# ORIGINAL VIDEO GAME
OPERATOR'S MANUAL

■ RACING JAM ■

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.

KONAMI.

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.

Driver software used under license of 3Dfx interactive.

Contents

■ 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.

ENGLISH

Setting Up

CAUTION

- **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 JAMTM" 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

WARNING

- **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

 CAUTION

•**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 unpug 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

 WARNING

•**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.

ENGLISH

Moving and transportation

⚠ CAUTION

• **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.

PRECAUTION IN HANDLING
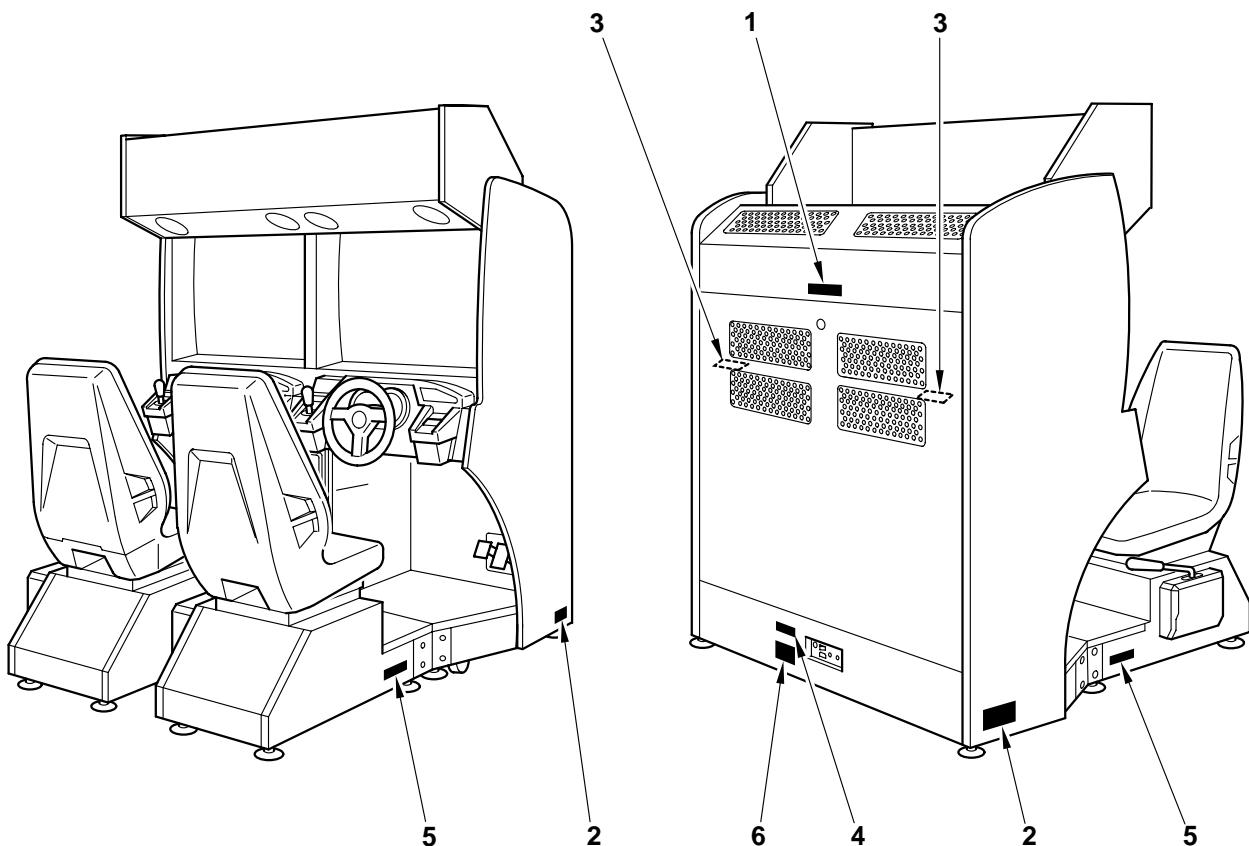
• When setting up, inspecting, maintaining, moving or transporting this product, follow the procedures and instructions set forth in this manual and perform such work safely.

• Do not remove labels of "WARNING", "CAUTION", etc. attached to the product.
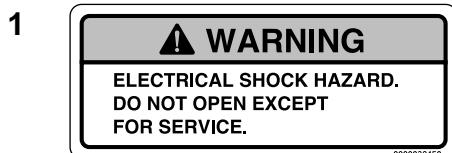
• Do not set up, handle, inspect, maintain, move or transport this product under conditions equivalent to the condition of "WARNING" or "CAUTION" specified in this manual.

• 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.

0000032450

2

⚠ **WARNING**

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

0000036360

3

⚠ **HAZARDOUS VOLTAGE**
PN. 0000032445

4

Weight **290 kg** (**639.5 lb**)

5

Weight **35 kg** (**77.2 lb**)

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

PN.0000041436   INDOOR USE
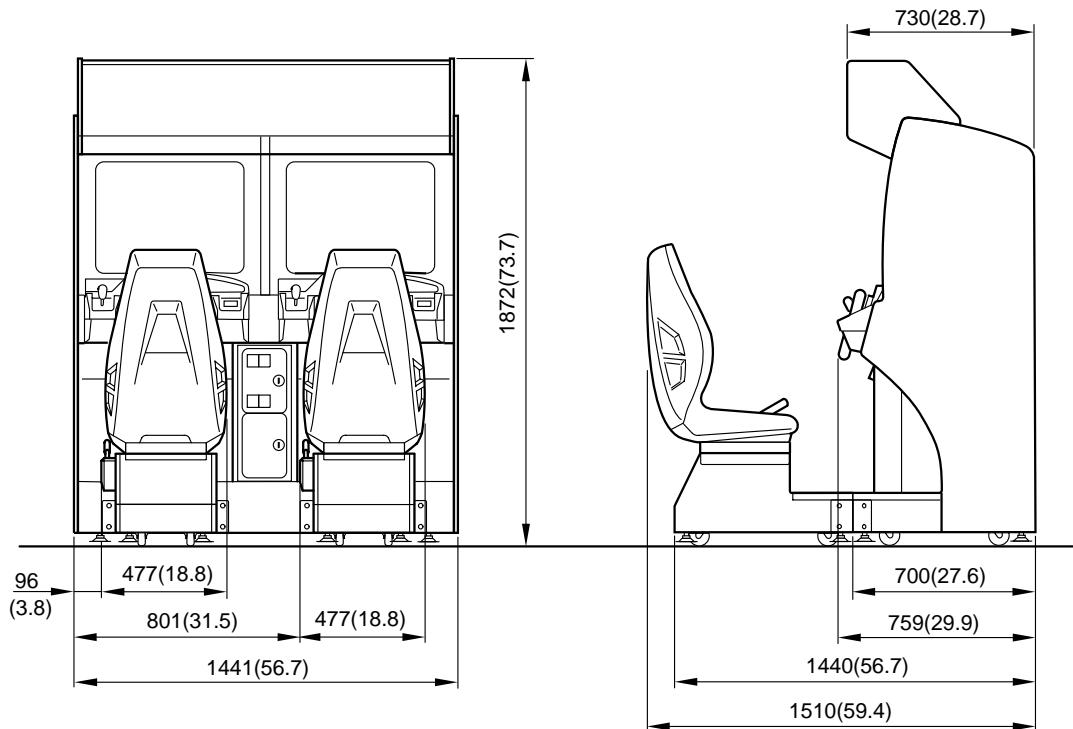
•The above is an example.
The entries are different from
destination to destination.

MEMO

1 Specifications

Specifications

Dimensions	Refer to the figure above: mm(in)
Weight	Total weight : Approx. 360 kg (794lb) Main unit : Approx. 290 kg (639.5lb) Seat unit : Approx. 35 kg (77.2lb) (one unit)
Rated power consumption	380W / 475VA
Monitor	29 - inch color monitor
Service condition	Temperature 10 to 35°C (50 to 95°F), Humidity 20 to 80%(No dewing is allowed.)
Attachments	· Instruction manual ....This manual · Keys for coin door .... 2 · Keys for maintenance .... 2 · Joint fitting A .... 2 · Joint fitting B .... 2 · Joint fixing parts (Screw M8X35L, flat washer, spring washer) ...... 16 · AC power cord .... 1 · Networking cable .... 1 · Racing number label... 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.

■ 安全使用注意事項

本書説明爲防止危害“RACING JAM™”的設置、使用、維護等人員及他人和財產的安全注意事項，本書內容務請遵守。

務　請　閱　讀

●本書使用如下標注，區分無視表示內容、錯誤使用時產生的危險和損害程度。

⚠ 警告	該項標注表示“有可能造成死亡或身負重傷”的內容。
⚠ 注意	該項標注表示“有可能造成傷害或物品損壞”的內容。

●本書使用如下圖標，説明務請遵守的內容種類。

⚠	本圖標表示“提請注意”的內容。
🚫	本圖標表示“禁止”的內容。
	本圖標表示“強制實行”的內容。

設置時

$$\triangle 警告$$

●設置、移動或搬運時，務必同當地的經銷店商洽。
　▶非專業人員執行設置、移動或搬運時，有可能受傷或損壞殼體。
　▶安裝本機時，務必使十二個位置的可調支腳接觸地面，証實殼體呈水平狀態。
　　無傾斜。固定不穩定時，可引起殼體晃動，及至受傷或造成事故。
　▶設置本機時，不得在殼體連接部位強加外力。
　　否則，可致受傷或造成事故、損壞殼體。

●本機爲室內用游戲機，千萬不要設置在室外。
　▶設置在室外，可造成事故或故障。

●本機不得設置在建筑物太平門附近。
　▶否則，發生災害時妨礙人們逃生，造成傷亡。

●本機尚不得設置在以下場所。
　▶否則，可造成事故或故障。
　　‧漏雨或潮濕結露的場所
　　‧陽光直射的場所
　　‧直接受到取暖裝置的熱氣吹拂的場所
　　‧煤油、信那水等有引火性的危險物附近
　　‧傾斜、不堅硬、不穩定的地面
　　‧消防設備的附近
　　‧晃動劇烈的場所
　　‧多灰塵的場所
　　‧產生強大磁場或電波的設備附近

●本機上面或周圍不得放置盛水或藥劑的容器或物品。
　▶水份或異物進入內部，可致觸電或故障。

●通風口附近不得放置物品。
　▶有妨通風，則內部溫度異常昇高，造成火災或故障。

●不得強行彎曲電源軟線，也不得在其上壓放重物。
　▶否則，可造成漏電事故或火災。

●千萬不得用濕手拔下或插入電源插頭。
　▶否則，可致觸電。

●不得牽拉電源軟線拔下電源插頭。
　▶否則，電源軟線損傷，造成漏電事故或火災。

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CHINESE

設置時

⚠注意

●務必使用符合規格的電源。利用加長電線時，應使用符合規格的室內用線。
　▶否則，可造成火災或故障。

●請務必使用附屬的電源軟線和通信用纜線。
　▶否則，可造成火災或故障。

●千萬不得使用多分支插座。
　▶否則，可造成火災或觸電。

禁　止

●通信連接用的插銷不可與「RACING JAM™」以外的游戲機、音像機器或通信機器連接。在不進行通信連接時，不要將通信連接用的插銷與任何東西連接。
　▶否則，不能正常進行游戲，引起故障。

禁　止

●不得將電源軟線、通信用纜線、等伸出到被人踐踏和絆人通道上。
　▶否則，可致翻倒傷人，而且可損傷軟線。

禁　止

●不可將通信用纜線強行扭曲或壓放重物。
　▶否則，不能正常進行游戲。

禁　止

●本產品必須連接地線。
　▶否則，可造成觸電或故障。

連接地線

●設置本機時，請距牆壁10公分以上，並且，將本機並列設置時，機體之間應相隔10公分以上。
　▶否則本體不能正常散熱，造成故障。

使用時

⚠警告

●萬一從本機中冒煙、發出氣味或異常聲響時，應立即關閉電源開關，幷從插座上拔下電源插頭，停止使用。
　▶在異常狀態下使用，可造成火災或事故。

拔下電源插頭

─── 判　斷　爲　異　常　時 ───

1	斷開電源
2	從插座上拔下電源插頭
3	通知當地的經銷店

●不得在電源插頭未正確插入插座中或積滿灰塵的狀態下放置不管。
　▶否則，可造成觸電或火災，應定期檢查。

禁　止

●千萬不得拆卸、修理或改造本書未指示的部位。
　▶否則，可造成火災、異常工作或故障。
　　需要修理等時，請委託當地的經銷店。
　　因改造本機而造成損害，本公司概不負責。

禁止拆卸

使用時

⚠ 注意

●本機不得在工商業地區以外使用。
　▶在住宅區或其鄰接處使用，會妨礙電視機、收音機、電話機等接受信號。

　　　　　　　　　　　　　　　　　　　　　　　　　　禁　止

●應提請屬於下列情況之一的顧客，不要利用本機游戲。
　▶否則，可致事故或引發疾病，加重症狀。

　　| ・飲酒者　・手臂、手腕有病，或正在接受治療 |

●千萬不得用濕手拔下或插入電源插頭。
　▶否則，可致觸電。

　　　　　　　　　　　　　　　　　　　　　　　　　　禁　止

●使用電源軟線和通信用纜線時，請遵守以下事項。
　▶否則，可造成漏電事故或火災、觸電。或者不能進行正常的通信遊戲。

　　| ・劃傷　・加工　・強行彎曲　・扭轉　　　　・加熱 |
　　| ・牽拉　・打結　・腳踏　　　・擠壓或打釘 |

●萬一電源軟線、電源插頭損傷時，應立即停止使用，委託當地的經銷店更換零件。
　▶在損傷狀態下使用，可造成火災或觸電。

●不得在成型品上放置物品、加壓或給予衝擊。
　▶否則，物品摔落或殼體損壞乃致傷人。

　　　　　　　　　　　　　　　　　　　　　　　　　　禁　止

檢查和打掃

⚠ 警告

●檢查或打掃本機時，務必斷開電源，從電源插座上拔下電源插頭。
　▶否則，可致觸電。

　　　　　　　　　　　　　　　　　　　　　　　　拔下電源插頭

●更換零件或易耗品時，務必使用本公司指定的產品。千萬不得使用或混用其他產品。
　▶否則，可造成火災或故障。

　　　　　　　　　　　　　　　　　　　　　　　　　　禁　止

●本體內部有高壓流動，非常危險。除技術人員以外，不可打開本體的背面門。
　另外，在本體背面門打開時，不可隨意觸碰，請充分予以注意。
　▶否則可致事故或有觸電危險。

　　　　　　　　　　　　　　　　　　　　　　　　　　禁　止

●千萬不得拆卸、修理或改造本書未指示的部位。
　▶否則，可造成火災、異常工作或故障。
　　需要修理等時，請委託當地的經銷店。
　　因改造本機而造成損害，本公司概不負責。

　　　　　　　　　　　　　　　　　　　　　　　　　禁止拆卸

●打掃本機時，用軟布蘸取中性洗劑，擰乾後再擦拭。
　▶使用信那水等有機溶劑，可致本機變質。
　▶本機內部滲水，可造成觸電或故障。

CHINESE

移動／搬運時
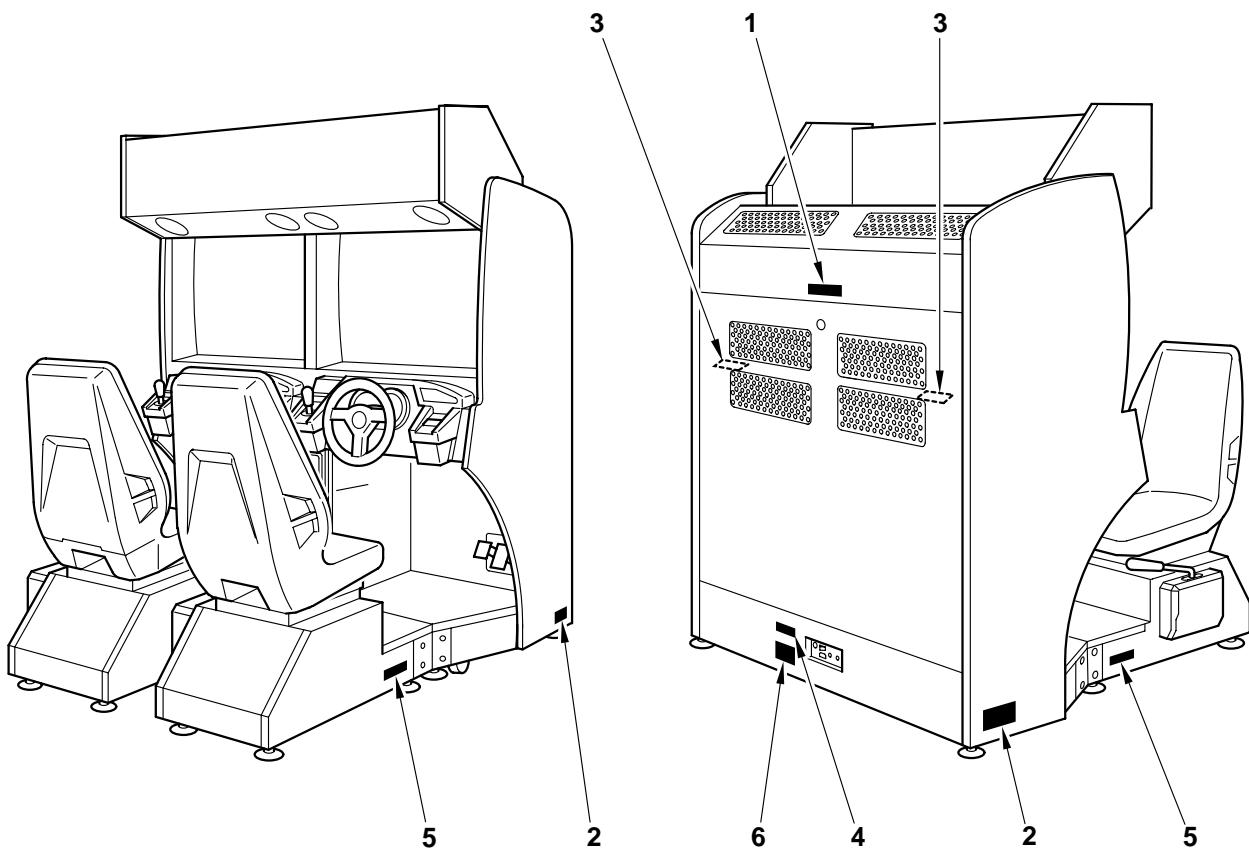
⚠ 注意

●本機內部裝有顯示器、電子元件、精密器件等，不耐震動和沖撞的零件。移動和搬運時，
　應精心操作。
　千萬不要翻倒橫放。

　　　　　　　　　　　　　　　　　　　　　　　　　禁　止

●移動本機前，請先切斷電源開關，從插座上拔下電源插頭，從機體上卸下電源軟線
　和通信用纜線。
　▶不可踩蹋或牽拉電源軟線和通信用纜線，否則，可造成事故和破損。

　　　　　　　　　　　　　　　　　　　　　　　　拔下電源插頭

●移動本機前，務必將座席裝置和本體裝置分離后，將十二支可調支腳調至最上面，
　用腳輪移動。
　▶否則會造成破損或故障。

●移動各裝置時，不可施加過份的力量。
　▶否則翻倒時造成事故和破損。

●本體裝置根據推動方向會翻倒。移動時應面對顯示器向左右方向推動。在斜面或臺
　階處移動時必須由兩個人以上進行。
　▶否則翻倒時造成事故和破損。

●移動各裝置時，不可向本體連接部施加過份的力量。
　▶否則，可致受傷或事故，破壞機器本體。

請留意

●本機的設置、操作、檢查、打掃、移動及搬運，請遵照本書所載步驟及內容進行，確保安全。

●不要揭下貼在本機上的"警告""注意"等標簽。

●不要在相當於間接性警告或注意的狀態下，設置、操作、檢查、打掃、移動及搬運等。

●因轉讓等，本機的所有者發生變化時，務必將本書轉交給新的所有者。

CHINESE

■ 警告標籤等的張貼位置

3 1 3

5 2

6 4 2 5

■警告標籤等的種類

1

⚠ **WARNING**

ELECTRICAL SHOCK HAZARD.
DO NOT OPEN EXCEPT
FOR SERVICE.

0000032450

2

⚠ **WARNING**

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

0000036360

3

⚠ **HAZARDOUS VOLTAGE**
PN. 0000032445

4

Weight **290 kg**（**639.5 lb**）

5

Weight **35 kg**（**77.2 lb**）

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		
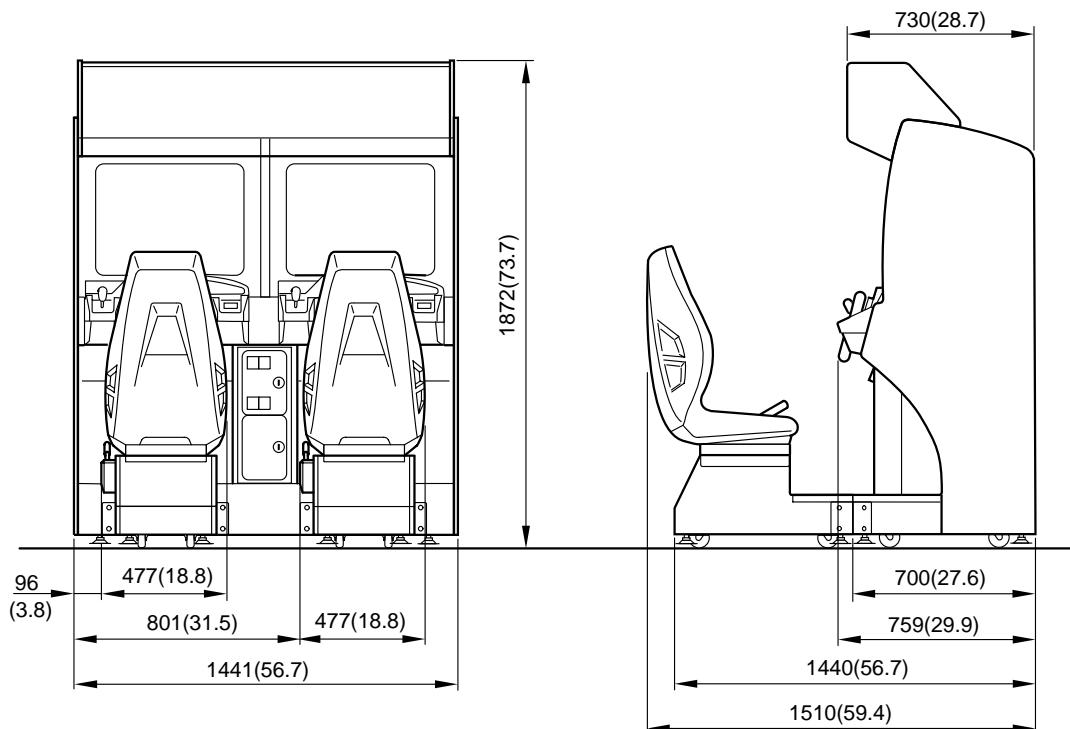
KONAMI®
MADE IN JAPAN
PN.0000041436   INDOOR USE

・以上標注內容僅爲示例。
　不同輸出地區，其標
　注內容有所不同。

MEMO

1 規 格
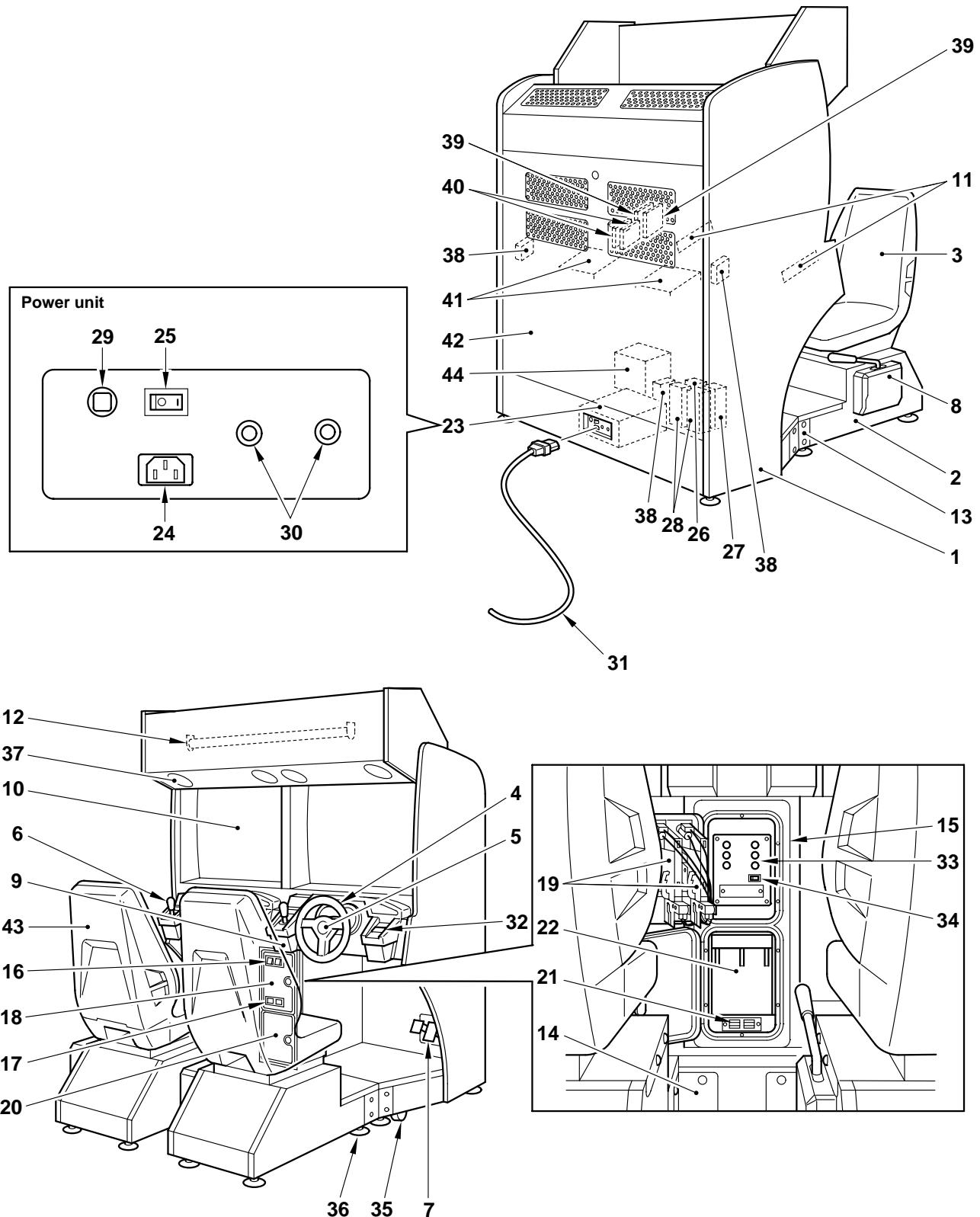
	規　格
外　形　尺　寸	參看上圖：mm(in)
重　　　　量	總重量 ：約**360**kg（**794**lb） 本體裝置 ：約**290**kg（**639.5**lb） 座席裝置 ：約**35**kg／（**77.2**lb）／（一個）
額　定　耗　電　量	**380**W／**475**VA
顯　　示　　器	29英寸彩色顯示器
使　用　條　件	溫度**10〜35**℃（**50〜95**℉）濕度20〜80％（不得結露）
附　　　　件	・使用説明書……………………………………………………………………… 本書 ・存幣箱鑰匙 …………………………………………………………………… 2 ・維修用鑰匙 …………………………………………………………………… 2 ・連接件A ……………………………………………………………………… 2 ・連接件B ……………………………………………………………………… 2 ・連接件用固定件（螺栓M8×35L／平墊圈／彈簧墊圈）…………………… 16 ・電源軟線 ……………………………………………………………………… 1 ・通信用纜線 …………………………………………………………………… 1 ・編號標籤 ……………………………………………………………………… 1組

●萬一有不足零件或不良零件，請惠詢當地的經銷店。
●本機的規格因性能改良等理由而變更時，恕不預告。

2 Names of parts and list of main parts

Power unit

No.	Part name	Part #	Quantity	Remarks
1	Main unit	-	1	
2	Seat unit	000042186	2	
3	Seat	000037086	2	
4	Steering wheel unit	000044812	2	
5	Center cap	000006097	2	
6	Shift unit	000003219	2	
7	Pedal unit	000041175	2	
8	Hand brake unit	000044028	2	
9	Control cover	-	2	
10	29 inch color monitor	000002680	2	
11	Monitor adjustment PCB	-	2	
12	Fluorescent light unit	000002522	1	
13	Joint fitting A	000012575	2	Attachment
14	Joint fitting B	000012576	2	Attachment
15	Coin door unit	000001415	1	Include **16** to **20** GM676-TB
		000002769	1	Include **16** to **20** GN676-HD
16	Coin input port	-	2	
17	Coin return port	-	2	
18	Maintenance door	-	1	
19	Coin selector	000036497	2	GM676-TB
		000036553	2	GM676-HD
20	Coin door	-	1	
21	Coin counter	000030431	2	
22	Coin box	000006850	1	
23	Power unit	-	1	Include **24** to **30**
24	Power inlet	000031056	1	
25	Main power switch	000039100	1	
26	Switching power A	000003799	1	Main PCB (5V)
27	Switching power B	000030688	1	Main PCB (12V)
28	Switching power C	000030688	2	Motor (12V)
29	Circuit protector	000036921	1	10A
30	Network pin jack	-	2	
31	AC power cord	000036692	1	250V 8A
32	START button	000038409	2	
33	Push-button switch	000005098	6	
34	Internal power switch	000039100	1	
35	Caster	000002051	12	
36	Adjuster	000002405	12	
37	Speaker	000002322	4	
38	Fan	000003209	3	
39	PCB (Steering wheel control PCB)	-	2	
40	PCB (amplifier PCB)	-	2	
41	Game PC board	-	2	
42	Back door	000041172	1	
43	Seat cover	000037087	2	
44	Transformer	000043603	1	

■**Steering wheel unit** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

1

2

3

5

4

■**Hand brake unit** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

3

2

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1

5

4

■ **Shift unit** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ■**Pedal unit** ▬ ▬ ▬ ▬ ▬ ▬ ▬

1

1

2

2

■Steering wheel unit (2X)

No.	Part name	Part #	Quantity	Remarks
1	Steering wheel	0000006092	1	
2	Motor	0000036918	1	
3	Gear head	0000036919	1	
4	Potentiometer	0000001723	1	
5	Timing belt	0000041389	1	

■Hand brake unit (2X)

No.	Part name	Part #	Quantity	Remarks
1	Coil spring	0000003244	1	
2	Potentiometer	0000001723	1	
3	Rubber suspension	0000036915	1	
4	End stopper	0000013109	2	
5	Gear B	0000013113	1	
6	Hand brake lever	0000007599	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	0000002247	1	
2	Potentiometer	0000001723	2	

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 35)

■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.

23

4 Opening and closing the doors
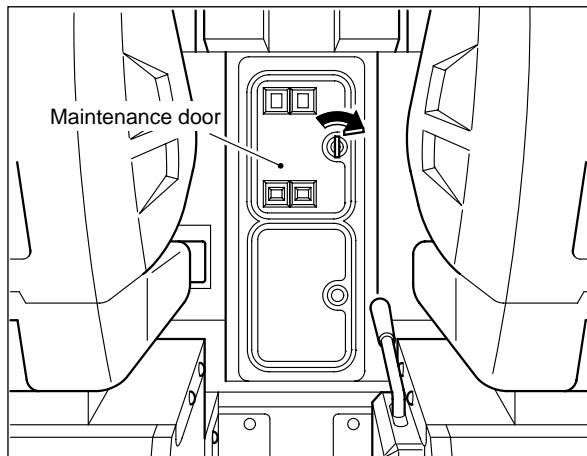
4-1 Opening and closing the maintenance door

■How to open the maintenance door ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬
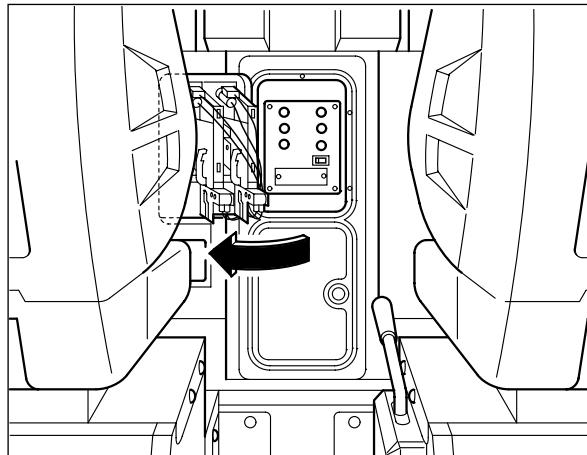
> ⚠
>
> •Take care not to apply any load or impact to the maintenance door when it is open.
> •After closing the maintenance door, be sure to check that the door is locked securely.

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

Maintenance door

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.
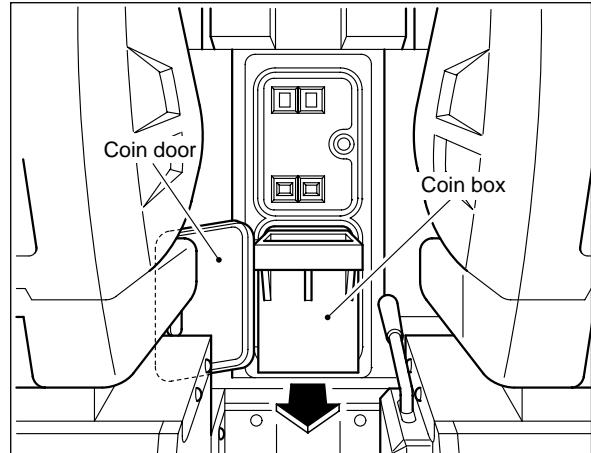
4-2 Opening and closing the coin door

■Opening and closing the coin door and removing the coin box ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

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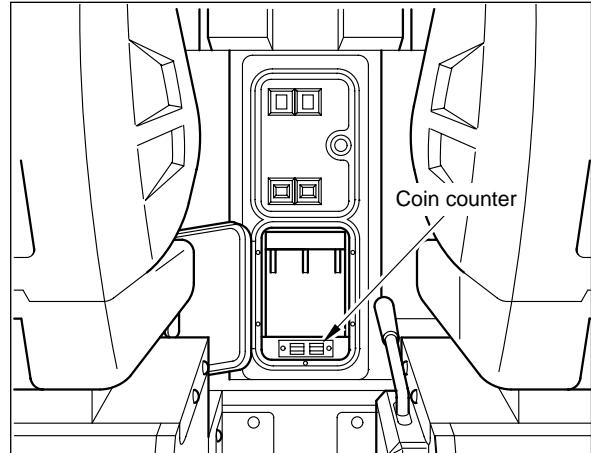
•Take care not to apply any load or impact to the coin door when it is open.
•Note that the coin box is considerably heavy to take out if it is full of coins.
•Securely lock the door for protection against burglaries.

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 door

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.

Coin counter
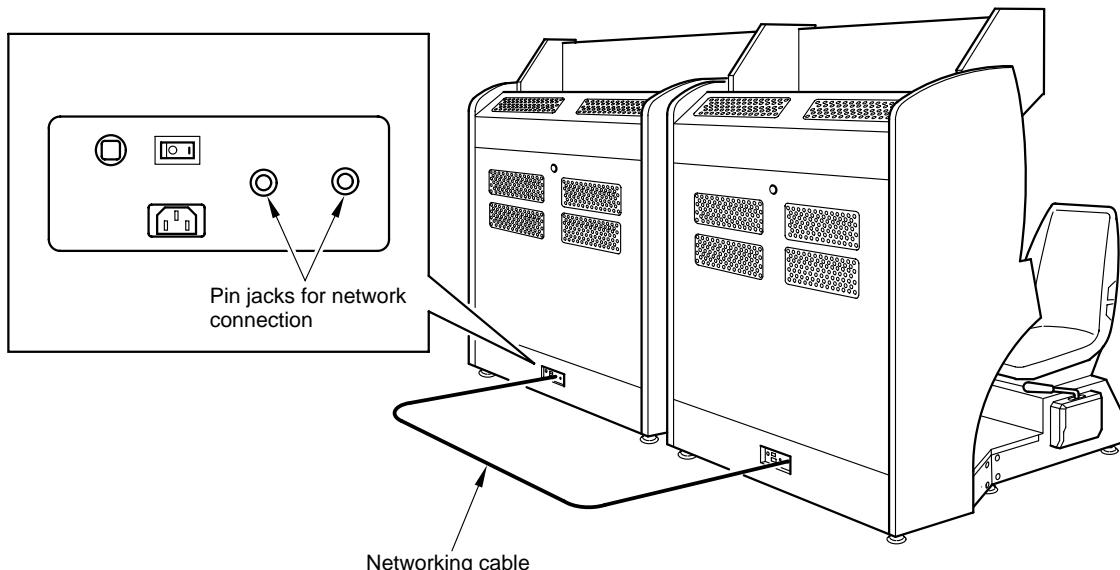
5 Networking game machines and PCB settings

5-1 How to networking
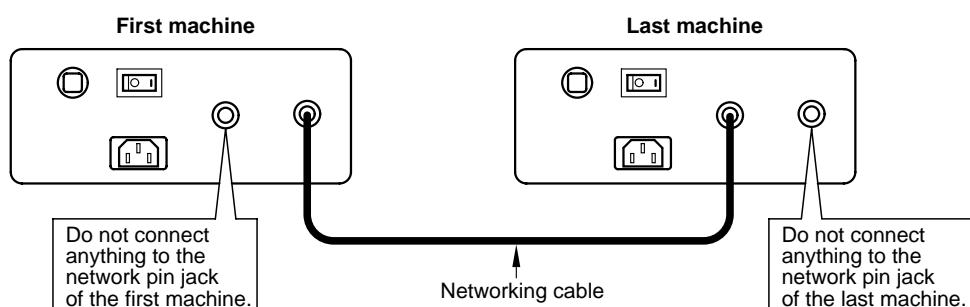
This game is also designed for communication racing. For this purpose, up to 4 machines (for 8 players) can be networked. To network, connect the networking cable supplied with each game machine to the network pin jack of the main unit after setting up the game machines.

⚠️

- **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 35) and then check the setting in "NETWORK CHECK".**

Pin jacks for network connection

Networking cable

■**Networking two game** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

First machine　　　　　　　　　　　**Last machine**

Do not connect anything to the network pin jack of the first machine.

Networking cable

Do not connect anything to the network pin jack of the last machine.

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 49 to 51.
•**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 54 to 56.
•**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 52 and 53.
•**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 52 and 53.

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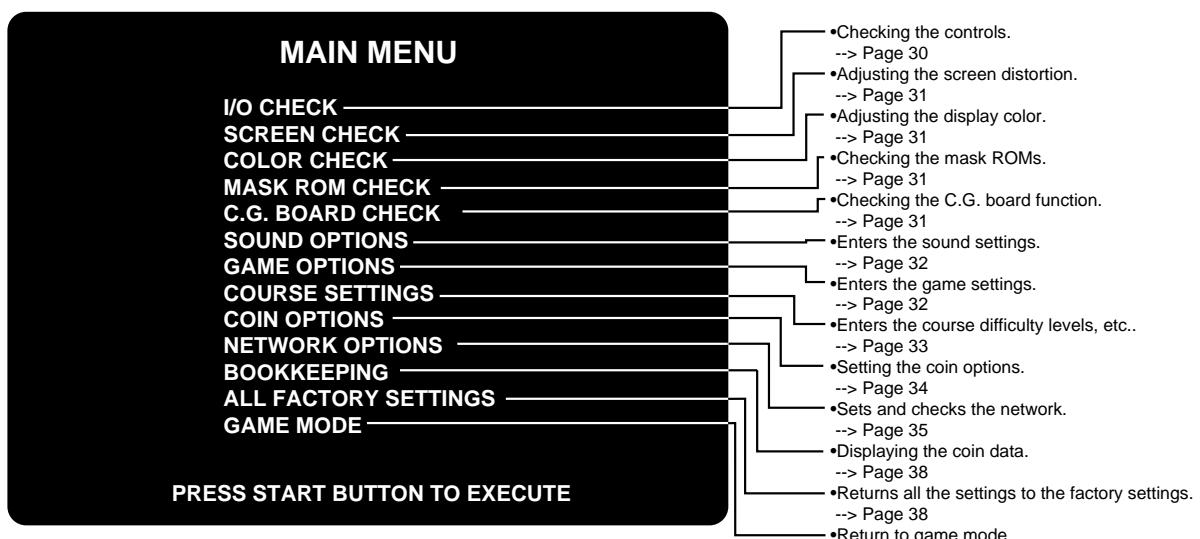
■ Starting the manual test mode ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬
1 Turn ON the power switch.
2 Press the test switch on the service panel during the game mode demo (during the game mode demo of all the game machines in the case of networking) .
   ·The unit is set in the manual test mode and the main menu is displayed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

```
            MAIN MENU


      I/O CHECK
      SCREEN CHECK
      COLOR CHECK
      MASK ROM CHECK
      C.G. BOARD CHECK
      SOUND OPTIONS
      GAME OPTIONS
      COURSE SETTINGS
      COIN OPTIONS
      NETWORK OPTIONS
      BOOKKEEPING
      ALL FACTORY SETTINGS
      GAME MODE


   PRESS START BUTTON TO EXECUTE
```

- •Checking the controls.
  --> Page 30
- •Adjusting the screen distortion.
  --> Page 31
- •Adjusting the display color.
  --> Page 31
- •Checking the mask ROMs.
  --> Page 31
- •Checking the C.G. board function.
  --> Page 31
- •Enters the sound settings.
  --> Page 32
- •Enters the game settings.
  --> Page 32
- •Enters the course difficulty levels, etc..
  --> Page 33
- •Setting the coin options.
  --> Page 34
- •Sets and checks the network.
  --> Page 35
- •Displaying the coin data.
  --> Page 38
- •Returns all the settings to the factory settings.
  --> Page 38
- •Return to game mode.

■ 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
                  U P
   START BUTTON    OFF              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)  +-+-+--------------------------------+---+




   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.

•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 eleased 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 released 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.

•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 49 to 56.

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 61) 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.


C.G.BOARD CHECK

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

•Two cubes are rotating and entangled with each other.

PRESS START BUTTON TO EXIT
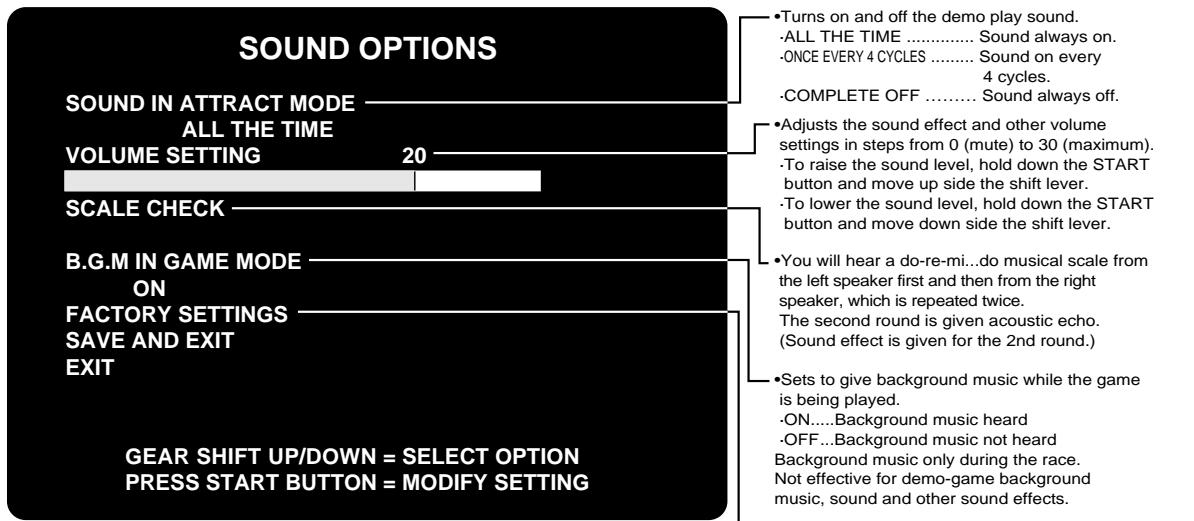
SOUND OPTIONS

Enters the sound settings

■ This screen is used to make sound settings and to check them.
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.

SOUND OPTIONS

SOUND IN ATTRACT MODE ─────────
    ALL THE TIME
VOLUME SETTING   **20** ──────

SCALE CHECK ──────────────────

B.G.M IN GAME MODE ───────────
    ON
FACTORY SETTINGS ────────────
SAVE AND EXIT
EXIT

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

•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 side the shift lever.
  ·To lower the sound level, hold down the START button and move down side 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.
(Sound effect is given for the 2nd round.)

•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
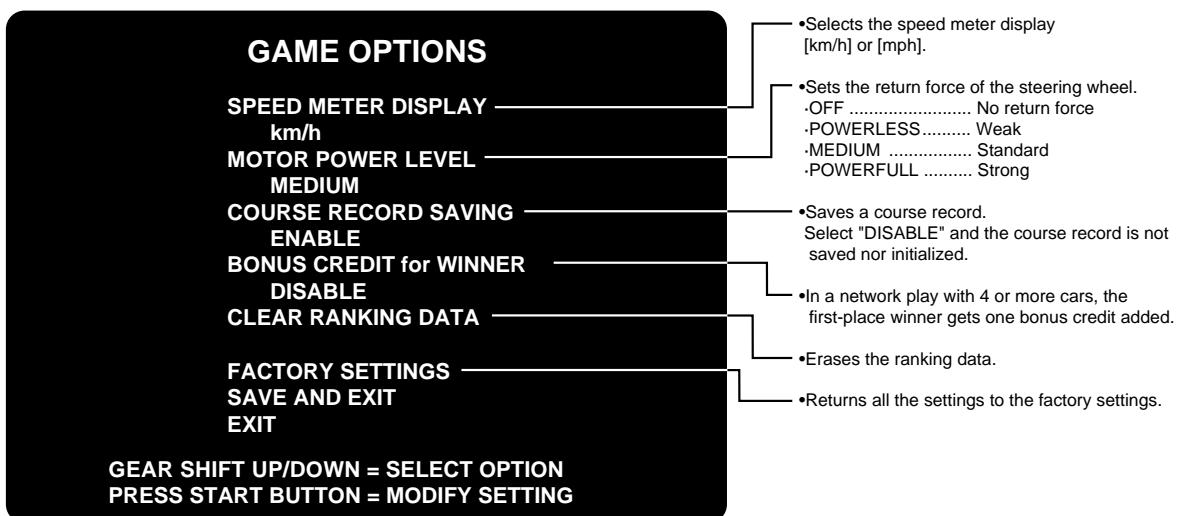
Enters the game settings

■ This screen is used to make game settings and to check them.
Move the shift lever up 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.

⚠

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

GAME OPTIONS

SPEED METER DISPLAY ──────────
    km/h
MOTOR POWER LEVEL ───────────
    MEDIUM
COURSE RECORD SAVING ─────────
    ENABLE
BONUS CREDIT for WINNER ───────
    DISABLE
CLEAR RANKING DATA ──────────

FACTORY SETTINGS ────────────
SAVE AND EXIT
EXIT

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

•This screen is just an example.
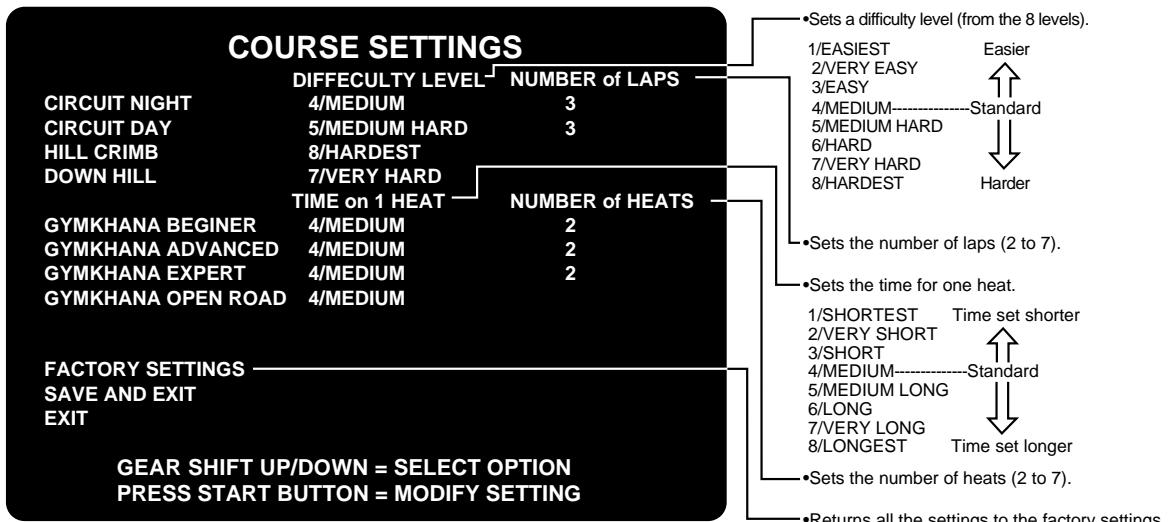
•Selects the speed meter display [km/h] or [mph].

•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	⇧
4/MEDIUM--------------Standard	
5/MEDIUM HARD	
6/HARD	⇩
7/VERY HARD	
8/HARDEST	Harder

•Sets the number of laps (2 to 7).

•Sets the time for one heat.

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

•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
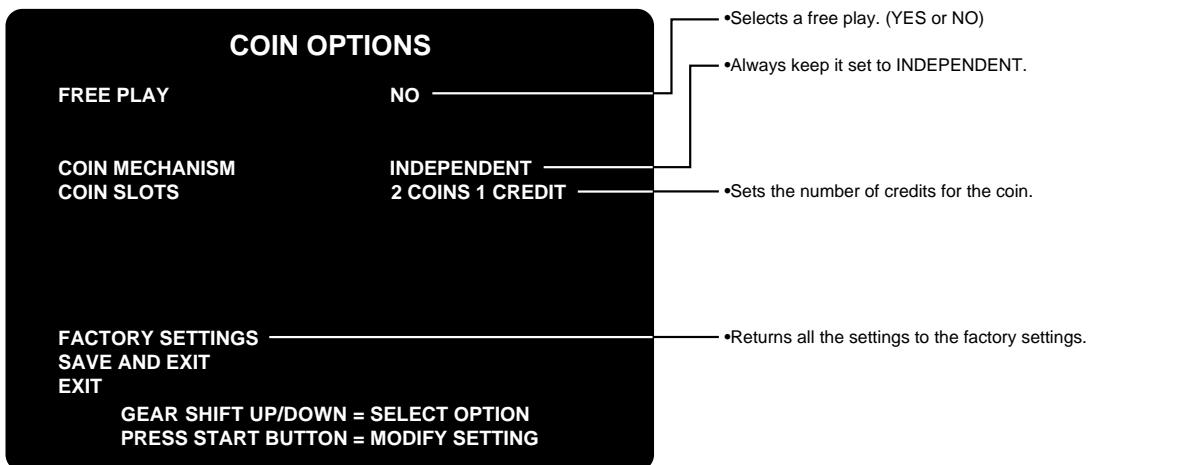
Setting the coin options

■ This screen is used to make coin settings and to check them.
Move the shift lever up 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.

⚠️

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

COIN OPTIONS

FREE PLAY	NO
COIN MECHANISM	INDEPENDENT
COIN SLOTS	2 COINS 1 CREDIT

FACTORY SETTINGS
SAVE AND EXIT
EXIT
        GEAR SHIFT UP/DOWN = SELECT OPTION
        PRESS START BUTTON = MODIFY SETTING

•Selects a free play. (YES or NO)

•Always keep it set to INDEPENDENT.

•Sets the number of credits for the coin.

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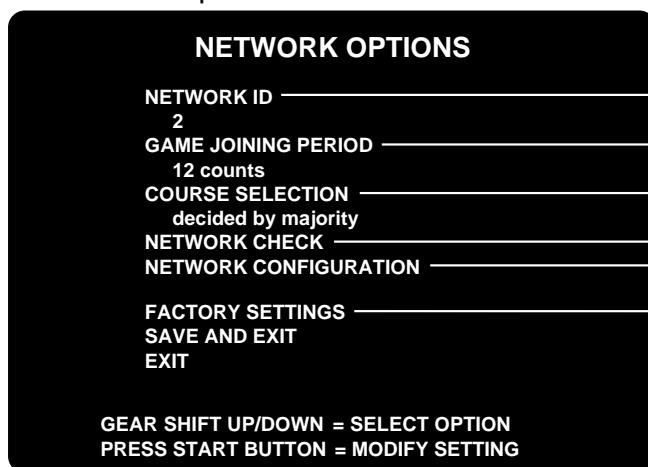
SETTING	21	22	23	24	25	26	27	28	29	30	31	32
COIN(S)	7	7	8	8	9	10	11	12	13	14	15	16
CREDIT(S)	1	2	1	3	1	1	1	1	1	1	1	1

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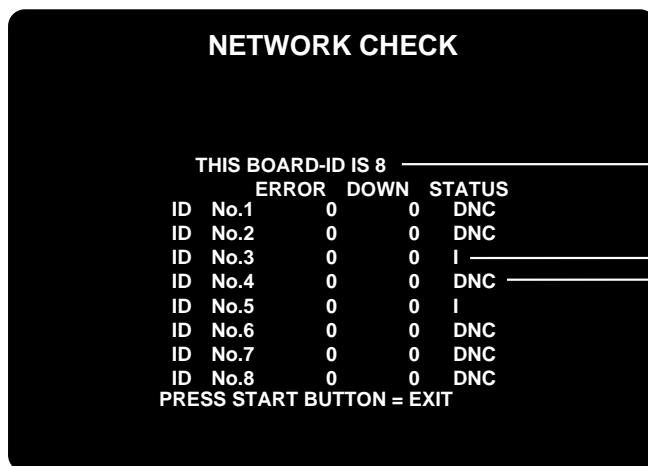
■When networking the machines, be sure to check their networking status on this screen. To return to the "NETWORK OPTIONS" screen, press the START button.

⚠

•**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 39.**
•**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".
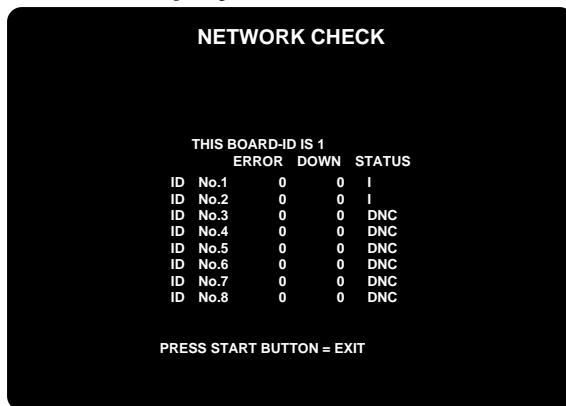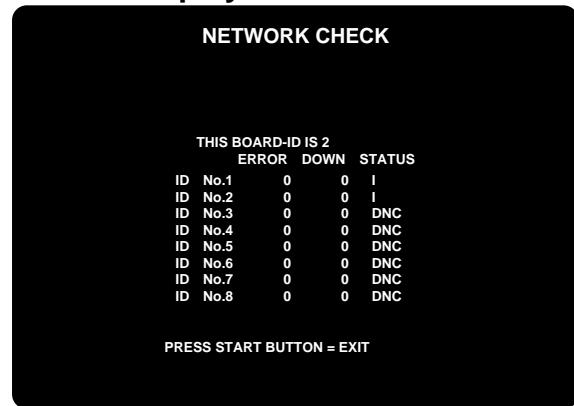
■Screen display when game machines are networked ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

•One game machine

Screen for player 1

```
              NETWORK CHECK



          THIS BOARD-ID IS 1
             ERROR  DOWN   STATUS
    ID  No.1     0      0    I
    ID  No.2     0      0    I
    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    I
    ID  No.2     0      0    I
    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
```
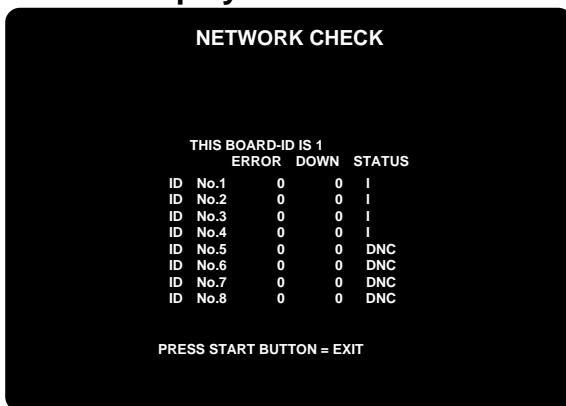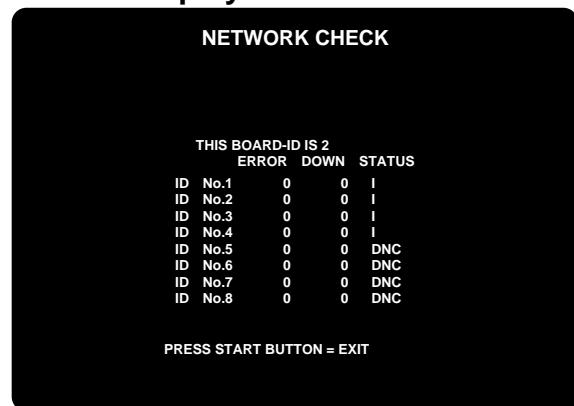
•Two game machines (4P) are networked

Screen for player 1

```
              NETWORK CHECK



          THIS BOARD-ID IS 1
             ERROR  DOWN   STATUS
    ID  No.1     0      0    I
    ID  No.2     0      0    I
    ID  No.3     0      0    I
    ID  No.4     0      0    I
    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    I
    ID  No.2     0      0    I
    ID  No.3     0      0    I
    ID  No.4     0      0    I
    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    I
    ID  No.2     0      0    I
    ID  No.3     0      0    I
    ID  No.4     0      0    I
    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    I
    ID  No.2     0      0    I
    ID  No.3     0      0    I
    ID  No.4     0      0    I
    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 → Auto setting   Setting ————————→ Auto setting

| 1P | 2P | | 1P | 2P | 3P | 4P | 5P | 6P | 7P | 8P |

One machine   Four machines being networked

Setting modes which can be unified are as follow:
  •"SOUND OPTIONS" .... (See page 32)
  •"GAME OPTIONS" .... (See page 32)
  •"COURSE SETTINGS" ..... (See page 33)
  •"COIN OPTIONS" .... (See page 34)

■**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 net work. (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 39 and 40.

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 32.)

# 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 35 and 36, 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. |

NETWORK ERROR

CHECK PLAYER MACHINE NUMBER
IN THE NETWORK OR
CHECK NETWORK VABLES

THIS MACHINE'S CAR No.1 ———————————— •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 35)
•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 26)

| Symptom 2 | The "NETWORK ERROR" message appears on the screen during playing. |

NETWORK ERROR

CALL THE CLARK

■ **Possible causes and measures to be taken** ▬▬▬▬▬▬▬▬▬▬▬▬

| Possible causes	Measures
•One of the networking cable has been disconnected from during play.	·1.Turn OFF the main power switch. 2.Connect the networking cable properly. 3.Turn ON the main power switch.
•One of the networking cable has been internally broken or broken.	·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.)
•The test switch (on the service panel) of one of the networked game machines has been pressed. ⚠ •The test switch should pressed during the game demo of all the networked game machines.	·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.
•Any of the networked machines has different settings.	·Configure the settings of all the machines referring to "NETWORK CONFIGURATION" (see page 37).

6 Setting up the game machine
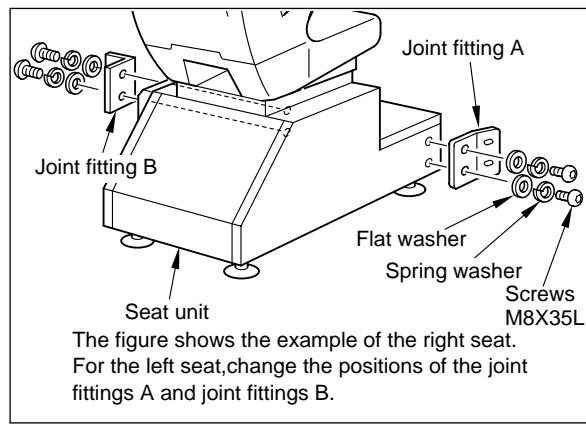
6-1 Connecting the unit

■**How to connect the unit** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

⚠
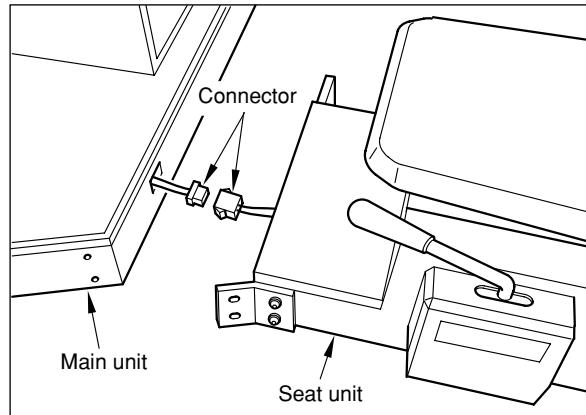
•**Do not pull the wiring and connectors of the main unit and seat unit to move them.**
•**When installing the main unit and seat unit take care not to catch the wiring.**
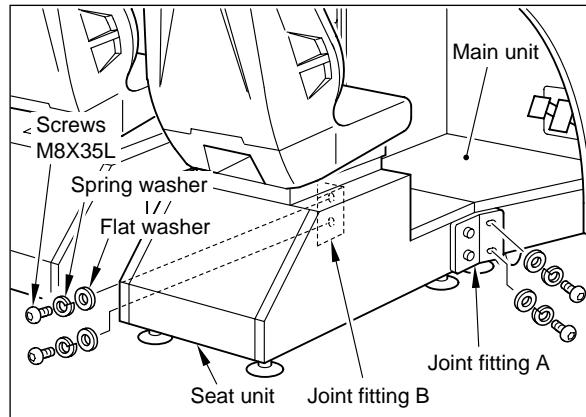
1 ▎ Fix the attached joint fittings A and joint fittings B temporarily to the seat unit.

Joint fitting A

Joint fitting B

Flat washer
Spring washer
Screws M8X35L

Seat unit

The figure shows the example of the right seat.
For the left seat,change the positions of the joint fittings A and joint fittings B.

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

Connector

Main unit

Seat unit

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

Main unit

Screws M8X35L
Spring washer
Flat washer

Seat unit   Joint fitting B

Joint fitting A

•After finishing the "6-2 Fastening the adjusters" on page 42, tighten the joint securely.

MEMO

41
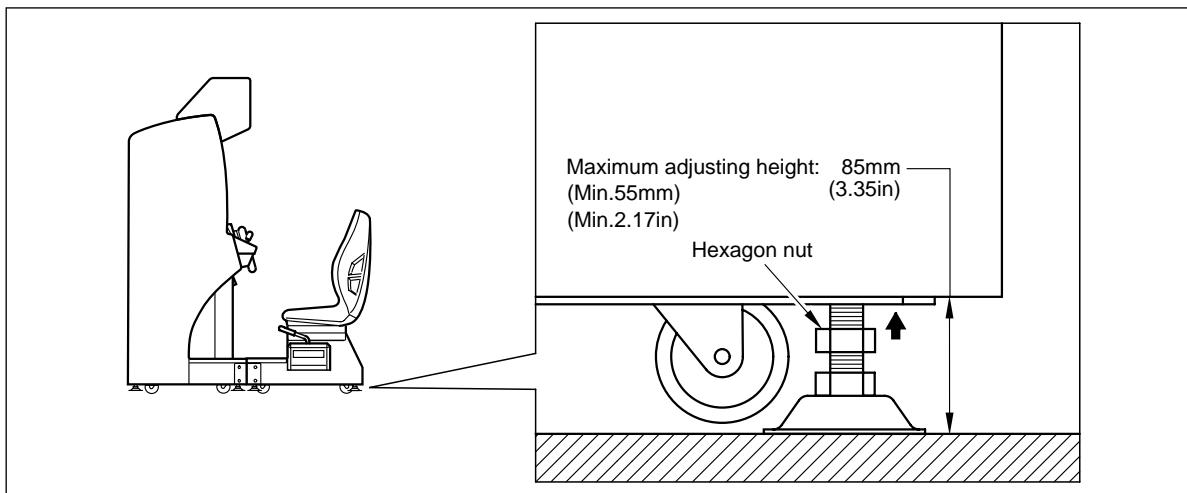
6-2 Fastening the adjusters

■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.**

Maximum adjusting height: 85mm
(Min.55mm) (3.35in)
(Min.2.17in)
Hexagon nut
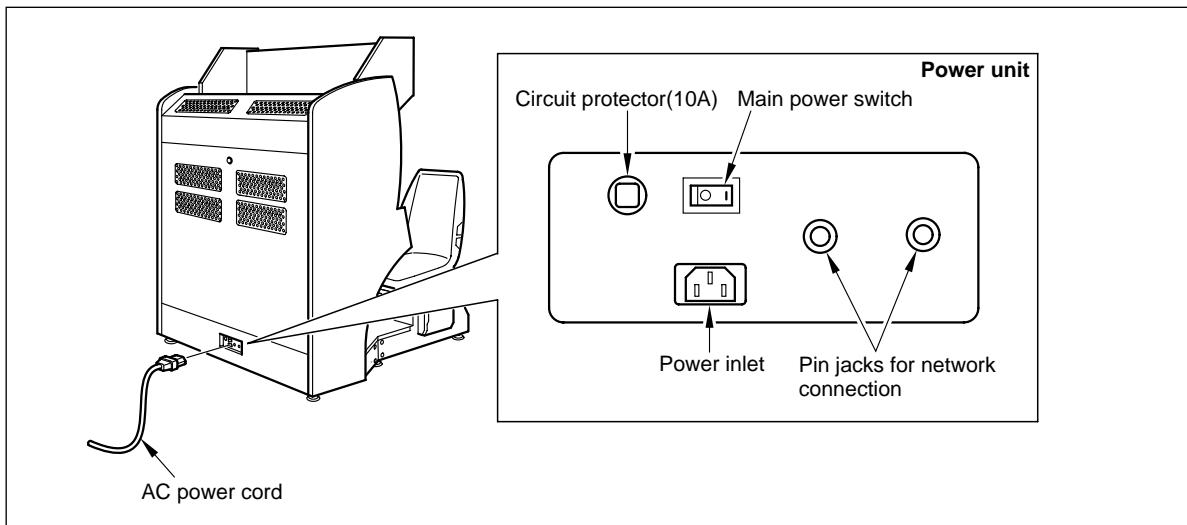
6-3 Power unit

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

■**Power unit** ━

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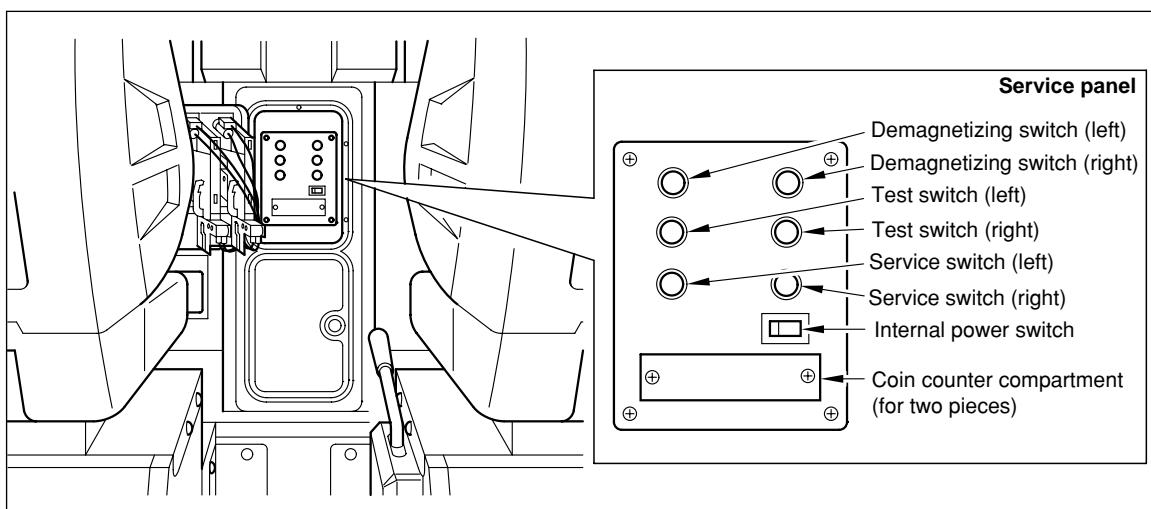
•**Be sure to use the attached AC power cord.**
•**Be sure to ground to the machine.   Never connect the grounding wire to gas pipe, water pipe or telephone ground terminal.**

Power unit

Circuit protector(10A)   Main power switch

Power inlet   Pin jacks for network connection

AC power cord

6-4 Service panel

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

■**Service panel** ━

Service panel

Demagnetizing switch (left)
Demagnetizing switch (right)
Test switch (left)
Test switch (right)
Service switch (left)
Service switch (right)
Internal power switch
Coin counter compartment (for two pieces)

6-5 Separating and moving the units

The machine can be divided into the units.
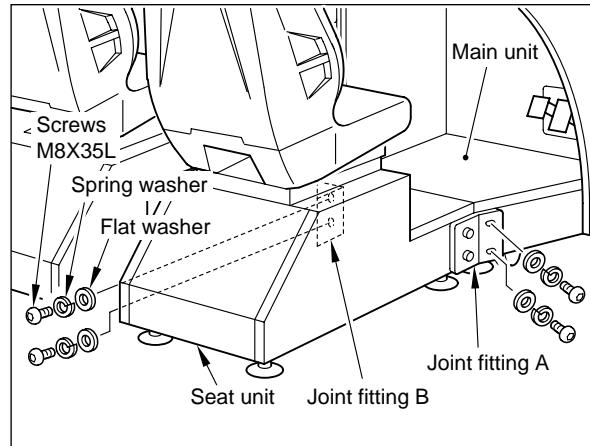
■**How to separate the units** ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━

⚠
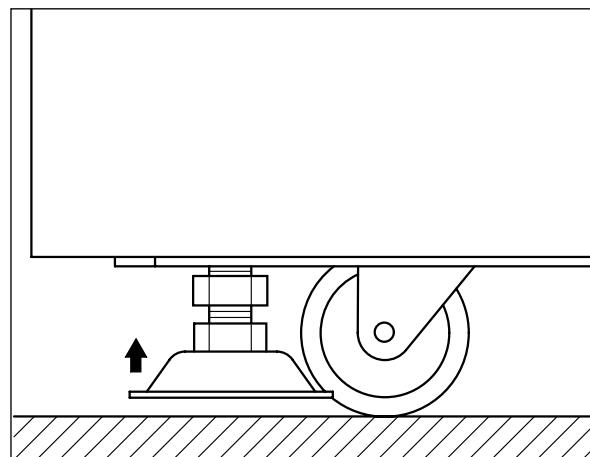
- •**Before separating the units from the machine, be sure to turn OFF the main power switch and remove the power cord plug from the receptacle.**
- •**When moving the machine, be sure to separate the main unit and seat unit beforehand.**
- •**Before moving the machine, fully screw up all adjusters.   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 side of the joint fitting A and joint fitting B.

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.

6-6 Moving the coin counter
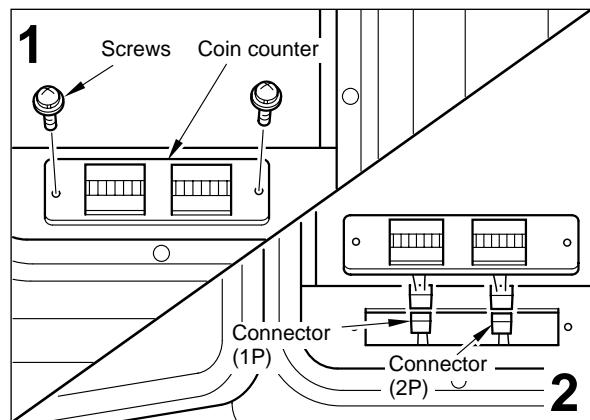
The coin counter was installed in the coin box when the machine left the factory, but it can be moved onto the service panel.

■**How to move the coin counter** ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━

⚠
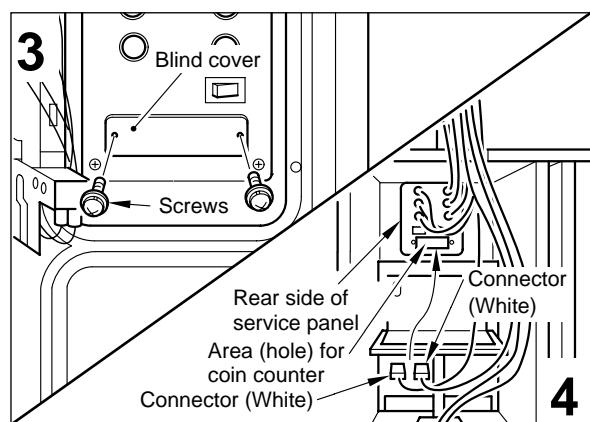
•**Before moving the coin counter, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**
•**The machine has some internal parts with high voltage.   Only a qualified industry specialists is allowed to open the back door of the machine.   With this back door open, be very careful not to touch unnecessary parts.**
•**When the back door is closed, be sure to fix it with the 3 screws.**

1 ┃ Open the coin door and remove the screw securing the coin counter.
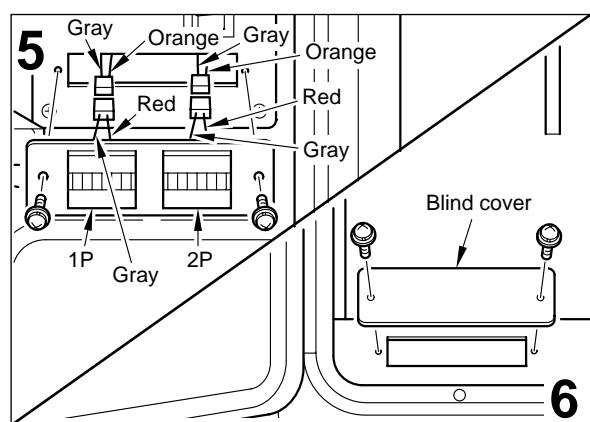
2 ┃ Taking out the coin counter, disconnect the two connectors.

3 ┃ Open the maintenance door and unscrew the blind cover to remove it from the service panel.

4 ┃ Remove the back door off the main unit (see Steps 1 and 2 on page 49).   Move the two connectors to the service panel.

5 ┃ Connect the connector and secure the coin counter with the screw.

6 ┃ Screw down the blind cover (removed in Step 3 above) in the position where there was the coin counter behind the coin door.

45

7 Maintenance and annex
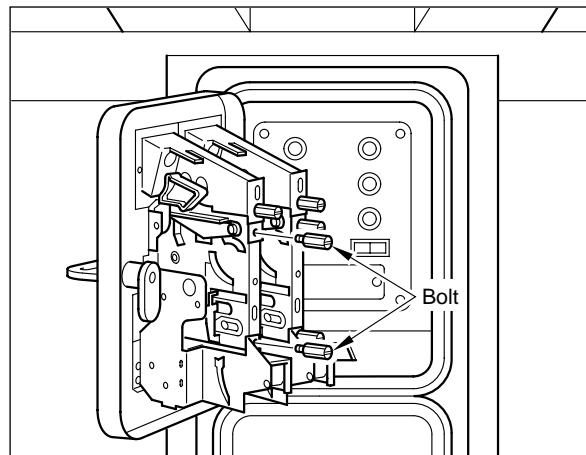
7-1 Replacing the coin selector

■How to replace the coin selector ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

⚠
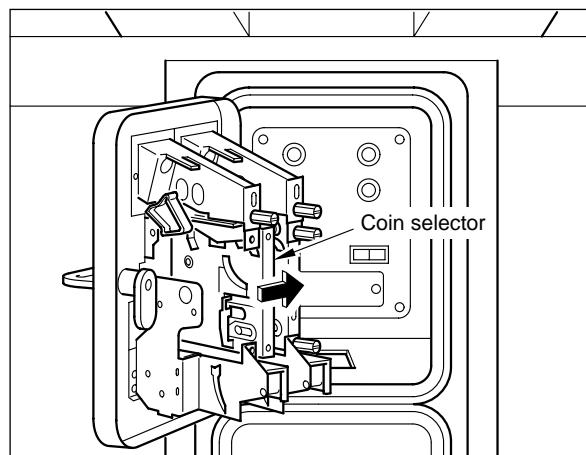
•Before replacing the coin selector, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.
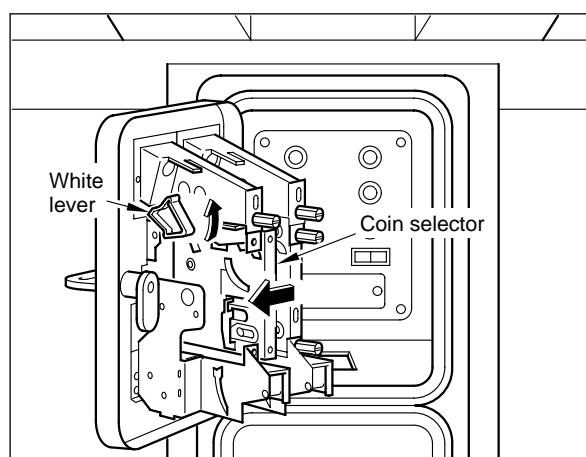
1 Open the maintenance door. Remove the two bolts off the coin selector.

Bolt

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

Coin selector

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.

White lever

Coin selector
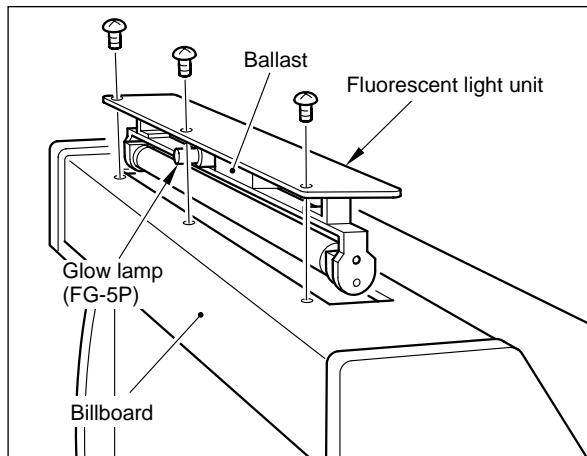
7-2 Replacing the fluorescent light

■**How to replace the fluorescent light** ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━ ━

⚠
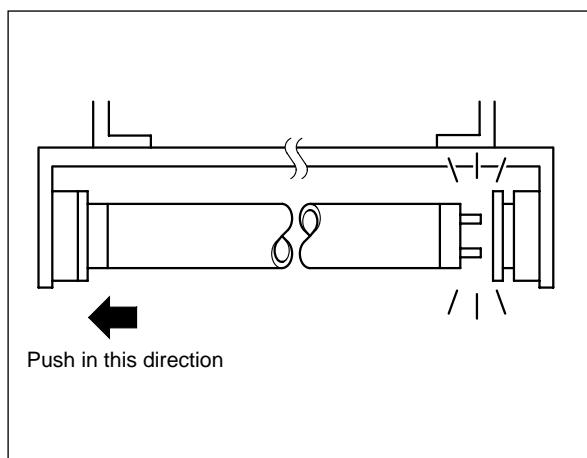
•**Before replacing the fluorescent light, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**
•**The fluorescent light is hot just after it is put off.   Wait until it cools down and then replace it with a new one of the same type (straight tube 32W/100V).**
•**When 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.

Ballast
Fluorescent light unit
Glow lamp (FG-5P)
Billboard

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

4 Install a new fluorescent light in the reverse order.

Push in this direction

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

MEMO
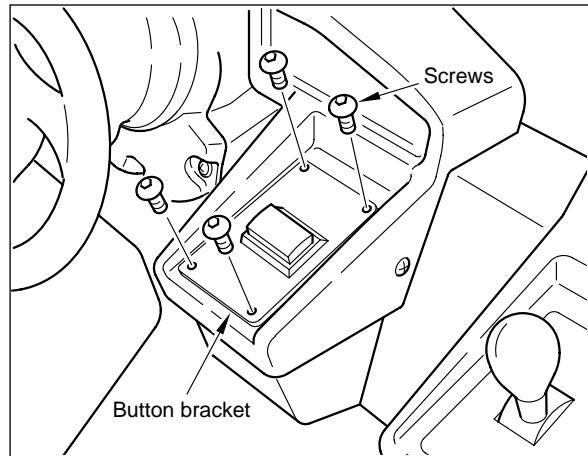
7-3 Replacing the button

■**How to replace the button**━━━━━━━━━━━━━━━━━━━━━━━

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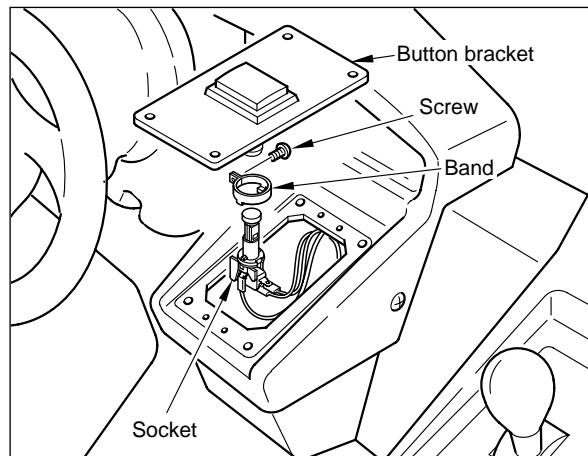
•**Before replacing the button, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**

1 ▌ Remove the screws and detach the button bracket.

Screws

Button bracket
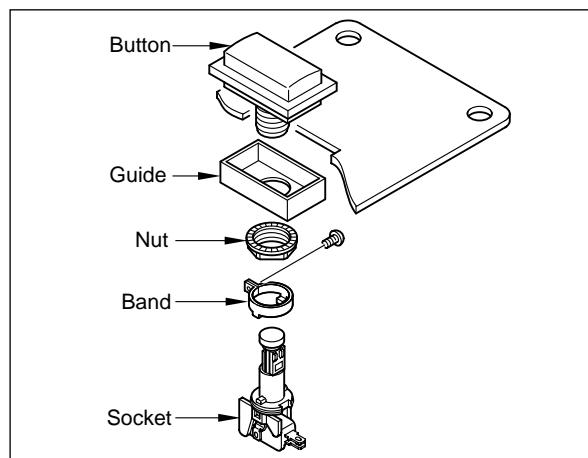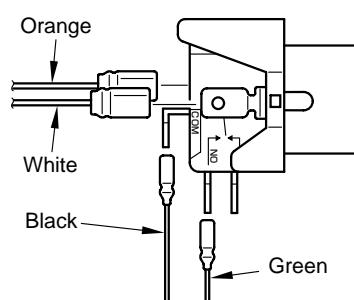
2 ▌ Remove the screw and detach the band from the button socket.

3 ▌ Draw the socket out of the button.

Button bracket

Screw

Band

Socket

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

Orange

White

Black

Green

Button

Guide

Nut

Band

Socket
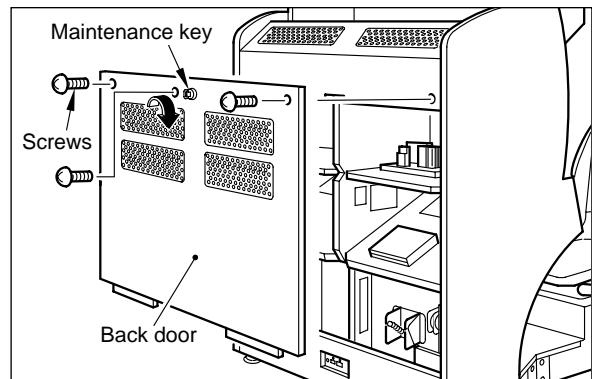
7-4 Replacing and adjusting the potentiometer

■**How to replace the steering wheel unit potentiometer** ━ ━ ━ ━ ━ ━ ━ ━

⚠
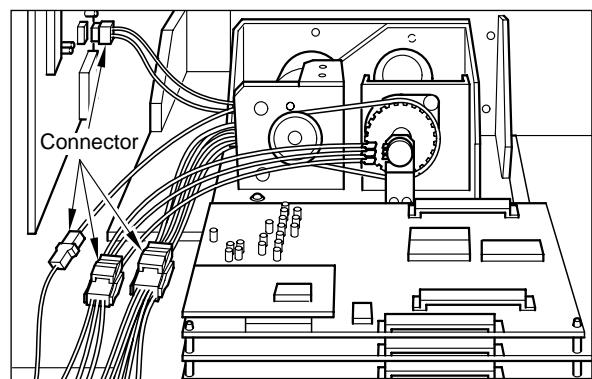
•**Before replacing the steering wheel unit potentiometer, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**
•**Since the steering wheel unit is heavy, remove it with care.**
•**The machine has some internal parts with high voltage.　Only a qualified industry specialists 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.**
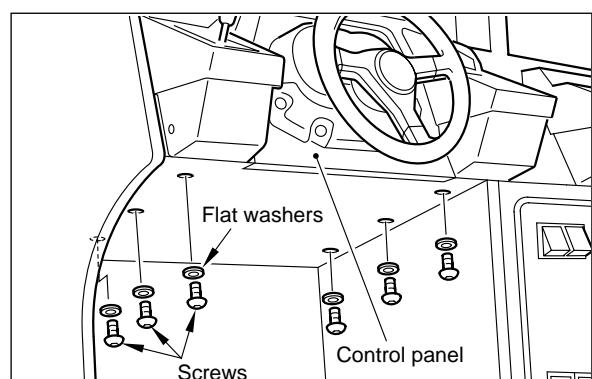
1 ▌ Remove the screws of the back door.

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

Maintenance key
Screws
Back door
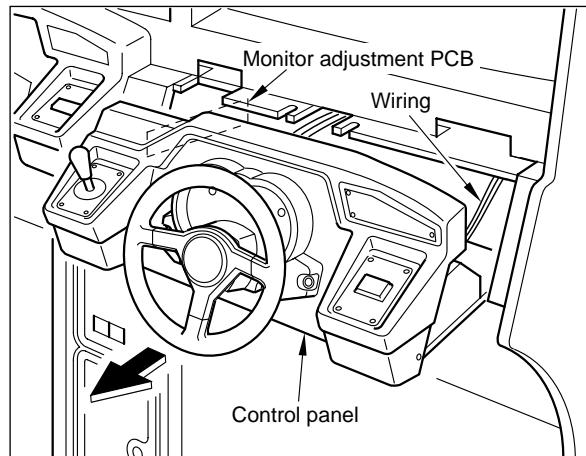
3 ▌ Disconnect the four connectors shown at right.

Connector

4 ▌ Remove the screws off the control panel.

Flat washers
Screws
Control panel

5 Pull out the control panel towards you.
Take due xare not to drop the control panel. And take care that the control panel does not damage the monitor adjustment PCB.
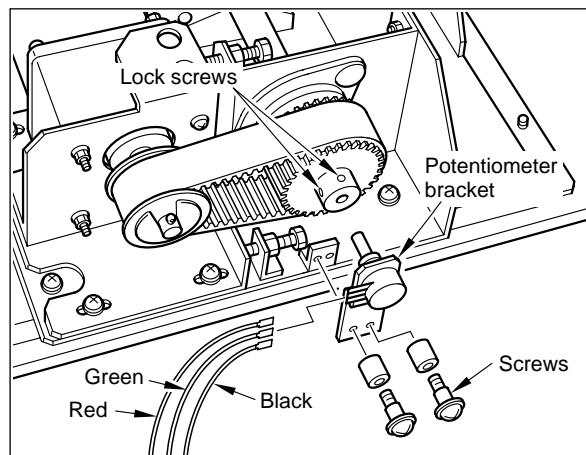
Monitor adjustment PCB

Wiring

Control panel

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

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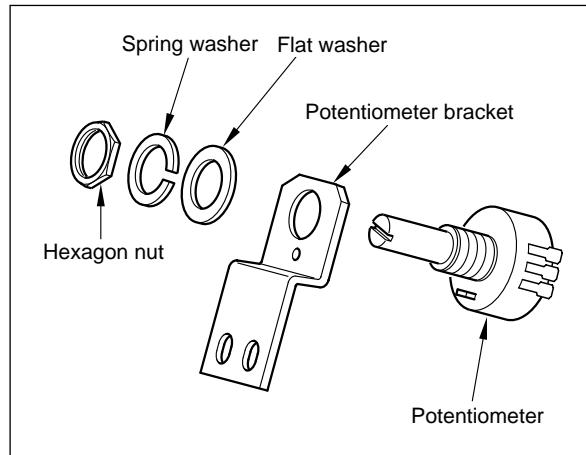
MEMO
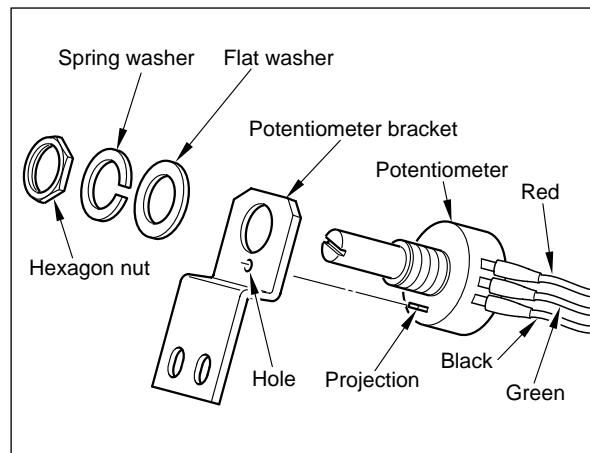
Lock screws

Potentiometer bracket

Screws

Green

Red

Black

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

Spring washer Flat washer

Potentiometer bracket

Hexagon nut

Potentiometer

50
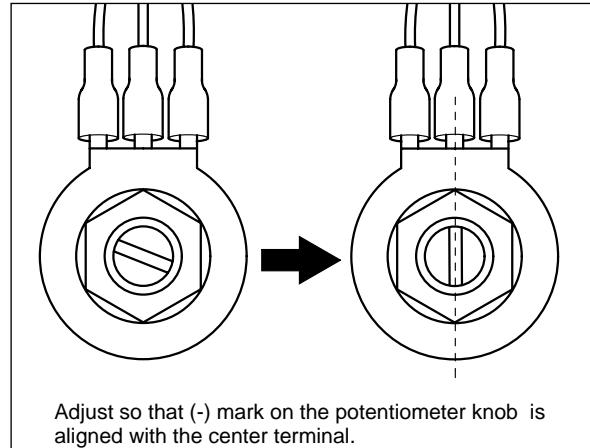
■**How to adjust the steering wheel unit potentiometer** ━ ━ ━ ━ ━ ━ ━ ━ ━ ━

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

2 Connect the wiring poperly.

Spring washer   Flat washer
Potentiometer bracket
Potentiometer
Red
Hexagon nut
Black
Hole   Projection   Green

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.

Adjust so that (-) mark on the potentiometer knob is aligned with the center terminal.

•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 27.

7 Call up the "I/O CHECK" screen, show on page 30. Move the steering wheel and make sure the "I" make comes to the LEFT and RIGHT positions.

■**How to replace the pedal unit potentiometers** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

⚠
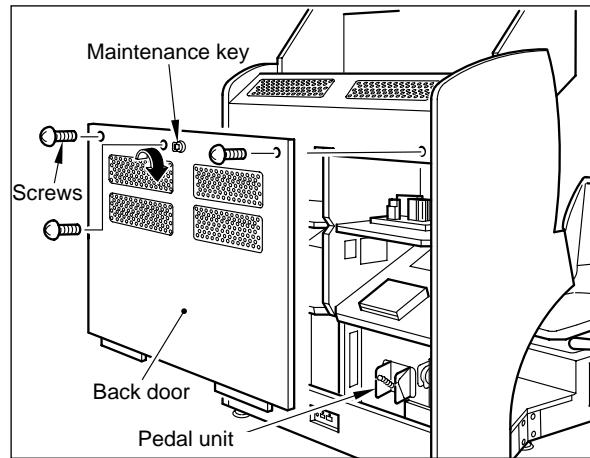
> •**Before replacing the acceleration and brake pedal unit potentiometers, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**
> •**The machine has some internal parts with high voltage. Only a qualified industry specialists is allowed to open the back door of 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.**
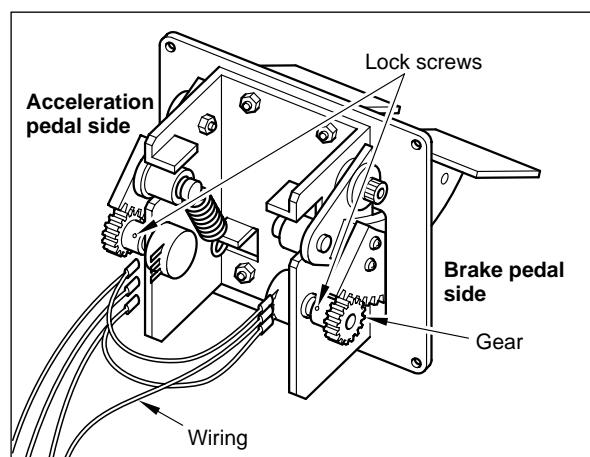
1 ▌ Remove the screws of the back door.

**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 looseing.
> ━ **MEMO** ━
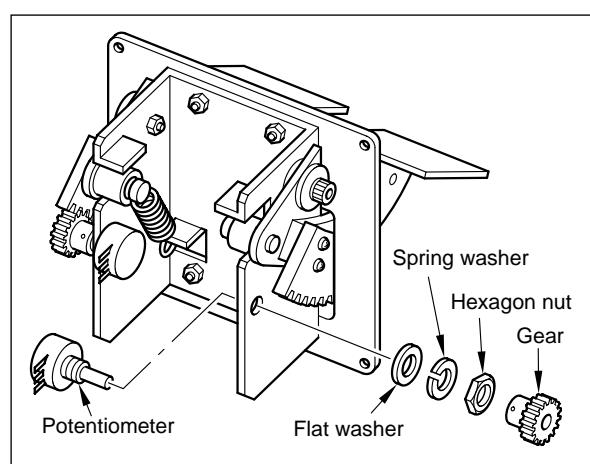
4 ▌ Remove the hexagon nut and separate the potentiometer.

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** ━

52

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

1 Without touching the pedal, adjust the potentiometer with a flatblade screwdriver.
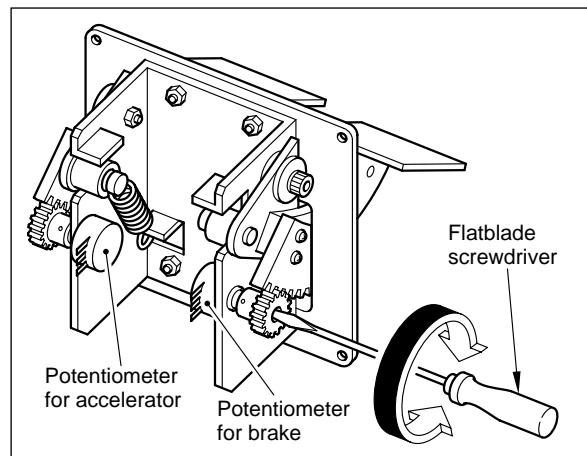
[Adjusting method]

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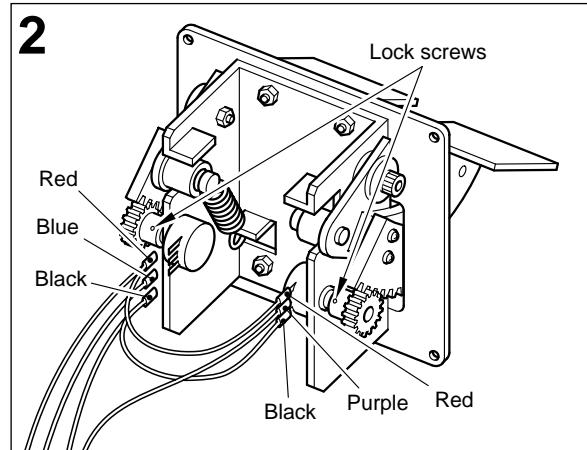
•**Potentiometer for brake**
Fully turn the potentiometer clockwise and the turn it back by about 10°.

Flatblade screwdriver

Potentiometer for accelerator

Potentiometer for brake

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

2

Lock screws

Red

Blue

Black

Black   Purple   Red

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 27.
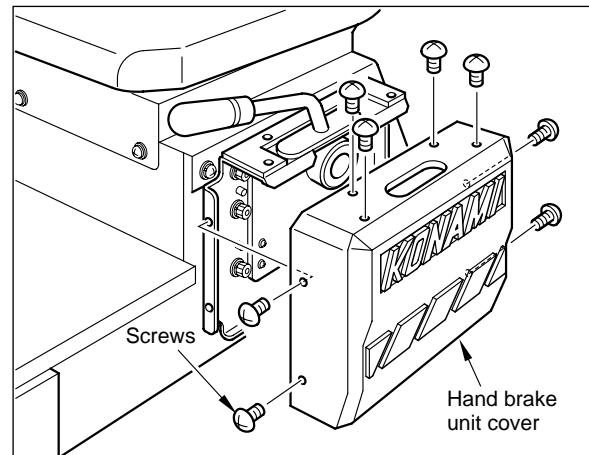
6 Call up the "I/O CHECK" screen, show on page 30. Step on the acceleration pedal and brake pedal and make sure the "I" make comes to the MIN and MAX positions.

■**How to replace the hand brake unit potentiometer** ━ ━ ━ ━ ━ ━ ━ ━ ━ ━

⚠
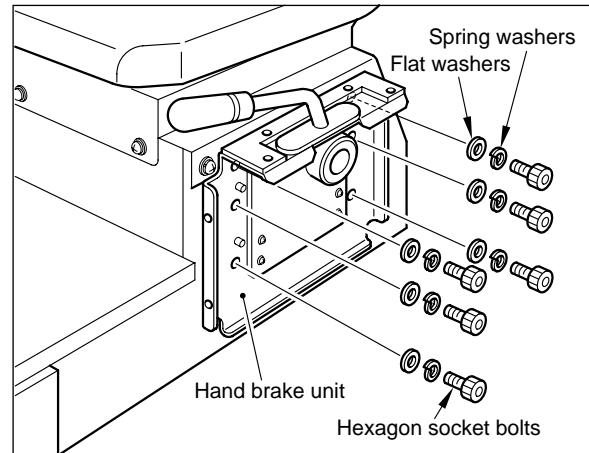
•**Before replacing the hand brake unit potentiometer, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**
•**Since the hand brake unit is heavy, use due care when handling it.**
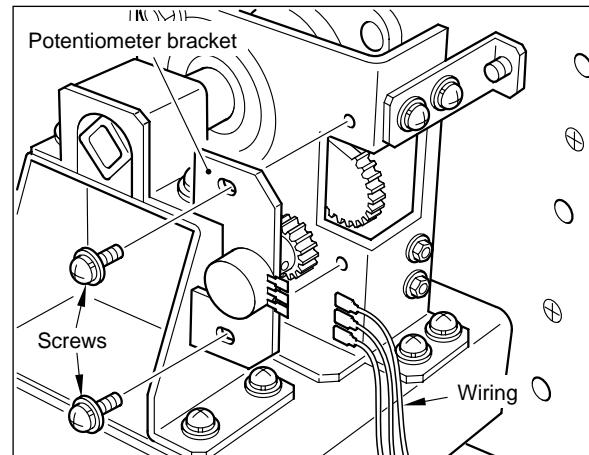
1 Remove the eight screws and detach the hand brake unit cover.

Screws

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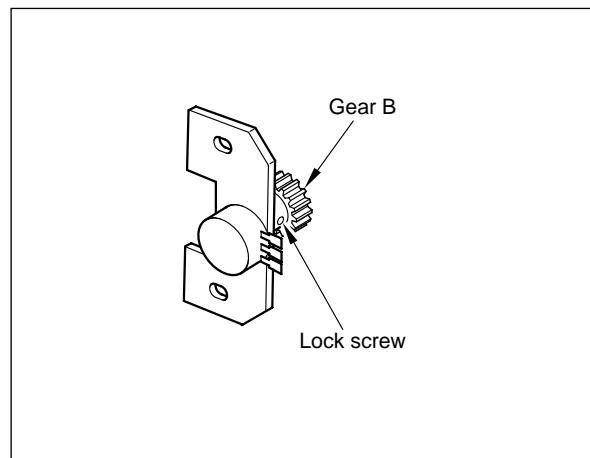
2 Remove the six screws and separate the hand brake unit from the main unit.

Spring washers
Flat washers

Hand brake unit

Hexagon socket bolts

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

Potentiometer bracket

Screws

Wiring
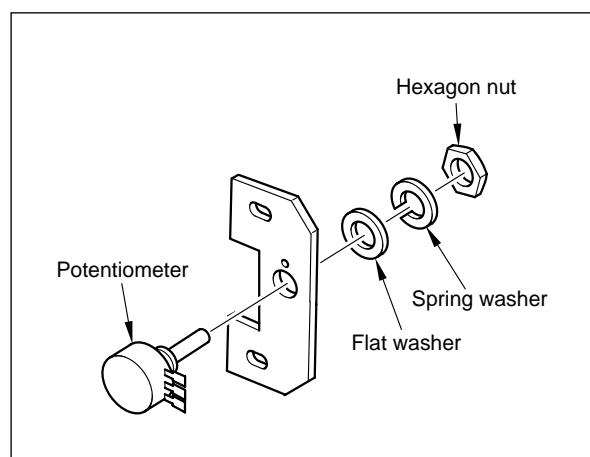
4 Loosen the lock screw and pull out the gear B.

Gear B

Lock screw

5 Remove the hexagon nut and separate the potentiometer.
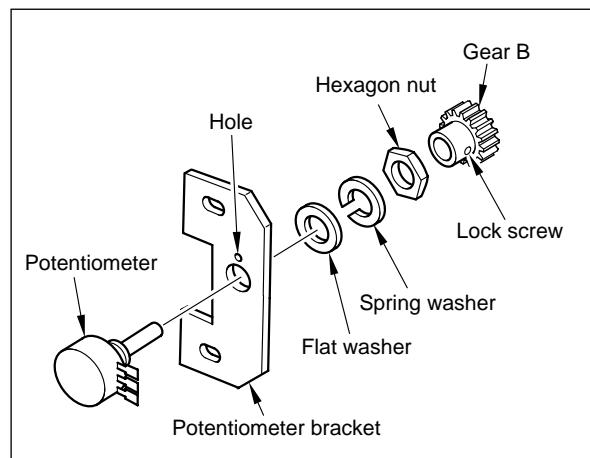
•When replacing the potentiometer with new one, be sure to first make the adjustment on the next page.

MEMO

Hexagon nut

Potentiometer

Spring washer

Flat washer
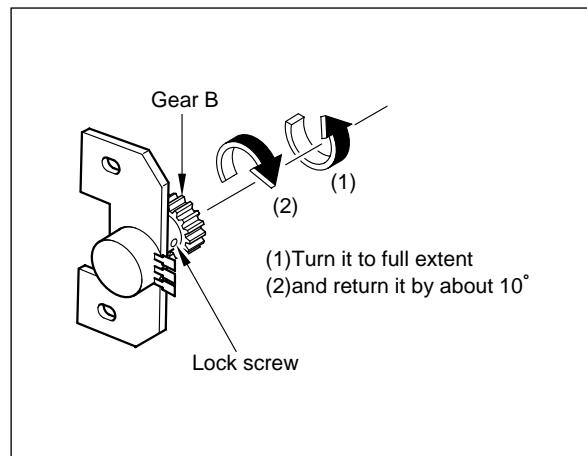
6 Fit the potentiometer projection to the smallest hole of the potentiometer bracket. Tighten up the hexagon nut.

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

Gear B

Hexagon nut

Hole

Lock screw

Potentiometer

Spring washer

Flat washer

Potentiometer bracket

55
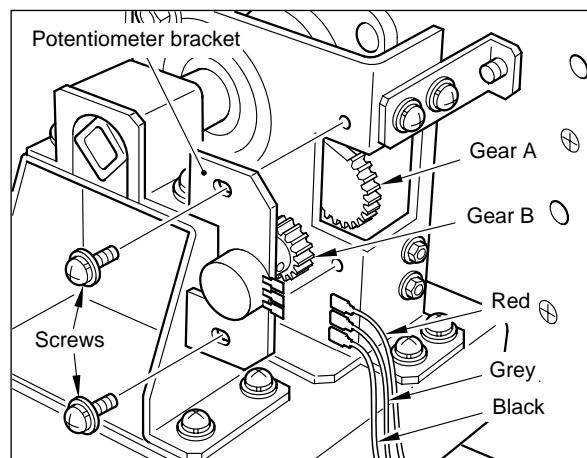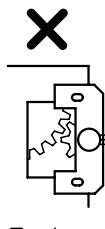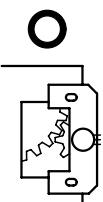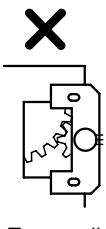
■**How to adjust the hand brake unit potentiometer** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

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

Gear B

(1)
(2)

(1)Turn it to full extent
(2)and return it by about 10°

Lock screw

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.

Potentiometer bracket

Gear A

Gear B

Red

Screws

Grey

Black

✗   ○   ✗

Too small clearance   Correct   Too large clearance

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 27.

6 ▌ Call up the "I/O CHECK" screen, show on page 30. Move the hand brake and make sure the "I" make comes to the MIN and MAX positions.
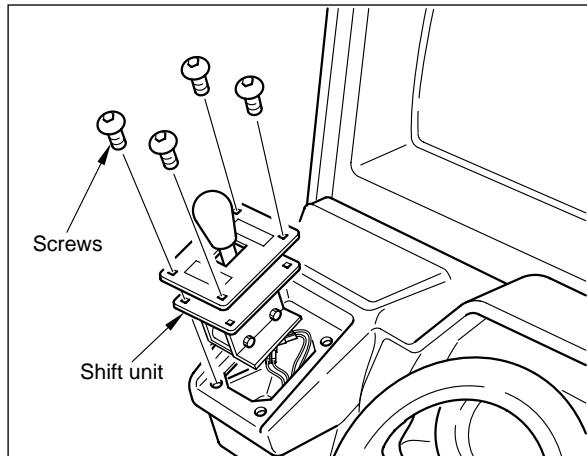
7-5 Replacing the shift unit microswitch

■**How to replace the shift unit microswitch** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

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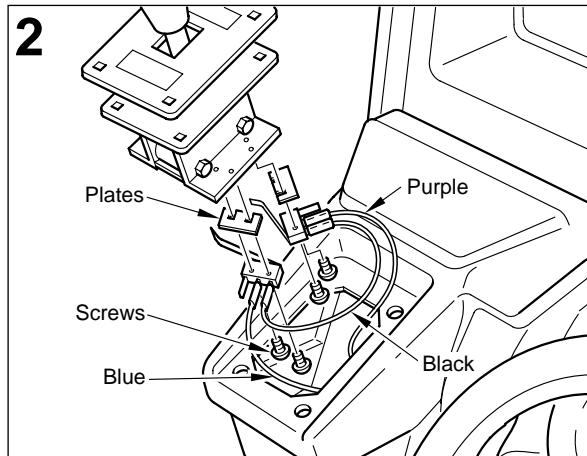
•**Before replacing the shift unit microswitch, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**

1 Remove the screws and take out the shift unit.

Screws

Shift unit

2 Remove the screws and take out the microswitch and plate.
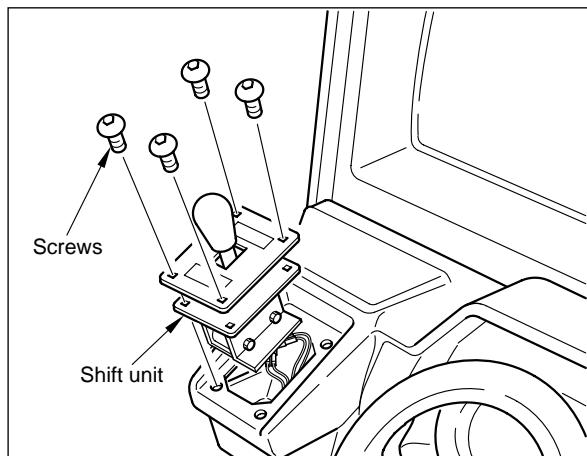
3 When replacing the microswitch with new one, be careful to position the microswitch correctly. Do not confuse the wiring.

2

Plates

Purple

Screws

Blue

Black

4 Place the shift unit back into position.

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

Screws

Shift unit

7-6 Inspecting and replacing the motor brushes
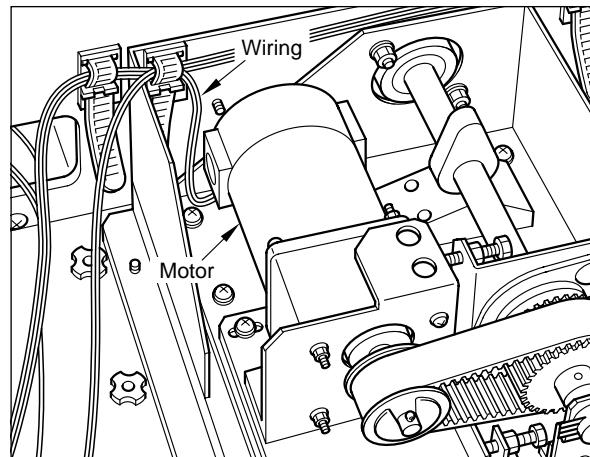
At the motor of the steering wheel unit are fitted two motor brushes. The motor brushes are worn every time when the machine is operated. It is therefore recommended to do periodical checking about every 2000 hours.

■**How to inspect and replace the motor brushes** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

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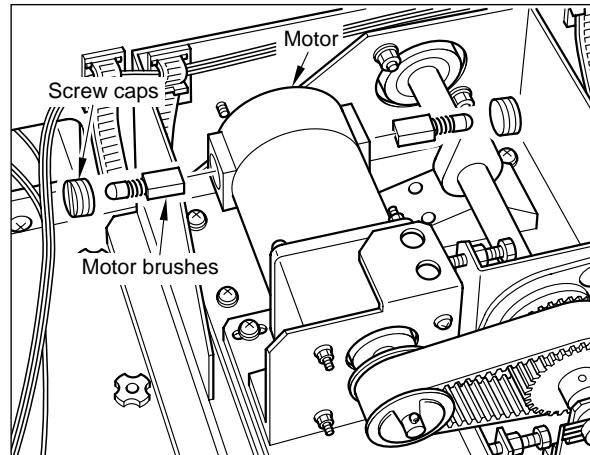
•**Before inspecting and replacing the motor brushes, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**

1 Referring to page 49, separate the control panel from the main unit.

2 Disconnect the wiring from the motor.

Wiring

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.

Motor

Screw caps

Motor brushes
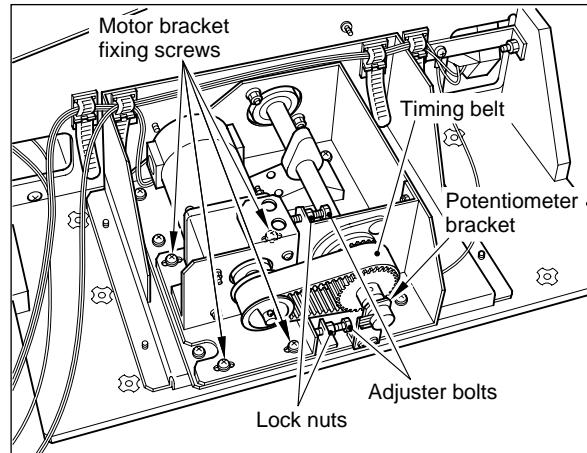
7-7 Replacing the timing belt and adjusting its tension

■ **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.**
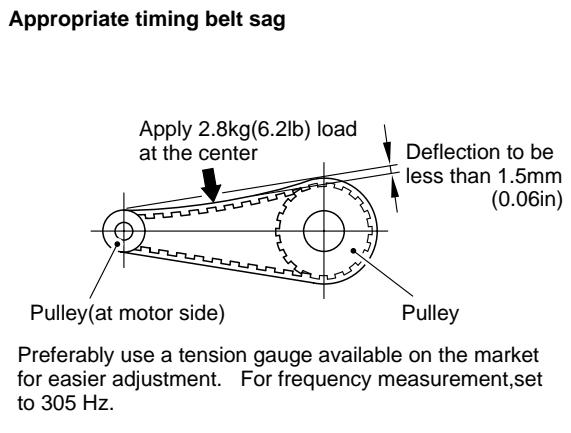
1 Referring to page 49, separate the control panel from the main unit.

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.

Motor bracket fixing screws

Timing belt

Potentiometer bracket

Adjuster bolts

Lock nuts

■ **How to adjust timing belt tension** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬
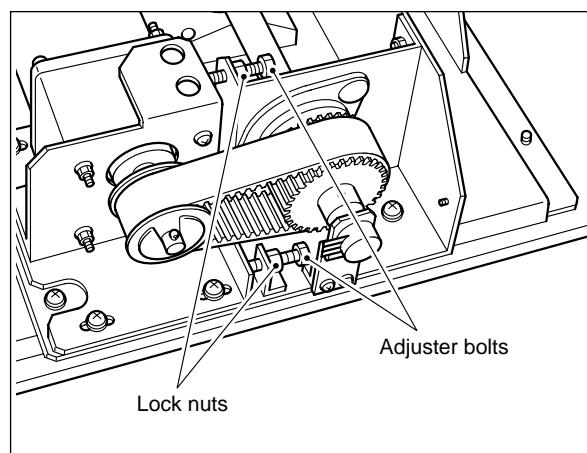
1 Keeping loose the motor bracket fixing screws and the adjuster bolts, apply a new timing belt on the pulley.

2 Make sure the timing belt runs in mesh with the pulley.
Tighten the adjuster bolts to achieve the deflection specified in the figure.

Appropriate timing belt sag

Apply 2.8kg(6.2lb) load at the center

Deflection to be less than 1.5mm (0.06in)

Pulley(at motor side)

Pulley

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

3 Make sure the deflection is as specified. Tighten up the lock nuts for the adjuster bolts.

•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.

Adjuster bolts

Lock nuts

59

7-8 Resetting the circuit protector
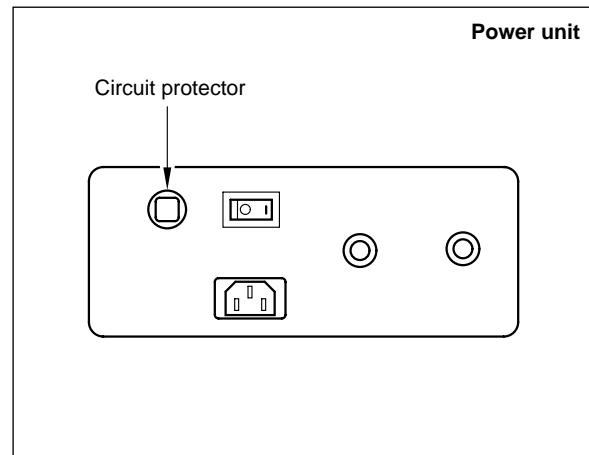
If an overcurrent or short circuit occurs, the circuit protector will be automatically actuated to protect the electric circuits of the game machine.   When resetting the circuit protector, turn OFF the main power switch, unplug the power cord from the receptacle, eliminate the cause, and then press the button of the circuit protector.

■**How to reset the circuit protector** ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

⚠

•**Before resetting the circuit protector, be sure to turn OFF the main power switch and unplug the power cord from the receptacle.**
•**If the circuit protector trips 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.**

Press the circuit protector button at the power unit.

Power unit

Circuit protector

7-9 Adjusting the monitor
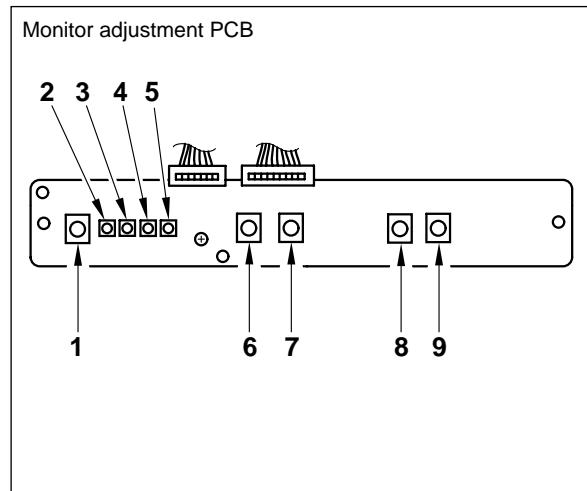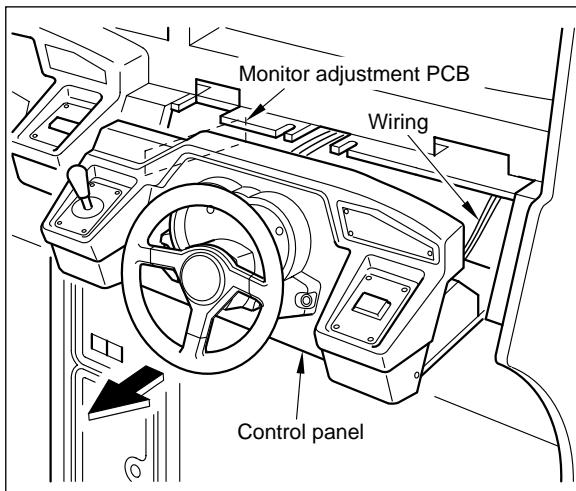
The monitor has already been adjusted at the time of shipment, but it may be readjusted as desired.

⚠️

•**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 49 and 50)
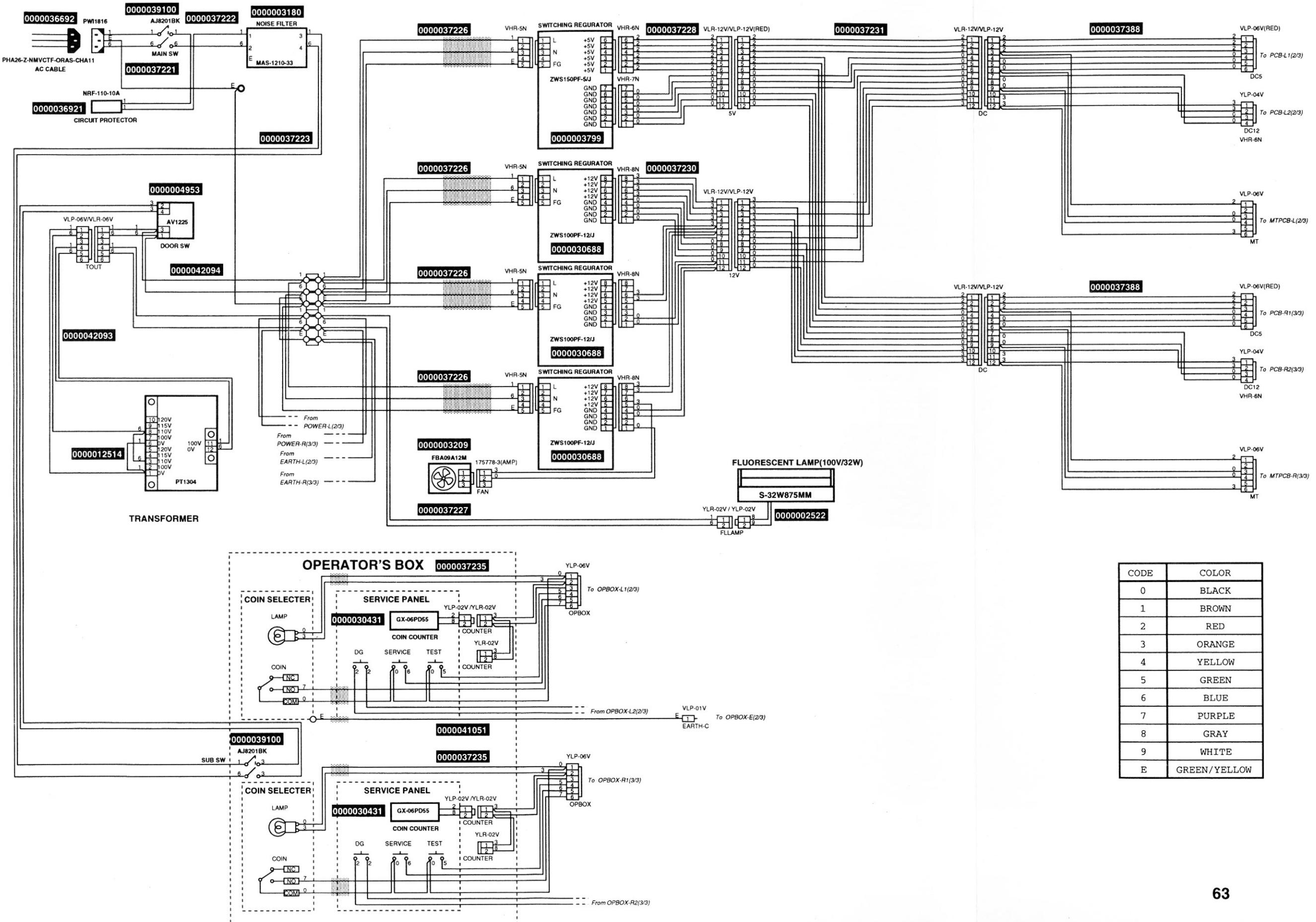
1	CONTRAST	**Contrast adjustment** Used to changes the contrast.
2	R.GAIN	**Red input gain adjustment** Changes red brightness. Turning it clockwise will make the red deeper.
3	G.GAIN	**Green input gain adjustment** Changes green brightness. Turning it clockwise will make the green deeper.
4	B.GAIN	**Blue 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.

MEMO

7-10 Wiring diagram

PHA26-Z-NMVCTF-ORAS-CHA11
AC CABLE
PWI1816
0000036692
0000039100
AJ8201BK
MAIN SW
0000037221
0000037222
0000003180
NOISE FILTER
MAS-1210-33
0000037223

NRF-110-10A
0000036921
CIRCUIT PROTECTOR

0000037226 VHR-5N
SWITCHING REGURATOR
ZWS150PF-5/J
0000003799
+5V +5V +5V +5V +5V
GND GND GND GND GND GND
VHR-6N VHR-7N
0000037228
VLR-12V/VLP-12V(RED)
0000037231
VLR-12V/VLP-12V
5V
0000037388
VLP-06V(RED)
To PCB-L1(2/3)
DC5
YLP-04V
To PCB-L2(2/3)
DC12
VHR-6N

0000004953
AV1225
DOOR SW
VLP-06V/VLR-06V
0000042094

0000042093

0000012514
PT1304
TRANSFORMER
120V 115V 110V 100V 0V 120V 115V 110V 0V
100V 0V

From POWER-L(2/3)
From POWER-R(3/3)
From EARTH-L(2/3)
From EARTH-R(3/3)

0000037226 VHR-5N
SWITCHING REGURATOR
ZWS100PF-12/J
0000030688
+12V +12V +12V +12V GND GND GND GND
VHR-8N
0000037230
VLR-12V/VLP-12V
12V
VLP-06V
To MTPCB-L(2/3)
MT

0000037226 VHR-5N
SWITCHING REGURATOR
ZWS100PF-12/J
0000030688
VHR-8N
VLR-12V/VLP-12V
0000037388
VLP-06V(RED)
To PCB-R1(3/3)
DC5
YLP-04V
To PCB-R2(3/3)
DC12
VHR-6N

0000037226 VHR-5N
SWITCHING REGURATOR
ZWS100PF-12/J
0000030688
VHR-8N
DC

0000003209
FBA09A12M
175778-3(AMP)
FAN
0000037227

FLUORESCENT LAMP(100V/32W)
S-32W875MM
0000002522
YLR-02V / YLP-02V
FLLAMP

VLP-06V
To MTPCB-R(3/3)
MT

OPERATOR'S BOX
0000037235

COIN SELECTER
LAMP
COIN
NC NO COM

SERVICE PANEL
0000030431
GX-06PD55
COIN COUNTER
DG SERVICE TEST
YLP-02V/YLR-02V
COUNTER
YLR-02V
COUNTER
YLP-06V
To OPBOX-L1(2/3)
OPBOX

0000041051
From OPBOX-L2(2/3)
VLP-01V
EARTH-C
To OPBOX-E(2/3)

0000039100
AJ8201BK
SUB SW

COIN SELECTER
LAMP
COIN
NC NO COM

SERVICE PANEL
0000030431
GX-06PD55
COIN COUNTER
DG SERVICE TEST
YLP-02V/YLR-02V
COUNTER
YLR-02V
COUNTER
YLP-06V
To OPBOX-R1(3/3)
OPBOX
0000037235

From OPBOX-R2(3/3)

CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GRAY
9	WHITE
E	GREEN/YELLOW

Wiring diagram

CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GRAY
9	WHITE
E	GREEN/YELLOW

MAIN PCB

MONITOR
K29CR55

PEDAL UNIT
BRAKE   GAS

SEAT UNIT
HAND BRAKE

VIEW BUTTON
LED
VIEW
DOWN
UP

SHIFT UNIT

STEERING UNIT

SPEAKER
SP-L
PD10391A
PD10391A
SP-R

0000037251
0000037253
0000003209
FAN
175778-3(AMP)
FBA09A12M

0000037702
0000037239
0000037242
0000037244
0000037252
0000037238
0000043973
0000037245
0000036918
0000012889
0000037250
0000006398
0000015440
PWB453635
PWB403454
0000031676
0000031389
PWB405281A
0000037387
0000037246
0000037247
0000002680
0000002322
0000002322
0000037248
0000037243 x1
0000037382 x2
0000037383 x1

64

Wiring diagram

CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GRAY
9	WHITE
E	GREEN/YELLOW

Wiring diagram

CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GRAY
9	WHITE
E	GREEN/YELLOW

Wiring diagram

CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GRAY
9	WHITE
E	GREEN/YELLOW

PEDAL UNIT
BRAKE GAS

SEAT UNIT
HAND BRAKE

VIEW BUTTON
LED
VIEW
DOWN
UP

SHIFT UNIT

STEERING
STEERING UNIT

MAIN PCB
175778-3(AMP) FBA09A12M FAN

MONITOR
K29CR55

SPEAKER
PD10391A SP-L
PD10391A SP-R

PWB403454
PWB405281A
PWB453635

0000037251
0000037253
0000003209
0000037252
0000037239
0000037702
0000037244
0000037242
0000043973
0000037238
0000037245
0000012889
0000036918
0000037250
0000006398
0000015440
0000037246
0000037247
0000002680
0000031676
0000031389
0000037387
0000037243 x1
0000037382 x2
0000037383 x1
0000037248
0000002322
0000002322

Wiring diagram

CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	PURPLE
8	GRAY
9	WHITE
E	GREEN/YELLOW

PEDAL UNIT

BRAKE   GAS

YLP-04V / YLR-04V

0000037239   PEDAL

SEAT UNIT

HAND BRAKE

YLP-04V / YLR-04V

0000037244   YLP-03V / YLR-03V

0000037242   HB-U   BRAKE

VIEW BUTTON

LED

VIEW
NC
NO
COM

DOWN
NC
NO
COM

UP
NC
NO
COM

YLP-08V / YLR-08V

SHIFT

SHIFT UNIT

0000037254

To EARTH-R(1/3)   0000038419

VLR-01VF/VLP-01V   EARTH-B

VLP-01V / VLR-01VF   E-HR   VLR-01VF   EARTH-S   *3-1

0000037386

STEERING

YLP-03V / YLR-03V

0000037245   HANDLE

STEERING UNIT

M   0000036918

VLP-04V   CN5   CN3

H10P-SHF-AA

MOTOR+   GND
MOTOR-   IP7
BRAKE+   IP6
BRAKE-   IP5
          IP4
          IP3
          IP2
          IP1
          IP0
          GND

0000012889   CN2

VHR-6N   VLR-06V

+5V
GND
GND
NC
NC

0000037250   From MTPCB-R(1/3)   MT

CN1

VHR-4N

+12V
+12V
GND
GND

PWB403454

YLR-06V   0000037251

From OPBOX-R1(1/3)   OPBOX

MAIN PCB

175778-3(AMP)   FBA09A12M   0000003209

0000037253   FAN

VLR-06V(RED)   VHR-8N

FROM PCB-R1(1/3)

+5V
+5V
+5V
GND
GND
GND
GND
+12V

0000037252   DC5   YLR-04V

FROM PCB-R2(1/3)   DC12

JAC-15P

1PAD CH0
1PAD CH1
1PAD CH2
1PAD CH3
+5V
+5V
+5V
GND
GND
GND

JBC-25P

GND
GND
COIN
START
DOWN
UP

TEST
SERVICE
GND

JBC-25S

PDB0
PDB1
PDB2
PDB3
PDB4
PDB5
PDB6
PDB7
GND

GND
GND
GND
GND
GND
+12V
+12V

COIN COUNTER1
VIEW LAMP
+12V

0000037243 x1
0000037382 x2
0000037383 x1

RED
GREEN
BLUE
N.C.
GND
RGND
GGND
BGND
+5V
GND
N.C.
N.C.
CSYNC
VSYNC
N.C.

KEC-15P

0000037246

To POWER-L(1/3)

To OPBOX-L2(1/3)

MONITOR
K29CR55

N.C.
CSYNC
GND
BLUE
GREEN
RED

EHR-6

YLP-09V / YLR-09V

VHR-3N

L
N.C.
N

VHR-5N

N.C.
N.C.
DG
N.C.
DG

0000037247   0000002680

L   CN4   0000031676   CN5

R

CN2   VHR-6N

+5V
+5V
GND
GND
+12V
+12V

CN1   H4P-SHF-AA

LEFT+
LEFT-
RIGHT-
RIGHT+

0000031389   PWB405281A

+5V   VHR-6N
+5V
GND
GND
+12V
+12V   0000037387

+5V   VHR-6N
+5V
GND
GND
+12V
+12V

SPEAKER

0000002322   SP-L   PD10391A

0000037249

PD10391A   SP-R

0000002322

*3-1   VLP-01V   0000041052   EARTH-S

C-551-2   CH1

C-551-2   CH2

To LANC-CH1(2/3)

From LANC-CH2(2/3)