ORIGINAL VIDEO GAME

OPERATOR'S MANUAL

■ RUSHING HEROES ■

RUSHING HEROES ™

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SYSTEM **GX** ™

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

KONAMI ®

KCE**R**

About this product

Thank you for purchasing this Konami product.   This manual explains how to operate your game Printed Circuit Boards (PCB) correctly and safely.

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

Contents

■ Precautions for use

In this manual, the precautions to be followed without fail in order to prevent damage to persons to install, use or maintain "RUSHING HEROES™" 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

•**Handle this machine with due care when installing it.**
·Otherwise, a machine trouble or accident may be caused.
·Parts inside the machine get very hot structurally.   Do not touch them until completely cooled down.
·This machine has some projections.   Be very careful not to get injured when handling the machine.

•**This machine is designed for indoor use.   Do not place it outdoors.**
·Outdoor use may cause an accident or machine trouble.

•**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.
·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.

•**Keep it in mind that the PCB is connected differently depending or how you operate (one machine or two machine networking).**
·Do not connect and disconnect the connectors with the power switch on.   Otherwise you may get an electric shock.
·Before connecting two monitors, be sure to turn off the power switches of both machines.   Otherwise you may get an electric shock.

•**Before setting the DIP switches, take antistatic measure by use of a grounding band or the like.**
·Static electricity may lead to breakage of electronic parts mounted on the PCBs.

•**Be sure to turn OFF the machine's power switch before mounting and dismounting the PCBs.**
·Otherwise, a machine trouble or electric shock may be caused.

•**The PCBs' card edge connectors conform to the JAMMA standard requirements. Never connect any other types of connectors than specified.**
·Otherwise, a machine trouble or fire may be caused.

•**In setting up the PCBs, identify all the connectors and connect them properly.**
·Otherwise, a machine trouble or fire may be caused.

⚠ CAUTION

•**The power cord extending from the machine and the communication cable for communication play should not be left in a place where people may step on or be caught by them.**
·People may tumble over the cable and get injured, or the cable itself may be damaged.
·Use the communication cable only for connecting the two monitors.   Use for any other purpose may cause machine trouble.

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.

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─────────── In case of abnormality ───────────
1. Turn OFF the machine's power switch.
2. Unplug the machine's power cord from the receptacle.
3. Contact your nearest dealer.
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•**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.

·We do not assume any responsibility for any damages that would be caused by tampering with the machine.

•**Do not touch the machine with wet hands.**

·Otherwise, an electric shock may be caused.

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..

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.
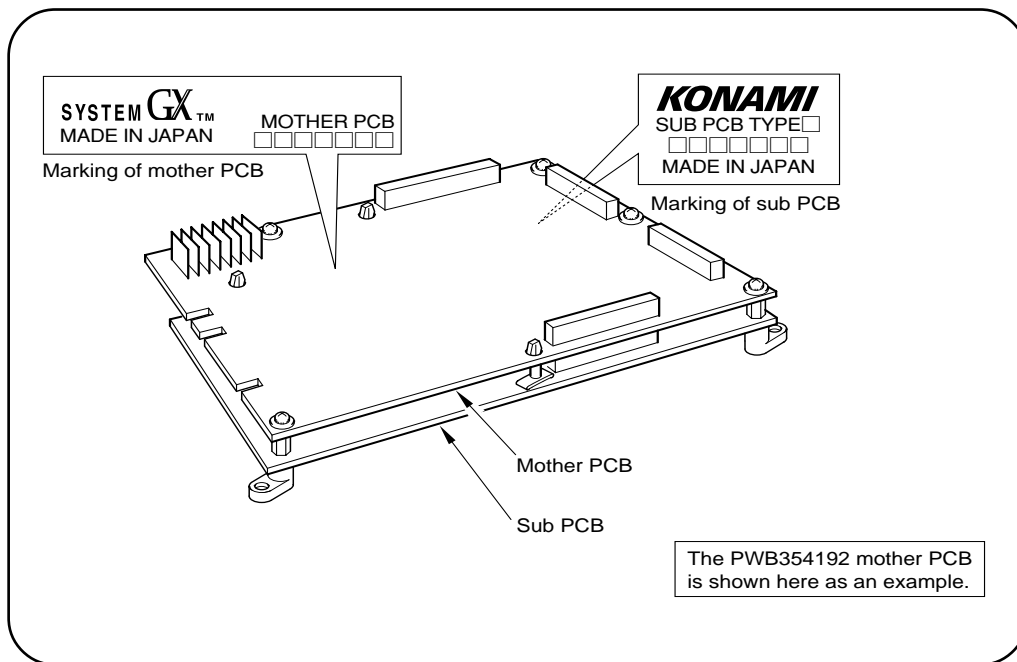
•Do not remove labels of "WARNING", "CAUTION", etc. attached to the product.

•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 Names of parts and specifications

1-1 Names of parts

SYSTEM GX ™
MADE IN JAPAN

MOTHER PCB
☐☐☐☐☐☐

Marking of mother PCB

KONAMI
SUB PCB TYPE☐
☐☐☐☐☐☐☐
MADE IN JAPAN

Marking of sub PCB

Mother PCB

Sub PCB

The PWB354192 mother PCB
is shown here as an example.

1-2 Specifications

■ Specifications of PCB power supply : GND-Vcc, 5V 7A or more
GND-(+12V) See page 23

- The game PCBs can be connected to general color monitors sold in your country.
- Use the control unit with 1P and 2P sockets arranged side by side.   (Use a simultaneous play type that has two sets of an 8-way joystick and 2 push buttons.)
- Use the monitors arranged side by side.
- The PCB is not equipped with a sound volume control.   Adjust the sound volume, referring to "SOUND OPTIONS" (See page 11).

Note: The speaker terminals of cabinets by manufacturers other than KONAMI may be in compatible in the specifications.
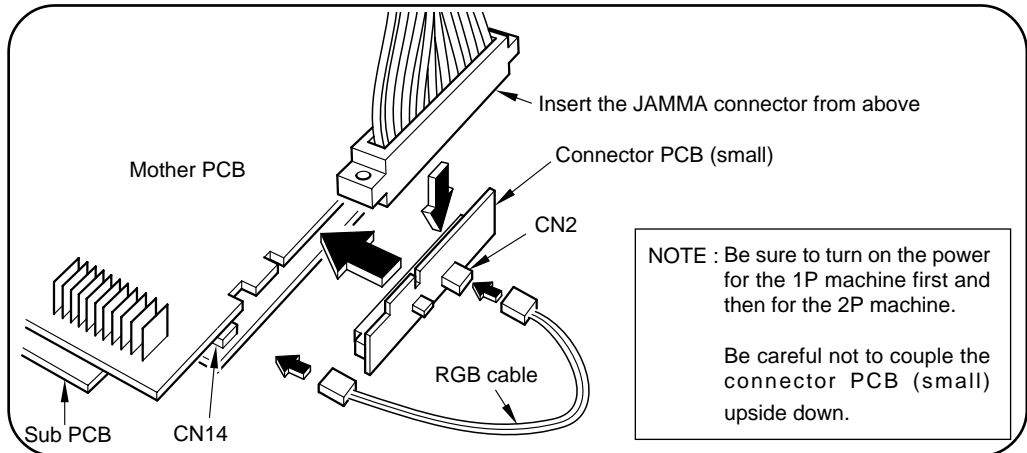
- Pay due attention in transporting and handling the PCB, which contains precision components and parts.
  For transporting the machine, be sure to use the specific container and handle the PCB with care.

2 Setting the PCBs in the machine

2-1 Connecting the connectors

■Attach the JAMMA connector in position on the connector PCB (small). Couple this assembly to the PCBs.
Also connect the accompanying RGB cable between the CN2 connector of the connector PCB (small) and the CN14 connector of the sub PCB.

Mother PCB

Insert the JAMMA connector from above

Connector PCB (small)

CN2

NOTE : Be sure to turn on the power for the 1P machine first and then for the 2P machine.

Be careful not to couple the connector PCB (small) upside down.

RGB cable

Sub PCB   CN14

2-2 DIP switch settings

Up to 4 players can join this game depending on the types of machines.   Set the DIP switches on the PCB according to the types of machines.   For the machine with four or more push buttons for each player on the control panel, take the following note.
　　　*Some machines have any of these push buttons to function as a service switch. Put such switch out of the electric circuit.

●**Setting up in a 2-player machine**
Use the simultaneous play type that has two sets of the start button, 8-way joystick and two push buttons.   Set the DIP switch 4 to the OFF (1-monitor) position.   The 2-player machine provides for three play modes: 1 player vs CPU, and 2 players vs CPU.

DIP SW1 bit No.	Content	OFF	ON
1	Switching of speaker output mode	Monaural	Stereo
2	Monitor display Normal/Reverse	Normal	Reverse
3	Not in use	*	*
4	Network play mode setting	1-monitor	*
5~8	Not used		

The DIP switch 2 is not used.

●**Setting up in two 2-player machines (4 players in total)**
Connect two 2-player machines using the accompanying connector cable.   Up to 4 players can join the game at once. (For connections, refer to page 21.) Set the DIP switch 4 to the ON (2-monitor) position.

DIP SW1 bit No.	Content	OFF	ON
1	Switching of speaker output mode	O	*(Mono output only)
2	Monitor 1 display Normal/Reverse	Normal	Reverse
3	Monitor 2 display Normal/Reverse	Normal	Reverse
4	Network play mode setting	*	2-monitor
5~8	Not used		

The DIP switch 2 is not used.
Two players can play jointly on the same machine.   For competitive play, one team of two players sit at one machine, while the other team of two players sit at the other machine.

3 PCB settings

3-1 PCB start-up check (self test)

Turn ON the machine's power switch after installation. The game Printed Circuit Boards (PCB) will be automatically checked for performance. The check results will appear on the screen.

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•**Be sure to perform the self test before using the PCBs.**
•**If an abnormality persists or the machine's 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 machine 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 machine has been installed or any of the PCBs has been repaired or replaced, hold down the test switch on the machine or on the mother PCB and turn ON the power switch. The settings will be back to the factory ones. If anything unusual keeps appearing on the screen or the machine fails, immediately turn OFF the machine's power switch, unplug the power cord from the receptacle and contact your nearest dealer.

■ **Initialization** ━━━━━━━━━━━━━━━━━━━━━━━━━━━━

After replacement of the sub PCB or ROM, the program automatically checks the contents in the memory. If initialization is necessary, the message "INITIALIZATION HAS NOT BEEN DONE. WILL START TO INITIALIZE NOW." appears on the screen and the memory is initialized automatically.

3-2 Adjusting the game environment (manual test)

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

If two machines are interconnected for communication, the manual test pattern appears on both the screens. However, perform the selection and decisive operation by the 1P side's control section. The gray-colored in the main menu and items displayed on the screen are not used in this game.
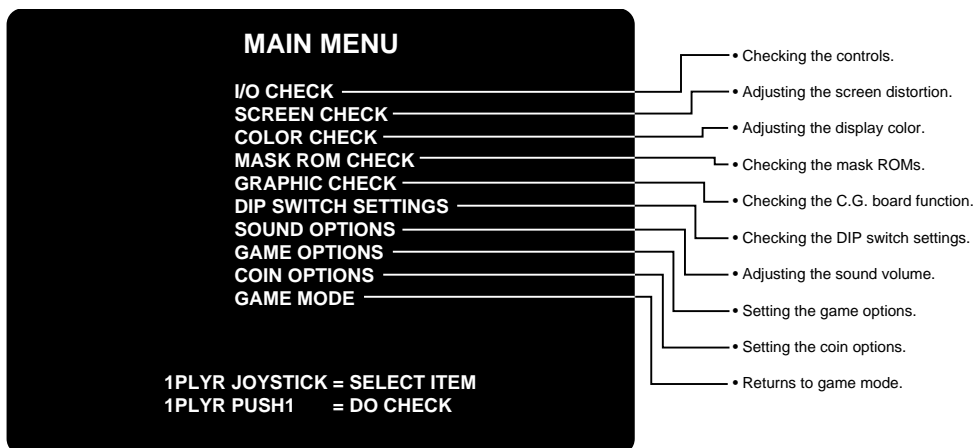
■ Starting the manual test mode ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

1 Turn ON the machine's power switch.

2 While the demo game is on, press the test switch on the machine or on the mother PCB. (If the power switch is turned on with the test switch down, the current settings will be erased and replaced by the factory settings.)

•The manual test mode is called and the main menu appears on the screen.

■ Quit the manual test mode ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

1 Using the 1P joystick, select "GAME MODE" on the main menu screen.

2 Press the 1P A (PUSH 1) button.

•The screen goes back to the game mode.

■ Main mode screen (basic items) ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

MAIN MENU

MAIN MENU	
I/O CHECK	• Checking the controls.
SCREEN CHECK	• Adjusting the screen distortion.
COLOR CHECK	• Adjusting the display color.
MASK ROM CHECK	• Checking the mask ROMs.
GRAPHIC CHECK	• Checking the C.G. board function.
DIP SWITCH SETTINGS	• Checking the DIP switch settings.
SOUND OPTIONS	• Adjusting the sound volume.
GAME OPTIONS	• Setting the game options.
COIN OPTIONS	• Setting the coin options.
GAME MODE	• Returns to game mode.

1PLYR JOYSTICK = SELECT ITEM
1PLYR PUSH1   = DO CHECK

■ Selecting each mode ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

How to select each mode from the main menu.

·SELECT······➤Turn up / down the 1P joy stick.

·SET   ······➤Press the 1P A (PUSH 1) button.

The modes are discussed on the following pages in detail.

3-3 Mode descriptions

■ The original factory settings are displayed in green; the changed settings are displayed in red. Move the 1P joystick up and down to select an item to be modified and move it right and left to change its setting.
·After the settings have been modified, select "SAVE AND EXIT" and press the 1P A (PUSH 1) button.   The new settings are saved automatically and the screen returns to the main menu.
·If "EXIT" is selected after the settings have been changed, the message "YOU DID NOT SAVE, DO YOU WANT TO SAVE? YES/NO" will appear.   Using the 1P joystick, select "YES" or "NO" and press the 1P A (PUSH 1) button.
If "YES" is selected, the message "NOW SAVING" will appear, the modified settings will be saved and the screen will return to the main menu.
If "NO" is selected, the message "NO MODIFICATION" will appear and the modified settings will not be saved.

•If "FACTORY SETTINGS" is selected and the 1P A (PUSH 1) button is pressed, all the settings will return to the factory ones.

MEMO

I/O CHECK

Checking the controls

■ Mode for checking the performance of each control.
When any control switch is pressed, "1" appears on the screen.
To return to the main menu, press the 1P A (PUSH 1) and 2P A (PUSH 1) buttons at once.

SCREEN CHECK

Adjusting the screen distortion

■ Mode for checking the screen display.
Adjust the focus, distortion and size of the monitor screen while watching the crosshatch pattern. Use the monitor adjusting PCB to make the adjustment.   To return to the main menu, press the 1P A (PUSH 1) button.

COLOR CHECK

Adjusting the display color

■ Mode for checking the display color.
Make the adjustment using the monitor adjusting PCB so that the colors of the color bars should appear properly graduated.   To return to the main menu, press the 1P A (PUSH 1) button.

MASK ROM CHECK

Checking the mask ROMs

■ The mask ROMs are checked one by one.   If everything is okay, "OK" appears.   If anything unusual is found, "BAD" appears.
If any of the mask ROMs is defective, the game may get in trouble.   An abnormal mask ROM may cause a trouble to the game.   In such a case, immediately turn OFF the machine's power switch, unplug the power cord from the reseptacle and contact your nearest dealer.   To return to the main menu, press the 1P A (PUSH 1) button.

GRAPHIC CHECK

Checking the C.G.board function

■ Mode for checking the function of the C.G. board.   Observe the monitor screen in this mode to make sure the C.G. board is functioning well.
To return to the main menu, press the 1P A (PUSH 1) and 2P A (PUSH 1) buttons at once.

DIP SWITCH SETTINGS

Checking the DIP switch settings

■ Mode for checking the DIP switch settings
To change the settings, use the DIP switches on the mother PCB.
To return to the main menu, press the 1P A (PUSH 1) button.

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•Before changing the DIP switch settings, be sure to turn OFF the machine's power switch.   And take antistatic measure using a grounding band or the like.

DIP SWITCH SETTINGS

SW   **1 2 3 4 5 6 7 8**   **ON**   ·Displays the current DIP switch settings.
⬜⬜⬜⬜⬜⬜⬜⬜   **OFF**

TO MODIFY SETTINGS.
OPERATE THE RELEVANT.
DIP SWITCH1 ON THE BOARD.   ·DIP switch 1: Setting the sound level.
DIP SWITCH2 ON THE USED.   ·ON …Stereo
                                                                         ·OFF…Monaural
SW1   SOUND OUTPUT
             MONAURAL
SW2   MONITOR1 SCREEN FLIP   ·Sets the monitor position.
             NORMAL   ·ON …Reverse
SW3   MONITOR2 SCREEN FLIP   ·OFF…Normal
             NORMAL
SW4   NUMBER OF MONITORS   ·The DIP switches 5 to 8 are not used.
             2MONITORS   Keep all of them off.
SW5 - 8   NO USE

1PLYR PUSH1 = EXIT

•The DIP switch on the mother PCB can be shifted easily by utilizing a thin flatblade screwdriver or a ball-point pen.

MEMO

SOUND OPTIONS

Adjusting the sound volume

■ In this mode, the following appears on the screen.
To return to the main menu, select "EXIT" and press the 1P A (PUSH 1) button.

SOUND OPTIONS

SOUND IN ATTRACT MODE
    ALL THE TIME

SOUND VOLUME
   18

SOUND SCALE CHECK

FACTORY SETTINGS
SAVE AND EXIT
EXIT

   1PLYR JOYSTICK   UP/DOWN = SELECT OPTION
   1PLYR JOYSTICK RIGHT/LEFT = MODIFY SETTING

•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.
  *The sound volume before putting coin(s) is
   preset at a lower level than during the game.

•Adjusts the volume from the level 0 (no sound)
 to 30 (max.).
 ·To turn up the sound level, tilt the 1P joystick
  to the right.
 ·To turn down the sound level, tilt the 1P joystick
  to the left.

•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. There are two
 sound sources. Check both of them.
  *When two monitors are set, the sound "do, re,
  mi ... do" is heard first from the main monitor
  and the same sound then from the sub-monitor.

•Returns all the settings to the factory settings.

GAME OPTIONS

Setting the game options

■ In this mode, the following appears on the screen.
To return to the main menu, select "EXIT" and press the 1P A (PUSH 1) button.

GAME OPTIONS

DIFFICULTY LEVEL   4/MEDIUM
LOOP SETTING   1 ROUND END
PLAY TIME <CPU>   2 MIN. 30 SEC.
PLAY TIME <VS>   2 MIN. 30 SEC.
CONTINUE PLAY FOR FINAL   YES
FREE CONTINUE PLAY   CUP PLAY ALWAYS YES
       BY WINNING   VS PLAY ALWAYS YES
DOWN SELECT   YES
BONUS GAME   YES
FACTORY SETTINGS
SAVE AND EXIT
EXIT

   1PLYR JOYSTICK   UP/DOWN = SELECT OPTION
   1PLYR JOYSTICK RIGHT/LEFT = MODIFY SETTING

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

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

•Sets the number of loops.

•Sets the time for playing a <VS CPU> game
 (1 to 5 min.).

•Sets the time for playing a <VS PLAY> game
 (1 to 5 min.).

•Sets the presence or absence of CONTINUE for
 the final game.

•Sets to get (or not to get) CONTINUE when the
 player won the game.

•Sets the down start.
  •YES ... Down select demo is displayed on the screen.
  •2ND to 4TH ... Down start displayed on screen is fixed.

•Sets to give a bonus game to the player who
 won the finalgame. (YES or NO)

•Returns all the settings to the factory settings.

COIN OPTIONS

Setting the coin options

■ In this mode, the following appears on the screen.
To return to the main menu, select "EXIT" and press the 1P A (PUSH 1) button.

⚠️

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

```
              COIN OPTIONS

 FREE PLAY            NO

 COIN MECHANISM       COMMON
    COIN SLOT1        1   COIN   1 CREDIT
    COIN SLOT2        1   COIN   1 CREDIT

 PREMIUM START        NO
    1 CREDIT          TO START
    1 CREDIT          TO CONTINUE

 FACTORY SETTINGS
 SAVE AND EXIT
 EXIT
   1PLYR JOYSTICK     UP/DOWN = SELECT OPTION
   1PLYR JOYSTICK RIGHT/LEFT   = MODIFY SETTING
```

•Selects a free play. (YES or NO)

•Specification of cabinet coin mechanism
(The specification can not be changed to "Independent type".)

•Sets the coin slot 1.
Sets the number of credits for a coin.
(See "Table of Coin Settings" shown below.)

•Sets the coin slot 2.
Sets the number of credits for a coin.
(See "Table of Coin Settings" shown below.)

•Sets the premium start.
The premium start can be selected among "NO" or "YES 1 to 4". (See the explanation below for how to set.)

•Sets the number of credits at starting.
(The number varies depending on the setting of PREMIUM START.)

•Sets the number of credits in the CONTINUE mode.
(The number varies depending on the setting of PREMIUM START.)

•Returns all the settings to the factory settings.

■Relationship between coins and credits

COIN(S)	1	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4
CREDIT(S)	1	2	3	4	5	6	7	1	3	5	1	2	4	1	3	5

■ "PREMIUM START" Setting

•It is possible to set the different numbers of credits for the start of the game and for its continuation. First, select a difference in the number of credits between the start and the continuation among "YES1" to "YES4", and set the number of credits for continuation.   The number of credits for start is automatically set as the addition of the number of credits for continuation and the above selected difference.   When "PREMIUM START" is not set, the number of credits required for start and that for continuation become the same.
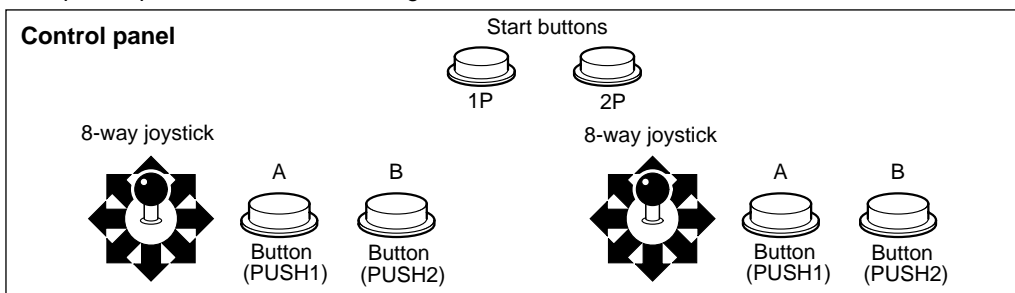
Example: "PREMIUM START YES1" selected
Credit 1 at continuation + Difference in the number 1 = Credit 2 at start

■ Coin counters

· For games on two machines being connected, the coin mechanism is set for the common type. Each machine has its coin slot.   With the two machines connected through the accompanying specific connectors, however, the coin counters start counting independently.

4 How to Play

The "RUSHING HEROES™" machine is to play an American football game machine.   You can play the match vs CPU or your competitor.   The virtual-reality animation made by CG rendering, the 3 dimensional view and the exciting scenes stir up the game.   Lead in the game and aim at the championship of Konami Football League.

Control panel

Start buttons

1P 2P

8-way joystick

8-way joystick

A B
Button (PUSH1) Button (PUSH2)

A B
Button (PUSH1) Button (PUSH2)

■How to play ▬

1. Put a coin into the slot and press the start button.   Then the entry screen appears.
Select your play mode among those shown below:

·1P (one person) vs CPU

·A team of 2P (two persons) vs CPU

·1P or 2P vs a team of 2P

2. Select your competing team among 30 teams.

3. When the DOWN SELECT demonstration appears on the screen, choose from the 1 to 4 quarters.   Advance the game according to the basic rules of American football while operating the players of the selected team.   There is no foul play.

4. The team who scored more points at the end of the game (4 quarters) is the winner of the game. If the game ends in a draw, both the teams are losers.

·The game is over at the fourth game.

■ Joining the game halfway ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

You can join the game halfway for a random match play or a team play.   When participating in the team play, put a coin into the slot of the same monitor and press the start button.

■ Continuing the game ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

The game can be continued when the necessary procedure is taken within 20 seconds before the game is over.

You can skip this stage by pressing either A or B (PUSH 1 or PUSH 2) buttons.

■ How to maneuver ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬ ▬

The "RUSHING HEROES™" game proceeds while developing the offensive and defensive battle in various formations.   In the team play of 2P, since the 1P and 2P players are to play different roles from each other, the teamwork of the players is very important. (The match play by 1 monitor is impossible.)

OFFENSE PLAY─────────────────────────

The game's 1st quarter and 3rd quarter start with "kickoff".   Since the ball kicked up by enemy is caught automatically, the player who has received the ball should operate the ball carrier of by maneuvering the joystick and attack the enemy's position while trying to avoid being caught. The position where the ball carrier falls down becomes the starting point for the 1st round.

•Selection of offense pattern
    ·Run play …………………… Running in while holding the ball
    ·Pass play …………………… Advancing while passing the ball
    ·Kick play (kick and punt) …… Invading by kicking the ball
The run play and pass play are available each in more than 20 different formation patterns.
Elaborate the game plan and select the most appropriate formation pattern.

•Selection of formation system
Select 4 categories first.   Then, 6 to 9 variations can further be selected among the
information patterns either by moving the joystick up and down or by pressing the button B
(PUSH 2) .
Press the button A (PUSH 1) for execution.
    ·Run play …… Total 24 types of information pattern
    ·Pass play …… Total 27 types of information pattern

•Basic developing method of run play <1P play>
The quarterback (red "QB" cursor for 1P side and blue "QB" cursor for 2P side) automatically
catches the ball that the center player has thrown.   Press the button B to select a player who
will catches the ball you are going to throw beforehand.   Then press the button A (PUSH 1)
to pass the ball timely. (Selectable players who catch the ball are different in their running
course.   Besides, the "PASS" cursor is attached to the selected player.)
After the quarterback has passed the ball, operate the player who caught the ball to make
him advance in the yard.   If an enemy approaches when the player is holding the ball, make
him dodge by "Spin Move".   The "Spin Move" can be controlled by pressing the button A
(PUSH 1) .

•Basic developing method of run play <2P team play>
In this method, one player should operate the
quarterback, while the other should operate the player
who catches the ball. (In this play, the arrangement
of quarterback for 1P side and ball catching player
for 2P side changes to another arrangement of ball
catching player for 1P side and quarterback for 2P
side.   This is repeated.)
When the quarterback is running, both the players
should back him up. If you press the button A (PUSH
1) at this time, you can perform "Shoulder Tackle".

Running direction

Pass ball catcher (Not selected)

Pass ball catcher (Selected)
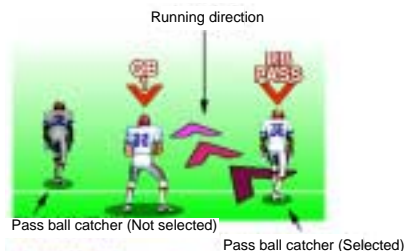
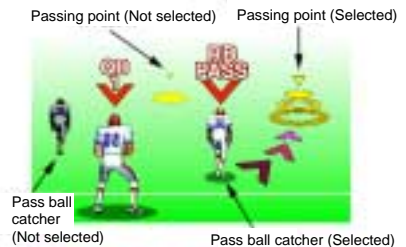**•Basic developing method of pass play <1P play>**
The quarterback automatically catches the ball that the center player has thrown.   Then,
select the "Passing Point" with the button B (PUSH 2) and pass the ball timely with the button
A (PUSH 1). (Selectable players who catch the ball are different in their running course.
Besides, the "PASS" cursor is attached to the selected player.) At the passing point is waiting
the selected player who will catch the ball.   The ball is caught automatically, but "Jumping
Catch" can also be performed by pressing the button A (PUSH 1).
After the ball has been caught, operate the player who has caught the ball to make him
advance in the yard.   If an enemy approaches when the player is holding the ball, make him
dodge by "Spin Move".   The "Spin Move" can be controlled by pressing the button A (PUSH 1).

•Basic developing method of pass play <2P team play>

In this method, one player should operate the quarterback, while the other should operate the player who catches the ball. (In this play, the arrangement of quarterback for 1P side and ball catching player for 2P side changes to another arrangement of ball catching player for 1P side and quarterback for 2P side. This is repeated.)
When the quarterback is running, both the players should back him up. If you press the button A (PUSH 1) at this time, you can perform "Shoulder Tackle".

Passing point (Not selected)   Passing point (Selected)

Pass ball catcher (Not selected)   Pass ball catcher (Selected)

•Kick play

There are two types of kick play: "Punt" and "Kick (Field Goal)" for kick play.

·Operation for punt

For operation of punt, a vertical gauge appears on the screen.   After snapping the ball by pressing the button A (PUSH 1), the power meter starts moving.   The higher the meter is set, the stronger the ball is kicked.   Press the button A (PUSH 1) timely again.

·Operation for kick (field goal)

For operation of kick, a horizontal gauge appears on the screen.   After snapping the ball by pressing the button A (PUSH 1), a point starts moving.   When the point that moves right and left on the gauge comes in the gauge's good center zone, press the A (PUSH 1) button timely.
(The range of "Good Zone" varies depending on the distance between the kicker and the goal posts.)

DEFENSE PLAY

The game's 1st quarter and 3rd quarter start with "Kickoff".   Since the kicker of the defense team kicks the ball automatically, operate other defensive player to make him prevent the invasion of offense ball carrier.   The position where the ball carrier falls down becomes the starting point for the 1st round.

•Selection of defense pattern

·Run defense …… Effective when an offensive player attacks by "Run Play".
·Pass defense … Effective when an offensive player attacks by "Pass Play".
·Blitz defense   … Facilitates to sack the quarterback immediately after the ball is snapped.
For the defense side, 4 different formation patterns are available.   Elaborate the game plan according to the situation and select the most appropriate formation pattern.

•Selection of formation system

Move the joystick right and left and select from 4 different formations.   Press the button A (PUSH 1) for execution. (Total 12 types of defense formations.)

•Basic developing method of defense play

When you return to the football court screen after the execution of formation, you can select the player you want to operate by pressing the button B (PUSH 2). (The character player can be selected even after the ball has been snapped.)   Besides, the green cursor is attached to the enemy's ball carrier.   Aim at this cursor.
When the button A (PUSH 1) is pressed during operation of character player, "Tackle Action" can be performed.   When the player is made to approach the ball and the button A (PUSH 1) is pressed, "Intercept" can be performed. (As for the defense side, the method of operation is the same for both 1P play and 2P team play.)

# 5 Sub PCB Replacement and Cautions

5-1 Types of mother PCB

•The "System GX" is made up of the mother PCB and sub PCB.
 The type of game can be changed by replacing the "System GX" sub PCB with the one for another type of game.

•The sub PCB is available in two types: for connection above the mother PCB and for connection below the mother PCB.   Since the type of sub PCB differs depending on the type of game, confirm the type with the instruction manual of each game software.

•The connecting method of this sub PCB varies depending on the type of mother PCB.   Be sure to confirm the type of mother PCB and connect the sub PCB according to the connecting method for each type.

For the PWB300456□mother PCB

Sub PCB

Heat sink

Connector

JAMMA Connector
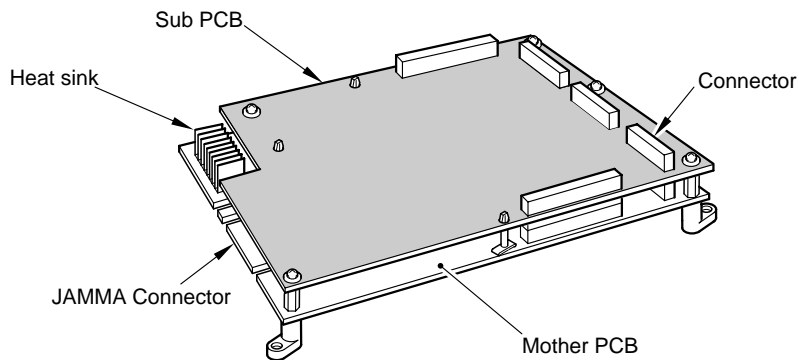
Mother PCB

•The PWB300456□mother PCB must be connected below the sub PCB.   Keep in mind that it will not work if connected above the sub PCB.   On this mother PCB are mounted 5 connectors that face upward.   The heat sink mounted on the mother PCB is in parallel with the JAMMA connector.

For the PWB354192□mother PCB

Mother PCB

Heat sink

Connector

JAMMA Connector
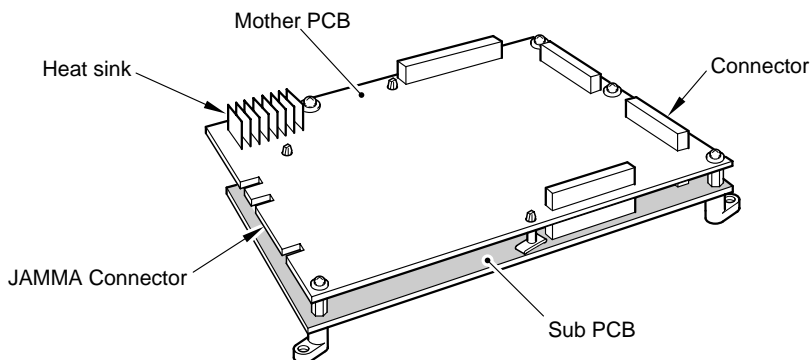
Sub PCB

The PWB354192□mother PCB must be connected above the sub PCB.   Keep in mind that the PCB will be broken if connected below the sub PCB.   On this mother board are mounted 4 connectors that face upward and 5 connectors that face downward. The heat sink mounted on the mother PCB is perpendicular to the JAMMA connector.
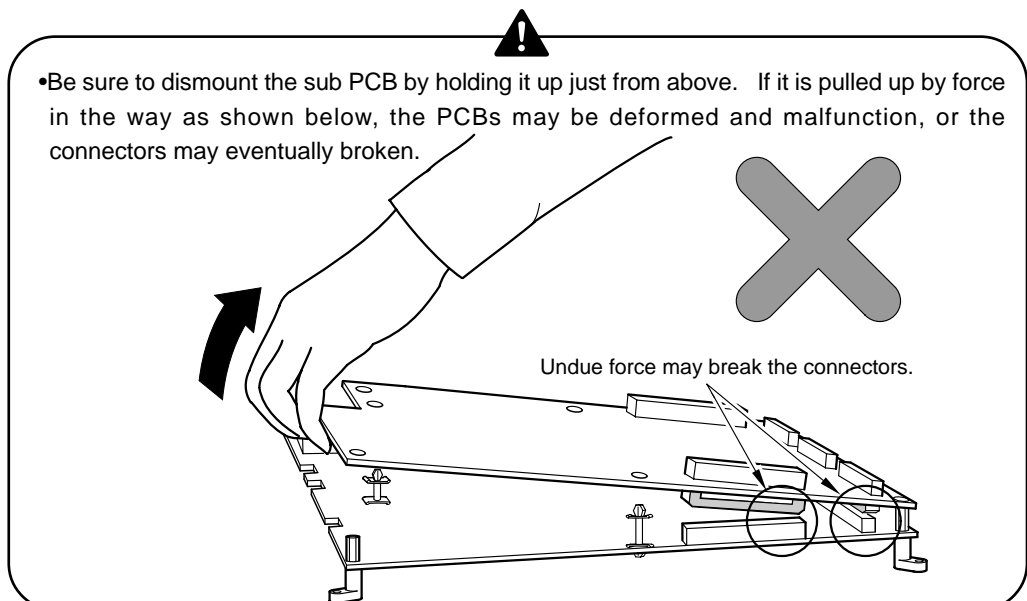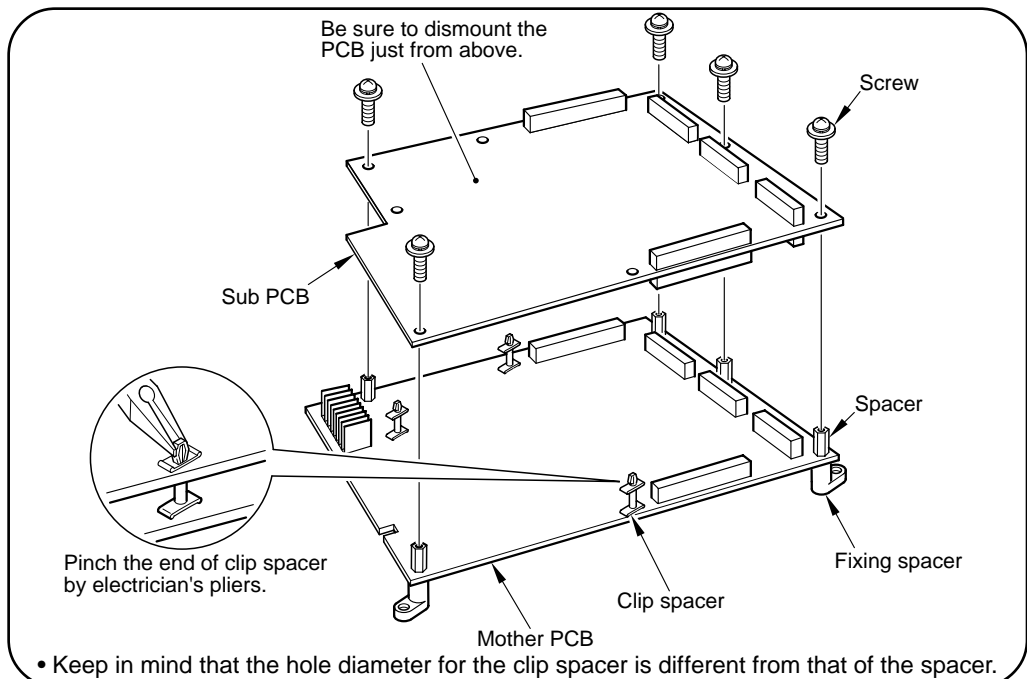
5-2 Dismounting the sub PCB

(For the PWB300456☐mother board)

The sub PCB is fixed to the mother PCB with fasteners such as clip spacers, spacers and screws.

Remove all these fasteners and dismount the sub PCB just from above.

The clips of clip spacers can be easily unhooked with electrician's pliers or the like.

(The quantities and positions of the fasteners are the same for any mother PCB.   The same screw holes of the sub PCB are used.)

Be sure to dismount the
PCB just from above.

Screw

Sub PCB

Spacer

Pinch the end of clip spacer
by electrician's pliers.

Fixing spacer

Clip spacer

Mother PCB

• Keep in mind that the hole diameter for the clip spacer is different from that of the spacer.

•Be sure to dismount the sub PCB by holding it up just from above.   If it is pulled up by force in the way as shown below, the PCBs may be deformed and malfunction, or the connectors may eventually broken.

Undue force may break the connectors.

5-3 Mounting the sub PCB

Check the parts supplied together.

(For the PWB300456☐mother PCB)
The following fasteners are required to mount the sub PCB.
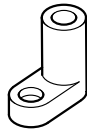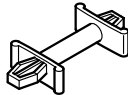
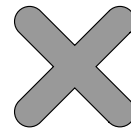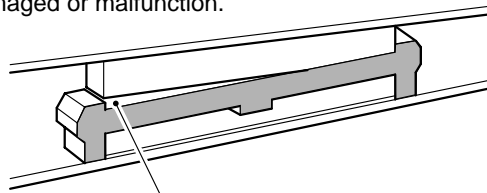·Fixing spacer   ·Clip spacer   ·Spacer   ·Screw
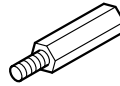
⚠

•Connect the connectors tightly enough.   If in poor contact as shown below, the connector may be damaged or malfunction.

A gap may cause the connector to break down.

1   Fit the fixing spacers on the mother PCB (PWB300456 ☐).   Screw the spacers for the fixing spacers between the sub PCB and the mother PCB.   And secure the other fixing spacers directly with the screws.
Be sure to use the clip spacers for fixing the sub PCB at the positions where there are no fixing spacers.
These fixing positions are very important to prevent the PCBs from getting warped.   Be sure to carry out the mounting according to the illustration below.

Spacer

Fixing spacer

Mother PCB   Clip spacer
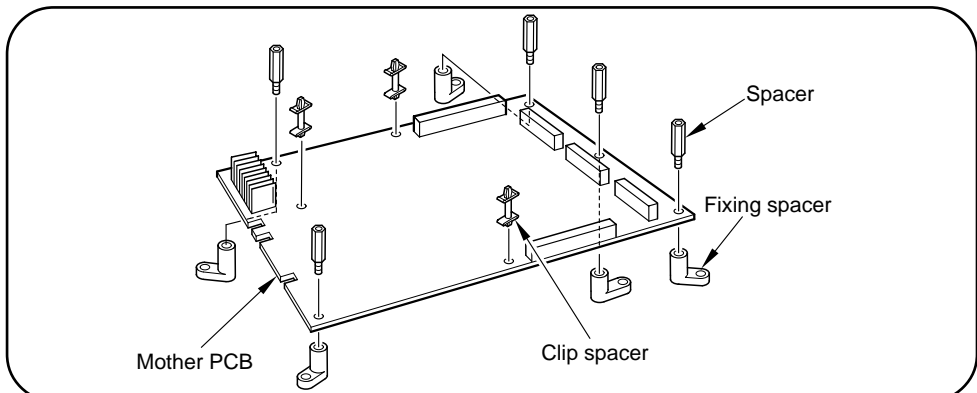
2 Confirm the connector positions in the mother and sub PCBs.   Insert all the connectors in the PCBs by using the clip spacers as guide for positioning.   At the same time, fit and fix the clip spacers into position.
If the connectors are out of position or overloaded, they may be in poor contact or broken.
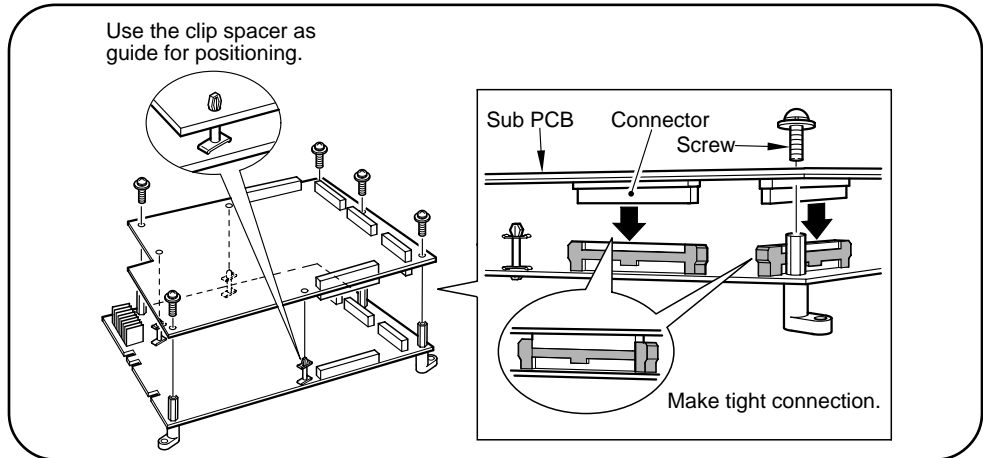
# 5-4 Test Switch

(For the PWB300456☐ mother PCB)
Use this switch to run the machine in the test mode or to initialize the memory.

•Test mode
In this mode, it is possible to check or change the settings relating to screen display or type of game. (See page 8.) when the test switch on the machine or on the mother PCB is pressed during display on the screen, the machine goes into the test mode and the main menu appears on the screen.

•Initialization
After the DIP switch settings have been done at the time of machine installation, turn ON the power switch while holding down the test switch of the machine or the mother PCB.   Normally the contents of memory are automatically verified, and if necessary, the memory is initialized. (See page 7.)
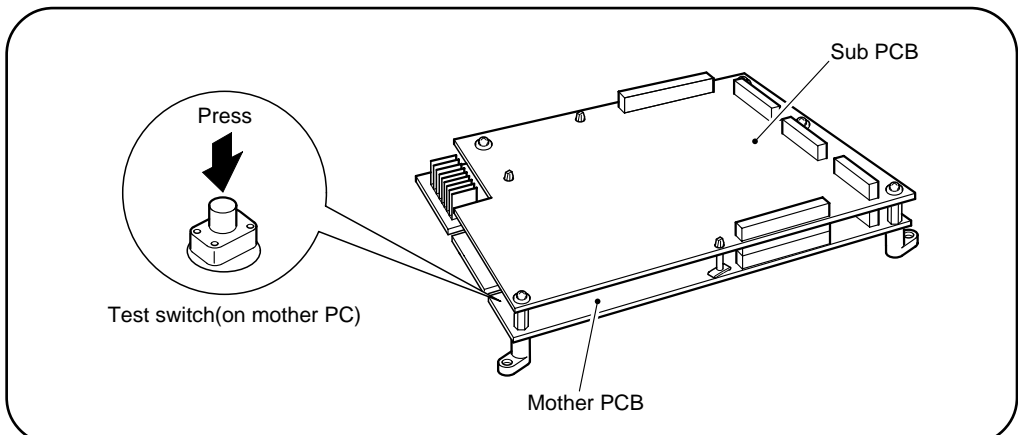
5-5 Connection to the machine in 1-monitor specifications

For the PWB300456☐mother PCB

1P and 2P machines

JAMMA
connector

RGB cable supplied

CN2   CN3

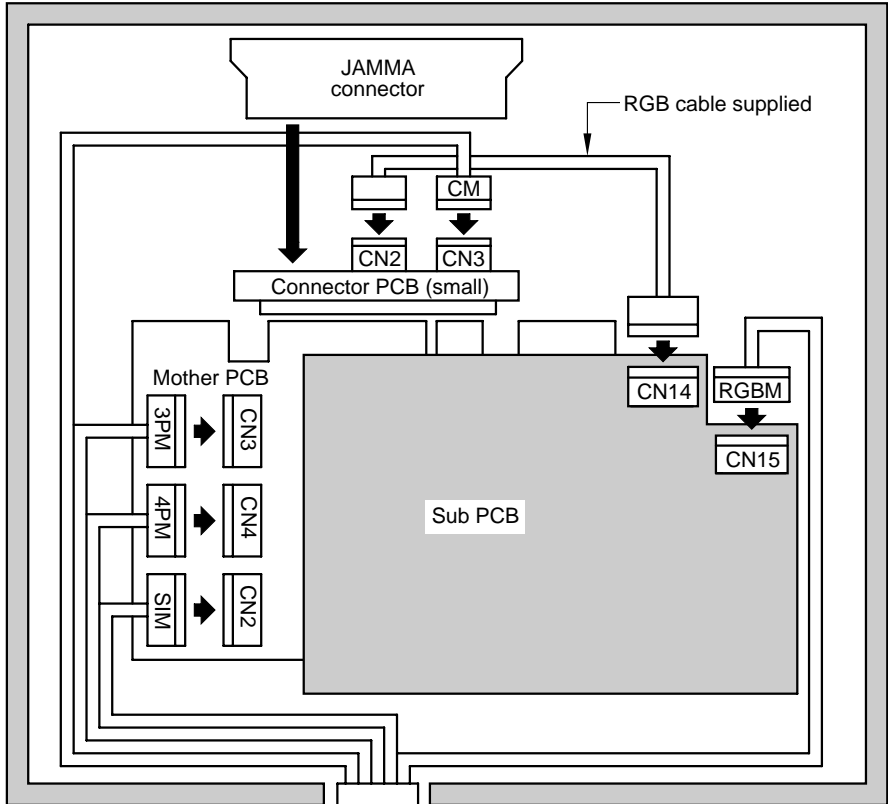Connector PCB (small)

CN14

Mother PCB

Sub PCB
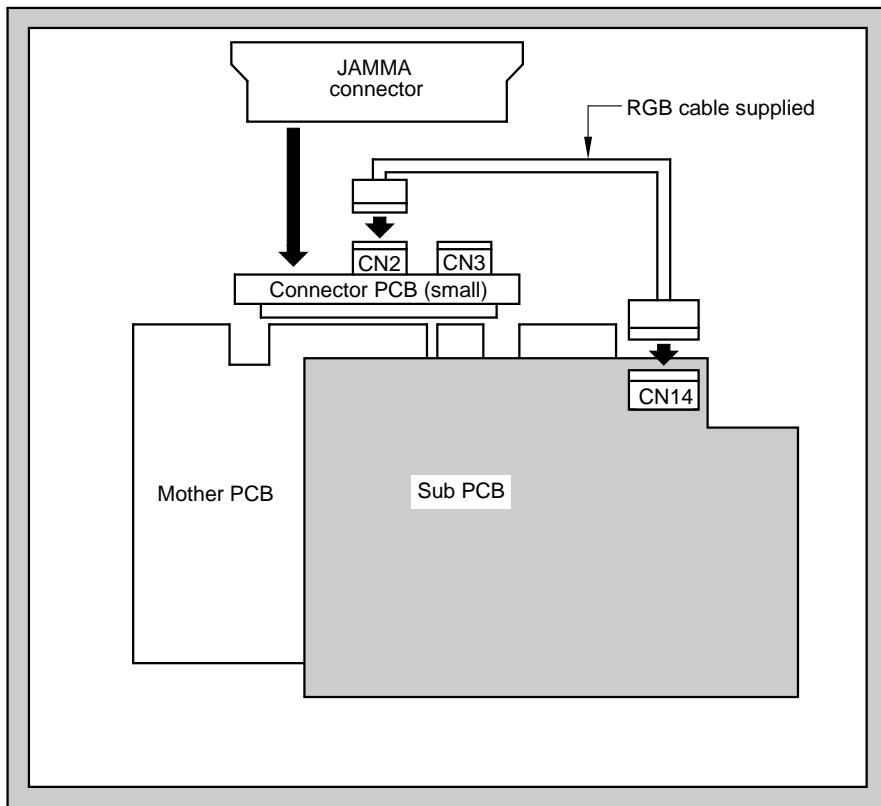
*For the 1-monitor specifications too, be sure to connect the accompanying
connector PCB (small) and RGB cable as shown above before installing the
machine.   Otherwise, the game does not appear properly on the screen.
*Be careful not to connect the connector PCB (small) and JAMMA connector
upside down.

5-6 Connection to the machine in 2-monitor specifications

For the PWB300456☐mother PCB

JAMMA
connector

RGB cable supplied

CM

CN2 CN3

Connector PCB (small)

Mother PCB

CN14 RGBM

3PM CN3

CN15

4PM CN4

Sub PCB

SIM CN2

Connect the communication cable between the two
machines as shown here.
Note:The connector positions shown here are not
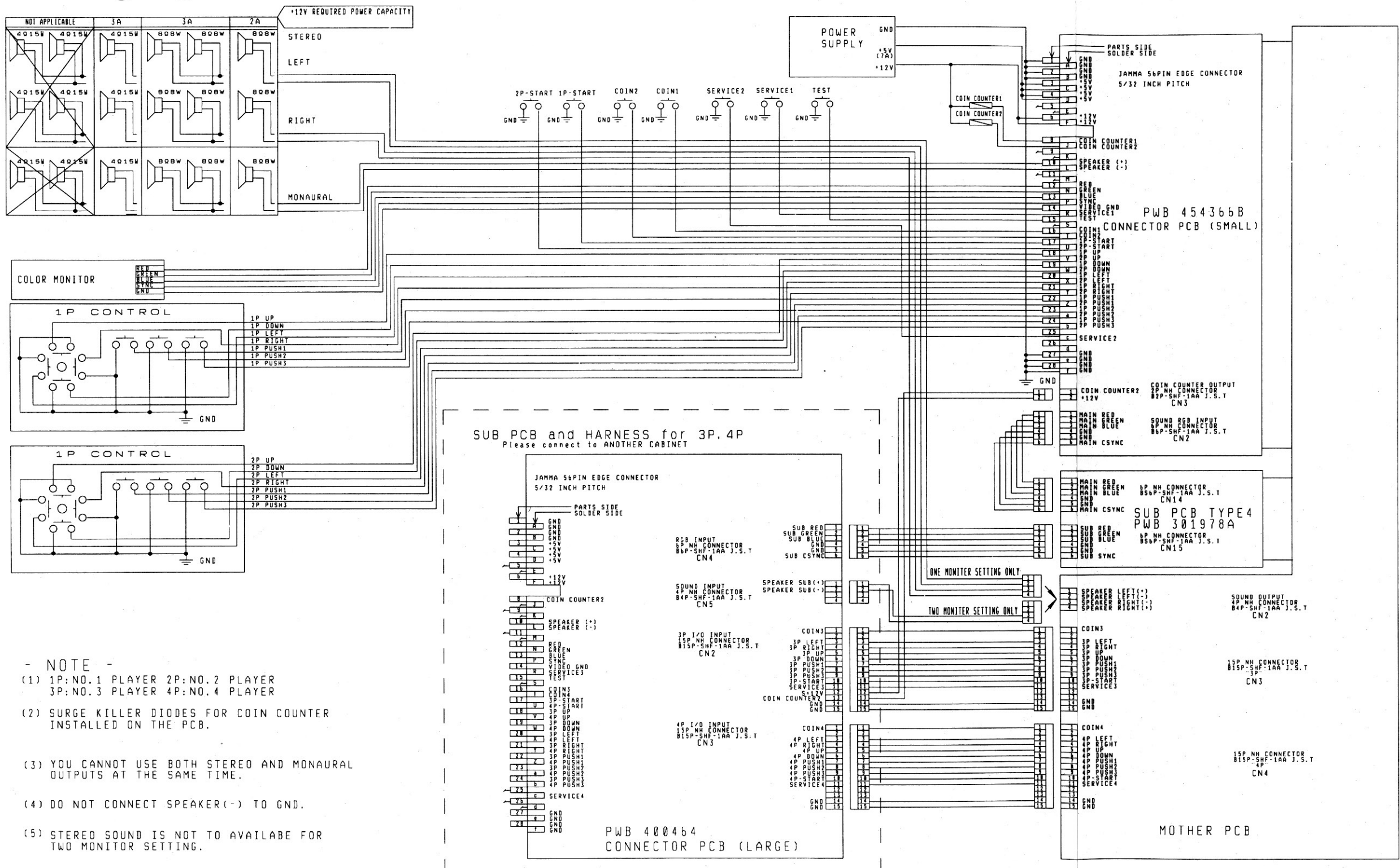exactly the same as those on the PCBs.

Communication cable

3P and 4P machines

SIS RGBS 4PS 3PS

CN5 CN6 CN3 CN2

Connector PCB
(large)

JAMMA
connector
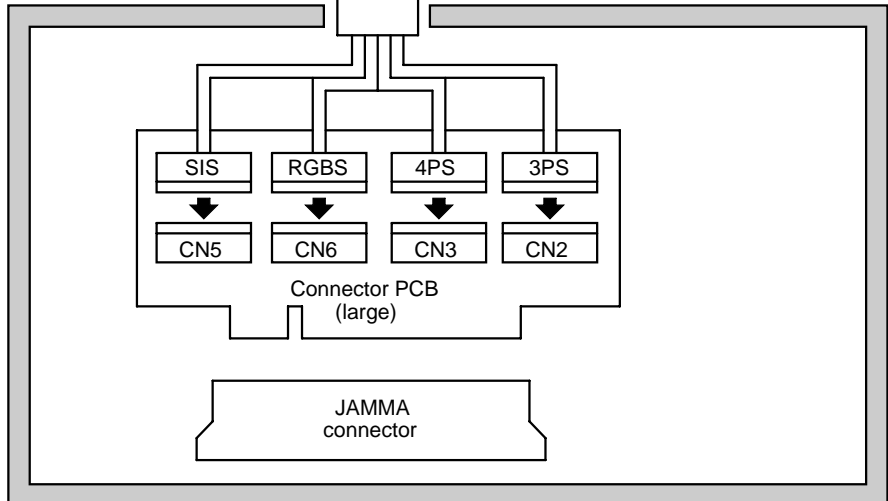
MEMO

5-7 Wiring diagram

- NOTE -
(1) 1P:NO.1 PLAYER 2P:NO.2 PLAYER
    3P:NO.3 PLAYER 4P:NO.4 PLAYER

(2) SURGE KILLER DIODES FOR COIN COUNTER
    INSTALLED ON THE PCB.

(3) YOU CANNOT USE BOTH STEREO AND MONAURAL
    OUTPUTS AT THE SAME TIME.

(4) DO NOT CONNECT SPEAKER(-) TO GND.

(5) STEREO SOUND IS NOT TO AVAILABE FOR
    TWO MONITOR SETTING.