NO. 3-8 LMN	
102	509-5704	1	SW MICRO TYPE (OMRON K3L 13)	
103	540-0006-01	1	WRENCH M4 TMP PRF	
104	540-0007-01	1	WRENCH M5 TMP PRF	
105	220-5484	1	VOL CONT B-5K OHM	
106	540-0009-01	1	WRENCH M8 TMP PRF	
107	390-5167	2	LAMP 110V 30W	
201	030-000825-SB	16	M8X25 BLT W/S BNP	(5)-8,B/BOARD-4,(4)-4
202	FS1031	4	M8 WSHR 25OD FLT BNP	INSIDE BILLBOARD-4
203	030-000820-S	4	M8X20 BLT W/S PAS	COINCHUTE TOWER-4
204	000-P00408-WB	10	M4X8 MSCR POSI PAN W/FS BNP	(6)-2,(7)-4,(8)-4
205	FX0400	12	M8 WSHR FORM A FLT BNP	(4)-4,(5)-8
206	FX0011	3	M4 NUT FLG SER BZP	COINCHUTE-1,AC BRKTS-2
207	FX0258	4	M8 WSHR 22OD FLT BZP	COINCHUTE-4
208	FX0431	5	M4X12 MSCR POSI PAN BNP	(AC-A)-5
209	FX0404	5	M4 WSHR SPR BNP	(AC-A)-5
210	FS1009	5	M4 WSHR FORM A FLT BNP	(AC-A)-5

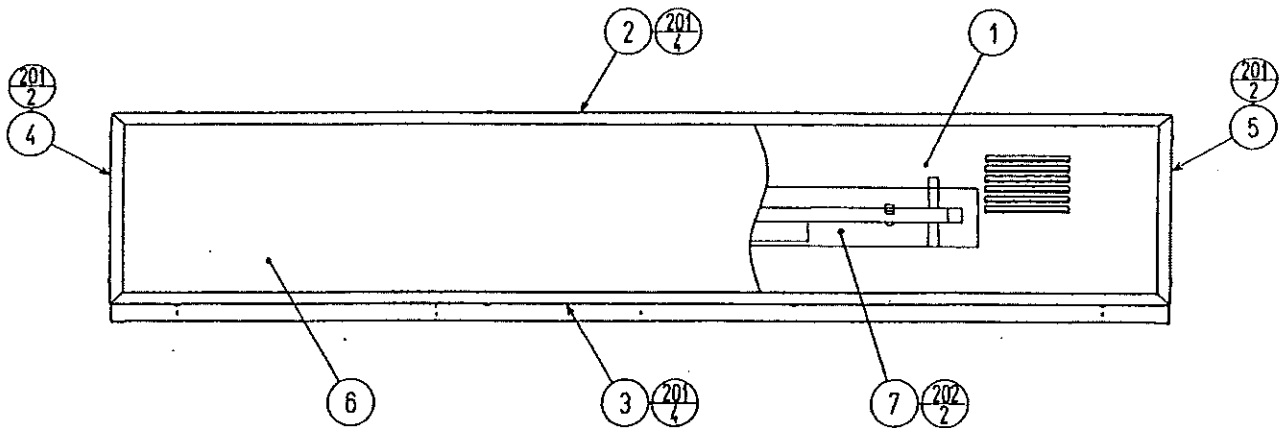


#### 7.4. ASSY BILLBOARD LMN (LMN-0200UK)



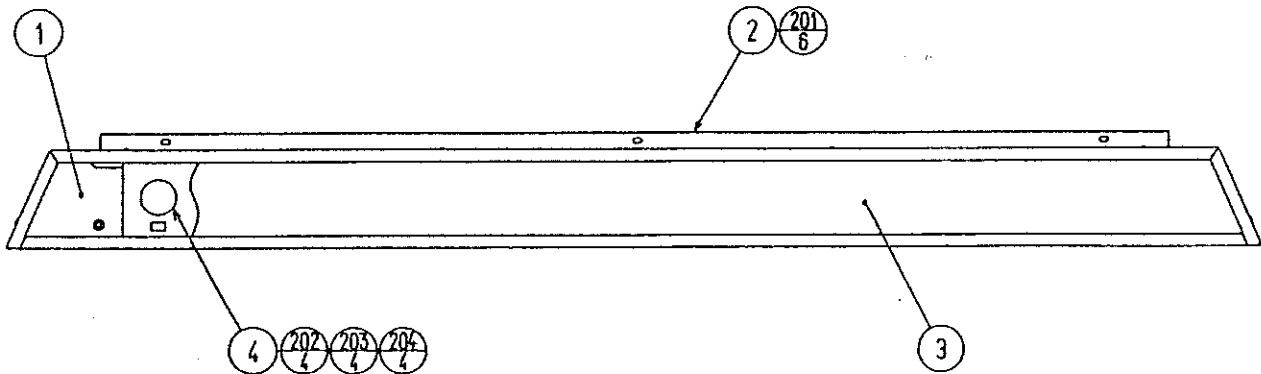
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	LMN-0220UK	1	ASSY BILLBOARD LOWER	
2	LMN-0210UK	1	ASSY BILLBOARD UPPER LMN TWIN	
3	RAL-0201UK	2	LAMP LID	
4	RAL-0202UK	2	STAY BRKT	
101	LB1104	1	STICKER CAUTION, HOT SURFACE	(1)-1
102	LB1102	1	STICKER DANGEROUS VOLTAGE	(1)-1
104	PP1106	0.5	PROTECT TUBE SPIRAL 6mm BLACK	ALL WIRE HARNS TOGETHER
201	000-T00408-OC	3	M4X8 MSCR POSI TH CRM	(1)-3
202	FX0011	5	M4 NUT FLG SER BZP	(4)-4,EARTH-1
301	LM9511	1	LOOM EARTH 750mm	LOWER BILLBOARD TO ROOF LID

### 7.5. ASSY BILLBOARD UPPER LMN (LMN-0210UK)



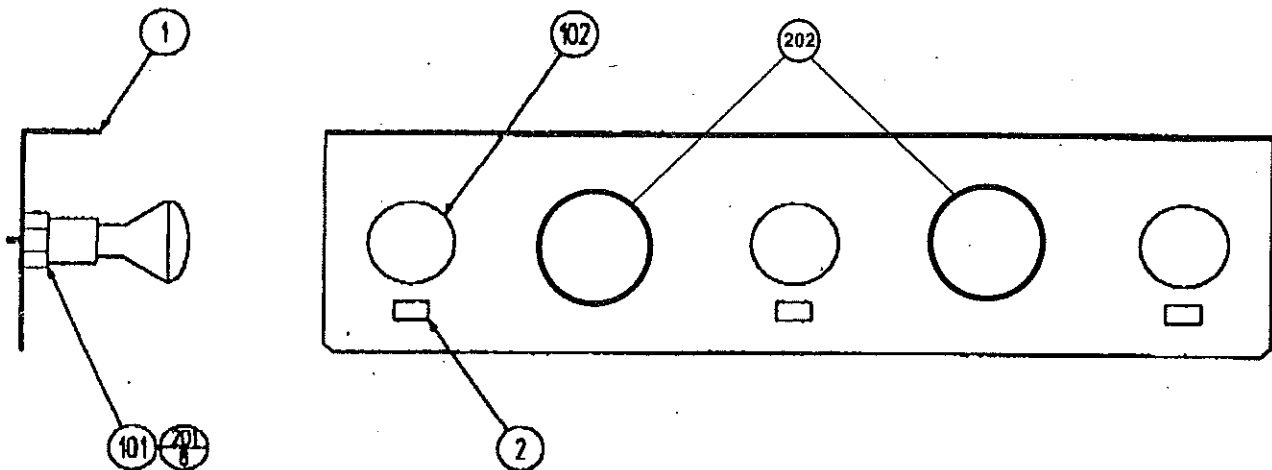
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	LMN-0211UK	1	BILLBOARD CASE UPPER	
2	RAL-0212UK	1	CORNER EDGE UPPER	
3	RAL-0213UK	1	CORNER EDGE LOWER	
4	RAL-0214UK	1	CORNER EDGE LEFT	
5	RAL-0215UK	1	CORNER EDGE RIGHT	
6	423-0301UK	1	BILLBOARD PLATE UPPER LMN	
7	STC-0240UK	1	ASSY FL TWIN	
201	000-T00408-OC	12	M4X8 MSCR POSI TH CRM	(2)-4,(3)-4,(4)-2,(5)-2
202	FX0163	2	N8X1/2" S/TAP POSI FLG BZP	(7)-2
203	FX0011	1	M4 NUT FLG SER BZP	EARTH-1
301	LM9111	1	LOOM EARTH 300mm	UPPER TO LOWER BILLBOARD

### 7.6. ASSY BILLBOARD LOWER LMN (LMN-0220UK)



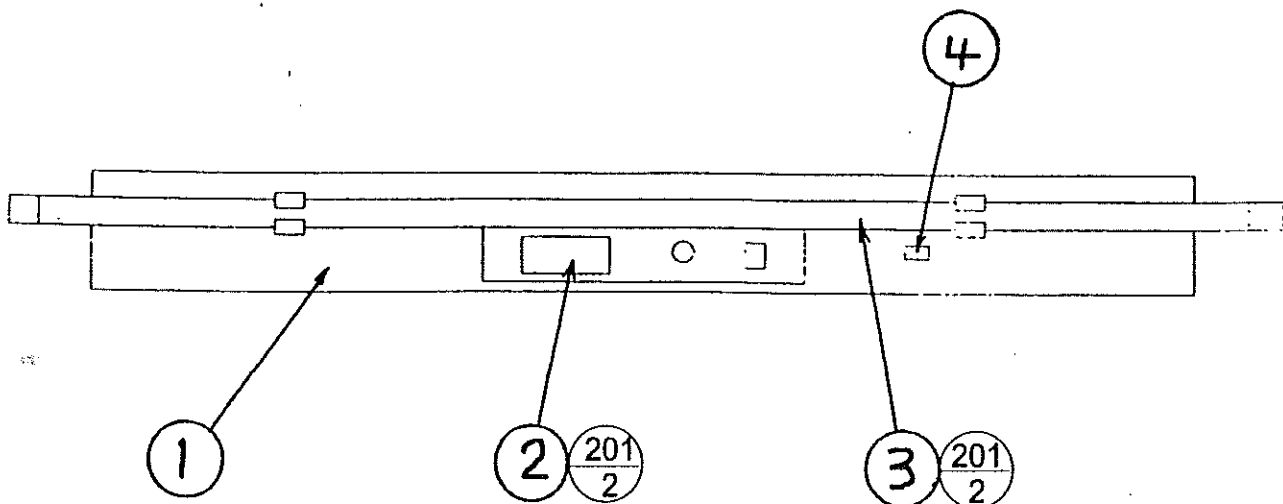
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	LMN-0221UK	1	BILLBOARD CASE LOWER	
2	RAL-0222UK	1	CORNER EDGE	
3	423-0275UK	1	BILLBOARD PLATE LOWER STC UK	
4	STC-0230UK	2	ASSY LAMP UNIT	
101	280-A00900-A	4	ROUTER TWIST D9 ADH	
201	000-T00408-OC	6	M4X8 MSCR POSI TH CRM	(2)-6
202	FX0037	4	M4X12 MSCR POSI PAN BZP	(4)-4
203	FX0009	4	M4 WSHR FORM A FLT BZP	(4)-4
204	FX0243	4	M4 WSHR SPR BZP	(4)-4

### 7.7. ASSY LAMP UNIT (STC-0230UK)



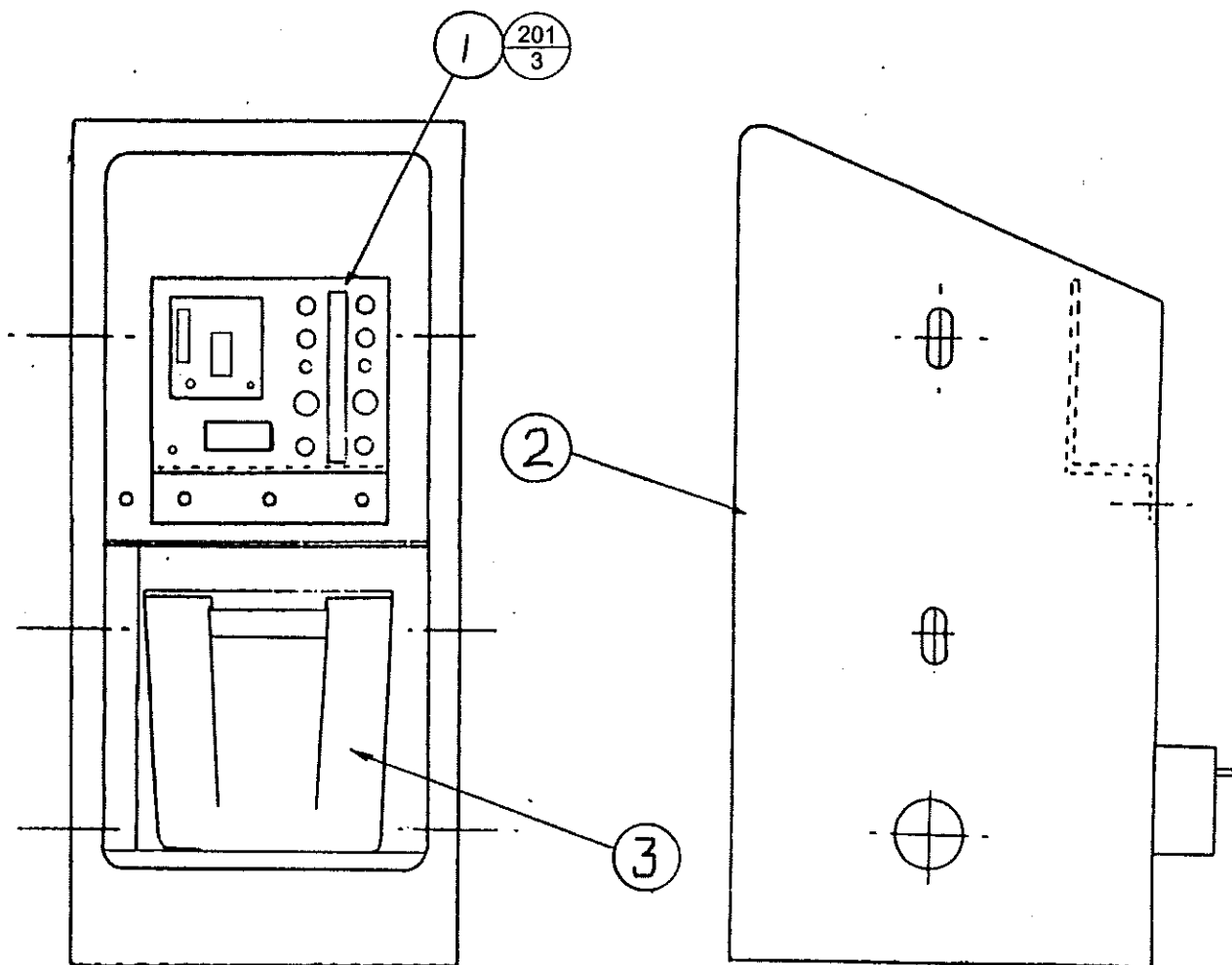
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	RAL-0231UK	1	LAMP PANEL	
2	421-7501-16UK	3	STICKER 110V 30W	
101	214-0110	3	BULB SOCKET (CERAMIC TYPE)	
102	390-5167	3	LAMP 110V 30W	
103	280-A00900-A	4	ROUTER TWIST D9 ADH	(301)TO(1)-4
201	FX0031	6	M3X16 MSCR POSI PAN BZP	(101)-6
202	PP1107	2	GROMMET RUBBER 1.6t dia50 MATL	(1)-2
301	600-6555-07UK	1	LOOM LAMP UNIT	

### 7.8. ASSY FL TWIN (STC-0240UK)



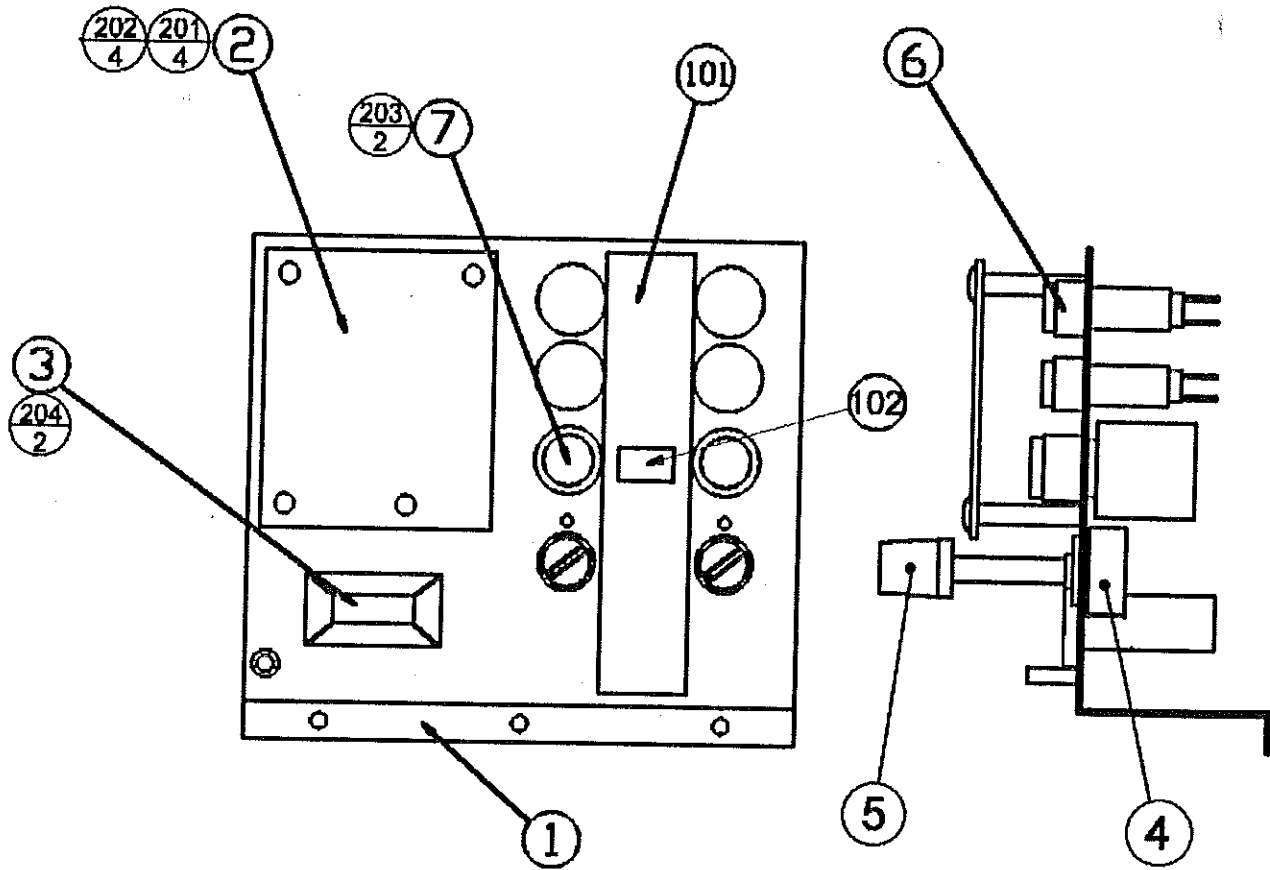
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	STC-0241UK	1	WOODEN BASE FL	
2	390-5538-40-AUK	1	FL LIGHTING TRAY 110V 40W	
3	LT1043	1	TUBE FL 40W 48" DIA38mm	(2)-1
4	421-7501-10	1	STICKER FL 40W	(1)-1
201	FX0163	4	N8X1/2" S/TAP POSI FLG BZP	(2)-2,(CLIPS)-2
202	280-A00500-WX	4	ROUTER TWIST D5 WOOD XLAR	
301	600-6555-06UK	1	WIRE HARN FL	

### 7.9. ASSY COINCHUTE TOWER (DYN-0300UK)



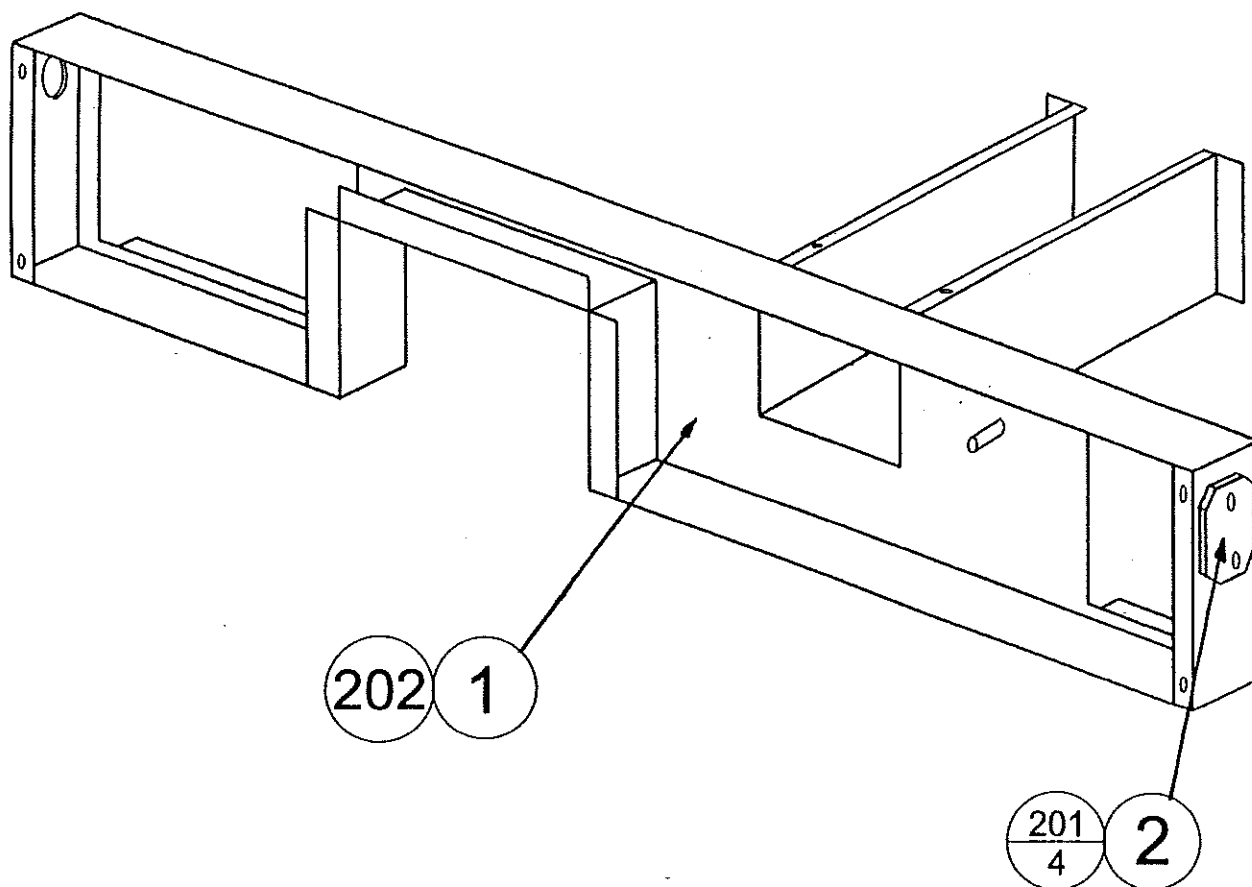
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	DYN-0350UK	1	ASSY VTS (QUICK-FIT) UK	
2	DYN-0301XUK	1	COIN CHUTE TOWER	
3	PP1087	1	BOX CASH FOR MINI DOOR	
201	FX0011	4	M4 NUT FLG SER BZP	(1)-3, EARTH-1
301	LM9012	2	LOOM EARTH 200mm	COIN DOOR TO FRAME,VTS TOWER
302	LM9212	1	LOOM EARTH 400mm	FRAME TO VTS

### 7.10. ASSY VTS (QUICK-FIT) UK (DYN-0350UK)



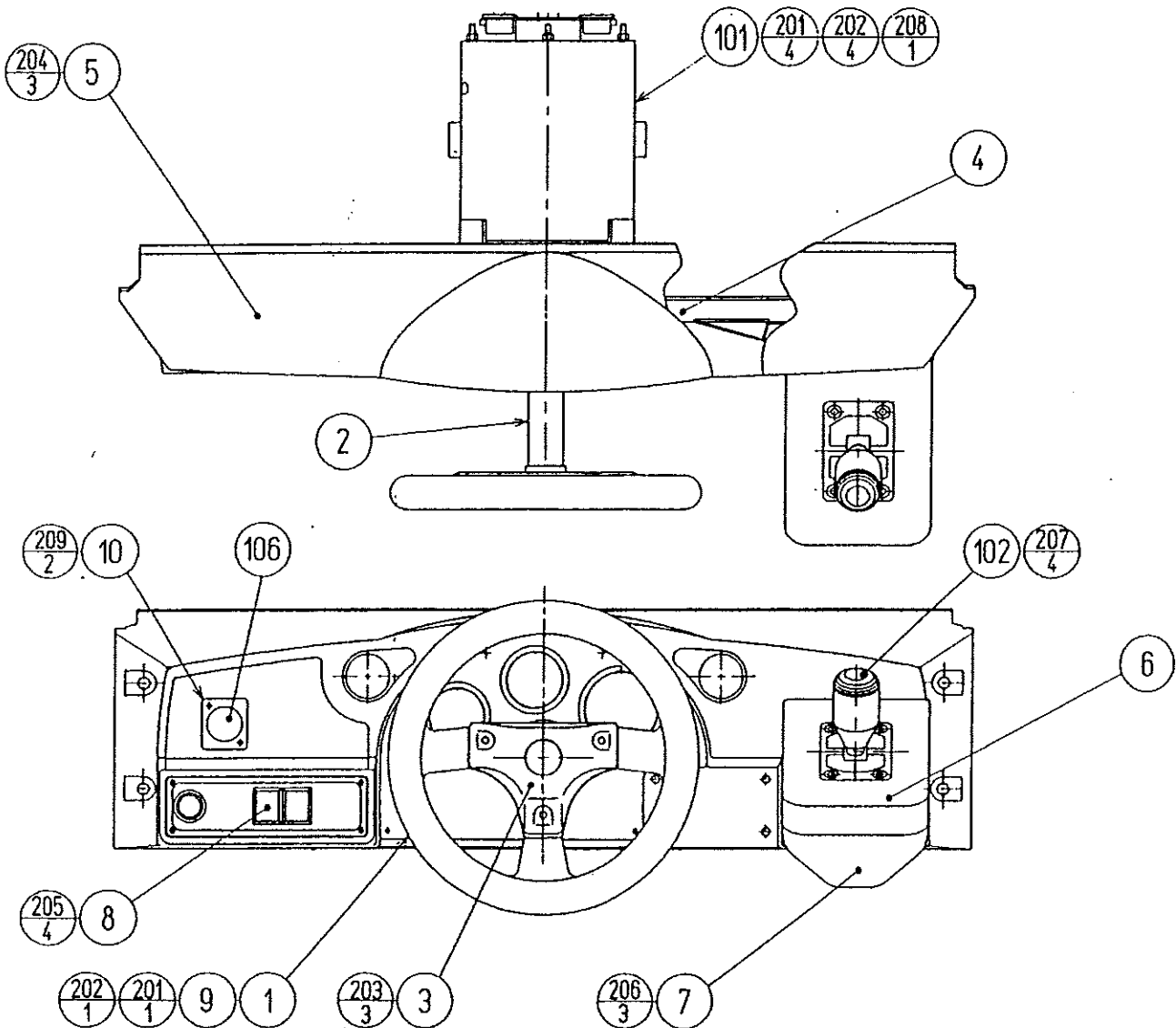
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	MP1284	1	BRKT PANEL VTS (KWIK FIT)	
2	EP1374	1	CREDIT BD KLINGON PLUS	
3	EP1003	1	COUNTER IMPULSE, PANEL W/CLIP	
4	EP1331	2	POT 4.7K LIN 0.11" TAB	
5	EP1018	2	KNOB 15MM DIA FOR 6.3MM SHAFT	
6	SW1100	4	SWITCH MOMENTARY 0.11" TAB	
7	SW1099	2	SWITCH PB MOMENTARY 30/40AMP	
101	LB1006	1	LABEL VTS 1 SIL/BLK VERT LIST	
102	LB1028	1	LABEL 110VAC MINI YELL/BLK	
201	FX0029	4	M3X10 MSCR POSI PAN BZP	(2)-4
202	FX0263	4	M3 WSHR FORM A FLT BZP	(2)-4
203	OS1055	2	TERM 1/4" RECEPT. RED F/INSUL	(7)-2
204	OS1098	2	CRIMP BELL END SMALL	(3)-2
205	OS1181	5	CABLE TIE BASE 19mmSq SELF/ADH	(1)-5
206	OS1174	5	CABLE TIE, NYLON 100mm	(1)-5
207	FX0011	1	M4 NUT FLG SER BZP	EARTH POINT FOR VTS BRKT
301	600-6559-101	1	WIRE HARN VTS DYN KWIK FIT	
302	LM9111	1	LOOM EARTH 300mm	VTS TO TOWER STUD

### 7.11. ASSY WIRE COVER (DYN-0500UK)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	DYN-0005UK	1	AC COVER A	
2	DYN-0009UK	2	HOLE LID	(1)-2
201	000-P00308-WB	4	M3X8 MSCR POSI PAN W/FS BNP	(2)-4
202	FX0011	1	M4 NUT FLG SER BZP	EARTH-1
203	280-A02000-A	5	ROUTER TWIST D20 ADH	(1)-5
301	600-6634-35UK	1	WIRE HARN EXT AC	
302	600-6634-36UK	1	WIRE HARN EXT TOWER L	
303	600-6634-37UK	1	WIRE HARN EXT TOWER R	
304	600-6373-76	1	WIRE HARNESS PLAYER SEL EXT A	
305	LM9511	1	LOOM EARTH 750mm	SUB AC TO COVER
306	LM9111	1	LOOM EARTH 300mm	MAIN AC TO COVER
307	LM9212	1	LOOM EARTH 400mm	COVER TO CCT

### 7.12. ASSY CONT PNL MARS (LMN-12003UK)

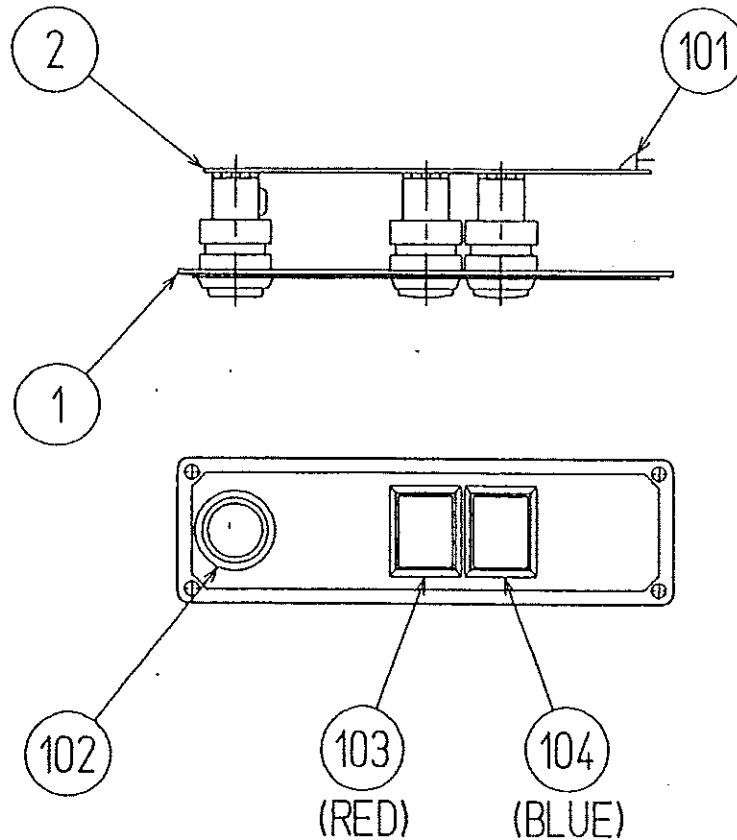


No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	DYN-1201	1	STEERING WHEEL	
2	DYN-1209	1	HANDLE COLLAR	
3	INY-1203	1	STEERING EMBLEM	
4	INY-1205	1	CONTROL PANEL BRKT TWIN	
5	LMN-1201-03	1	CONTROL PANEL COVER MARS	
6	INY-1204	1	SHIFT COVER INY	
7	DYN-1223	1	SHIFT COVER	
8	INY-1250	1	ASSY VIRTUAL BUTTON	
9	OUT-2026	1	SPACER	
10	117-5164	1	START PLATE 37 X 42	
101	610-0383	1	ASSY HANDLE MECHA W/MOTOR	
102	610-0408	1	UP/DOWN SHIFTER AL	
106	509-5440	1	PUSH BTN SW 1T GRN W/L DC14V	

(Continued...)

201	060-S00800	5	M8 WSHR SPR	(1)-1,(101)-4
202	050-H00800	5	M8 NUT	(1)-1,(101)-4
203	008-T00512-OB	3	M5X12 MSCR TMP PRF TH BNP	(3)-3
204	000-T00416-OB	3	M4X16 MSCR POSI TH BNP	(5)-3
205	000-T00416-OC	4	M4X16 MSCR POSI TH CRM	(8)-4
206	000-P00412-W	3	M4X12 MSCR POSI PAN W/FS	(7)-3
207	008-T00516-OB	4	M5X16 MSCR POSI TH BNP	(102)-4
208	050-F00400	1	M4 NUT FLG SER	FOR EARTH
209	050-F00300	2	M3 NUT FLG SER	(10)-2
301	600-6634-24	1	WIRE HARN EXT SHIFTER	
302	600-6634-25	1	WIRE HARN VR BUTTON	
303	600-6634-32	1	WIRE HARN EXT MOTOR	
304	600-634-33	1	WIRE HARN EARTH MOTOR	
305	600-6373-78	1	WIRE HARNPLAYER SELECT SW	

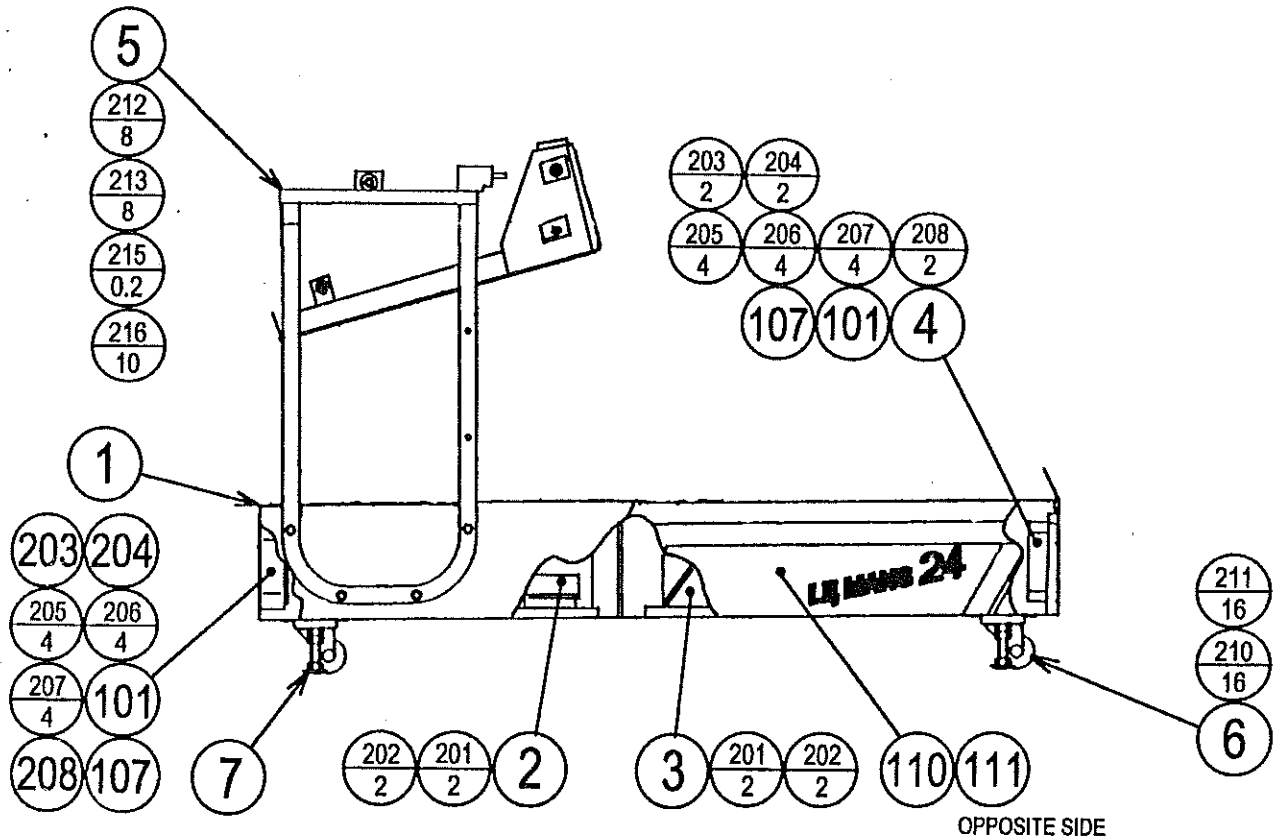
**7.13. ASSY VIRTUAL BUTTON (INY-1250)**



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	INY-1251	1	VR SW BRKT	
2	171-6478B	1	PC BD LIGHTING SWX5	
101	212-5205-12	1	CONN JST M 12P RTA	
102	509-5560-Y	1	PB WS W/L 6V 1L Y	
103	509-5561-R	1	PB WS W/L 6V 5L R	
104	509-5561-S	1	PB WS W/L 6V 5L S	



### 7.14. ASSY MAIN BASE LMN (LMN-21001UK)

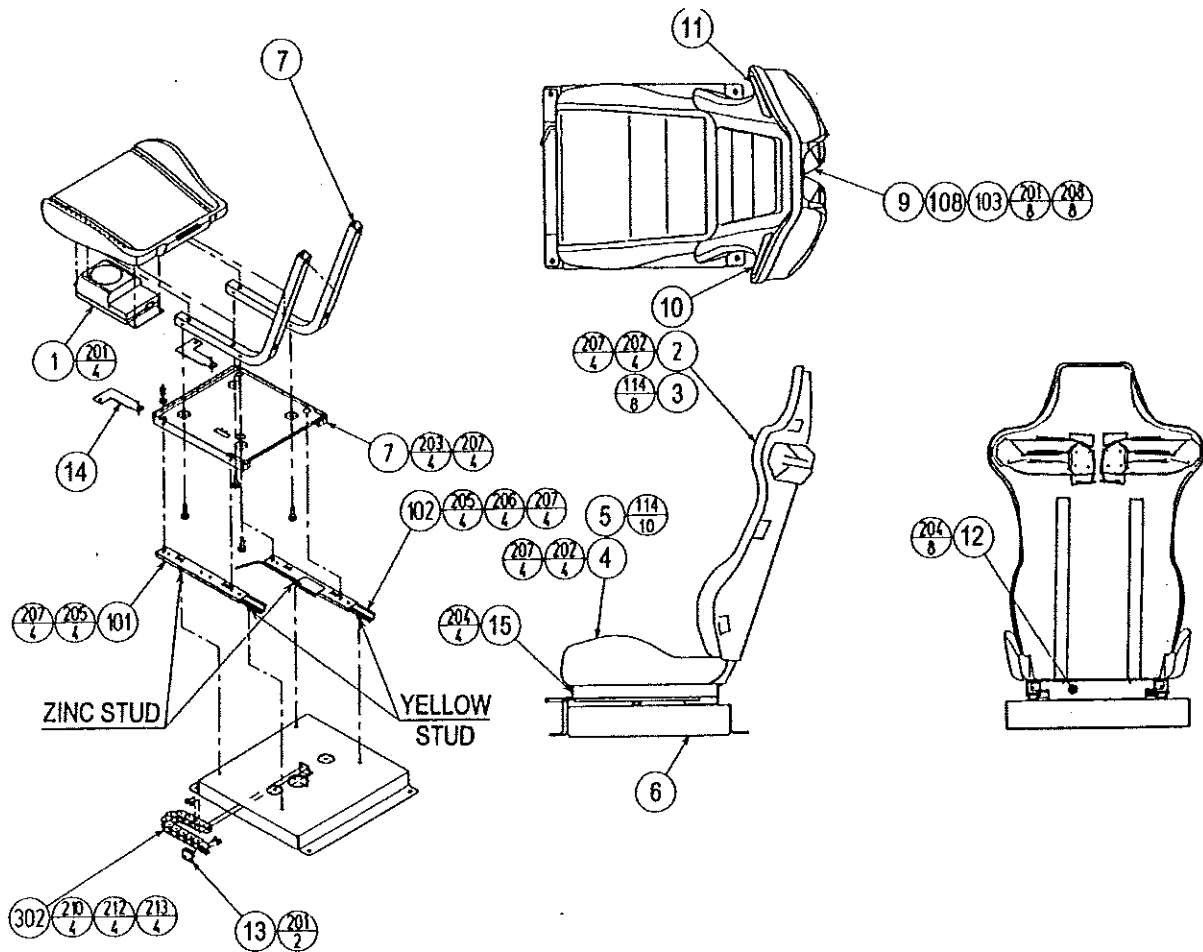


No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	MSB-1121UK	1	MAIN BASE UK	
2	LMN-4400UK	1	ASSY MAIN BD BASE	
3	LMN-4500UK	1	ASSY ELEC BASE	
4	MP1208	1	BRKT FAN DAYTONA	
5	INY-1014UK	1	MONITOR STAND UK	
6	MA1007	4	CASTOR SWIVEL 63mm NYLON	
7	MA1011	4	FOOT ADJUST M16X95 TYPE C	
101	260-0011-02	2	AXIAL FLOW FAN AC100V 50-60Hz	
102	600-6275-0150	2	ASSY FIBER OPTIC I5 0150CM	
105	OS1174	10	CABLE TIE, NYLON 100mm	
107	FN1012	2	MESH GUARD METAL 120mm FAN	
110	LMN-1501-A	1	STICKER BASE L LMN	
111	LMN-1501-B	1	STICKER BASE R LMN	

(Continued...)

201	FX0040	4	M4X25 MSCR POSI PAN BZP	(2)-2,(3)-2
202	FX0301	4	M4 WSHR 16OD FLT BZP	(2)-2,(3)-2
203	FX0037	3	M4X12 MSCR POSI PAN BZP	FAN EARTH -3
204	FX0009	3	M4 WSHR FORM A FLT BZP	FAN EARTH -3
205	FX0448	8	N10X1/2" S/TAP HEX B BZP	(101)-8
206	FX0245	8	M5 WSHR FORM A FLT BZP	4 FRONT FAN,4 REAR FAN
207	OS1195	8	RIVET SNAP MOSS SR1811	(107)-8
208	FX0449	3	M4 WSHR TOOTH EXT CSK BZP	FRONT FAN-1,REAR FAN-2
209	FX0011	1	M4 NUT FLG SER BZP	MAIN BASE EARTH -1
210	FX0201	16	M8X16 SET BZP	(6)-16
211	FX0261	16	M8 WSHR SPR BZP	(6)-16
212	030-000850-SB	8	M8X50 BLT W/S BNP	(5)-8
213	FS1014	8	M8 WSHR FORM C FLT BNP	(5)-8
215	OS1221	0.1	FOAM STRIP, OPEN CELL, SEL/AD	(5)-2 ON EARS
216	280-A01200-A	10	ROUTER TWIST D12 ADH	
217	OS1199	1	CLIP "P" ADHESIVE 25X25MMX15MM	(1)-1 TO KEEP LOOMS FROM R-FAN
301	600-6873-033UK	1	WIRE HARN REAR FAN	
302	600-6373-35UK	1	WIRE HARN AC FAN UK	
303	600-6634-22	1	WIRE HARN EXT CONT PNL A	
304	600-6634-26	1	WIRE HARN EXT TOWER	
305	600-6634-27	1	WIRE HARN EXT VOLUME A	
306	600-6634-38	1	WIRE HARN EXT RGB B	
307	600-6775-009	1	WIRE HARN MAIN BASE 2	
308	LM9812	1	LOOM EARTH 2000mm	MAIN BASE-REAR FAN

### 7.15. ASSY SEAT LMN (LMN-1600UK)

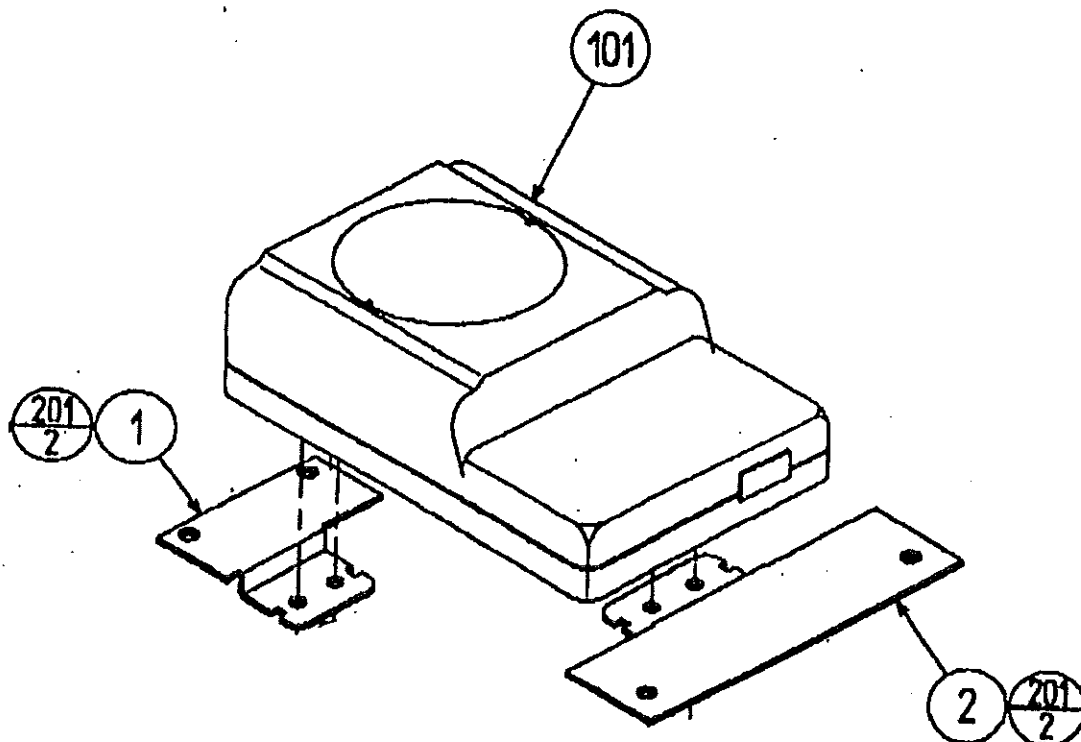


No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	STC-1650	1	ASSY SUB WOOFER STCC	
2	STC-1601-A	1	UPPER SEAT BLANK	
3	LMN-1601-G	1	UPPER SEAT INSERT	(2)-1
4	STC-1602-A	1	LOWER SEAT BLANK	
5	LMN-1602-B	1	LOWER SEAT INSERT	(4)-1
6	STC-1603	1	SEAT BASE	
7	STC-1604	2	SEAT FRAME	
8	STC-1606	1	SEAT MOUNT TRAY	
9	STC-1607	2	SP MOUNT BRKT	
10	LMN-1608	1	SPEAKER NET L BLUE	
11	LMN-1609	1	SPEAKER NET R BLUE	
12	STC-1610	1	SAFETY GUARD	
13	STC-1611	1	CABLE BEAR BRKT	
14	STC-1612	2	PROTECT RUBBER	
15	STC-1613	1	SAFETY GUARD F	
101	601-9059	1	SEAT RAIL L	
102	601-9060	1	SEAT RAIL R	
103	130-5159	2	GULL BOX SPEAKER 8 OHM 5W	
105	601-6563-188	1	BUSH 2.4T	
106	601-6563-100	1	BUSH 2.4T	
108	OS1004	0.75	DRAFT EXCLDR 4 X7MM BLK x 10M	FIT TO ITEM 103
112	280-A00900-A	5	ROUTER TWIST D9 ADH	
114	280-K02529-WX	18	DRIVE FASTENER 25FH 24L 7.9DIA	(3)-8,(5)-10

(Continued...)

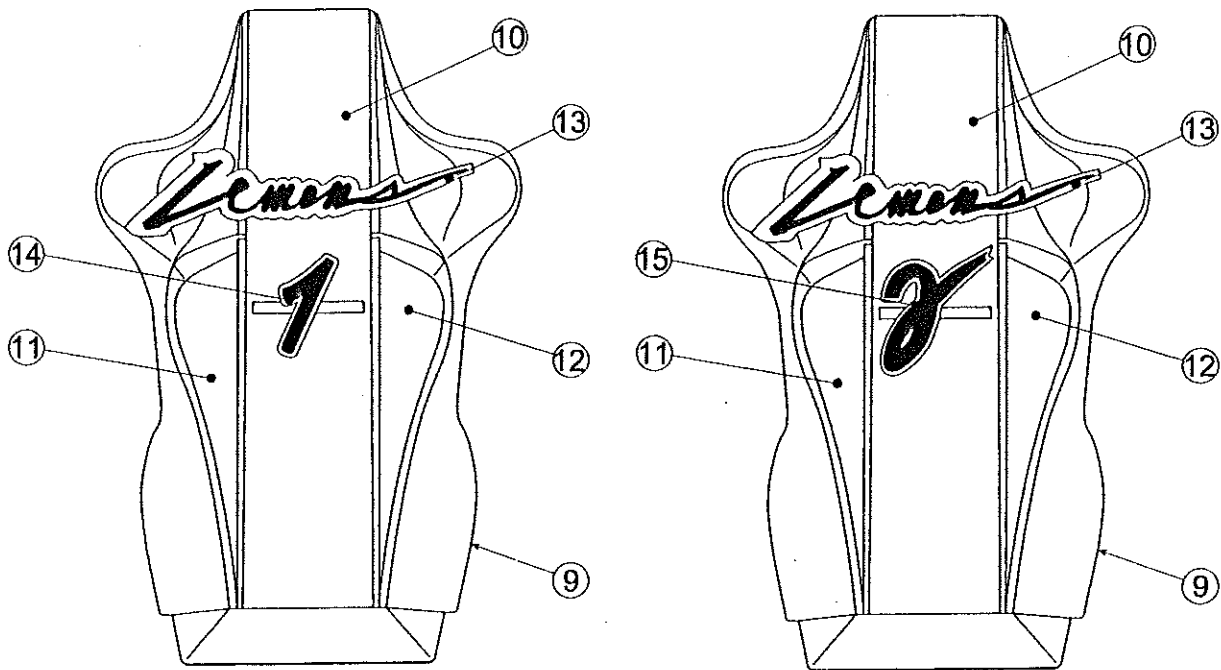
201	000-P00410-W	14	M4X10 MSCR POSI PAN W/FS	(1)-4,(9)-8,(13)-2
202	030-000850-SB	8	M8X50 BLT W/S BNP	(2)-4,(4)-4
203	030-000816-S	4	M8X16 BLT W/S PAS	(8)-4
204	FX0403	8	M4X8 MSCR POSI PAN BNP	(12)-8
205	FX0220	8	M8 NUT NLK BZP	(101)-4,(102)-4
207	FX0258	20	M8 WSHR 22OD FLT BZP	(101)-4,(102)-4,(2,4,8)-4
208	FX0155	8	N6X1/2" S/TAP POSI FLG BZP	(103)-8
210	000-T00616-OB	4	M6X16 MSCR TH POSI BNP	(302)-4
212	FX0042	2	M4X6 MSCR POSI PAN	2 - ITEM 302
213	FX0449	2	M4 WSHR TOOTH EXT CSK BZP	2 - ITEM 302
301	600-6774-016	1	WIRE HARN SPEAKER EXT	
302	600-6774-017	1	WIRE SEAT EXT	
303	LM9611	1	LOOM EARTH 1000mm	SEAT BASE TO REAR FAN

**7.16. ASSY WOOFER (SPG-1650)**



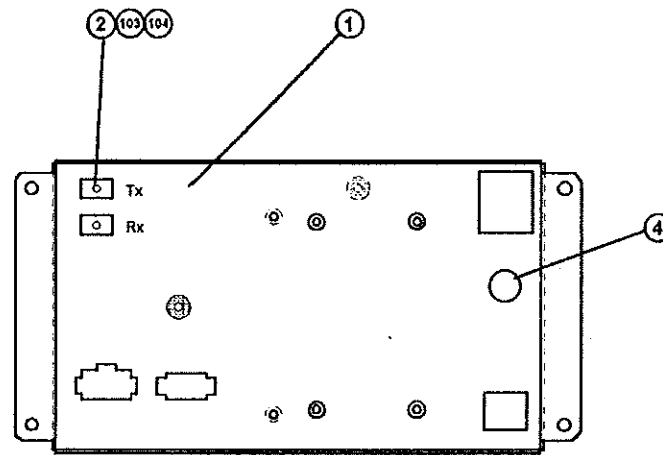
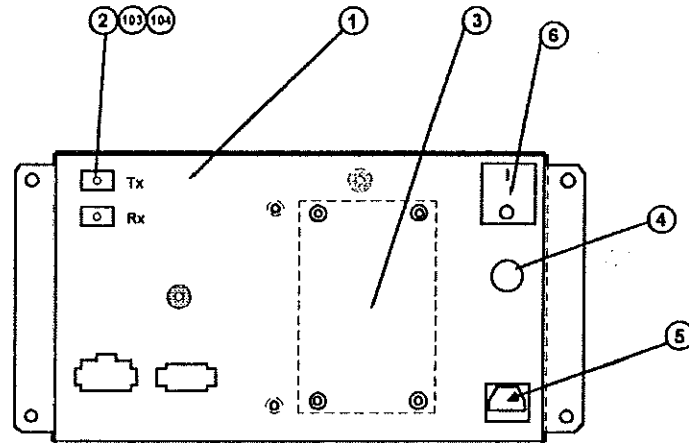
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	STC-1651	1	WOOFER BRKT F	
2	STC-1652	1	WOOFER BRKT R	
101	130-5160	1	SUB WOOFER 4OHM 30W	
201	FX0155	4	N6X1/2" S/TAP POSI FLG BZP	(1)-2,(2)-2

**7.17. ASSY HANDING KIT (LMN-5500UK)**



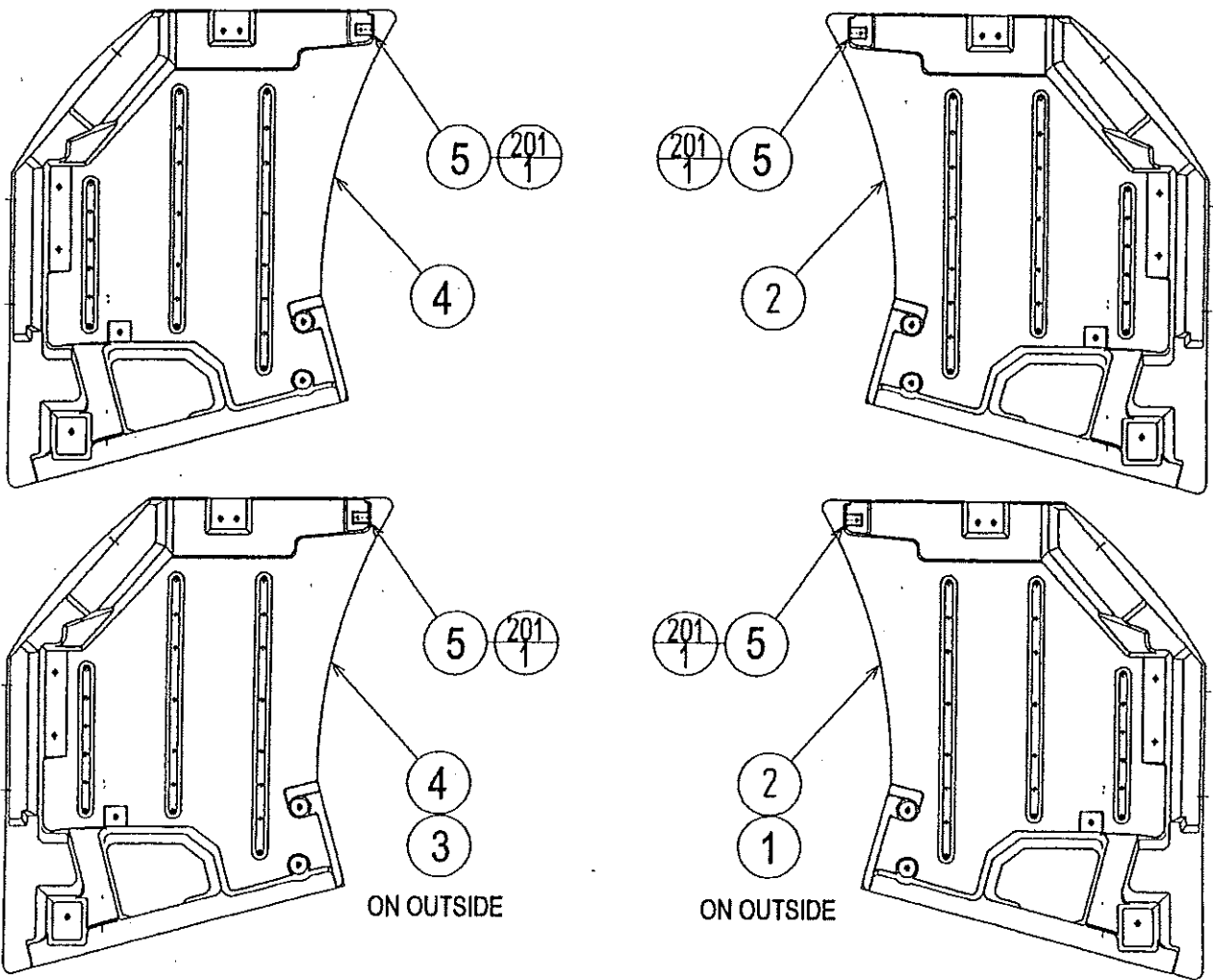
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
9	LMN-1601-A	2	SEAT REAR COVER BLANK	
10	LMN-1601-B	2	STICKER SEAT LINE LMN	
11	LMN-1601-C	2	STICKER SEAT BACK L LMN	
12	LMN-1601-D	2	STICKER SEAT BACK R LMN	
13	LMN-1601-E	2	STICKER SEAT CALLIGRAPHY LMN	
14	LMN-1601-F	1	STICKER NUMBER 1 LMN	
15	LMN-1701-A	1	STICKER NUMBER 2 LMN	

### 7.18. ASSY AC HANDING KIT (LMN-6000UK)



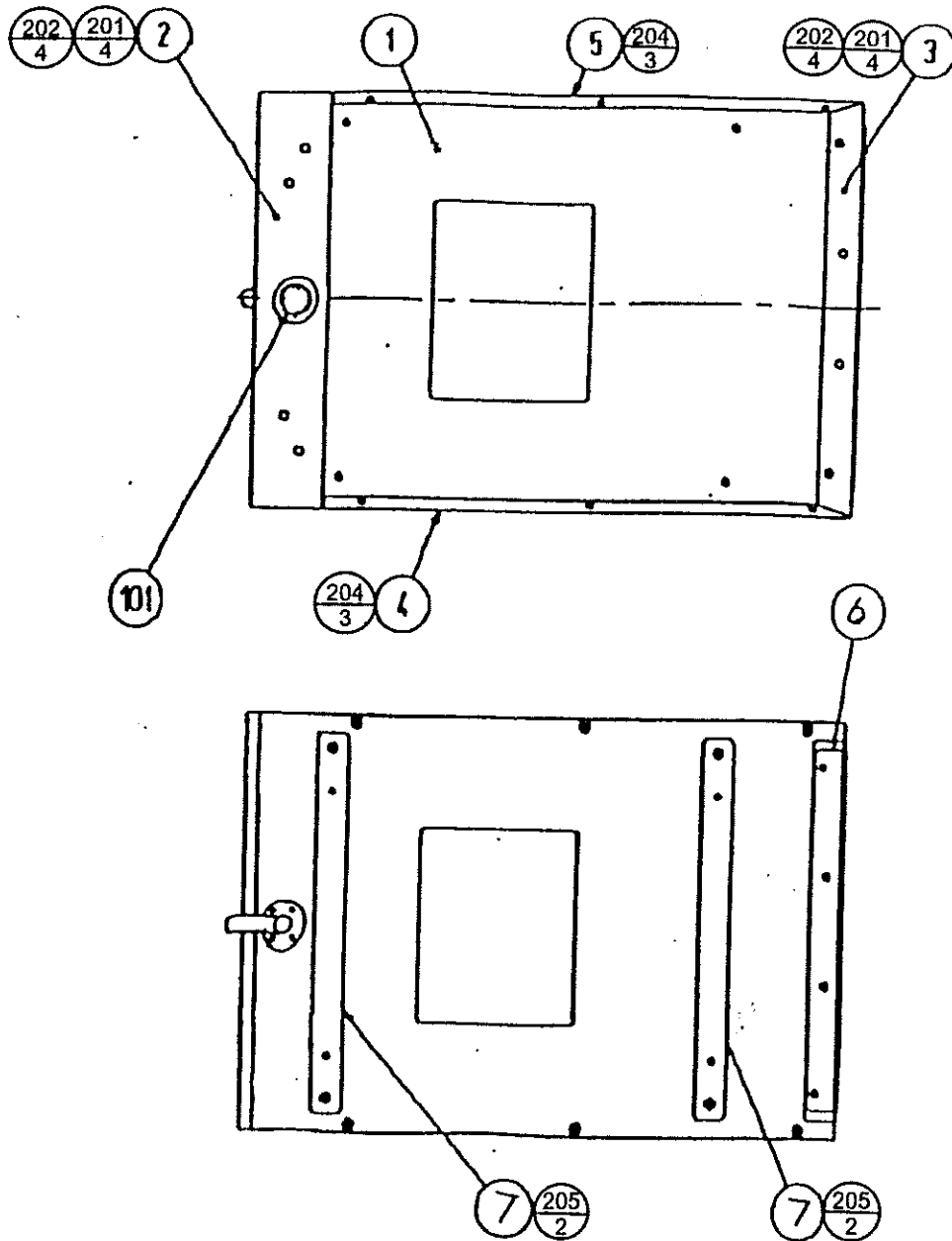
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	STC-0401UK	2	AC BRKT UK	
2	211-5479-01	4	CONN OPT JOINT PNL-TOCA150	MAIN-2,SUB-2
3	EP1344	1	FILTER EMI 10A BLP	MAIN-1
4	EP1334	2	FUSE HOLDER 20mm 10A 240Vac	MAIN-1,SUB-1
5	EP1302	1	EURO SOCKET FUSED 10A 250Vac	MAIN-1
6	EP1303	1	SWITCH ROCKER DPST 10A 250Vac	MAIN-1
7	514-5078-10000	1	FUSE 5X20 CERAMIC SB 10000mA	
8	514-5078-5000	2	FUSE 5X20 CERAMIC SB 5000mA	(4)-2 AC UNIT MAIN&SUB
101	LB1000	2	LABEL 5A (AC BRKT FUSE)	MAIN-1,SUB-1
102	LB1037	1	LABEL 10A FUSE	MAIN-1
103	LB1087	2	STICKER FIBRE CABLE RX	MAIN-1,SUB-1
104	LB1088	2	STICKER FIBRE CABLE TX	MAIN-1,SUB-1
105	LB1096	1	STICKER PROTECTIVE EARTH	MAIN-1 ON INSIDE STUD
106	LB1100	3	STICKER FUSE TYPE T	MAIN-2,SUB-1
108	310-5029-D508	0.05	HEAT SHRINK SLEEVING 50.8DIA	(5)-0.05
203	FX0263	4	M3 WSHR FORM A FLT BZP	(3)-4 MAIN
204	FX0011	2	M4 NUT FLG SER BZP	MAIN-1,SUB-1
205	FX0029	12	M3X10 MSCR POSI PAN BZP	(2)-8,(3)-4 MAIN
301	600-6373-60UK	1	WIRE HARN AC UNIT SUB	
302	600-6775-102	1	WIRE HARN AC BRKT (MAIN)	
303	LM9111	2	LOOM EARTH 300mm	AC BRKT TO BASE STUD
304	LM9212	1	LOOM EARTH 400mm	AC BRKT TO XFMR SUB

### 7.19. ASSY MONITOR HANDING KIT (LMN-7000UK)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	LMN-1031-A	1	STICKER SIDE LEFT	MAIN LHS
2	STC-1031-A	2	COVER PANEL L BLANK	MAIN+SUB
3	LMN-1046-A	1	STICKER SIDE RIGHT	SUB RHS
4	STC-1061-A	2	COVER PANEL R BLANK	MAIN+SUB
5	DYN-1032UK	4	MASK BRKT	
201	000-P00408-W	4	M4X8 MSCR POSI PAN W/FS PAS	(5)-4

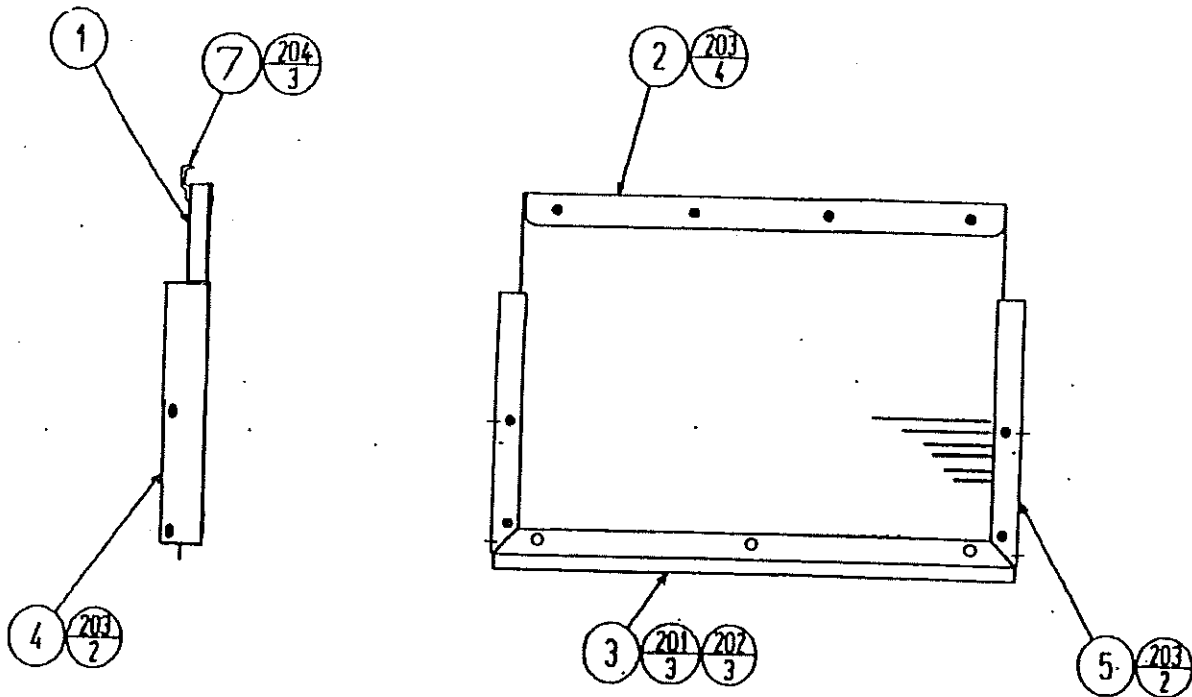
7.20. ASSY REAR FLOOR (DYN-2040UK)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	DYN-2041UK	1	FLOOR REAR DAYTONA	
2	RAL-XXXX-8UK	1	FLOOR EDGE R F	
3	DYN-2043UK	1	FLOOR EDGE R R DAYTONA	
4	DYN-2044UK	1	FLOOR EDGE R LEFT DAYTONA	
5	DYN-2045UK	1	FLOOR EDGE R RIGHT DAYTONA	
6	DYN-2006UK	1	HINGE 480 DAYTONA	1-ITEM 1&3 WITH 4EA-ITEMS 8&9
7	DYN-2049UK	2	NUT PLATE (SEAT) DYN UK	
101	CH1194	1	LOCK RADIAL WITH TONGUE, RALLY	(2)-1
201	031-000530-OC	8	M5X30 CRG BLT CRM	(2)-4,(3)-4
202	FX0302	8	M5 NUT FLG SER BZP	(2)-4,(3)-4
204	000-T00420-OC	6	M4X20 MSCR POSI TH CRM	(4)-3,(5)-3
205	FX0163	4	N8X1/2" S/TAP POSI FLG BZP	(7)-4

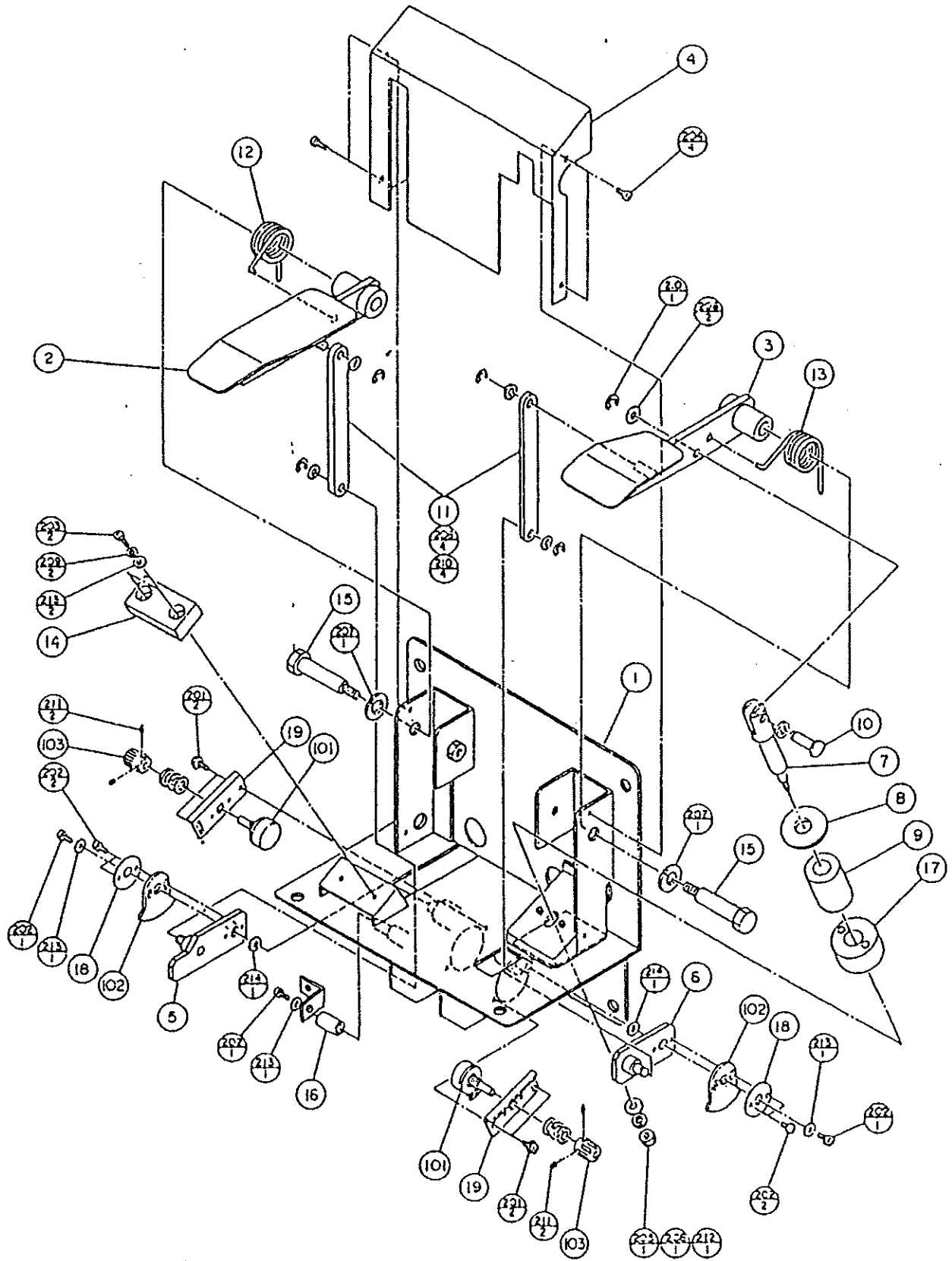


### 7.21. ASSY FRONT FLOOR (MSB-2030UK)



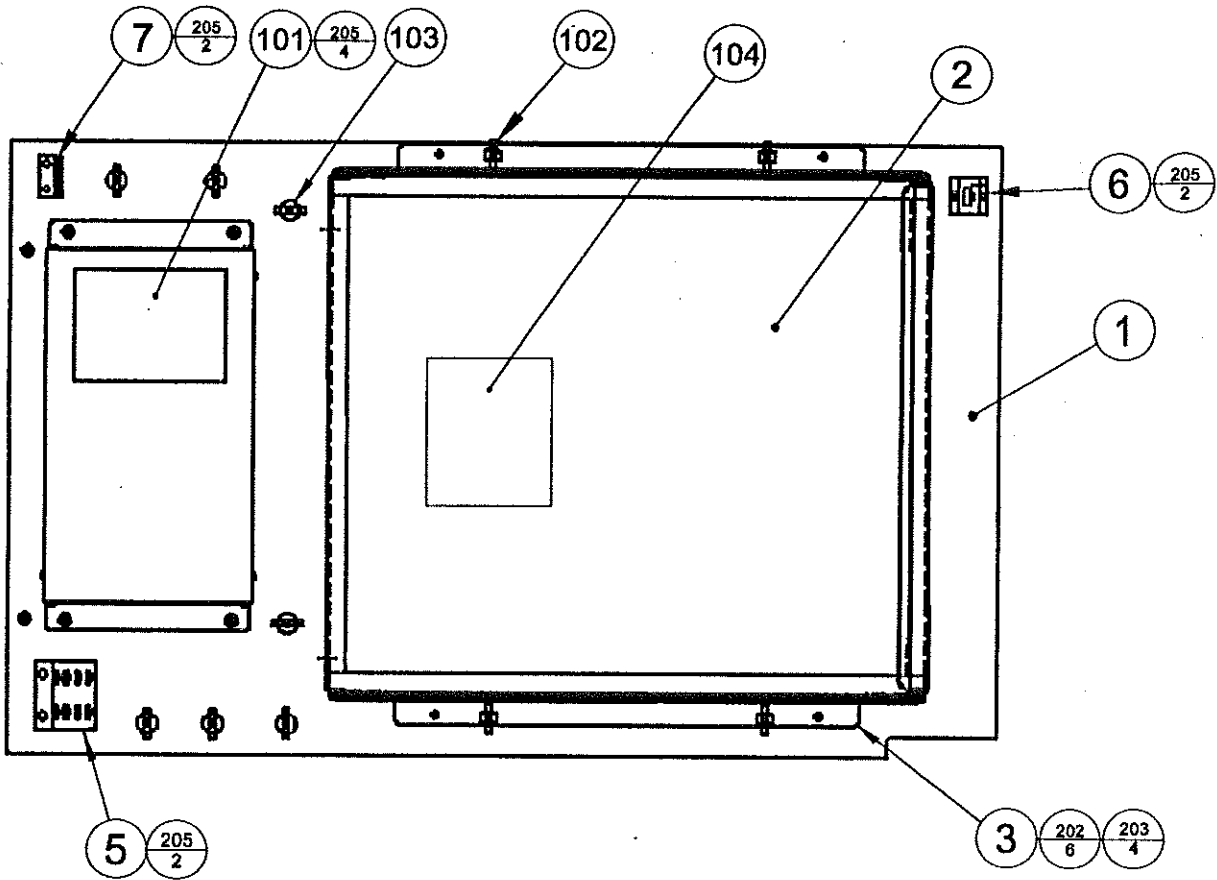
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	MSB-2031UK	1	FLOOR FRONT UK	
2	DYN-2032XUK	1	FLOOR EDGE F FRONT UK	
3	DYN-2033UK	1	FLOOR EDGE F R DAYTONA	
4	DYN-2034XUK	1	FLOOR EDGE F LEFT UK	
5	DYN-2035XUK	1	FLOOR EDGE F RIGHT UK	
7	DYN-2037XUK	1	WATER DEFLECTOR	
201	031-000530-OC	3	M5X30 CRG BLT CRM	(3)-3
202	FX0302	3	M5 NUT FLG SER BZP	(3)-3
203	000-T00420-OC	8	M4X20 MSCR POSI TH CRM	(2)-4,(4)-2,(5)-2
204	FX0163	3	N8X1/2" S/TAP POSI FLG BZP	(7)-3

7.22. ASSY ACCEL & BRAKE (DYN-1300~)



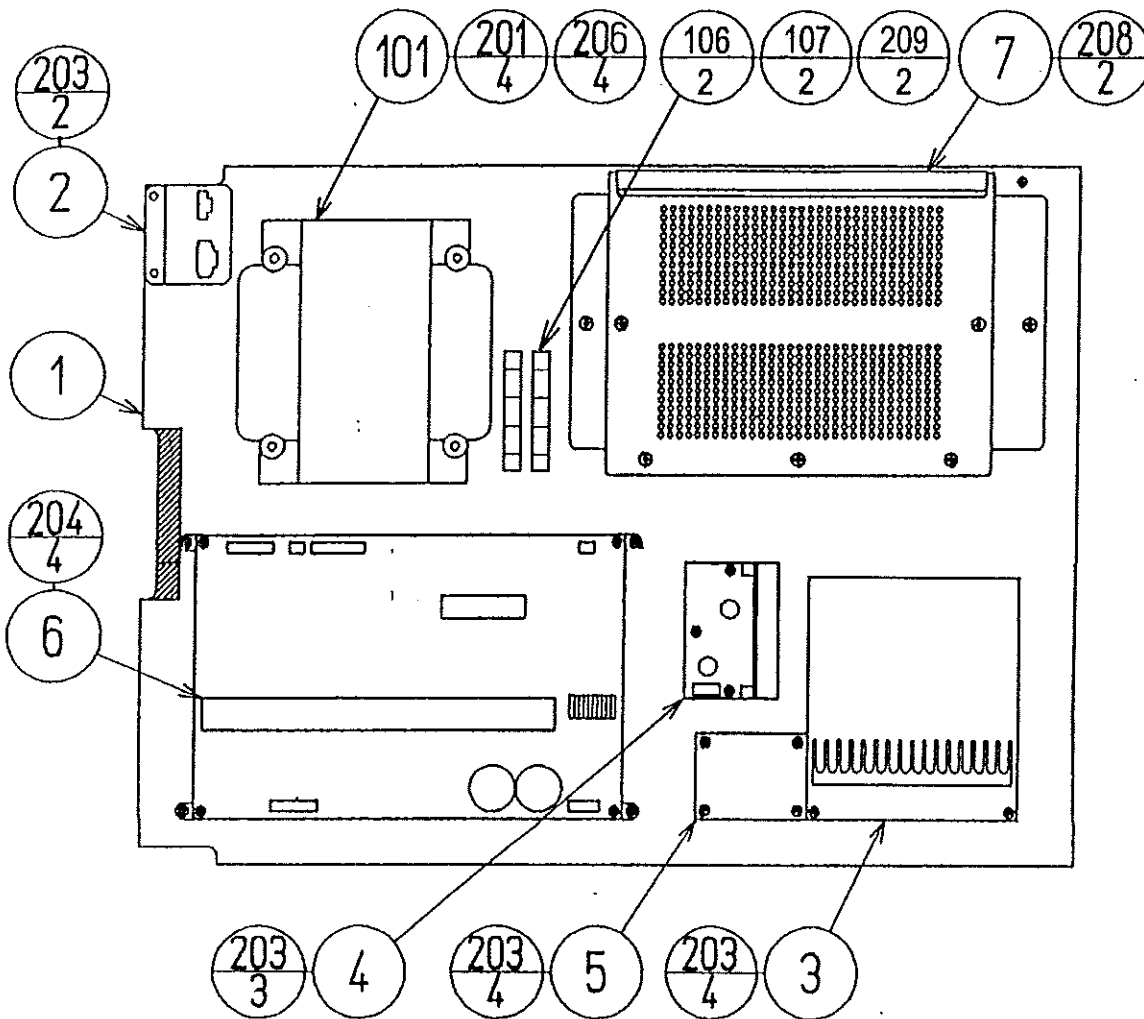
No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	DYN-1301	1	PEDAL BASE	
2	DYN-1306	1	ACCEL PEDAL AL	
3	DYN-1307	1	BRAKE PEDAL AL	
4	BVG-1404	1	PEDAL COVER	
5	BVG-1405	1	SWING ARM A	
6	BVG-1406	1	SWING ARM B	
7	BVG-1407	1	PUSH ROD	
8	BVG-1408	1	PUSH PLATE	
9	DYN-1302	1	RUBBER DUMPER	
10	BVG-1410	1	PUSH ROD PIN	
11	BVG-1411	2	LINK ROD	
12	DYN-1303	1	TORSION SPRING ACCEL	
13	BVG-1413	1	TORSION SPRING B	
14	BVG-1414	1	RUBBER STOPPER	
15	BVG-1415	2	PEDAL SHAFT	
16	BVG-1416	1	SWING ARM STOPPER	
17	BVG-1417	1	SPACER	
18	GLC-2122	2	GEAR PLATE	
19	RDM-1210	2	VR BRACKET	
101	220-5484	2	VOL CONT B-5K OHM	
102	601-6005	2	ADJUST GEAR	
103	601-5943	2	GEAR 20 ø 15	
104	310-5029-F20	6	SUMITUBE F F20MM	
105	601-0460	10	PLASTIC TIE BELT 100MM	
106	280-5009	5	CORD CLAMP ø 21	
201	000-P00408-W	4	M SCR PH W/FS M4 x 8	(19)-4
202	000-P00408-S	7	M SCR PH W/S M4 x 8	(5)-1,(6)-1,(16)-1,(18)-4
203	000-P00416-OB	2	M SCR PH BLK M4X 16	(14)-2
204	008-T00408-OB	4	TMP PRF SCR TH BLK M4 X8	(4)-4
205	050-H00600	1	HEX NUT M6	(7)-1
206	060-F00S00-OB	6	FLT WSHR BLK M8	(7)-2,(11)-4
207	060-S01200-OB	2	SPR WSHR BLK M12	(15)-2
208	060-S00600	1	SPR WSHR M6	(7)-1
209	060-S00400-OB	2	SPR WSHR BLK M4	(14)-2
210	065-E00600	5	E RING 6MM	(5)-2,(6)-2,(10)-1
211	028-A00308-P	4	SET SCR HEX SKT CUP P M3x 8	(103)-4
212	068-652016	1	FLT WSHR 6.5-20x 1.6	(7)-1
213	DYN-1304	5	FLT WSHR BLK 4. 4-12 x 1.6	(5)-1,(6)-1,(14)-2,(16)-1
214	DYN-1305	2	FLT WSHR 12.2-22x 0.5	(5)-1,(6)-1
301	600-6178-54	1	WIRE HARN ACCEL & BRAKE	
302	600-6178-113	1	WIRE HARN EARTH ACCEL & BRAKE	

### 7.23. ASSY MAIN BD BASE (LMN-4400UK)



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	SPG-4401UK	1	WOODEN BASE	
2	LMN-4600	1	ASSY SHIELD CASE	
3	105-5241	2	SHIELD CASE BRKT	(2)-2
5	LMN-4402UK	1	CONN BRKT SHIELD CASE	
6	SPG-4403UK	1	CONN BRKT AC FAN	
7	SPG-4404UK	1	CONN BRKT AC IN	
101	400-5330-02	1	SW REGU FOR MODEL 3	
102	280-A01200-A	4	ROUTER TWIST D12 ADH	(2)-4
103	280-A02064-WX	8	ROUTER TWIST D20 SO6.4 WOOD X	(1)-8
104	LB1101	1	STICKER WARNING BATTERY	(2)-1
202	000-P00408-W	7	M4X8 MSCR POSI PAN W/FS PAS	(3)-6 (308)-1(SIGNAL GROUND)
203	000-P00416-W	4	M4X16 MSCR POSI PAN W/FS PAS	(3)-4
205	FX0163	10	N8X1/2" S/TAP POSI FLG BZP	(5)-2,(6)-2,(7)-2,(101)-4.
301	600-6873-017UK	1	WIRE HARN GAME BD DC IN	
303	600-6907-019UK	1	WIRE HARN GAME BD(AD&TX)	
304	600-6907-022UK	1	WRIE HARN SOUND 1 (LMN)	
305	600-6873-201UK	1	WIRE HARN REAR FAN EXT	
306	600-6873-021UK	1	WIRE HARN GAME BD RGB	
307	600-6907-018UK	1	WIRE HARN ASSY ELEC DC SUPPLY	
308	LM9311	1	LOOM EARTH 500mm	SHIELD CASE-FAN

### 7.24. ASSY ELEC BASE (LMN-4500UK)

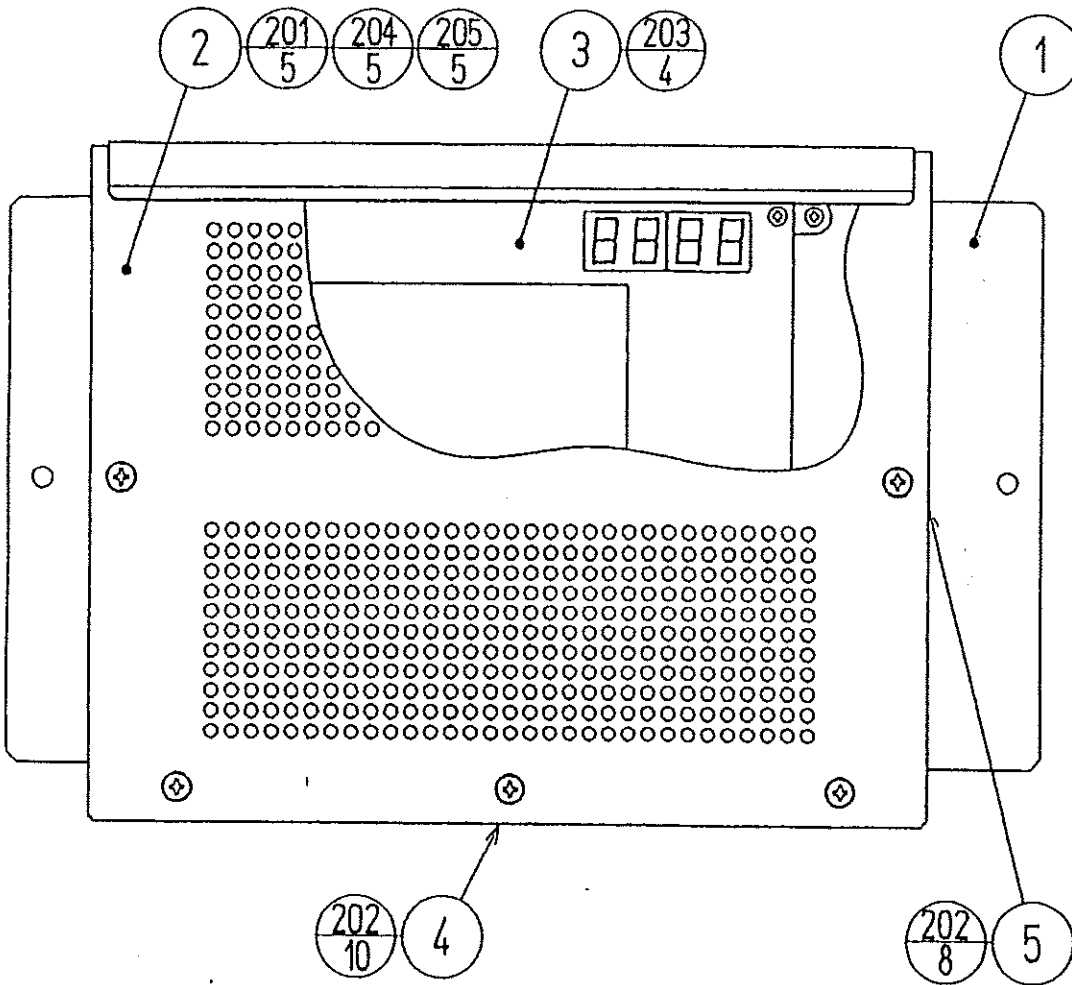


No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	STC-4501UK	1	WOODEN BASE	
2	DYN-4003	1	CONN BRKT ELEC	
3	838-11650-26	1	EQ. PWR AMP	
4	838-11651	1	PEC LOWPASS AMP	
5	838-11855-01	1	SSR,CONN BD	
6	838-11966	1	MOTOR DRIVE BD	
7	INY-4600	1	ASSY DRIVE CONTROL BD	
101	560-5260YUK	1	PWR XFMR 100V6A 12.5V6A	
102	OS1174	20	CABLE TIE, NYLON 100mm	
103	280-A02064-WX	5	ROUTER TWIST D20 SO6.4 WOOD X	(1)-5
104	280-A01264-WX	8	ROUTER TWIST D12 SO6.4 WOOD X	(1)-8
105	270-5052-04	3	LINE FILTER D	(311)-1,(310)-1,(309)-1
106	514-5080-10000UK	1	FUSE 32X6.35 HRC SB 10000mA	(318)-1
107	EP1361	1	FUSE HOLDER COVER 1 1/4"	(318)-1

(Continued...)

201	000-P00516-S	4	M5X16 MSCR POSI PAN W/S	XFMR-4
202	FX0151	11	N4X1" S/TAP POSI PAN BZP	(3)-4,(4)-3,(5)-4
203	FX0163	2	N8X1/2" S/TAP POSI FLG BZP	(2)-2
204	FX0156	4	N6X1/2" S/TAP POSI PAN BZP	(6)-4
206	FS1012	4	M5 WSHR FORM C FLT BNP	XFMR-4
208	000-P00416-W	2	M4X16 MSCR POSI PAN W/FS PAS	(7)-2
209	FX0150	1	N4X5/8" S/TAP POSI CSK BZP	(318)-1
301	600-6634-01UK	1	WIRE HARN XFMR IN UK	
302	600-6634-02UK	1	WIRE HARN XFMR AC100V OUT UK	
303	600-6634-03UK	1	WIRE HARN XFMR AC12.5V OUT UK	
304	600-6634-04UK	1	WIRE HARN CONN BD UK	
306	600-6634-06	1	WIRE HARN LOWPASS AMP	
307	600-6634-07	1	WIRE HARN AMP TO AMP	
308	600-6634-08	1	WIRE HARN EXT AUDIO A	
309	600-6634-09	1	WIRE HARN LEADER SIGNAL	
310	600-6634-10	1	WIRE HARN ELEC TO TOWER	
311	600-6634-11	1	WIRE HARN MOTOR DRIVE BD OUT	
312	600-6634-12	1	WIRE HARN EXT DRIVE BD	
313	600-6634-13	1	WIRE HARN DRIVE BD VOLUME	
314	600-6634-14	1	WIRE HARN DRIVE CONTROL BD TX	
315	600-6634-15	1	WIRE HARN DRIVE CONTROL BD RX	
317	600-6775-013	1	WIRE HARN ELEC BASE2	
318	600-6907-02UK	1	WIRE HARN 12.5V FUSE EXT	

**7.25. ASSY DRIVE CONTROL BD (INY-4600)**



No.	PART NUMBER	QTY	DESCRIPTION	COMPONENT REFERENCE
1	INY-4601	1	SHIELD CASE	
2	INY-4602	1	SHIELD CASE LID	
3	838-11967	1	DRIVE CONTROL BD	
4	839-0829	1	FLT BD DRIVE CONTROL BD A	
5	839-0830	1	FLT BD DRIVE CONTROL BD B	
201	FX0021	5	M4X8 MSCR POSI PAN BZP	(2)-5
202	FX0020	22	M3X8 TAPTITE POSI PAN BZP	(3)-4, (4)-10, (5)-8
204	FX0009	5	M4 WSHR FORM A FLT BZP	(2)-5
205	FX0243	5	M4 WSHR SPR BZP	(2)-5
301	600-6609-64	1	WIRE HARN SHIELD CASE P8	
302	600-6609-65	1	WIRE HARN SHIELD CASE 10P	
303	600-6609-66	1	WIRE HARN SHIELD CASE 11P	
304	600-6609-67	1	WIRE HARN SHIELD CASE 12P	
305	600-6609-68	1	WIRE HARN SHIELD CASE 18P	

## 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

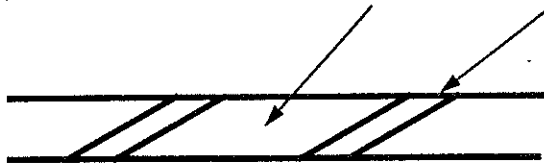
Wires other than those of any of the colours listed above will be displayed by 2 alphanumeric characters:

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



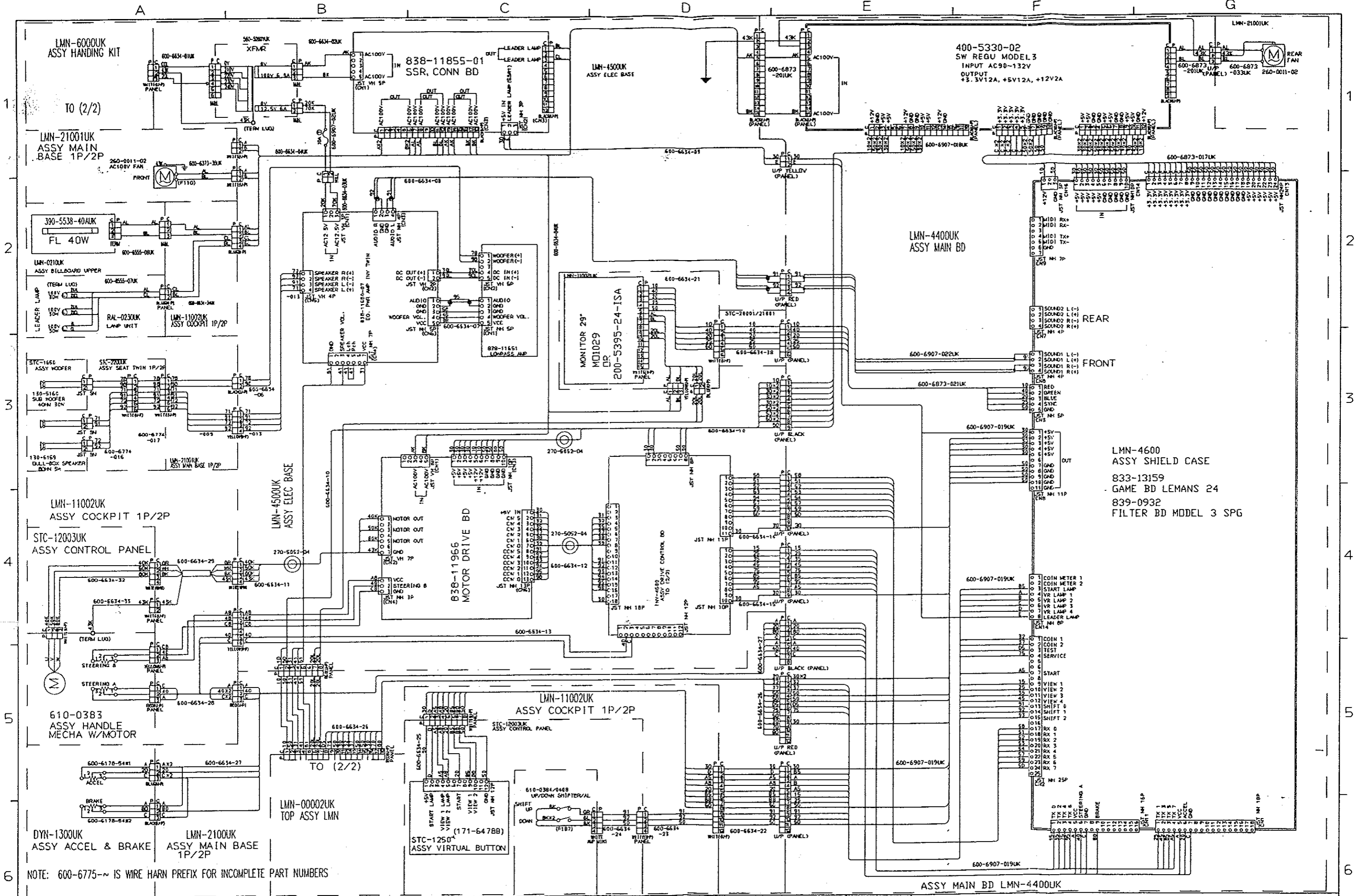
Note 2: The character following the wire colour code indicates the size of the wire.

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

### 8.2. ELECTRICAL SCHEMATIC

The following 2 pages contain the electrical schematic for this machine.





NOTE: 600-6775-~ IS WIRE HARN PREFIX FOR INCOMPLETE PART NUMBERS

8	BLACK		50L	WHITE	AWG20
7	ORANGE	E	LIGHT GREEN	51	WHITE RED
6	WHITE	D	PURPLE	50	WHITE
5	WHITE				
4	GREEN	C	BROWN	U	AWG16 UL1015
3	YELLOW	B	SKY BLUE	K	AWG18 UL1015
2	BLUE	A	PINK	L	AWG20 UL1007
1	RED	S	GRAY		AWG22 UL1007

DRAWN	CHECKED	D CHECKED	APPROVED
GC			PJE
30/06/97			30/06/97

SEGA SEGA ENTERPRISES, LTD. THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND.	
DESCRIPTION	LMNTW (1/2)
LEMANS 24 TWIN UK	DIAGRAM No.

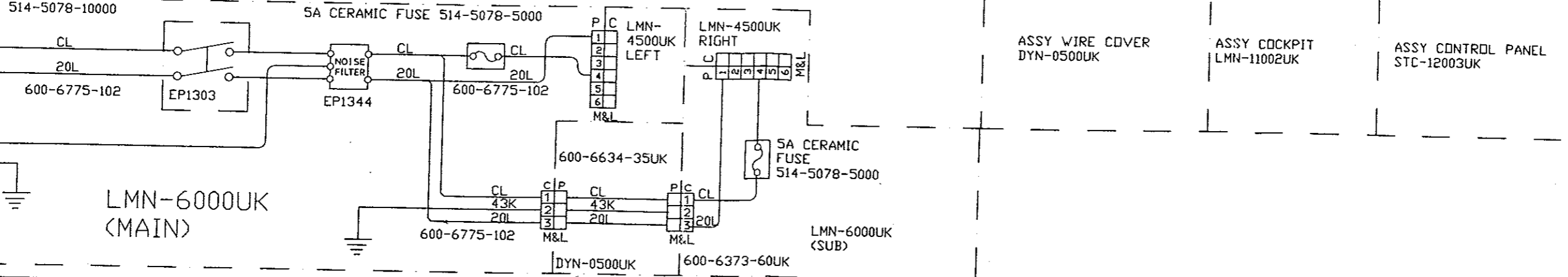
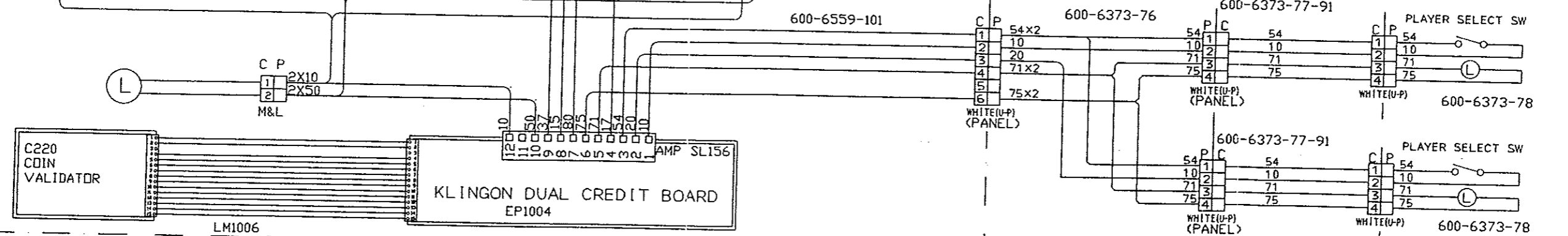
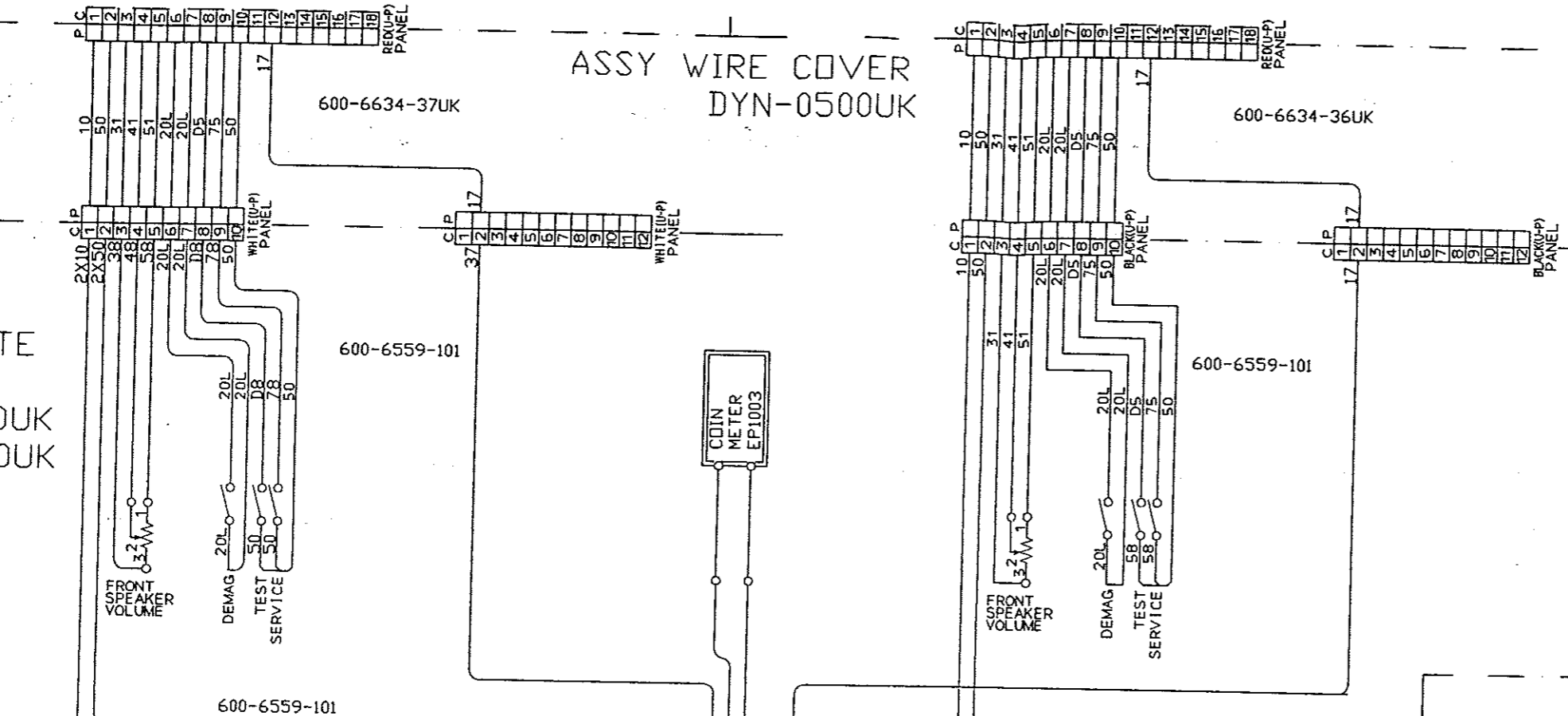
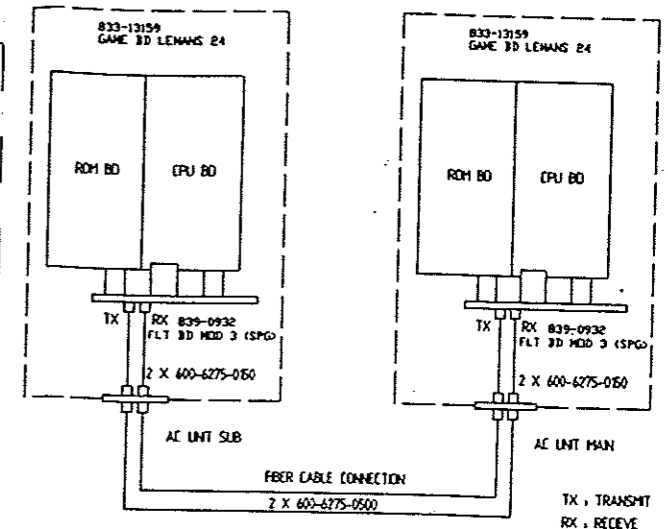


LMN-4500UK (LEFT)

LMN-4500UK (RIGHT)

ASSY WIRE COVER  
DYN-0500UK

ASSY  
COINCHUTE  
& VTS  
DYN-0300UK  
DYN-0350UK



8 BLACK	E LIGHT GREEN	50L WHITE AWG20
7 ORANGE	D PURPLE	51 WHITE RED
5 WHITE	C BROWN	50 WHITE
4 GREEN	B SKY BLUE	EXAMPLE
3 YELLOW	A PINK	U AWG16 UL1015
2 BLUE	9 GRAY	K AWG18 UL1015
1 RED		L AWG20 UL1007
		M AWG22 UL1007

DRAWN	CHECKED	D CHECKED	APPROVED
GC			PJE
30/06/97			30/06/97

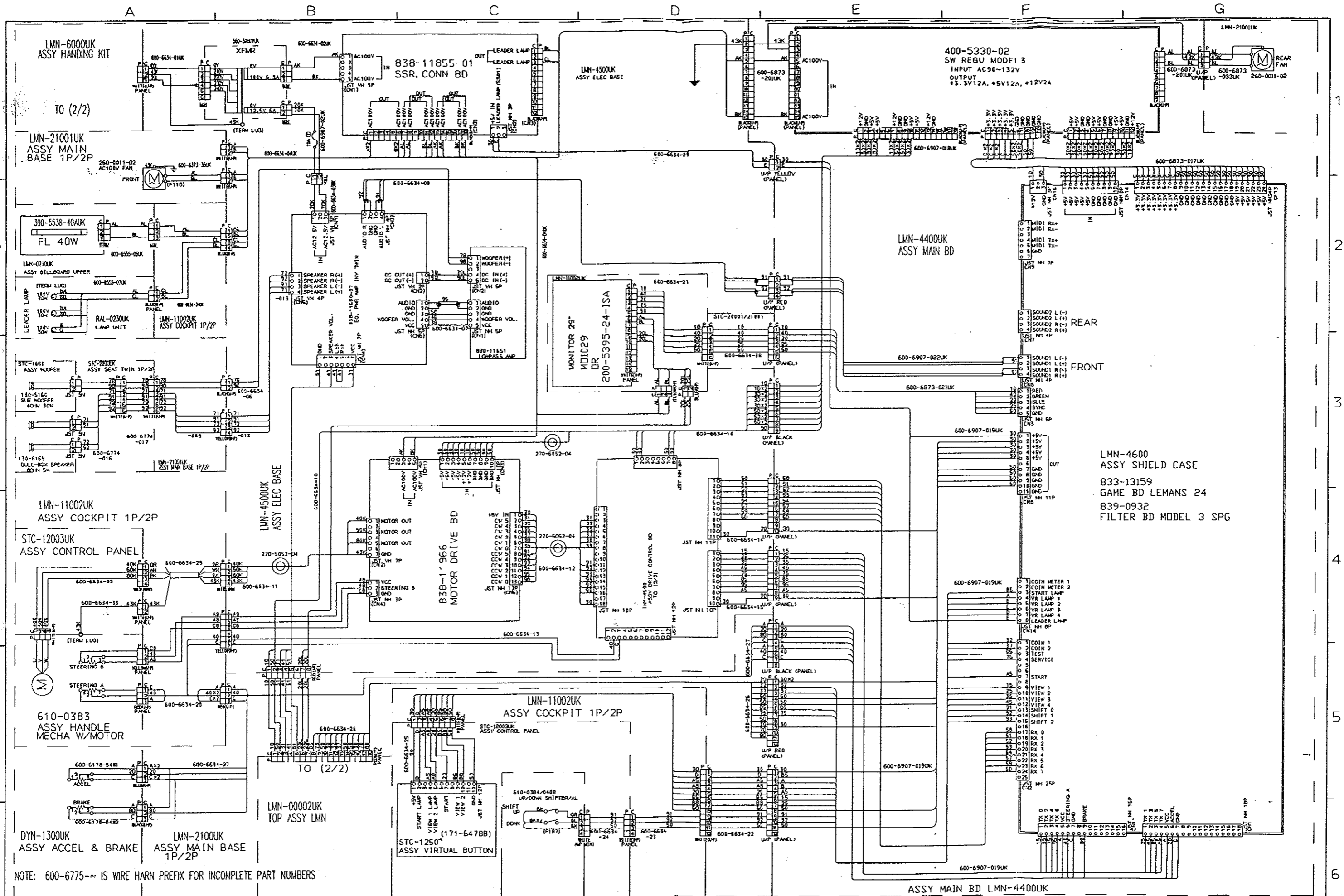
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LEMANS 24 TWIN UK

LMNTW (2/2)

DIAGRAM No.





NOTE: 600-6775-~ IS WIRE HARNESS PREFIX FOR INCOMPLETE PART NUMBERS

8	BLACK	E	LIGHT GREEN	51	WHITE RED
7	ORANGE	F	PURPLE	52	WHITE
6	WHITE	G	BROWN	53	EXAMPLE
5	GREEN	H	SKY BLUE	54	UL1015
4	YELLOW	I	PINK	55	UL1015
3	BLUE	J	GRAY	56	UL1007
2	RED	K		57	UL1007
1	RED	L		58	UL1007

8	BLACK	50L	WHITE AWG20
7	ORANGE	51	WHITE RED
6	WHITE	52	WHITE
5	GREEN	53	EXAMPLE
4	YELLOW	54	UL1015
3	BLUE	55	UL1015
2	RED	56	UL1007
1	RED	57	UL1007

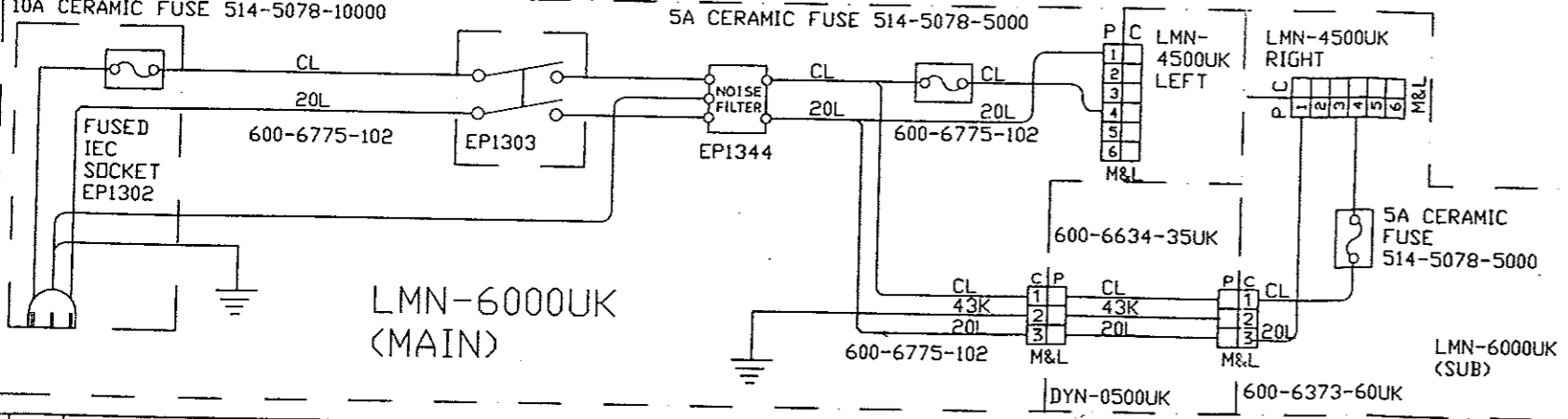
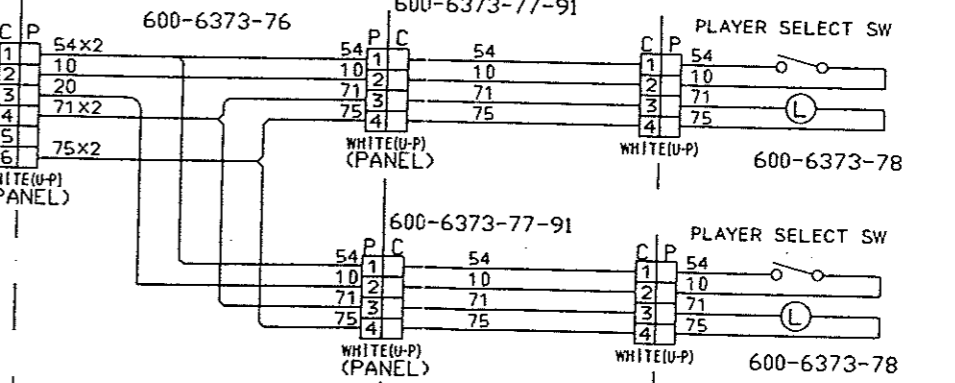
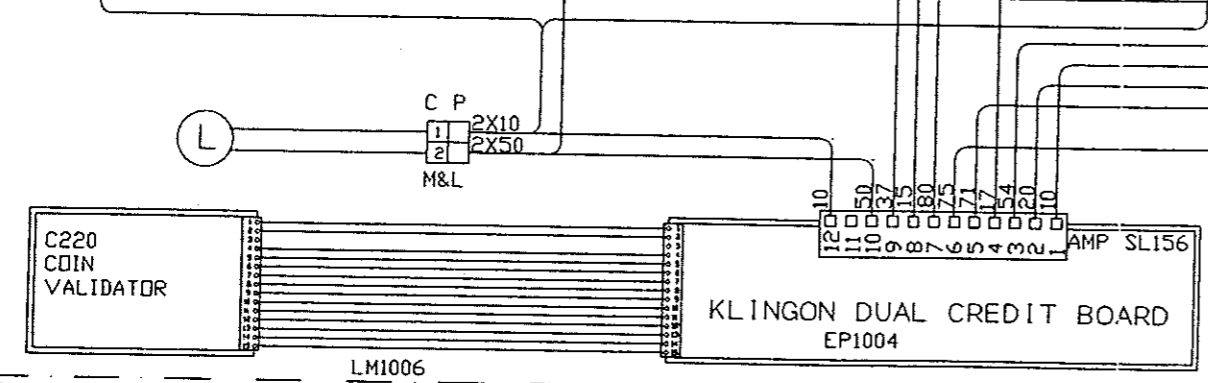
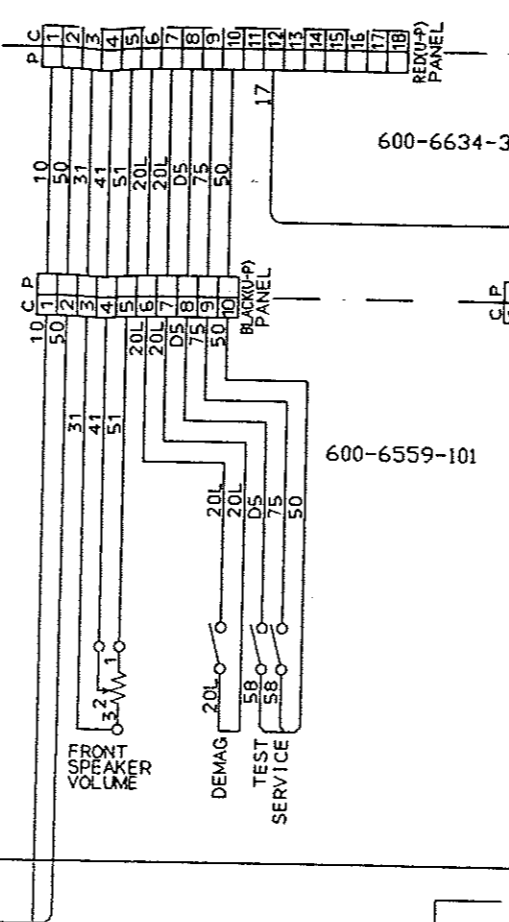
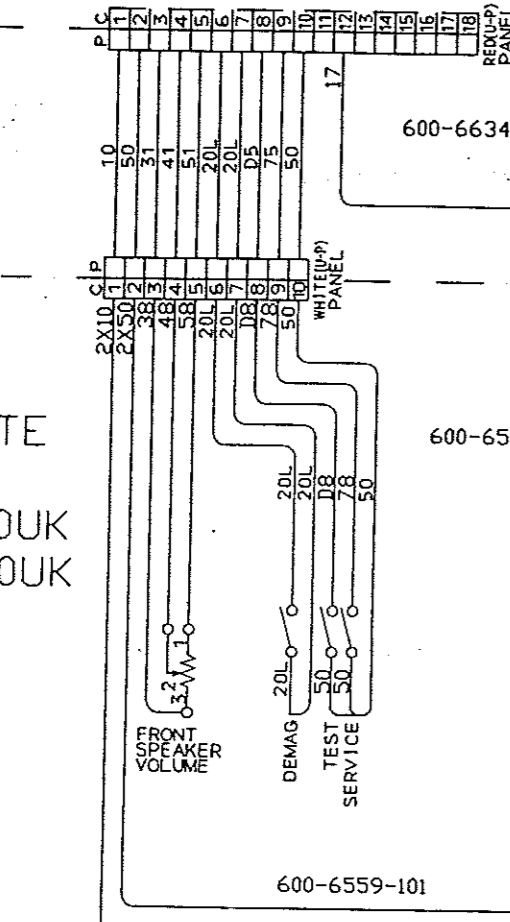
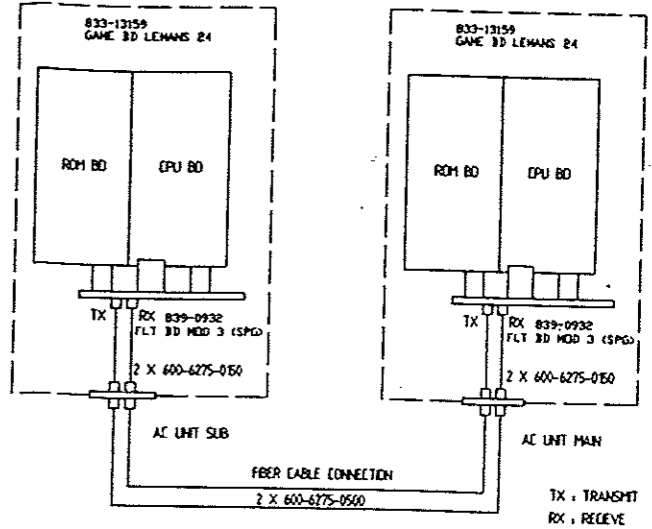
DRAWN	CHECKED	D CHECKED	APPROVED	SEGA SEGA ENTERPRISES, LTD. THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND.	LEMANS 24 TWIN UK	LMNTW (1/2)
GC			PJE			
30/06/97			30/06/97	DESCRIPTION	96	DIAGRAM No.

LMN-4500UK (LEFT)

LMN-4500UK (RIGHT)

ASSY WIRE COVER  
DYN-0500UK

ASSY  
COINCHUTE  
& VTS  
DYN-0300UK  
DYN-0350UK



8 BLACK	E LIGHT GREEN	50L WHITE AWG20
7 ORANGE	D PURPLE	51 WHITE RED
5 WHITE	C BROWN	50 WHITE
4 GREEN	B SKY BLUE	EXAMPLE
3 YELLOW	A PINK	U AWG16 UL1016
2 BLUE	9 GRAY	K AWG18 UL1015
1 RED		L AWG20 UL1007
		M AWG22 UL1007

USED IN ASSY	DRAWN	CHECKED	D CHECKED	APPROVED
LMN-00002UK	GC			PJE
TOP-ASSY	30/06/97			30/06/97

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LEMANS 24 TWIN UK

LMNTW (2/2)

DIAGRAM No.