



ORIGINAL VIDEO GAME

OPERATOR'S MANUAL

■ RACING JAM ■



© 1997 KONAMI. ALL RIGHTS RESERVED.



- 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.



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 power switch and contact your nearest dealer.

• In this manual, the right-side steering wheel model GN676-TB/HD is described. The GN676-UC, a left-side steering wheel model, is different from the illustrations in this manual.

• This manual covers the following models:

- **GN676-TB**
- **GN676-HD**
- **GN676-UC**

The specifications of GN676-TB may be somewhat different from GN676-HD and GN676-UC. In such a case, read the descriptions of the model which applies to the game machine you are operating.

- The specifications of this product are subject to change without notice for reasons such as improving the performance.
- The contents of this game, its main data and design are protected by copyright law and industrial property law.
- Unauthorized reproduction of this document or any of its contents is strictly forbidden.

© 1997 KONAMI ALL RIGHTS RESERVED.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Driver software used under license of 3Dfx interactive.



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

Contents

■ Precautions for use	2
安全使用注意事項	10
■ Locations of warning and other safety labels	7
警告標籤等的張貼位置	15
1 Specifications	9
規 格	17
2 Names of parts and list of main parts	18
3 How to play	22
4 Opening and closing the doors	
4-1 Opening and closing the maintenance door	24
4-2 Opening and closing the coin door	25
5 Networking game machine and PCB settings	
5-1 How to networking	26
5-2 PCB start-up check (self test)	27
5-3 Correcting the positions of the steering wheel etc.	28
5-4 Adjusting the game environment (manual test)	29
5-5 Mode descriptions	30
5-6 Measures to be taken when there is a network abnormality	39
6 Setting up the game machine	
6-1 Connecting the unit	41
6-2 Fastening the adjusters	42
6-3 Power unit	43
6-4 Service panel	43
6-5 Separating and moving the units	44
6-6 Moving the coin counter	46
7 Maintenance and annex	
7-1 Replacing the coin selector	48
7-2 Replacing the fluorescent light	49
7-3 Replacing the button	50
7-4 Replacing and adjusting the potentiometer	51
7-5 Replacing the shift unit microswitch	60
7-6 Inspecting and replacing the motor brushes	61
7-7 Replacing the timing belt and adjusting its tension	62
7-8 Resetting the circuit protector	63
7-9 Adjusting the projector	64
7-10 Wiring diagram	67

■ 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****ENGLISH****•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 10 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.



Precautions for use

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 JAM™" machines, nor for any audio-visual appliances and communication equipment. While the communication mode is not used, keep the networking pin jack open.
 - Otherwise the game may fail to work or get in trouble.
- Lay the power cord, networking cable and unit connecting pipes 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.
- Do not pull by force the unit connecting pipe located between the projector unit and cockpit unit.
 - Doing so could result in equipment failure, electrical shock 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 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 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 unplug the power cord with wet hands.**

•Doing so could result in electrical shock.

**•In handling the power cord and the networking cable, follow the instructions below.**

•Otherwise an electric leak, fire or electric shock may result. Normal communication play may also be impossible.

•Do not damage the power cord.

•Do not modify the power cord.

•Do not bend the power cord excessively.

•Do not twist the power cord.

•Do not heat the power cord.

•Do not pull the power cord.

•Do not bind the power cord.

•Do not tread on the power cord.

•Do not sandwich the power cord.

•Do not drive a nail into the power cord.

•If the power cord or power plug becomes damaged, stop using the machine immediately and ask your nearest dealer to replace the parts.

•Using a damaged power cord or power plug could result in fire or electrical shock.

Inspection and cleaning**WARNING****•Be sure to turn OFF the 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 projector unit has some internal parts with high voltage. Only a qualified industry specialists is allowed to open the back door of the projector unit. 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.

Precautions for use

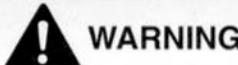
Moving and transportation



CAUTION

- The game machine contains parts such as the projector, 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 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 cockpit unit and projector unit and fully raise the 10 adjusters so that the machine can be moved on the casters.
 - Otherwise accidents, machine damage or trouble may result.
- When moving the machine, do not hold the unit connecting pipe.
 - Otherwise accidents or machine damage 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 units, be careful not to give undue force to the cockpit unit couplers.
 - Otherwise you may get injured or the machine damaged.

Disposal



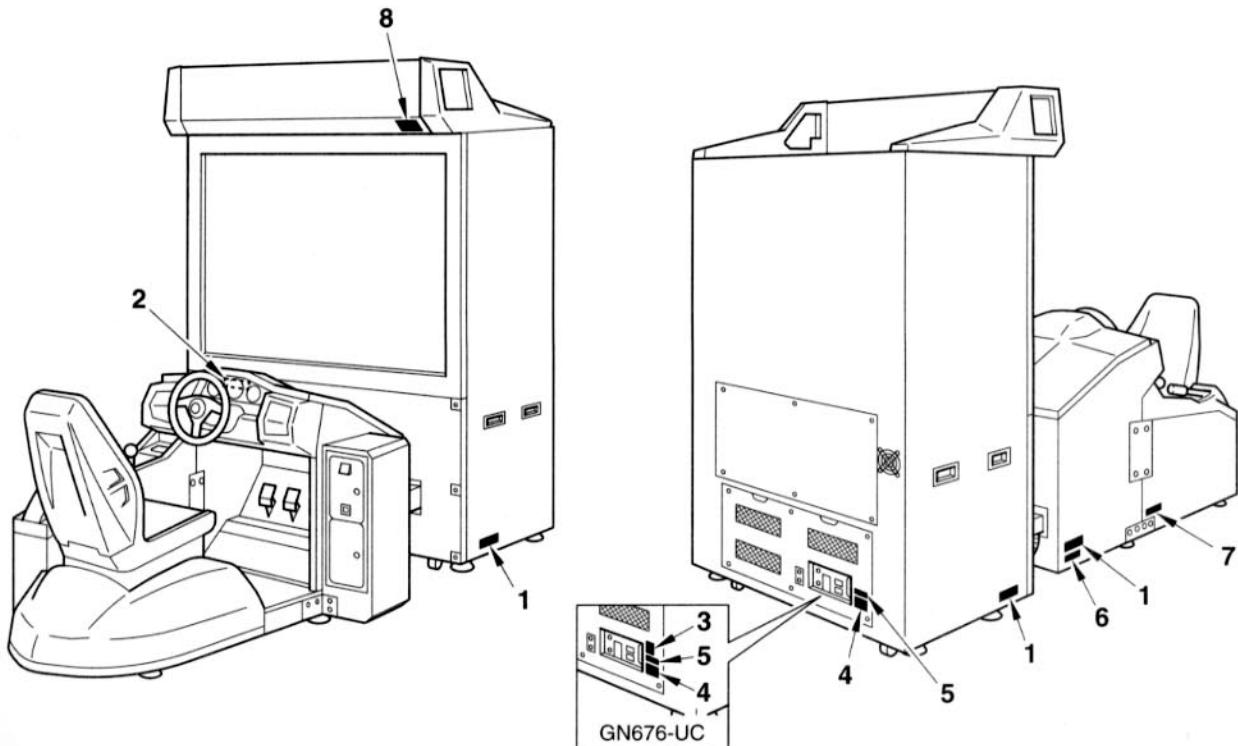
WARNING

- When disposing of the projector of this product, do not leave it with the screen exposed.
 - Doing so could result in fire due to direct sunlight, etc..
- When disposing of the projector with the screen section removed, do not hold the screen section to direct sunlight, etc..
 - Doing so could cause burns or fire.

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



•The machine shown here is GN676-TB/HD.

■ Types of warning and other safety labels

1



4

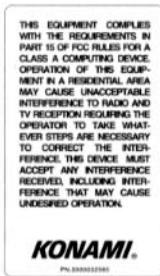


2



•The above is an example.
The entries are different from destination to destination.

3



GN676-UC only

5

Weight 180kg(397lb)

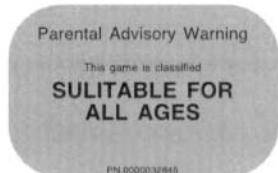
6

Weight 115kg(254lb)

7

Weight 80 kg(176lb)

8

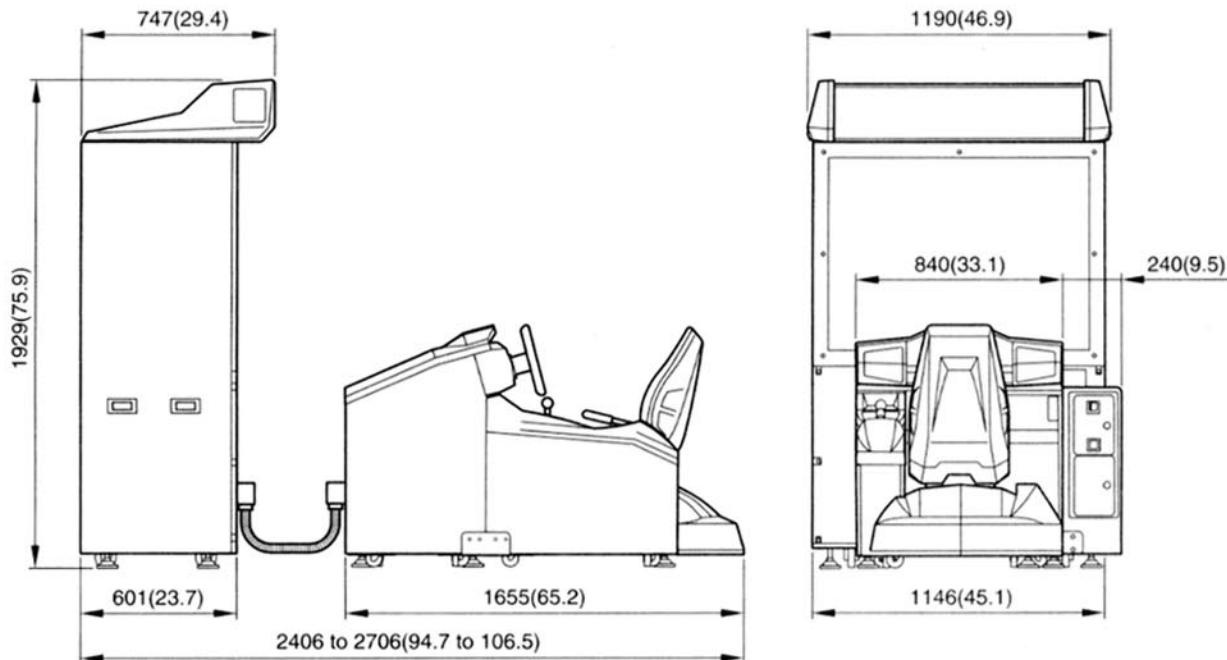


GN676-UC only

MEMO

ENGLISH

1 Specifications



•The machine shown here is GN676-TB/HD.

Specifications

Dimensions	Refer to the figure above: mm(in)
Weight	Total weight : Approx. 375 kg (827lb) Projector unit : Approx. 180 kg (397lb) Cockpit unit : Approx. 195 kg (430lb)
Rated power consumption	380W
Monitor	50 - inch color projector
Service condition	Temperature 0 to 30°C (32 to 86°F), Humidity 20 to 80%(No dewing is allowed.)
Attachments	<ul style="list-style-type: none"> · Instruction manual This manual · Keys for coin door 2 · Keys for maintenance 2 · Unit connecting pipe 1 · Unit connecting pipe fixing screw (M5 x 20L) 8 · AC power cord (3P) 1 · Networking cable 1 · Racing number label 1 · Projector remote controller 1 · AA size batteries 2

•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

本書說明為防止危害“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。



該項標注表示“有可能造成死亡或身負重傷”的內容。



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，說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



● 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。

● 本機為室內用遊戲機，千萬不要設置在室外。

- ▶ 設置在室外，可造成事故或故障。

● 本機不得設置在建築物太平門附近。

- ▶ 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



禁止



禁止



禁止

● 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。



禁止

● 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。



禁止

● 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。



禁止

● 千萬不得用濕手拔下或插入電源插頭。

- ▶ 否則，可致觸電。



禁止

● 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。



禁止

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。
- 通信連接用的插銷不可與「RACING JAM™」以外的遊戲機、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，不能正常進行遊戲，引起故障。
- 不得將電源軟線、通信用纜線、裝置連接管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。
- 不可將通信用纜線強行扭曲或壓放重物。
▶否則，不能正常進行遊戲。
- 不得在投影裝置和操縱席裝置的連接管上壓放重物，或強行牽拉。
▶否則，可造成故障、觸電或火災。
- 本產品必須連接地線。
▶否則，可造成觸電或故障。
- 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，并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。



判斷為異常時

- 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。
- 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。



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，不要利用本機遊戲。

► 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 · 據壓或打釘

●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。

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

●投影裝置內部有高壓流動，非常危險。除技術人員以外，不可打開投影裝置的背面門。

另外，在投影裝置背面門打開時，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。

移動／搬運時

！注意

- 本機內部裝有投影機、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。
- 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。
 - 不可踩踢或牽拉電源軟線和通信用纜線，否則，可造成事故和破損。
- 移動本機前，務必將操縱席裝置和投影裝置分離後，將十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。
- 移動本機時請不得帶動裝置連接管一起移動。
 - 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。
- 屏幕裝置根據推動方向會翻倒。移動時應面對屏幕向左右方向推動。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，不可向操縱席裝置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。



禁止



拔下電源插頭

廢棄

！警告

- 廢棄本產品的投影機時，不得將屏幕部分外露放置。
 - 否則，受直射陽光等的影響，將引起火災。
- 卸下投影機的屏幕部分將其廢棄時，避開直射陽光等。
 - 否則，有被燒傷危險或引起火災。



禁止



禁止

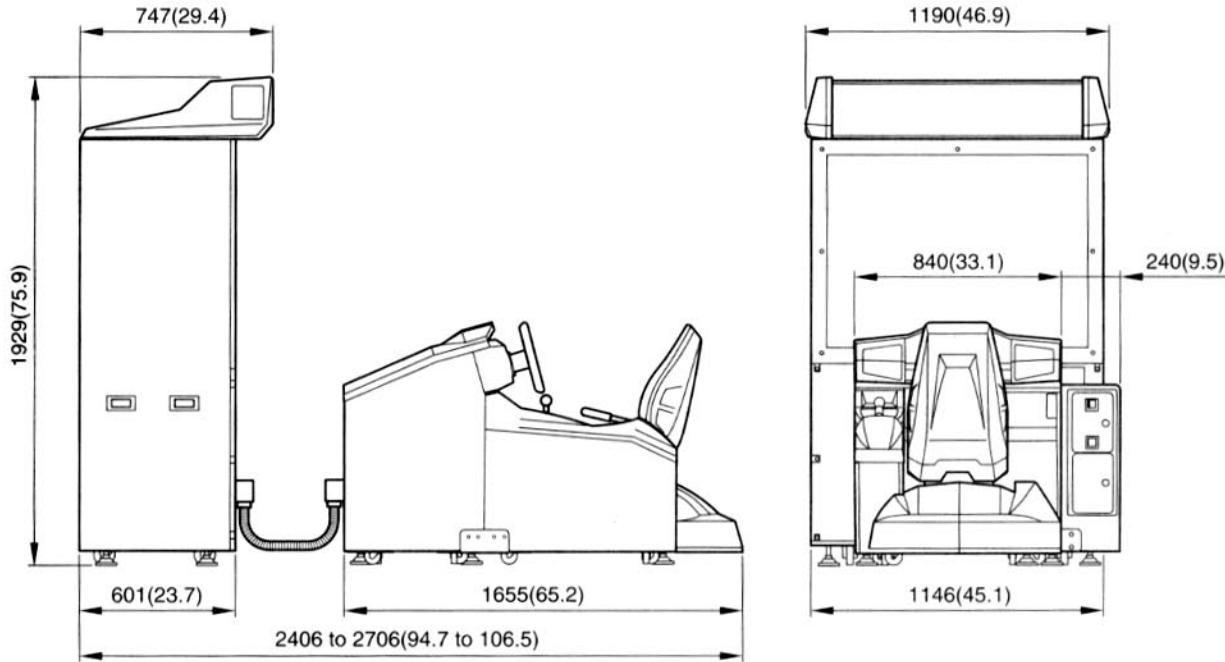
請留意

- 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。

MEMO

CHINESE

1 規 格



• 圖示為GN676-TB/HD。

規 格

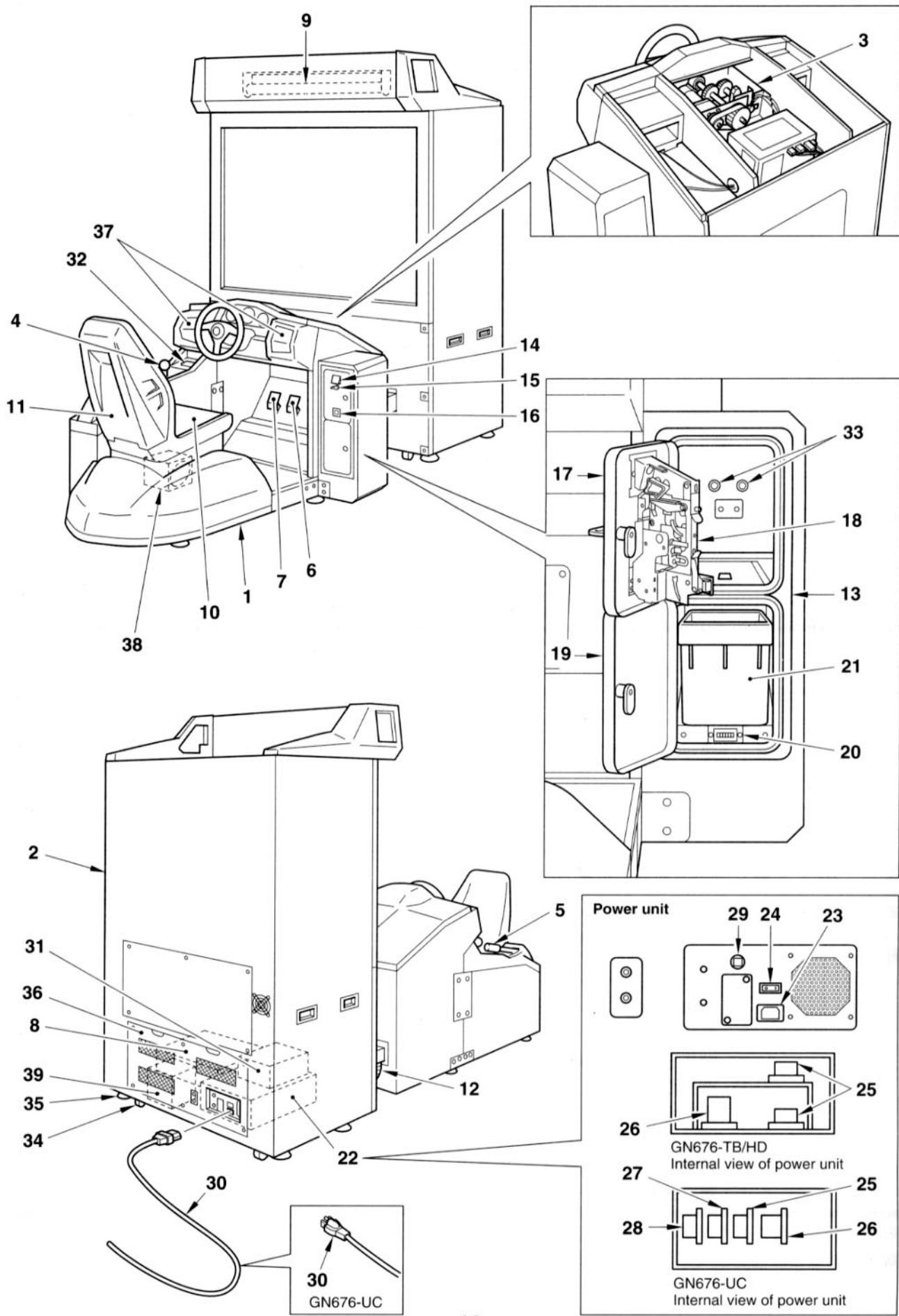
外 形 尺 寸	參看上圖 : mm(in)
重 量	總重量 : 約375kg (827lb) 投影裝置 : 約180kg (397lb) 操縱席裝置 : 約195kg (430lb)
額 定 耗 電 量	380W
顯 示 器	50英寸彩色投影機
使 用 條 件	溫度0~30°C (32~86°F) 濕度20~80% (不得結露)
附 件	· 使用說明書 本書 · 存幣箱鑰匙 2 · 維修用鑰匙 2 · 裝置連接管 1 · 裝置連接管固定用螺栓 (M5×20L) 8 · 電源軟線 1 · 通信用纜線 1 · 編號標簽 1 · 投影機調整遙控器 1 · 單三型干電池 2

●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。

CHINESE

2 Names of parts and list of main parts

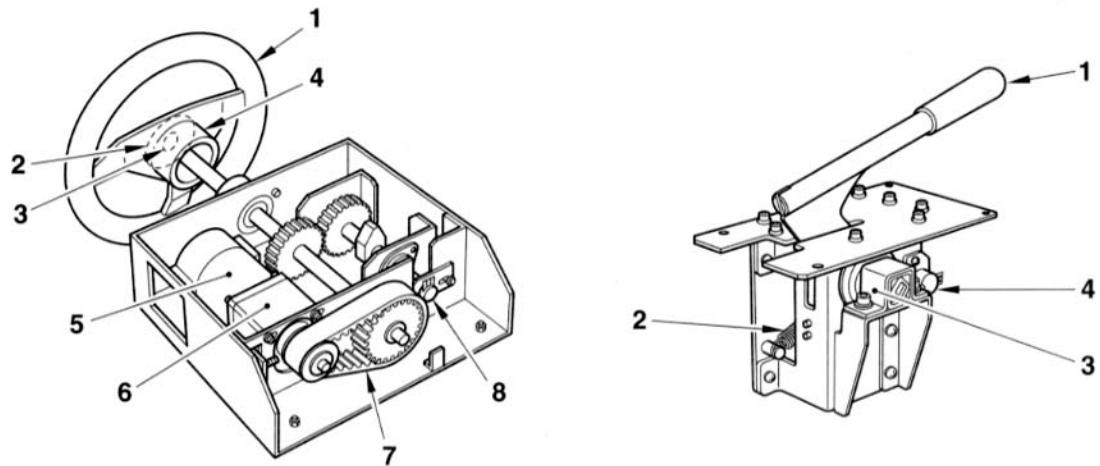


2 Names of parts and list of main parts

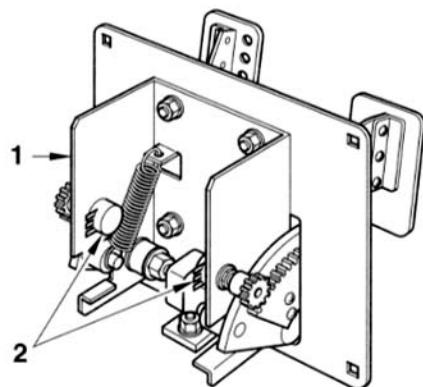
No.	Part name	Part #	Quantity	Remarks
1	Cockpit unit	-	1	
2	Projector unit	-	1	
3	Steering wheel unit	0000043426	1	
4	Shift unit	0000039884	1	
5	Hand brake unit	0000043428	1	
6	Pedal unit (acceleration and brake pedals)	0000037120	1	
7	Pedal unit (clutch pedal)	0000037121	1	
8	PCB unit	-	1	
9	Fluorescent light assy	0000035008	1	
10	Seat	0000037086	1	
11	Seat cover	0000037087	1	
12	Unit connecting pipe	0000037543	1	
13	Coin door unit	0000036914 0000036913	1 1	Include 14 to 19 GN676-HD Include 14 to 19 GN676-TB/UC
14	Coin input port	-	1	
15	Coin return lever	-	1	
16	Coin return port	-	1	
17	Maintenance door	-	1	
18	Coin selector	0000036553 0000036497	1 1	GN676-HD GN676-TB/UC
19	Coin door	-	1	Excluding key
20	Coin counter	0000030431	1	
21	Coin box	0000006850	1	
22	Power unit	0000043481 0000043522	1 1	Include 23 to 26, 29 GN676-TB/HD Include 23 to 29 GN676-UC
23	Power inlet	0000037224	1	
24	Power switch	0000039100	1	
25	Switching Power A	0000030688	2 1	12V 100W GN676-TB/HD 12V 100W GN676-UC
26	Switching Power B	0000030609	1	5V 100W
27	Switching Power C	0000033796	1	12V 75W GN676-UC only
28	Switching Power D	0000039960	1	12V 30W GN676-UC only
29	Circuit protector	0000036921	1	10A
30	AC power cord	0000036692 0000036690	1 1	GN676-TB/HD GN676-UC
31	Amplifier unit	0000037510	1	
32	START button	0000036916	1	
33	Push-button switch	0000005098	2	
34	Caster	0000001478	12	
35	Adjuster	0000003807	10	
36	Back door	0000037536	1	
37	Speaker	0000036900	2	For cockpit unit
38	Super woofer	0000003182	1	
39	Transformer	0000002707	1	

2 Names of parts and list of main parts

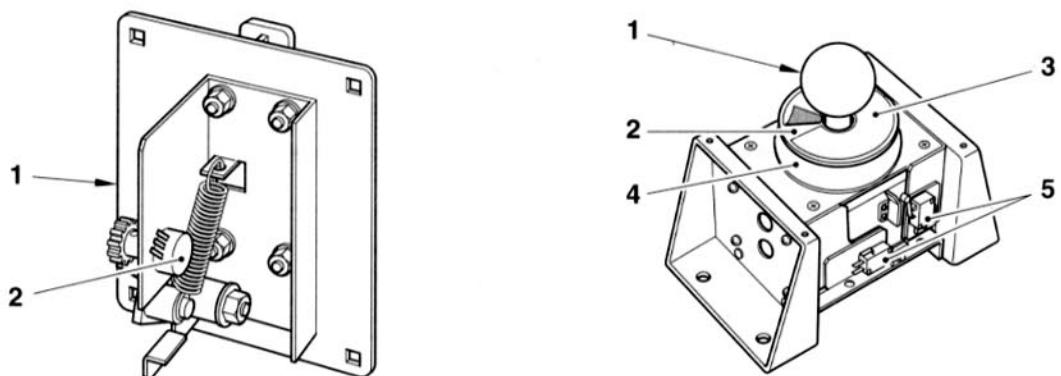
■ Steering wheel unit ----- ■ Hand brake unit -----



■ Pedal unit (acceleration and brake pedals) -----



■ Pedal unit (clutch pedal) ----- ■ Shift unit -----



■ Steering wheel unit

No.	Part name	Part #	Quantity	Remarks
1	Steering wheel	0000035211	1	
2	Disk	0000037013	1	
3	Steering wheel ornament	0000036802	1	
4	Steering column boss	0000037016	1	
5	DC motor	0000036918	1	
6	Gear head	0000036919	1	
7	Timing belt	0000036904	1	
8	Potentiometer	0000001723	1	

■ Pedal unit (acceleration and brake pedals)

No.	Part name	Part #	Quantity	Remarks
1	Pedal unit (acceleration and brake pedals)	0000036930	1	
2	Potentiometer	0000001723	2	

■ Pedal unit (clutch pedal)

No.	Part name	Part #	Quantity	Remarks
1	Pedal unit (Clutch pedal)	0000036931	1	
2	Potentiometer	0000001723	1	

■ Hand brake unit

No.	Part name	Part #	Quantity	Remarks
1	Grip	0000036906	1	
2	Coil spring	0000003244	1	
3	Rubber suspension	0000036915	1	
4	Potentiometer	0000001723	1	

■ Shift unit

No.	Part name	Part #	Quantity	Remarks
1	Shift knob	0000036911	1	
2	Mask plate	0000037080	1	Clear
3	Mask plate sticker	0000036806	1	
4	Cover sheet	0000037070	1	Black
5	Microswitch	0000036923	4	

3 How to play

The "RACING JAM™" is a real-world racing game.

You can feel as if driving a real racing car. With your new driving experience in mind, the machine is equipped with many features: forced-feedback steering wheel, clutch, hand brake and 5 speeds plus reverse.

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 and press the START button.

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. (The clutch pedal can be operated.)

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-than-fifth place, the player's name entry can be made. (Make this setting referring to "COURSE SETTINGS" on page 33)

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

4 Opening and closing the doors

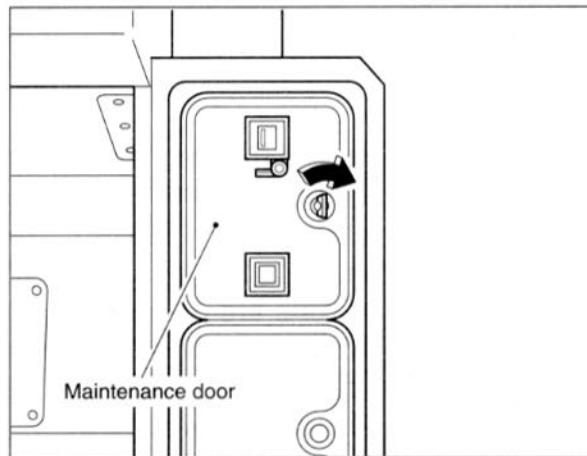
4-1 Opening and closing the maintenance door

■ How to open the maintenance door

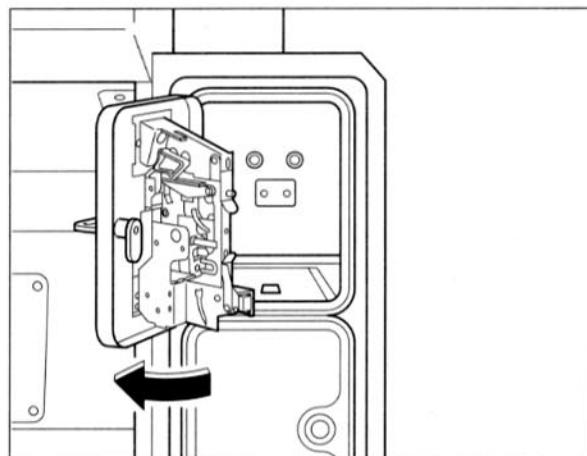


- Take care not to apply any load or impact to the maintenance door when it is open.
- After closing the maintenance door, be sure to check that the door is locked securely.

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



- 2 | Open the maintenance door.



■ How to close the maintenance door

- 1 | Close the maintenance door.

- 2 | Turn the maintenance key counterclockwise and draw it out.

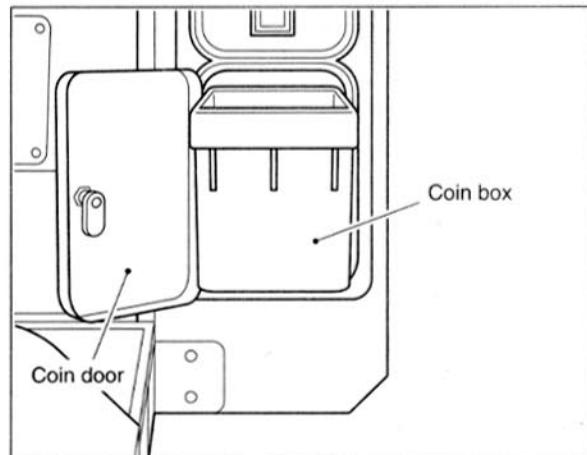
4-2 Opening and closing the coin door

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



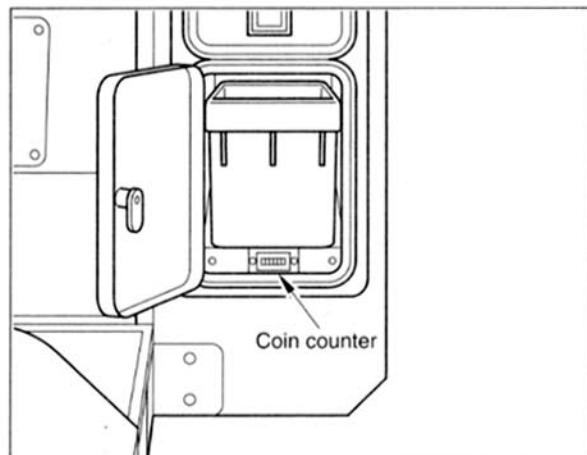
- Take care not to apply any load or impact to the coin door when it is open.
- Note that the coin box is considerably heavy to take out if it is full of coins.
- Securely lock the door for protection against burglaries.

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



■ Coin counter -----

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



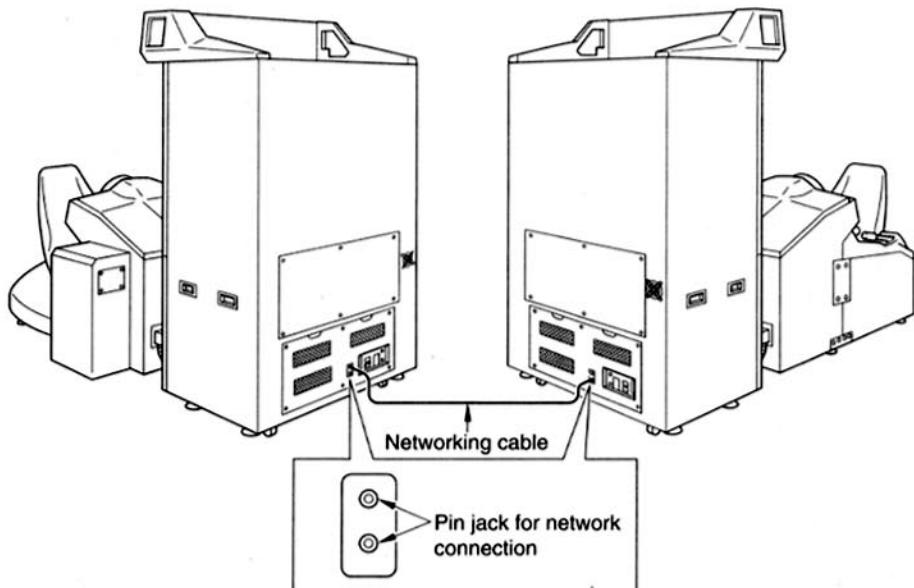
5 Networking game machines and PCB settings

5-1 How to networking

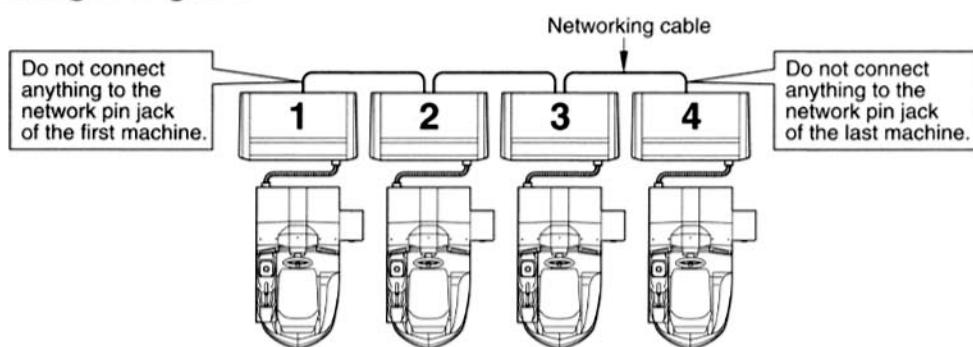
The specification of the game machine allow up to eight game machines to be connected so that players can enjoy versus games. To network, connect the networking cable supplied with each game machine to the network pin jack of the projector unit after setting up the game machines.



- 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”.



■ Networking four game



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.



- 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 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.
When the message "OPTION SETTINGS BACK UP DATA ERROR. PRESS TEST SWITCH TO ALL FACTORY SETTINGS" appears on the screen, press the test switch on the service panel. (The data are initialized. When the machine gets restarted, the test is made and the game mode is called up.)
If an abnormal display continues or the machine does not operate normally, immediately turn OFF the 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 and clutch 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 and clutch 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 51 and 52.

• 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 57 to 59.

• 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 53 and 54.

• 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 53 and 54.

• Clutch abnormal

The message "DEVICE ERROR (CLUTCH)" appears on the screen.
What to do The clutch control exceeds the correctable range. Make the adjustment by referring to "7-4 Replacing and adjusting the potentiometer" in pages 55 and 56.

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 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 power switch, unplug the power cord from the receptacle and contact your nearest dealer.

5-4 Adjusting the game environment (manual test)

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

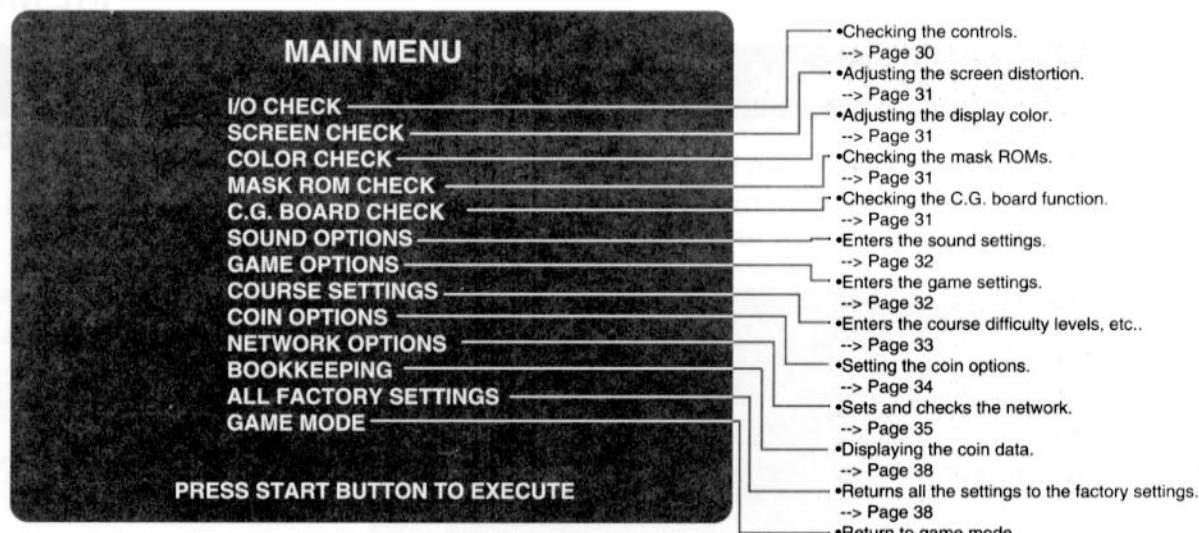
■ Starting the manual test mode

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

■ Quit the manual test mode

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

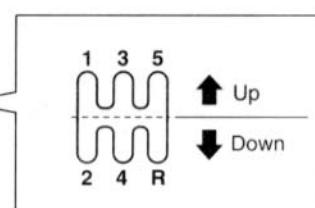
■ Main menu screen (basic items)



■ Selecting each mode

How to select each mode from the main menu

- SELECT --> Move the shift lever up (1, 3 or 5) or down (2, 4 or R).
- SET --> Press the START button.



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 or down 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 or down 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 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 the shift lever.

I/O CHECK					
GEAR SHIFT LEVER	1 3 5 ERROR 2 4 R	UP LEFT	OFF OFF	DOWN RIGHT	OFF OFF
START BUTTON	OFF		COIN MECH SWITCH	OFF	
SERVICE SWITCH	OFF		TEST SWITCH	OFF	
STEERING WHEEL	LEFT 0.0000 (0000)		CENTER	RIGHT MAX	
ACCEL PEDAL	MIN 0.0000 (0000)				• Shows the value for the accelerator pedal [decimal (hexadecimal)]. If the "I" mark moves to "MIN" when the accelerator pedal is released and to "MAX" when the accelerator pedal is fully pressed, the accelerator pedal is properly adjusted.
FOOT BRAKE PEDAL	MIN 0.0000 (0000)				• Shows the value for the foot brake unit [decimal (hexadecimal)]. Make sure the "I" mark moves to "MIN" when the foot brake is released and to "MAX" when the foot brake is fully pressed.
HAND BRAKE LEVER	MIN 0.0000 (0000)				• 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.
CLUTCH PEDAL	MIN 0.0000 (0000)				• Shows the value for the clutch pedal [decimal (hexadecimal)]. If the "I" mark moves to "MIN" when the clutch pedal is released and to "MAX" when the clutch pedal is fully pressed, the clutch pedal is properly adjusted.
HOLD START BUTTON AND GEAR SHIFT DOWN = ACTIVE STEERING TEST HOLD GEAR SHIFT UP AND PRESS START BUTTON TO EXIT					
• This screen is just an example.					
• Check the steering wheel reaction device by putting down 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 51 to 59.

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 according to "Adjusting the projector". (See page 64)

To return to the main menu screen, press the START button.

COLOR CHECK

Adjusting the display color

- Mode for checking the display color.

Adjust the color of the image on the screen according to "Adjusting the projector" (see page 64) so that the colors of the color bars appear in distinct gradation and the background becomes sufficiently dark. 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 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.



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

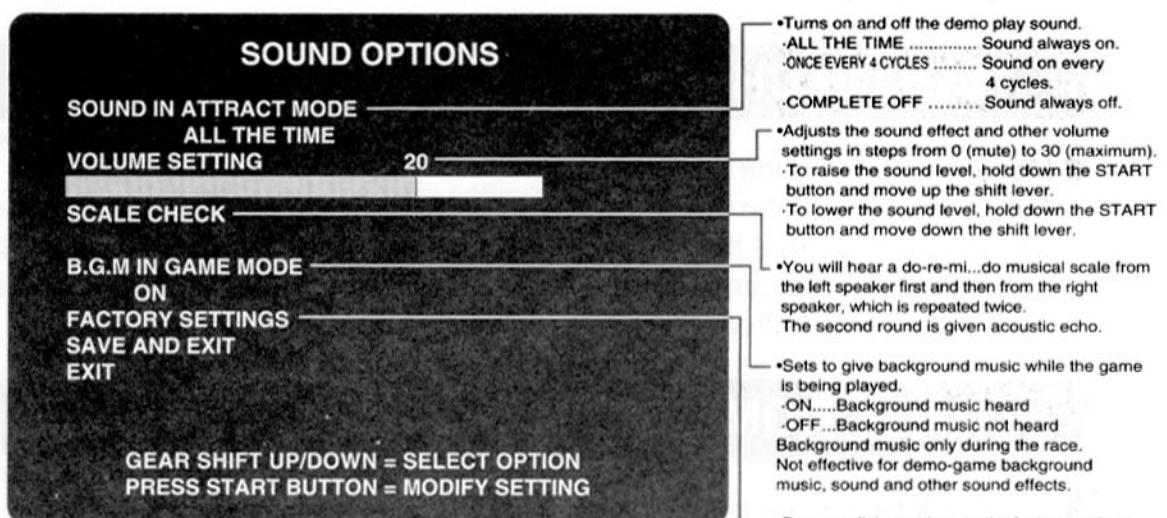
• Two cubes are rotating and entangled with each other.

SOUND OPTIONS

Enters the sound settings

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

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



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

• This screen is just an example.

GAME OPTIONS

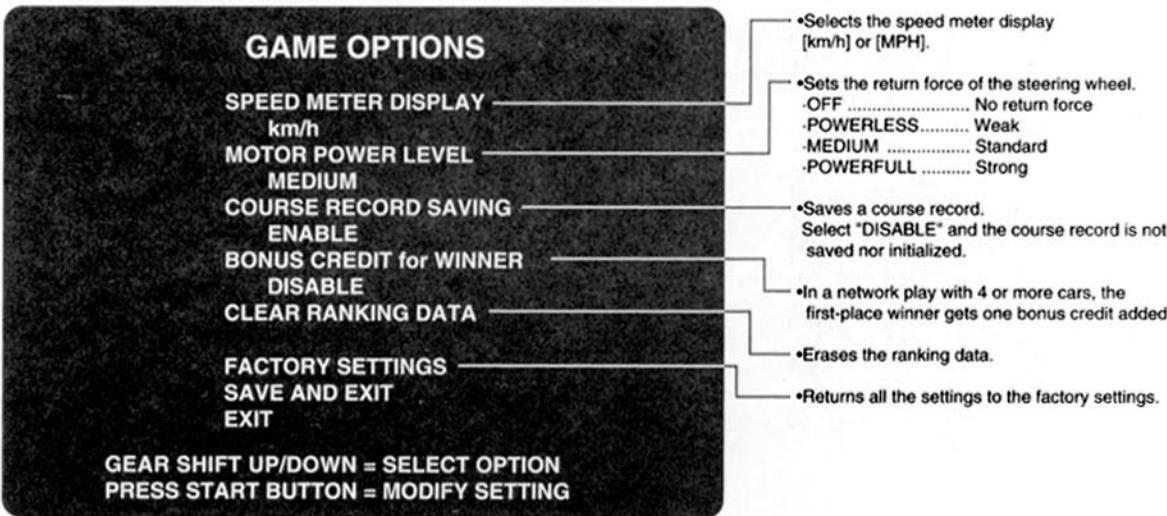
Enters the game settings

- This screen is used to make game settings and to check them.

Move the shift lever up or down to select an item, and press the START button to enter it. To return to the main menu 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.



- 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
 - POWERFUL 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.

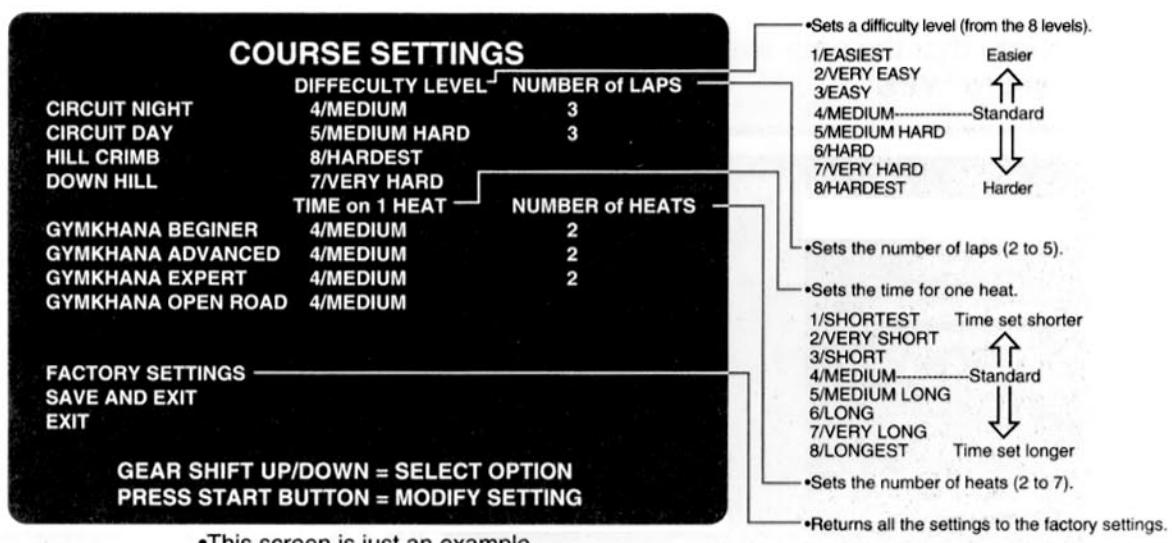
• This screen is just an example.

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



•This screen is just an example.

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

MEMO

COIN OPTIONS

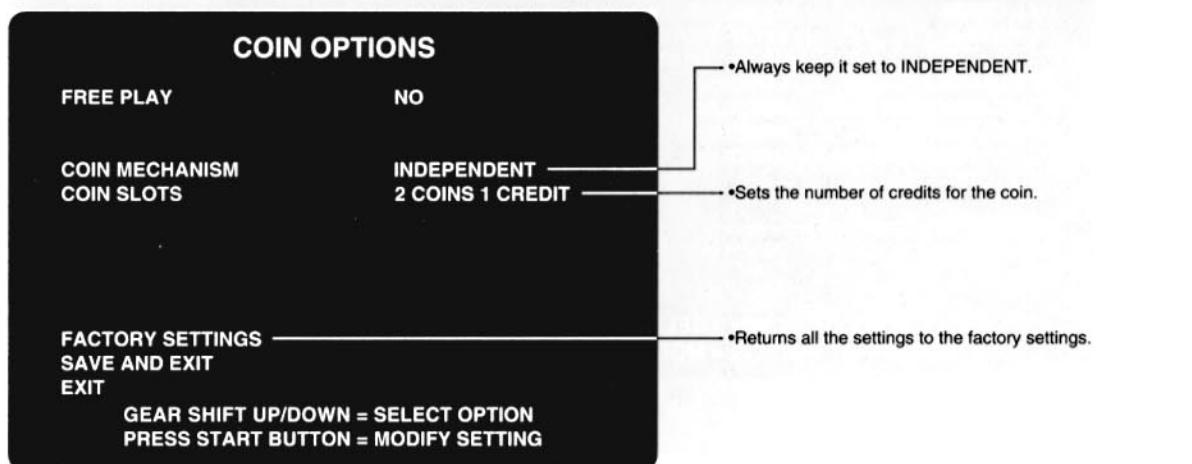
Setting the coin options

- This screen is used to make coin settings and to check them.

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



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



•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

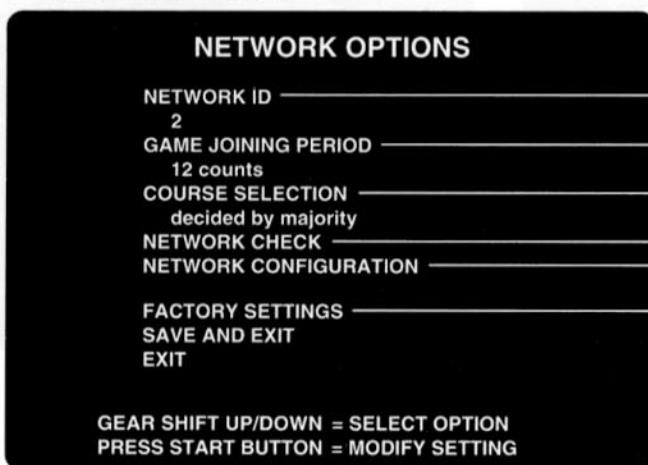
SETTING	21	22	23	24	25	26	27	28	29	30	31	32
COIN(S)	7	7	8	8	9	10	11	12	13	14	15	16
CREDIT(S)	1	2	1	3	1	1	1	1	1	1	1	1

NETWORK OPTIONS

Sets and checks the network

■ Sets and checks the network.

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

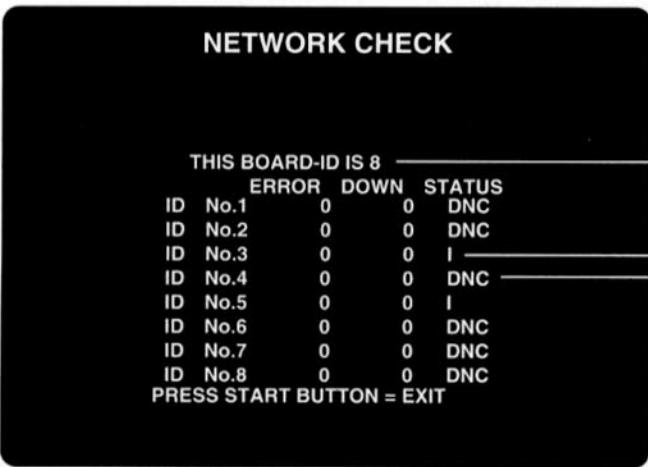
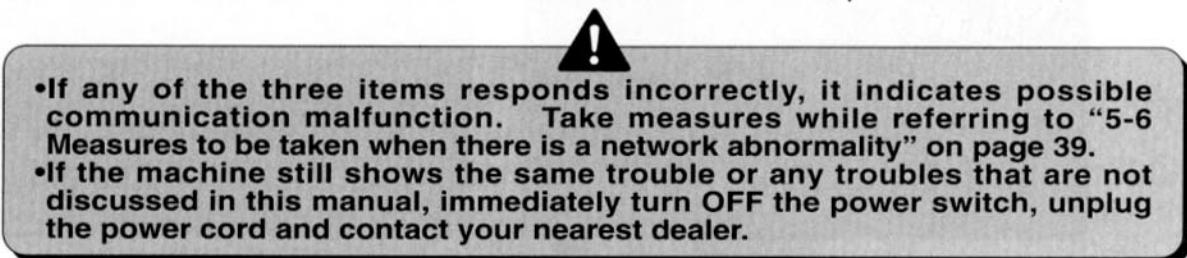


- Sets a network ID.
Enters different numbers (machine numbers) to the machines that will be networked.
(Same numbers are not allowed.)
- Sets the communication wait time.
Choose from 4, 8, 12, 16, 20, 24, 28 and 32.
- Sets the communication-play course decision by majority or by individual.
-DECIDED 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 machine.(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.



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

•This screen is just an example.

Check items (Watch the screen for longer than 1 minute and make sure the following 3 conditions are met.)

- Check that the "I" mark in the STATUS column is moving from the left to the right at a fixed speed.
- Check that the value in the ERROR column is below "10" after one minute.
- Check that the value in the DOWN column does not change from "0".

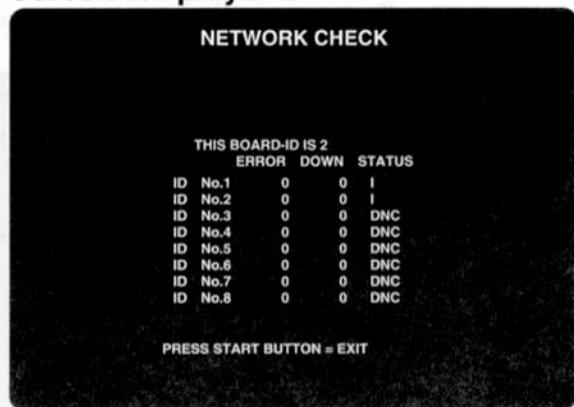
■ Screen display when game machines are networked -----

- Two game machines are networked

Screen for player 1



Screen for player 2

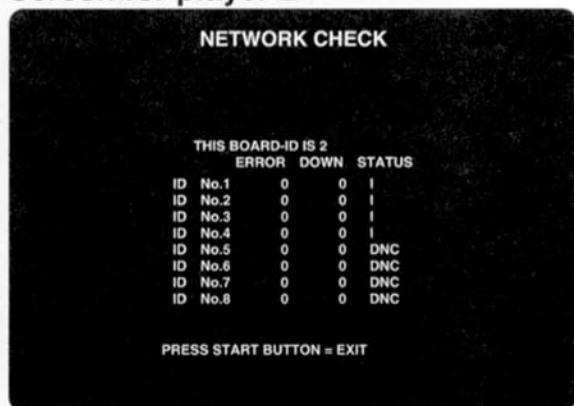


- Four game machines are networked

Screen for player 1



Screen for player 2



Screen for player 3



Screen for player 4

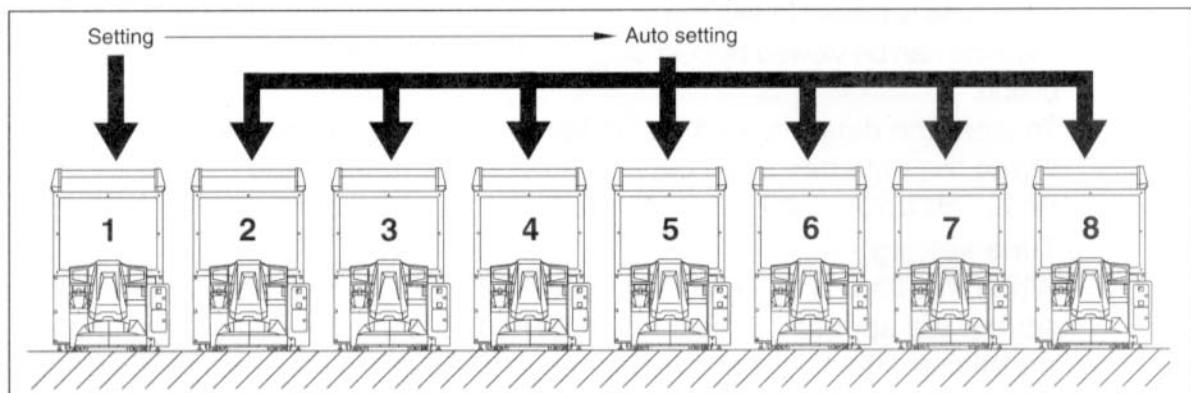


*This screen is just an example.

NETWORK CONFIGURATION**Configuring various settings**

■ This mode is to automatically configure a group of already networked machines to the settings of a machine that has been connected to the group.

To return to the “NETWORK OPTIONS” screen, press the START button.



Setting modes which can be unified are as follow:

- “SOUND OPTIONS” (See page 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 network. (Do not operate the other machines for setting.)
4. When the setting is finished , select the “NETWORK CONFIGURATION” from the “MAIN MENU” screen only for the machine for which the above setting 3 was made. Press the START button.
5. Make sure that other machines connected to the network have entered into “NETWORK CONFIGURATION” mode.
6. Press the test switch on the service panel of the machine (discussed in Step 3) to automatically configure the settings of all the other machines. If the START button has been pressed, the main menu reappears on the screen.
7. When the other machines have been networked, the main menu comes up on the screen.

- If the network communication settings have not been made normally in the above steps 5 to 7, 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 Position 3 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 Position 4 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

The data of the last 51 weeks are displayed by week average by moving right / left the shift lever.

ALL FACTORY SETTING

Returns all settings but the network settings to factory ones

- Mode for Returning all the settings to the factory settings.

When this item is selected, all the settings other than the setting for "BOOKKEEPING" will be returned to the factory settings.

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

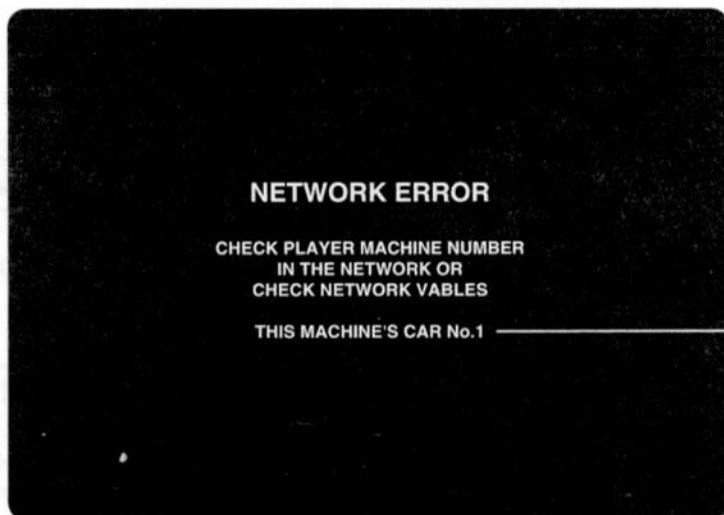
If the “NETWORK ERROR” message appears, if any item responds incorrectly in the network communication check described on pages 35 and 36, or if the projector displays differ from the specified ones, take the following measures.



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

Symptom 1

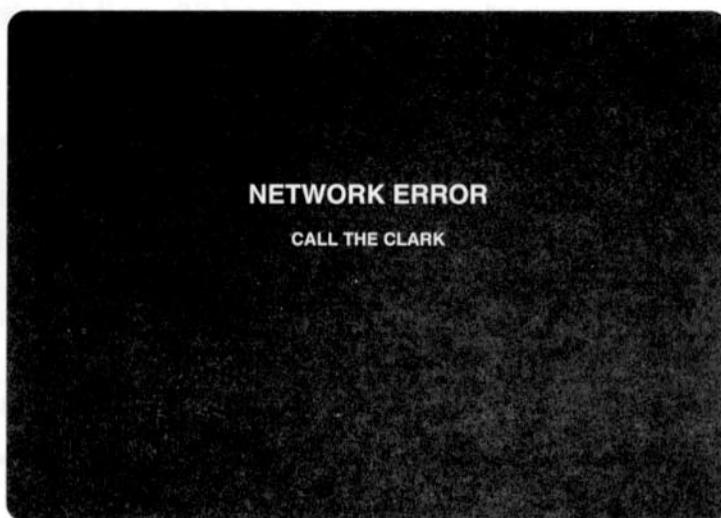
The “NETWORK ERROR” message appears on the screen after the power is turned ON.



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

■ Possible causes and measures to be taken -----

Possible causes	Measures
•The “Network ID” settings are improper.	•Readjust the “Network ID” settings on the “NETWORK OPTIONS” screen in the manual test mode. (See page 35)
•One of the networking cable used is disconnected from the game machine.	•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.**Possible causes and measures to be taken** -----

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

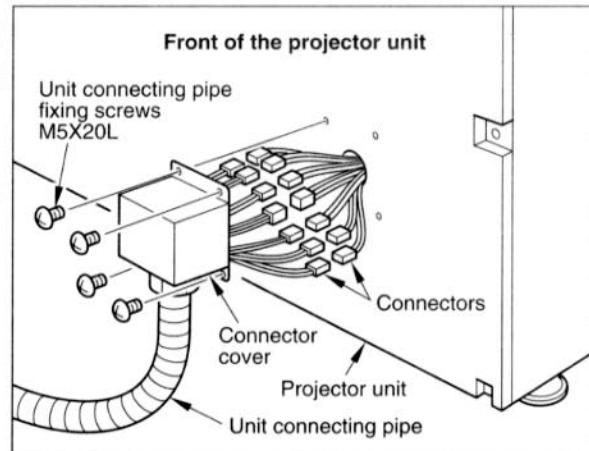
■ How to connect the unit



- Do not pull the wiring and connectors and the unit connecting pipe of the cockpit unit and projector unit to move them.
- When installing the connector cover, and connector plate take care not to catch the wiring.

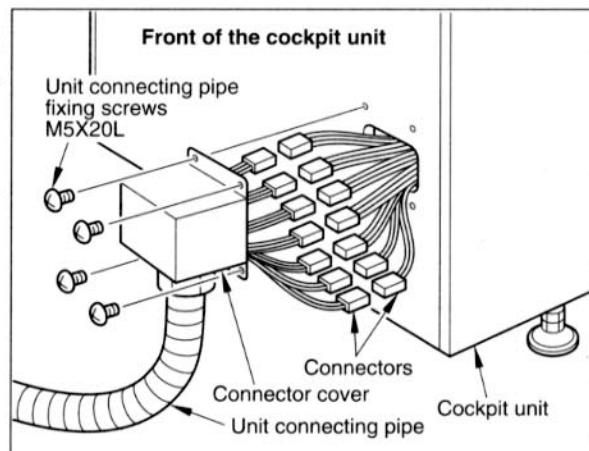
1 Connect the connectors coming out of the projector unit to those of the unit connecting pipe.

2 Attach the connector cover with the accompanying screws.



3 Connect the connectors coming out of the cockpit unit to those of the unit connecting pipe.

4 Attach the connector cover with the accompanying screws.

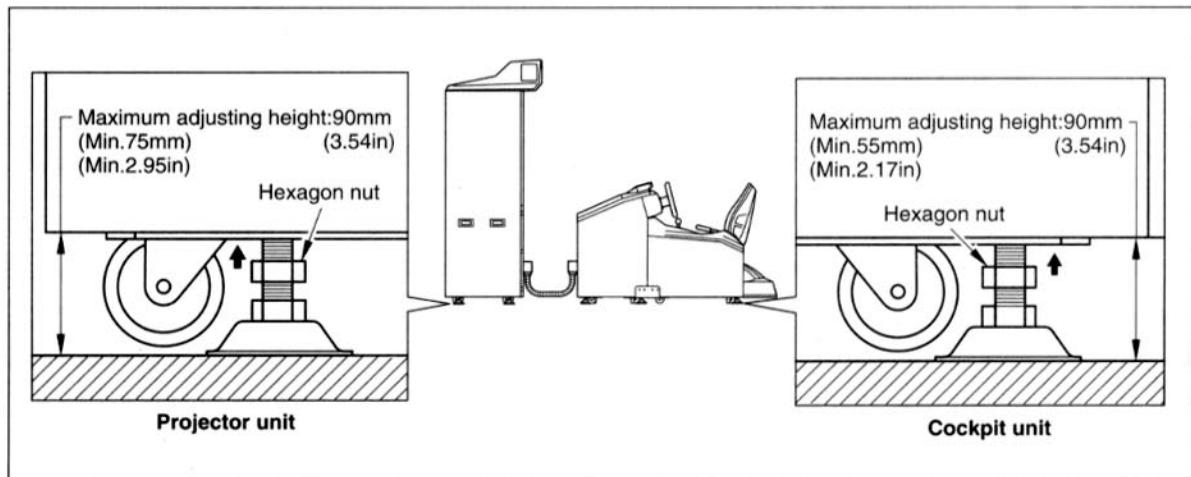


6-2 Fastening the adjusters

■ 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 10 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.



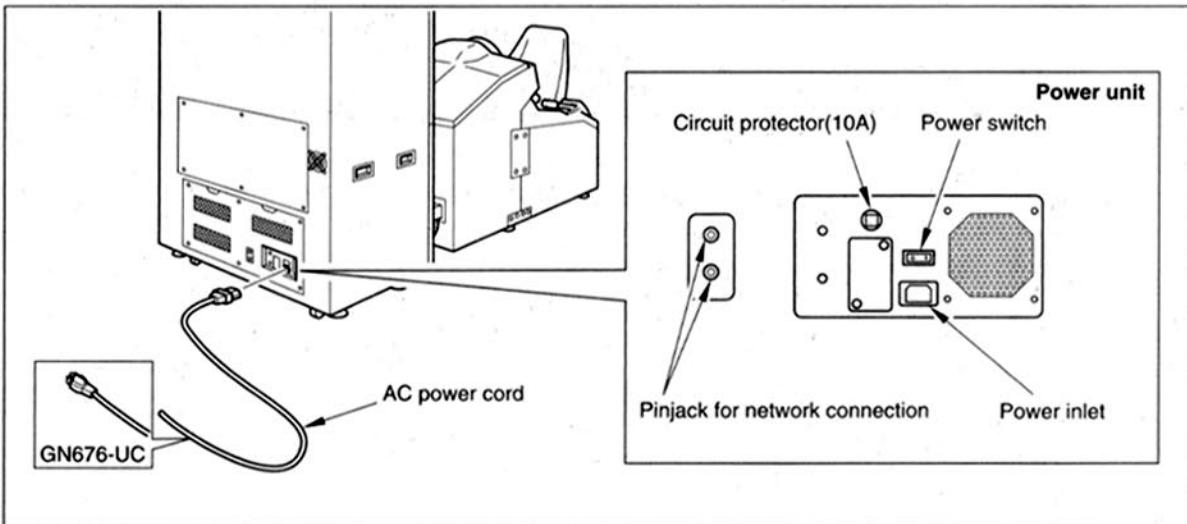
6-3 Power unit

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

■ Power unit



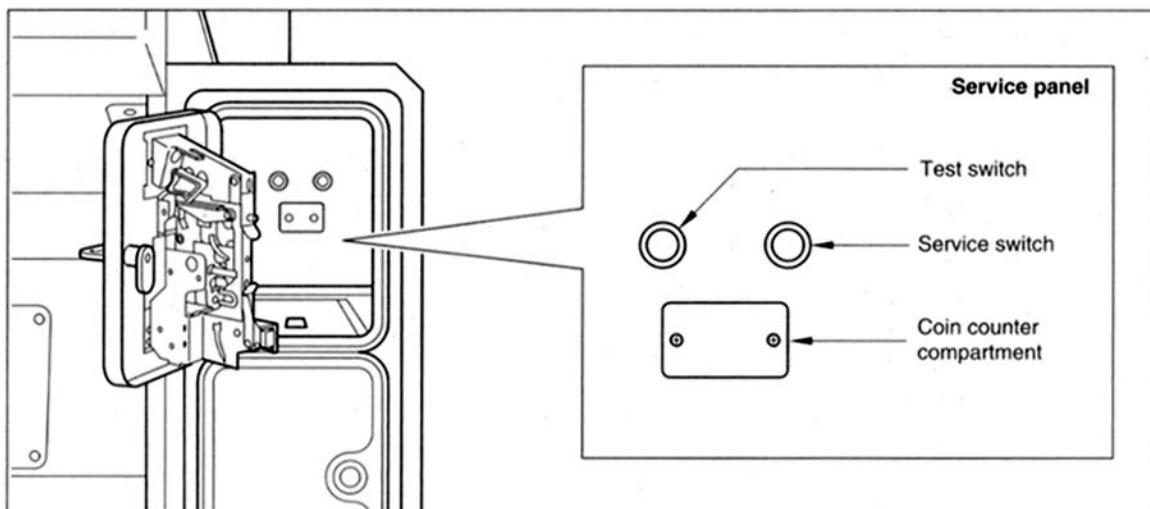
- Be sure to use the attached AC power cord.
- Be sure to ground to the machine. Never connect the grounding wire to gas pipe, water pipe or telephone ground terminal.



6-4 Service panel

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

■ Service panel



6-5 Separating and moving the units

The machine can be divided into the units.

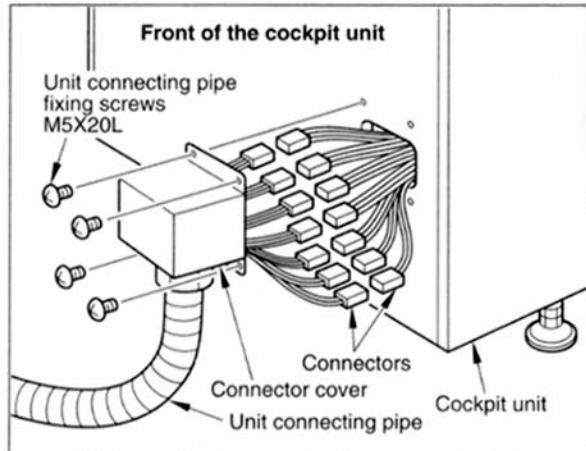
■ How to separate the units



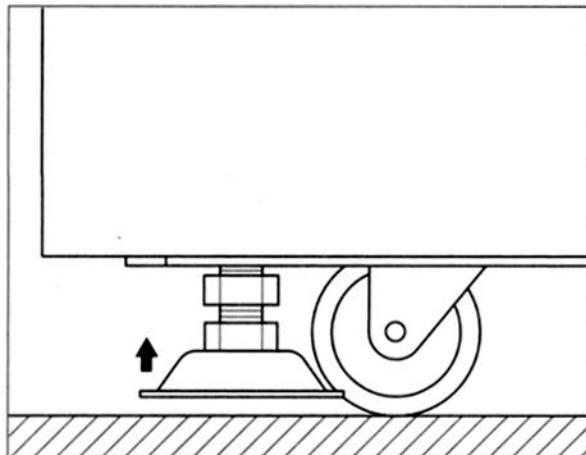
- Before separating the units from the machine, be sure to turn OFF the power switch and remove the power cord plug from the receptacle.
- When moving the machine, be sure to separate the cockpit unit, projector unit beforehand.
- Do not pull the unit connecting pipe of connector cover to move the unit.
- 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 Remove the connector cover and disconnect all the connectors.



- 2 Raise all the adjusters and move the units on the casters.



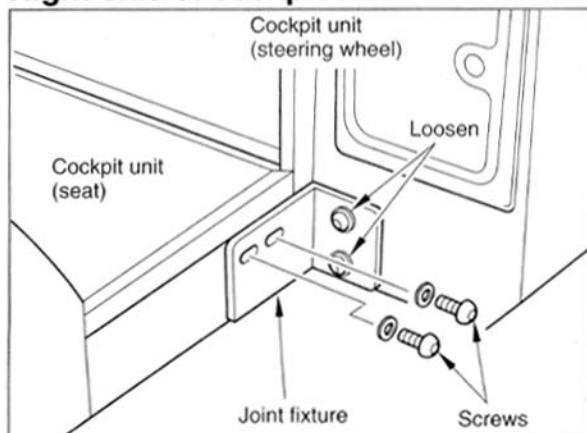
■ How to separate the cockpit unit



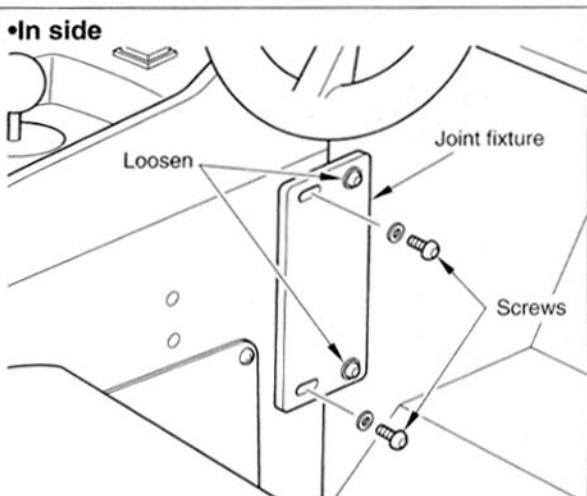
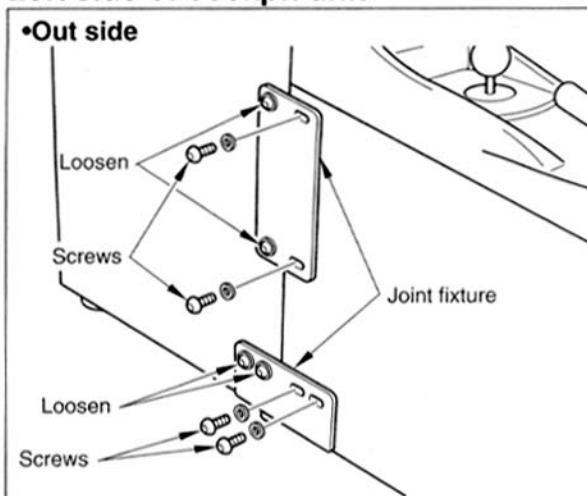
- Before separating the units, be sure to turn OFF the power switch and unplug the power cord from the receptacle.
- When reconnecting the cockpit unit, be very careful not to get your hands and the wiring caught.

- 1** Loosen the joint fixture screws at the steering wheel. Remove the screws from the seat.

Right side of cockpit unit

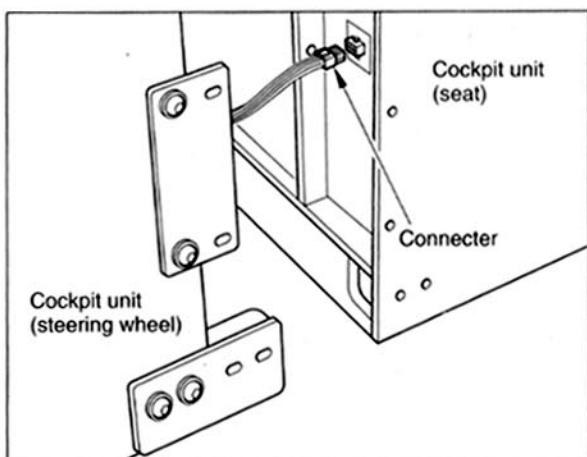


Left side of cockpit unit



- 2** Separate the steering wheel and the seat a little from each other. Disconnect the connectors.

- 3** To reconnect the cockpit unit, take the reverse steps.



6-6 Moving the coin counter

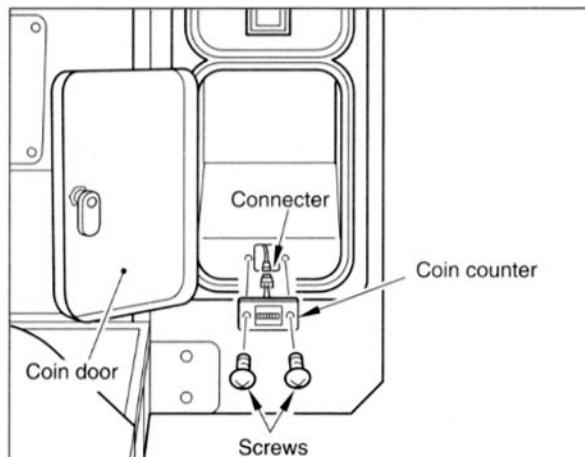
The coin counter was installed in the coin box when the machine left the factory, but it can be moved onto the service panel.

■ How to move the coin counter

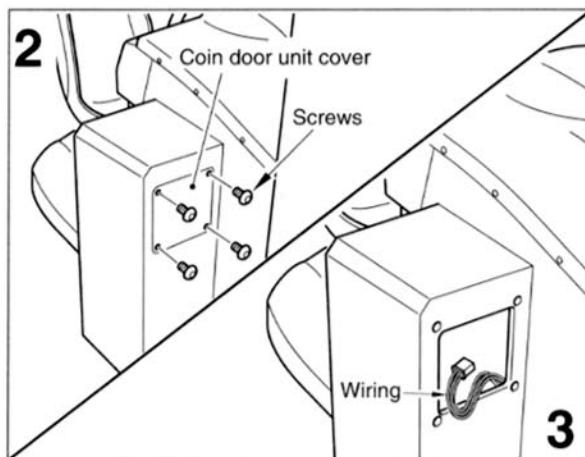


•Before moving the coin counter, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

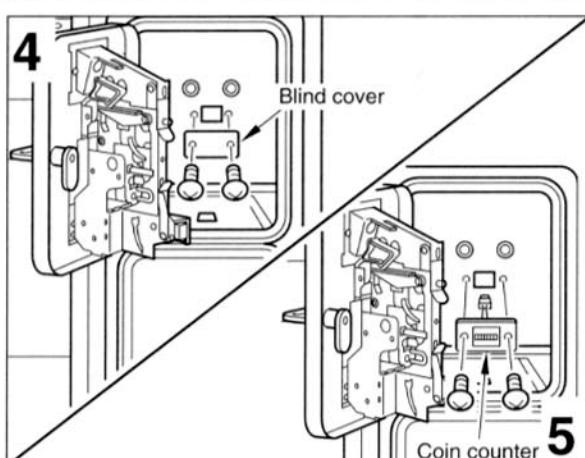
- 1 Open the coin door, remove the screws, pull out the coin counter, and disconnect the connector.



- 2 Remove the coin door unit cover from the back of the coin door unit.



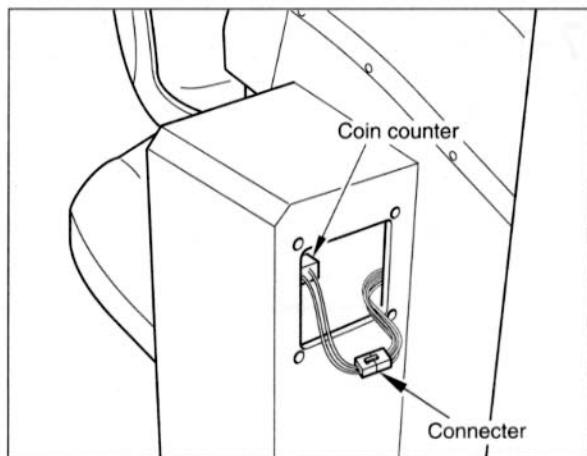
- 3 A bundle of coin counter wiring is located inside.
Pull out the bundle.



- 4 Open the maintenance door and remove the blind cover off the service panel.

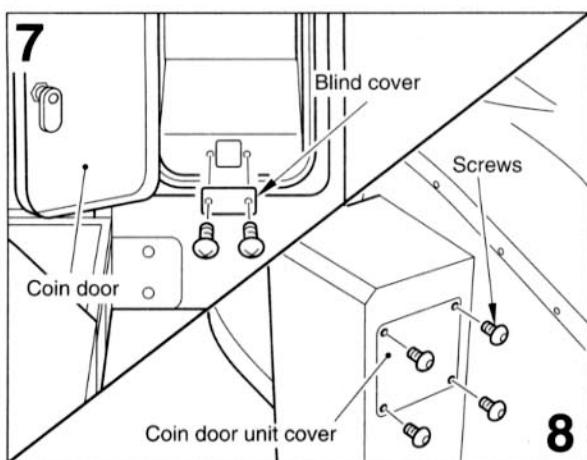
- 5 Attach the coin counter on the service panel.

- 6** | Couple the coin counter connector to the connector of the wiring (in Step 3 above).



- 7** | Attach the blind cover (in Step 4 above) back into position.

- 8** | Attach the coin door unit cover back into position.



7 Maintenance and annex

7-1 Replacing the coin selector

■ How to replace the coin selector



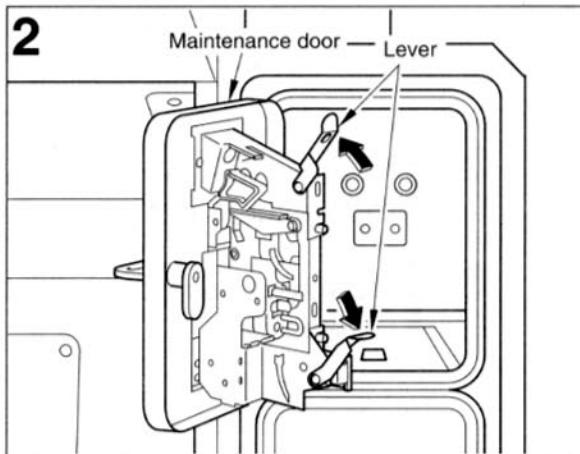
• Before replacing the coin selector, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

1 | Open the maintenance door.

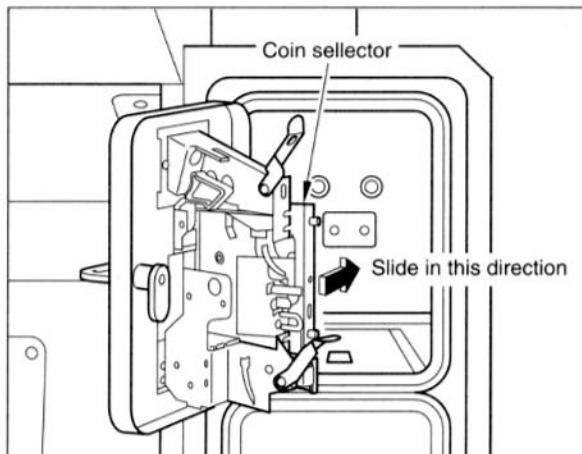
2

| Release the levers that fix the coin selector. See at right.

2



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



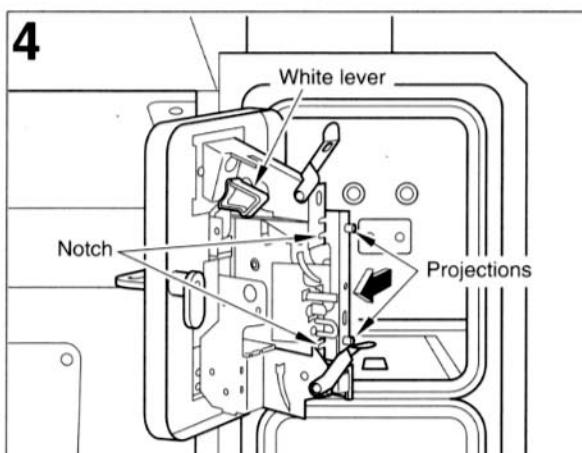
4 | **To reattach the coin selector**

Hold up the white lever and fit the 2 projections of the coin selector to their mating notches.

4

5 | Lock the levers (in Step 2 above) again, and close the maintenance door.

4



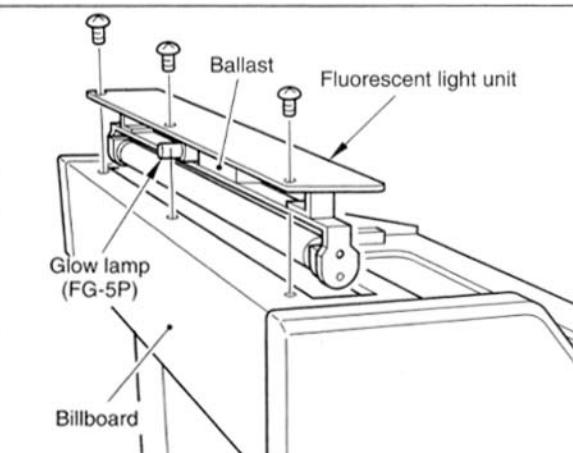
7-2 Replacing the fluorescent light

■How to replace the fluorescent light

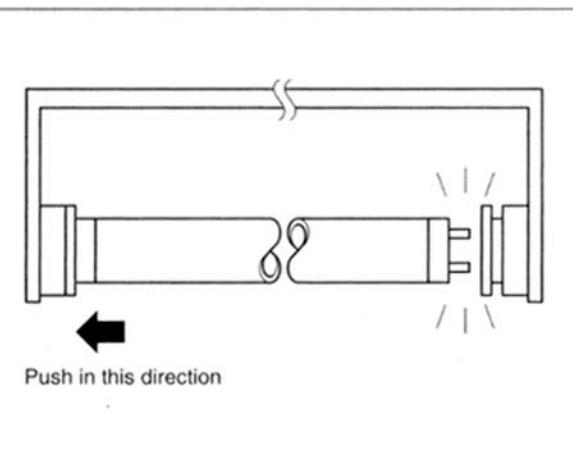


- Before replacing the fluorescent light, be sure to turn OFF the power switch and unplug the power cord from the receptacle.
- The fluorescent light is hot just after it is put off. Wait until it cools down and then replace it with a new one of the same type (straight tube 32W/100V).
- When installing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

- 1 Remove the fluorescent light unit lock screws off the top of the billboard.
- 2 Lift the fluorescent light unit off position. Be careful not to hit against the ballast.



- 3 Push one end of the fluorescent light in the direction of the socket. The other end of the fluorescent light will be detached from the opposite socket.
- 4 Install a new fluorescent light in the reverse order.



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

MEMO

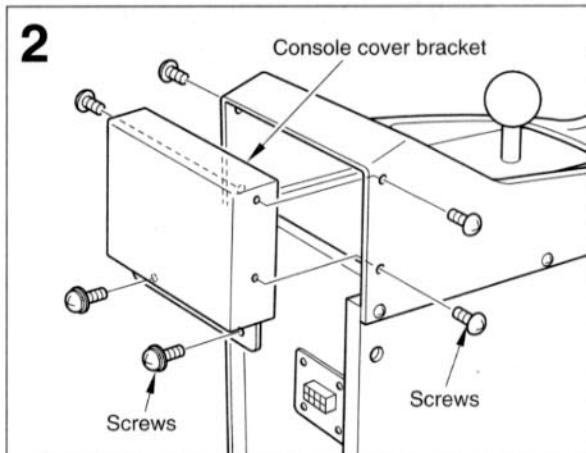
7-3 Replacing the button

■ How to replace the button

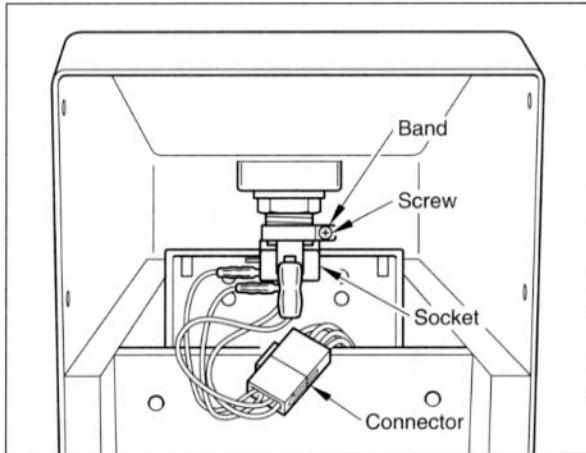


•Before replacing the button, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

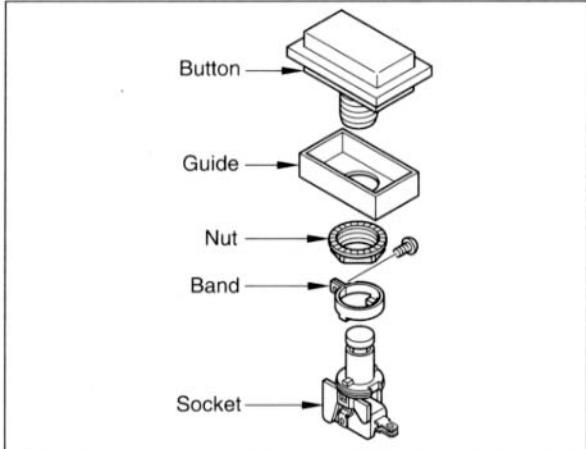
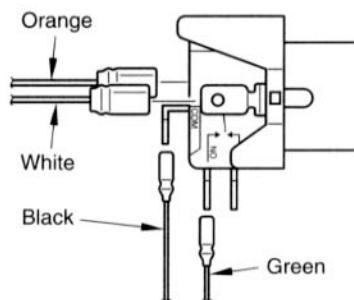
- 1** Separate the cockpit unit, referring back to page 45.
- 2** Remove the screws and detach the console cover bracket.



- 3** Remove the screw and detach the band from the button socket.
- 4** Disconnect the connector and draw the socket out of the button.



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



7-4 Replacing and adjusting the potentiometer

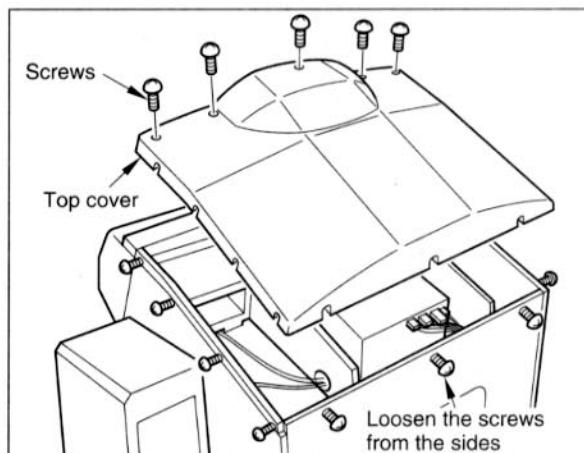
■ How to replace the steering wheel unit potentiometer



• Before replacing the steering wheel unit potentiometer, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

- 1 Separate the cockpit unit and the screen unit from each other, referring back to page 45.

- 2 Remove the 5 screws from the top of the top cover. Loosen all the other screws from the sides and take away the top cover.

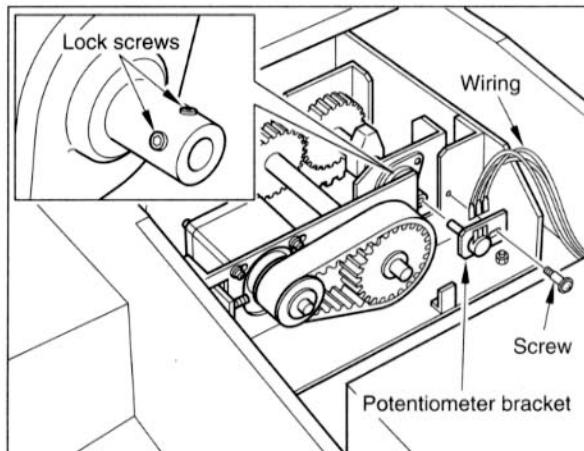


- 3 Disconnect the wiring from the steering wheel unit potentiometer bracket. Loosen the two lock screws.

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

MEMO

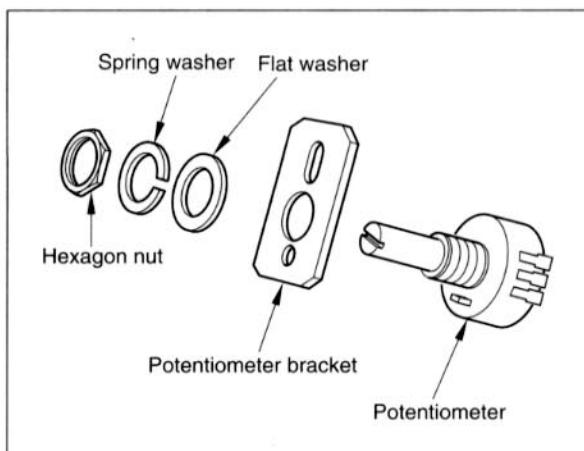
- 4 Remove the screw from the potentiometer bracket and take out the potentiometer and the bracket together.



- 5 Remove the hexagon nut and separate the potentiometer.

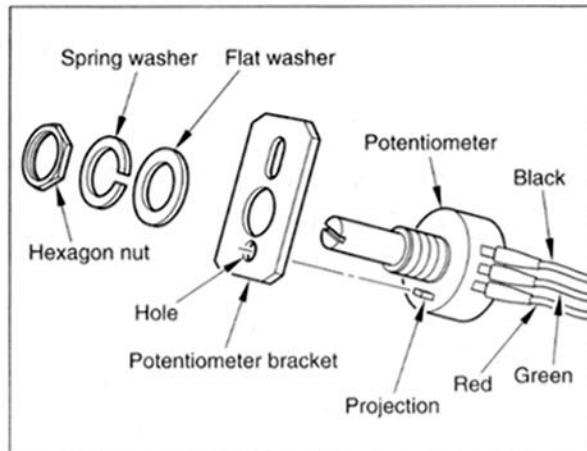
• When replacing the potentiometer with new one, be sure to first make the adjustment on the next page.

MEMO

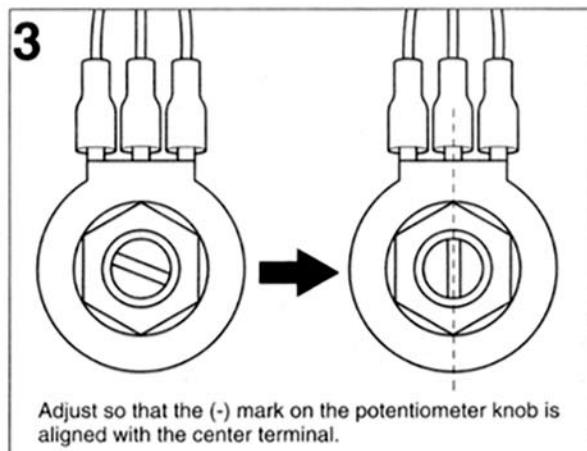


■ How to adjust the steering wheel unit potentiometer -----

- 1 Fit the potentiometer projection to the smallest hole of the potentiometer bracket. Tighten up the hexagon nut.
- 2 Connect the wiring properly.



- 3 Grasp the potentiometer tip with your fingers and adjust it as shown in the figure.
- 4 Mount the potentiometer bracket back in place and tighten up the two lock screws.



- 5 Reattach the top cover and make all the connections of the cockpit unit.

• 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

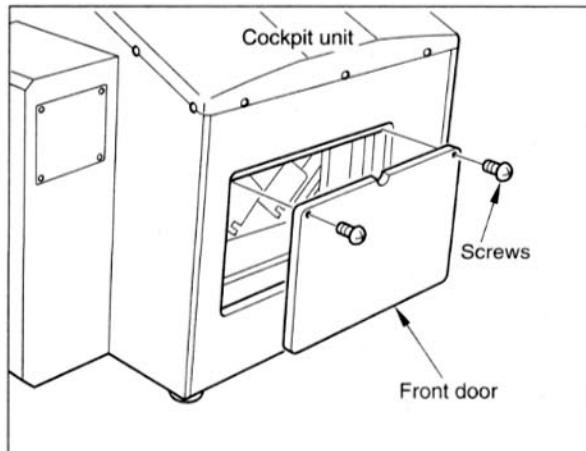
- 6 Carry out "5-2 PCB start-up check (self test)" on page 27.
- 7 Call up the "I/O CHECK" screen, show on page 30. Move the steering wheel and make sure the "I" make comes to the LEFT and RIGHT positions.

■ How to replace the pedal unit (acceleration and brake) potentiometers



• Before replacing the acceleration and brake pedal unit potentiometers, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

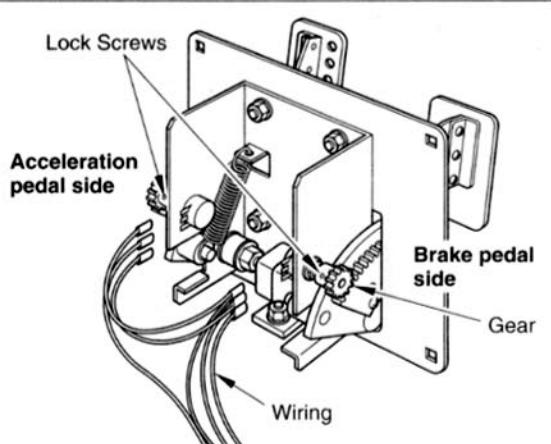
- 1** Remove the screws and detach the front door of the cockpit unit.



- 2** Disconnect the wiring from the pedal unit potentiometer. Loosen the lock screws and take out the gears.

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

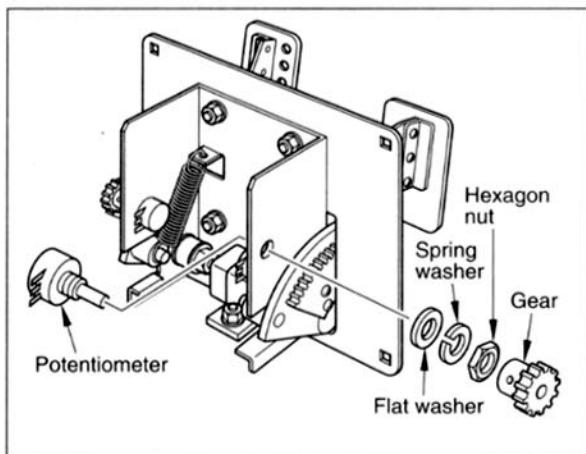
MEMO



- 3** Remove the hexagon nut and separate the potentiometer.
4 Fit new potentiometer first and then the gears.

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

MEMO



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

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

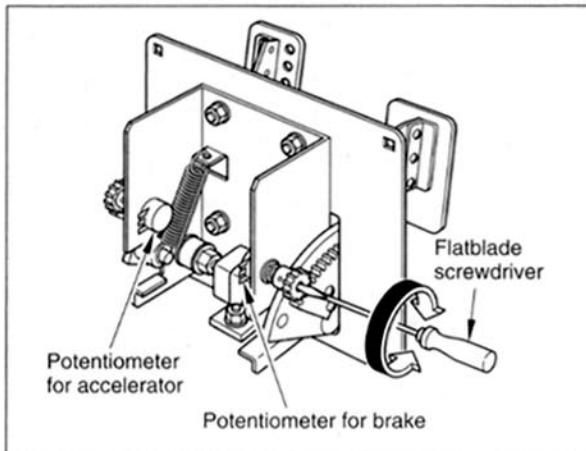
[Adjusting method]

• Potentiometer for accelerator

Fully turn the potentiometer clockwise and then turn it back by about 10°.

• Potentiometer for brake

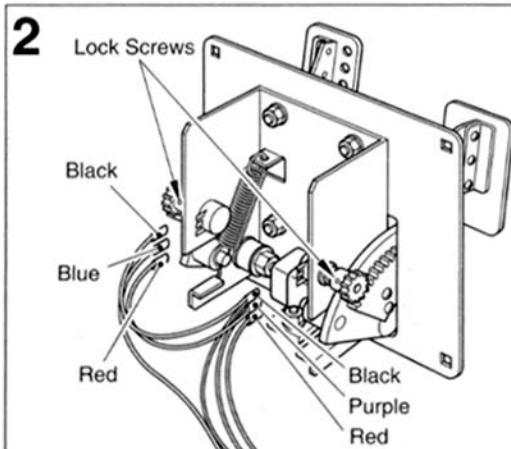
Fully turn the potentiometer counterclockwise and then turn it back by about 10°.



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

- 3 Reassemble the front door in position.

- 4 Carry out "5-2 PCB start-up check (self test)" on page 27.



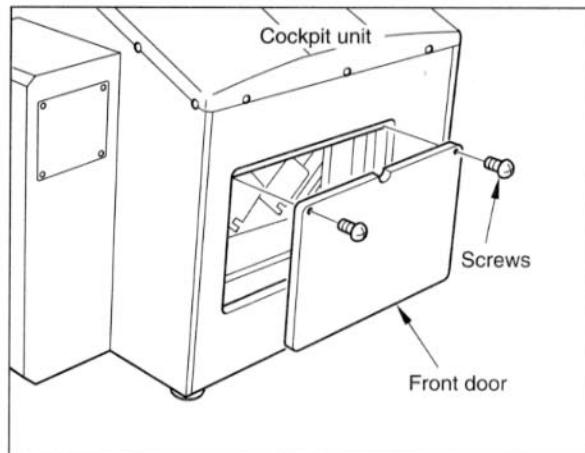
- 5 Call up the "I/O CHECK" screen, show on page 30. Step on the acceleration pedal and brake pedal and make sure the "I" make comes to the MIN and MAX positions.

■ How to replace the clutch pedal unit potentiometer



• Before replacing the clutch pedal unit potentiometer, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

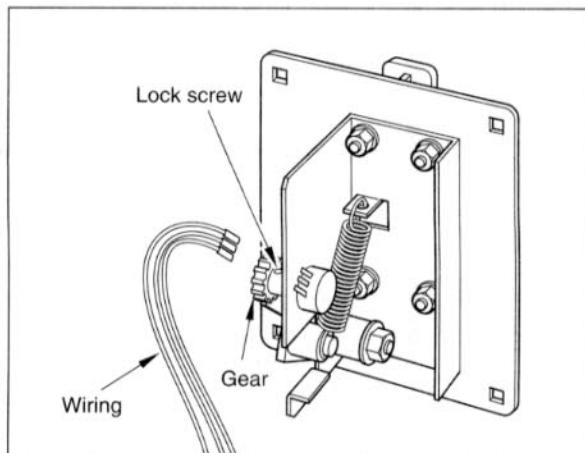
- 1 Remove the screws and detach the front door of the cockpit unit.



- 2 Disconnect the wiring from the pedal unit potentiometer. Loosen the lock screw and take out the gear.

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

MEMO

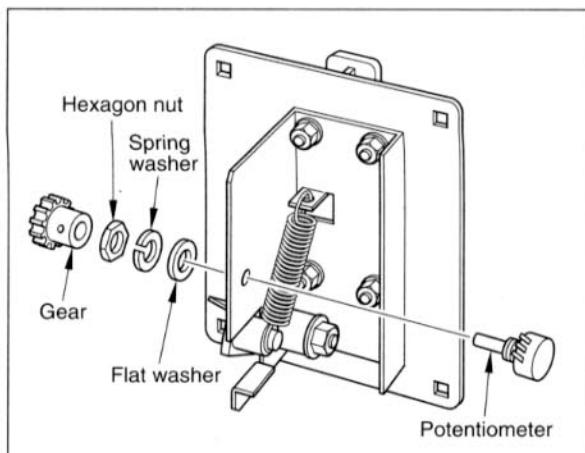


- 3 Remove the hexagon nut and separate the potentiometer.

- 4 Fit new potentiometer first and then the gear.

• Be sure to make the adjustment on the next page before tightening up the gear's lock screw.
• When replacing the potentiometer with new one, be sure to first make the adjustment on the next page.

MEMO



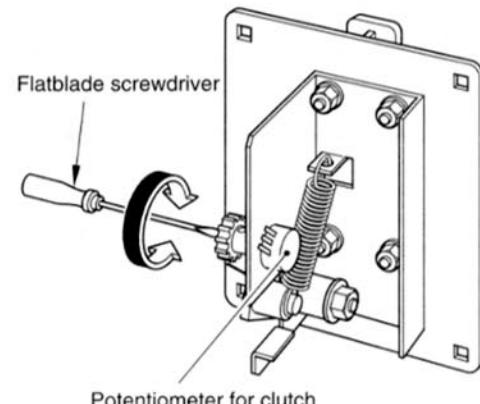
■ How to adjust the clutch pedal unit potentiometer -----

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

[Adjusting method]

• Potentiometer for clutch

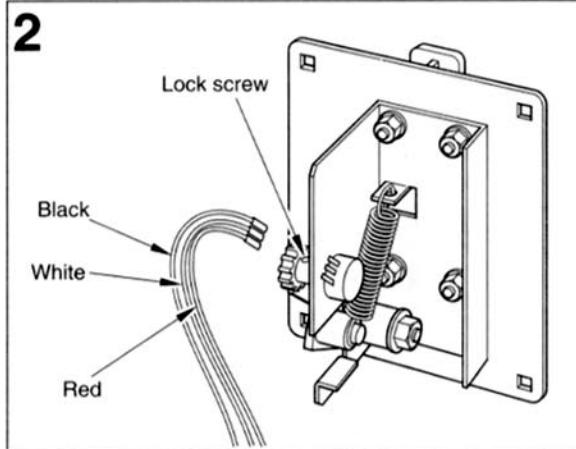
Fully turn the potentiometer clockwise and then turn it back by about 10°.



- 2 Tighten up the gear's lock screw. Be careful not to confuse the wiring.

- 3 Reassemble the front door in position.

- 4 Carry out "5-2 PCB start-up check (self test)" on page 27.



- 5 Call up the "I/O CHECK" screen, show on page 30. Step on the clutch pedal and make sure the "I" make comes to the MIN and MAX positions.

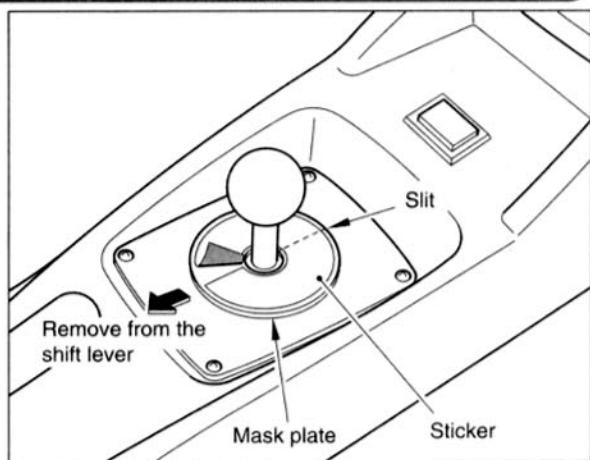
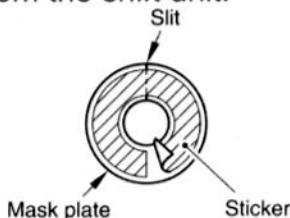
■ How to replace the hand brake unit potentiometer



- Before replacing the hand brake unit potentiometer, be sure to turn OFF the power switch and unplug the power cord from the receptacle.
- Since the hand brake unit is heavy, use due care when handling it.
- When detaching and reattaching the console cover, be very careful not to get your fingers caught.

1 Separate the cockpit unit, referring back to page 45.

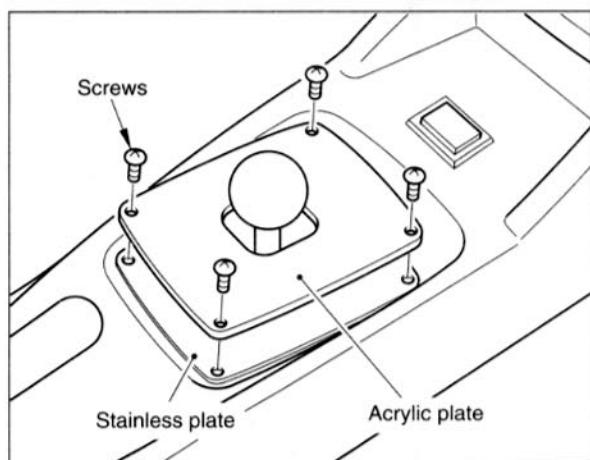
2 Peel the sticker up to the slit of the mask plate. Remove the mask plate from the shift unit.



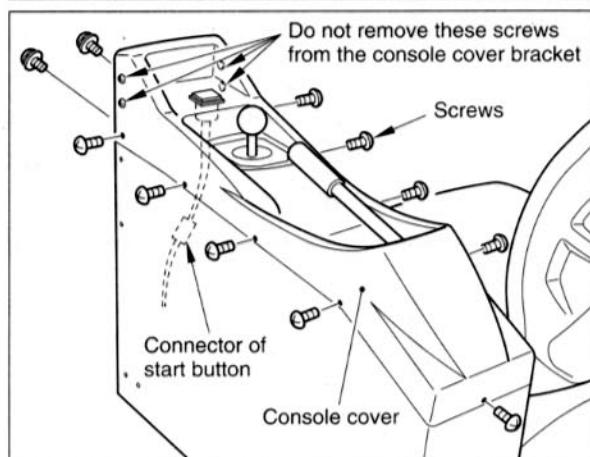
- The mask plate is used again after replacement of the shift unit. Keep it in a safe place.

MEMO

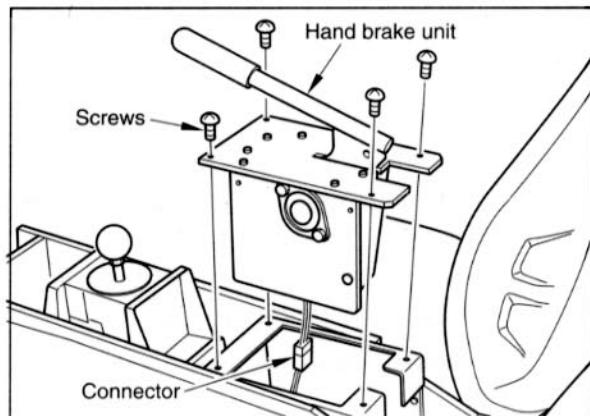
3 Remove the screws and then the acrylic plate and the stainless plate.



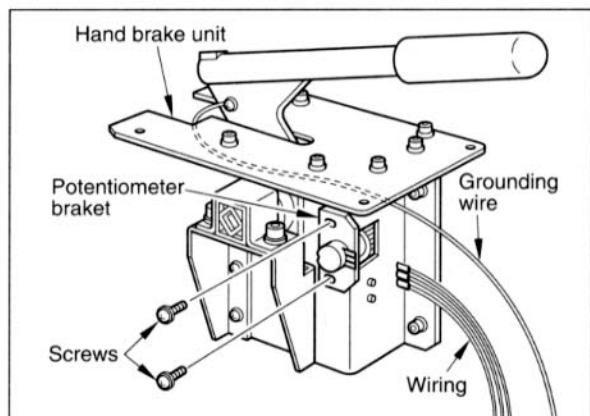
4 Remove the screws. Pulling the hand brake toward yourself, detach the console cover and its bracket (see page 50). Also disconnect the connector of the START button.



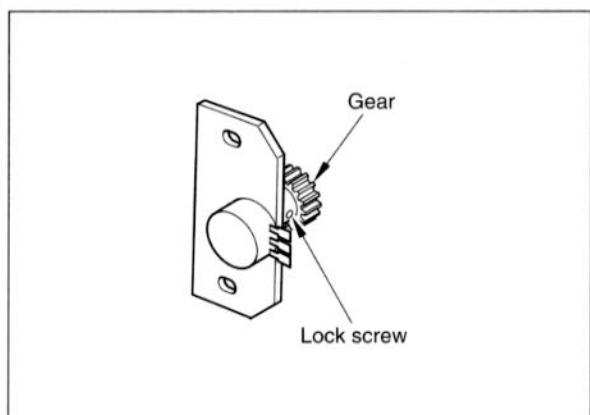
- 5** Remove the screws. Take out the hand brake unit and disconnect the connector.



- 6** Disconnect the wiring and the grounding wire from the potentiometer. Remove the screws and take out potentiometer bracket.



- 7** Loosen the lock screw and pull out the gear.

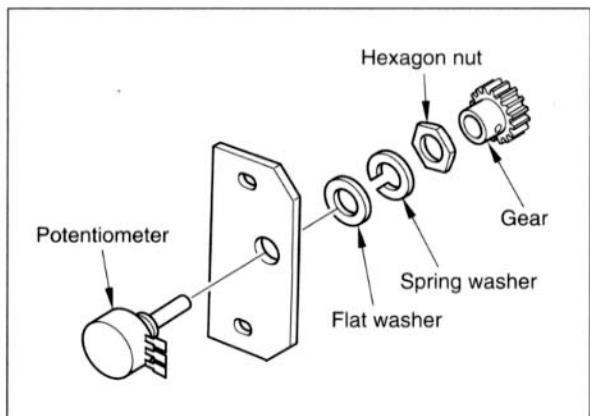


- 8** Remove the hexagon nut and separate the potentiometer.

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

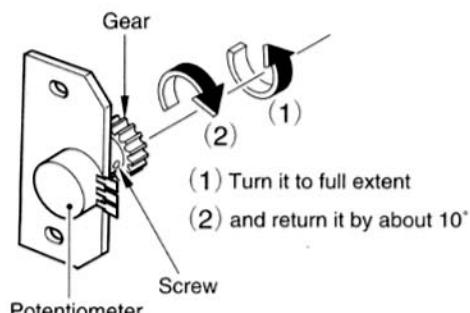
MEMO

- 9** Fit a new potentiometer first and then the gear. Tighten up the lock screw.

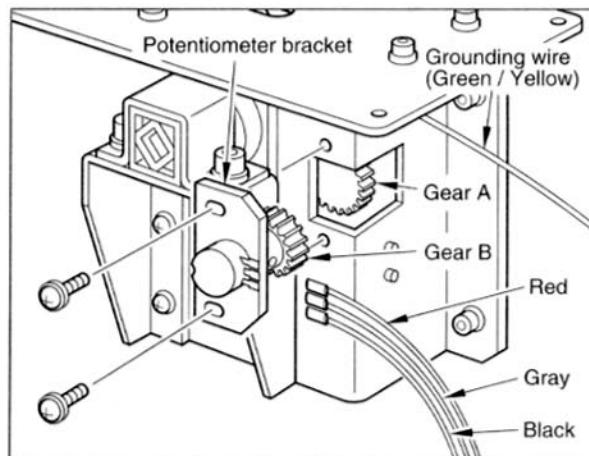
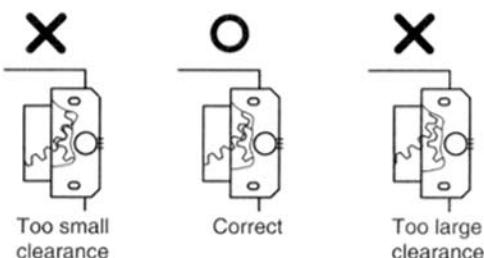


■ How to adjust the hand brake unit potentiometer -----

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



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



- 3** Reconnect the wiring. Be careful not to confuse them.
- 4** Replace the hand brake unit and the console cover into position.
- 5** Reconnect the cockpit unit back into position.
- 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 hand brake and make sure the "I" make comes to the MIN and MAX positions.

7-5 Replacing the shift unit microswitch

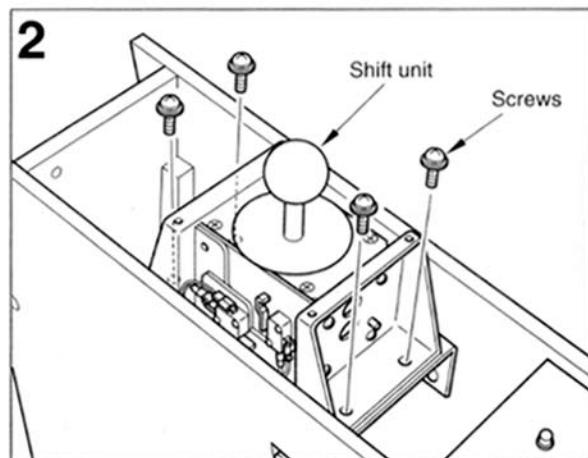
■ How to replace the shift unit microswitch



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

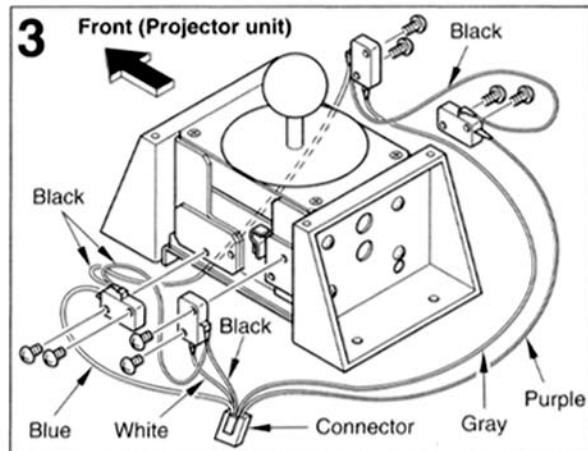
- 1** Separate the cockpit unit first and then remove the console cover, referring back to page 57.

- 2** Remove the screws and take out the shift unit.



- 3** Remove the screws and take out the microswitch.

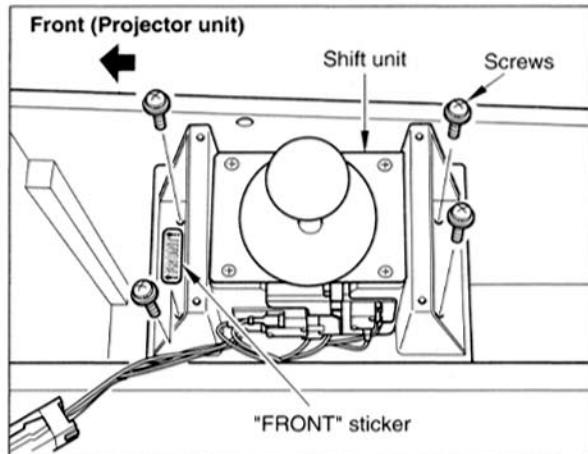
- 4** When replacing the microswitch with new one, be careful to position the microswitch correctly. Do not confuse the wiring.



- 5** Place the shift unit back into position.

• Place the shift unit with its "FRONT" sticker facing the projector unit.

MEMO



7-6 Inspecting and replacing the motor brushes

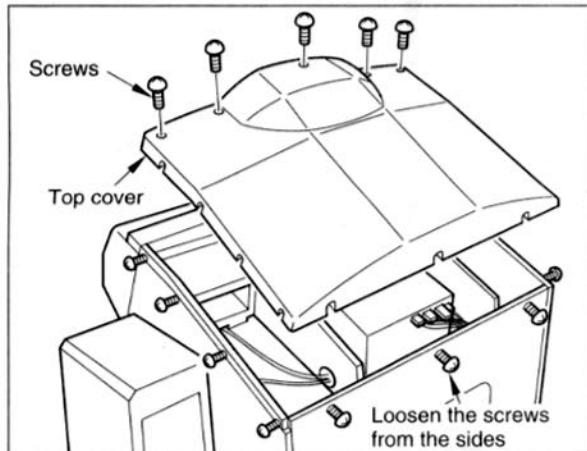
At the motor of the steering wheel unit are fitted two motor brushes. The motor brushes are worn every time when the machine is operated. It is therefore recommended to do periodical checking about every 2000 hours.

■ How to inspect and replace the motor brushes -----

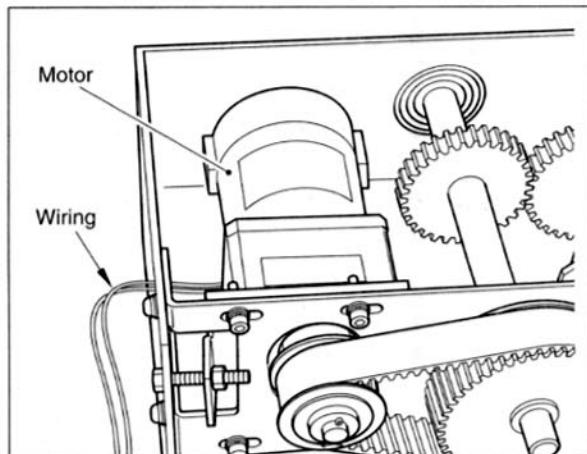


•Before inspecting and replacing the motor brushes, be sure to turn OFF the power switch and unplug the power cord from the receptacle.

- 1 Remove the 5 screws from the top of the top cover. Loosen all the other screws from the sides and take away the top cover.



- 2 Disconnect the wiring from the motor.



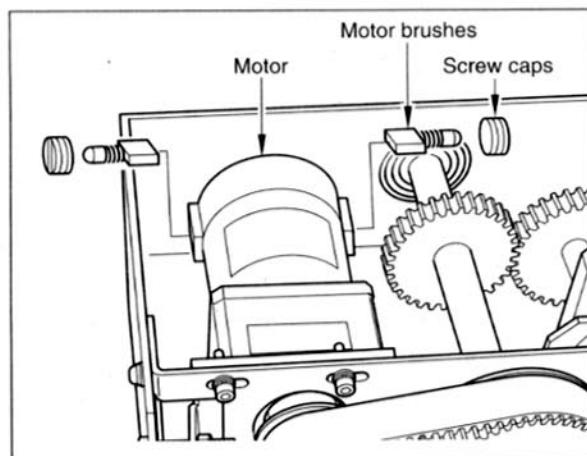
- 3 Using a Flatblade screwdriver, remove the screw caps and take out the motor brushes.

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

Motor brush part No. 0000036164

MEMO

- 4 Install the motor brushes back into position. Attach the top cover in place.



7-7 Replacing the timing belt and adjusting its tension

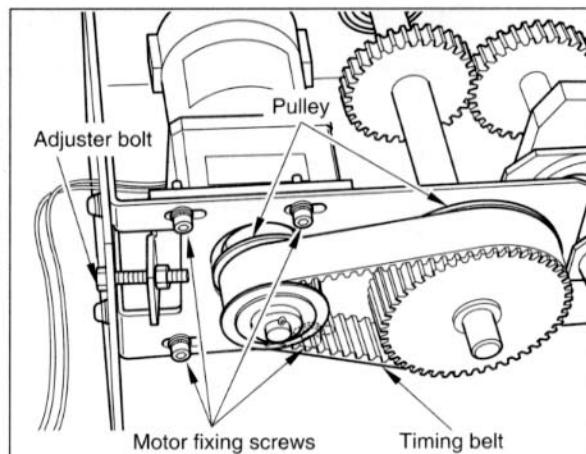
■ How to replace the timing belt



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

- 1 Remove the 5 screws from the top of the top cover. Loosen all the other screws from the sides and take away the top cover.(See page 61)

- 2 Loosen the motor fixing screws and the adjuster bolt. Undo the timing belt.

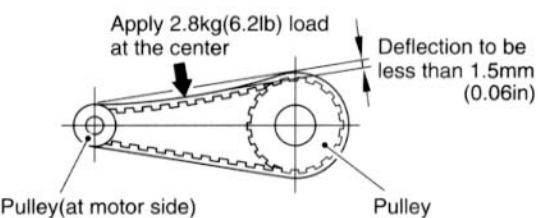


■ How to adjust timing belt tension

- 1 Keeping loose the motor lock screws and the adjuster bolt, apply a new timing belt on the pulley.

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

Appropriate timing belt sag



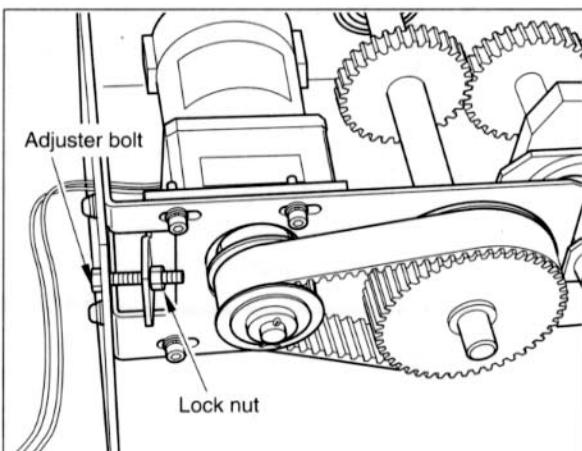
Preferably use a tension gauge available on the market for easier adjustment. For frequency measurement, set to 305 Hz.

- 3 Make sure the deflection is as specified. Tighten up the lock nut for the adjuster bolt.

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

MEMO

- 4 Finally tighten up the motor fixing screws evenly.



7-8 Resetting the circuit protector

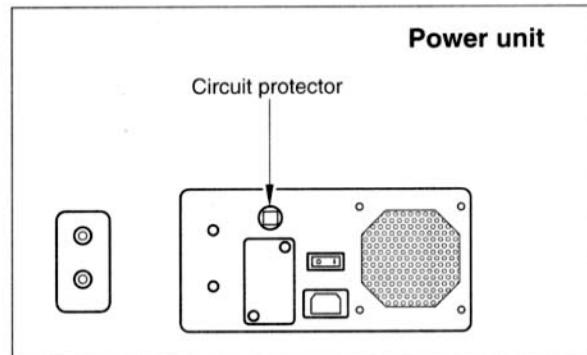
If an overcurrent or short circuit occurs, the circuit protector will be automatically actuated to protect the electric circuits of the game machine. When resetting the circuit protector, turn OFF the power switch, unplug the power cord from the receptacle, eliminate the cause, and then press the button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

■ How to reset the power unit circuit protector



- Before resetting the circuit protector, be sure to turn OFF the power switch and unplug the power cord from the receptacle.
- If the circuit protector trips soon again, immediately turn OFF the power switch, unplug the power cord, and contact your nearest dealer.
- The projector unit has some internal parts with high voltage. Only a qualified industry specialists is allowed to open the back door of the projector unit. With this back door open, be very careful not to touch unnecessary parts.
- If the machine is in abnormal conditions and does not operate normally, immediately turn OFF the power switch, unplug the power cord from the receptacle and contact your nearest dealer.

■ Press the circuit protector button at the power unit.



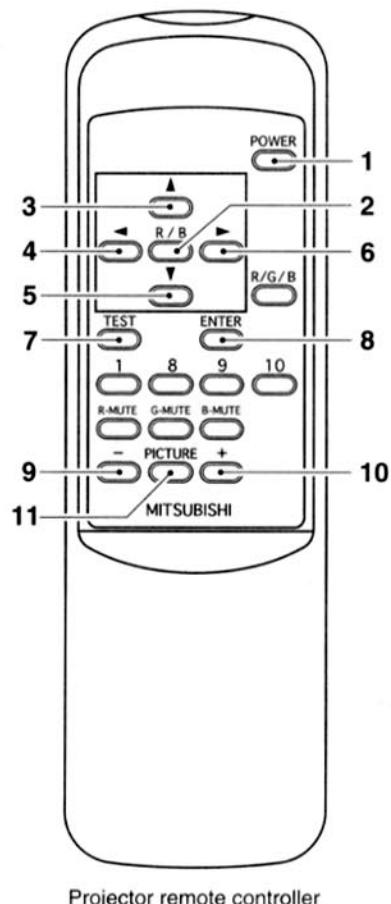
7-9 Adjusting the projector

The projector has already been adjusted at the time of shipment, but it may be readjusted with the attached remote controller as desired.



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

■Appearance of the remote controller

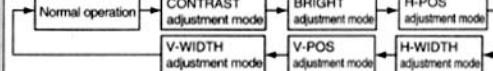


Projector remote controller

- Only the keys 1 to 11 shown above are allowed to be used. Never press the other keys.

MEMO

1	POWER key	Used to turn ON/OFF the power. The POWER key is used only at the time of service maintenance. Do not use it in normal times.
2	R/B key	Used to select the red adjustment mode (R) or blue adjustment mode (B) in the static convergence adjustment mode.
3	▲(UP) key	Used to shift "Test Cross" up in the static convergence adjustment mode.
4	◀(LEFT) key	Used to shift "Test Cross" left in the static convergence adjustment mode.
5	▼(DOWN) key	Used to shift "Test Cross" down in the static convergence adjustment mode.
6	►(RIGHT) key	Used to shift "Test Cross" right in the static convergence adjustment mode.
7	TEST key	It is an ON/OFF key for the static convergence adjustment mode. When it is turned ON, the "Test Cross" pattern appears in the center of the screen.
8	ENTER key	This key is used at the time of shipment. It does not function in normal times.
9	- key	Used to decrease the adjustment data value in the CONTRAST, BRIGHT, H-POS, V-POS, H-WIDTH and V-WIDTH adjustment modes.
10	+ key	Used to increase the adjustment data value in the CONTRAST, BRIGHT, H-POS, V-POS, H-WIDTH and V-WIDTH adjustment modes.
11	PICTURE key	Used to select the CONTRAST, BRIGHT, H-POS, V-POS, H-WIDTH and V-WIDTH adjustment modes. The adjustment modes are selected in the following order by pressing the key.



•Adjustment mode

CONTRAST adjustment mode	Used to change the brightness of the picture. Make adjustments with the "+" or "-" key.
BRIGHT adjustment mode	Used to change the black level of the picture. Make adjustments with the "+" or "-" key.
H-POS adjustment mode	Used to shift the position of the picture in the horizontal direction. Make adjustments with the "+" or "-" key.
H-WIDTH adjustment mode	Used to change the horizontal width of the picture. Make adjustments with the "+" or "-" key.
V-POS adjustment mode	Used to shift the position of the picture in the vertical direction. Make adjustments with the "+" or "-" key.
V-WIDTH adjustment mode	Used to change the vertical width of the picture. Make adjustments with the "+" or "-" key.

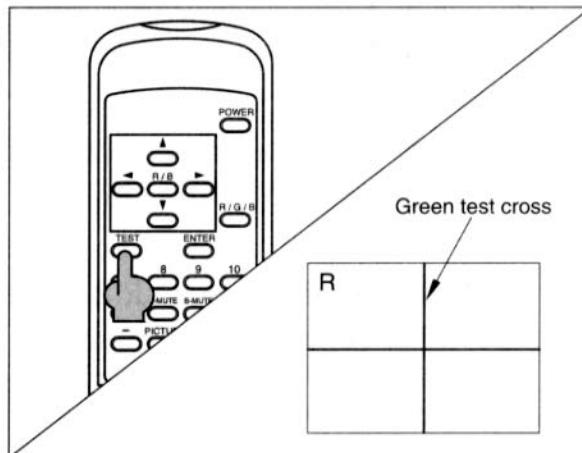
When the game machine is moved to another location or reoriented, screen color distortion can occur due to magnetism from objects near the game machine or from the earth's magnetic field. If screen color distortion occurs uniformly across the whole screen, adjust convergence in the following way.

■How to adjust the static convergence



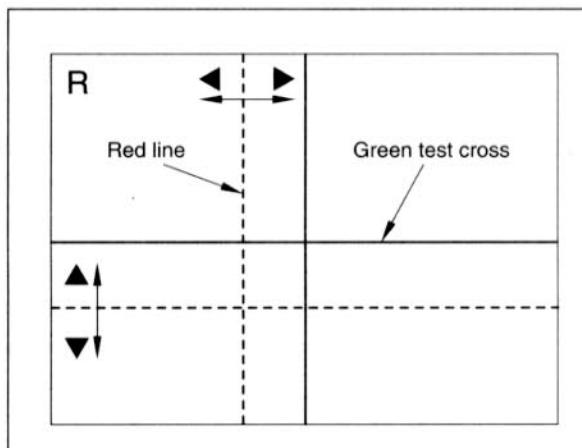
- Direct the remote control to the screen.
- When using the remote control, keep it within a 30° angle to the top, bottom, left and right of the center of the screen and stand no further than 3 meters(118inches) away from the screen.
- When the screen is disturbed by static electricity etc. during the adjustment of the unit, turn OFF the power switch and on again, and readjust the unit.
- If the remote control does not work properly, replace the batteries with new ones. If the remote control is not to be used for a long time, remove the batteries from the remote control. Failure to do so could cause liquid leakage.

- 1 Press the TEST key of the remote control. (The red line adjustment screen will appear.)



- 2 Superimpose the red line on the green test cross. Using the "◀", "▶", "▲" and "▼" keys on the remote control, align the center of the red line with the center of the green test cross.

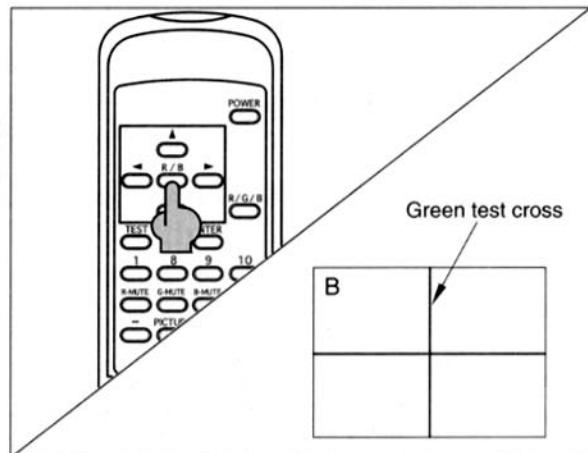
(When the red line is superimposed on the green test cross, the green test cross turns yellow or white.)



3

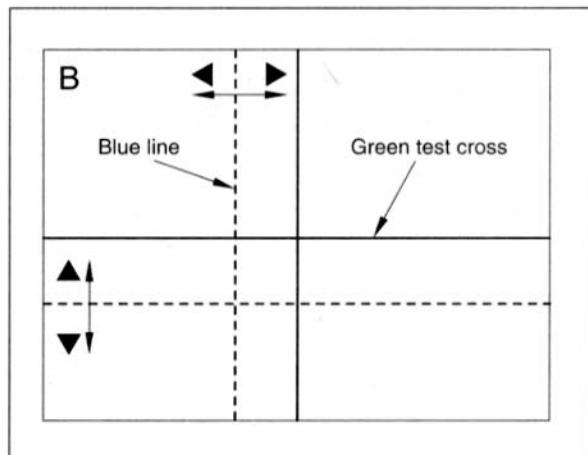
Press the R / B key.

The blue line adjustment screen will appear. Each time the key is pressed, switching between the red and blue is made.

**4**

Superimpose the blue line on the green test cross. Using the "◀", "▶", "▲" and "▼" keys on the remote control, align the center of the blue line with the center of the green test cross.

When the blue line is superimposed on the green test cross, the green test cross turns white.

**5**

When the adjustment is completed, press the TEST key.

■Ending and automatic canceling of the adjustment mode -----

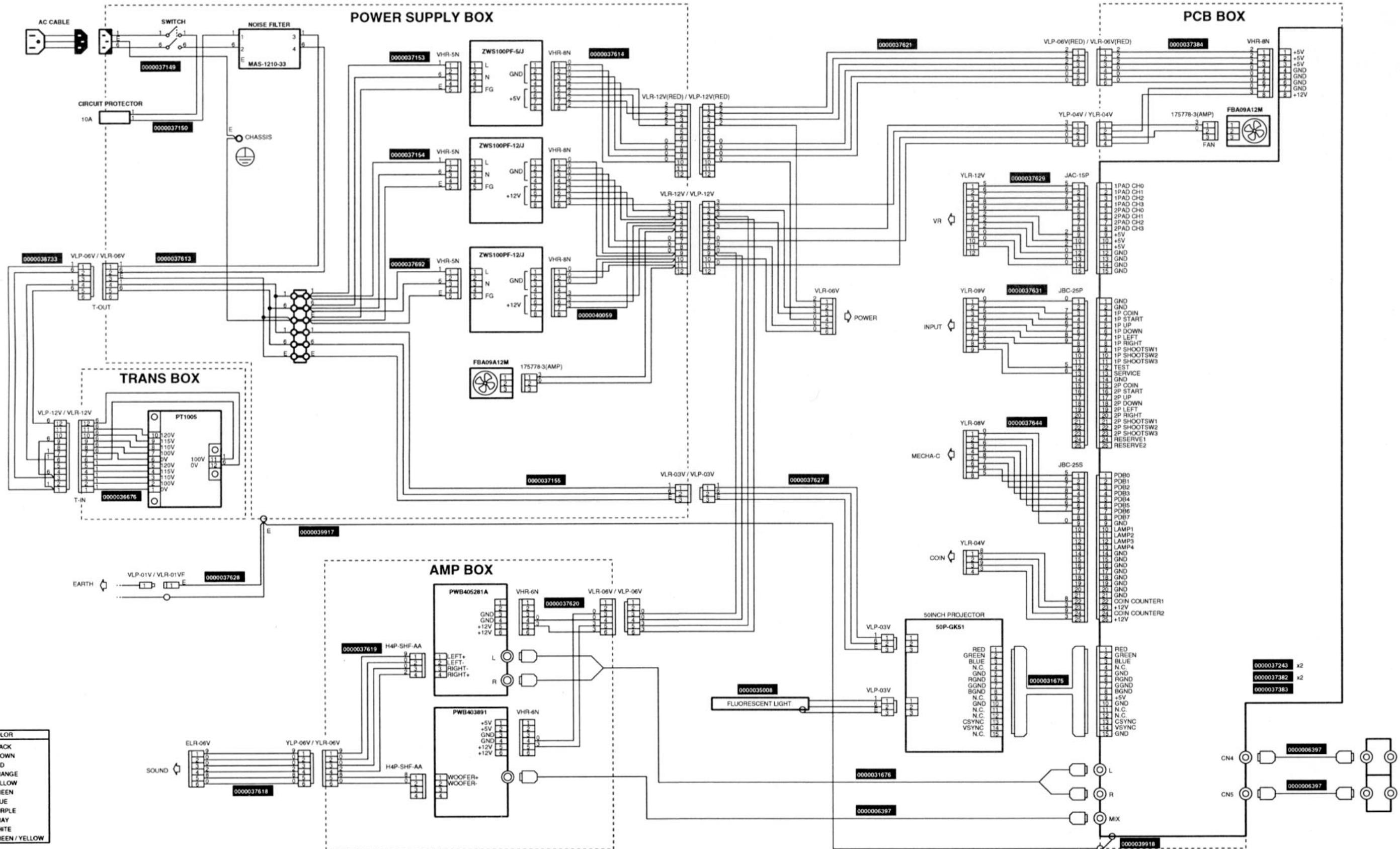
If no valid key entry (changing the value or picture) is made in each adjustment mode within the time specified below, the mode is automatically canceled and ended and then the normal picture is displayed.

About 6 seconds	<ul style="list-style-type: none"> ·CONTRAST adjustment mode ·BRIGHT adjustment mode ·H-POS adjustment mode ·H-WIDTH adjustment mode ·V-POS adjustment mode ·V-WIDTH adjustment mode
About 5 minutes	<ul style="list-style-type: none"> ·Static convergence adjustment mode

7-10 Wiring diagram

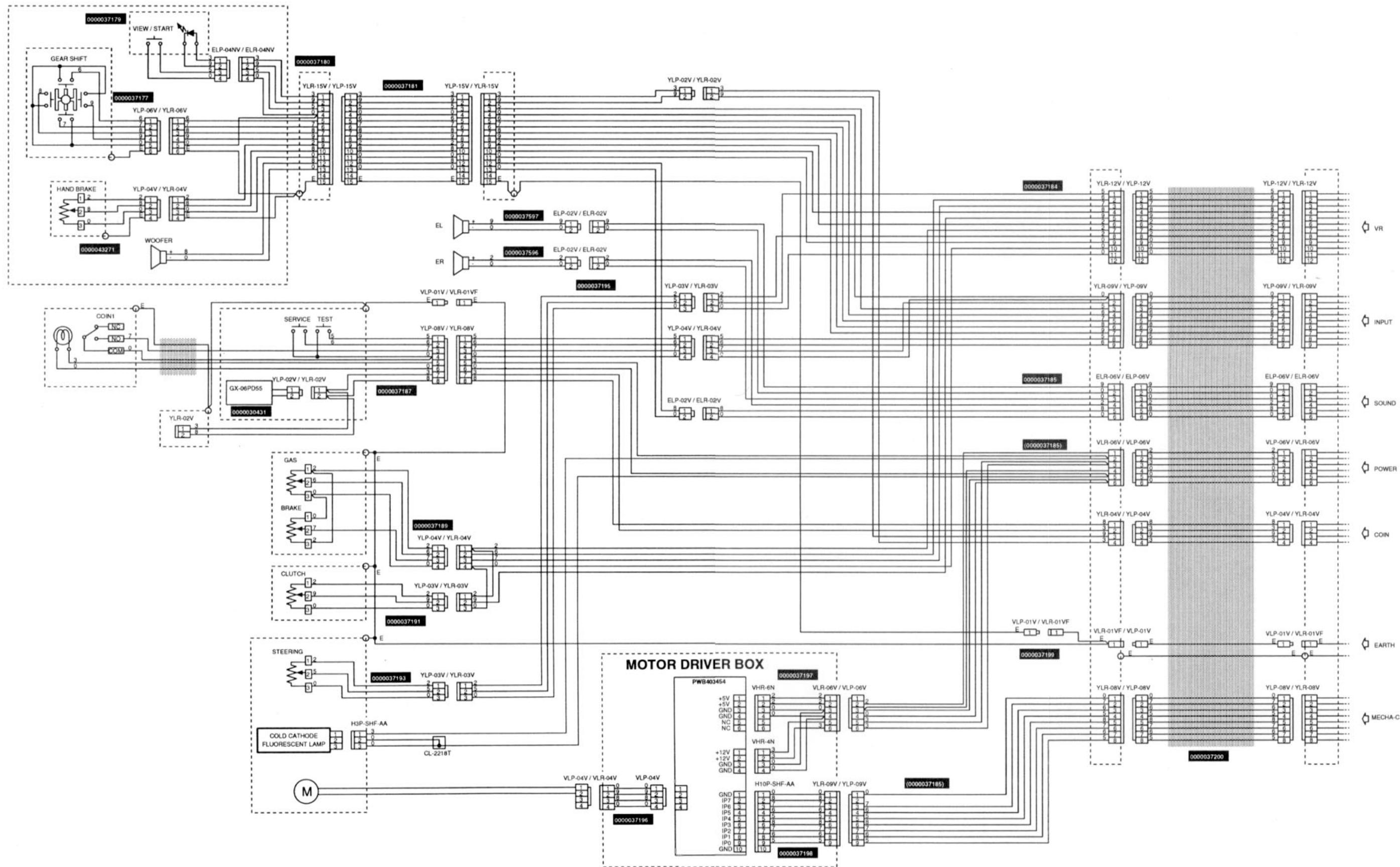
GN676-TB specifications for regions using 110 voltage area in Asia.

1/2



Wiring diagram

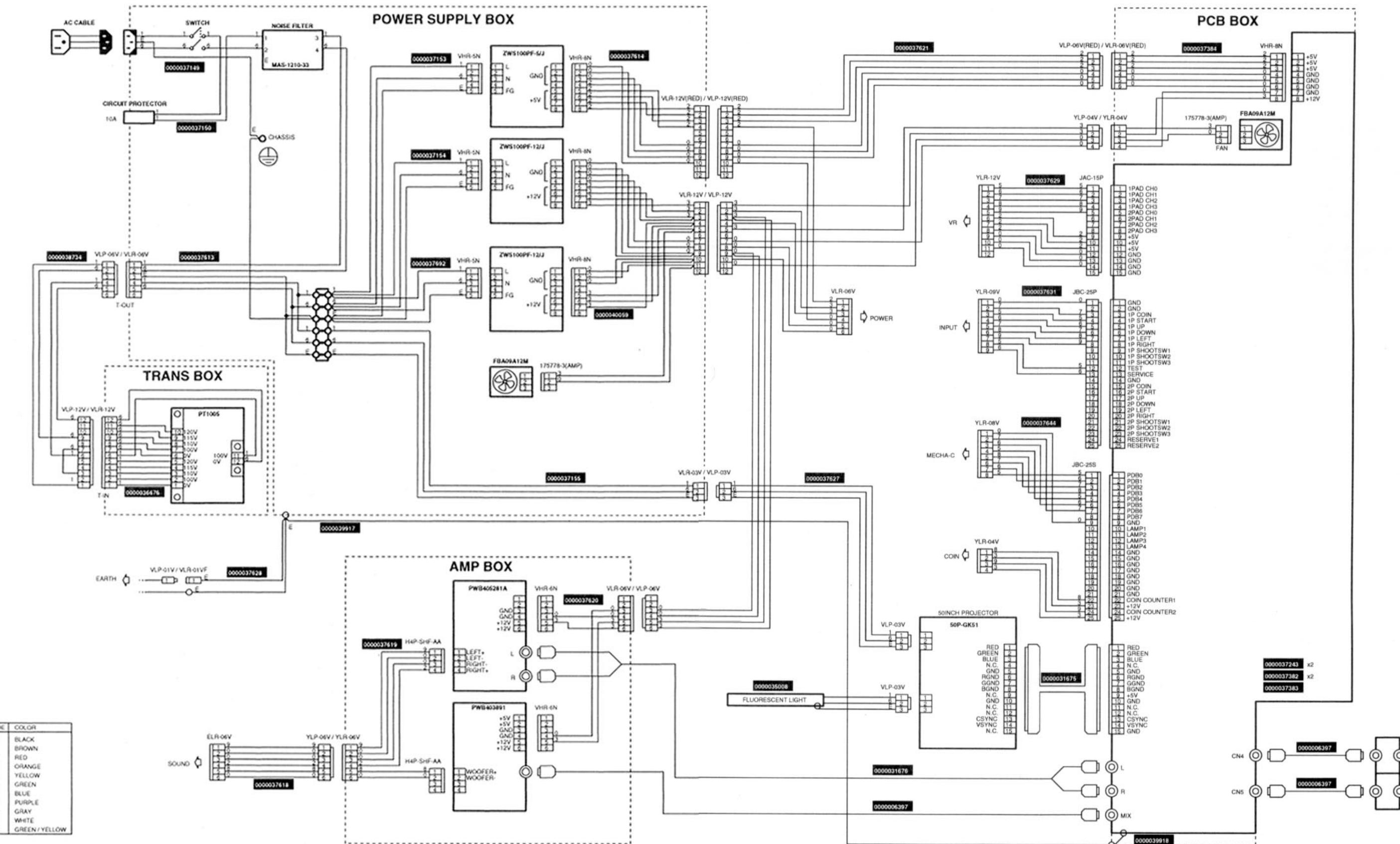
GN676-TB specifications for regions using 110 voltage area in Asia.
2/2



Wiring diagram

GN676-HD specifications for regions using 220 voltage area in Asia.

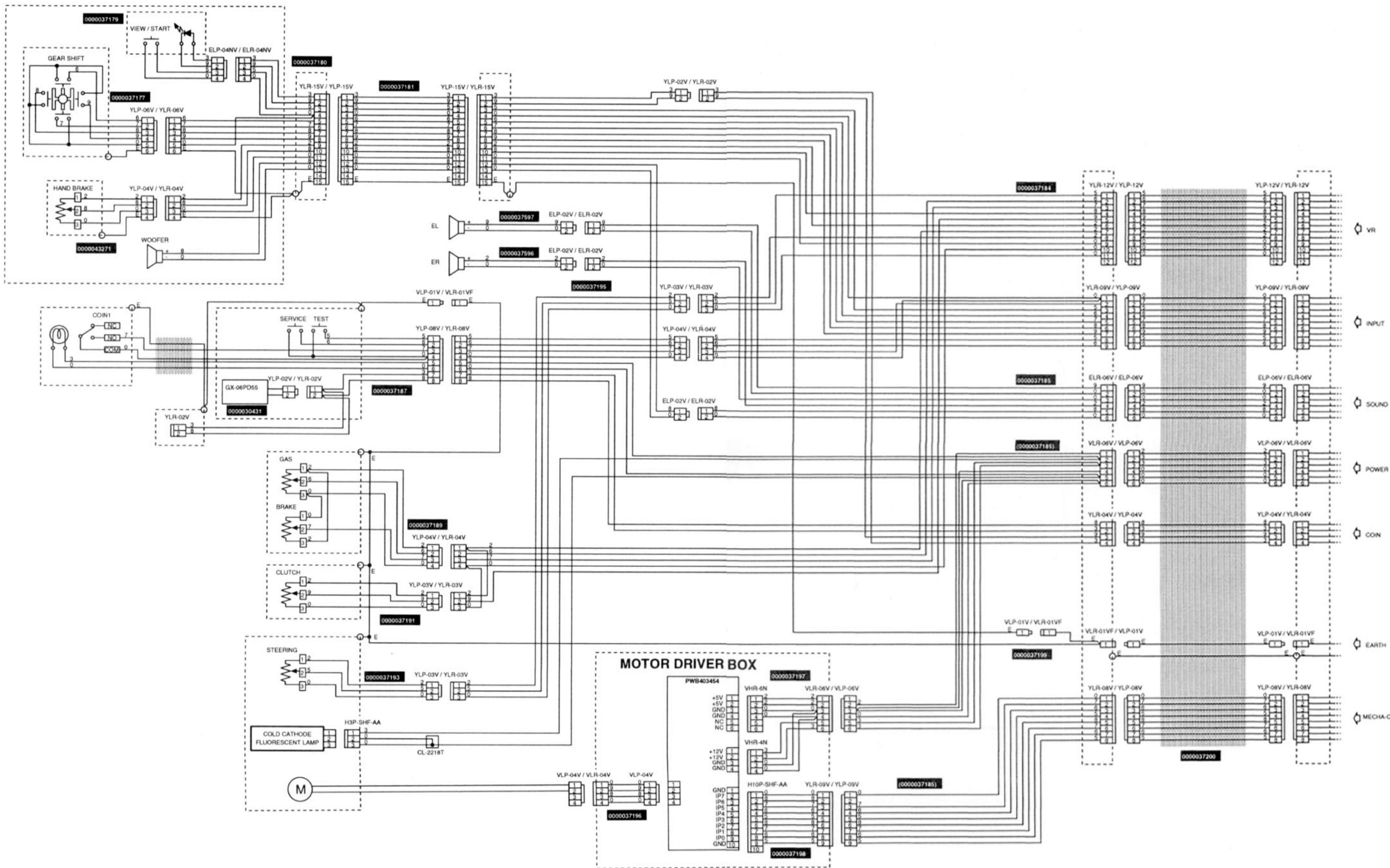
1/2



Wiring diagram

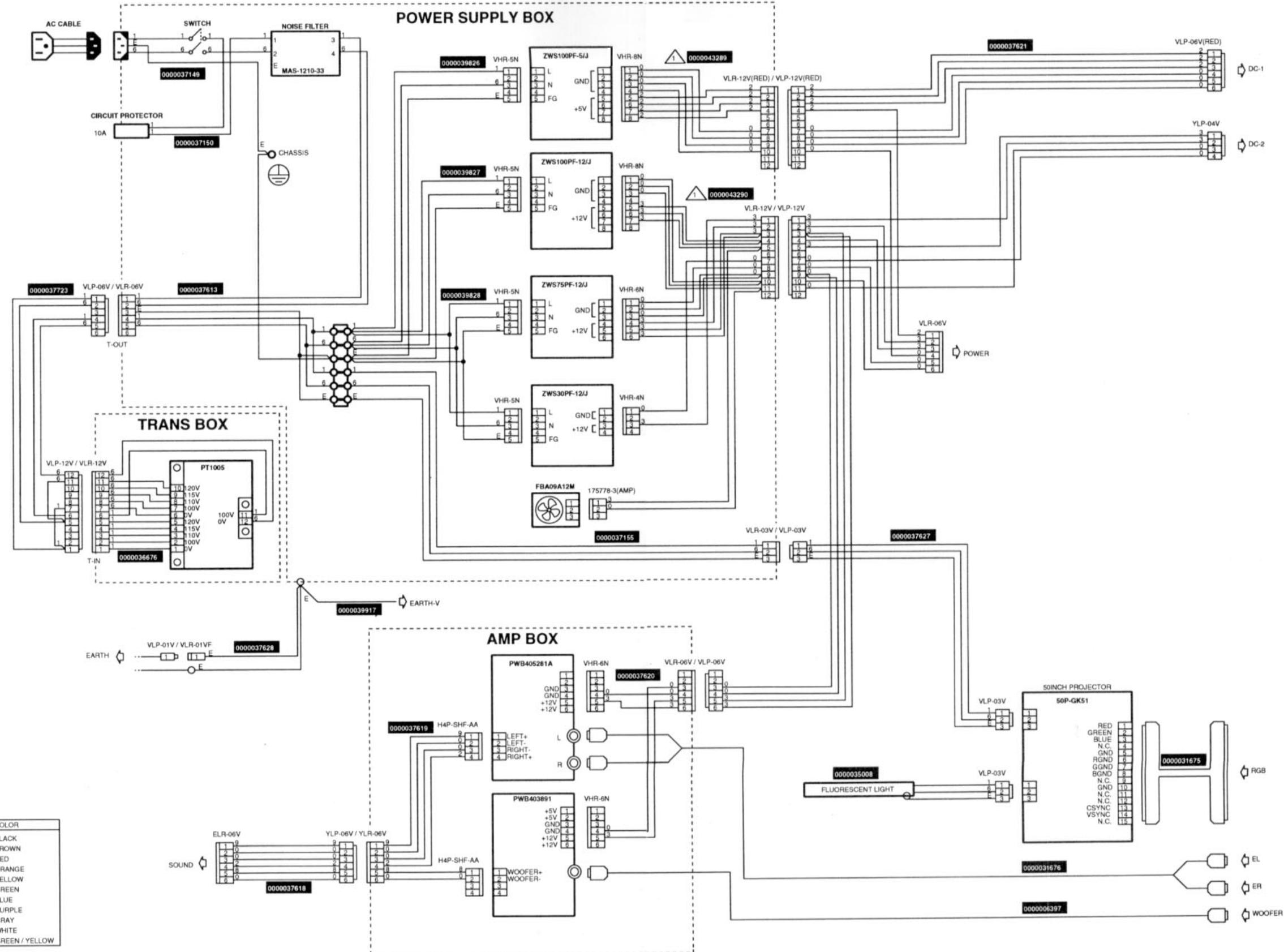
GN676-HD specifications for regions using 220 voltage area in Asia.

2/2



Wiring diagram

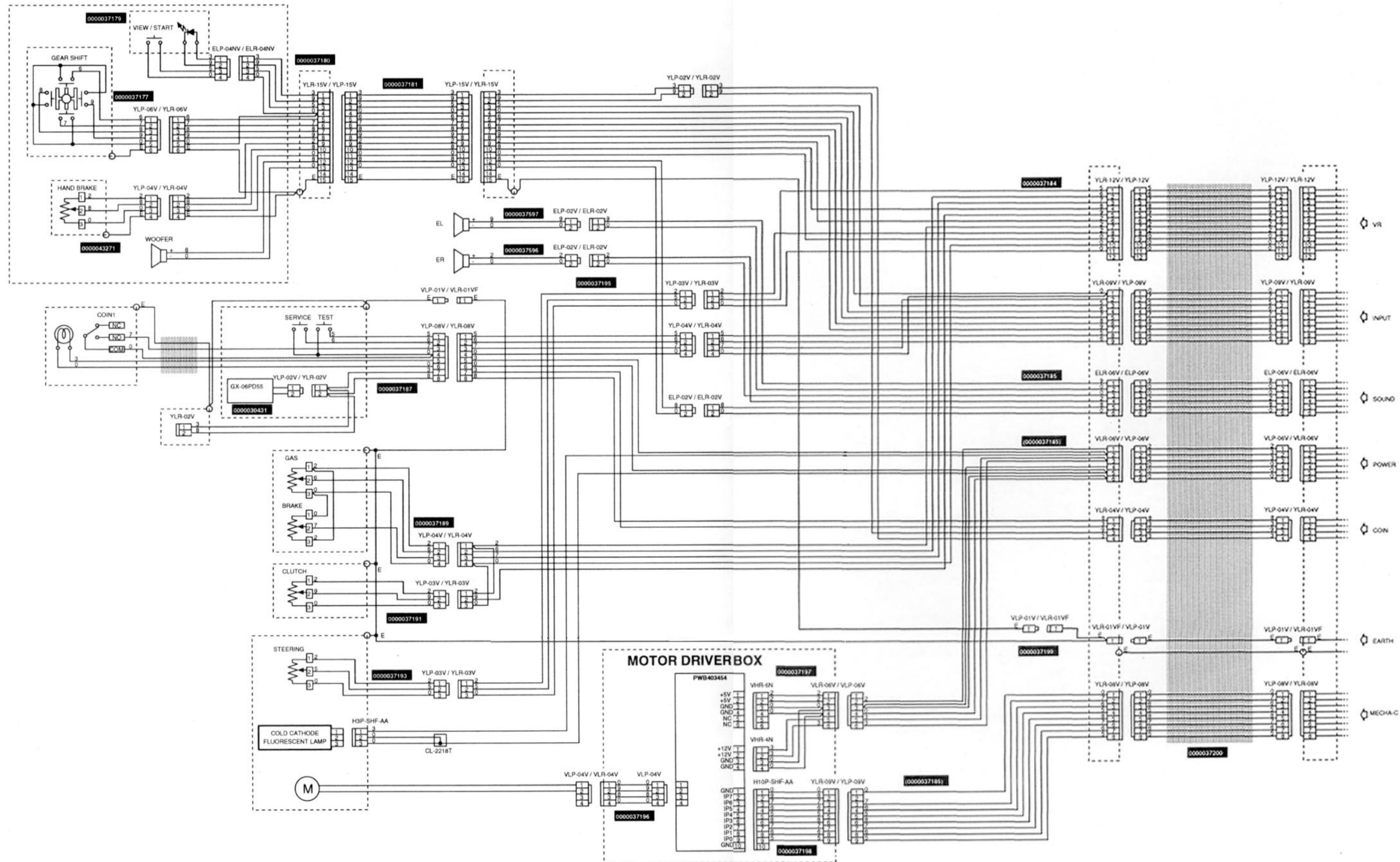
GN676-UC specifications for regions using 120 voltage area in the U.S.A..
1/3



Wiring diagram

GN676-UC specifications for regions using 120 voltage area in the U.S.A..

2/3



Wiring diagram

GN676-UC specifications for regions using 120 voltage area in the U.S.A..
3/3

