



ORIGINAL DRIVE VIDEO GAME

DX TYPE

GTI CLUBTM

RALLY COTE D'AZUR

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OPERATOR'S MANUAL

KONAMI

WARNING

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SPATIALIZER[®]
50 STEREO

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■ 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.

This manual covers the following models: _____

- GN688-AD
- GN688-HD
- GN688-TB
- GN688-AF

The specifications of GN688-AD may be somewhat different from GN688-HD, GN688-TB and GN688-AF. 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 industrial property law.
- Unauthorized reproduction of this document or any of its contents is strictly forbidden.

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■ 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 “GTI CLUB™” or other persons or to properties are shown as follows.

Be sure to read the following

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



WARNING

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



CAUTION

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

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



Indicates a matter of which care should be taken.



Indicates a matter which is forbidden.



Indicates a matter which should be performed without fail.

Setting Up

**WARNING**

- **Be sure to consult your nearest dealer when setting up, moving or transporting this product.**
 - ▶ This product should not be set up, moved or transported by anyone other than industry specialists. Doing so could result in injury or product damage.
 - ▶ When setting up this product, fasten the game machine securely with all the adjusters. If the game machine is not fastened securely, injury or accidents could be caused by the machine rocking.
 - ▶ 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:**
 - 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 substances 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 items near the ventilating holes.**
 - ▶ Doing so could cause the internal temperature to rise excessively, resulting in 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 on the power cord.**
 - ▶ Doing so could damage the cord, resulting in electric leakage or fire.
- **Use an earthing band or similar means of discharging static electricity when adjusting the PCB DIP switches.**
 - ▶ If not discharged, static electricity could damage the electronic components on the board.

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.
- Never plug more than one cord at a time in the electrical receptacle.
 - ▶ Doing so could result in fire or electrical shock.
- Do not lay the power cord and the communication cable where people walk through. You may tread on or stumble over them.
 - ▶ You may stumble down and get injured, or damage the cord or the cable.
- Do not place heavy objects on or pull on the pipe connecting the projector unit and drive unit. Also, do not use the game machine with the pipe removed and the wiring exposed.
 - ▶ Doing so could result in equipment failure.
- Be sure to connect a earth cable to the ground terminal of the game machine.
- Clearances of 100 mm(3.94in) or more should be created between the game machine and walls.



Operation



WARNING

- 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.
- If there is any abnormality such as smoke, bad smell or abnormal noise being emitted from the machine, immediately unplug the power cord 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.
2. Unplug the power cord.
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.



Operation



CAUTION

- 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.



- When handling the power cord, take care of the following:

▶ Improper handling could result in fire or electrical shock.



- Do not damage the power cord.
- Do not bend the power cord excessively.
- Do not heat the power cord.
- Do not bind the power cord.
- Do not sandwich the power cord.
- Do not modify the power cord.
- Do not twist the power cord.
- Do not pull the power cord.
- Do not tread on 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.

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

- Do not place items or heavy loads on or provide a strong impact to the molding.

▶ Doing so could cause the object on the machine to fall off or could damage the machine, resulting in injury.



Inspection and cleaning



WARNING

- Be sure to turn off the power 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.



- Never disassemble, repair or modify any section other than those specified in this manual.

▶ Doing so could result in fire, malfunction or equipment failure.



- To clean the game machine, wipe it with a soft cloth dampened in a neutral detergent and wrung out.

▶ Using organic solvents such as thinner may decompose the material.

▶ Electrical shock or equipment failure could be caused by water entering the inside of the machine.

Moving and Transportation



CAUTION

- The game machine contains parts such as a projector, electronic components and precision components which are sensitive to vibration and impact. Great care therefore should be taken when moving and transporting the game machine. Be sure not to let the machine tip over.
- Fully raise all the adjusters before moving the game machine and move it utilizing the casters. Be sure to turn off the power and unplug the power cord from the receptacle before moving the game machine.
 - ▶ Failure to do so could result in accidents, damage or equipment failure.
- Take care that no undue force is applied to the connecting sections of the game machine when moving it.
 - ▶ Failure to do so could cause injury, accidents or product damage.



Disposal



WARNING

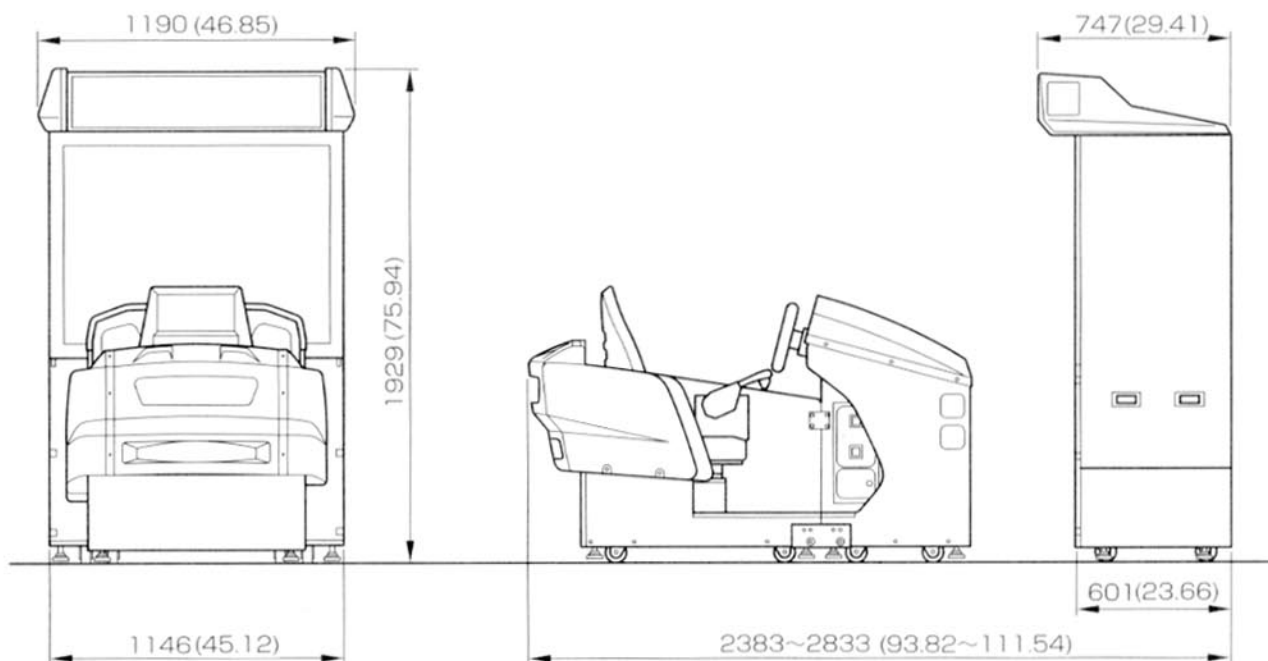
- When disposing of the projector of this product, do not leave it with the screen exposed.
 - ▶ Doing so could result in fire due to direct sunlight, etc.
- If the screen is removed, be careful not to leave it in direct sunlight.
 - ▶ Doing so could cause burns or fire.



PRECAUTION IN HANDLING

- When setting up, handling, 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.

1 Specifications



Specifications

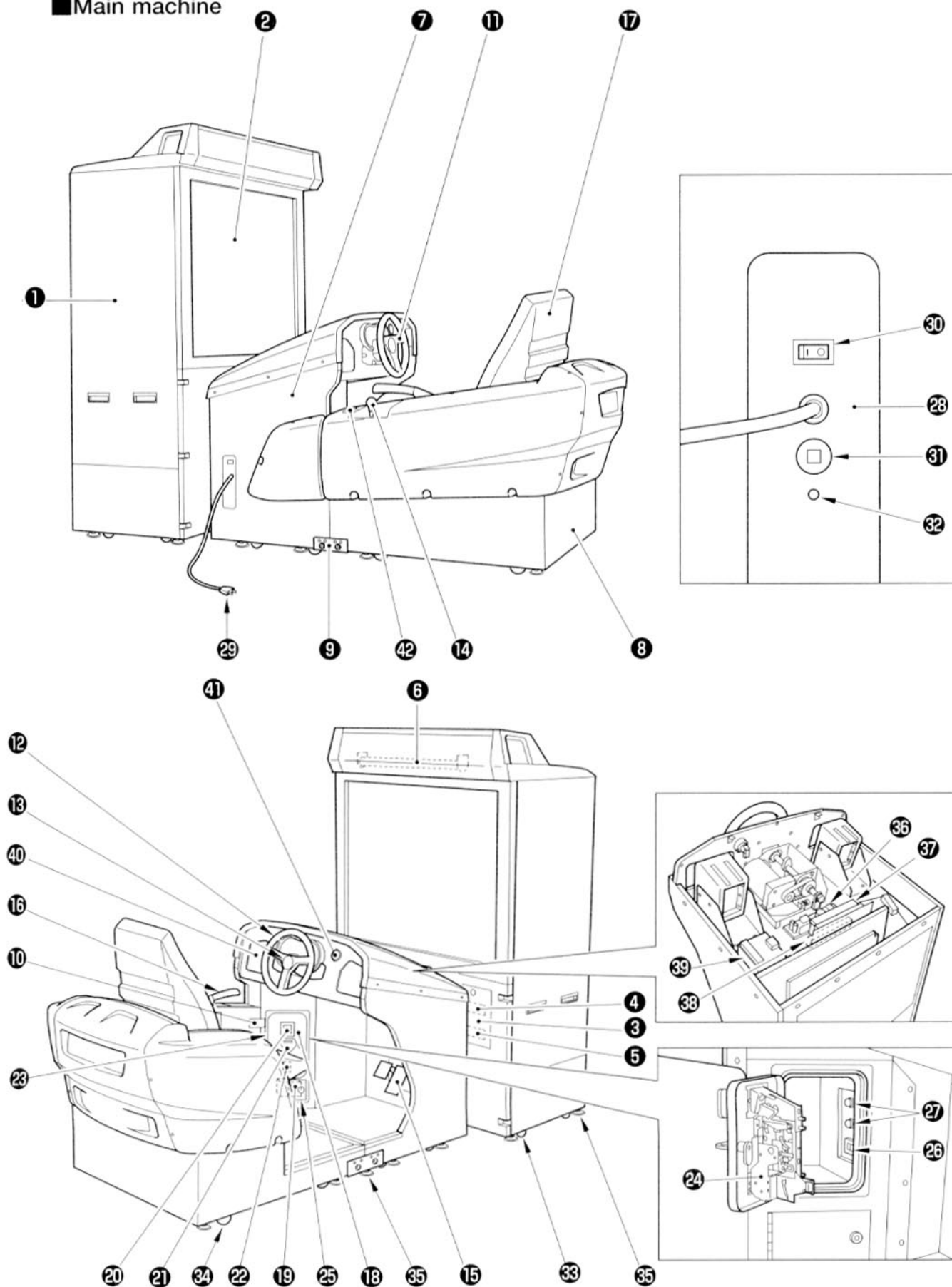
Dimensions	Refer to the figure above: mm (in)
Weight	Approx. 230kg (507lb)
Power consumption	Max. 300 W
Monitor	50-inch color projector
Service condition	Temperature 10 to 35°C (50 to 95°F) Humidity 20 to 80% (No dewing is allowed.)
Attachments	<ul style="list-style-type: none"> • Instruction manualthis manual • Keys for coin door2 • Keys for maintenance2 • Machine connecting plates2 • Machine connecting plate screws (M8 x 25L)8 • Joint fitting1 • Screws for fastening joint fittings (M6 x 30L)4 • Screws for fastening connection pipe (M4 x 6L)4 • (M4 x 15L)4 • Networking cord1 • Remote control for adjusting projector1 • UM-4 (AAA batteries)2 • Seal for remote control for adjusting projector1 • Timing belt1

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

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

2 Names of parts and list of main parts

■ Main machine

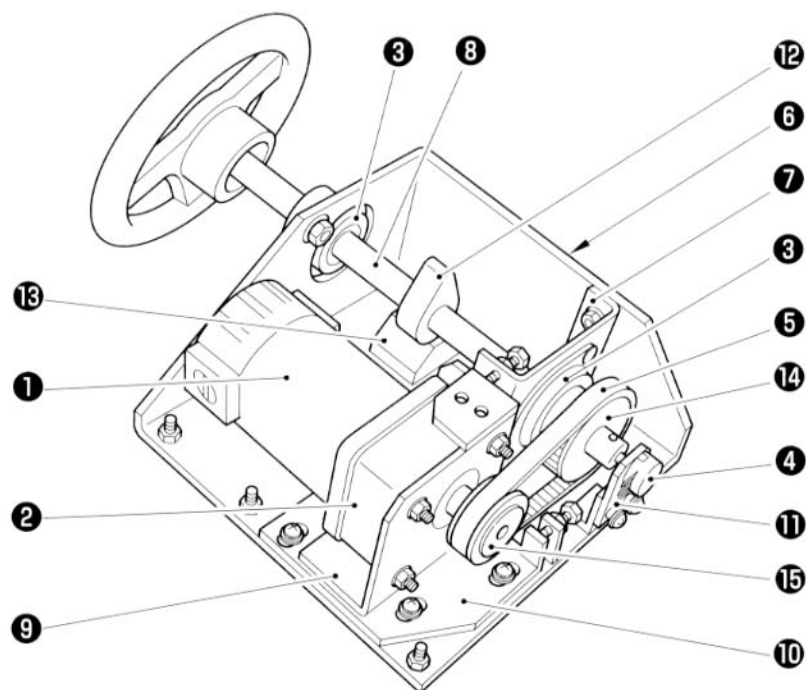


2 Names of parts and list of main parts

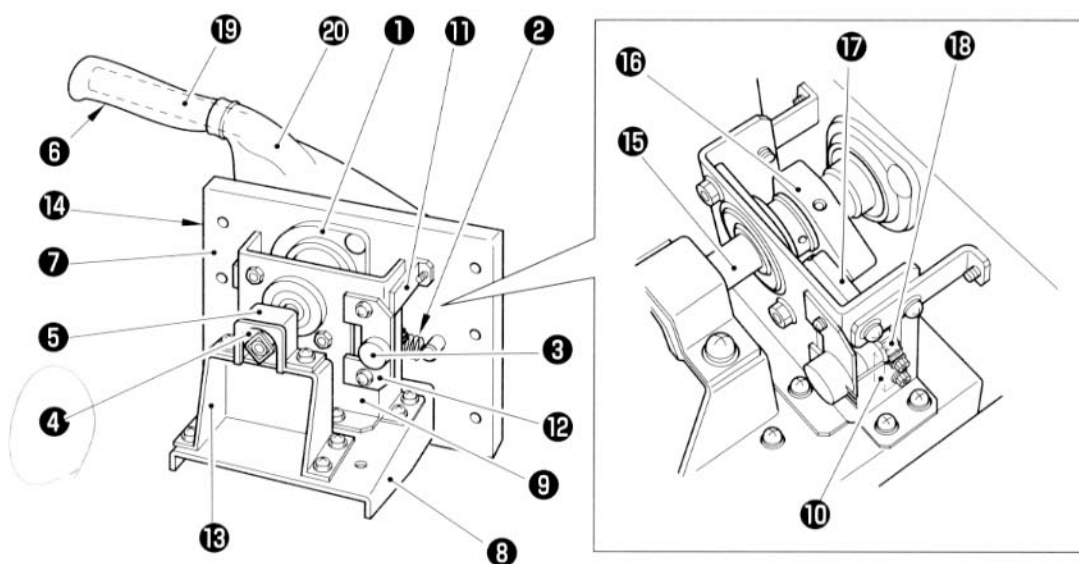
No.	Part name	Part #	Quantity	Remarks
①	Projector unit	—	1	
②	Projector	002243	1	
③	Projector maintenance door	302072A	1	
④	Projector adjustment PCB	—	1	
⑤	Projector input panel	—	1	
⑥	Fluorescent light unit	003192	1	
⑦	Drive unit A	—	1	
⑧	Drive unit B	—	1	
⑨	Machine connecting plate	302790	2	Attachment
⑩	Joint fitting	301491	1	Attachment
⑪	Steering wheel unit	—	1	
⑫	Steering wheel	057133	1	
⑬	Center cap	057146	1	
⑭	Gear shift unit	003138	1	
⑮	Pedal unit	—	1	
⑯	Hand brake unit	—	1	
⑰	Seat	100507	1	
⑱	Maintenance door unit	003344	1	Include ⑳～㉔ GN688-AD/AF/TB
		003345	1	Include ⑳～㉔ GN688-HD
㉑	Coin box	302779	1	
㉒	Coin input port	—	1	
㉓	Coin return button	—	1	
㉔	Coin return port	—	1	
㉕	Maintenance door	—	1	
㉖	Coin selector	—	1	
㉗	Coin door	302780	1	
㉘	Coin counter	054339	1	
㉙	Service panel switch	054337	2	
㉚	AC bracket	303038	1	
㉛	AC power cord	053090	1	
㉜	Main power switch	003110	1	
㉝	Circuit protector	002483	1	
㉞	Ground terminal	055905	1	
㉟	Caster	055231	4	Projector unit
㊱	Caster	056890	8	Drive unit
㊲	Adjuster	002102	12	
㊳	Switching power	057523	1	Main PCB(5v)
㊴	Switching power	054795	1	Main PCB(12v)
㊵	Switching power	056338	1	Motor(12v)
㊶	Transformer	002494	1	
㊷	Speaker	003168	2	1 set
㊸	View shift switch	058447	1	
㊹	AT/MT shift switch	003133	1	

2 Names of parts and list of main parts

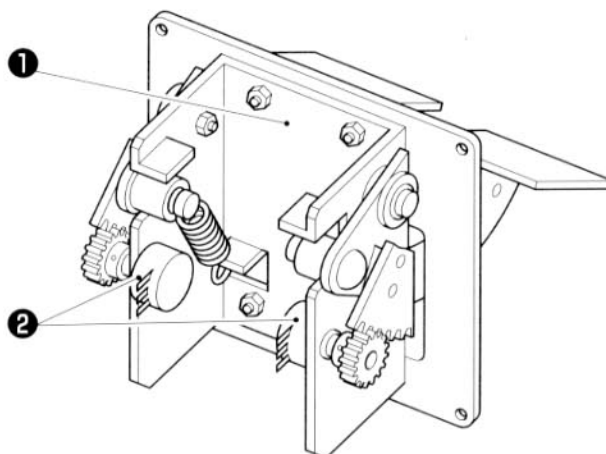
Steering wheel unit



Hand brake unit



Pedal unit



2 Names of parts and list of main parts

■ Steering wheel unit

No.	Part name	Part #	Quantity	Remarks
①	Motor	003152	1	
②	Gear head	003151	1	
③	Bearing	001121	2	
④	Potentiometer	001123	1	
⑤	Timing belt	003149	1	
⑥	Unit A bracket	302827A	1	
⑦	Unit B bracket	302828A	1	
⑧	Steering wheel shaft	302829	1	
⑨	Support plate A	302826A	1	
⑩	Support plate B	403578	1	
⑪	Potentiometer bracket	403669A	1	
⑫	Shaft stopper	403243	1	
⑬	End stopper	403709	1	
⑭	Pulley A	403670	1	
⑮	Pulley B	403708	1	

■ Hand brake unit

No.	Part name	Part #	Quantity	Remarks
①	Bearing	001121	2	
②	Coil spring	003163	1	
③	Potentiometer	001123	1	
④	Suspension rubber	003164	1	
⑤	Clamp	003165	1	
⑥	Grip	003166	1	
⑦	Main base	302841A	1	
⑧	Bottom base	403762	1	
⑨	Stopper bracket	302844	1	
⑩	End stopper	403763	2	
⑪	Main fixture	403764	2	
⑫	Potentiometer bracket	403765	1	
⑬	Suspension bracket	302845	1	
⑭	Cover(A)	302847	1	
⑮	Shaft	302849	1	
⑯	Shaft stopper	302851	1	
⑰	Gear(A)	403766	1	
⑱	Gear(B)	403767	1	
⑲	Hand brake lever	200675	1	
⑳	Arm cover	302833	1	

■ Pedal unit

No.	Part name	Part #	Quantity	Remarks
①	Pedal unit	001870	1	
②	Potentiometer	001123	2	

3 How to play

This machine to play a driving game in which eight small rally cars (one of which is to be selected by the player and the other rival cars). These cars develop competing race through a virtual urban area in the scene as if the player is racing in a beautiful resort town in southern France. This machine allows the player to enjoy a thrilling driving game while controlling his car in “quick turn” and “drift driving” by pulling up or down the hand brake lever. Besides, the matching race of maximum 4P networks can be enjoyed.

■How to play — — — — —

1. Put a coin into the slot to start the game. (In the free play mode, push the [VIEW] shift to start the game.)
2. The Network Entry screen appears. If a coin is put in another machine which is connected to this machine through network while this screen is displayed, the network race starts automatically.
 - ※If the machine is not connected to the network or it is impossible for player to play the game because someone else is playing the game, proceed to the operation in the following item 3 after a coin is put in.
3. Select the player car on the “Machine Select Screen”. Select desired car by turning the steering wheel and set it by stepping on the accelerator.
4. The screen changes to the “Game Select Screen”. Then, make the game mode selection among the following modes. Select desired mode by turning the steering wheel and set it by stepping on the accelerator.
 - Beginner's mode A part of the urban area in the map of entire courses is made into a circuit, where the beginner plays a circuit race.
 - Advanced mode All the roads are made open, and the player plays circuit race while looking for the shortest and fastest route. This mode is for an expert player.
 - Super-advanced mode The player plays circuit race in the reverse course to that of the advanced mode. This mode is for a super-expert player who wants to challenge an extremely difficult course where a labyrinth of roads is running.
 - Special mode This mode can be selected only for the network play. The player can enjoy the car racing “Tag” in a closed urban area.
5. When the selection among the above-mentioned modes is over, then the game starts. The car racing game begins when the countdown has ended on the screen.
6. The basic control is performed by the operation of the following equipments.
 - Steering wheel Running direction can be controlled by turning the wheel right or left.
 - Accelerator Stepping on it accelerates and releasing it decelerates the car speed.
 - Brake Stepping on it brakes the car.
 - Hand brake When it is pulled up, the rear wheels are locked and skidding for “Quick Turn”.
 - Shift operation Manual operation (MT) or automatic operation (AT) can be selected. Switching over to MT or AT can be performed by the depression of the [AT/MT] shift switch button at any time during play.
 - View shift Depression on the [VIEW] shift switch button enables the player to select a view among the following three kinds at any time during play.
Rear View/Distant View/Driver's View
In special mode, the “Super-distant View” is exclusively set and the player can not select any other views than this.

7. The rules for each mode are as follows.

◆ Beginner's/Advanced/Super-advanced modes

The remaining play time is added whenever the player's car passes each check point in the course. The game ends either when the player's car has run the whole preset course or when the play time is up.

The ranking, entire route travelled and the point reached at that time are displayed on the map when the game is over.

When the player's car has run the whole distance in the race, the entire route travelled by the player's car is replayed on the screen, and the ranking, total lap time and course record are displayed. Name entry is possible only when the player has renewed the course record.

◆ Special mode

A "Bomb Mark" is attached to only one of the all participant cars, which becomes the "Tagger" in tag. When the "Tagger" bumps on any one of the other participant cars, the "Bomb Mark" is handed over to the bumped car. The player who has the "Bomb Mark" on his car at the time when the limited time is up loses the game.

■ Buy-in during the game

In [GTI CLUB™], no buy-in is allowed.

■ Player car

One "Player's Car" can be selected out of the total five cars including four small cars and one premium car (super car).

There is no difference in performance among the small cars but only the premium car excels in accelerating performance. The play fee may be set higher only for the premium car. (See page 26 for setting the additional number of coins.)

■ Rival cars

The "Rival Cars" are to be composed of the small cars which have not be selected (except the premium car) and additional four rival cars.

4 Opening and closing the doors

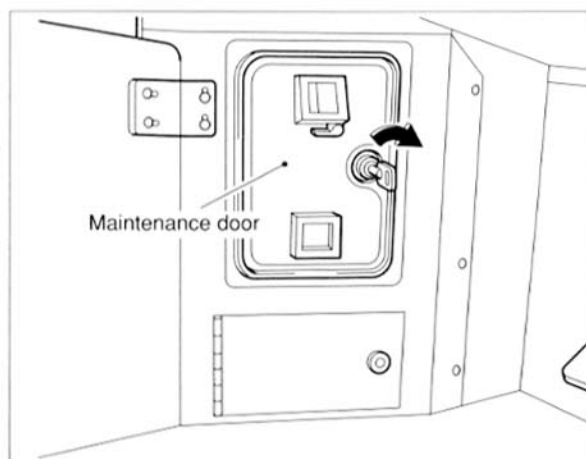
4-1 Opening and closing the maintenance door

■ How to open the maintenance door

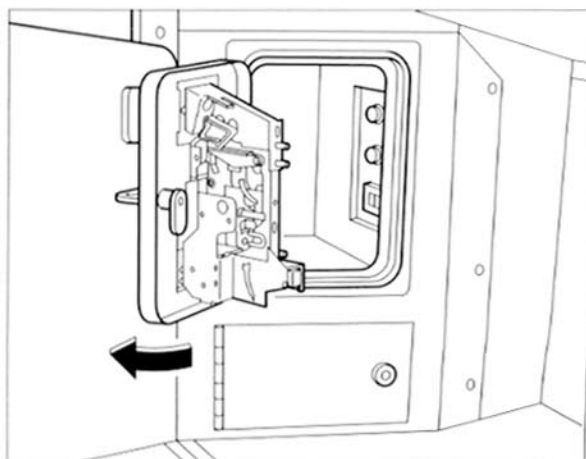


- Take care not to apply any load or impact to the maintenance door when it is open.

- 1 Insert the attached maintenance key into the keyhole of the door in the upper portion of the coin door unit, 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.

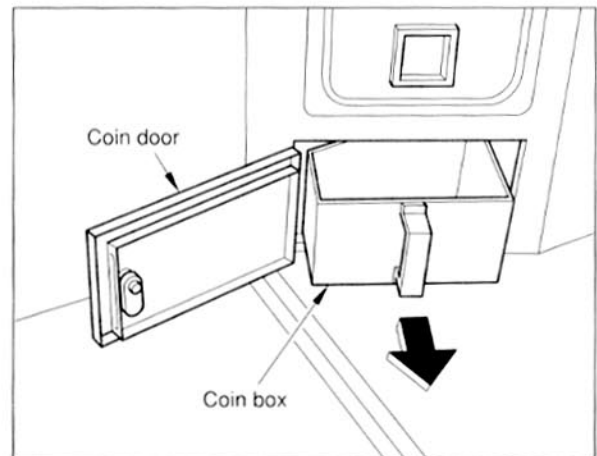
4-2 Opening and closing the coin door

■ How to take out the coin box



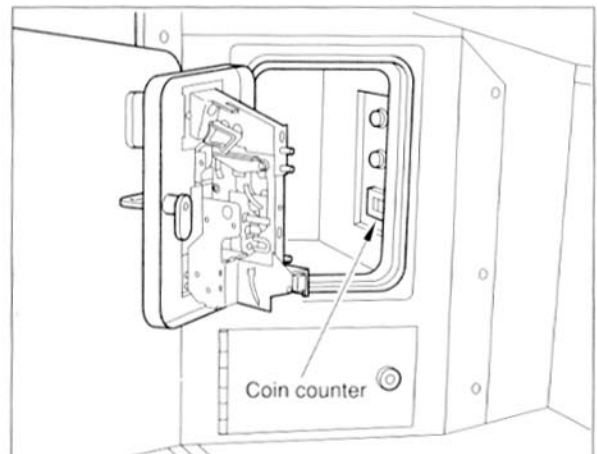
- Securely lock the door for protection against burglaries.
- Note that the coin box is considerably heavy to take out if it is full of coins.

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



■ Coin counter

When the maintenance door is opened, the coin counter is found on the service panel.



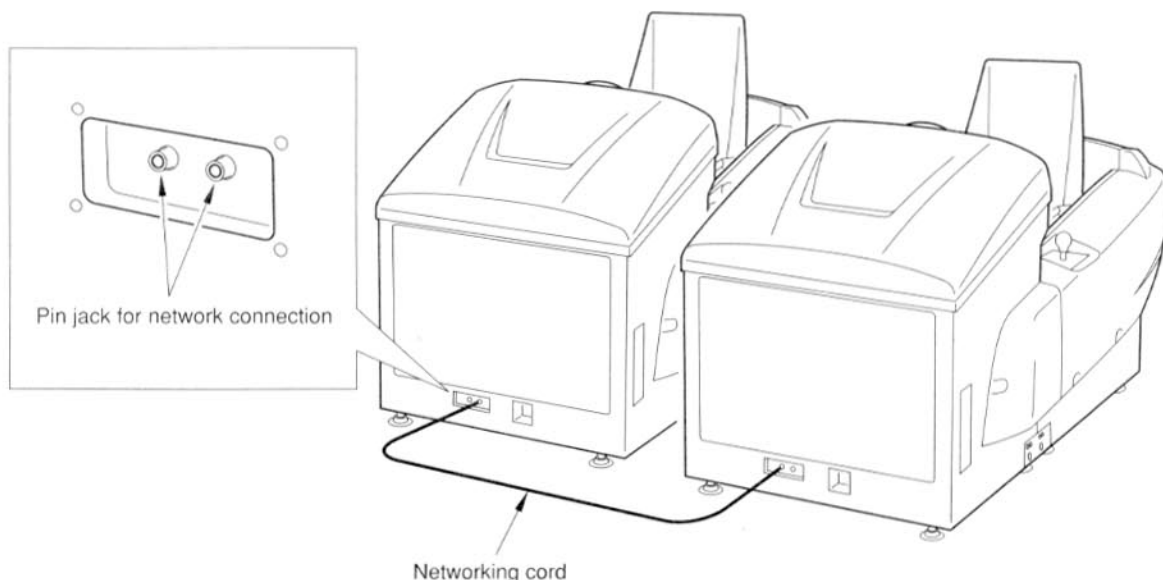
5 Networking game machines and PCB settings

5-1 How to network game machines

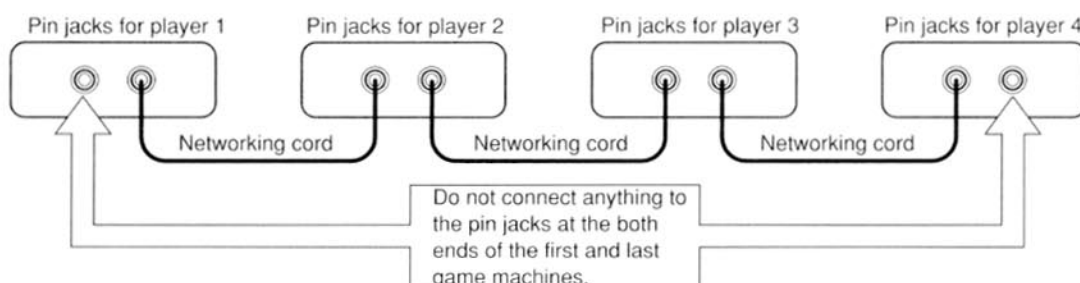
The specification of the game machine allow up to four game machines to be connected so that players can enjoy versus games. To network, connect the networking cord supplied with each game machine to the network pin jack of the main unit after setting up the game machines.



- When using the game machine independently, do not connect anything to the pin jack.
- Game machines are linked together in a chain with the networking cords. Do not connect anything to the first and last pin jacks in the chain.
- The pin jack for networking is exclusively for [GTI CLUB™]. Never connect it to other game machines or AV equipment.
- When the network connection is made, set the “Network ID” of the dip switch provided at the PCB main board of the machine to be connected by referring to “DIP SWITCH SETTINGS” in page 24, and be sure to confirm in the manual test mode that the network game can be played normally.



■ Networking four game



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

- When the power switch is turned ON after the installation of machine, the performance of PCB is checked automatically and the result is displayed on the screen.



- Be sure to perform the self test before using the machine. If an abnormality persists or the machine does not operate properly, turn OFF the power switch immediately to stop operating the machine.

■ Result of test — — — — —

If test is OK

- The position of steering wheel is corrected automatically.

If any abnormality is detected

- “BAD” appears on the screen, and the checking is repeated.
If “24G BAD” is displayed, once turn OFF the power switch and then turn it ON again while depressing the test switch button on the service panel. (The content of setting in manual test and the course record return to those having been set at the time of shipment.)

After the machine is installed, or PCB is repaired or replaced, once return the content of setting to those having been set at the time of shipment by turning ON the power switch while depressing the test switch of the service panel. If the abnormality indication still appears or the machine does not operates normally, turn OFF the power switch immediately to stop operating the machine.

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

■ After the self test, the positions of the following equipment are corrected automatically.

- Steering wheel/Hand brake/Accelerator/Brake

At this time, the message “DO NOT TOUCH THE CONTROL DEVICE WHEN THE MACHINE IS BEING INITIALIZED.” appears on the screen. Refrain from touching the steering wheel, hand brake, accelerator or brake as long as this message appears.

The steering wheel turns a few times to the left or right automatically.

■ Result of position check

If the result is OK

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

If the result is abnormal

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 doThe steering wheel control exceeds the correctable range or the steering wheel reaction device is out of order. Make the adjustment by referring to “7-3. Replacing and adjusting the Potentiometer” in pages 37 and 38.

- **Hand brake abnormal**

The message “DEVICE ERROR (HAND BRAKE)” appears on the screen.

What to doThe hand brake control exceeds the correctable range. Make the adjustment by referring to “7-3. Replacing and adjusting the potentiometer” in pages 41 and 42.

- **Accelerator abnormal**

The message “DEVICE ERROR (ACCEL)” appears on the screen.

What to doThe accelerator control exceeds the correctable range. Make the adjustment by referring to “7-3. Replacing and adjusting the potentiometer” in pages 39 and 40.

- **Brake abnormal**

The message “DEVICE ERROR (BRAKE)” appears on the screen.

What to doThe brake control exceeds the correctable range. Make the adjustment by referring to “7-3. Replacing and adjusting the potentiometer” in pages 39 and 40.

When any of the above signs is displayed, push the test switch on the service panel to go to the manual test mode.

Then choose [I/O CHECK] to check the device which shows the error. In case that the [DEVICE ERROR] is still displayed after the readjustment, something may be wrong with it.

Turn off the power switch immediately.

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 error signs is displayed, or the device doesn't work correctly, turn off the power switch immediately.

5-4 Adjusting the game environment (manual test)

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

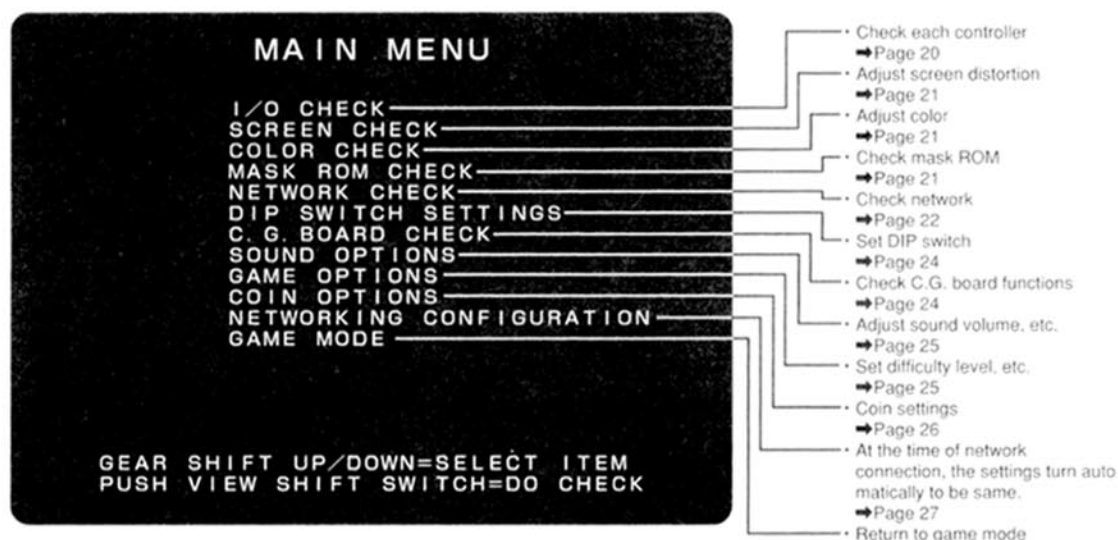
■ Starting the manual test mode

- 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) . (Turning ON the power while holding down the test switch will return all the present manual test settings to the original factory settings at the time of shipment.) 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 Push the [VIEW] shift switch.
 - Then, the screen returns to game mode.

■ Main mode screen (basic items)



■ Selecting each mode

How to select each mode from the menu

- Select ➡ Move the shift lever up or down.
- Set ➡ Push the [VIEW] shift switch.

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.
- After the completion of the setting change, select the “SAVE AND EXIT” and push the [VIEW] shift switch. Then, the settings are saved automatically and the screen returns to the main menu.
- If “EXIT” is selected after the completion of setting change, the message “YOU DID NOT SAVE. DO YOU WANT TO SAVE ? YES/NO” will appear. Select “YES” or “NO” by the shift lever and set it by the [VIEW] shift switch.
- If “YES” is selected, the message “NOW SAVING” will appear, the changed settings will be saved and you will be returned to the main menu.
- If “NO” is selected, the message “NO MODIFICATION” will appear and the changed settings will not be saved.

- ◆ If “FACTORY SETTINGS” is selected and the [VIEW] shift switch is pushed, all the settings will return to the original settings that have been made at the time of shipment.

MEMO

I/O CHECK

- The check mode for the controls.

To return to the main menu screen, move up the gear shift lever while pushing the [VIEW] shift switch.

I/O CHECK

VIEW	SHIFT	SWITCH	OFF	COIN	MECH	SWITCH	OFF
GEAR	SHIFT	SWITCH	---	SERVICE	SWITCH	OFF	OFF
AT/MT	SHIFT	SWITCH	OFF	TEST	SWITCH	OFF	OFF

	LEFT	CENTER	RIGHT
STEERING WHEEL	+ 0000 (0000)		
HAND BRAKE	I MIN		MAX
ACCEL	I MIN		MAX
BRAKE	I MIN		MAX

HOLD VIEW SHIFT SWITCH and GEAR SHIFT DOWN =
ACTIVE STEERING WHEEL TEST

HOLD VIEW SHIFT SWITCH and
GEAR SHIFT UP = EXIT

- The marker position changes to show the input value.
- Shows the value for steering wheel in decimal (hexadecimal).
The steering wheel controlling position is normal if the "I" mark comes to the "RIGHT" position when the steering wheel is fully turned to the right and if it comes to the "LEFT" position when the steering wheel is fully turned to the left.
- Shows the value for hand brake in decimal (hexadecimal).
The hand brake controlling position is normal if the "I" mark comes to "MIN" position when the hand brake is released and if it comes to "MAX" position when the hand brake is fully pulled up.
- Shows the value for the accelerator [decimal (hexadecimal)]. if the "I" mark moves to "MIN" when the accelerator is released and to "MAX" when the accelerator is fully pressed, the accelerator is properly adjusted.
- Shows the value for the brake [decimal (hexadecimal)]. Make sure the "I" mark moves to "MIN" when the brake is released and to "MAX" when the brake is fully pressed.
- Check the steering wheel reaction device by putting down the shift gear while pushing the [VIEW] shift switch. 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 “7-3 Replacing and adjusting the potentiometer” on pages 37 to 42.

MEMO

SCREEN CHECK

- Adjust the focus, distortion and size of the screen while watching the grill screen. Use projector control PCB (See page 46.) to make the adjustment. To return to the main menu, push the [VIEW] shift switch.

COLOR CHECK

- Make the adjustment using the projector control PCB (See page 46.) so that the colors of the color bar should be displayed in discrete gradation. To return to the main menu, push the [VIEW] shift switch.

MASK ROM CHECK

- Mask ROMs are checked one by one, and when no abnormality is found, "OK" is displayed. If any abnormality is found, "BAD" is displayed. To start checking, push the [AT/MT] shift switch. To return to the main menu, push the [VIEW] shift switch.

NETWORK CHECK

- Turn all machines that are connected with the network communication to this mode , observe the screen for longer than one minute. To make sure that they satisfy the conditions of the following three items.
To return to the Main menu , push the [VIEW] shift switch.



- If any of the three items responds incorrectly, it indicates possible communication malfunction. Take measures while referring to “5-6 Measures to be taken when there is a network abnormality” on page 28. If the same symptom persists in spite of taking measures or a problem not covered in this manual occurs, turn off the power switch immediately to stop operating the machine.

NETWORK CHECK

This BOARD-ID is 3

	ERROR	DOWN	STATUS
ID No.1	0	0	DNC
ID No.2	0	0	DNC
ID No.3	0	0	I
ID No.4	0	0	DNC

PUSH VIEW SHIFT SWITCH=exit

• Shows the “Network ID” of the connected game machine.
(A number form 1 to 4)

• “DNC” (did not connect) appears if connection is not made.

Check items

- 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



DIP SWITCH SETTINGS

■ The DIP switch setting check mode.

(Set DIP switch)

When changing the DIP switch settings, set the DIP switch by referring to the chart below.

To return to the main menu, push the [VIEW] shift switch.



- Be sure to turn OFF the power switch before setting the DIP switch.
- Generation of static electricity may cause breakage of electronic parts on the PCB. Be sure to eliminate static electricity by means of the earthing band.

■ DIP switch setting chart

- Main board (upper PCB) DIP switch

- Set the all DIP switches on the C.G. board (PCB shown below) for OFF.

Setting	1	2	3	4
Network ID	First machine	OFF	OFF	
	Second machine	ON	OFF	
	Third machine	OFF	ON	
	Fourth machine	ON	ON	
Not in use (Be sure to set it OFF.)			OFF	OFF

- When setting DIP switch of networking game machines, number each switch in the sequence of the small number. (Example: When networking two game machines, set the network ID of one machine to 1 and the other to 2.)
- The DIP switch on the PCB can be shifted easily by utilizing a thin flatblade screwdriver or a ball-point pen.

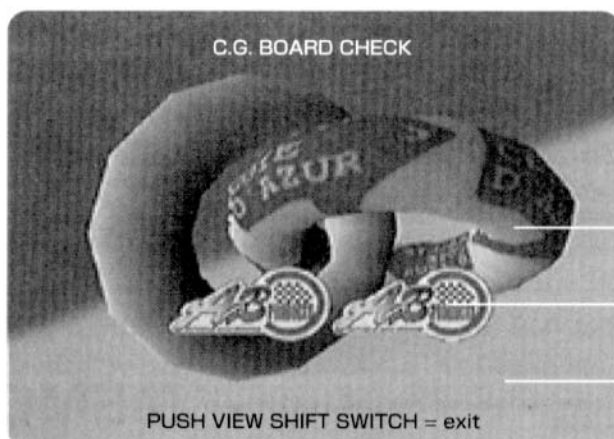
MEMO

C.G.BOARD CHECK

■ The C.G. board function check mode.

(Check C.G. board functions)

Observe the screen in this mode to check whether the C.G. board is functioning properly. To return to the main menu, push the [VIEW] shift switch.



Two touruses (doughnut-shape bodies) are rotating.

Two "A&B PRODUCT" logos displayed in front of the touruses are flickering alternately.

Two background displayed at the back of the touruses is rotating.

SOUND OPTIONS

■ The following screen appears when this mode is selected. (Adjust sound volume)

SOUND OPTIONS

Sound in Attract Mode
All The Time

Sound Volume 20

Sound Scale Check

B.G.M. in GAME MODE ON

FACTORY SETTINGS

SAVE and EXIT

EXIT

GEAR SHIFT UP/DOWN = SELECT OPTION
PUSH VIEWSHIFT SWITCH = MODIFY SETTING

- Turns the demo play sound ON or OFF.
 - ALL THE TIME ——— Sound always ON
 - ONCE EVERY 4 CYCLES ——— Sound ON every 4 cycles
 - COMPLETELY OFF ——— Sound always OFF
- Adjusts the volume from the level 0 (no sound) to 30 (Max.)
 - ※ To raise the sound level, push the [VIEW] shift switch.
 - To lower the sound level, push the [VIEW] shift switch while pushing the [AT/MT] shift switch.
- You will hear a do-re-mi musical scale from the left external speaker and then the right external speaker, which is repeated twice.
- Turns the BGM during the game ON or OFF.
 - ※ The setting is only for the BGM to be used while the car is running on the course, and not for the demo BGM, voice or special effect sound.
- Returns all the settings to the factory settings at the time of shipment.

GAME OPTIONS

■ The following screen appears when this mode is selected. (Game settings)

!

● When connecting the machines to the network communication, be sure to set all the PCBs in the same configuration.

GAME OPTIONS

Tag Game

Normal Race	180 counts	Difficulty Level	4/MEDIUM	Number of Laps	3
Hard Race		4/MEDIUM		3	
Very Hard Race		4/MEDIUM		3	

Motor Power Level

Speed Meter Display

Game Joining Period

Course Record Saving

Bonus Credit for Winner

FACTORY SETTINGS

SAVE and EXIT

EXIT

GEAR SHIFT UP/DOWN = SELECT OPTION
PUSH VIEWSHIFT SWITCH = MODIFY SETTING

- Difficulty level settings (8 levels)
 - 1/EASIEST
 - 2/VERY EASY
 - 3/EASY
 - 4/MEDIUM ——— Medium
 - 5/MEDIUM HARD
 - 6/HARD
 - 7/VERY HARD
 - 8/HARDEST
 - Very difficult
- Time limits of special mode (100, 120, 140, 160, 180, 200, 220, 240)
 - standard
- Sets circulation frequency (2, 3, 4 times)
- Sets force of the steering wheel reaction device
 - 1/LIGHT
 - 2/MEDIUM
 - 3/HEAVY
 - 4/VERY HEAVY
 - Heavy
- Switches the speed meter display [Km/h] or [MPH]
 - (4, 8, 12, 16) standard
- Recording the course record
 - When "Disable" is selected, the course record is not recorded nor initialized.
 - When "Enable" is selected, 1 credit is added to the top ranking machine in the network communication play among 4 sets of machine.

- If the setting of circulation frequency for a course is changed and saved, the course record of the course is initialized.

MEMO

COIN OPTIONS

(Coin settings)

■ The following screen appears when this mode is selected.



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

COIN OPTIONS

Free Play NO

Coin Mechanism INDEPENDENT

Coin Slots 2 Coins 1 Credit

Premium Start 1Coin

FACTORY SETTINGS

SAVE and EXIT

EXIT

- Always keep it set to INDEPENDENT.
- Sets the relation between the number of coins and the number of credits.
- When Free Play is set at "YES", the "Coin Mechanism", "Coin Slots" and "Premium Start" are not displayed.
- Sets the number of additional coins for the selection of the premium car (super car).
- Returns all the settings to the factory settings at the time of shipment.

GEAR SHIFT UP/DOWN = SELECT OPTION
PUSH VIEW SHIFT SWITCH = MODIFY SETTING

■ 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

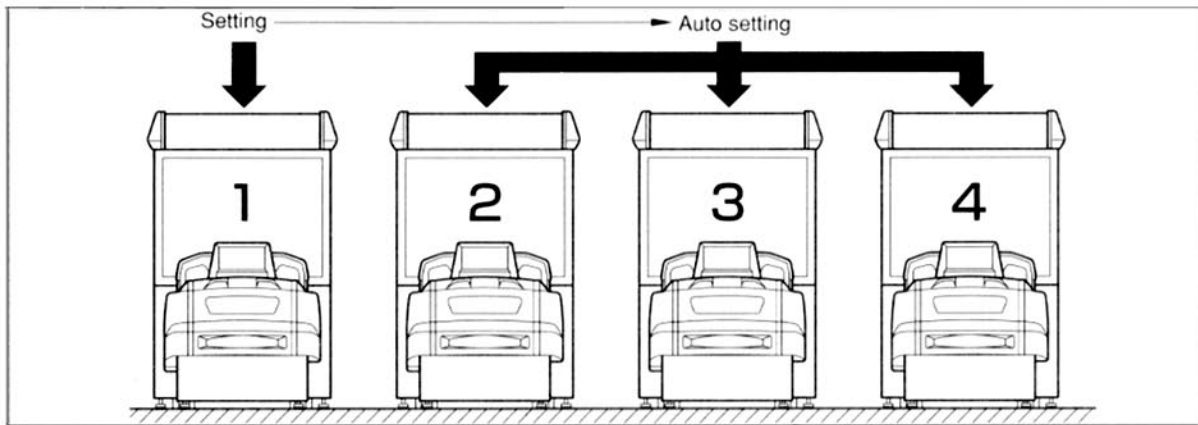
SETTING	21	22	23	24	25	26	27	28	29	30	31	32
COIN(S)	7	7	8	8	9	10	11	12	13	14	15	16
CREDIT(S)	1	2	1	3	1	1	1	1	1	1	1	1

■ Number of additional coins for the premium car.

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

NETWORKING CONFIGURATION

This mode is to automatically unify other machines than the machine selected out of the machines connected to the network.



Setting modes which can be unified are as follow:

- “SOUND OPTIONS” (See page 25.)
- “GAME OPTIONS” (See page 25.)
- “COIN OPTIONS” (See page 26.)

■ How to make unified setting —————

1. Since the machine modes are unified in network communication function, check whether the net work communication is normal or abnormal 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” 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 “NETWORKING CONFIGURATION” from the “Main Menu” screen only for the machine for which the above setting 3 was made. Push the [VIEW] shift switch.
5. Make sure that other machines connected to the network have entered into “Networking Configuration” mode.
6. The game is started automatically when the [AT/MT] shift switch is pushed. If the [VIEW] shift switch is pushed at this time, the screen returns to the “Main Menu”.
7. When the network communication setting is over, the screen returns automatically to the “Main Menu”.

- If the network communication setting has not been made normally by the above steps 5 to 7, make the same setting by manually operating individual machines.

MEMO

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

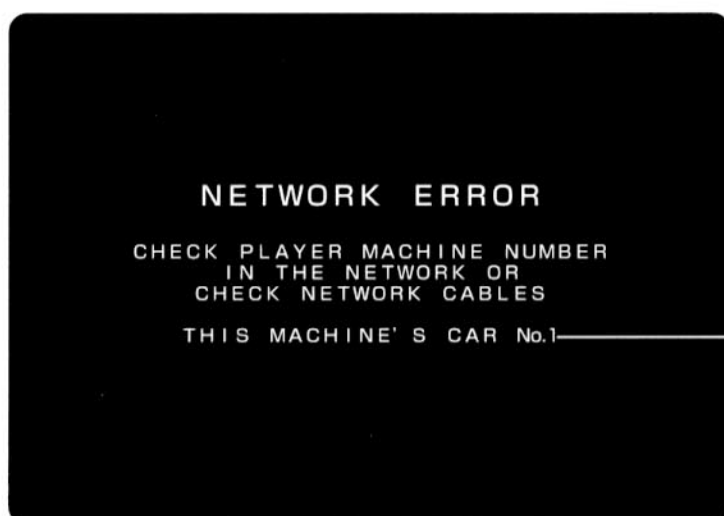
If the “NETWORK ERROR” message appears, if any item responds incorrectly in the network communication check described on pages 22 and 23, or if the projector displays differ from the specified ones, take the following measures.



- If the same symptom persists in spite of taking measures or a problem not covered in this manual occurs, immediately turn off the power switch to stop operating the machine.

Symptom 1

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



• Shows the “Network ID” of the game machine (A number for 1to4)


■ Possible causes and measures to be taken

Possible causes	Measures
● The main board DIP switch “Network ID” settings are improper.	○ Set the DIP switch properly. (See page 24.)
● One of the networking cords used is disconnected from the game machine.	○ Properly connect the networking cords between the game machines. Make sure that the pin jacks that are not in use are free of dust or dirt.
● A network cable is connected between the pin jacks of the first and last machines.	○ Disconnect the network cable from those pin jacks. (See page 16.)

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



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

Possible causes	Measures
<ul style="list-style-type: none"> ● One of the networking cords has been disconnected from during play. 	<ul style="list-style-type: none"> ○ 1. Turn OFF the power switch. ○ 2. Connect the networking cord properly. ○ 3. Turn ON the power switch.
<ul style="list-style-type: none"> ● One of the networking cords has been internally broken or broken. 	<ul style="list-style-type: none"> ○ Replace the networking cord with the spare networking cord. (You can also use commercially-sold video cable (75 Ω 3C-FV) having a length of 2m(78.74in) or less.
<ul style="list-style-type: none"> ● The test switch (on the service panel) of one of the networked game machines has been pushed. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"></p> <p>● The test switch should pushed during the game demo of all the networked game machines.</p> </div>	<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.
<ul style="list-style-type: none"> ● Any of the machines which are connected through the network have different game option settings (in the manual test). 	<ul style="list-style-type: none"> ○ Enter the manual test mode and set for the same game options among all the machines.

6 Setting up the game machine

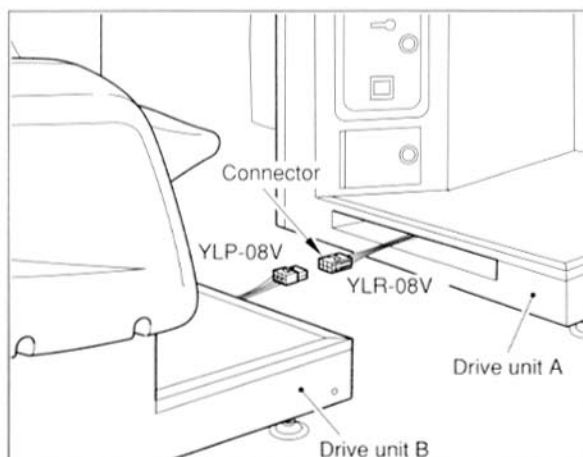
6-1 Connecting the units

■How to connect the units

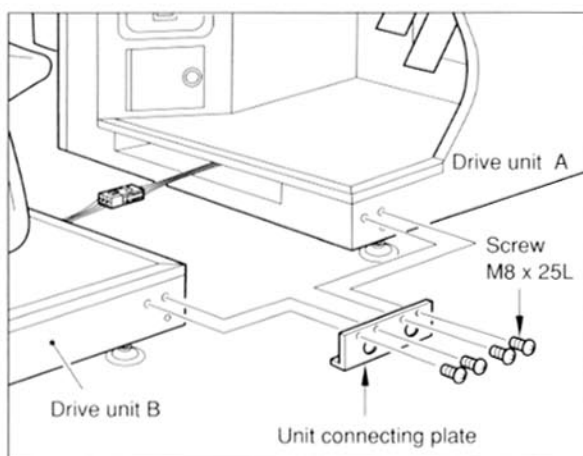


- Do not move the units by pulling the cables coming out of the drive unit or the projector unit, or the connectors and connection pipes.
- When connecting the drive unit or installing the connector cover, take care not to catch the wiring.

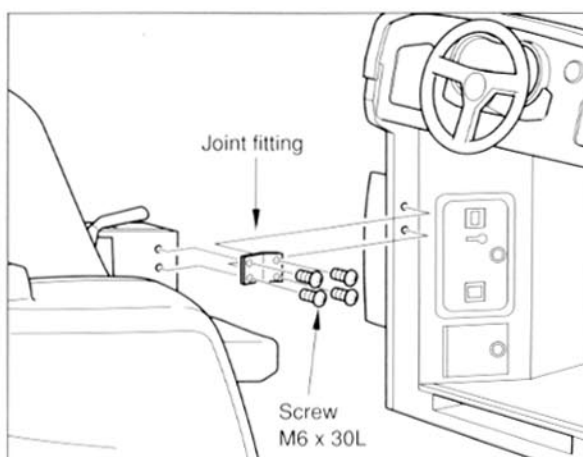
- 1 Connect the connectors of drive unit A with the connectors of drive unit B.



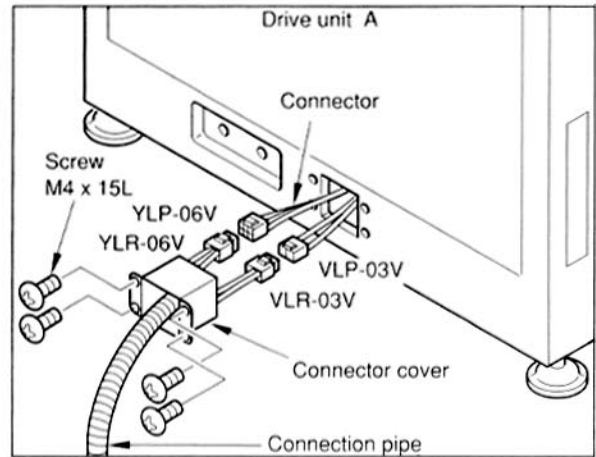
- 2 Align drive unit A and drive unit B and temporarily fasten the attached unit connecting plate.



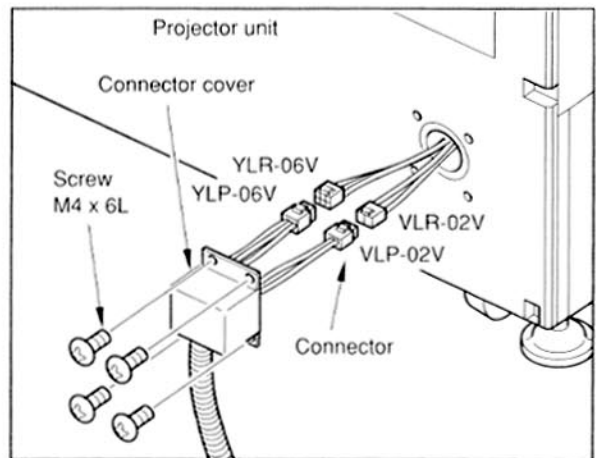
- 3 Temporarily fasten the attached joint fitting.



- 4 Connect the connectors of drive unit A with the connectors of the connection pipe, and install the connector cover using the attached screws.



- 5 Connect the projector unit connector to the connection pipe connector, and install the connector cover using the attached screws.



- The temporarily-fastened unit connecting plate and joint fitting should be fastened securely after the completion of “6-2. Fastening the adjusters” on page 32.

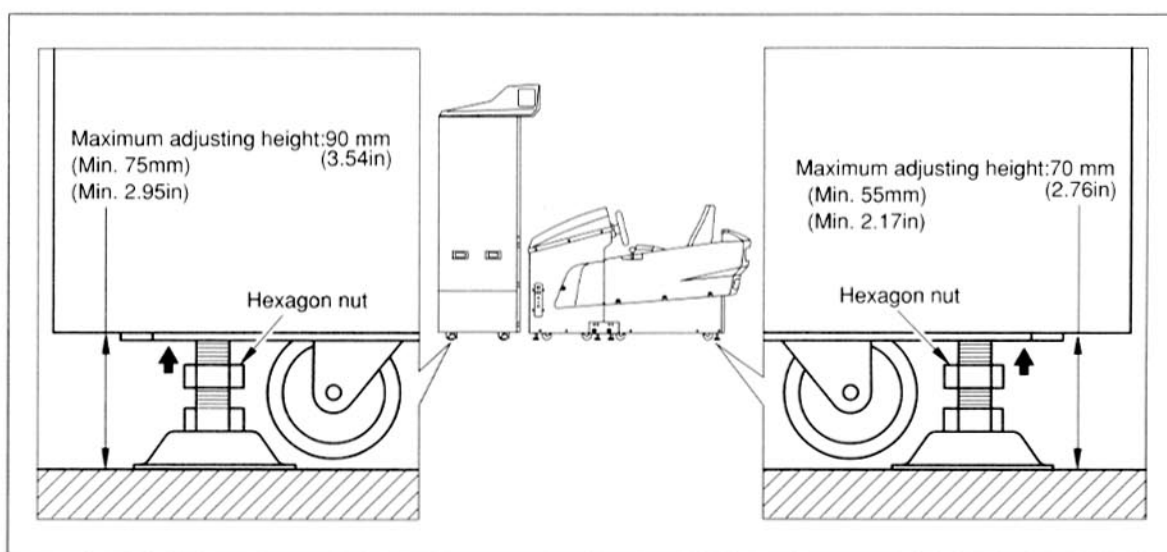
MEMO

6-2 Fastening the adjusters

■ How to fasten the adjusters



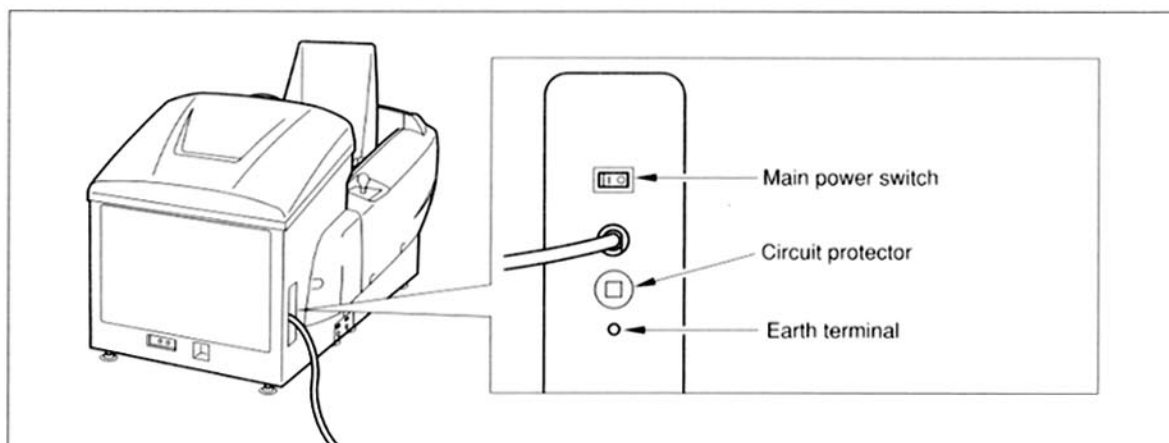
- Adjust the adjusters so that the casters do not touch the floor. Take care not to exceed the maximum adjusting height of the adjuster.
- After checking that all the adjusters stand on the floor and the units do not wobble, tighten the hexagon nuts upward.



6-3 AC bracket

■ AC bracket

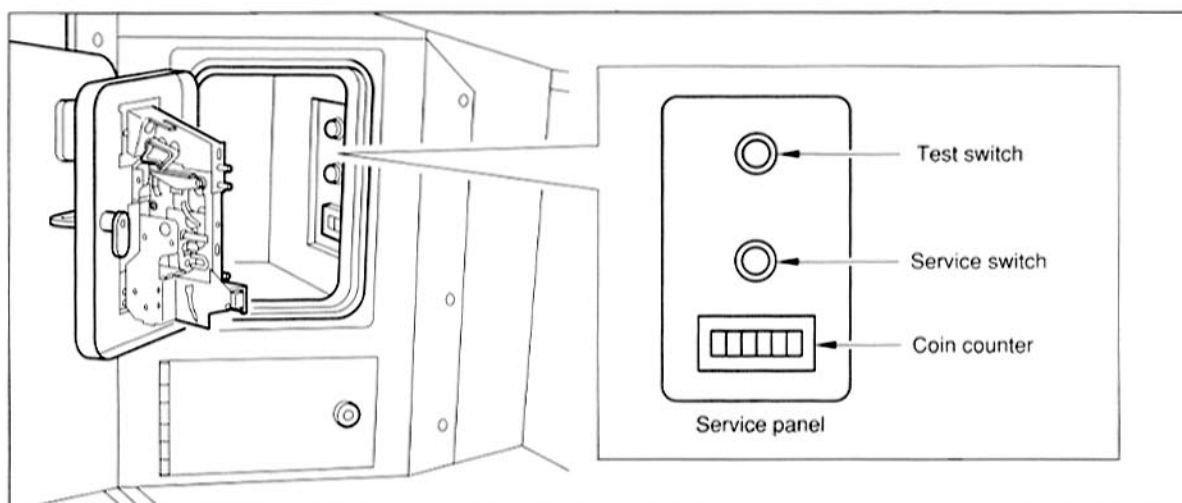
The AC bracket is located on the left side of drive unit A.



6-4 Service panel

■ Service panel

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



6-5 Separating and moving the units

The units of the machine can be separated.

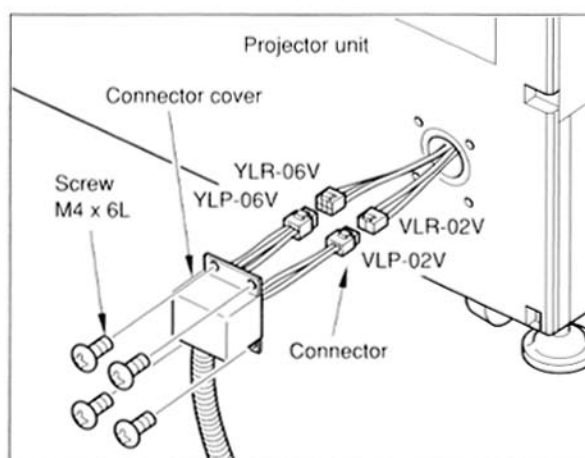
■ How to remove the units



- Before separating the units from the machine, be sure to turn off the power switch and remove the power cord plug from the receptacle.
- Move the game machine, after making sure that the drive unit and projector unit are removed separately.
- When connecting the separated units, take care not to catch the wiring and your hand between the units.

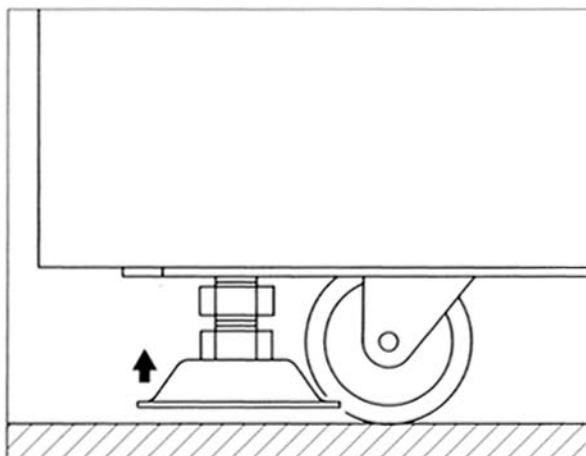
1 Turn off the power switch and remove the power cord plug from the receptacle.

2 Remove the connector cover and disconnect the connectors.



3 Loosen all the adjusters and move the units utilizing the casters.

- Remove the unit connecting plate and joint fitting, loosen the adjusters, and separate drive unit A and drive unit B from the machine.



MEMO

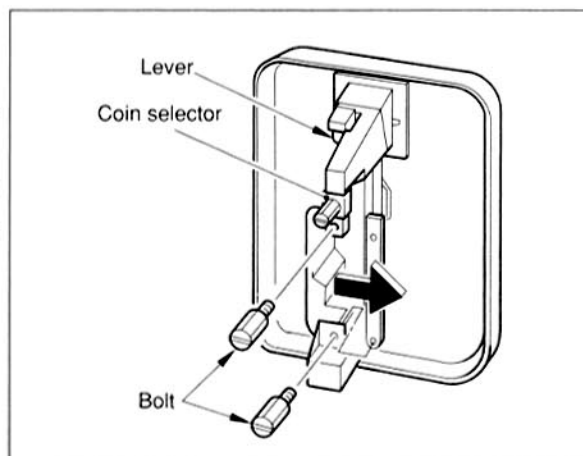
7 Maintenance and annex

7-1 Replacing the coin selector



● Be sure to turn off the power switch and remove the power cord plug from the receptacle before replacing the coin selector.

- 1 | Open the maintenance door.
- 2 | Remove the (two) bolts which are fixing the coin selector as shown in the figure and dismount the coin selector by sliding it horizontally to the right.
- 3 | When mounting the coin selector, push up the lever and follow the procedure in the reverse order.

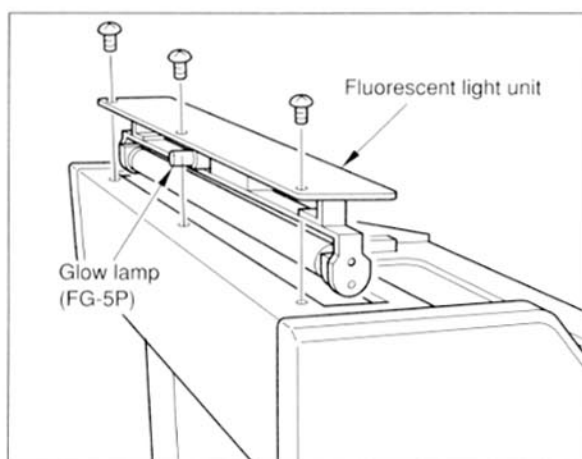


7-2 Replacing the fluorescent light



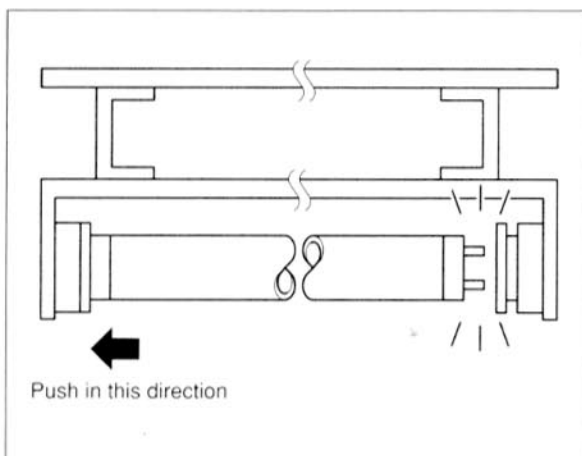
- Be sure to turn off the power switch and remove the power cord plug from the receptacle before replacing the fluorescent light.
- The fluorescent light is hot just after it is put off. Wait until it cools down and then replace it with a new one of the same type (straight tube 32 W/100V).
- When removing or installing the fluorescent light unit, take care not to catch the wiring between the fluorescent light unit and the main unit.

- 1 Remove the screws fixing the fluorescent light unit in the upper portion of the billboard, and remove the fluorescent light unit.



- 2 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.

- 3 Install a new fluorescent light in the reverse order.



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

MEMO

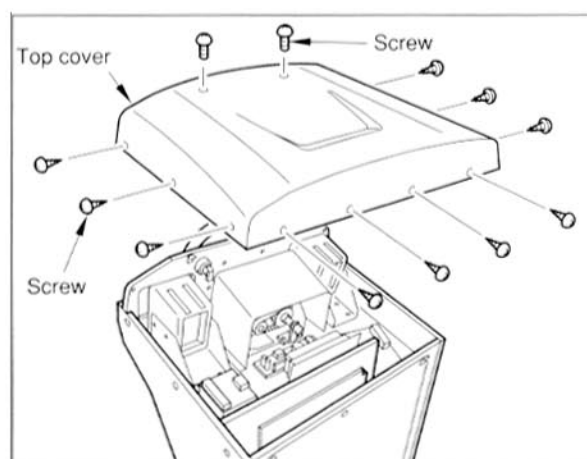
7-3 Replacing and adjusting the potentiometer

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

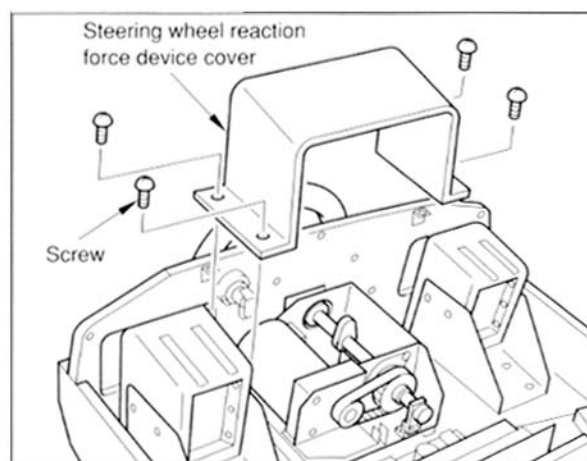


- Be sure to turn OFF the power switch and remove the power cord plug from the receptacle before replacing the potentiometer.

- 1 Remove the top cover on the upper portion of drive unit A.



- 2 Remove the cover of the steering wheel reaction force device.

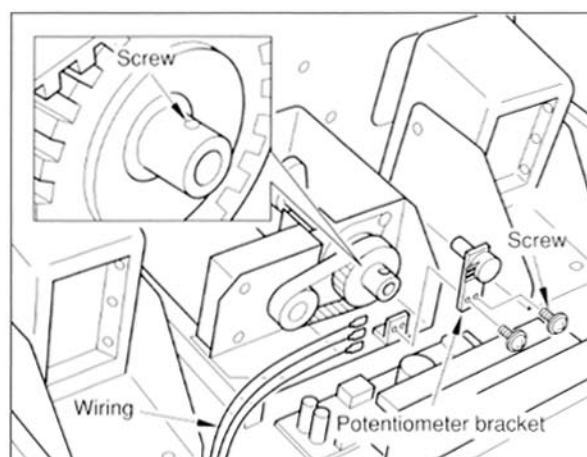


- 3 Disconnect the wiring and loosen the two hexagon socket set screws.

- When the fixing screw is not easily accessible to loose it, turn the steering wheel to have the screw at an accessible position.

MEMO

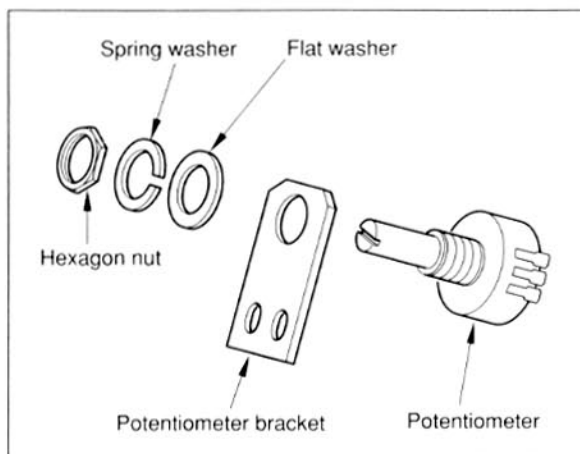
- 4 Remove the two screws fastening the potentiometer bracket and remove the potentiometer and bracket together.



- 5 Remove the hexagon nut fastening the potentiometer and the potentiometer.

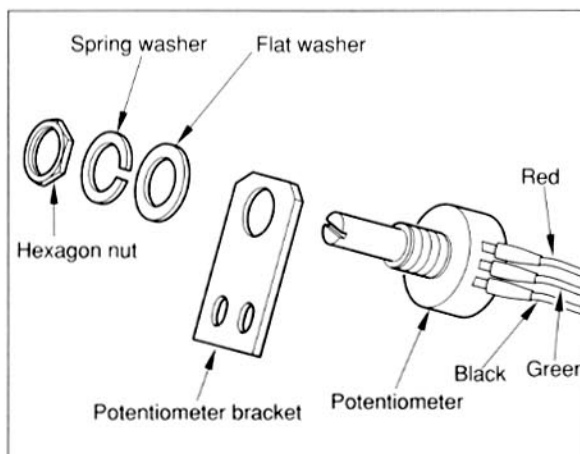
- When replacing the potentiometer with a new one, be sure to adjust the new potentiometer as described on this page.

MEMO



How to adjust the steering wheel unit potentiometer

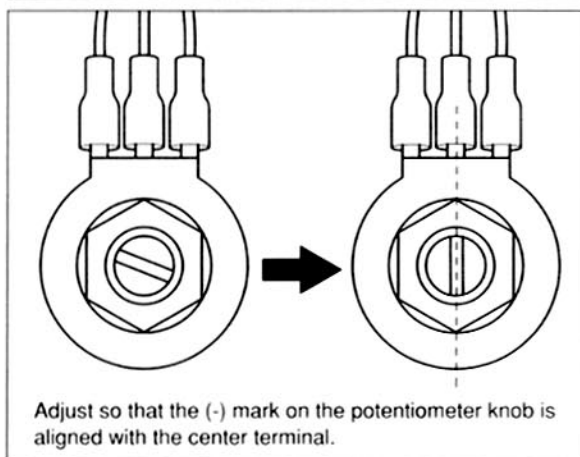
- 1 Attach a new potentiometer to the bracket.
- 2 Connect the wiring properly.



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

- When the fixing screws are tightened up, it is normal that the bracket still has some play. It cannot be fixed tightly.

MEMO



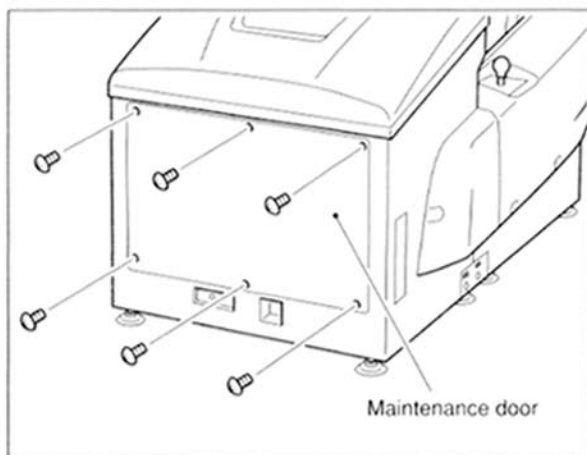
- 5 Reassemble the control in the reverse order.
- 6 Carry out the checking as described in "5-2. PCB start-up check (self test)" in page 17.

■ How to replace the pedal unit potentiometers — — — — —



- Be sure to turn off the power switch and remove the power cord plug from the receptacle before replacing the potentiometers.

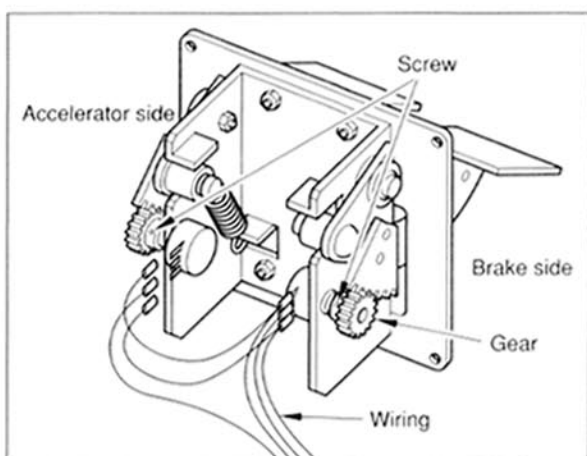
- 1 Remove the maintenance door on the front of drive unit A.



- 2 Disconnect the wiring. Loosen the hexagon socket set screws on the accelerator side and brake side of the pedal unit, and remove the gears.

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

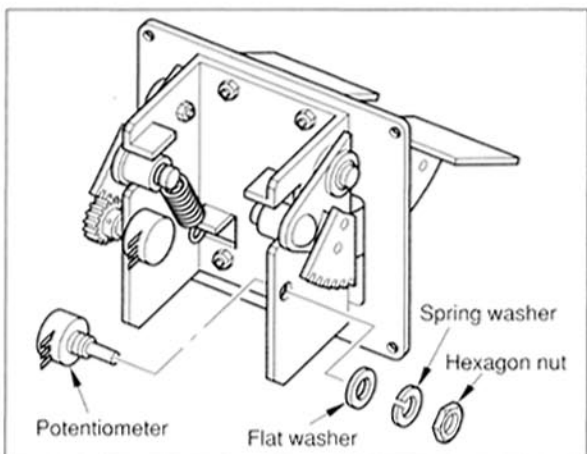
MEMO



- 3 Remove the hexagon nut fastening the potentiometer and remove the potentiometer.

- When replacing the potentiometer with a new one, be sure to adjust the new potentiometer as described on page 40.

MEMO

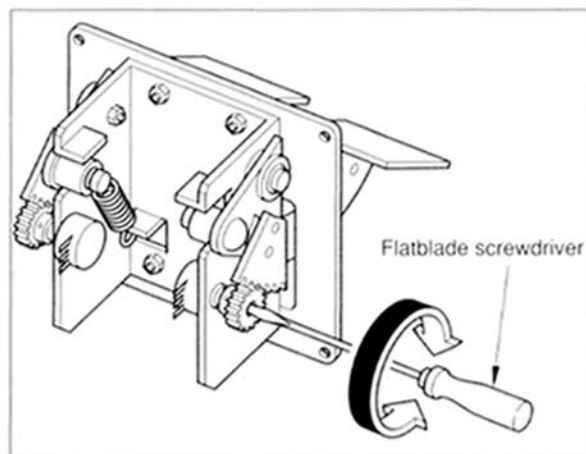


■ How to adjust the pedal unit potentiometers

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

[Adjusting method]

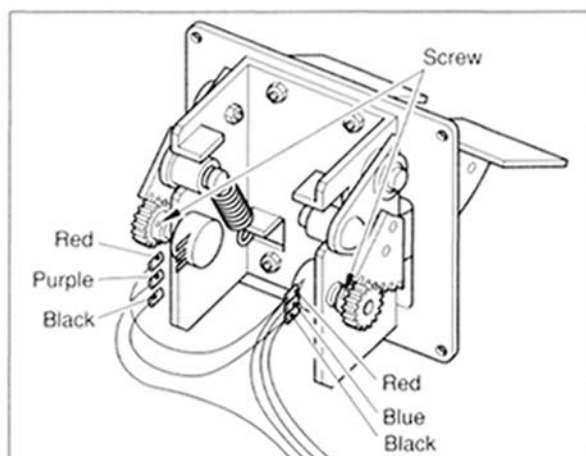
- **Potentiometer for accelerator**
Fully turn the potentiometer counterclockwise and then turn it back by about 10°.
- **Potentiometer for brake**
Fully turn the potentiometer clockwise and then turn it back by about 10°.



- 2 When the adjustment is over, be sure to tighten the fixing screws and connect the wires to the right positions.

- 3 Close the back door and fix it securely by the screws.

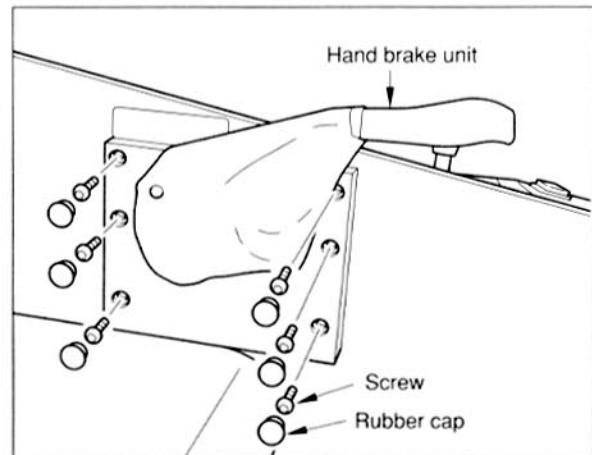
- 4 Carry out the checking as described in "5-2. PCB start-up check (self test)" in page 17.



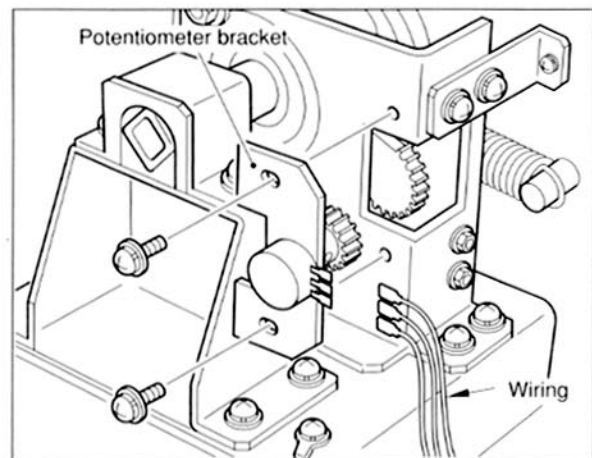
How to replace the hand brake potentiometer — — — — —

- Be sure to turn OFF the power switch and pull out the power plug before replacing the control.
- Since the hand brake is heavy, use due care when handling it.

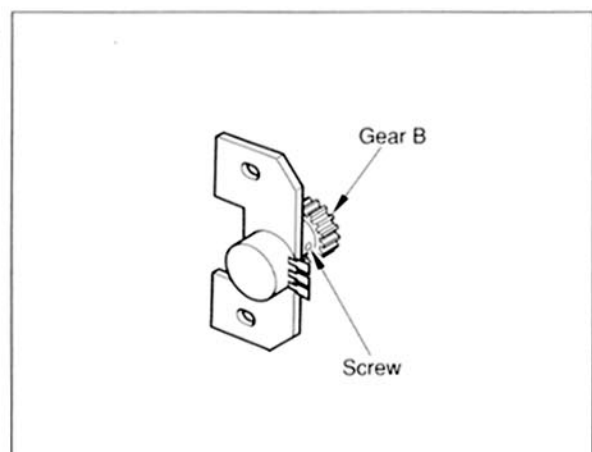
- 1 Remove the rubber caps.
- 2 Remove the screws and the hand brake unit from the main body.



- 3 Disconnect the three wires and dismount the potentiometer bracket from the hand brake unit.



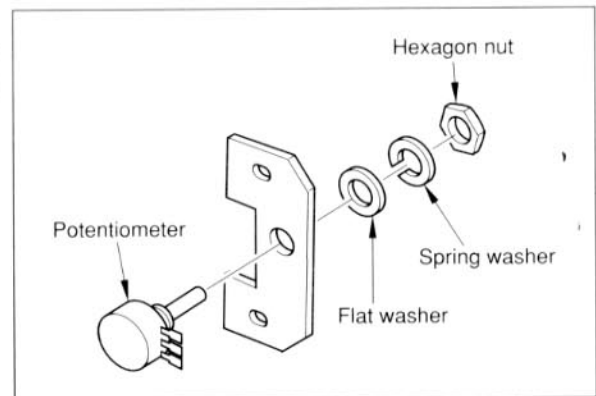
- 4 Loosen the fixing screw and remove the gear B.



- 5 Remove the hex. nut which is fixing the control shaft and dismount the control unit.

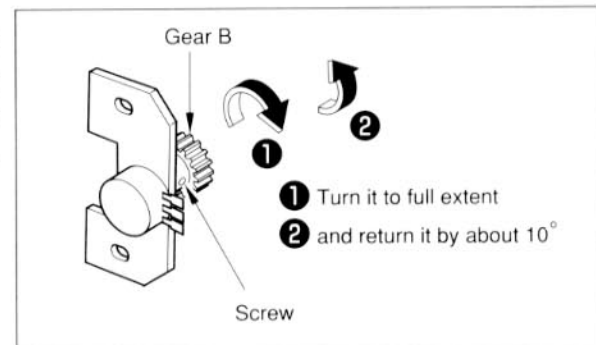
- When the control unit is replaced, be sure to adjust it according to the procedure as described in this page.

MEMO

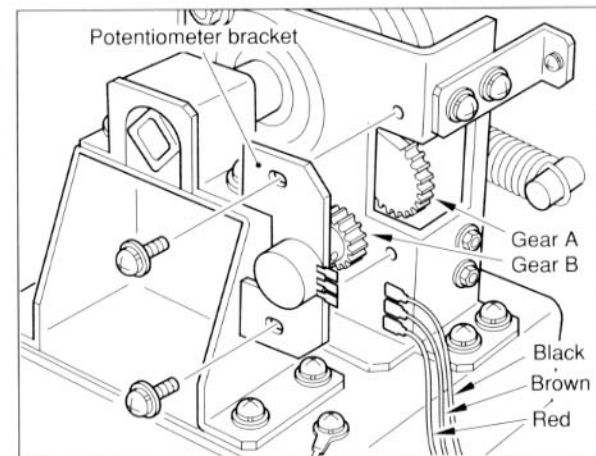
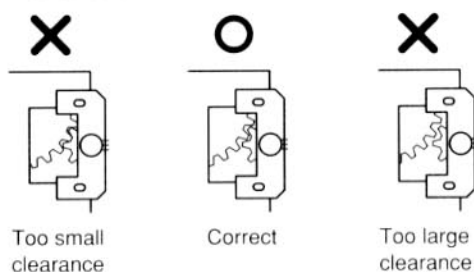


How to adjust the hand brake unit potentiometer

- 1 Mount the hand brake unit and gear to the potentiometer bracket. Turn the gear B fully in the directions as shown in the figure and return it by about 10°.



- 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 Connect the three wires so as not to confuse color discrimination.
- 4 Mount the hand brake unit to the main body in the reverse order.
- 5 Carry out the checking as described in "5-2. PCB start-up check (self test)" in page 17.

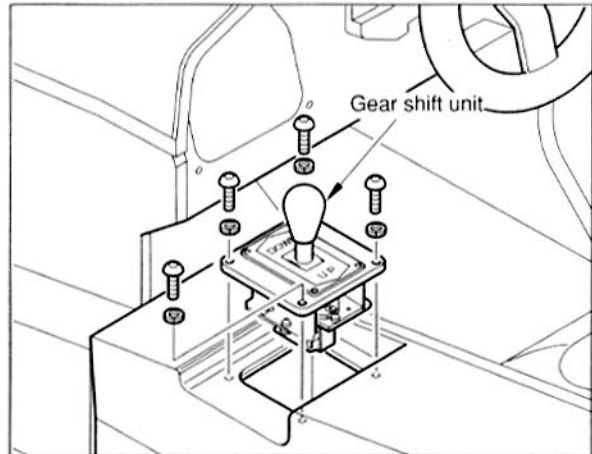
7-4 Replacing the gear shift unit switch

■ How to replace the gear shift unit microswitch — — — — —

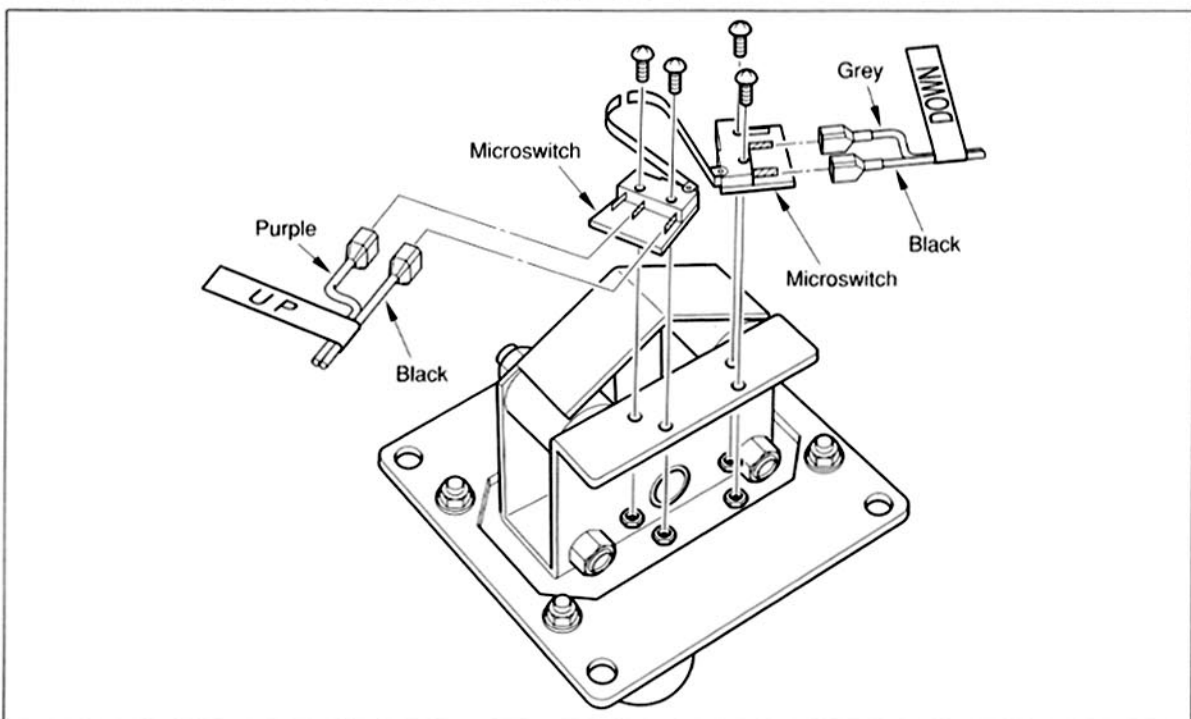


- Be sure to turn off the power switch and remove the power cord plug from the receptacle before replacing the gear shift unit switch.

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



- 2 Disconnect the wiring from the microswitch. Remove the screws and take out the microswitch.
- 3 When installing a new microswitch, take care to position the microswitch correctly and connect the wiring properly.



7-5 Inspecting and replacing the motor brushes

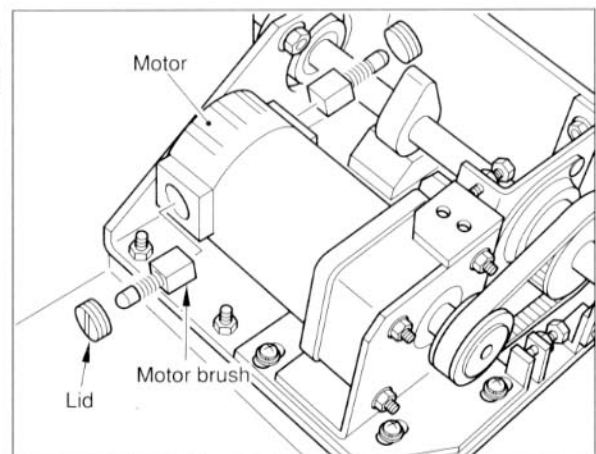
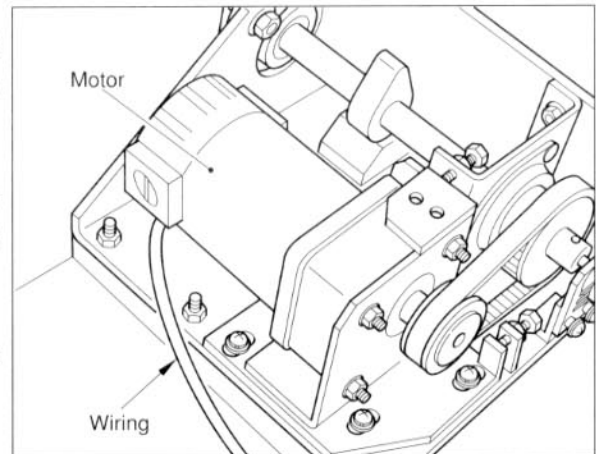
At the motor of the steering unit are fitted two motor brushes. The motor brushes are worn every time when the machine is operated. It is therefore recommended to do periodical checking about every 2000 hrs.



- Be sure to turn off the power switch and remove the power cord plug from the receptacle before replacing the motor brushes.

■ How to inspect and replace the motor brushes

- 1 Remove the top cover from the upper portion of drive unit A. (See page 37.)
- 2 Remove the cover from the steering wheel reaction force device. (See page 37.)
- 3 Disconnect the wiring from the motor.
- 4 Remove the lid with a flatblade screwdriver and take out the motor brushes.



- If the brushes are worn to the line on them, replace them with new ones.
Motor brush part No. : 003497

MEMO

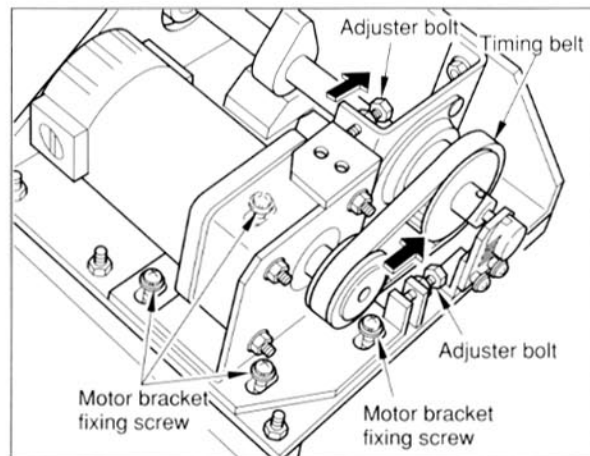
7-6. Replacing the timing belt and adjusting its tension

■ How to replace the timing belt



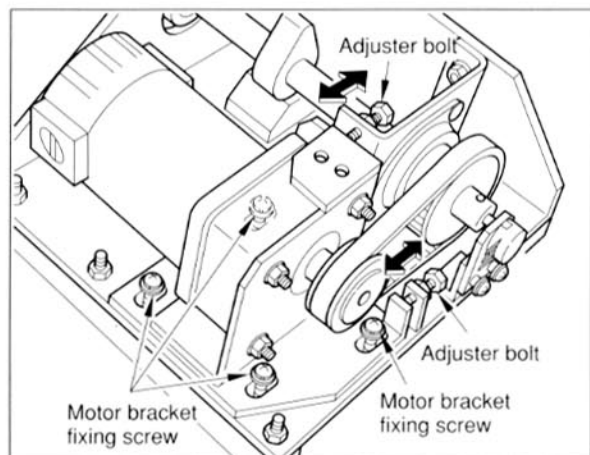
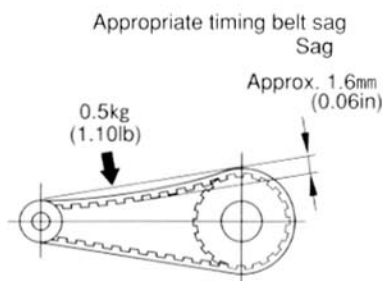
● Be sure to turn OFF the power switch and pull out the power plug from the receptacle before replacing the timing belt.

- 1 Remove the top cover at the upper part of the drive unit. (See page 37.)
- 2 Remove the cover of the steering wheel reaction device. (See page 37.)
- 3 Loosen the four motor bracket fixing screws and the two adjuster bolts and remove the timing belt.



■ How to adjust timing belt tension

- 1 Loosen the four motor bracket fixing screws and adjust the timing belt tension by turning the two adjuster bolts.



[Reference]

A commercially available tension gauge will make this adjustment easier.

7-7 Adjusting the projector

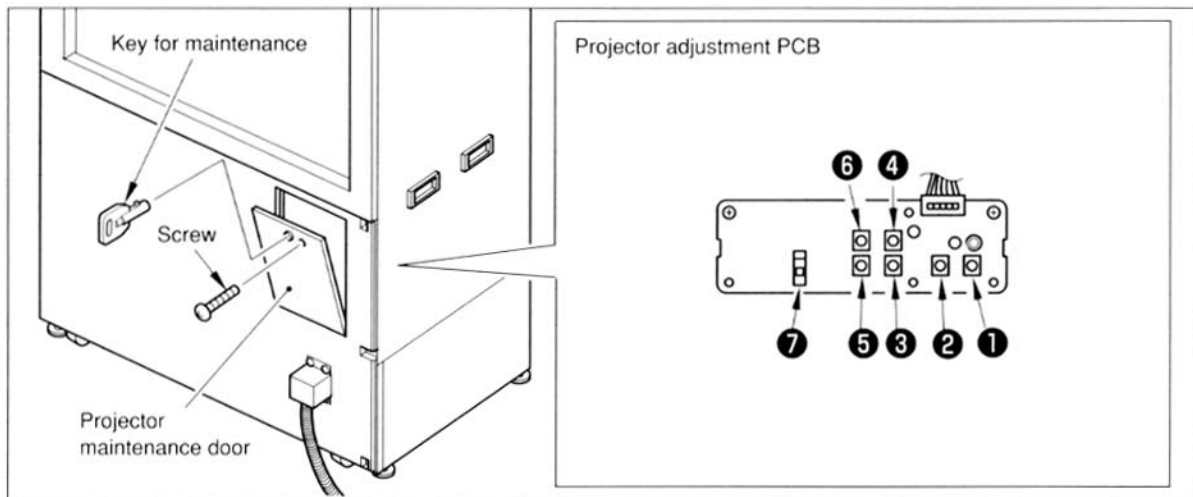
The projector has already been adjusted at the time of shipment, but it may be readjust as desired.



●The interior of the projector contains high voltage electricity, so take great care not to touch it.

■Projector adjustment PCB

The projector adjustment PCB is located inside the projector maintenance door of the projector unit. (Remove the screw and open the door with the maintenance key.)



①	CONTRAST	Contrast adjustment Used to change the contrast.
②	BRIGHT	Brightness adjustment Used to change the brightness. Turning it clockwise will make the image brighter.
③	H.POSI	Horizontal screen position adjustment Used to change the raster position in the horizontal direction.
④	V.POSI	Vertical screen position adjustment Used to change the raster position in the vertical direction.
⑤	H.SIZE	Horizontal screen size adjustment Used to change the width of the screen.
⑥	V.SIZE	Vertical screen size adjustment Used to change the height of the screen.
⑦	CONV.ADJ. (CONVERGENCE)	Convergence adjustment Used to adjust misconvergence caused by the earth's magnetic field, etc. (Be sure to keep this off when not adjusting.) Refer to page 47 for the adjusting method.

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.

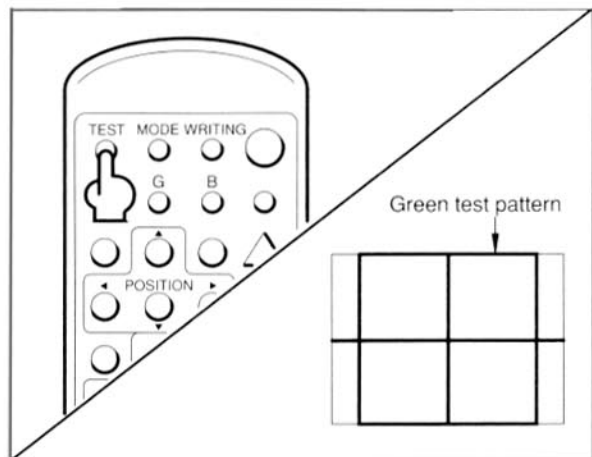
■ How to adjust convergence



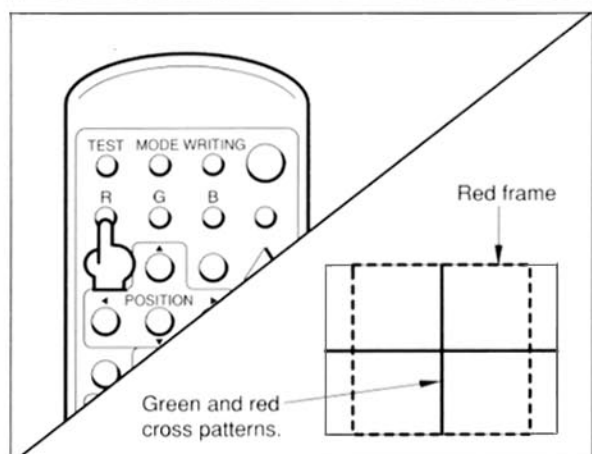
- Be sure to keep the [CONV.ADJ.] switch off when not adjusting. After the completion of adjustment, check that the [CONV.ADJ.] switch is turned off.
- When using the remote control, keep it within a 30° angle to the top, bottom, left and right of the center of the screen and stand no further than 3 meters(118inches) away from the screen.
- When the [RESET] key is pushed during adjustment, setting to the status before adjustment is performed.
- 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 Turn ON the [CONV.ADJ.] switch on the projector control PCB.

- 2 Point the remote control at the screen and push the [TEST] key for about 3 seconds.
(A green cross pattern appears on the screen.)



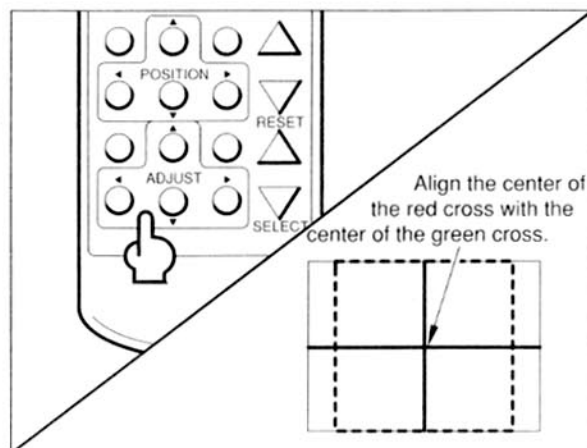
- 3 When adjusting the red color. Push the [R] key on the remote control.
(A red cross pattern appears on the screen along with the green cross pattern and the frame turns red.)



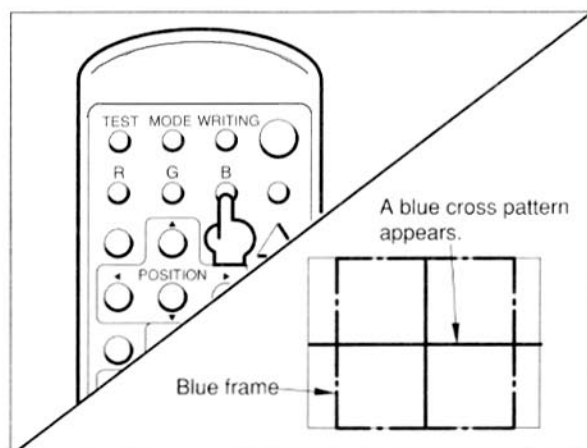
- 4 Using the [ADJUST] keys on the remote control, align the center of the red cross with the center of the green cross. (When the red cross is superimposed on the green cross, the resultant cross looks yellow.)

- Move the red cross (not the green cross) for adjustment.

MEMO



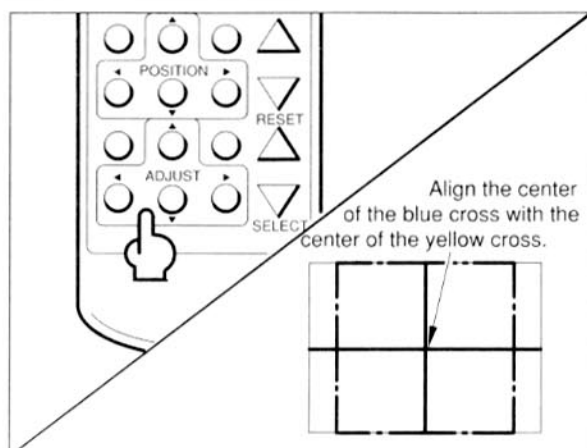
- 5 When adjusting the blue color. Push the [B] key on the remote control. (A blue cross pattern appears on the screen along with the yellow cross pattern and the frame turns blue.)



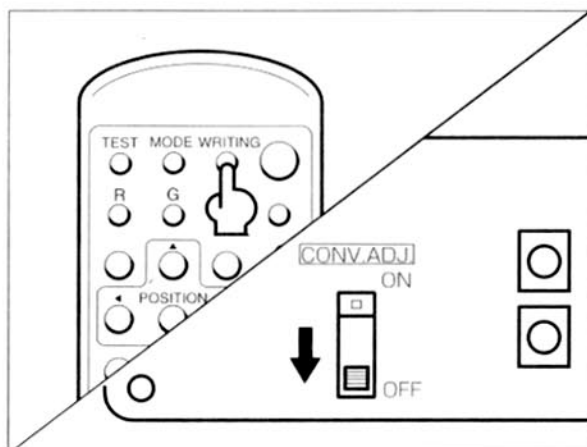
- 6 Using the [ADJUST] keys on the remote control, align the center of the blue cross with the center of the yellow cross. (When the blue cross is superimposed on the yellow cross, the resultant cross looks white.)

- Selecting red again after adjusting blue will make the red disappear, so select a second time. (Do the same when adjusting blue again after red.)

MEMO



- 7 Push the [WRITING] key on the remote control to save the adjustments.
- 8 Turn OFF the [CONV.ADJ.] switch on the projector control PCB.



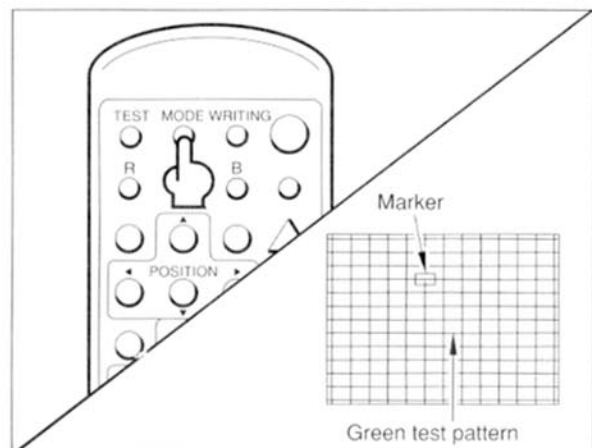
If a partial color drift is found, perform convergence adjustment in the following procedure:

■ How to perform partial convergence adjustment — — — — —



- Do not perform an extraordinary setting on purpose; otherwise, it will cause a damage.
- In case a problem happens during the adjustment, do not push the [WRITING] key but turn off the power switch and on again, and readjust the unit.

- 1 Turn on the [CONV.ADJ] switch on the projector control PCB.
- 2 Point the remote control toward the screen and push the [TEST] key for about 3 seconds. (A green checked pattern appears on the screen.)
- 3 Push the [MODE] key on the remote control.
(Each pushing of the [MODE] key changes the mode in the following order: adjustment → one-row adjustment → one-point adjustment → --. Select one of the modes according to the color drift condition. Here, we will describe the procedure for carrying out partial convergence adjustment, assuring that the one-point adjustment mode has been selected: The screen shows a green checked test-pattern and the marker indicating the place to be adjusted.)



- 4 When adjusting the red color.
Push the [R] key on the remote control.
(A red test pattern appears on the screen along with the green test pattern, and the green marker turns red.)
- 5 Push the [POSITION] keys on the remote control to move the marker to the place you want to adjust. (The range where the marker can move is limited.)
- 6 Push the [ADJUST] keys on the remote control to match the red test pattern with the green one. (When the red test pattern is laid over the green one, the resultant test pattern looks yellow.)
- 7 When adjusting the blue color.
Push the [B] key on the remote control.
(The blue test pattern is added to the screen and the red marker turns blue. Adjust the blue color according to the procedure described in steps 5 and 6.)
- 8 Store the adjustment condition by pushing the [WRITING] key on the remote control.
- 9 Turn off the [CONV.ADJ.] switch on the projector control PCB.

Wiring Diagram Details:

- Power Source:** AC110V input through a 10A circuit protector (402260) and a switch (402918) to a transformer (PT1304, 402914).
- Transformer:** Provides various voltages (100V, 110V, 115V, 120V) to different parts of the system.
- Modules:**
 - PWB302009A:** Central processing unit with multiple connectors (CN1, CN2, CN3, CN4, CN5, CN6, CN7, CN8, CN9, CN10, CN11, CN12, CN13, CN14, CN15, CN16, CN17, CN18, CN19, CN20, CN21, CN22, CN23, CN24, CN25, CN26, CN27, CN28, CN29, CN30, CN31, CN32, CN33, CN34, CN35, CN36, CN37, CN38, CN39, CN40, CN41, CN42, CN43, CN44, CN45, CN46, CN47, CN48, CN49, CN50, CN51, CN52, CN53, CN54, CN55, CN56, CN57, CN58, CN59, CN60, CN61, CN62, CN63, CN64, CN65, CN66, CN67, CN68, CN69, CN70, CN71, CN72, CN73, CN74, CN75, CN76, CN77, CN78, CN79, CN80, CN81, CN82, CN83, CN84, CN85, CN86, CN87, CN88, CN89, CN90, CN91, CN92, CN93, CN94, CN95, CN96, CN97, CN98, CN99, CN100).
 - PWB403454:** Peripheral module with connectors CN1, CN2, CN3, CN4, CN5, CN6, CN7, CN8, CN9, CN10, CN11, CN12, CN13, CN14, CN15, CN16, CN17, CN18, CN19, CN20, CN21, CN22, CN23, CN24, CN25, CN26, CN27, CN28, CN29, CN30, CN31, CN32, CN33, CN34, CN35, CN36, CN37, CN38, CN39, CN40, CN41, CN42, CN43, CN44, CN45, CN46, CN47, CN48, CN49, CN50, CN51, CN52, CN53, CN54, CN55, CN56, CN57, CN58, CN59, CN60, CN61, CN62, CN63, CN64, CN65, CN66, CN67, CN68, CN69, CN70, CN71, CN72, CN73, CN74, CN75, CN76, CN77, CN78, CN79, CN80, CN81, CN82, CN83, CN84, CN85, CN86, CN87, CN88, CN89, CN90, CN91, CN92, CN93, CN94, CN95, CN96, CN97, CN98, CN99, CN100.
- Peripherals:**
 - Speakers:** LEFT SPEAKER BOX and RIGHT SPEAKER BOX connected to ELR-02 and ELP-02.
 - Monitor:** 50 inch Projection Monitor P500GKB connected to VLP-2.
 - Switches:** Various switches for TEST, 1PCOIN, 1PSTART, 1PUP, 1PDOWN, 1PLEFT, 1P PUSH 1, 1PAD CH0, 1PAD CH2, 1PAD CH1, 1PAD CH3, 1PAD CH4, 1PAD CH5, 1PAD CH6, 1PAD CH7, 1PAD CH8, 1PAD CH9, 1PAD CH10, 1PAD CH11, 1PAD CH12, 1PAD CH13, 1PAD CH14, 1PAD CH15, 1PAD CH16, 1PAD CH17, 1PAD CH18, 1PAD CH19, 1PAD CH20, 1PAD CH21, 1PAD CH22, 1PAD CH23, 1PAD CH24, 1PAD CH25, 1PAD CH26, 1PAD CH27, 1PAD CH28, 1PAD CH29, 1PAD CH30, 1PAD CH31, 1PAD CH32, 1PAD CH33, 1PAD CH34, 1PAD CH35, 1PAD CH36, 1PAD CH37, 1PAD CH38, 1PAD CH39, 1PAD CH40, 1PAD CH41, 1PAD CH42, 1PAD CH43, 1PAD CH44, 1PAD CH45, 1PAD CH46, 1PAD CH47, 1PAD CH48, 1PAD CH49, 1PAD CH50, 1PAD CH51, 1PAD CH52, 1PAD CH53, 1PAD CH54, 1PAD CH55, 1PAD CH56, 1PAD CH57, 1PAD CH58, 1PAD CH59, 1PAD CH60, 1PAD CH61, 1PAD CH62, 1PAD CH63, 1PAD CH64, 1PAD CH65, 1PAD CH66, 1PAD CH67, 1PAD CH68, 1PAD CH69, 1PAD CH70, 1PAD CH71, 1PAD CH72, 1PAD CH73, 1PAD CH74, 1PAD CH75, 1PAD CH76, 1PAD CH77, 1PAD CH78, 1PAD CH79, 1PAD CH80, 1PAD CH81, 1PAD CH82, 1PAD CH83, 1PAD CH84, 1PAD CH85, 1PAD CH86, 1PAD CH87, 1PAD CH88, 1PAD CH89, 1PAD CH90, 1PAD CH91, 1PAD CH92, 1PAD CH93, 1PAD CH94, 1PAD CH95, 1PAD CH96, 1PAD CH97, 1PAD CH98, 1PAD CH99, 1PAD CH100.
 - Other:** COIN COUNTER1, COIN COUNTER2, COIN COUNTER3, COIN COUNTER4, COIN COUNTER5, COIN COUNTER6, COIN COUNTER7, COIN COUNTER8, COIN COUNTER9, COIN COUNTER10, COIN COUNTER11, COIN COUNTER12, COIN COUNTER13, COIN COUNTER14, COIN COUNTER15, COIN COUNTER16, COIN COUNTER17, COIN COUNTER18, COIN COUNTER19, COIN COUNTER20, COIN COUNTER21, COIN COUNTER22, COIN COUNTER23, COIN COUNTER24, COIN COUNTER25, COIN COUNTER26, COIN COUNTER27, COIN COUNTER28, COIN COUNTER29, COIN COUNTER30, COIN COUNTER31, COIN COUNTER32, COIN COUNTER33, COIN COUNTER34, COIN COUNTER35, COIN COUNTER36, COIN COUNTER37, COIN COUNTER38, COIN COUNTER39, COIN COUNTER40, COIN COUNTER41, COIN COUNTER42, COIN COUNTER43, COIN COUNTER44, COIN COUNTER45, COIN COUNTER46, COIN COUNTER47, COIN COUNTER48, COIN COUNTER49, COIN COUNTER50, COIN COUNTER51, COIN COUNTER52, COIN COUNTER53, COIN COUNTER54, COIN COUNTER55, COIN COUNTER56, COIN COUNTER57, COIN COUNTER58, COIN COUNTER59, COIN COUNTER60, COIN COUNTER61, COIN COUNTER62, COIN COUNTER63, COIN COUNTER64, COIN COUNTER65, COIN COUNTER66, COIN COUNTER67, COIN COUNTER68, COIN COUNTER69, COIN COUNTER70, COIN COUNTER71, COIN COUNTER72, COIN COUNTER73, COIN COUNTER74, COIN COUNTER75, COIN COUNTER76, COIN COUNTER77, COIN COUNTER78, COIN COUNTER79, COIN COUNTER80, COIN COUNTER81, COIN COUNTER82, COIN COUNTER83, COIN COUNTER84, COIN COUNTER85, COIN COUNTER86, COIN COUNTER87, COIN COUNTER88, COIN COUNTER89, COIN COUNTER90, COIN COUNTER91, COIN COUNTER92, COIN COUNTER93, COIN COUNTER94, COIN COUNTER95, COIN COUNTER96, COIN COUNTER97, COIN COUNTER98, COIN COUNTER99, COIN COUNTER100.

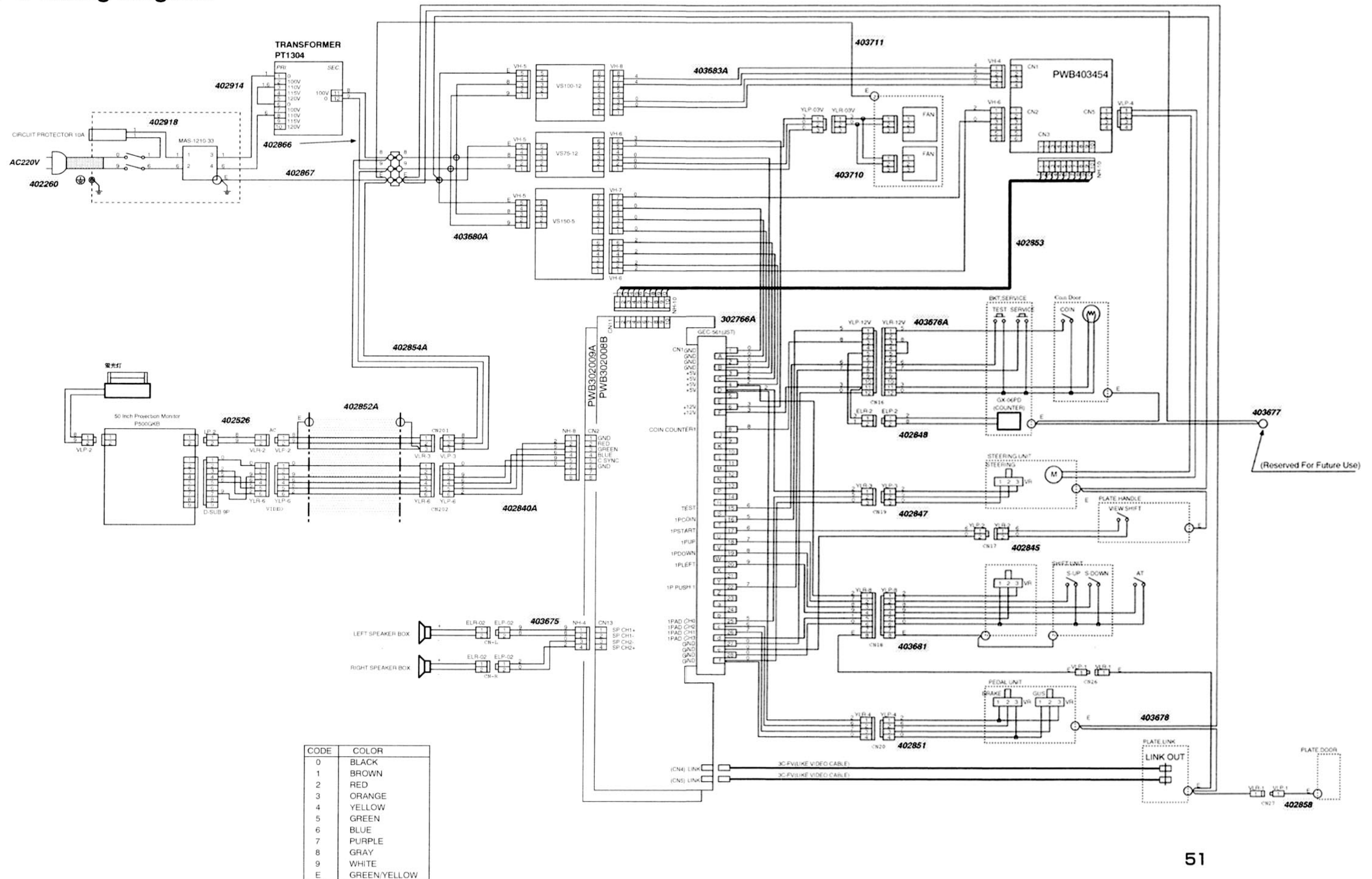
Color Code Table:

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

Page Number: 50

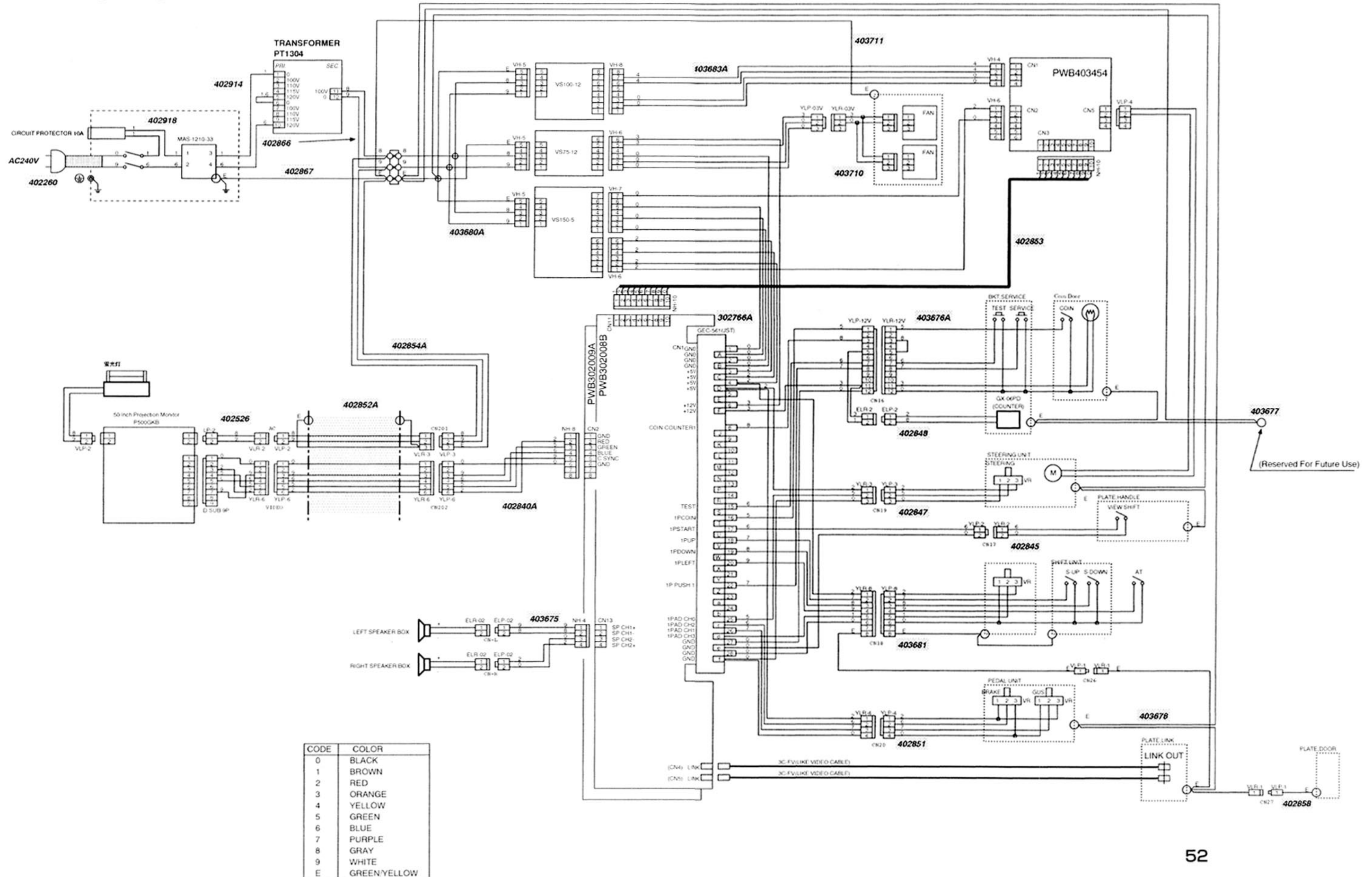
7-8 Wiring diagram

GN688-AD/HD specifications for regions using 220 voltage area in Asia.



7-8 Wiring diagram

GN688-AF specifications for regions using 240 voltage area in Australia.





GTI-CLUB

RALLY COTE D'AZUR

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