

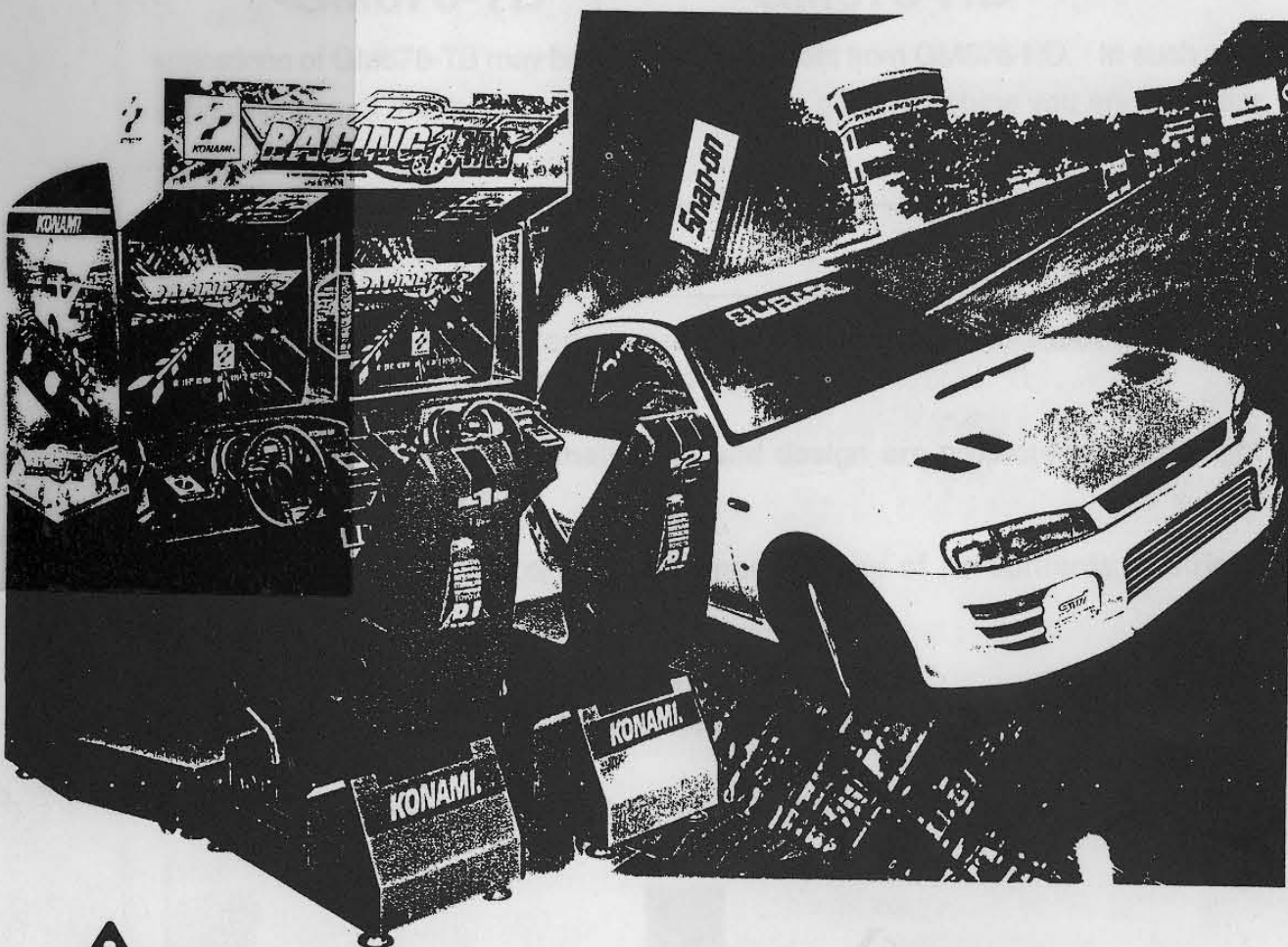


ORIGINAL VIDEO GAME
OPERATOR'S MANUAL

■ **RACING JAM** ■



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- Failure to operate the machine correctly could result in malfunction or accidents, so please read this manual carefully before commencing operation. Be sure to operate the machine as described in this manual.
- Keep this manual carefully so as to be ready for use when necessary.



OPERATOR'S MANUAL

RACING JAM



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DODGE

1-800-4ADODGE

About this product

Thank you for purchasing this Konami product. This manual explains how to operate your game machine correctly and safely.



- Failure to operate the machine correctly could result in malfunction or accidents, so please read this manual carefully before commencing operation. Be sure to operate the machine as described in this manual.
- Keep this manual carefully so as to be ready for use when necessary.
- If the machine still fails to display or to get started, immediately turn OFF the main power switch and contact your nearest dealer.

• This manual covers the following models:

• **GM676-TB**

• **GM676-HD**

The specifications of GM676-TB may be somewhat different from GM676-HD. In such a case, read the descriptions of the model which applies to the game machine you are operating.

- The specifications of this product are subject to change without notice for reasons such as improving the performance.
- The contents of this game, its main data and design are protected by copyright law and industrial property law.
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Driver software used under license of 3Dfx interactive.



SPATIALIZER®
3D stereo

PORTIONS OF THIS PRODUCT MANUFACTURED UNDER A LICENSE FROM DESPER PRODUCTS, INC. SPATIALIZER® AND THE CIRCLE-IN-SQUARE DEVICE ARE TRADEMARKS OWNED BY DESPER PRODUCTS, INC. US Patent No 5412731

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Thank you for purchasing this Konami product. This manual explains how to operate your game machine correctly and safely.

Precautions for use

In this manual, the precautions to be followed without fail in order to prevent damage to persons to install, use or maintain "RACING JAM™" or other persons or to properties are shown as follows.

Be sure to read the following

•The following suggestions show the degree of danger and damage caused when the product is used improperly with the suggestions disregarded.



WARNING

Indicates a situation where disregarding the suggestions could result in death or serious injury.



CAUTION

Indicates a situation where disregarding the suggestions could result in injury or product damage.

•The following graphic suggestions describe the types of precautions to be followed.



Indicates a matter of which care should be taken.



Indicates a matter which is forbidden.











Indicates a matter which should be performed without fail.

Setting Up








WARNING

- **Be sure to consult your nearest dealer when setting up, moving or transporting this product.**
 - This product should not be set up, moved or transported by anyone other than industry specialists. Doing so could result in injury or product damage.
 - When installing the machine, make sure that all the 12 adjusters are tight on the floor and that the machine is placed stably and horizontally. Unstable set-up may get the machine shaky and result in personal injury or machine trouble.
 - When setting up this product, take care that no undue force is applied to the connecting sections of the game machine. Failure to do so could cause injury, accidents or product damage.
- **This product is an indoor game machine. Never set up the game machine outside.** 
 - Setting up this product outside could result in accidents or equipment failure.
- **Do not set up the game machine near emergency exits.** 
 - Doing so could block exits in time of emergency and could result in death or serious injury.
- **Do not set up the game machine.** 
 - Otherwise an accident or malfunction may result.
 - In a place exposed to rain or moisture.
 - In a place exposed to direct sunlight.
 - In a place exposed to direct heat from air-conditioning and heating equipment, etc..
 - Near hazardous flammable substance such as thinner and kerosene.
 - On an inclined or uneven floor.
 - Near fire extinguishing equipment.
 - In a place exposed to strong vibration.
 - In a place exposed to excessive dust.
 - Near equipment generating strong magnetism or electric waves.
- **Do not place containers holding chemicals or water on or near the game machine.** 
 - Electrical shock or damage could be caused by water or foreign matter entering the inside of the machine.
- **Do not place objects near the ventilating holes.** 
 - Doing so could cause the internal temperature to rise excessively, resulting in fire or equipment failure.
- **Do not bend the power cord by force or place heavy objects on it.** 
 - Doing so could result in electric leakage or fire.
- **Never plug or unplug the power cord with wet hands.** 
 - Doing so could result in electrical shock.
- **Never unplug by pulling the power cord.** 
 - Doing so could damage the cord, resulting in electric leakage or fire.


Setting Up





- Be sure to use indoor wiring for within the specified voltage range. For extension cord, use indoor wiring of the specified rating or more.
 - Failure to do so could result in fire or equipment failure.
- Be sure to use the attached power cord and networking cable.
 - Otherwise a fire or machine trouble may result.
- Never plug more than one cord at a time in the electrical receptacle.
 - Doing so could result in fire or electrical shock. 
- Never use the attached networking pin jack for any game machines other than the "RACING JAM™" machines, nor for any audio-visual appliances and communication equipment. While the communication mode is not used, keep the networking pin jack open.
 - Otherwise the game may fail to work or get in trouble. 
- Lay the power cord, networking cable away from the passages where people walk along.
 - Otherwise people may trip over them and get injured. The cable may also be stepped on and get damaged. 
- Do not bend the networking cable by force or place heavy objects on it.
 - Doing so could result in electric leakage or fire. 
- Be sure to ground this product.
 - Otherwise an electric shock or machine trouble may be caused. 
- Clearance of 100 mm (3.94in) or more should be created between the game machine and walls. When two or more machines are placed side by side, be sure to provide a clearance of 100 mm (3.94in) or more between them.
 - Otherwise the machine (s) cannot be ventilated well, resulting in malfunction.

Operation



- if there is any abnormality such as smoke, bad smell or abnormal noise being emitted from the machine, immediately turn OFF the main power switch and unplug the power cord from the receptacle to stop operating it. 
 - Using the machine in abnormal conditions could result in fire or accidents.
- In case of abnormality**

 - 1 Turn OFF the main power switch.
 - 2 Unplug the power cord from the receptacle.
 - 3 Contact your nearest dealer.
- Do not leave the power cord plugged improperly or covered with dust.
 - Doing so could result in electrical shock or fire, so inspect the power cord periodically. 
 - Never disassemble, repair or modify any section other than those specified in this manual.
 - Doing so could result in fire, malfunction or equipment failure. 
 - Ask your nearest dealer to perform repairing, etc..
 - We do not assume any responsibility for any damages that would be caused by tampering with the machine.

Operation



- **Do not use this product anywhere other than industrial areas.**
 - Using in a residential area or an area next to a residential area could affect signal reception of radios, television sets, telephones, etc..
- **The following users should not play the game.**
 - Doing so could cause accidents or illness.

· Those under the influence of alcohol.	· Those suffering from or being treated for arm or wrist ailments.
---	--
- **Do not plug or unplug the power cord with wet hands.**
 - Doing so could result in electrical shock.
- **In handling the power cord and the networking cable, follow the instructions below.**
 - Otherwise an electric leak, fire or electric shock may result. Normal communication play may also be impossible.

· Do not damage the power cord.	· Do not modify the power cord.
· Do not bend the power cord excessively.	· Do not twist the power cord.
· Do not heat the power cord.	· Do not pull the power cord.
· Do not bind the power cord.	· Do not tread on the power cord.
· Do not sandwich the power cord.	· Do not drive a nail into the power cord.
- **If the power cord or power plug becomes damaged, stop using the machine immediately and ask your nearest dealer to replace the parts.**
 - Using a damaged power cord or power plug could result in fire or electrical shock.
- **Do not place anything on the machine. Do not give shock and impact to the machine either.**
 - The thing may drop or the machine get damaged, which may get you injured.



Inspection and cleaning



- **Be sure to turn OFF the main power switch and unplug the power cord from the receptacle before inspecting or cleaning the machine.**
 - Failure to do so could result in electrical shock.
- **When replacing parts, be sure to use parts of the correct specifications. Never use parts other than the specified ones.**
 - Using improper parts could result in fire or equipment failure.
- **The machine has some internal parts with high voltage. Only a qualified industry specialists is allowed to open the back door of the machine. With this back door open, be very careful not to touch unnecessary parts.**
 - Otherwise an accident or electric shock may result.
- **Never disassemble, repair or modify any section other than those specified in this manual.**
 - Doing so could result in fire, malfunction or equipment failure.
 - Ask your nearest dealer to perform repairing, etc..
 - We do not assume any responsibility for any damages that would be caused by tampering with the machine.
- **To clean the game machine, wipe it with a soft cloth dampened in a neutral detergent and wrung out.**
 - Using organic solvents such as thinner may decompose the material.
 - Electrical shock or equipment failure could be caused by water entering the inside of the machine.

Moving and transportation

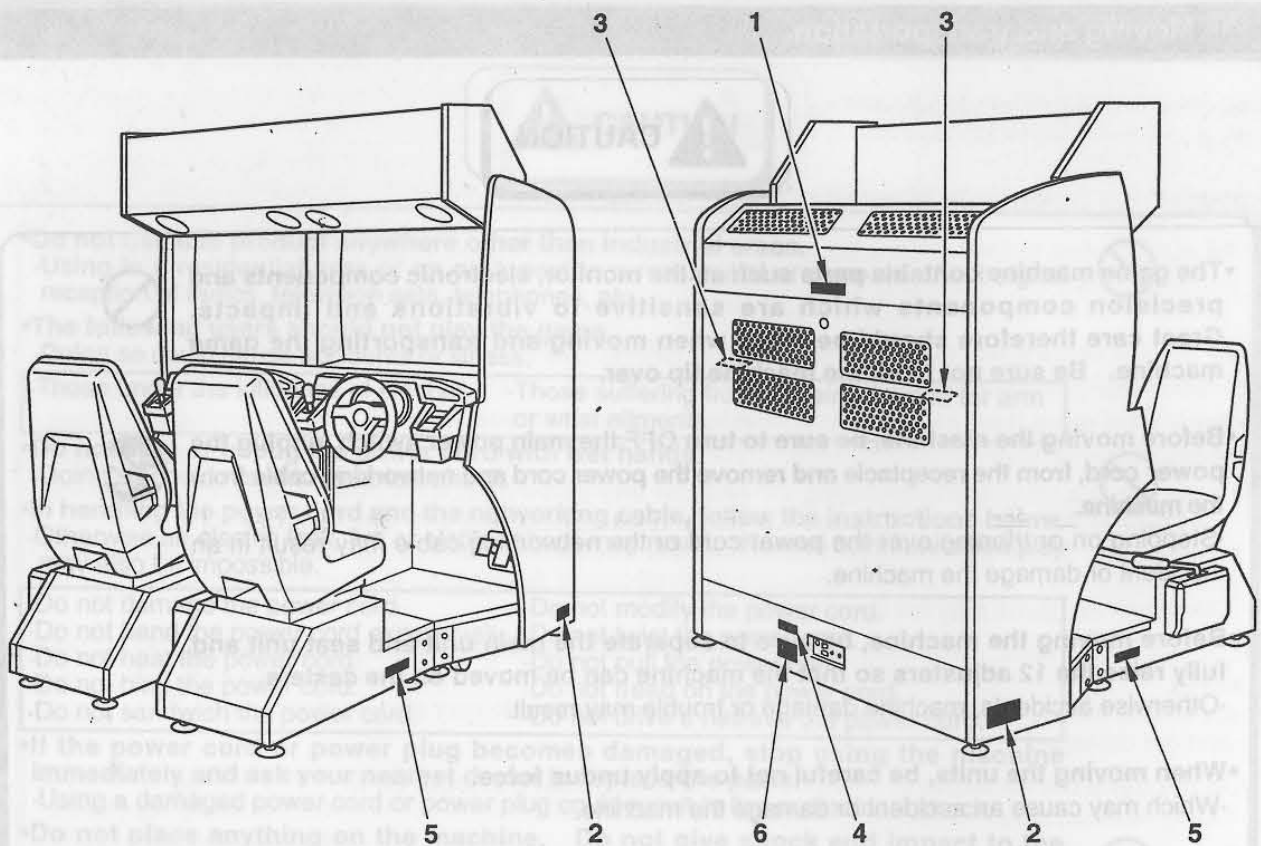


- **The game machine contains parts such as the monitor, electronic components and precision components which are sensitive to vibrations and impacts. Great care therefore should be taken when moving and transporting the game machine. Be sure not to let the machine tip over.** 
- **Before moving the machine, be sure to turn OFF the main power switch, unplug the power cord, from the receptacle and remove the power cord and networking cable from the machine.** 
 - Stepping on or tripping over the power cord or the networking cable may result in an accident or damage the machine.
- **Before moving the machine, be sure to separate the main unit and seat unit and fully raise the 12 adjusters so that the machine can be moved on the casters.**
 - Otherwise accidents, machine damage or trouble may result.
- **When moving the units, be careful not to apply undue force.**
 - Which may cause an accident or damage the machine.
- **When moving the main unit, be sure to press it along sideways (to the right or left). When moving it on a slope or getting it over a level difference, be sure to take the buddy system.**
 - Otherwise the unit may turn over, resulting in an accident or damage.
- **When moving the units, be careful not to give undue force to the machine couplers.**
 - Otherwise you may get injured or the machine damaged.



- **When setting up, inspecting, maintaining, moving or transporting this product, follow the procedures and instructions set forth in this manual and perform such work safely.**
- **Do not remove labels of "WARNING", "CAUTION", etc. attached to the product.**
- **Do not set up, handle, inspect, maintain, move or transport this product under conditions equivalent to the condition of "WARNING" or "CAUTION" specified in this manual.**
- **If a new owner is to have this product as a result of transfer, etc., be sure to give this manual to the new owner.**

Locations of warning and other safety labels



Types of warning and other safety labels

1

⚠ WARNING

**ELECTRICAL SHOCK HAZARD.
DO NOT OPEN EXCEPT
FOR SERVICE.**

P000032486

4

Weight 290kg (639.5 lb)

2

⚠ WARNING

**Ensure all leg levellers are
securely set and game cabinet
is level.**

P000032485

5

Weight 35kg (77.2 lb)

3

⚠ HAZARDOUS VOLTAGE

PN: 0000032445

6

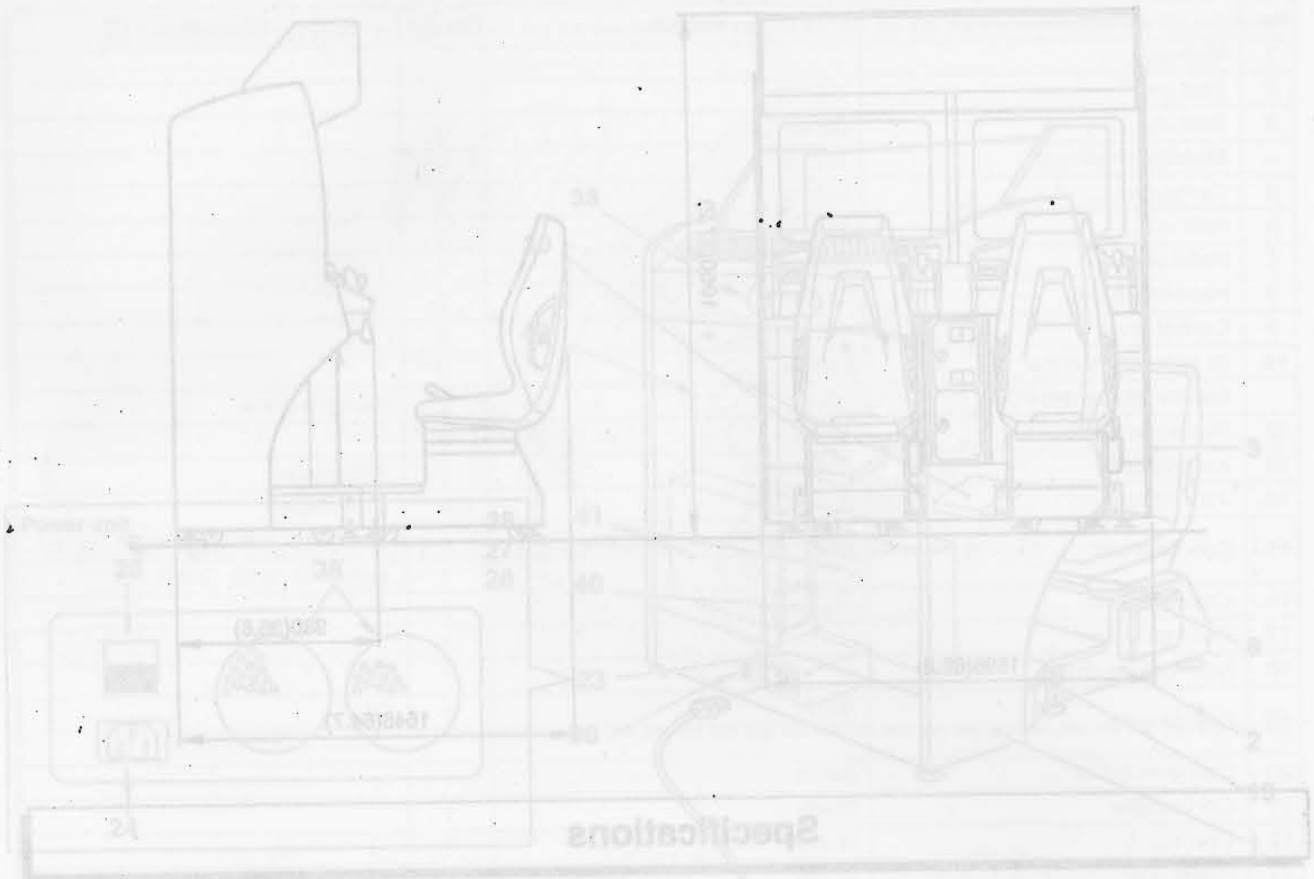
MODEL	GM676 RACING JAM
POWER	110 v / 60 Hz 380 w / 475 VA
MANUFACTURER	KONAMI CO., LTD.
DATE OF MANUFACTURE	February 1998
WEIGHT	360 Kg (794 lb)
SERIAL NUMBER	

KONAMI.

MADE IN JAPAN

PL00000108 INDOOR USE

• The above is an example.
The entries are different from
destination to destination
and may not be used.

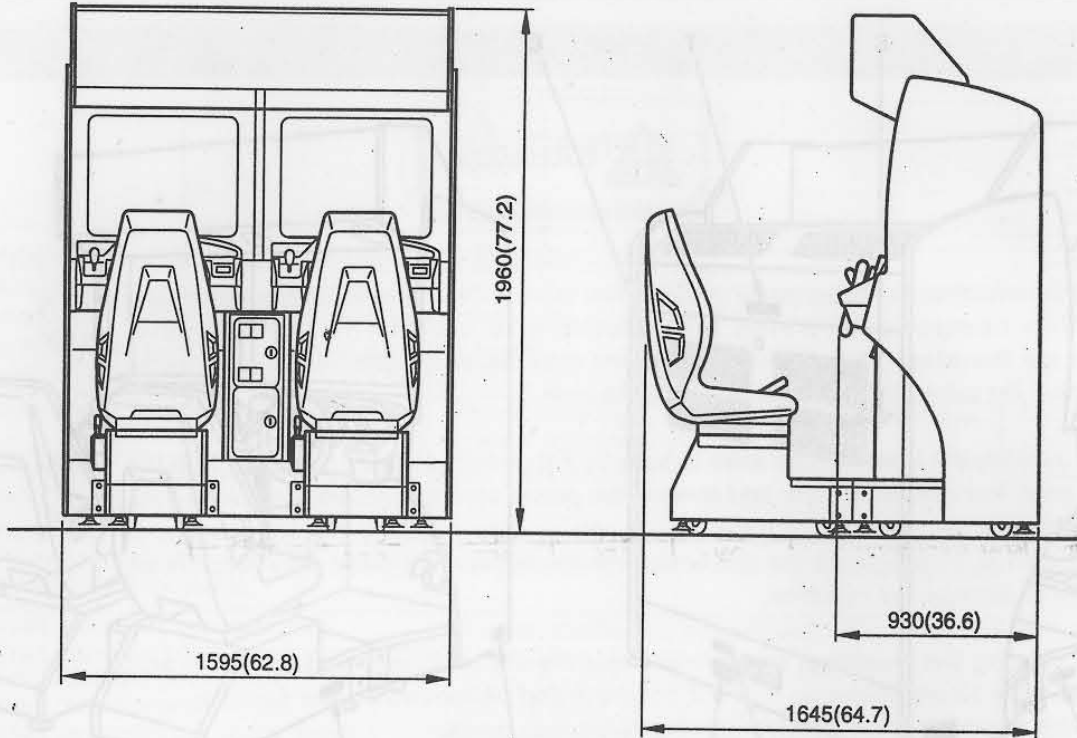


Dimensions	Weight	Service condition	Attachments
Refer to the figure above: mm(in)	Total weight : Approx. 484 kg (1020.8lb) Main unit : Approx. 372 kg (818.4lb) Seat unit : Approx. 48 kg (101lb) (one unit)	Temperature 10 to 35°C (50 to 95°F), Humidity 20 to 80% (no dewing is allowed)	<ul style="list-style-type: none"> 1. Racing number label (1 to 8) 1. Networking cable 5M 1. AC power cord 12. Joint fixing parts (Screw M8X35, flat washer, spring washer) 2. Allen key 4mm + 6mm 2. Monitor manual 2. Keys for cash door 2. Keys for coin door 1. Instruction manual (this manual)
Monitor	380W T425VA	21-inch color monitor Hantarex Polo 1525KHz	
Field power connection			

If any part is defective or not found, contact your nearest dealer. © 96
 The specifications of this product are subject to change without notice for reasons such as improving the performance.

1 Specifications

ENGLISH



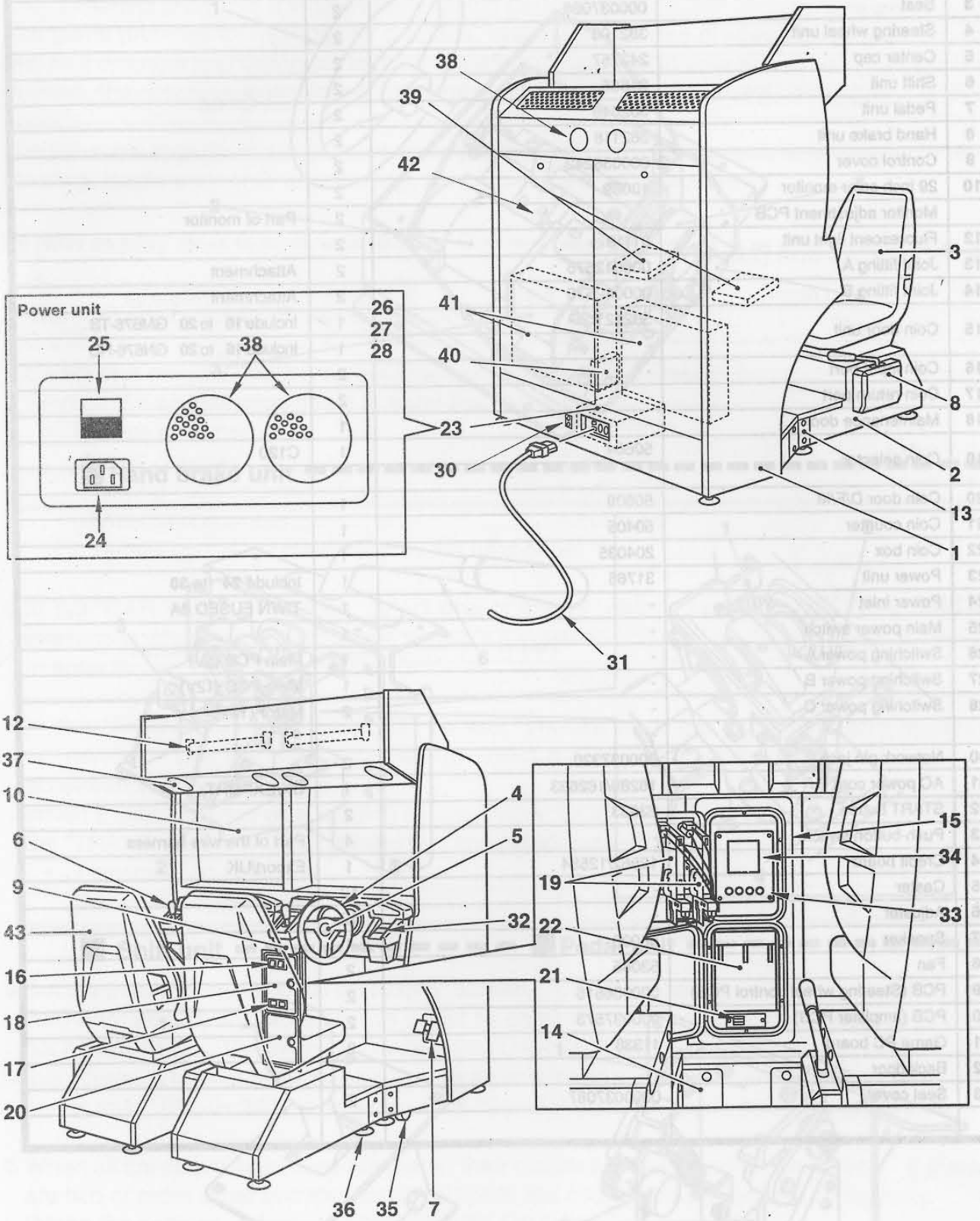
Specifications

Dimensions	Refer to the figure above: mm(in)
Weight	Total weight : Approx. 464 kg (1020.8lb)
	Main unit : Approx. 372 kg (818.4lb)
	Seat unit : Approx. 46 kg (101lb) (one unit)
Rated power consumption	380W / 475VA
Monitor	28 - inch color monitor Hantarex Polo 15/25Khz
Service condition	Temperature 10 to 35°C (50 to 95°F), Humidity 20 to 80%(No dewing is allowed.)
Attachments	<ul style="list-style-type: none"> • Instruction manual This manual • Keys for coin door 2 • Keys for cash door 2 • Monitor manual 2 • Allen key 4mm + 5mm 2 • Joint fixing parts (Screw M8X35L, flat washer, spring washer) 12 • AC power cord 1 • Networking cable 2M 1 • Racing number label (1 to 8) 1set

•If any part is defective or not found, contact your nearest dealer.

•The specifications of this product are subject to change without notice for reasons such as improving the performance.

2 Names of parts and list of main parts



1 Specification to fall 2 Names of parts and list of main parts

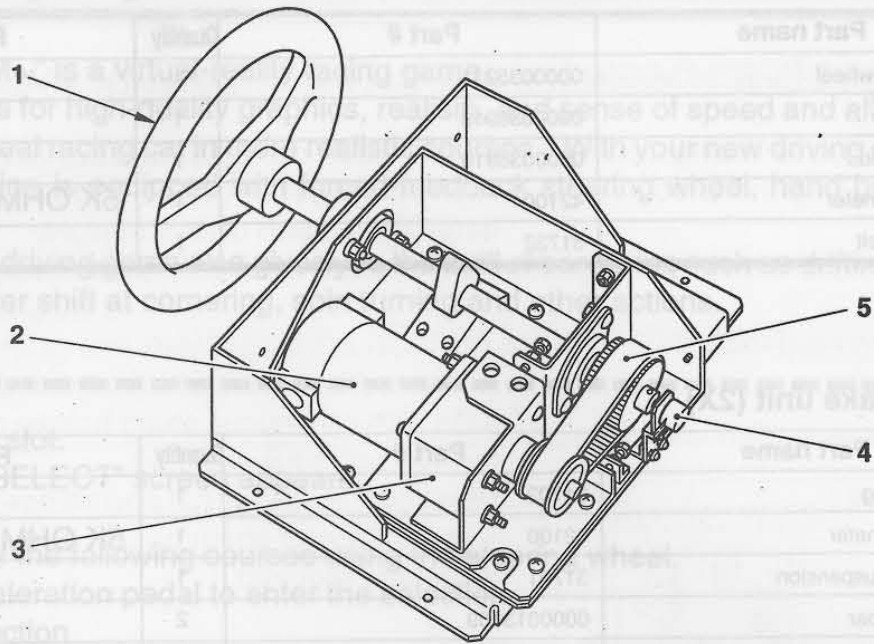
No.	Part name	Part #	Quantity	Remarks
1	Main unit	-	1	
2	Seat unit	382108	2	
3	Seat	000037086	2	
4	Steering wheel unit	382106	2	
5	Center cap	243757	2	
6	Shift unit	31665	2	
7	Pedal unit	382046	2	
8	Hand brake unit	382118	2	
9	Control cover	000038242	2	
10	29 inch color monitor	10089	2	
	Monitor adjustment PCB	-	2	Part of monitor
12	Fluorescent light unit	81119	2	
13	Joint fitting A	000012575	2	Attachment
14	Joint fitting B	000012576	2	Attachment
15	Coin door unit	382121	1	Include 16 to 20 GM676-TB
		-	1	Include 16 to 20 GN676-HD
16	Coin input port	-	2	
17	Coin return port	-	2	
18	Maintenance door	-	1	
19	Coin selector	50664	1	C120
		-		
20	Coin door D/F/M	50609	1	
21	Coin counter	50405	1	
22	Coin box	204035	1	
23	Power unit	31766	1	Include 24 to 30
24	Power inlet	-	1	TIWN FUSED 8A
25	Main power switch	-	1	
26	Switching power A	-	1	Main PCB (5V)
27	Switching power B	-	1	Main PCB (12V)
28	Switching power C	-	2	Motor (12V)
		-		
30	Network pin jack	000037320	2	
31	AC power cord	16289/162663	1	UK/EXPORT
32	START button	22533	2	
33	Push-button switch	-	4	Part of the wire harness
34	Credit board	12562/12584	1	Export/UK
35	Caster	-	12	
36	Adjuster	-	12	
37	Speaker	56006	4	
38	Fan	53065	2	
39	PCB (Steering wheel control PCB)	000036615	2	
40	PCB (amplifier PCB)	000037573	2	
41	Game PC board	11338	2	
42	Back door	-		
43	Seat cover	0000037087	2	

*If any part is defective or not found, contact your nearest dealer. 26 86

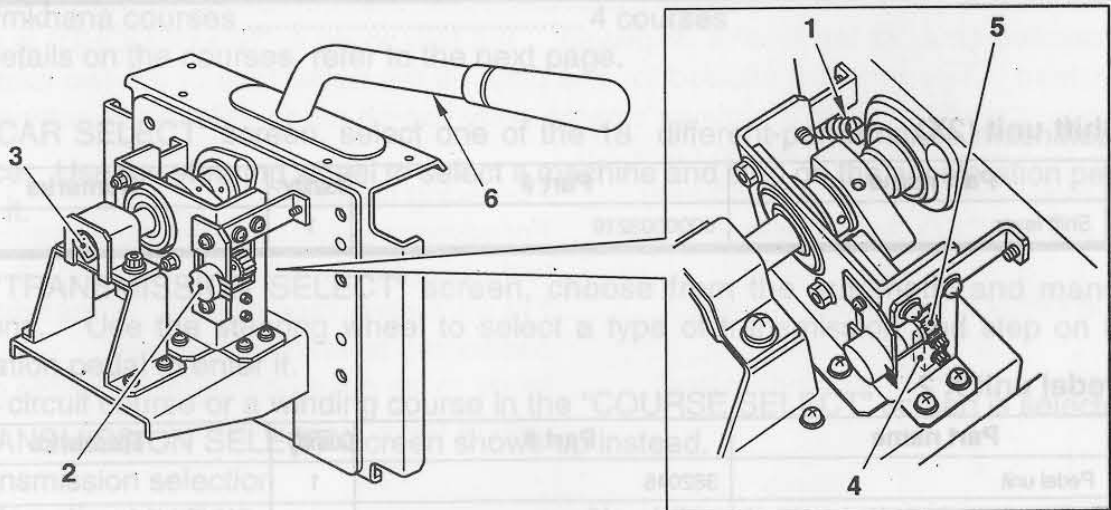
*The specifications of this product are subject to change without notice for reasons such as improving the performance.

2 Names of parts and list of main parts

Steering wheel unit

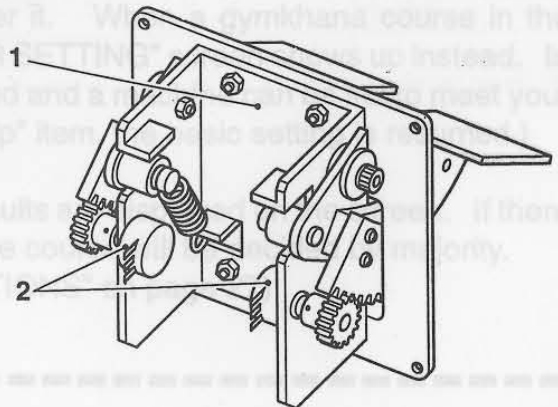
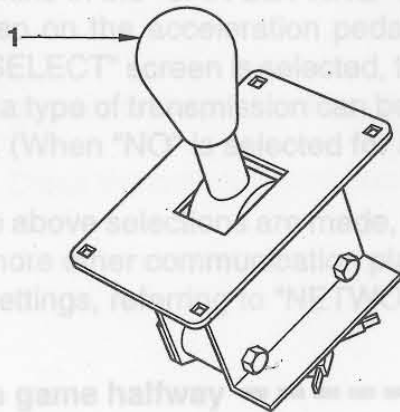


Hand brake unit



Shift unit

Pedal unit



Steering wheel unit (2X)

No.	Part name	Part #	Quantity	Remarks
1	Steering wheel	0000035211	1	
2	Motor	0000036918	1	
3	Gear head	0000036919	1	
4	Potentiometer	42100	1	5K OHM
5	Timing belt	31732	1	

Hand brake unit (2X)

No.	Part name	Part #	Quantity	Remarks
1	Coil spring	31702	1	
2	Potentiometer	42100	1	5K OHM
3	Rubber suspension	31701	1	
4	End stopper	0000013109	2	
5	Gear B	31652	1	
6	Hand brake lever	204172	1	

Shift unit (2X)

No.	Part name	Part #	Quantity	Remarks
1	Shift lever	0000003219	1	

Pedal unit X 2

No.	Part name	Part #	Quantity	Remarks
1	Pedal unit	382046	1	
2	Potentiometer	42100	2	5K OHM

3 How to play

The "RACING JAM™" is a virtual-reality racing game.

The game provides for high-quality graphics, realism, and sense of speed and allows you to feel as if driving a real racing car in more realistic courses. With your new driving experience in mind, the machine is equipped with forced-feedback steering wheel, hand brake and 5 speeds.

The full-scale race driving game also gives you the thrill of car racing such as drifting, counter-steering, load center shift at cornering, spin turning and other actions.

How to play

1 Put a coin in the slot.

The "COURSE SELECT" screen appears.

2 Select one out of the following courses using the steering wheel.

Step on the acceleration pedal to enter the selection.

- Course selection
 - Circuit courses 2 courses
 - Winding road courses 2 courses
 - Gymkhana courses 4 courses

For details on the courses, refer to the next page.

3 In the "CAR SELECT" screen, select one of the 18 different-performance machines in existence. Use the steering wheel to select a machine and step on the acceleration pedal to enter it.

4 In the "TRANSMISSION SELECT" screen, choose from the automatic and manual operations. Use the steering wheel to select a type of transmission and step on the acceleration pedal to enter it.

When a circuit course or a winding course in the "COURSE SELECT" screen is selected, the "TRANSMISSION SELECT" screen shows up instead.

- Transmission selection
 - Automatic operations No shifting is needed during the play.
 - Manual operations Shifting is needed.

5 Set the machine in the "CAR SETTING" screen. Use the steering wheel to select a setup item and step on the acceleration pedal to enter it. When a gymkhana course in the "COURSE SELECT" screen is selected, the "CAR SETTING" screen shows up instead. In this screen, a type of transmission can be selected and a machine can be set to meet your racing style. (When "NO" is selected for a "Set-Up" item, the basic setting is resumed.)

6 When all the above selections are made, their results are displayed on the screen. If there are two or more other communication players, the course will be decided by majority. (Make the settings, referring to "NETWORK OPTIONS" on page 27)

Joining the game halfway

You cannot join the "RACING JAM™" game halfway.

Course selection

- Circuit course racing
 - NIGHT (Beginner's course) High-speed circuit course (partially with the opposite lane) in an urban district at night.
 - DAY (Medium-level course) Varied circuit course rich in ups and downs.
- Winding road racing
 - Hill climb Advanced-level closed circuit course up a mountain pass with continuous sharp hairpin curves. Advanced driving technique required.
 - Downhill Ultra-level closed circuit course down a mountain pass with continuous sharp hairpin curves. Super driving technique required.

•Gymkhana racing (Network play is not possible.)

The player is challenged to pass of markers along the course and reach the finish line within the play time. When the car runs the complete distance within the specified time, its lap time is displayed. If it fails to do it, "NO RECORD" is displayed instead. Two runs are allowed for one play. If the better time of the two runs is in the upper-then-fifth place, the player's name entry can be made. (Make this setting referring to "COURSE SETTINGS" on page 33)

- BEGINNER (Beginner's course) For racing beginners.
- ADVANCED (Advanced-level course) For advanced-level race drivers. Advanced driving technique required.
- EXPERT (Ultra-level course) For ultra-level race drivers. Super driving and positioning techniques required.
- OPEN ROAD (Training course) Mode to lay out a course freely and to practice driving within a certain time.

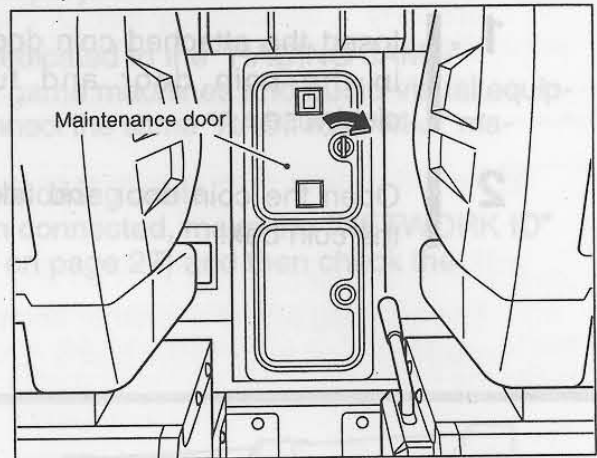
4 Opening and closing the doors

4-1 Opening and closing the maintenance door

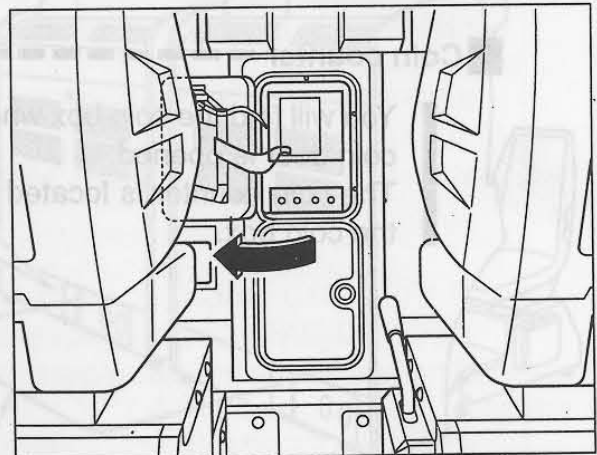
■ How to open the maintenance door

- Take care not to apply any load or impact to the maintenance door when it is open.
- After closing the maintenance door, be sure to check that the door is locked securely.

- 1** Insert the attached maintenance key in the maintenance door and turn it clockwise.



- 2** Open the maintenance door.



■ How to close the maintenance door

- 1** Close the maintenance door.
- 2** Turn the maintenance key counterclockwise and draw it out.

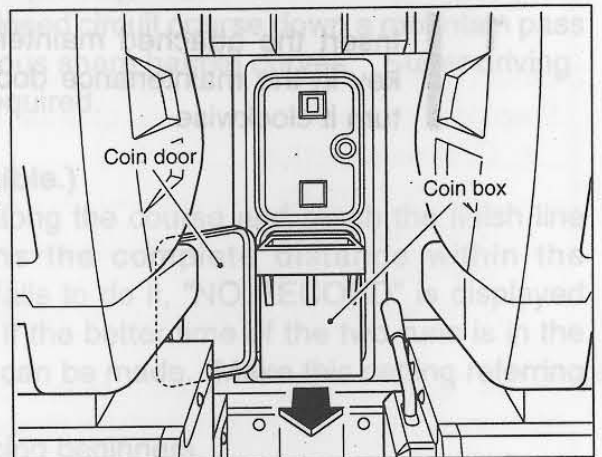
4-2 Opening and closing the coin door

Opening and closing the coin door and removing the coin box



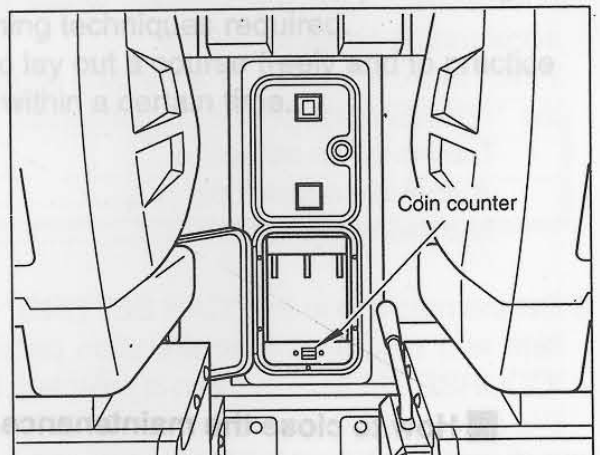
- Take care not to apply any load or impact to the coin door when it is open.
- Note that the coin box is considerably heavy to take out if it is full of coins.
- Securely lock the door for protection against burglaries.

- 1 Insert the attached coin door key in the coin door and turn it clockwise.
- 2 Open the coin door and take out the coin box.



Coin counter

You will find the coin box when the coin door is opened. The coin counter is located under the coin box.



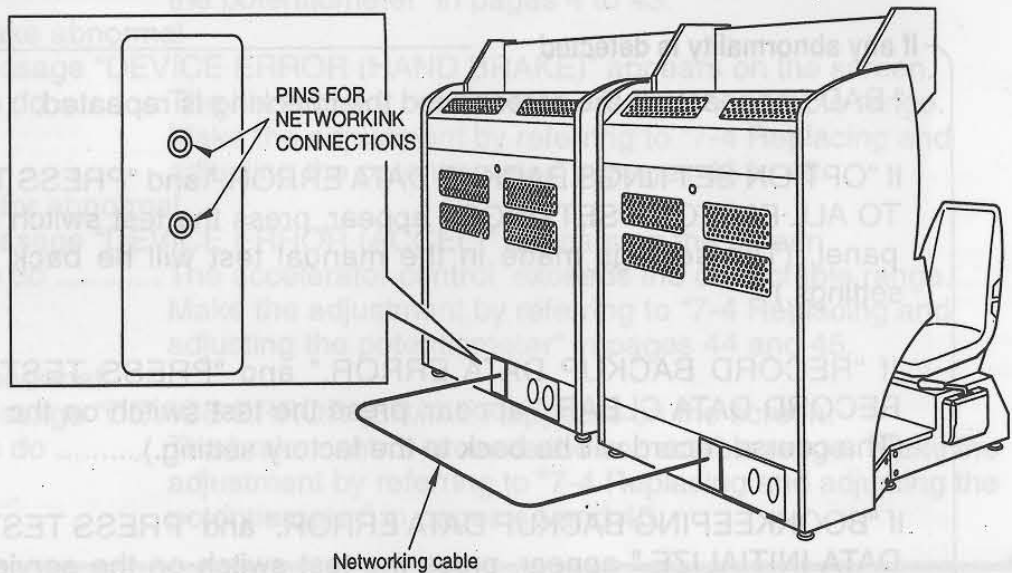
5 Networking game machines and PCB settings

5-1 How to network

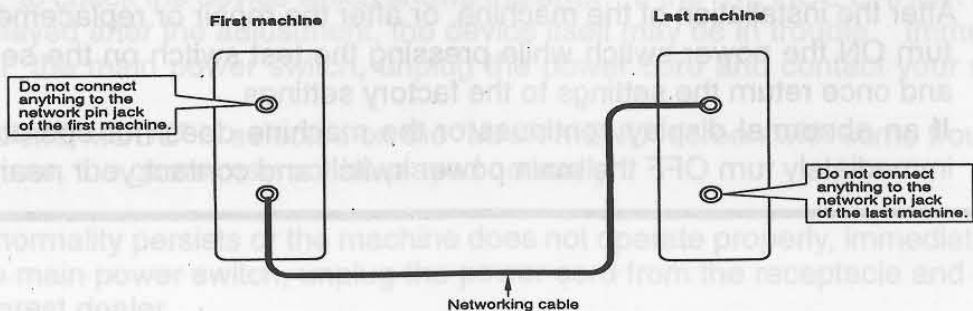
This game is also designed for communication racing. For this purpose, up to 4 machines (for 8 players) can be networked. To network, connect the networking cable supplied with each game machine to the network pin jack of the main unit after setting up the game machines.



- When using the game machine independently, do not connect anything to the pin jack for network connection.
- Game machines are linked together in a chain with the networking cables. Do not connect anything to the first and last pin jack for network connection in the chain.
- The network connection pin jack is dedicated to the "RACING JAM™" machine. Never use it for any other game machines and audio-visual equipment. Be sure to employ it to interconnect the same "RACING JAM™" machines.
- Be sure to use the accompanying networking cable.
- When the networking cable has been connected, make the "NETWORK ID" setting (see "NETWORK OPTIONS" on page 27) and then check the setting in "NETWORK CHECK".



■ Networking two games



5-2 PCB start-up check (self test)

When the power switch is turned ON after installation of machine, the performance of game Printed Circuit Boards (PCB) is checked automatically and the result is displayed on the screen. If the power is not turned ON, make sure that the main power switch and internal power switch are both at the ON position. (See page43)



- Be sure to check the PCB (self test) before using the machine.
- If an abnormality persists or the machine does not operate properly , immediately turn OFF the main power switch, unplug the power cord from the receptacle and contact your nearest dealer .

Result of test

If test is OK

- The steering wheel and other components are automatically repositioned. The machine then goes to the game mode and the demonstration game gets started.

If any abnormality is detected

- “BAD ” appears on the screen, and the checking is repeated.

If “OPTION SETTINGS BACKUP DATA ERROR.” and “PRESS TEST SWITCH TO ALL FACTORY SETTINGS.” appear, press the test switch on the service panel. (The settings made in the manual test will be back to the factory settings.)

If “RECORD BACKUP DATA ERROR.” and “PRESS TEST SWITCH TO RECORD DATA CLEAR.” appear, press the test switch on the service panel. (The course record will be back to the factory setting.)

If “BOOKKEEPING BACKUP DATA ERROR.” and “PRESS TEST SWITCH TO DATA INITIALIZE.” appear, press the test switch on the service panel. (The bookkeeping data will be back to the factory setting.)

After the installation of the machine, or after the repair or replacement of PCB. turn ON the power switch while pressing the test switch on the service panel and once return the settings to the factory settings.

If an abnormal display continues or the machine does not operate normally, immediately turn OFF the main power switch and contact your nearest dealer.

5-3 Correcting the positions of the steering wheel etc.

- After the self-test, the positions of the steering wheel, hand brake, acceleration pedal, brake pedal are corrected automatically.

At this time, the message "DO NOT TOUCH THE CONTROL DEVICE WHEN THE MACHINE IS BEING INITIALIZED." appears on the screen. Never touch the steering wheel, hand brake, acceleration pedal, brake pedal as long as this message stays on the screen. The steering wheel makes a few turns itself clockwise and counterclockwise.

■ Result of position check

If test is OK

- When the position check is over, the operation mode returns automatically to the game mode.

If any abnormality is detected

The result of check is displayed as follows on the screen.

•Steering wheel abnormal

The message "DEVICE ERROR (STEERING WHEEL)" appears on the screen.
What to do The steering wheel control exceeds the correctable range or the steering wheel reaction device is out of order. Make the adjustment by referring to "7-4 Replacing and adjusting the potentiometer" in pages 4 to 43.

•Hand brake abnormal

The message "DEVICE ERROR (HAND BRAKE)" appears on the screen.
What to do The hand brake control exceeds the correctable range. Make the adjustment by referring to "7-4 Replacing and adjusting the potentiometer" in pages 46 to 48.

•Accelerator abnormal

The message "DEVICE ERROR (ACCEL)" appears on the screen.
What to do The accelerator control exceeds the correctable range. Make the adjustment by referring to "7-4 Replacing and adjusting the potentiometer" in pages 44 and 45.

•Brake abnormal

The message "DEVICE ERROR (BRAKE)" appears on the screen.
What to do The brake control exceeds the correctable range. Make the adjustment by referring to "7-4 Replacing and adjusting the potentiometer" in pages 44 and 45.

If any of the above signs is displayed, press the test switch on the service panel to go to the manual test mode. (The "MAIN MENU" screen shows up.) Then choose "I/O CHECK" to check the device which shows the error. If the "DEVICE ERROR (****)" is still displayed after the adjustment, the device itself may be in trouble. Immediately turn OFF the main power switch, unplug the power cord and contact your nearest dealer.

If the "GAME MODE" is selected on the "MAIN MENU" screen with some troubles of any devices, the game may not be played normally.

If an abnormality persists or the machine does not operate properly, immediately turn OFF the main power switch, unplug the power cord from the receptacle and contact your nearest dealer.

5-4 Adjusting the game environment (manual test)

Manually check the settings for the screen displays and game contents and change them as required.

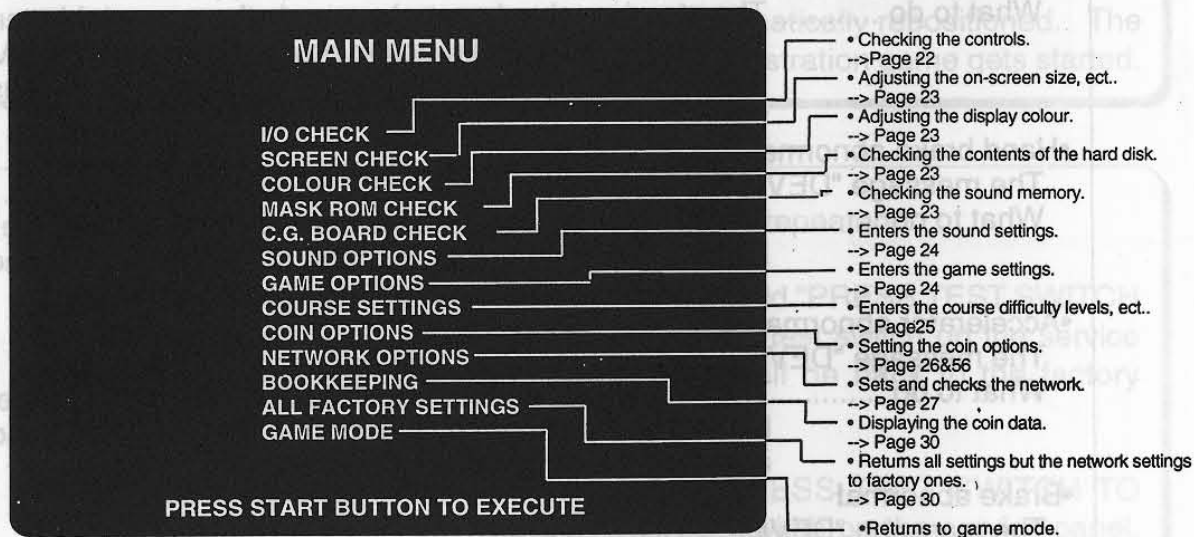
Starting the manual test mode

- 1 Turn ON the power switch.
- 2 Press the test switch on the service panel during the game mode demo (during the game mode demo of all the game machines in the case of networking) .
 ·The unit is set in the manual test mode and the main menu is displayed on the screen.

Quit the manual test mode

- 1 Choose the "GAME MODE" from the main menu by the shift lever.
- 2 Press the START button.
 ·Then, the screen returns to game mode.

Main menu screen (basic items)



Selecting each mode

How to select each mode from the main menu

- SELECT --> Move the shift lever up side or down side.
- SET --> Press the START button.
 •The machine is now in the selected mode.

After selecting a mode, refer to the page on which that mode is described in details.

5-5 Mode descriptions

- The original factory settings are displayed in green; the changed settings are displayed in red.
- To change the settings, move the shift lever up side or down side to select an item, and press the START button to enter it.
- After the setting change, select "SAVE AND EXIT" and press the START button. The settings are saved automatically and the screen returns to the main menu.
- If "EXIT" is selected after the modification of the settings, the following message will appear:
"YOU DID NOT SAVE. DO YOU WANT TO SAVE? YES / NO" Select "YES" or "NO" by shift lever up side or down side and set it by pressing the START button. If "YES" is selected, the new settings will be saved with "NOW SAVING" displayed and the screen will return to the main menu. If "NO" is selected, the new settings will not be saved with "NO MODIFICATION" displayed.

- If "FACTORY SETTINGS" is selected and the START button is pressed, all the settings of the mode will be back to the factory ones.

MEMO

I/O CHECK

Checking the controls

- Mode for checking the performance each control.

To return to the main menu screen, hold down the START button and move up side the shift lever.

I/O CHECK			
GEAR SHIFT LEVER	DOWN	UP OFF	DOWN OFF
START BUTTON	UP	COIN MECH SWITCH	OFF
SERVICE SWITCH	OFF	TEST SWITCH	OFF
STEERING WHEEL	LEFT	CENTER	RIGHT
0.0000 (0000)	-----+-----		-----+-----
ACCEL PEDAL	MIN		MAX
0.0000 (0000)	-----+-----		-----+-----
FOOT BRAKE PEDAL	MIN		MAX
0.0000 (0000)	-----+-----		-----+-----
HAND BRAKE LEVER	MIN		MAX
0.0000 (0000)	-----+-----		-----+-----

• The marker position changes to show the input value.
 • Shows the value for steering wheel in decimal (hexadecimal).
 The steering wheel is set properly when the steering wheel is fully turned clockwise and the red "I" mark comes to the "RIGHT" position as well as when the wheel is fully turned counterclockwise and the mark comes to the "LEFT" position.
 • Shows the value for the accelerator pedal (decimal (hexadecimal)). if the "I" mark moves to "MIN" when the accelerator pedal is released and to "MAX" when the accelerator pedal is fully press, the accelerator pedal is properly adjusted.
 • Shows the value for the foot brake unit (decimal (hexadecimal)).
 Make sure the "I" make moves to "MIN" when the foot brake is release and to "MAX" when the foot brake is fully pressed.
 • Shows the value for hand brake in decimal (hexadecimal).
 The hand brake is set properly when the hand brake is released and the "I" mark comes to the "MIN" position as well as when the hand brake is pulled up and the mark comes to the "MAX" position.
 • Check the steering wheel reaction device by putting up side the shift lever while pressing the START button. The steering wheel turns automatically clockwise and counterclockwise by turns during checking. Then, make sure that the "I" mark moves accordingly to the right and left on the meter which shows the value for the steering wheel. Do not touch the steering wheel while this checking is conducted.

• HOLD START BUTTON AND GEAR SHIFT UP = ACTIVE STEERING TEST
 • HOLD GEAR SHIFT DOWN AND PRESS START BUTTON TO EXIT

•This screen is just an example.

- If the steering wheel or the accelerator is not properly adjusted, make the necessary adjustments while referring to "7-4 Replacing and adjusting the potentiometer" on pages 41 to 48.

MEMO

SCREEN CHECK

Adjusting the screen distortion

- Mode for checking the screen display.

Adjust the focus, distortion and size of the image on the screen while watching the crosshatch pattern. Use the monitor adjustment PCB (See page 53) to make adjustments. To return to the main menu screen, press the START button.

COLOR CHECK

Adjusting the display color

- Mode for checking the display color.

Make the adjustment using the monitor adjustment PCB (See page 61) so that the colors of the color bars should appear properly graduated and the background should become black sufficiently. To return to the main menu screen, press the START button.

MASK ROM CHECK

Checking the mask ROMs

- The mask ROMs are checked one by one.

If the ROM is not in trouble, "OK" is displayed.

If anything unusual is found, "BAD" appears. Once in this mode, this checking gets started automatically. To return to the main menu screen, press the START button.

- If "BAD" appears, immediately turn OFF the main power switch, unplug the power cord from the receptacle and contact your nearest dealer.

C.G. BOARD CHECK

Checking the C.G. board function

- Mode for checking the function of the C.G. board.

Observe the screen in this mode to make sure that the C.G. board is functioning well. To return to the main menu screen, press the START button.

This is a test font to see what it looks like !!!!



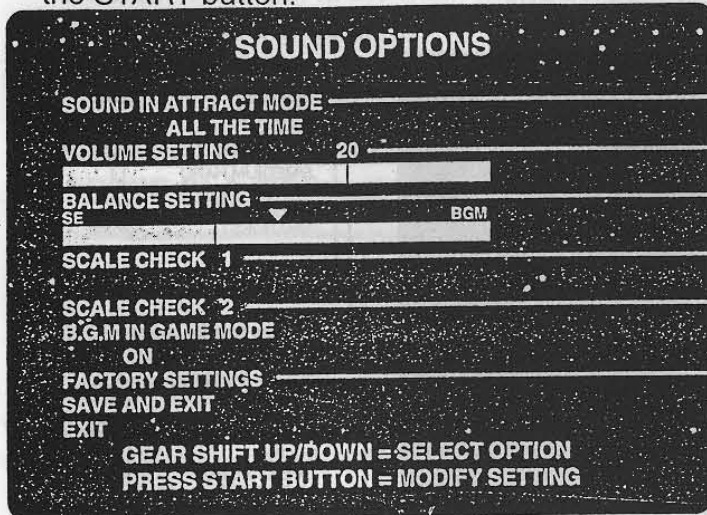
•The "RACING JAM" logo is shown before the cubes.

•Two cubes are rotating and entangled with each other.

SOUND OPTIONS

Enters the sound settings

■ This screen is used to make sound settings and to check them. Move the shift lever up or down to select an item, and press the START button to enter it. To return to the main menu, select "SAVE AND EXIT" or "EXIT" and press the START button.



• This screen is just an example.

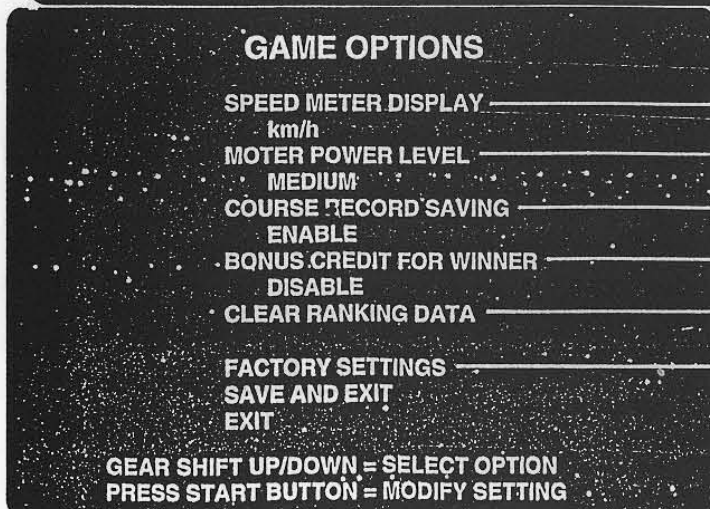
- Turns on and off the demo play sound.
 - ALL THE TIME Sound always on.
 - ONCE EVERY 4 CYCLES Sound on every 4 cycles.
 - COMPLETE OFF Sound always off.
- Adjusts the sound effect and other volume settings in steps from 0 (mute) to 30 (maximum).
 - To raise the sound level, hold down the START button and move up the shift lever.
 - To lower the sound level, hold down the START button and move down the shift lever.
- Sets the loudness balance between background music and sound effect.
 - To raise the volume of sound effect, hold down the START button and move up the shift lever.
 - To lower the volume of sound effect, hold down the START button and move down the shift lever.
- You will hear a do-re-mi...do musical scale from the left speaker first and then from the right speaker, which is repeated twice. The second round is given acoustic echo.
- Sets to give background music while the game is being played.
 - ON Background music heard
 - OFF ... Background music not heard
 Background music only during the race. Not effective for demo-game background music, sound and other sound effects.
- Returns all the settings to the factory settings.

GAME OPTIONS

Enters the game settings

■ This screen is used to make game settings and to check them. Move the shift lever up or down to select an item, and press the START button to enter it. To return to the main menu, select "SAVE AND EXIT" or "EXIT" and press the START button.

! **• When networking the machines, be sure to set all the machines to the same settings.**



• This screen is just an example.

- Selects the speed meter display [km/h] or [MPH].
- Sets the return force of the steering wheel.
 - OFF No return force
 - POWERLESS Weak
 - MEDIUM Standard
 - POWERFULL Strong
- Saves a course record. Select "DISABLE" and the course record is not saved nor initialized.
- In a network play with 4 or more cars, the first-place winner gets one bonus credit added.
- Erases the ranking data.
- Returns all the settings to the factory settings.

COURSE SETTINGS

Enters the course difficulty levels, etc. settings

- This screen is used to make course settings and their difficulty levels. Move the shift lever up side or down side to select an item, and press the START button to enter it. To return to the main menu screen, select "SAVE AND EXIT" or "EXIT" and press the START button.

COURSE SETTINGS		
	DIFFECULTY LEVEL	NUMBER of LAPS
CIRCUIT NIGHT	4/MEDIUM	3
CIRCUIT DAY	5/MEDIUM HARD	3
HILL CRIMB	8/HARDEST	
DOWN HILL	7/VERY HARD	
	TIME on 1 HEAT	NUMBER of HEATS
GYMKHANA BEGINER	4/MEDIUM	2
GYMKHANA ADVANCED	4/MEDIUM	2
GYMKHANA EXPERT	4/MEDIUM	2
GYMKHANA OPEN ROAD	4/MEDIUM	

FACTORY SETTINGS	
SAVE AND EXIT	
EXIT	

GEAR SHIFT UP/DOWN = SELECT OPTION
PRESS START BUTTON = MODIFY SETTING

•Sets a difficulty level (from the 8 levels).

1/EASIEST Easier
 2/VERY EASY ↑
 3/EASY Standard
 4/MEDIUM ↓
 5/MEDIUM HARD
 6/HARD Harder
 7/VERY HARD
 8/HARDEST

•Sets the number of laps (2 to 7).

•Sets the time for one heat.

1/SHORTEST Time set shorter
 2/VERY SHORT ↑
 3/SHORT Standard
 4/MEDIUM ↓
 5/MEDIUM LONG
 6/LONG Time set longer
 7/VERY LONG
 8/LONGEST

•Sets the number of heats (2 to 7).

•Returns all the settings to the factory settings.

•This screen is just an example.

- When the number of laps for a course has been set and saved, the course record of that course will be initialized.

MEMO

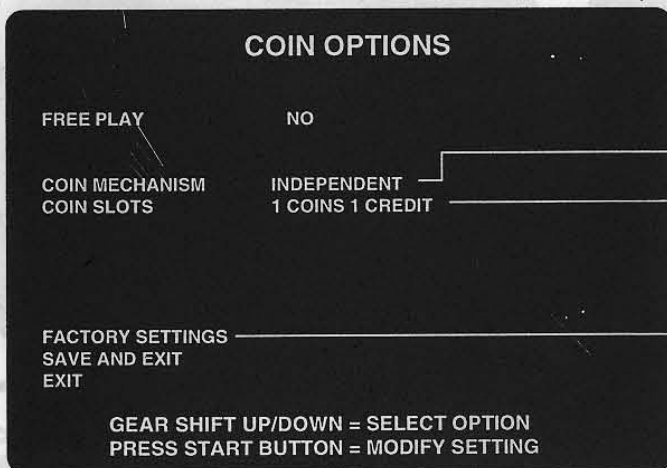
COIN OPTIONS

Setting the coin options

■ This screen is used to make coin settings and to check them.
 Move the shift lever up or down to select an item, and press the 'START' button to enter it. To return to the main menu screen, select "SAVE AND EXIT" or "EXIT" and press the START button.

! **Note that the coin setting options are not displayed when "FREE PLAY" is set to "YES".**

! **Note all price of play settings are done by the Klingon credit PCB, see page 55 for details.**



•Always keep it set to INDEPENDENT.

• Sets the number of credits for coins. This must be set to 1 coin 1 credit. See page 56 for adjusting the price of play.

•Returns all the settings to the factory settings.

•This screen is just an example.

■ The relationship between the number of coins and the number of credits

SETTING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
COIN(S)	1	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4	5	5	6	6
CREDIT(S)	1	2	3	4	5	6	7	1	3	5	1	2	4	1	3	5	1	2	1	5

SETTING	21	22	23	24	25	26	27	28	29	30	31	32
COIN(S)	7	7	8	8	9	10	11	12	13	14	15	16
CREDIT(S)	1	2	1	3	1	1	1	1	1	1	1	1

NETWORK OPTIONS

Sets and checks the network

■ Sets and checks the network.

Move the shift lever up side or down side to select an item, and press the START button to enter it. To return to the main menu screen, select "SAVE AND EXIT" or "EXIT" and press the START button.

NETWORK OPTIONS

NETWORK ID _____

2

GAME JOINING PERIOD _____

12 counts

COURSE SELECTION _____

decided by majority

NETWORK CHECK _____

NETWORK CONFIGURATION _____

FACTORY SETTINGS _____

SAVE AND EXIT _____

EXIT _____

GEAR SHIFT UP/DOWN = SELECT OPTION
PRESS START BUTTON = MODIFY SETTING

- Sets a network ID.
Enters different numbers (machine numbers) to the machines that will be networked.
(Same numbers are not allowed.)
- Sets the communication wait time.
Choose from 4, 8, 12, 16, 20, 24, 28 and 32.
- Sets the communication-play course decision by majority or by individual.
-DECIDED by MAJORITY...Course decided by majority
- DECIDED INDIVIDUALLY...Course not decided by majority
- This mode is used to check the network condition.
(See page 35)
- This mode is used to automatically configure the settings of the networked machined.(See page 37)
- Returns all the settings to the factory settings.

•This screen is just an example.

NETWORK CHECK select the following screen appears.

■ When networking the machines, be sure to check their networking status on this screen. To return to the "NETWORK OPTIONS" screen, press the START button.



- If any of the three items responds incorrectly, it indicates possible communication malfunction. Take measures while referring to "5-6 Measures to be taken when there is a network abnormality" on page 31.
- If the machine still shows the same trouble or any troubles that are not discussed in this manual, immediately turn OFF the main power switch, unplug the power cord and contact your nearest dealer.

NETWORK CHECK

THIS BOARD-ID IS 8 _____

	ERROR	DOWN	STATUS
ID No.1	0	0	DNC
ID No.2	0	0	DNC
ID No.3	0	0	I
ID No.4	0	0	DNC
ID No.5	0	0	I
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

PRESS START BUTTON = EXIT

- Shows "Network ID" of the connected machine. (Number from 1 to 8).
- The "I" mark is moving from left to right when the machine is networked.
- "DNC" (Did Not Connect) appears if the machine is not networked.

•This screen is just an example.

- Check items (Watch the screen for longer than 1 minute and make sure the following 3 conditions are met.)
- Check that the "I" mark in the STATUS column is moving from the left to the right at a fixed speed.
 - Check that the value in the ERROR column is below "10" after one minute.
 - Check that the value in the DOWN column does not change from "0".

■ Screen display when game machines are networked ■

- Two game machines are networked

Screen for player 1

NETWORK CHECK

THIS BOARD-ID IS 1

	ERROR	DOWN	STATUS
ID No.1	0	0	
ID No.2	0	0	
ID No.3	0	0	DNC
ID No.4	0	0	DNC
ID No.5	0	0	DNC
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

PRESS START BUTTON = EXIT

Screen for player 2

NETWORK CHECK

THIS BOARD-ID IS 2

	ERROR	DOWN	STATUS
ID No.1	0	0	
ID No.2	0	0	
ID No.3	0	0	DNC
ID No.4	0	0	DNC
ID No.5	0	0	DNC
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

PRESS START BUTTON = EXIT

- Four game machines are networked

Screen for player 1

NETWORK CHECK

THIS BOARD-ID IS 1

	ERROR	DOWN	STATUS
ID No.1	0	0	
ID No.2	0	0	
ID No.3	0	0	
ID No.4	0	0	
ID No.5	0	0	DNC
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

PRESS START BUTTON = EXIT

Screen for player 2

NETWORK CHECK

THIS BOARD-ID IS 2

	ERROR	DOWN	STATUS
ID No.1	0	0	
ID No.2	0	0	
ID No.3	0	0	
ID No.4	0	0	
ID No.5	0	0	DNC
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

PRESS START BUTTON = EXIT

Screen for player 3

NETWORK CHECK

THIS BOARD-ID IS 3

	ERROR	DOWN	STATUS
ID No.1	0	0	
ID No.2	0	0	
ID No.3	0	0	
ID No.4	0	0	
ID No.5	0	0	DNC
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

PRESS START BUTTON = EXIT

Screen for player 4

NETWORK CHECK

THIS BOARD-ID IS 4

	ERROR	DOWN	STATUS
ID No.1	0	0	
ID No.2	0	0	
ID No.3	0	0	
ID No.4	0	0	
ID No.5	0	0	DNC
ID No.6	0	0	DNC
ID No.7	0	0	DNC
ID No.8	0	0	DNC

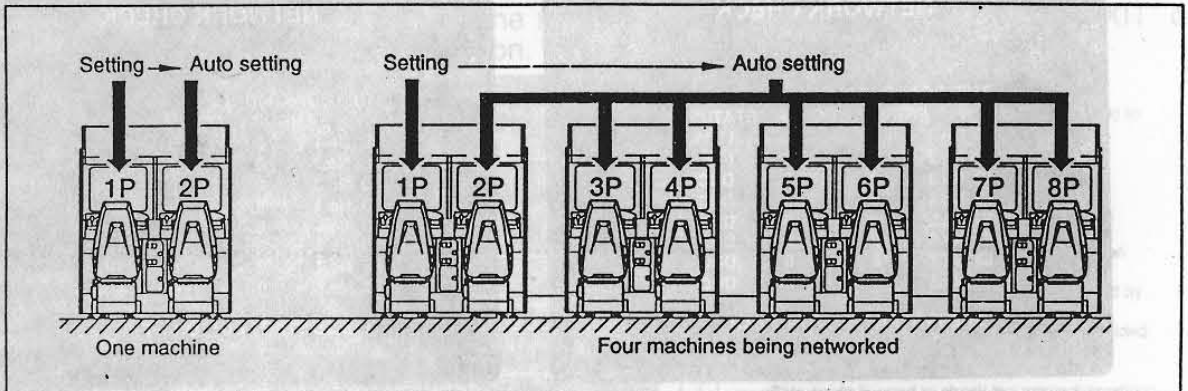
PRESS START BUTTON = EXIT

• This screen is just an example.

NETWORK CONFIGURATION

Configuring various settings

■ This mode is to automatically configure a group of already networked machines to the settings of a machine that has been connected to the group.
To return to the "NETWORK OPTIONS" screen, press the START button.



Setting modes which can be unified are as follow:

- "SOUND OPTIONS" (See page 24)
- "GAME OPTIONS" (See page 24)
- "COURSE SETTINGS" (See page 25)
- "COIN OPTIONS" (See page 26)

■ **Organizing the machine settings being networked.** -----

Take the following steps to configure the settings using the communication function.

1. Make sure the networking functions well in the "NETWORK CHECK" mode.
2. All the machines which are connected to the network are displayed on the "MAIN MENU" screen for the manual test.
3. Set "SOUND OPTIONS", "GAME OPTIONS", "COURSE SETTINGS" and "COIN OPTIONS" for only one set of machine among the others connected to the network. (Do not operate the other machines for setting.)
4. When the setting is finished, select the "NETWORK OPTIONS" from the "MAIN MENU" screen only for the machine for which the above setting 3 was made. Then select the "NETWORK CONFIGURATION" and press the START button. Make sure the message "PRESS TEST SWITCH TO START" appears on the screen. Press the test switch on the service panel of the machine. "CONFIGURATION START" appears on the screen instead.
5. Make sure all the other machines networked are automatically brought in the "NETWORK CONFIGURATION" mode. Then "COMPLETE" appears on the screen.
6. To return to the "NETWORK OPTIONS" screen, press the START button of the machine for which the above setting 3 was made. (For all the other machines, the "MAIN MENU" screen shows up.)

- If the network communication settings have not been made normally in the above steps 5 to 6, make the same settings for all the machines one by one. If the network play still fails, refer to pages 31 and 32.

MEMO

BOOKKEEPING

Displaying the coin data

■ Mode for displaying the number of coins put into the machine.
 If the time is preset in this mode, the following data on the number of coins put into the machine can be viewed by coin slot. To return to the main menu screen, press the START button.

To clear the data, move the shift lever to down side and press the START button. When the date has been cleared, the time is reset to the Greenwich Mean Time. When "BOOKKEEPING" is selected next time, the time setting screen comes up.

Time setting

When this item is selected after setting up the game machine, the time setting screen will appear. Pressing the START button after setting the time will save the setting. To cancel this mode, move the shift lever to up side and press the START button.

- Once the time is set, this screen will not appear until the data is cleared.
- If the time setting is canceled, the data will not be collected.

MEMO

BOOKKEEPING	
·TOTAL COINS _____	Total number of coins after the time being set
COIN DATA OF LAST 7DAYS	
·TODAY _____	Number of coins of today
·YESTERDAY _____	Number of coins of yesterday
--2DAY _____	Number of coins of 2 days ago
--3DAY _____	Number of coins of 3 days ago
--4DAY _____	Number of coins of 4 days ago
--5DAY _____	Number of coins of 5 days ago
--6DAY _____	Number of coins of 6 days ago
LAST 7DAYS AVERAGE _____	Average number of coins of last 7 days

Move up the shift lever, and the data of the past 51 weeks will be displayed with the average of each week.

ALL FACTORY SETTING

Returns all settings but the network settings to factory ones

■ Mode for Returning all the settings to the factory settings.
 In this mode, all the settings but the "BOOKKEEPING" settings on the main menu will be back to the factory ones. Now "DISABLE" is shown at the "COURSE RECORD SAVING" option in the "GAME OPTIONS" screen. Select "ENABLE" to initialize this setting. (See page 24.)

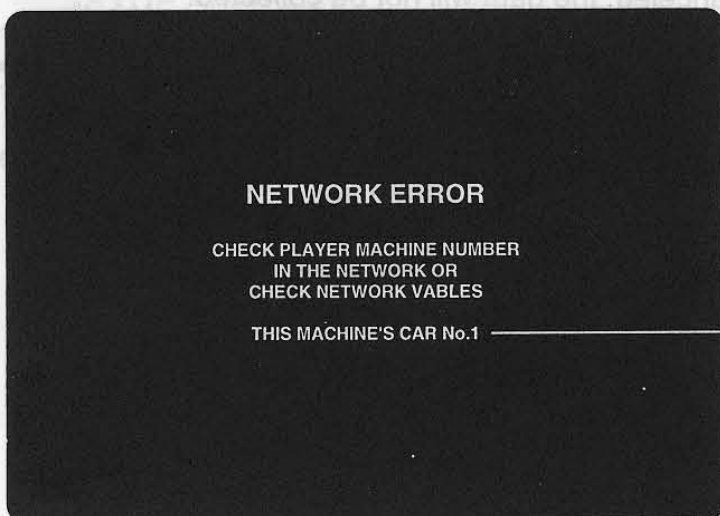
5-6 Measures to be taken when there is a network abnormality

If the "NETWORK ERROR" message appears, if any item responds incorrectly in the network communication check described on pages 27 and 28, or if the projector displays differ from the specified ones, take the following measures.



- If the machine still shows the same trouble or any troubles that are not discussed in this manual, immediately turn OFF the main power switch, unplug the power cord and contact your nearest dealer.

Symptom 1 The "NETWORK ERROR" message appears on the screen after the power is turned ON.



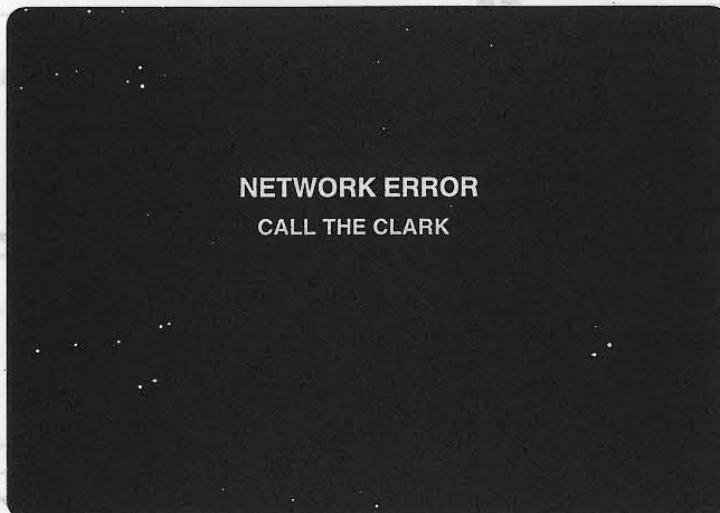
•Shows the "Network ID" of game machine.
(A number for 1 to 8)

Possible causes and measures to be taken


Possible causes	Measures
•The "Network ID" settings are improper.	•Readjust the "Network ID" settings on the "NETWORK OPTIONS" screen in the manual test mode. (See page 27)
•One of the networking cable used is disconnected from the game machne.	•Properly connect the networking cable between the game machines. Make sure that the pin jacks that are not in use are free of dust or dirt.
•An unnecessary networking cable is connected with the pin jacks of the first and last machines.	•Disconnect the network cable from those pin jacks. (See page 18)

Symptom 2

The "NETWORK ERROR" message appears on the screen during playing.



Possible causes and measures to be taken

Possible causes	Measures
<ul style="list-style-type: none"> •One of the networking cable has been disconnected from during play. 	<ul style="list-style-type: none"> ·1.Turn OFF the main power switch. 2.Connect the networking cable properly. 3.Turn ON the main power switch.
<ul style="list-style-type: none"> •One of the networking cable has been internally broken or broken. 	<ul style="list-style-type: none"> ·Replace the networking cable with the spare networking cable. (You can also use commercially-sold video cable (75 Ω 3C-FV) having a length of 2m(78.74in) or less.
<ul style="list-style-type: none"> •The test switch (on the service panel) of one of the networked game machines has been pressed. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"></p> <ul style="list-style-type: none"> •The test switch should pressed during the game demo of all the networked game machines. </div>	<ul style="list-style-type: none"> ·1.Turn OFF the main power switch of all the networked game machines. 2.Close the maintenance door. 3.Turn ON the main power switch.
<ul style="list-style-type: none"> •Any of the networked machines has different settings. 	<ul style="list-style-type: none"> ·Configure the settings of all the machines referring to "NETWORK CONFIGURATION" (see page 29).

6 Setting up the game machine

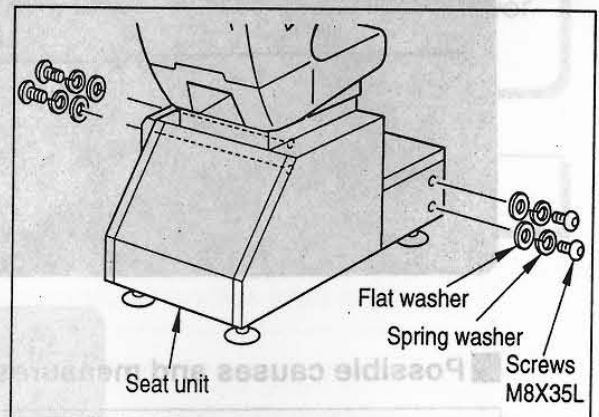
6-1 Connecting the unit

How to connect the unit

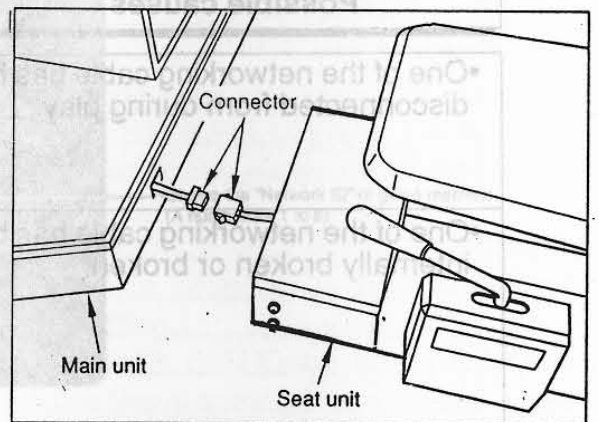


- Do not pull the wiring and connectors of the main unit and seat unit to move them.
- When installing the main unit and seat unit take care not to catch the wiring.

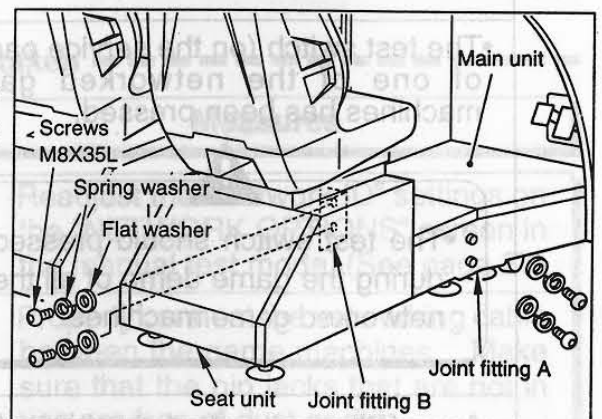
- 1** Fix the attached joint fittings A and joint fittings B temporarily to the seat unit.



- 2** Connect the connector of the main unit to that of the seat units.



- 3** Fit the main unit and the seat units and temporarily fix the joint of the main unit.



- After finishing the "6-2 Fastening the adjusters" on page 34, tighten the joint securely.

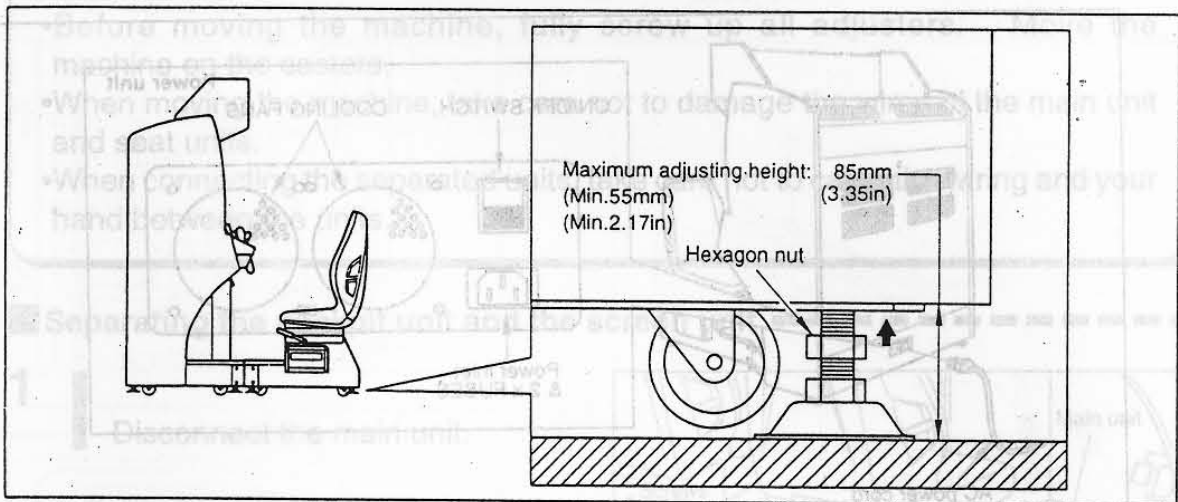
MEMO

6-2 Fastening the adjusters

■ How to fasten the adjusters

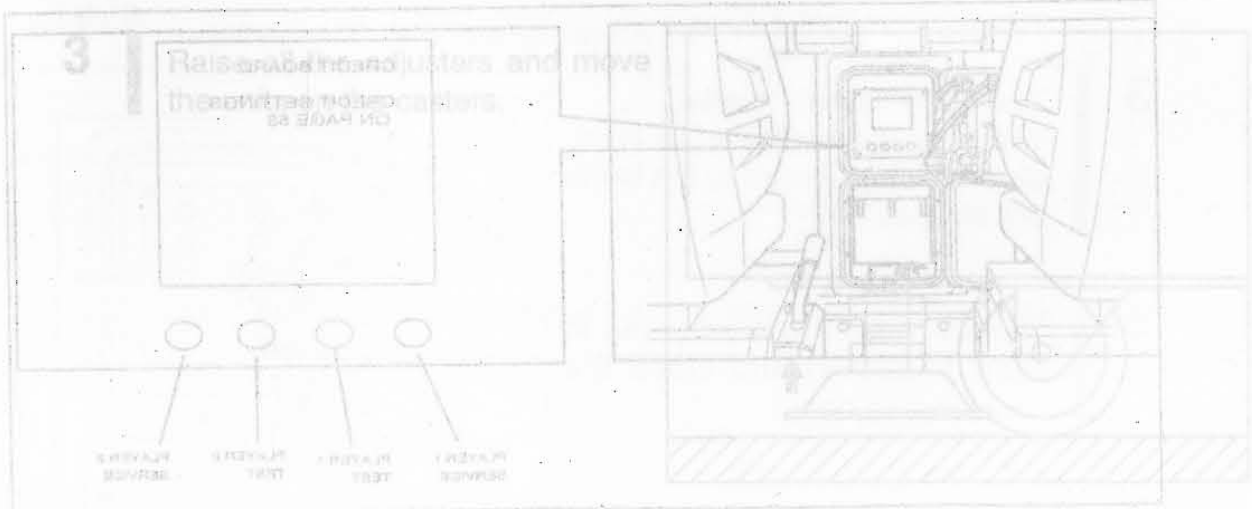


- Adjust the adjusters so that the casters do not touch the floor. Take care not to exceed the maximum adjusting height of the adjuster.
- Adjust the 12 adjusters so that they are flush with the floor and make sure that the machine is stable and placed in a horizontal position. Then tighten up the hexagon nuts upward.



2 Disconnect the connector from the main unit and the seat.

You will find the service panel when the maintenance door is opened with the maintenance key.



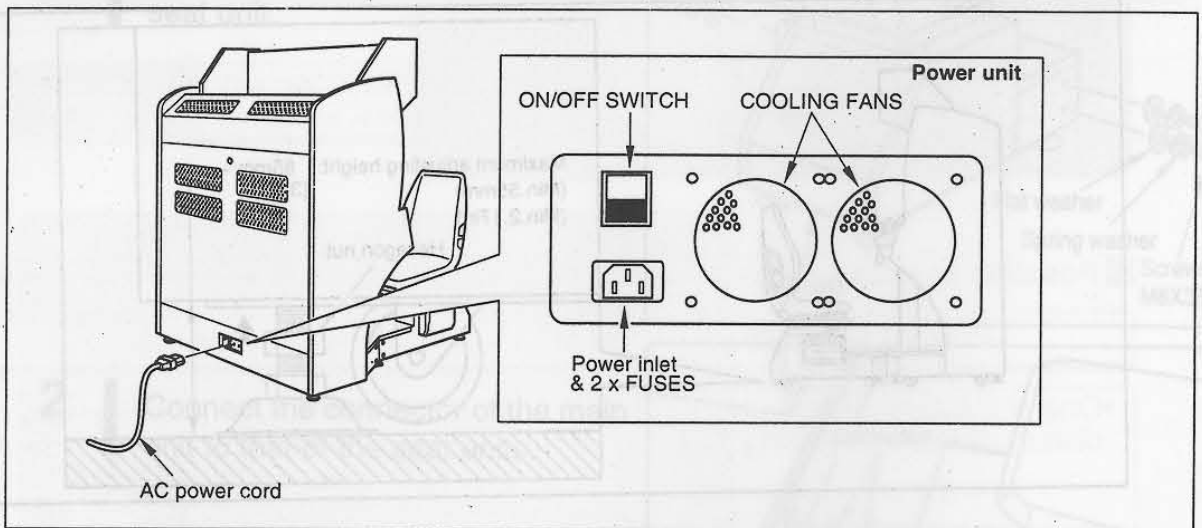
6-3 Power unit

The power unit is located on the back of main unit.

■ Power unit



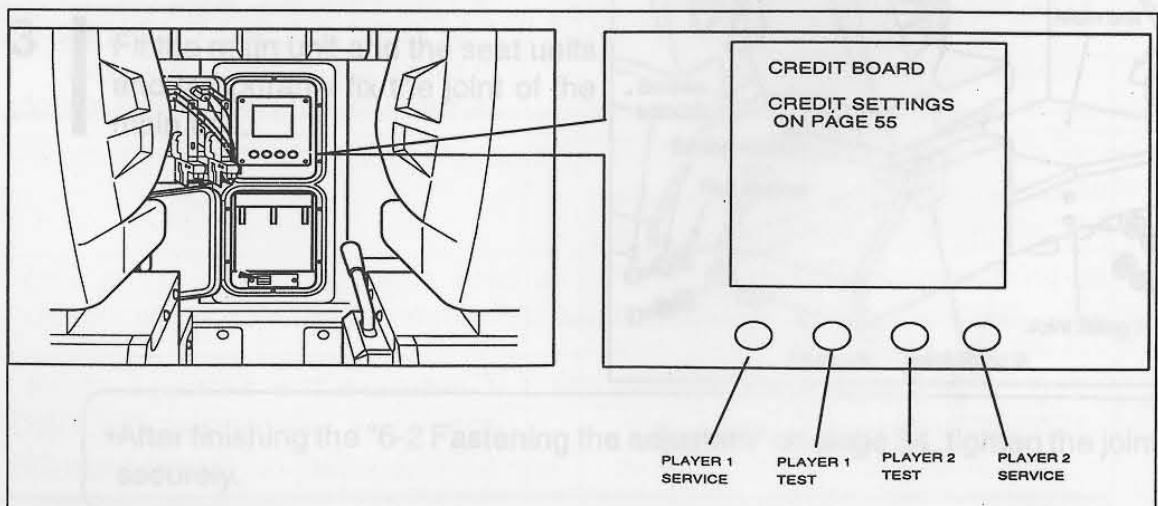
- Be sure to use the attached AC power cord.
- Be sure to ground to the machine. Never connect the grounding wire to gas pipe, water pipe or telephone ground terminal.



6-4 Service panel

You will find the service panel when the maintenance door is opened with the attached maintenance key.

■ Service panel



6-5 Separating and moving the units

The machine can be divided into the units.

How to separate the units



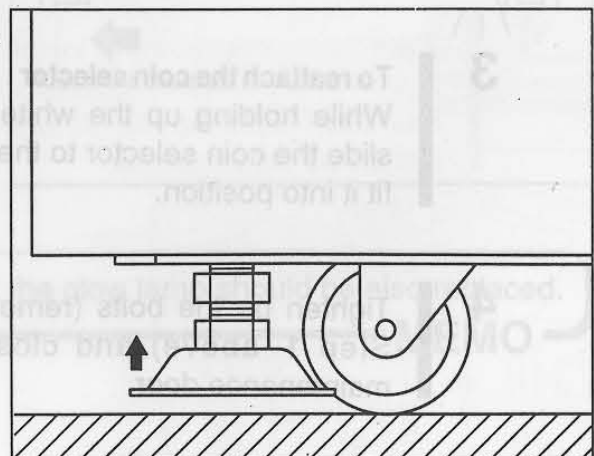
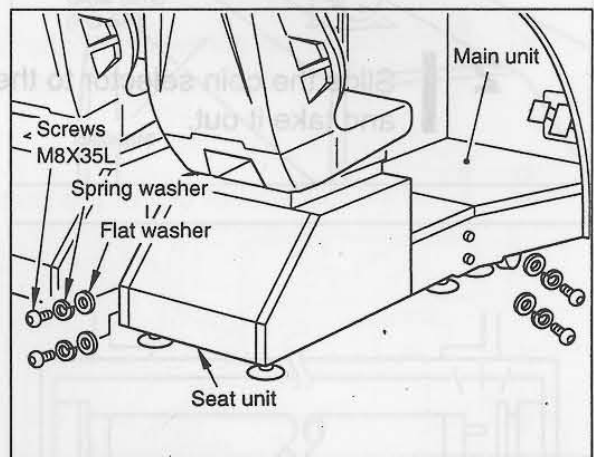
- Before separating the units from the machine, be sure to turn OFF the main power switch and remove the power cord plug from the receptacle.
- When moving the machine, be sure to separate the main unit and seat unit beforehand.
- Before moving the machine, fully screw up all adjusters. Move the machine on the casters.
- When moving the machine, take care not to damage the wires of the main unit and seat units.
- When connecting the separated units, take care not to catch the wiring and your hand between the units.

Separating the cockpit unit and the screen unit

1 Disconnect the main unit.

2 Disconnect the connector from between the main unit and the seat units.

3 Raise all the adjusters and move the units on the casters.



7 Maintenance and annex

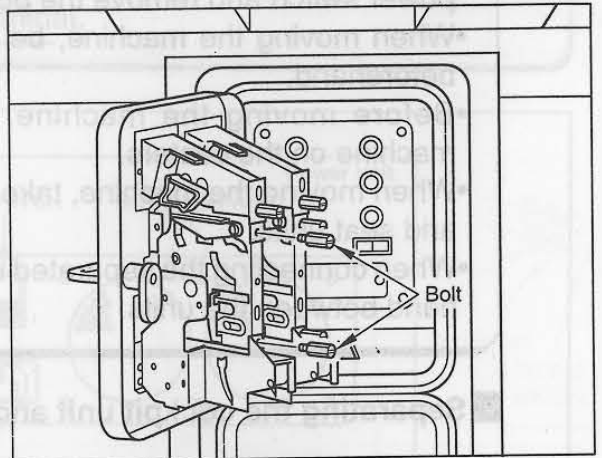
7-1 Replacing the coin selector

How to replace the coin selector

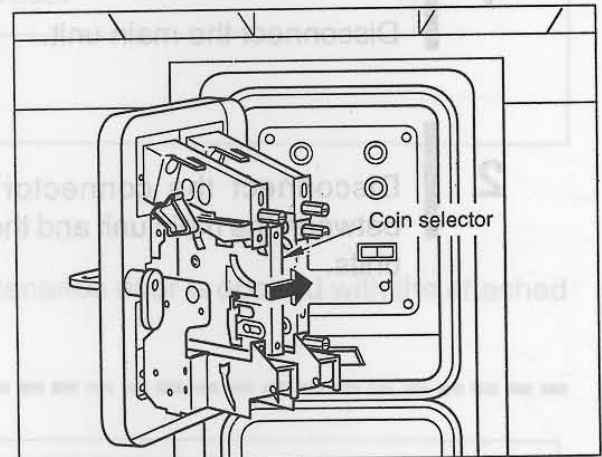


- Before replacing the coin selector, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.

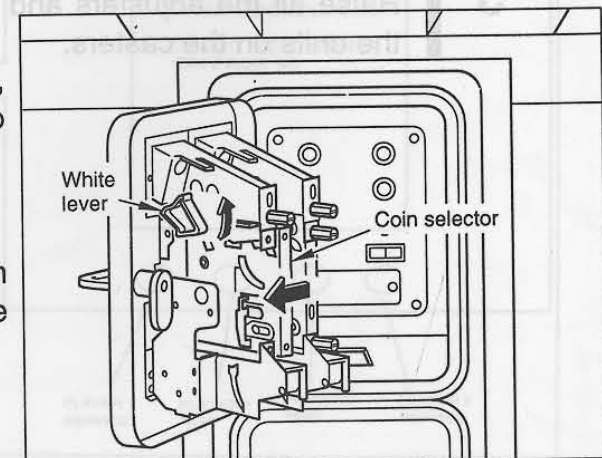
- 1** Open the maintenance door. Remove the two bolts off the coin selector.



- 2** Slide the coin selector to the right, and take it out.



- 3** **To reattach the coin selector**
While holding up the white lever, slide the coin selector to the left to fit it into position.



- 4** Tighten up the bolts (removed in Step 1 above) and close the maintenance door.

7-2 Replacing the fluorescent light

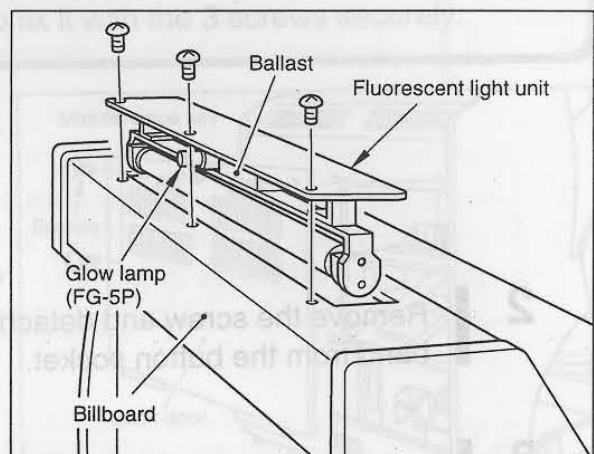
How to replace the fluorescent light



- Before replacing the fluorescent light, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.
- The fluorescent light is hot just after it is put off. Wait until it cools down and then replace it with a new one of the same type (straight tube 32W/100V).
- When installing and removing the fluorescent light unit, take care not to damage the wiring connecting the fluorescent light unit and the game machine.

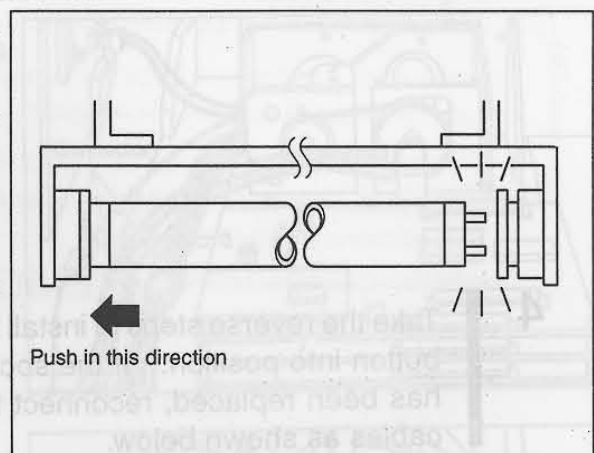
1 Remove the fluorescent light unit lock screws off the top of the billboard.

2 Lift the fluorescent light unit off position. Be careful not to hit against the ballast.



3 Push one end of the fluorescent light in the direction of the socket. The other end of the fluorescent light will be detached from the opposite socket.

4 Install a new fluorescent light in the reverse order.



• It is recommended that the glow lamp should be also replaced.

MEMO

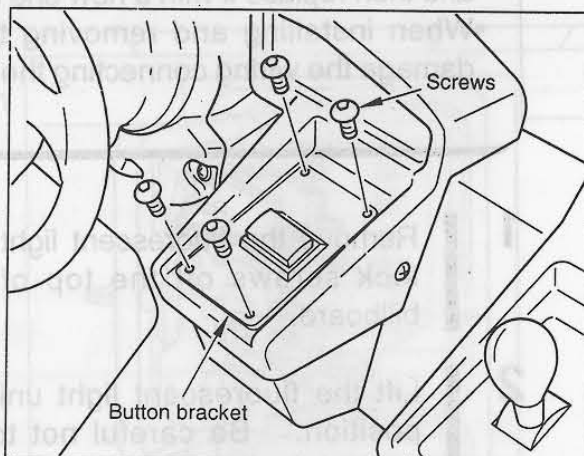
7-3 Replacing the button

How to replace the button

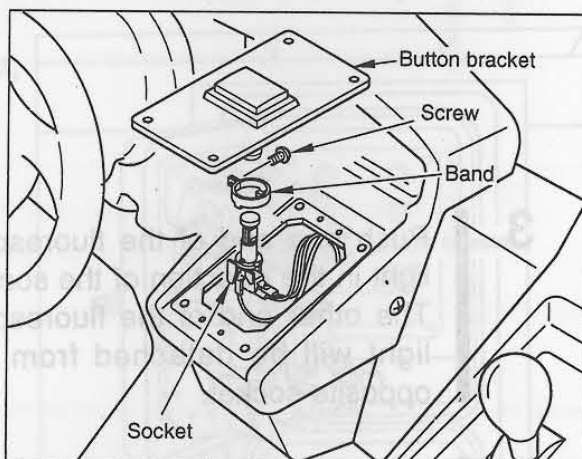


•Before replacing the button, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.

- 1 Remove the screws and detach the button bracket.

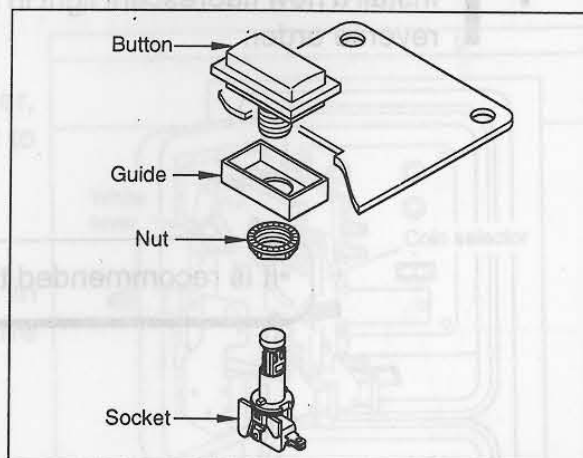
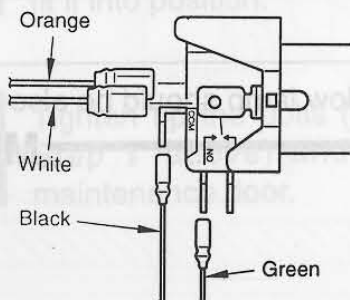


- 2 Remove the screw and detach the band from the button socket.



- 3 Draw the socket out of the button.

- 4 Take the reverse steps to install the button into position. If the socket has been replaced, reconnect the cables as shown below.



7-4 Replacing and adjusting the potentiometer

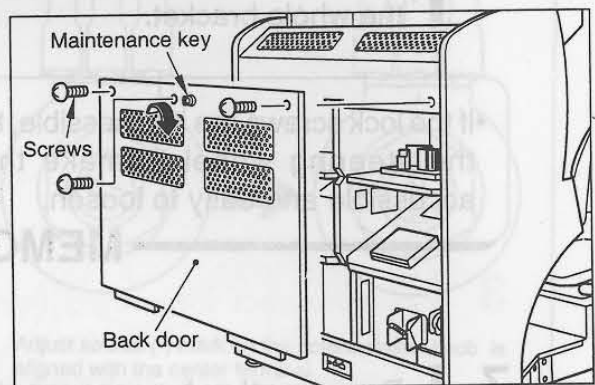
■ How to replace the steering wheel unit potentiometer — — — — —



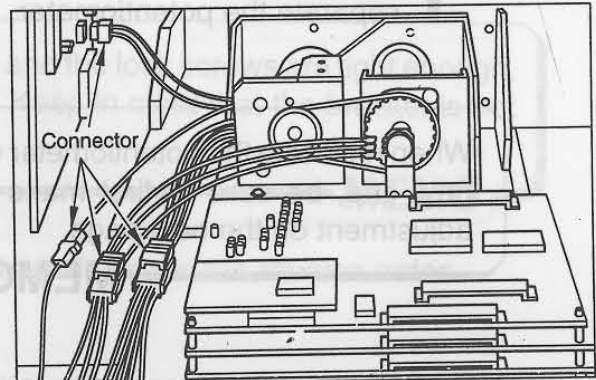
- Before replacing the steering wheel unit potentiometer, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.
- Since the steering wheel unit is heavy, remove it with care.
- The machine has some internal parts with high voltage. Only a qualified industry specialist is allowed to open the back door of the machine. With this back door open, be very careful not to touch unnecessary parts.
- When mounting/dismounting the control panel, take care not to damage the wires connecting the steering wheel unit and the main unit.
- When closing the back door, be sure to fix it with the 3 screws securely.

- 1** | Remove the screws of the back door.

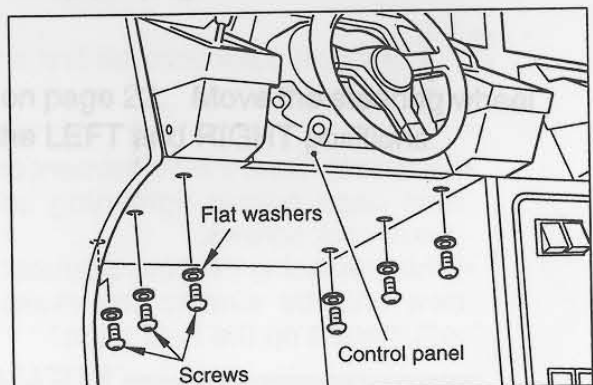
- 2** | Insert the attached maintenance key, turn it clockwise and remove the back door.



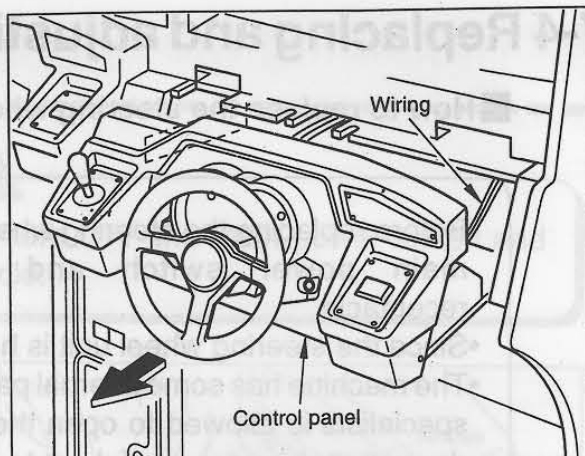
- 3** | Disconnect the four connectors shown at right.



- 4** | Remove the screws off the control panel.



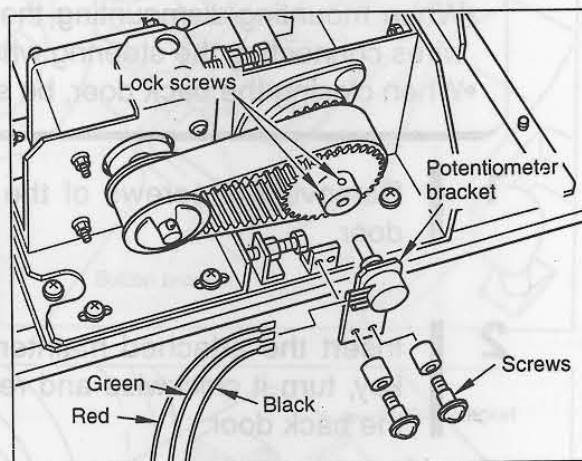
- 5** Pull out the control panel towards you.
Take due care not to drop the control panel. And take care that the control panel does not damage the monitor



- 6** Loosen the two fixing screws, remove the screws off the potentiometer bracket, and remove the whole bracket.

•If the lock screws are inaccessible, turn the steering wheel to make them accessible and easy to loosen.

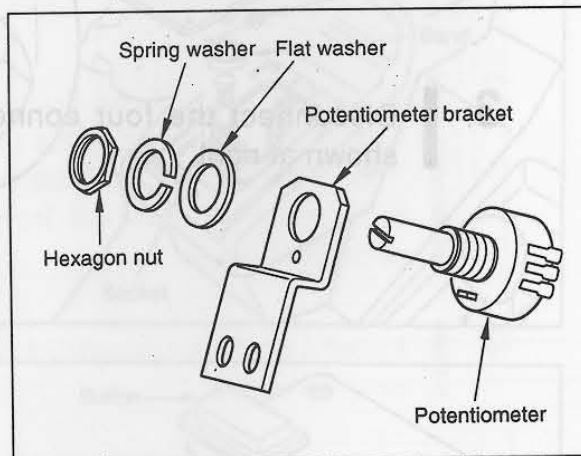
MEMO



- 7** Remove the hexagon nut and separate the potentiometer.

•When replacing the potentiometer with new one, be sure to first make the adjustment on the next page.

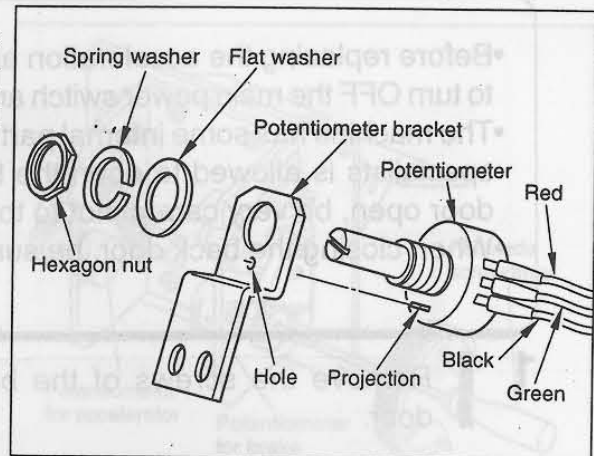
MEMO



How to adjust the steering wheel unit potentiometer

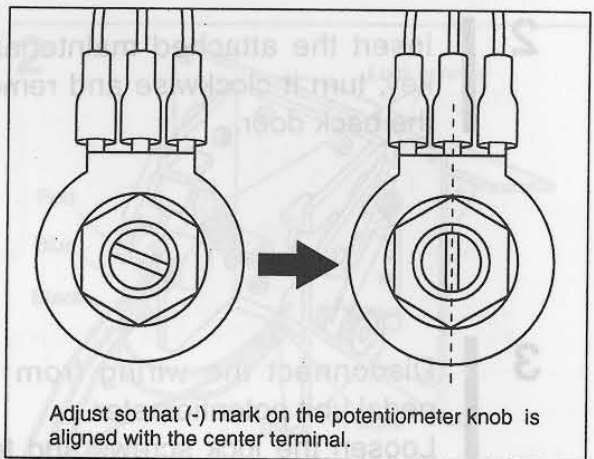
1 Fit the potentiometer projection to the smallest hole of the potentiometer bracket. Tighten up the hexagon nut.

2 Connect the wiring properly.



3 Grasp the potentiometer tip with your fingers and adjust it as shown in the figure.

4 Turn the steering wheel to the original position, install the potentiometer bracket as it was and tighten the bracket with the two fixing screws securely.



•Even when the potentiometer bracket screw and the lock screws are tight enough, the potentiometer bracket has some play. Keep in mind that the bracket is not tightly locked.

MEMO

5 Assemble the steering wheel unit to the main unit in the reverse order.

6 Carry out "5-2 PCB start-up check (self test)" on page 19.

7 Call up the "I/O CHECK" screen, show on page 22. Move the steering wheel and make sure the "I" make comes to the LEFT and RIGHT positions.

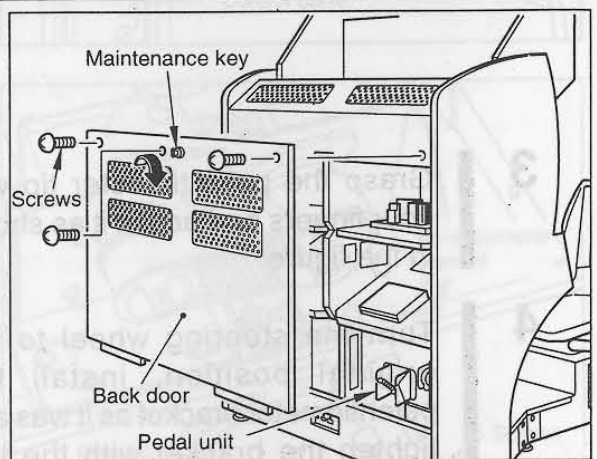
How to replace the pedal unit potentiometers



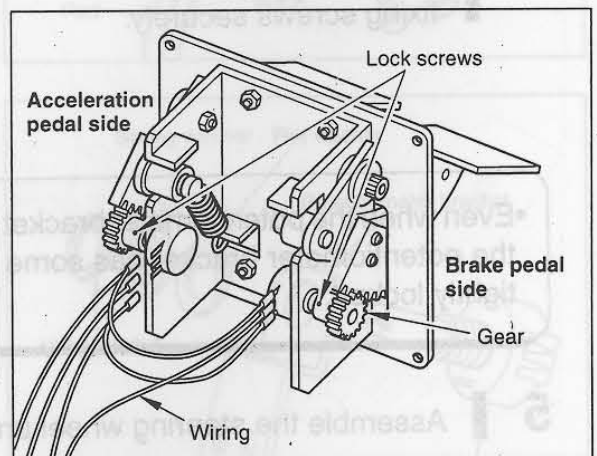
- Before replacing the acceleration and brake pedal unit potentiometers, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.
- The machine has some internal parts with high voltage. Only a qualified industry specialist is allowed to open the back door of the machine. With this back door open, be very careful not to touch unnecessary parts.
- When closing the back door, be sure to fix it with the 3 screws securely.

1 Remove the screws of the back door.

2 Insert the attached maintenance key, turn it clockwise and remove the back door.



3 Disconnect the wiring from the pedal unit potentiometer. Loosen the lock screws and take out the gears.

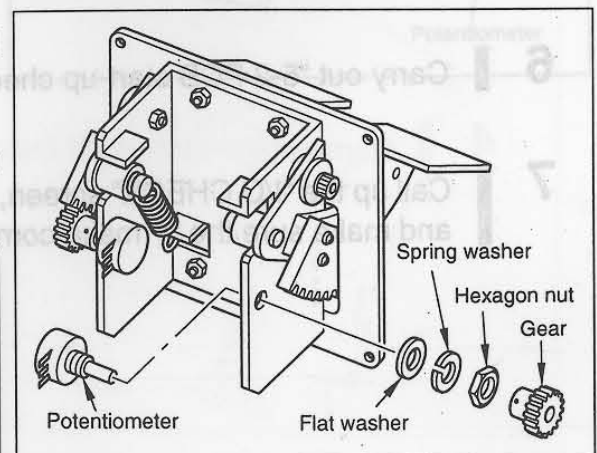


- If the lock screws are in a position where it is difficult to loosen them, press the pedal so that they are positioned favorably for loosening.

MEMO

4 Remove the hexagon nut and separate the potentiometer.

5 Fit new potentiometer first and then the gears.



- Be sure to make the adjustment on the next page before tightening up the gears' lock screws.
- When replacing the potentiometer with new one, be sure to first make the adjustment on the next page.

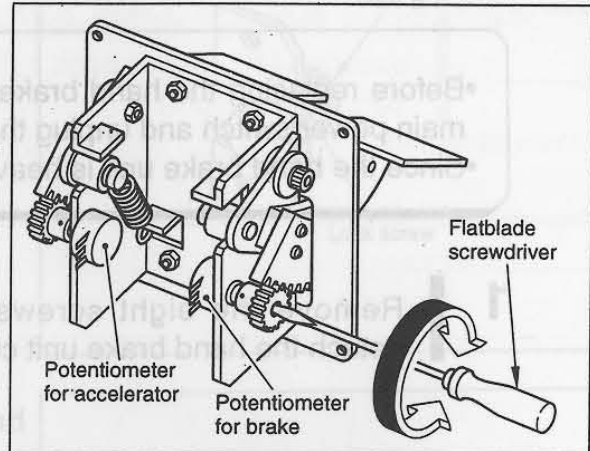
MEMO

How to adjust the pedal unit (acceleration and brake) potentiometers

- 1** Without touching the pedal, adjust the potentiometer with a flatblade screwdriver.

[Adjusting method]

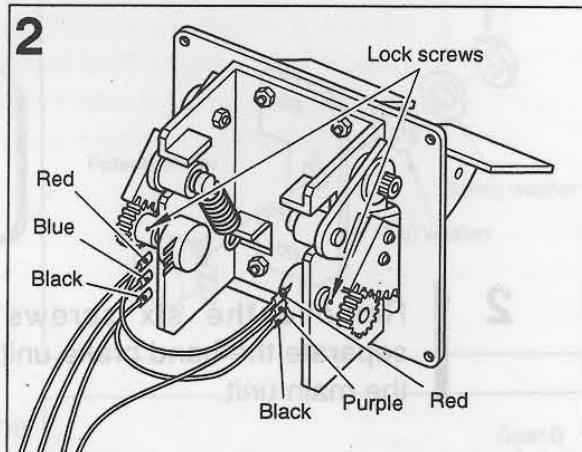
- Potentiometer for accelerator
Fully turn the potentiometer counterclockwise and then turn it back by about 10°.
- Potentiometer for brake
Fully turn the potentiometer clockwise and then turn it back by about 10°



- 2** Tighten up the gears' lock screws. Be careful not to confuse the wiring.

- 3** Attach the back door in position, and turn the maintenance key counterclockwise.

- 4** Secure the back door with the three screws.



- 5** Carry out "5-2 PCB start-up check (self test)" on page 19.

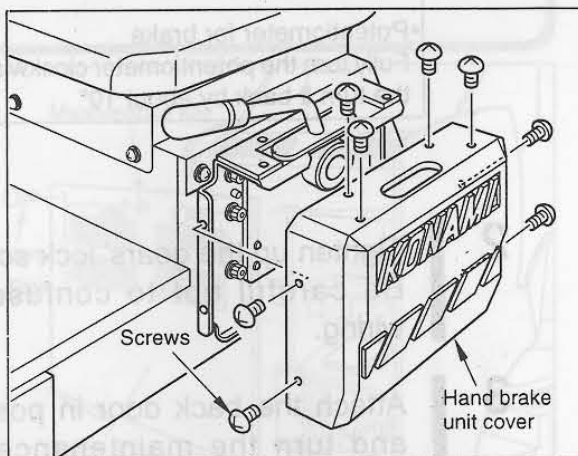
- 6** Call up the "I/O CHECK" screen, show on page 22. Step on the acceleration pedal and brake pedal and make sure the "I" make comes to the MIN and MAX positions.

How to replace the hand brake unit potentiometer

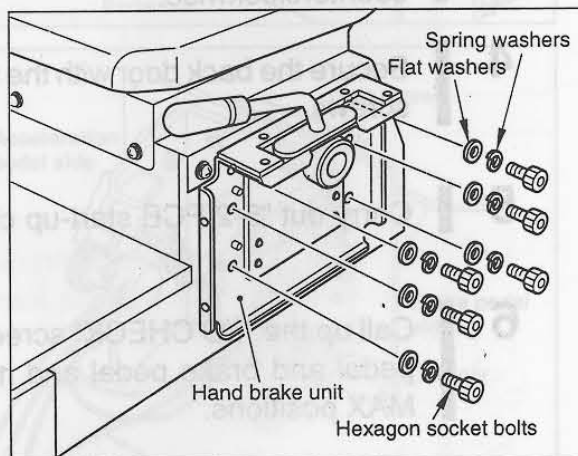


- Before replacing the hand brake unit potentiometer, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.
- Since the hand brake unit is heavy, use due care when handling it.

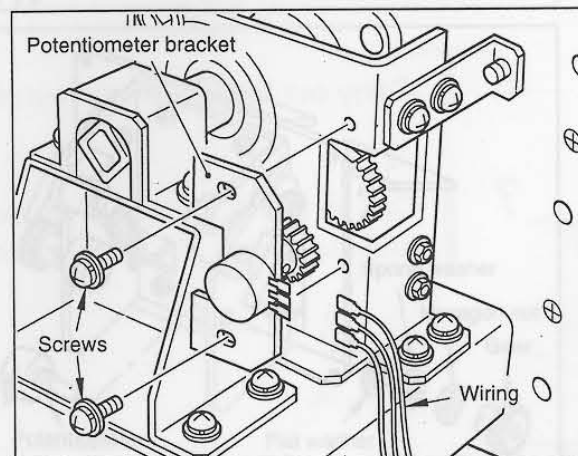
1 Remove the eight screws and detach the hand brake unit cover.



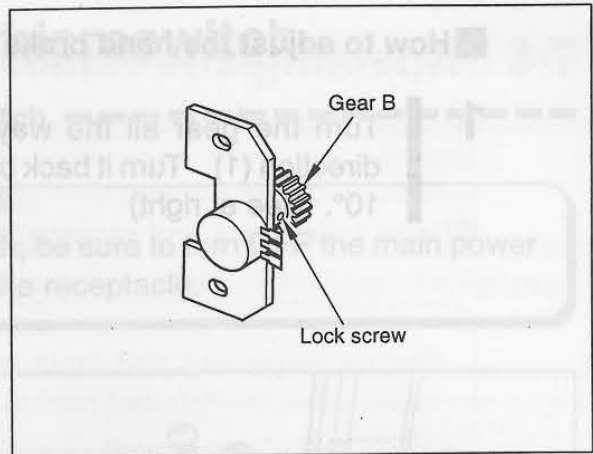
2 Remove the six screws and separate the hand brake unit from the main unit.



3 Disconnect the wiring from the potentiometer, and detach the potentiometer bracket.



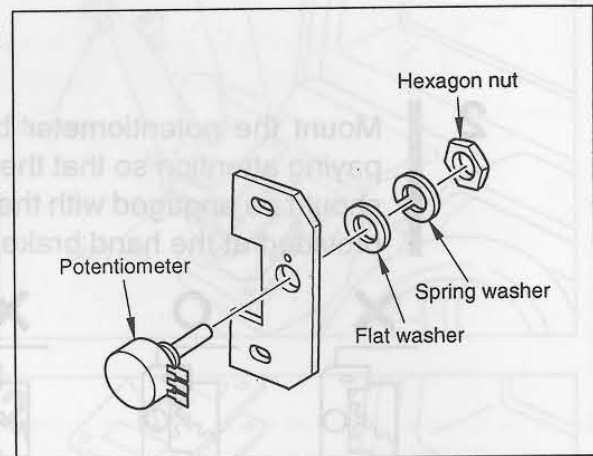
- 4** Loosen the lock screw and pull out the gear B.



- 5** Remove the hexagon nut and separate the potentiometer.

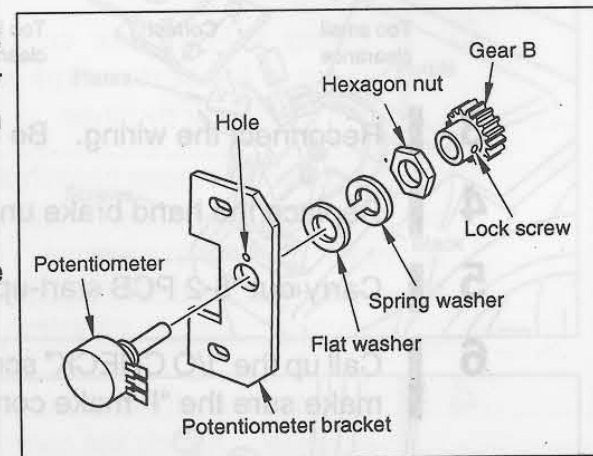
•When replacing the potentiometer with new one, be sure to first make the adjustment on the next page.

MEMO



- 6** Fit the potentiometer projection to the smallest hole of the potentiometer bracket. Tighten up the hexagon nut.

- 7** Install the gear B and fix it with the lock screw.

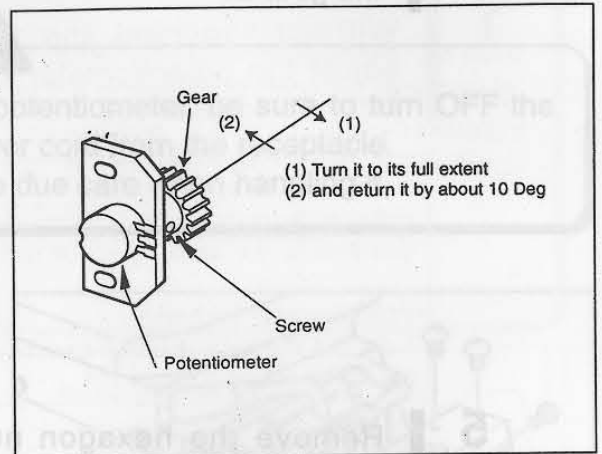


•Place the shift unit in the specified position. See the figure at right.

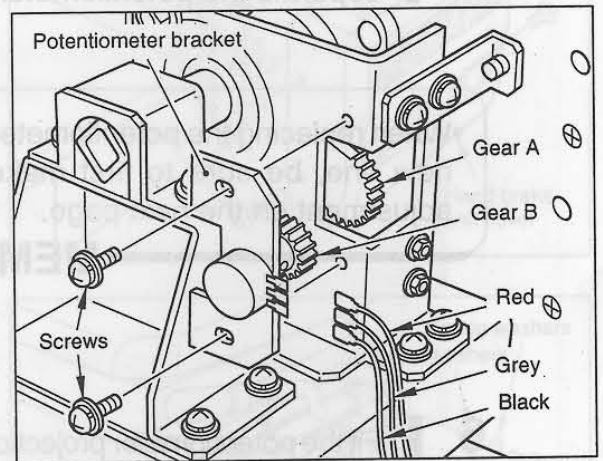
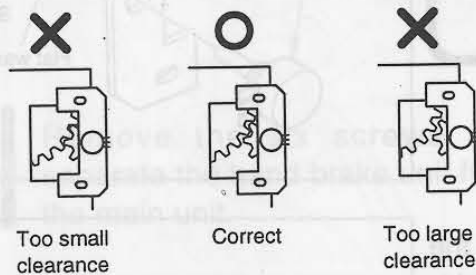
MEMO

■ How to adjust the hand brake unit potentiometer

- 1** Turn the gear all the way in the direction (1). Turn it back by about 10°. (See at right)



- 2** Mount the potentiometer bracket, paying attention so that the gear B should be engaged with the gear A provided at the hand brake unit.



- 3** Reconnect the wiring. Be careful not to confuse them.
- 4** Replace the hand brake unit and the hand brake unit cover into position.
- 5** Carry out "5-2 PCB start-up check (self test)" on page 19.
- 6** Call up the "I/O CHECK" screen, show on page 22. Move the hand brake and make sure the "I" make comes to the MIN and MAX positions.

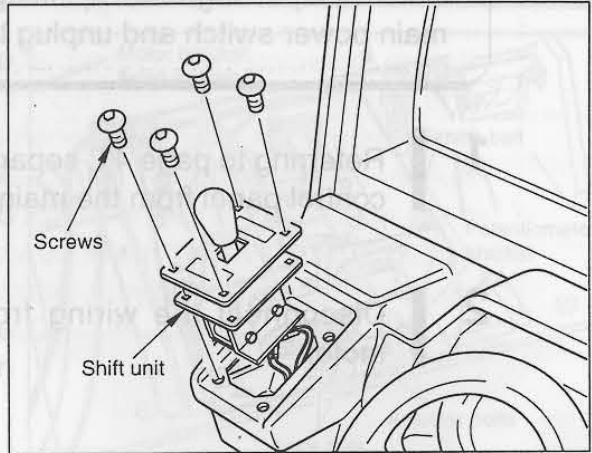
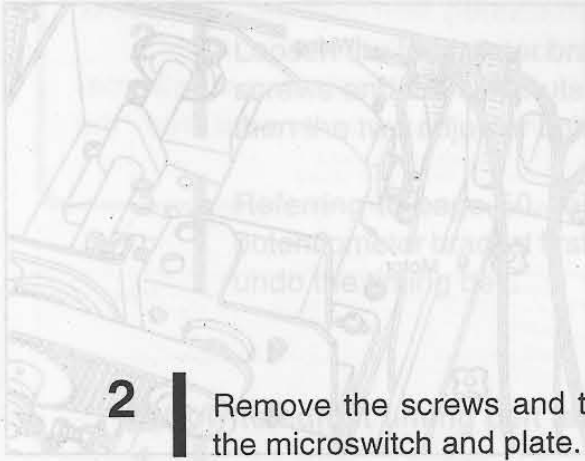
7-5 Replacing the shift unit microswitch

How to replace the shift unit microswitch

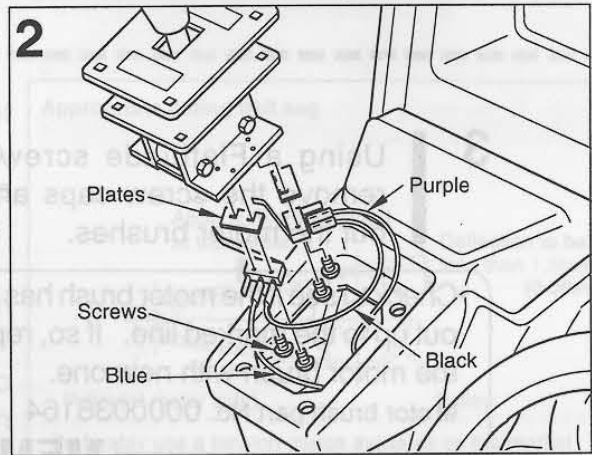


•Before replacing the shift unit microswitch, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.

- 1 Remove the screws and take out the shift unit.



- 2 Remove the screws and take out the microswitch and plate.

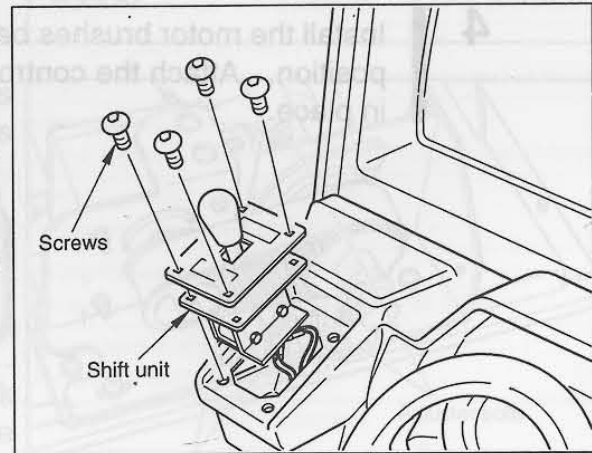


- 3 When replacing the microswitch with new one, be careful to position the microswitch correctly. Do not confuse the wiring.

- 4 Place the shift unit back into position.

•Place the shift unit in the specified position. See the figure at right.

MEMO



7-6 Inspecting and replacing the motor brushes

At the motor of the steering wheel unit are fitted two motor brushes. The motor brushes are worn every time when the machine is operated. It is therefore recommended to do periodical checking about every 2000 hours.

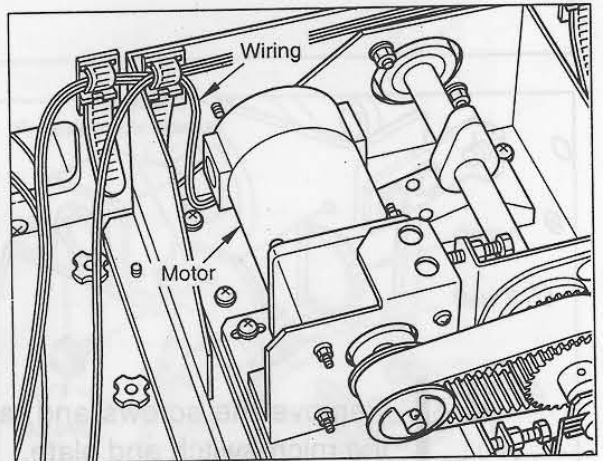
■ How to inspect and replace the motor brushes



• Before inspecting and replacing the motor brushes, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.

1 Referring to page 41, separate the control panel from the main unit.

2 Disconnect the wiring from the motor.



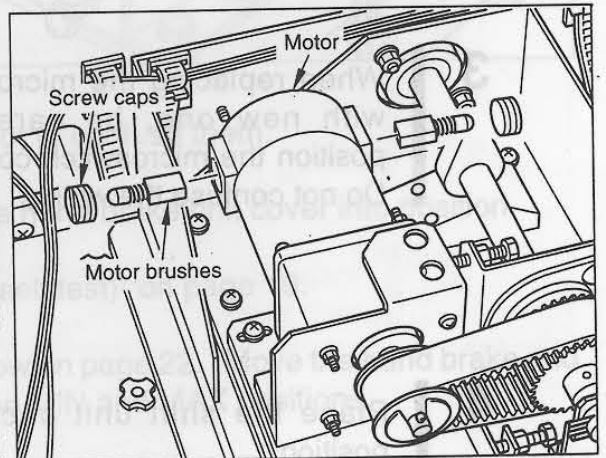
3 Using a Flatblade screwdriver, remove the screw caps and take out the motor brushes.

• Check to see if the motor brush has worn out up to the marked line. If so, replace the motor brush with new one.

Motor brush part No. 0000036164

MEMO

4 Install the motor brushes back into position. Attach the control panel in place.



Place the shift unit in the specified position. See the figure at right.

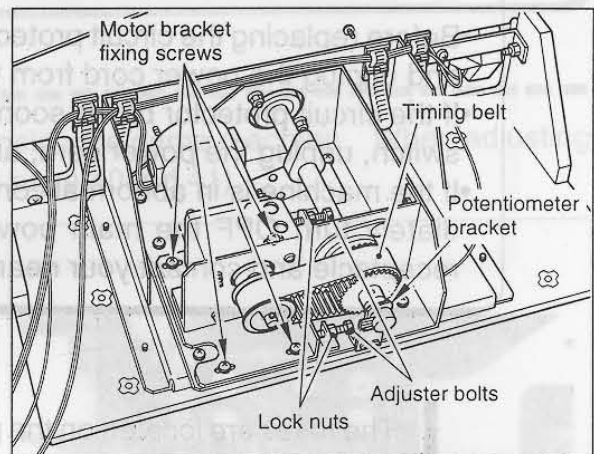
MEMO

7-7 Replacing the timing belt and adjusting its tension

How to replace the timing belt

- Before replacing the timing belt and adjusting its tension, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.

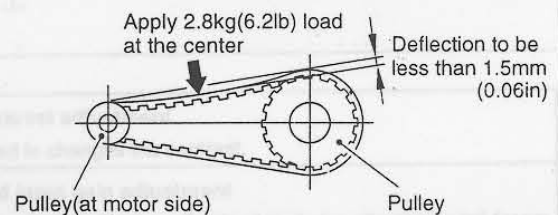
- 1 Referring to page 49, separate the control panel from the main unit.
- 2 Loosen the four motor bracket lock screws and the lock nuts first, and then the two adjuster bolts.
- 3 Referring to page 50, remove the potentiometer bracket first and then undo the timing belt.



How to adjust timing belt tension

- 1 Keeping loose the motor bracket fixing screws and the adjuster bolts, apply a new timing belt on the pulley.
- 2 Make sure the timing belt runs in mesh with the pulley. Tighten the adjuster bolts to achieve the deflection specified in the figure.
- 3 Make sure the deflection is as specified. Tighten up the lock nuts for the adjuster bolts.

Appropriate timing belt sag

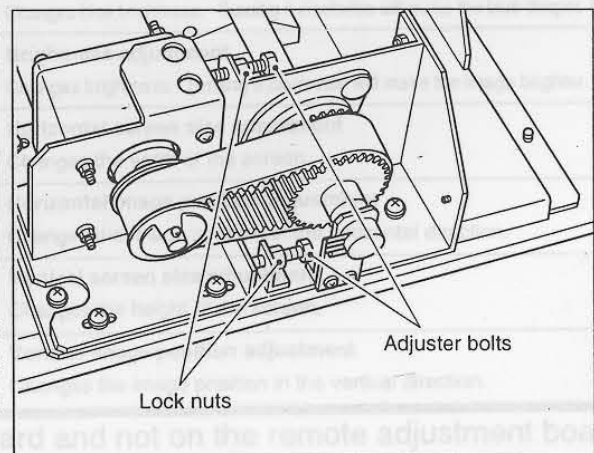


Preferably use a tension gauge available on the market for easier adjustment. For frequency measurement, set to 305 Hz.

- If the timing belt has a wrong deflection, it may break or wear out much earlier than expected.

MEMO

- 4 Tighten the motor bracket lock screws evenly. Finally install the potentiometer bracket back in position.



7-8 Replacing the circuit protector

If an overcurrent or short circuit occurs, the circuit protector will be automatically blow to protect the electric circuits of the game machine. When replacing the circuit protector, turn OFF the main power switch, unplug the power cord from the receptacle, eliminate the cause, and then replace the fuse with the same rating.

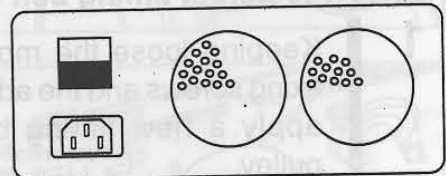
How to reset the circuit protector



- Before replacing the circuit protector, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.
- If the circuit protector blows soon again, immediately turn OFF the main power switch, unplug the power cord, and contact your nearest dealer.
- If the machine is in abnormal conditions and does not operate normally, immediately turn OFF the main power switch, unplug the power cord from the receptacle and contact your nearest dealer.

The fuses are located on the power inlet socket, there are two fuses.

Power unit



MEMO
If the timing belt has a wrong detection, it may break or wear out much earlier than expected.

4
Tighten the motor bracket lock screws evenly. Finally install the potentiometer bracket back in position.

on the following pages.

7-9 Adjusting the monitor

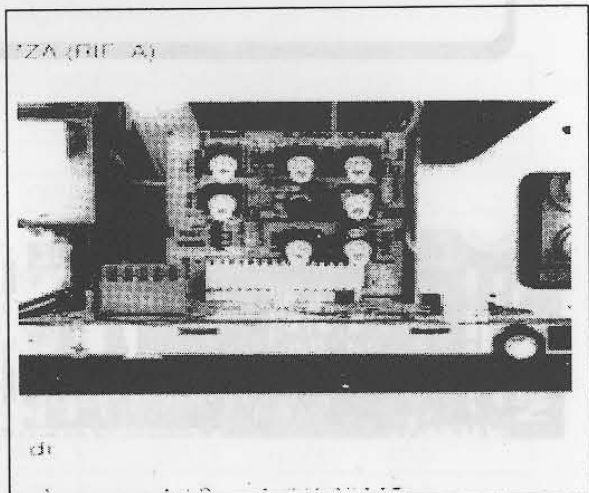
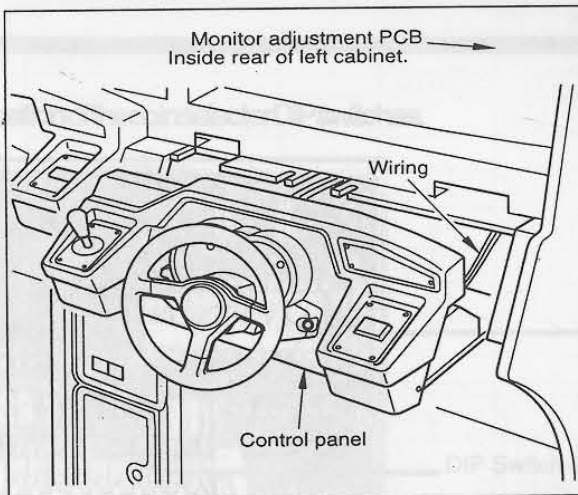
The monitor has already been adjusted at the time of shipment, but it may be readjusted as desired.



- The machine has some internal parts with high voltage. Only a qualified Industry specialists is allowed to open the back door of the machine. With this back door open, be very careful not to touch unnecessary parts.

■ Monitor adjustment PCB

The monitor adjustment PCB is located inside the game machine. When adjusting the monitor, pull the control panel. (See page 40 and 41)



1	CONTRAST	Contrast adjustment Used to changes the contrast.
*2	R.GAIN	Red input gain adjustment Changes red brightness. Turning it clockwise will make the red deeper.
*3	G.GAIN	Green input gain adjustment Changes green brightness. Turning it clockwise will make the green deeper.
*4	B.GAIN	Blue input gain adjustment Changes blue brightness. Turning it clockwise will make the blue deeper.
5	BRIGHT	Brightness adjustment Changes brightness. Turning it clockwise will make the image brighter.
6	H.SIZE	Horizontal screen size adjustment Changes the width of the screen.
7	H.POSI	Horizontal image position adjustment Changes the image position in the horizontal direction.
8	V.SIZE	Vertical screen size adjustment Changes the height of the screen.
9	V.POSI	Vertical image position adjustment Changes the image position in the vertical direction.

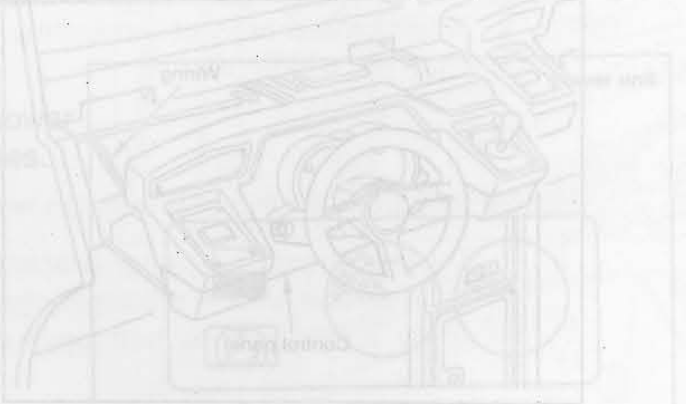
* these are found on the monitor neck board and not on the remote adjustment board.

7-8 Replacing the monitor and adjusting the monitor

If an overcurrent or short circuit occurs, the circuit protector will automatically trip. The monitor has already been adjusted at the time of shipment, but if any adjustment is required, please refer to the following instructions. When adjusting the monitor, please turn the main power switch OFF and the circuit protector OFF to ensure safety. Please refer to the cause and remedy in the next section.

The machine has some internal parts with high voltage. Only specialized technicians are allowed to open the back door of the machine. With the back door open, be very careful not to touch unnecessary parts.

Monitor adjustment PCB is located inside the game machine. When adjusting the monitor, pull the control panel (see page 53) out of the machine and turn the main power switch OFF. The monitor adjustment PCB is located near the control panel. Please refer to the location of the control panel and the monitor adjustment PCB in the next section.



No.	Function	Description
1	CONTRAST	Used to change the contrast.
2	RED GAIN	Changes red brightness. Turning it clockwise will make the red darker.
3	GREEN GAIN	Changes green brightness. Turning it clockwise will make the green darker.
4	BLUE GAIN	Changes blue brightness. Turning it clockwise will make the blue darker.
5	BRIGHT	Changes brightness. Turning it clockwise will make the image brighter.
6	H SIZE	Horizontal screen size adjustment. Changes the width of the screen.
7	H POS	Horizontal image position adjustment. Changes the image position in the horizontal direction.
8	V SIZE	Vertical screen size adjustment. Changes the height of the screen.
9	V POS	Vertical image position adjustment. Changes the image position in the vertical direction.

* These are found on the monitor neck board and not on the remote adjustment board.

7-10 Credit Board Settings

The credit board settings need to be changed in accordance with the currency of each country.

Set dil switches (DIL 1) sw-1 to sw-5 according to the options found in the relevant price of play table on the following pages.

Set dil switches (DIL 2) sw-1 to sw-4, which are located under the IC socket as shown in the fig-1. Sw-4 must always be set to "off" as the game board only operates in common mode. Care must be taken when removing the IC from its socket so as not to damage its leadout pins. After setting the switches replace the IC in its socket with the package ident adjacent to the board edge.



- Be sure to turn the power OFF before setting the DIP switches.
- Be sure to check which type of credit board is fitted before changing any DIP switches.
- There are three types of credit board ,
 - 1) Klingon v1.* EXPORT ONLY
 - 2) Klingon v3.* UK ONLY
 - 3) Klingon plus BOTH

• The position of the coin selector DIP switches.

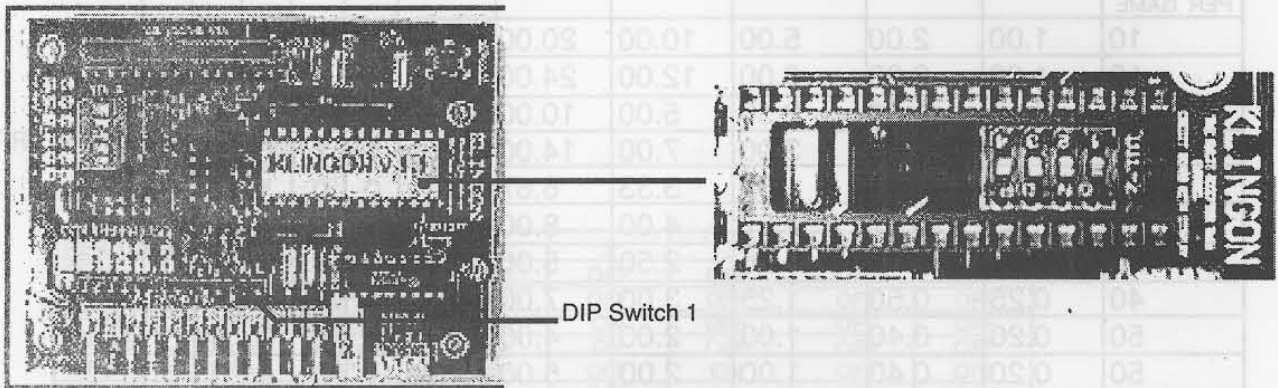


FIG 1

• Settings DIP switches 2

KLINGON CREDIT BOARD V1.* & V3.*

SW1	SW2	SW3	SW4	COIN SETTINGS	COIN 1	COIN 2	COIN 3	COIN 4
OFF	OFF	OFF	-	UK & GREECE	100	50	20	10
OFF	OFF	OFF	-	FINLAND & SWEDEN	10	5	2	1
ON	OFF	OFF	-	BELGIUM	N/U	50	20	N/U
OFF	ON	ON	-	FRANCE, AUSTRIA, NORWAY, DEMARK	20	10	5	1
OFF	OFF	ON	-	HOLLAND	N/U	5	2.5	1
OFF	ON	ON	-	PORTUGAL	200	100	50	N/U
ON	ON	ON	-	GERMANY & SWITZERLAND	5	2	1	N/U
ON	ON	ON	-	SOUTH AFRICA	5	2	1	N/U
ON	ON	ON	-	SPAIN & ITALY	500	200	100	N/U
-	-	-	OFF	DIRECT MODE				
-	-	-	ON	2 CHANNEL MODE				

• Settings DIP switches 2
KLINGON PLUS CREDIT BOARD

SW1	SW2	SW3	SW4	COIN SETTINGS	COIN 1	COIN 2	COIN 3	COIN 4
OFF	OFF	OFF	-	UK & GREECE	100	50	20	10
OFF	OFF	OFF	-	FINLAND & SWEDEN, ISRAEL	10	5	2	1
ON	OFF	OFF	-	BELGIUM	N/U	50	20	N/U
OFF	ON	ON	-	FRANCE, AUSTRIA, NORWAY, DENMARK, CZECH	20	10	5	1
OFF	ON	ON	-	HUNGARY	20	10	N/U	N/U
OFF	ON	OFF	-	MALTA	N/U	1L	50c	25c
OFF	OFF	ON	-	HOLLAND	N/G	5G	2.5G	1G
OFF	ON	ON	-	PORTUGAL	200	100	50	N/U
ON	ON	ON	-	GERMANY	5	2	1	N/U
ON	ON	ON	-	SOUTH AFRICA, SWITZERLAND	5	2	1	N/U
ON	ON	ON	-	SPAIN, ITALY	500	200	100	N/U
-	-	-	OFF	DIRECT MODE				
-	-	-	ON	2 CHANNEL MODE				

PLAY SETTINGS FOR UK (KLINGON V3.*) ONLY

	COIN4	COIN3	COIN2	COIN1	COIN6		DIPSW1				
	10	20	50	100	200						
PER GAME											
10	1.00	2.00	5.00	10.00	20.00	STD	0	0	0	0	0
10	1.00	2.00	6.00	12.00	24.00	BONUS	1	0	0	0	0
20	0.50	1.00	2.50	5.00	10.00	STD	0	1	0	0	0
20	0.50	1.00	3.00	7.00	14.00	BONUS	1	1	0	0	0
30	0.33	0.67	1.67	3.33	6.67	STD	0	0	1	0	0
30	0.33	0.67	1.67	4.00	8.00	BONUS	1	0	1	0	0
40	0.25	0.50	1.25	2.50	5.00	STD	0	1	1	0	0
40	0.25	0.50	1.25	3.00	7.00	BONUS	1	1	1	0	0
50	0.20	0.40	1.00	2.00	4.00	STD	0	0	0	1	0
50	0.20	0.40	1.00	2.00	5.00	BONUS	1	0	0	1	0
60	0.17	0.33	0.83	1.67	3.33	STD	0	1	0	1	0
60	0.17	0.33	0.83	1.67	4.00	BONUS	1	1	0	1	0
80	0.13	0.20	0.63	1.25	2.50	STD	0	0	1	1	0
100	0.10	0.20	0.50	1.00	2.00	STD	1	0	1	1	0
100	0.10	0.20	0.50	1.00	3.00	BONUS	0	1	1	1	0
120	0.08	0.13	0.42	0.83	1.67	STD	1	1	1	1	0
150	0.07	0.10	0.33	0.67	1.33	STD	0	0	0	0	1
200	0.05	0.08	0.25	0.50	1.00	STD	1	0	0	0	1
250	0.04	0.07	0.20	0.40	0.80	STD	0	1	0	0	1
300	0.03	0.06	0.17	0.33	0.67	STD	1	1	0	0	1
350	0.03	0.05	0.14	0.29	0.57	STD	0	0	1	0	1
400	0.03	0.04	0.13	0.25	0.50	STD	1	0	1	0	1
450	0.02	0.04	0.11	0.22	0.44	STD	0	1	1	0	1
500	0.02	0.04	0.10	0.20	0.40	STD	1	1	1	0	1

7 Credit board settings

PLAY SETTINGS FOR EXPORT (KLINGON 1.*) ONLY

SETTINGS DIP SWITCHES 1

PRICE OF PLAY FOR GREECE

PER GAME			1	2	3	4	5
10 play	50=5	100=10	OFF	OFF	OFF	OFF	OFF
10 play	50=5	100=11	ON	OFF	OFF	OFF	OFF
10 play	50=6	100=12	OFF	ON	OFF	OFF	OFF
20 play	50=2 1/2	100=5	ON	ON	OFF	OFF	OFF
20 play	50=3	100=6	OFF	OFF	ON	OFF	OFF
20 play	50=3	100=7	ON	OFF	ON	OFF	OFF
30 play	50=1 2/3	100=1 1/3	OFF	ON	ON	OFF	OFF
30 play	50=2	100=4	ON	ON	ON	OFF	OFF
30 play	50=2	100=5	OFF	OFF	OFF	ON	OFF
40 play	50=1 1/4	100=2 1/2	ON	OFF	OFF	ON	OFF
40 play	50=1 1/4	100=3	OFF	ON	OFF	ON	OFF
50 play	50=1	100=2	ON	ON	OFF	ON	OFF
50 play	50=1	100=3	OFF	OFF	ON	ON	OFF
60 play	50=5/6	100=1 2/5	ON	OFF	ON	ON	OFF
60 play	50=5/6	100=2	OFF	ON	ON	ON	OFF
80 play	50=5/8	100=1 1/4	ON	ON	ON	ON	OFF
100 play	50=1/2	100=1	OFF	OFF	OFF	OFF	ON
100 play	50=1/2	100=1 200=3	ON	OFF	OFF	OFF	ON
200 play	50=1/4	100=1/2	OFF	ON	OFF	OFF	ON
200 play	50=1/4	100=1/2 500=3	ON	ON	OFF	OFF	ON
300 play	no bonuses		OFF	OFF	ON	OFF	ON
300 play		500=3	ON	OFF	ON	OFF	ON
500 play	no bonuses		OFF	ON	ON	OFF	ON
500 play		1000=3	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

PRICE OF PLAY FOR BELGIUM

PER GAME			1	2	3	4	5
5F play	20F=4	50F=10	OFF	OFF	OFF	OFF	OFF
5F play	20F=4	50F=11	ON	OFF	OFF	OFF	OFF
5F play	20F=5	50F=12	OFF	ON	OFF	OFF	OFF
10F play	20F=2	50F=5	ON	ON	OFF	OFF	OFF
10F play	20F=2	50F=5	OFF	OFF	ON	OFF	OFF
10F play	20F=3	50F=7	ON	OFF	ON	OFF	OFF
15F play	20F=1 1/3	50F=3 1/3	OFF	ON	ON	OFF	OFF
15F play	20F=1 1/3	50F=4	ON	ON	ON	OFF	OFF
15F play	20F=2	50F=5	OFF	OFF	OFF	ON	OFF
20F play	-	50F=2 1/2	ON	OFF	OFF	ON	OFF
20F play	-	50F=3	OFF	ON	OFF	ON	OFF
20F play	50F=3	100F=7	ON	ON	OFF	ON	OFF
25F play	20F=4/5	50F=2	OFF	OFF	ON	ON	OFF
25F play	20F=4/5	50F=2 100F=5	ON	OFF	ON	ON	OFF
25F play	20F=4/5	50F=3 100F=6	OFF	ON	ON	ON	OFF
30F play	20F=2/3	50F=1 1/2	ON	ON	ON	ON	OFF
30F play	20F=2/3	50F=1 1/3 100F=4	OFF	OFF	OFF	OFF	ON
30F play	20F=2/3	50F=2 100F=4	ON	OFF	OFF	OFF	ON
40F play	20F=1/2	50F=1 1/4	OFF	ON	OFF	OFF	ON
40F play	20F=1/2	50F=2 1/4 100=3	ON	ON	OFF	OFF	ON
50F play	NO BONUSSES		OFF	OFF	ON	OFF	ON
50F play		100F=3	ON	OFF	ON	OFF	ON
			OFF	ON	ON	OFF	ON
			ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

PRICE OF PLAY FOR SPAIN/ITALY

PER GAME			1	2	3	4	5
100 play	500=5	1000=10	OFF	OFF	OFF	OFF	OFF
100 play	500=5	1000=11	ON	OFF	OFF	OFF	OFF
100 play	500=6	1000=12	OFF	ON	OFF	OFF	OFF
200 play	500=2 1/2	1000=5	ON	ON	OFF	OFF	OFF
200 play	500=3	1000=6	OFF	OFF	ON	OFF	OFF
200 play	500=3	1000=7	ON	OFF	ON	OFF	OFF
300 play	500=1 2/3	1000=1 1/3	OFF	ON	ON	OFF	OFF
300 play	500=2	1000=4	ON	ON	ON	OFF	OFF
300 play	500=2	1000=5	OFF	OFF	OFF	ON	OFF
400 play	500=1 1/4	1000=2 1/2	ON	OFF	OFF	ON	OFF
400 play	500=1 1/4	1000=3	OFF	ON	OFF	ON	OFF
500 play	500=1	1000=2	ON	ON	OFF	ON	OFF
500 play	500=1	1000=3	OFF	OFF	ON	ON	OFF
600 play	500=5/6	1000=1 2/5	ON	OFF	ON	ON	OFF
600 play	500=5/6	1000=2	OFF	ON	ON	ON	OFF
800 play	500=5/8	1000=1 1/4	ON	ON	ON	ON	OFF
1000 play	500=1/2	1000=1	OFF	OFF	OFF	OFF	ON
1000 play	500=1/2	1000=1 2000=3	ON	OFF	OFF	OFF	ON
2000 play	500=1/4	1000=1/2	OFF	ON	OFF	OFF	ON
2000 play	500=1/4	1000=1/2 5000=3	ON	ON	OFF	OFF	ON
3000 play	NO BONUSES		OFF	OFF	ON	OFF	ON
3000 play		5000=3	ON	OFF	ON	OFF	ON
5000 play	NO BONUSES		OFF	ON	ON	OFF	ON
5000 play		10,000=3	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

PRICE OF PLAY FOR DENMARK, SWEDEN, NORWAY, FINLAND & CZECH REP.

PER GAME			1	2	3	4	5
1Kr play	5Kr=5CR	10Kr=10CR	OFF	OFF	OFF	OFF	OFF
1Kr play	5Kr=5CR	10Kr=11CR	ON	OFF	OFF	OFF	OFF
1Kr play	5Kr=6CR	10Kr=12CR	OFF	ON	OFF	OFF	OFF
2Kr play	5Kr=2.5CR	10Kr=5CR	ON	ON	OFF	OFF	OFF
2Kr play	5Kr=3CR	10Kr=6CR	OFF	OFF	ON	OFF	OFF
2Kr play	5Kr=3CR	10Kr=7CR	ON	OFF	ON	OFF	OFF
3Kr play	5Kr=1.6CR	10Kr=3.3CR	OFF	ON	ON	OFF	OFF
3Kr play	5Kr=2CR	10Kr=4CR	ON	ON	ON	OFF	OFF
3Kr play	5Kr=2CR	10Kr=5CR	OFF	OFF	OFF	ON	OFF
4Kr play	5Kr=1.25CR	10Kr=2.5CR	ON	OFF	OFF	ON	OFF
4Kr play	5Kr=1.25CR	10Kr=3CR	OFF	ON	OFF	ON	OFF
5Kr play	5Kr=1CR	10Kr=2CR	ON	ON	OFF	ON	OFF
5Kr play	5Kr=1CR	10Kr=3CR	OFF	OFF	ON	ON	OFF
6Kr play	5Kr=0.83CR	10Kr=1.25CR	ON	OFF	ON	ON	OFF
6Kr play	5Kr=0.83CR	10Kr=2CR	OFF	ON	ON	ON	OFF
8Kr play	5Kr=0.62CR	10Kr=1.25CR	ON	ON	ON	ON	OFF
10Kr play	5Kr=0.5CR	10Kr=1CR	OFF	OFF	OFF	OFF	ON
10Kr play	5Kr=0.5CR	20Kr=3	ON	OFF	OFF	OFF	ON
20Kr play	5Kr=0.25CR	10Kr=0.5CR	OFF	ON	OFF	OFF	ON
20Kr play	5Kr=0.25CR	10Kr=0.5 50Kr=3CR	ON	ON	OFF	OFF	ON
30Kr play	NO BONUSES		OFF	OFF	ON	OFF	ON
30Kr play		50Kr=3CR	ON	OFF	ON	OFF	ON
50Kr play	NO BONUSES		OFF	ON	ON	OFF	ON
50Kr play		100Kr=3CR	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

METER OPERATES ON 1KR=1 PULSE

FINLAND/SWEDEN COINAGE: COIN 1=10Kr, COIN2=5Kr, COIN3=2Kr, COIN4=1Kr

DENMARK/NORWAY COINAGE : COIN1 =20Kr, COIN2=10Kr, COIN3=5Kr COIN4=1Kr

7 Credit board settings

PRICE OF PLAY FOR GERMANY

PRICE OF PLAY FOR FRANCE/SWITZERLAND

PER GAME			1	2	3	4	5
1DM play	5DM=5CR	10DM=10CR	OFF	OFF	OFF	OFF	OFF
1DM play	5DM=5CR	10DM=11CR	ON	OFF	OFF	OFF	OFF
1DM play	5DM=6CR	10DM=12CR	OFF	ON	OFF	OFF	OFF
2DM play	5DM=2.5CR	10DM=5CR	ON	ON	OFF	OFF	OFF
2DM play	5DM=3CR	10DM=6CR	OFF	OFF	ON	OFF	OFF
2DM play	5DM=3CR	10DM=7CR	ON	OFF	ON	OFF	OFF
3DM play	5DM=1.6CR	10DM=3.3CR	OFF	ON	ON	OFF	OFF
3DM play	5DM=2CR	10DM=4CR	ON	ON	ON	OFF	OFF
3DM play	5DM=2CR	10DM=5CR	OFF	OFF	OFF	ON	OFF
4DM play	5DM=1.25CR	10DM=2.5CR	ON	OFF	OFF	ON	OFF
4DM play	5DM=1.25CR	10DM=3CR	OFF	ON	OFF	ON	OFF
5DM play	5DM=1CR	10DM=2CR	ON	ON	OFF	ON	OFF
5DM play	5DM=1CR	10DM=3CR	OFF	OFF	ON	ON	OFF
6DM play	5DM=0.83CR	10DM=1.25CR	ON	OFF	ON	ON	OFF
6DM play	5DM=0.83CR	10DM=2CR	OFF	ON	ON	ON	OFF
8DM play	5DM=0.62CR	10DM=1.25CR	ON	ON	ON	ON	OFF
10DM play	5DM=0.5CR	10DM=1CR	OFF	OFF	OFF	OFF	ON
10DM play	5DM=0.5CR	20DM=3	ON	OFF	OFF	OFF	ON
20DM play	5DM=0.25CR	10DM=0.5CR	OFF	ON	OFF	OFF	ON
20DM play	5DM=0.25CR	10DM=0.5 50DM=3CR	ON	ON	OFF	OFF	ON
30DM play	NO BONUSES		OFF	OFF	ON	OFF	ON
30DM play		50DM=3CR	ON	OFF	ON	OFF	ON
50DM play	NO BONUSES		OFF	ON	ON	OFF	ON
50DM play		100DM=3CR	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

PRICE OF PLAY FOR HOLLAND

PER GAME			1	2	3	4	5
1G play	NO BONUSES		OFF	OFF	OFF	OFF	OFF
1G play	2.5G=3	5G=6	ON	OFF	OFF	OFF	OFF
1G play	2.5G=3	5G=7	OFF	ON	OFF	OFF	OFF
2G play	NO BONUSES	50F=5	ON	ON	OFF	OFF	OFF
2G play	5G=3		OFF	OFF	ON	OFF	OFF
2G play	5G=3	10G=7	ON	OFF	ON	OFF	OFF
3G play	NO BONUSES		OFF	ON	ON	OFF	OFF
3G play	5G=2		ON	ON	ON	OFF	OFF
3G play	5G=2	10G=5	OFF	OFF	OFF	ON	OFF
4G play	NO BONUSES		ON	OFF	OFF	ON	OFF
4G play	10G=3		OFF	ON	OFF	ON	OFF
5G play	NO BONUSES		ON	ON	OFF	ON	OFF
5G play	10G=3		OFF	OFF	ON	ON	OFF
6G play	NO BONUSES		ON	OFF	ON	ON	OFF
6G play	15G=3		OFF	ON	ON	ON	OFF
8G play	NO BONUSES		ON	ON	ON	ON	OFF
8G play	20G=3		OFF	OFF	OFF	OFF	ON
10G play	NO BONUSES		ON	OFF	OFF	OFF	ON
10G play	20G=3		OFF	ON	OFF	OFF	ON
			ON	ON	OFF	OFF	ON
			OFF	OFF	ON	OFF	ON
			ON	OFF	ON	OFF	ON
			OFF	ON	ON	OFF	ON
			ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

METER OPERATES ON 0.5G=1 PULSE

COINAGE: COIN 1=N/U, COIN2=5G, COIN3=2.5G, COIN4=1G

PRICE OF PLAY FOR PORTUGAL

PER GAME			1	2	3	4	5
10Esc play	50Esc=5	100Esc=10	OFF	OFF	OFF	OFF	OFF
10Esc play	50Esc=5	100Esc=11	ON	OFF	OFF	OFF	OFF
10Esc play	50Esc=6	100Esc=12	OFF	ON	OFF	OFF	OFF
20Esc play	50Esc=2 1/2	100Esc=5	ON	ON	OFF	OFF	OFF
20Esc play	50Esc=3	100Esc=6	OFF	OFF	ON	OFF	OFF
20Esc play	50Esc=3	100Esc=7	ON	OFF	ON	OFF	OFF
30Esc play	50Esc=1 2/3	100Esc=1 1/3	OFF	ON	ON	OFF	OFF
30Esc play	50Esc=2	100Esc=4	ON	ON	ON	OFF	OFF
30Esc play	50Esc=2	100Esc=5	OFF	OFF	OFF	ON	OFF
40Esc play	50Esc=1 1/4	100Esc=2 1/2	ON	OFF	OFF	ON	OFF
40Esc play	50Esc=1 1/4	100Esc=3	OFF	ON	OFF	ON	OFF
50Esc play	50Esc=1	100Esc=2	ON	ON	OFF	ON	OFF
50Esc play	50Esc=1	100Esc=3	OFF	OFF	ON	ON	OFF
60Esc play	50Esc=5/6	100Esc=1 2/5	ON	OFF	ON	ON	OFF
60Esc play	50Esc=5/6	100Esc=2	OFF	ON	ON	ON	OFF
80Esc play	50Esc=5/8	100Esc=1 1/4	ON	ON	ON	ON	OFF
100Esc play	50Esc=1/2	100Esc=1	OFF	OFF	OFF	OFF	ON
100Esc play	50Esc=1/2	100Esc=1 200=3	ON	OFF	OFF	OFF	ON
200Esc play	50Esc=1/4	100Esc=1/2	OFF	ON	OFF	OFF	ON
200Esc play	50Esc=1/4	100Esc=1/2 500=3	ON	ON	OFF	OFF	ON
300Esc play	NO BONUSES		OFF	OFF	ON	OFF	ON
300Esc play		500Esc=3	ON	OFF	ON	OFF	ON
500Esc play	NO BONUSES		OFF	ON	ON	OFF	ON
500Esc play		1000Esc=3	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

PRICE OF PLAY FOR AUSTRIA

PER GAME			1	2	3	4	5
1Sch	5Sch=5	10Sch=10	OFF	OFF	OFF	OFF	OFF
1Sch	5Sch=5	10Sch=11	ON	OFF	OFF	OFF	OFF
1Sch	5Sch=6	10Sch=12	OFF	ON	OFF	OFF	OFF
2Sch	5Sch=2 1/2	10Sch=5	ON	ON	OFF	OFF	OFF
2Sch play	5Sch=3	10Sch=6	OFF	OFF	ON	OFF	OFF
2Sch play	5Sch=3	10Sch=7	ON	OFF	ON	OFF	OFF
3Sch play	5Sch=1 2/3	10Sch=3 1/3	OFF	ON	ON	OFF	OFF
3Sch play	5Sch=2	10Sch=4	ON	ON	ON	OFF	OFF
3Sch play	5Sch=2	10Sch=5	OFF	OFF	OFF	ON	OFF
4Sch play	5Sch=1 1/4	10Sch=2 1/2	ON	OFF	OFF	ON	OFF
4Sch play	5Sch=1 1/4	10Sch=3	OFF	ON	OFF	ON	OFF
5Sch play	5Sch=1	10Sch=2	ON	ON	OFF	ON	OFF
5Sch play	5Sch=1	10Sch=3	OFF	OFF	ON	ON	OFF
6Sch play	5Sch=5/6	10Sch=1 1/4	ON	OFF	ON	ON	OFF
6Sch play	5Sch=5/6	10Sch=2	OFF	ON	ON	ON	OFF
8Sch play	5Sch=5/8	10Sch=1 1/4	ON	ON	ON	ON	OFF
10Sch play	5Sch=1/2	10Sch=1	OFF	OFF	OFF	OFF	ON
10Sch play	5Sch=1/2	10Sch=1 20Sch=3	ON	OFF	OFF	OFF	ON
20Sch play	5Sch=1/4	10Sch=1/2	OFF	ON	OFF	OFF	ON
20Sch play	5Sch=1/4	10Sch=1/2 50Sch=3	ON	ON	OFF	OFF	ON
30Sch play	NO BONUSES		OFF	OFF	ON	OFF	ON
30Sch play	50Sch=3		ON	OFF	ON	OFF	ON
50Sch play	NO BONUSES		OFF	ON	ON	OFF	ON
50Sch play		100Sch=3	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

COINAAGE : COIN1 =20Sch, COIN2=10Sch, COIN3=5Sch COIN4=1Sch

7 Credit board settings

PRICE OF PLAY FOR FRANCE/SWITZERLAND

PER GAME	5F=5	10F=10	1	2	3	4	5
1F play	5F=5	10F=10	OFF	OFF	OFF	OFF	OFF
1F play	5F=5	10F=11	ON	OFF	OFF	OFF	OFF
1F play	5F=6	10F=12	OFF	ON	OFF	OFF	OFF
2F play	5F=2 1/2	10F=5	ON	ON	OFF	OFF	OFF
2F play	5F=3	10F=6	OFF	OFF	ON	OFF	OFF
2F play	5F=3	10F=7	ON	OFF	ON	OFF	OFF
3F play	5F=1 2/3	10F=1 1/3	OFF	ON	ON	OFF	OFF
3F play	5F=2	10F=4	ON	ON	ON	OFF	OFF
3F play	5F=2	10F=5	OFF	OFF	OFF	ON	OFF
4F play	5F=1 1/4	10F=2 1/2	ON	OFF	OFF	ON	OFF
4F play	5F=1 1/4	10F=3	OFF	ON	OFF	ON	OFF
5F play	5F=1	10F=2	ON	ON	OFF	ON	OFF
5F play	5F=1	10F=3	OFF	OFF	ON	ON	OFF
6F play	5F=5/6	10F=1 2/5	ON	OFF	ON	ON	OFF
6F play	5F=5/6	10F=2	OFF	ON	ON	ON	OFF
8F play	5F=5/8	10F=1 1/4	ON	ON	ON	ON	OFF
10F play	5F=1/2	10F=1	OFF	OFF	OFF	OFF	ON
10F play	5F=1/2	10F=1 20F=3	ON	OFF	OFF	OFF	ON
20F play	5F=1/4	10F=1/2	OFF	ON	OFF	OFF	ON
20F play	5F=1/4	10F=1/2 50F=3	ON	ON	OFF	OFF	ON
			OFF	OFF	ON	OFF	ON
			ON	OFF	ON	OFF	ON
			OFF	ON	ON	OFF	ON
			ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

PRICE OF PLAY FOR SOUTH AFRICA

PER GAME	5R=5CR	10R=10CR	1	2	3	4	5
1R play	5R=5CR	10R=10CR	OFF	OFF	OFF	OFF	OFF
1R play	5R=5CR	10R=11CR	ON	OFF	OFF	OFF	OFF
1R play	5R=6CR	10R=12CR	OFF	ON	OFF	OFF	OFF
2R play	5R=2.5CR	10R=5CR	ON	ON	OFF	OFF	OFF
2R play	5R=3CR	10R=6CR	OFF	OFF	ON	OFF	OFF
2R play	5R=3CR	10R=7CR	ON	OFF	ON	OFF	OFF
3R play	5R=1.6CR	10R=3.3CR	OFF	ON	ON	OFF	OFF
3R play	5R=2CR	10R=4CR	ON	ON	ON	OFF	OFF
3R play	5R=2CR	10R=5CR	OFF	OFF	OFF	ON	OFF
4R play	5R=1.25CR	10R=2.5CR	ON	OFF	OFF	ON	OFF
4R play	5R=1.25CR	10R=3CR	OFF	ON	OFF	ON	OFF
5R play	5R=1CR	10R=2CR	ON	ON	OFF	ON	OFF
5R play	5R=1CR	10R=3CR	OFF	OFF	ON	ON	OFF
6R play	5R=0.83CR	10R=1.25CR	ON	OFF	ON	ON	OFF
6R play	5R=0.83CR	10R=2CR	OFF	ON	ON	ON	OFF
8R play	5R=0.62CR	10R=1.25CR	ON	ON	ON	ON	OFF
10R play	5R=0.5CR	10R=1CR	OFF	OFF	OFF	OFF	ON
10R play	5R=0.5CR	10R=3CR	ON	OFF	OFF	OFF	ON
20R play	5R=0.25CR	10R=0.5CR	OFF	ON	OFF	OFF	ON
20R play	5R=0.25CR	10R=0.5 50R=3CR	ON	ON	OFF	OFF	ON
30R play	NO BONUSES		OFF	OFF	ON	OFF	ON
30R play		50R=3CR	ON	OFF	ON	OFF	ON
50R play	NO BONUSES		OFF	ON	ON	OFF	ON
50R play		100R=3CR	ON	ON	ON	OFF	ON
FREE PLAY OPTIONS			ON	ON	ON	ON	ON

METER OPERATES ON 1 RAND = 1 PULSE
 COINAGE : COIN1 =5R, COIN2=2R, COIN3=1 RAND

THE FOLLOWING TABLES ARE PRICE OF PLAY AND BONUS AWARDS
FOR THE KLINGON PLUS CREDIT PCB ONLY.
PRICE OF PLAY FOR UK & GREECE

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
10	10=1			OFF	OFF	OFF	OFF	OFF
10	10=1	50=6		ON	OFF	OFF	OFF	OFF
20	20=1			OFF	ON	OFF	OFF	OFF
20	20=1	50=3		ON	ON	OFF	OFF	OFF
30	30=1			OFF	OFF	ON	OFF	OFF
30	30=1	50=2		ON	OFF	ON	OFF	OFF
40	40=1			OFF	ON	ON	OFF	OFF
40	40=1	100=3		ON	ON	ON	OFF	OFF
50	50=1			OFF	OFF	OFF*	ON	OFF
50	50=1	200=5		ON	OFF	OFF	ON	OFF
60	60=1			OFF	ON	OFF	ON	OFF
60	60=1	100=2		ON	ON	OFF	ON	OFF
80	80=1			OFF	OFF	ON	ON	OFF
80	80=1	200=3		ON	OFF	ON	ON	OFF
100	100=1			OFF	ON	ON	ON	OFF
100	100=1	200=3		ON	ON	ON	ON	OFF
120	120=1			OFF	OFF	OFF	OFF	ON
150	150=1			ON	OFF	OFF	OFF	ON
200	200=1			OFF	ON	OFF	OFF	ON
250	250=1			ON	ON	OFF	OFF	ON
300	300=1			OFF	OFF	ON	OFF	ON
350	350=1			ON	OFF	ON	OFF	ON
400	400=1			OFF	ON	ON	OFF	ON
450	450=1			ON	ON	ON	OFF	ON
500	500=1			OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: UK = PENCE
GREECE = DRACHMA

PRICE OF PLAY FOR AUSTRIA, SWEDEN, FINLAND, FRANCE, CZECH REP
NORWAY, DENMARK AND HUNGARY

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
1	1=1			OFF	OFF	OFF	OFF	OFF
1	1=1	5=6		ON	OFF	OFF	OFF	OFF
2	2=1			OFF	ON	OFF	OFF	OFF
2	2=1	5=3		ON	ON	OFF	OFF	OFF
3	3=1			OFF	OFF	ON	OFF	OFF
3	3=1	5=3		ON	OFF	ON	OFF	OFF
4	4=1			OFF	ON	ON	OFF	OFF
4	4=1	10=3		ON	ON	ON	OFF	OFF
5	5=1			OFF	OFF	OFF	ON	OFF
5	5=1	10=2	20=5	ON	OFF	OFF	ON	OFF
6	6=1			OFF	ON	OFF	ON	OFF
6	6=1	10=2		ON	ON	OFF	ON	OFF
8	8=1		20=3	OFF	OFF	ON	ON	OFF
8	8=1			ON	OFF	ON	ON	OFF
10	10=1		20=3	OFF	ON	ON	ON	OFF
10	10=1			ON	ON	ON	ON	OFF
12	12=1			OFF	OFF	OFF	OFF	ON
15	15=1			ON	OFF	OFF	OFF	ON
20	20=1			OFF	ON	OFF	OFF	ON
25	25=1			ON	ON	OFF	OFF	ON
30	30=1			OFF	OFF	ON	OFF	ON
35	35=1			ON	OFF	ON	OFF	ON
40	40=1			OFF	ON	ON	OFF	ON
45	45=1			ON	ON	ON	OFF	ON
50	50=1			OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: AUSTRIA=SHILLING, SWEDEN=KRONOR, NORWAY=KRONER, FINLAND=MARKKA, CZECH REP=KRONA,
FRANCE=FRANC, DENMARK=KRONER AND HUNGARY=FORINT.

7 Credit board settings

PRICE OF PLAY FOR MALTA

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
				OFF	OFF	OFF	OFF	OFF
				ON	OFF	OFF	OFF	OFF
25c	25=1	50=2	1L=4	OFF	ON	OFF	OFF	OFF
25c			1L=5	ON	ON	OFF	OFF	OFF
				OFF	OFF	ON	OFF	OFF
50c	50=1		1L=3	ON	OFF	ON	OFF	OFF
50c	50=1		1L=2	OFF	ON	ON	OFF	OFF
50c	50=1	1L=2	3L=7	ON	ON	ON	OFF	OFF
				OFF	OFF	OFF	ON	OFF
				ON	OFF	OFF	ON	OFF
75c	75=1		3L=4	OFF	ON	OFF	ON	OFF
75c	75=1		2L=3	ON	ON	OFF	ON	OFF
1L	1L=1			OFF	OFF	ON	ON	OFF
1L	1L=1		5L=6	ON	OFF	ON	ON	OFF
1.5L	1.5L=1	2.5L=2	5L=4	OFF	ON	ON	ON	OFF
1.5L	1.5L=1	2.5L=3	5L=6	ON	ON	ON	ON	OFF
1.5L	1.5L=1			OFF	OFF	OFF	OFF	ON
2L	2L=1			ON	OFF	OFF	OFF	ON
2.5L	2.5L=1			OFF	ON	OFF	OFF	ON
3.5L	3.5L=1			ON	ON	OFF	OFF	ON
4L	4L=1			OFF	OFF	ON	OFF	ON
4.5L	4.5L=1			ON	OFF	ON	OFF	ON
5L	5L=1			OFF	ON	ON	OFF	ON
6L	6L=1			ON	ON	ON	OFF	ON
7L	7L=1		13L=2	OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: UK = PENCE
GREECE = DRACHMA

PRICE OF PLAY FOR SWITZERLAND

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
1	1=1			OFF	OFF	OFF	OFF	OFF
1	1=1	5=6		ON	OFF	OFF	OFF	OFF
2	2=1			OFF	ON	OFF	OFF	OFF
2	2=1	5=3		ON	ON	OFF	OFF	OFF
3	3=1			OFF	OFF	ON	OFF	OFF
3	3=1	5=2		ON	OFF	ON	OFF	OFF
4	4=1			OFF	ON	ON	OFF	OFF
4	4=1	10=3		ON	ON	ON	OFF	OFF
5	5=1			OFF	OFF	OFF	ON	OFF
5	5=1	10=2	20=5	ON	OFF	OFF	ON	OFF
6	6=1			OFF	ON	OFF	ON	OFF
6	6=1	10=2	20=4	ON	ON	OFF	ON	OFF
8	8=1			OFF	OFF	ON	ON	OFF
8	8=1		20=3	ON	OFF	ON	ON	OFF
10	10=1			OFF	ON	ON	ON	OFF
10	10=1		20=3	ON	ON	ON	ON	OFF
12	12=1			OFF	OFF	OFF	OFF	ON
15	15=1			ON	OFF	OFF	OFF	ON
20	20=1			OFF	ON	OFF	OFF	ON
25	25=1			ON	ON	OFF	OFF	ON
30	30=1			OFF	OFF	ON	OFF	ON
35	35=1			ON	OFF	ON	OFF	ON
40	40=1			OFF	ON	ON	OFF	ON
45	45=1			ON	ON	ON	OFF	ON
50	50=1			OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: SWITZERLAND=SWISS FRANC

PRICE OF PLAY FOR GERMANY

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
1	1=1			OFF	OFF	OFF	OFF	OFF
1	1=1	5=6		ON	OFF	OFF	OFF	OFF
2	2=1			OFF	ON	OFF	OFF	OFF
2	2=1	5=3		ON	ON	OFF	OFF	OFF
3	3=1			OFF	OFF	ON	OFF	OFF
3	3=1	5=2		ON	OFF	ON	OFF	OFF
4	4=1			OFF	ON	ON	OFF	OFF
4	4=1	10=3		ON	ON	ON	OFF	OFF
5	5=1			OFF	OFF	OFF	ON	OFF
5	5=1	10=2	20=5	ON	OFF	OFF	ON	OFF
6	6=1			OFF	ON	OFF	ON	OFF
6	6=1	10=2		ON	ON	OFF	ON	OFF
8	8=1			OFF	OFF	ON	ON	OFF
8	8=1		20=3	ON	OFF	ON	ON	OFF
10	10=1			OFF	ON	ON	ON	OFF
10	10=1		20=3	ON	ON	ON	ON	OFF
12	12=1			OFF	OFF	OFF	OFF	ON
15	15=1			ON	OFF	OFF	OFF	ON
20	20=1			OFF	ON	OFF	OFF	ON
25	25=1			ON	ON	OFF	OFF	ON
30	30=1			OFF	OFF	ON	OFF	ON
35	35=1			ON	OFF	ON	OFF	ON
40	40=1			OFF	ON	ON	OFF	ON
45	45=1			ON	ON	ON	OFF	ON
50	50=1			OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: GERMANY=DEUTCHE MARK

PRICE OF PLAY FOR PORTUGAL

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
				OFF	OFF	OFF	OFF	OFF
				ON	OFF	OFF	OFF	OFF
				OFF	ON	OFF	OFF	OFF
				ON	ON	OFF	OFF	OFF
				OFF	OFF	ON	OFF	OFF
				ON	OFF	ON	OFF	OFF
				OFF	ON	ON	OFF	OFF
				ON	ON	ON	OFF	OFF
50	50=1			OFF	OFF	OFF	ON	OFF
50	50=1	100=2	200=5	ON	OFF	OFF	ON	OFF
				OFF	ON	OFF	ON	OFF
				ON	ON	OFF	ON	OFF
				OFF	OFF	ON	ON	OFF
				ON	OFF	ON	ON	OFF
100	100=1			OFF	ON	ON	ON	OFF
100	100=1		200=3	ON	ON	ON	ON	OFF
				OFF	OFF	OFF	OFF	ON
				ON	OFF	OFF	OFF	ON
150	150=1			OFF	ON	OFF	OFF	ON
200	200=1			ON	ON	OFF	OFF	ON
250	250=1			OFF	ON	OFF	OFF	ON
300	300=1			OFF	OFF	ON	OFF	ON
350	350=1			ON	OFF	ON	OFF	ON
400	400=1			OFF	ON	ON	OFF	ON
450	450=1			ON	ON	ON	OFF	ON
500	500=1			OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: PORTUGAL = ESCUDOS

7 Credit board settings

PRICE OF PLAY FOR BELGIUM

PRICE OF PLAY OPTIONS			DIP SWITCH 1					
PRICE	BONUS		1	2	3	4	5	
5		20=4	50=10	OFF	OFF	OFF	OFF	OFF
5		20=4	50=12	ON	OFF	OFF	OFF	OFF
10		20=2	50=5	OFF	ON	OFF	OFF	OFF
10		20=2	50=6	ON	ON	OFF	OFF	OFF
15		15=1		OFF	OFF	ON	OFF	OFF
15		25=2	50=4	ON	OFF	ON	OFF	OFF
20		30=1		OFF	ON	ON	OFF	OFF
20		50=3	100=6	ON	ON	ON	OFF	OFF
25		50=2		OFF	OFF	OFF	ON	OFF
25		50=2	100=5	ON	OFF	OFF	ON	OFF
30		30=1		OFF	ON	OFF	ON	OFF
30		50=2	100=4	ON	ON	OFF	ON	OFF
40		40=1		OFF	OFF	ON	ON	OFF
40		40=1	100=3	ON	OFF	ON	ON	OFF
50		50=1	100=2	OFF	ON	ON	ON	OFF
50		50=1	100=3	ON	ON	ON	ON	OFF
60		60=1		OFF	OFF	OFF	OFF	ON
75		75=1		ON	OFF	OFF	OFF	ON
100		100=1		OFF	ON	OFF	OFF	ON
140		140=1		ON	ON	OFF	OFF	ON
150		150=1		OFF	OFF	ON	OFF	ON
200		200=1	350=2	ON	OFF	ON	OFF	ON
200				OFF	ON	ON	OFF	ON
250		450=2		ON	ON	ON	OFF	ON
				OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: BELGIUM=BELGIUM FRANC

PRICE OF PLAY FOR SPAIN & ITALY

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
100	100=1			OFF	OFF	OFF	OFF	OFF
100	100=1	500=6		ON	OFF	OFF	OFF	OFF
200	200=1			OFF	ON	OFF	OFF	OFF
200	200=1	500=3		ON	ON	OFF	OFF	OFF
300	300=1			OFF	OFF	ON	OFF	OFF
300	300=1	500=2		ON	OFF	ON	OFF	OFF
400	400=1			OFF	ON	ON	OFF	OFF
400	400=1	1000=3		ON	ON	ON	OFF	OFF
500	500=1			OFF	OFF	OFF	ON	OFF
500	500=1	1000=2	2000=5	ON	OFF	OFF	ON	OFF
600	600=1			OFF	ON	OFF	ON	OFF
600	600=1	1000=2	2000=4	ON	ON	OFF	ON	OFF
800	800=1			OFF	OFF	ON	ON	OFF
800	800=1		2000=3	ON	OFF	ON	ON	OFF
1000	1000=1			OFF	ON	ON	ON	OFF
1000	1000=1		2000=3	ON	ON	ON	ON	OFF
1200	1200=1			OFF	OFF	OFF	OFF	ON
1500	1500=1			ON	OFF	OFF	OFF	ON
2000	2000=1			OFF	ON	OFF	OFF	ON
2500	2500=1			ON	ON	OFF	OFF	ON
3000	3000=1			OFF	OFF	ON	OFF	ON
3500	3500=1			ON	OFF	ON	OFF	ON
4000	4000=1			OFF	ON	ON	OFF	ON
				ON	ON	ON	OFF	ON
				OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

MONETARY UNITS: SPAIN=PESETAS , ITALY=LIRE

PRICE OF PLAY FOR HOLLAND

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
				OFF	OFF	OFF	OFF	OFF
				ON	OFF	OFF	OFF	OFF
1		1=1		OFF	ON	OFF	OFF	OFF
1		1=1	5=6	ON	ON	OFF	OFF	OFF
				OFF	OFF	ON	OFF	OFF
				ON	OFF	ON	OFF	OFF
2			10=5	OFF	ON	ON	OFF	OFF
2		5=3		ON	ON	ON	OFF	OFF
2.5				OFF	OFF	OFF	ON	OFF
2.5		2.5=1	10=5	ON	OFF	OFF	ON	OFF
3		3=1		OFF	ON	OFF	ON	OFF
3		5=2	10=4	ON	ON	OFF	ON	OFF
4		4=1		OFF	OFF	ON	ON	OFF
4		4=1	10=3	ON	OFF	ON	ON	OFF
5		5=1		OFF	ON	ON	ON	OFF
5		5=1	10=3	ON	ON	ON	ON	OFF
6		6=1		OFF	OFF	OFF	OFF	ON
7.5		7.5=1		ON	OFF	OFF	OFF	ON
10		10=1		OFF	ON	OFF	OFF	ON
15		15=1	25=2	ON	ON	OFF	OFF	ON
15		15=1		OFF	OFF	ON	OFF	ON
20		20=1	35=2	ON	OFF	ON	OFF	ON
20		20=1		OFF	ON	ON	OFF	ON
25		25=1	45=2	ON	ON	ON	OFF	ON
25		25=1		OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

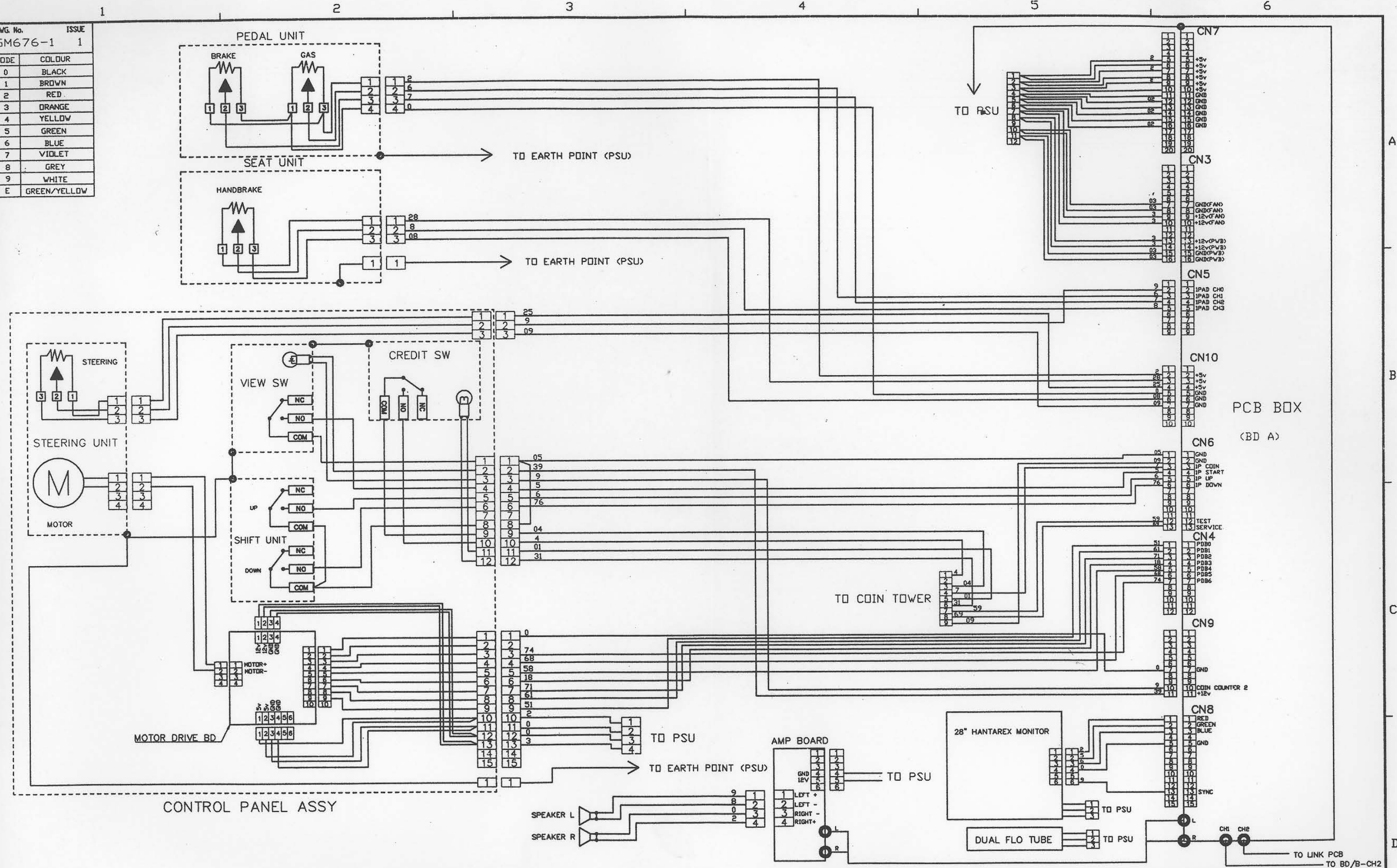
MONETARY UNITS: HOLLAND = GUILDER

PRICE OF PLAY

PRICE OF PLAY OPTIONS				DIP SWITCH 1				
PRICE	BONUS			1	2	3	4	5
				OFF	OFF	OFF	OFF	OFF
				ON	OFF	OFF	OFF	OFF
				OFF	ON	OFF	OFF	OFF
				ON	ON	OFF	OFF	OFF
				OFF	OFF	ON	OFF	OFF
				ON	OFF	ON	OFF	OFF
				OFF	ON	ON	OFF	OFF
				ON	ON	ON	OFF	OFF
				OFF	OFF	OFF	ON	OFF
				ON	OFF	OFF	ON	OFF
				OFF	ON	OFF	ON	OFF
				ON	ON	OFF	ON	OFF
				OFF	OFF	ON	ON	OFF
				ON	OFF	ON	ON	OFF
				OFF	ON	ON	ON	OFF
				ON	ON	ON	ON	OFF
				OFF	OFF	OFF	OFF	ON
				ON	OFF	OFF	OFF	ON
				OFF	ON	OFF	OFF	ON
				ON	ON	OFF	OFF	ON
				OFF	OFF	ON	OFF	ON
				ON	OFF	ON	OFF	ON
				OFF	ON	ON	OFF	ON
				ON	ON	ON	OFF	ON
				OFF	OFF	OFF	ON	ON
				ON	OFF	OFF	ON	ON
				OFF	ON	OFF	ON	ON
				ON	ON	ON	ON	ON
FREE PLAY OPTIONS				ON	ON	ON	ON	ON

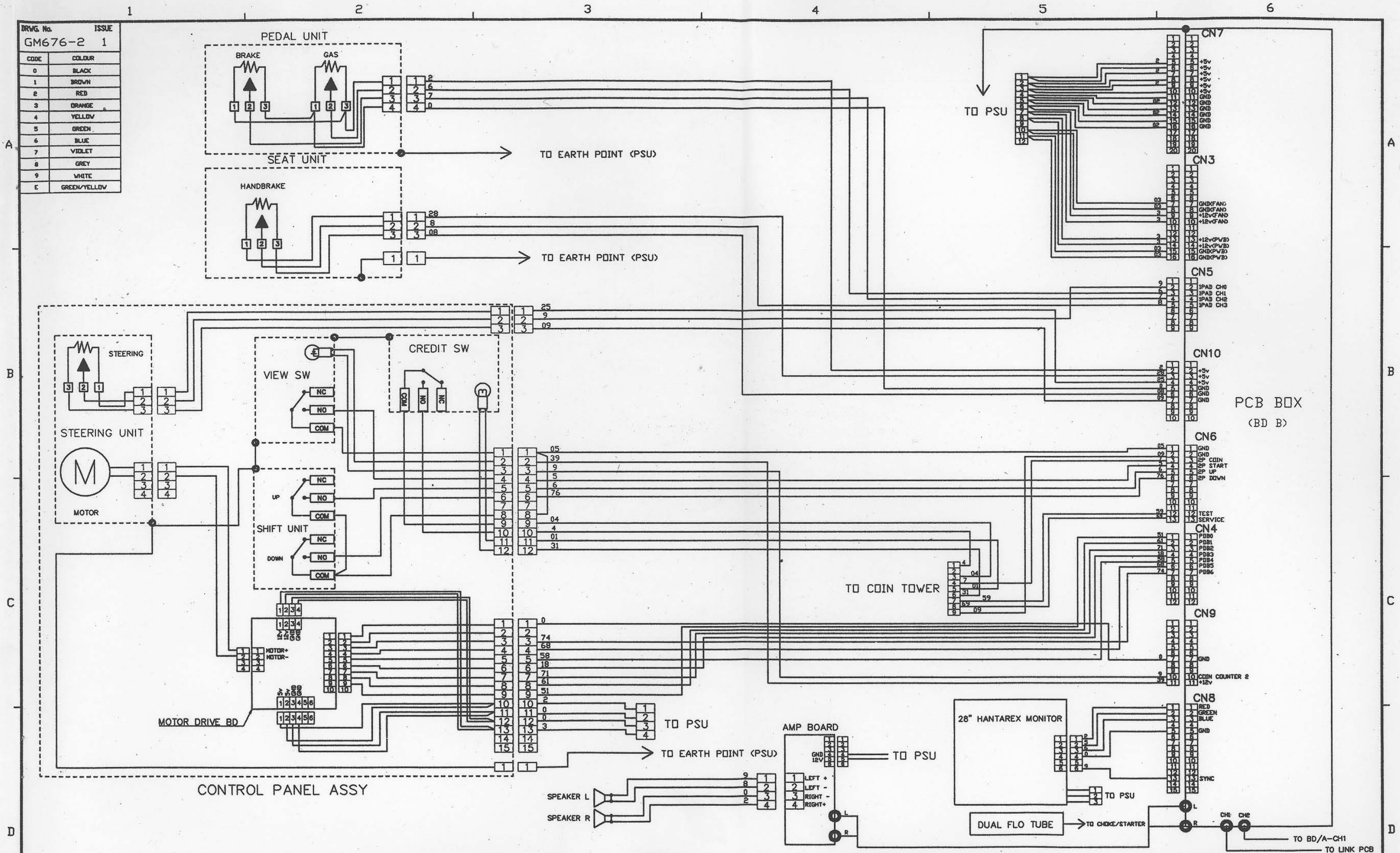
MONETARY UNITS:

DRWG. No.	ISSUE
GM676-1	1
CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GREY
9	WHITE
E	GREEN/YELLOW



ISSUE		ALTERATION		CHANGE No.	SIG.	DATE	ADDITIONAL MANUFACTURING REQUIREMENTS		MATERIAL	FINISH	ORIGINAL SCALE	(A0)	U.S.	PROJECTION	MANUAL ALTERATIONS MUST BE RECORDED ON CAD	DIMENSIONS IN mm U.S.	DATE	26-2-98	USED FOR	RACING JAM GM676					
															DRAWN		CHECKED		APPROVED		TITLE		WIRING DIAGRAM-A		
															ELECTROCOIN AUTOMATICS LTD.		STATUS		SHEET OF SHEETS		DRWG. No.		ISSUE		
															PROTOTYPE		GM676-1		1						

DRWG No.	ISSUE
GM676-2	1
CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GREY
9	WHITE
E	GREEN/YELLOW



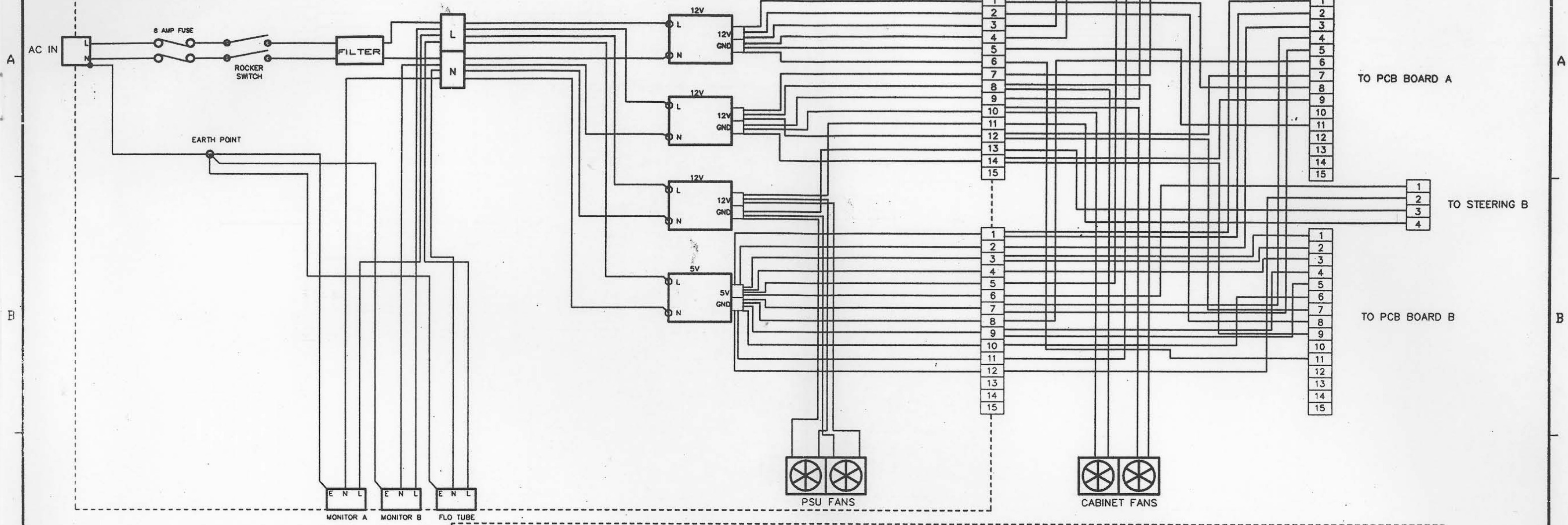
ISSUE	ALTERATION	CHANGE No.	CHK.	DATE
1				

ADDITIONAL MANUFACTURING REQUIREMENTS	
MATERIAL	FINISH
ORIGINAL SCALE	(A0)
TOLERANCE	LINEAR U.S. ANGULAR U.S.
PROJECTION	

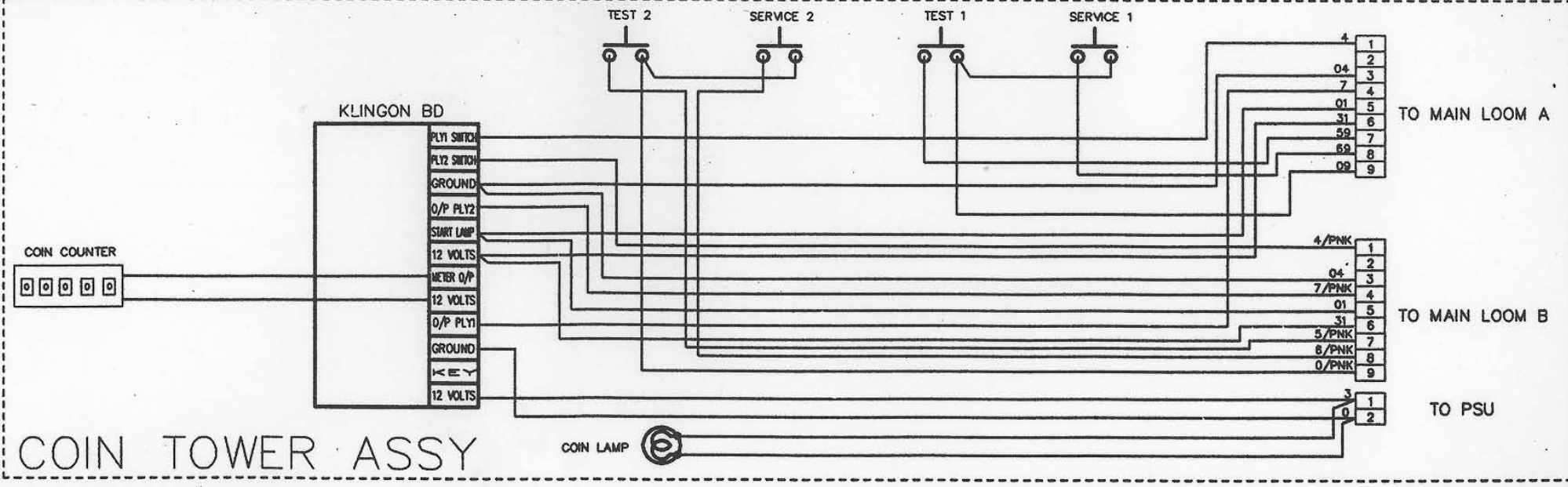
MANUAL ALTERATIONS MUST BE RECORDED ON CAD	
DIMENSIONS IN mm U.S.	DATE
DRAWN	26-2-98
CHECKED	
APPROVED	

USED FOR			
RACING JAM GM676			
TITLE			
WIRING DIAGRAM-B			
STATUS	SHEET OF	DRWG No.	ISSUE
PROTOTYPE	10	GM676-2	1
PREP. PART	SHEET(S)		

POWER SUPPLY ASSY



CODE	COLOUR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GREY
9	WHITE
E	GREEN/YELLOW



COIN TOWER ASSY

ISSUE		ALTERATION		CHANGE No.	SIG.	DATE	ADDITIONAL MANUFACTURING REQUIREMENTS		MATERIAL		MANUAL ALTERATIONS MUST BE RECORDED ON CAD		USED FOR	
1		2							FINISH	DIMENSIONS IN mm U.S.		DATE	RACING JAM GM676	
									ORIGINAL SCALE (A0)	DRAWN		5-3-98	TITLE: WIRING DIAGRAM-3	
									TOLERANCE LINEAR ANGULAR U.S.	CHECKED			ELECTROCOIN AUTOMATICS LTD.	
									PROJECTION	APPROVED			STATUS PROTOTYPE PRODH PART	SHEET OF SHEETS
													DRWG No. GM676-3	ISSUE 1

