

1ST PRINTING MAY 01

SEGA



Universal Kit

Kit Installation Instructions
& Service Manual

Switchable *FROM* High Resolution 31K
TO Standard (Low) Resolution 15.75K.

1 - 2 PLAYER GAME

SEGA ENTERPRISES, INC. USA

MANUAL NO. 999-1234

Warranty

Your new Sega Product is covered for a period of 90 days from the date of shipment. This certifies that the Printed Circuit Boards, Power Supplies and Monitor are to be free of defects in workmanship or materials under normal operating conditions. This also certifies that all Interactive Control Assemblies are to be free from defects in workmanship and materials under normal operating conditions. No other product in this machine is hereby covered.

Sellers sole liability in the event a warranted part described above fails shall be, at its option, to replace or repair the defective part during the warranty period. For Warranty claims, contact your Sega Distributor.

Should the Seller determine, by inspection that the product was caused by Accident, Misuse, Neglect, Alteration, Improper Repair, Installation or Testing, the warranty offered will be null and void.

Under no circumstances is the Seller responsible for any loss of profits, loss of use, or other damages.

This shall be the exclusive written Warranty of the original purchaser expressed in lieu of all other warranties expressed or implied. Under no circumstance shall it extend beyond the period of time listed above.

Virtua Golf/ Tennis
 Sega Naomi System
 Kit Contains List
 Common Parts

Part #	Desc	Qty
400-5397-01	NAOMI POWER SUPPLY	1
838-13616	AUDIO POWER AMP 2 CH	1
560-5407-UL	AUDIO XFORMER 120V	1
838-13683-93CV1	JAMMA I/O BD (NAOMI)	1
400-5397	POWER SUPPLY (NAOMI)	1
600-7141-200	USB CABLE	2
600-7009-2500	VGA VIDEO CABLE	1
840-0051D-01	ASSY CASE PC1 DIMM BD	1
600-7247-500	CABLE SCSI TYPE 2 500MM	1
837-13938	I/O CTRL BD JVS ENCORD.	1
LOC. PURCHASE	SERVICE SWT BRKT ASSY	1
XKT-0833	GD-ROM DRIVE KIT	1
LOC. PURCHASE	JOYSTICK 8 WAY	2
LOC. PURCHASE	PUSHBUTTON - GREEN	2
LOC. PURCHASE	PUSHBUTTON - BLUE	2
LOC. PURCHASE	PUSHBUTTON - WHITE	2

Virtua Golf/ Tennis
 Sega Naomi System
 Kit Contains List

Part #	Desc	Qty
999-1223	MARQUEE (TENNIS)	1
999-1224	INSTR. SHEET #1 (TENNIS)	1
999-1226	INSTR. SHEET #2 (TENNIS)	1
999-1225	DECAL SIDE ART (TENNIS)	2
999-1227	CONTROL PANEL (TENNIS)	1
999-1221	STICKER C PNL (TENNIS)	1
610-0630-0011	GD SOFT KIT (TENNIS)	1
610-0595	ASSY TRACK BALL (GOLF)	1
999-1233	CTRL PNL OVERLAY(GOLF)	1
999-1228	MARQUEE (GOLF)	1
999-1229	INSTR. SHEET #1 (GOLF)	1
999-1230	INSTR. SHEET #2 (GOLF)	1
999-1231	CONTROL PANEL (GOLF)	1
999-1232	DECAL SIDE ART (GOLF)	2
610-0630-0009	GD SOFT KIT (GOLF)	1



SERVICE BULLETIN

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45133 Industrial Drive
Fremont, Ca. 94538

Feb 9. 2000
<http://www.seuservice.com>
Phone: 415.701.6580
Fax: 415.701.6594

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SPECIAL NOTICE FOR ALL SEGA NAOMI KITS

PROBLEM:

The SEGA Naomi Game kits are actually 'JAMMA Dependent'. What this means exactly is they will only install into existing JAMMA Cabinets. If an operator tries to install these kits into a Non-JAMMA cabinet, they will first have to bring the wiring up to JAMMA Standards.

SOLUTION:

- Step 1 Disconnect the games original DC Power Supply. You may only use the power supply provided with your kit. Be sure to set the voltages going to your Game BD to 5.1 and 3.3 volts DC to assure proper operation (Measure on Square Connector at Game BD. Yellow = 5vdc / Brown = 3.3vdc / White = Gnd)
- Step 2 You MUST USE THE COIN METER SUPPLIED WITH YOUR KIT to assure proper Coin acceptance. A minimum 18 Gauge wire should be used from the Coin Meter 1 output line on your JAMMA Harness. The 5vdc (Yellow) wire found in the wiring bag of your kit MUST BE USED for the supply voltage to the meter.



IMPORTANT!

Not following the directions provided herein may cause your game to malfunction.
All electrical work should be performed by the site's Serviceman or Technician.



WARNING!

- In order to prevent an electric shock and short circuit, be sure to turn power off before performing work or touching the interior parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause an electric shock or short circuit accident.
- Do not touch places other than those specified. Touching places not specified can cause an electric shock or short circuit accident.

If you have any questions please contact the SEGA Service Department at the numbers given above.

INSTALLATION INSTRUCTIONS

- 1) First. Remove all access panels from the game. Locate the original game Logic PCB's & Power Supply and remove from the Cabinet by first disconnecting all harnesses from the boards. (You need only to splice in the Main Power (110v AC) into the 3-Pin Connector (GRN/WHT/BLK).)
- 2) Remove all existing game harnesses (we suggest using New Jamma Harnesses (*NOT contained in the kit*) to ensure reliability).
- 3) Locate the most convenient and open area of the cabinet to mount the Virtua Golf/Tennis Naomi System Assembly. Make sure this area is free and clear of all cable harnesses and grounds, cable clamps, etc.

Vacuum out or clean bottom of cabinet of dirt & miscellaneous parts (e.g. screws, loose coins / tokens, etc.).



Remove all exterior decals and repair any cabinet damage. Repaint cabinet if necessary. Remove the Monitor Plexi or if your game plexi has Silk-screened artwork, you will need to strip it off.

- 4) Connect the JAMMA Harnesses to the JVS-JAMMA Interface Boards. Separate the wires from each other (i.e. Control Panel, Video, Speaker, Power Supply). Run the various harnesses to the part of the cabinet they go to ensuring they are dressed properly & secured to the cabinet. Locate the Volume/Speaker/Coin Meter Cable and connect to your existing **Switch Bracket** or use the new one included with the kit. **Note:** *If you are using a VGA Compatible Monitor you can run your VGA Cable directly to the monitor or connect it to your JVS JAMMA Interface for RGB Conversion to your JAMMA Cables.*
- 5) Remove Marquee from cabinet and cut to fit the new Virtua Golf/Tennis Marquee in place.

REPLACE old Joysticks & Buttons with the **NEW** ones supplied in Kit.



- 6) First remove all Joystick and Button assemblies from the Control Panel. Remove Lexan and Control Panel Overlay. Proceed to clean surface of the Control Panel by removing all adhesive and dirt. Fill in or plug up existing button holes to set up a blank work area for your new controls.
- 7) Install the new Control Panel Overlay by carefully peeling off the paper backing and laying down on the panel. Smooth it out, starting in the center and working your way to the edges (removing all of the trapped air pockets). If necessary, cut the edges of the overlay excess and fold under panel.
- 8) Cut out the button and Joystick Holes. Install Joystick and buttons from kit into the Control Panel and tighten down. Connect all game harness wires to switches and buttons.

INSTALLATION INSTRUCTIONS

- 9) Proceed to place new decals on the sides of the cabinet. Locate a new monitor bezel, if needed, and replace glass, if required (due scratches). Install Instruction Placard to the back of the Monitor Glass.

NOTE: As a precaution, disconnect the JAMMA Harness from the I/O Boards and turn power on. With a Multi-Meter, measure the 5v and 3.3v. Adjust if necessary to 5.15v DC and 3.3vDC. Measure the +12 to ensure the wires and voltages are in the correct position. Turn power off. Plug in the JAMMA Harness once again to the I/O Boards. The Attract Mode should appear on the screen.

Adjust the **SIZE, CONTRAST, BRIGHTNESS, and COLORS** on the Monitor for optimum appearance. Adjust **VERTICAL/HORIZONTAL** Hold to get a stable picture, if required.



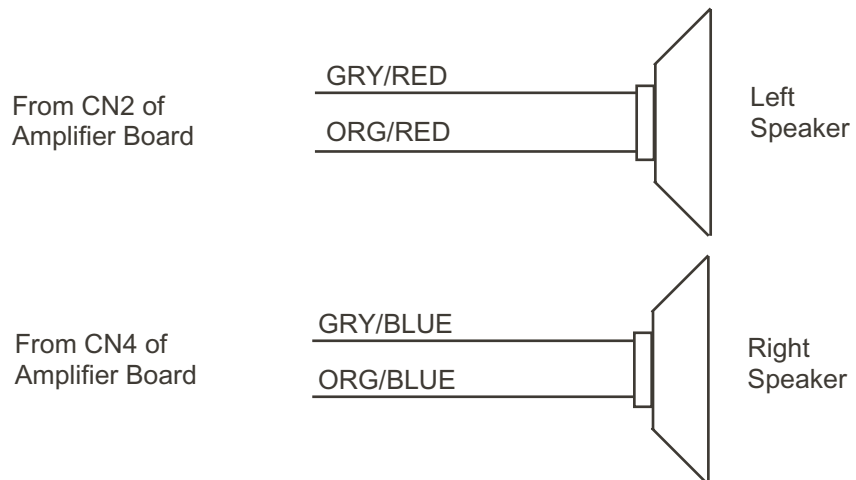
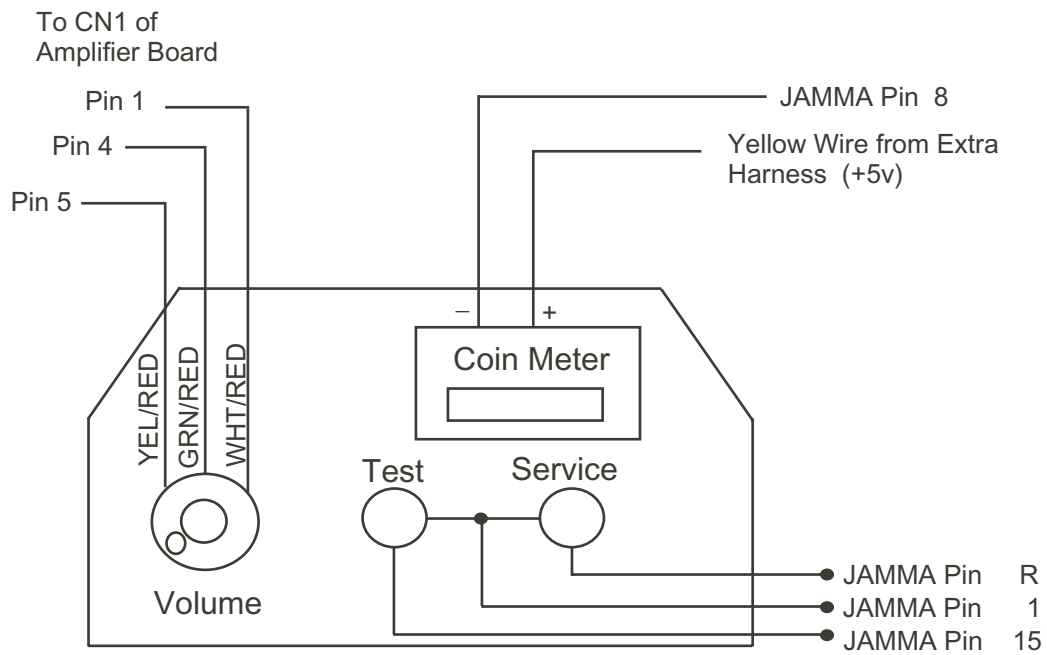
Good Idea!



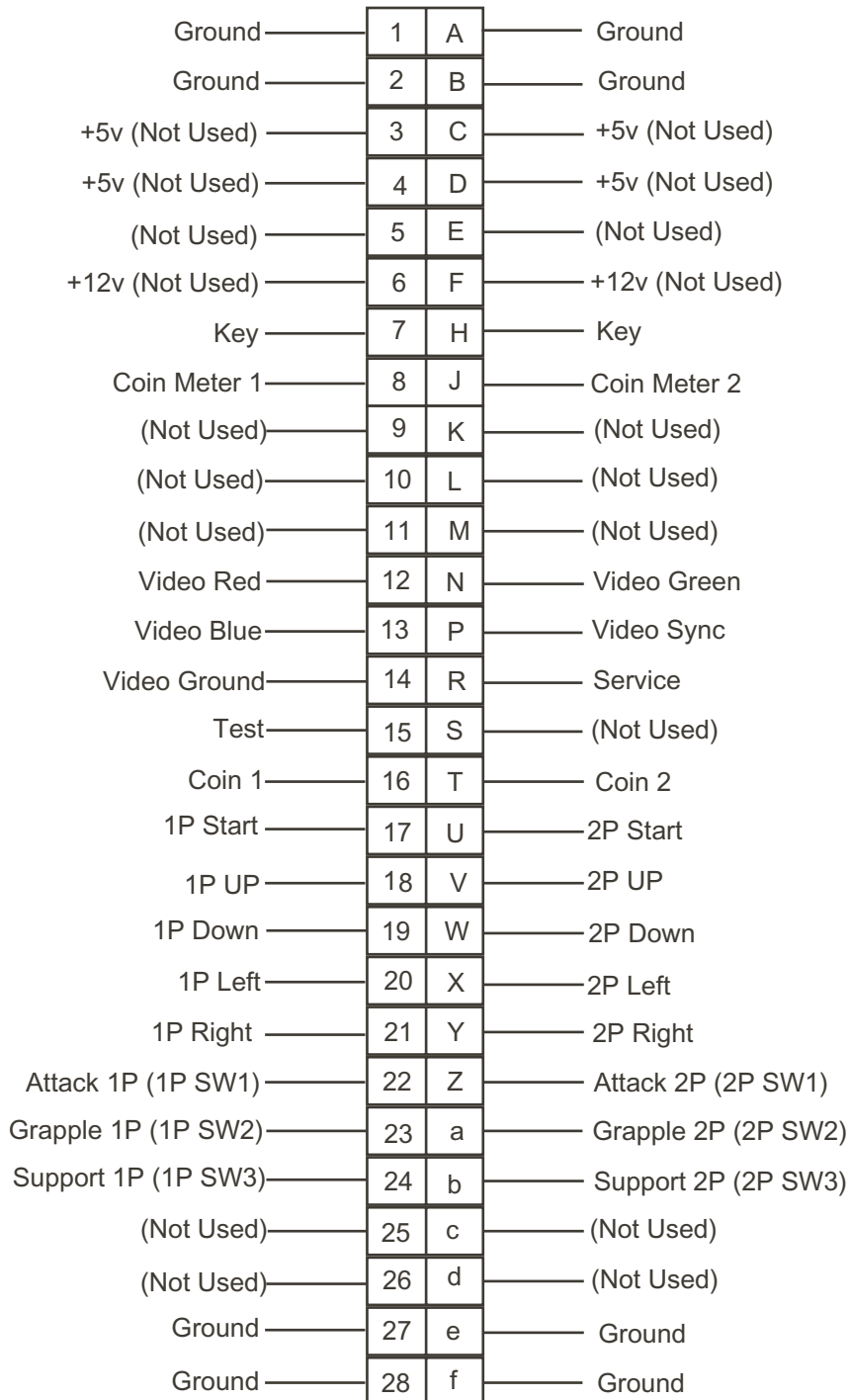
Good Idea!

Enter **DIAGNOSTICS** and adjust the Volume Level, test all Buttons & Joystick for proper operation & wiring. Adjust Pricing. Coin-Up and test out a game to ensure proper play functions are as they should be.

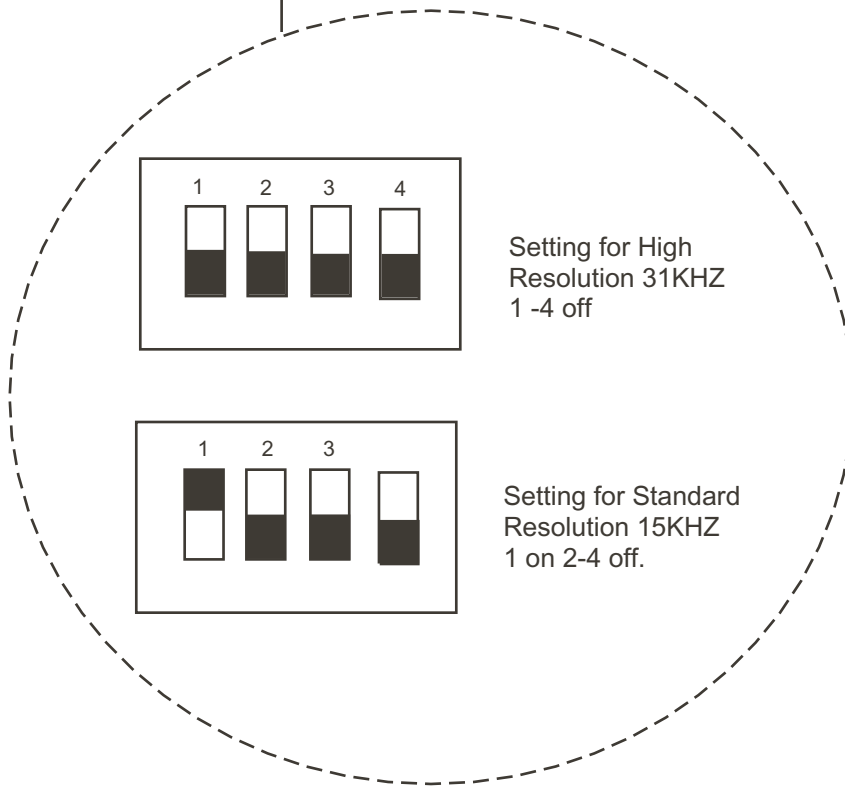
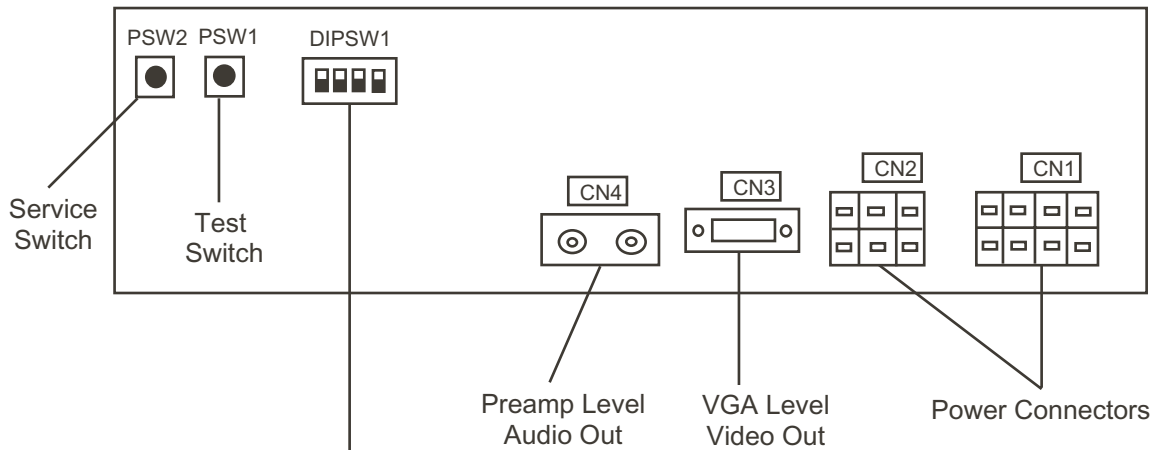
Sega Naomi System Switch Bracket and Speaker Installation Diagrams (Figure 3)



Sega Naomi System JAMMA Harness Wiring (JAMMA I/O BD) (Figure 4)



Sega Naomi System Filter Board Information Connector Description etc.





GAME INFORMATION

1. GAME INSTRUCTIONS

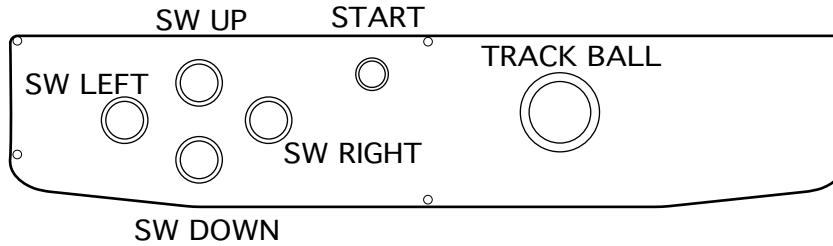
① ON-SCREEN DISPLAY

Monitor Position



Horizontal Synchronous Frequency
15/31 kHz

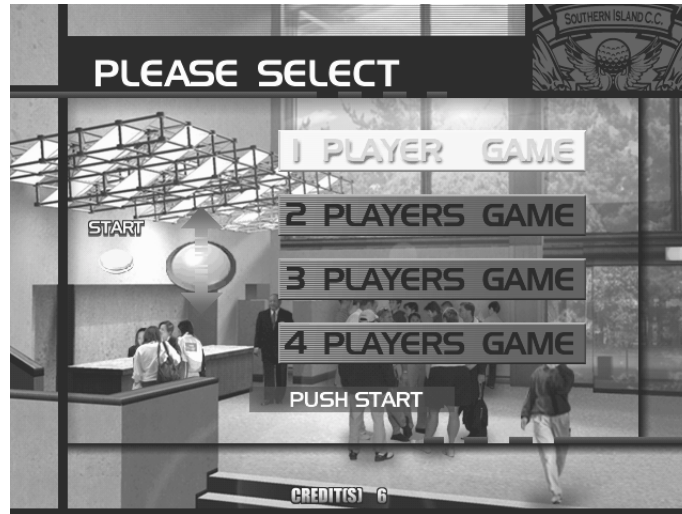
② CONTROL PANEL



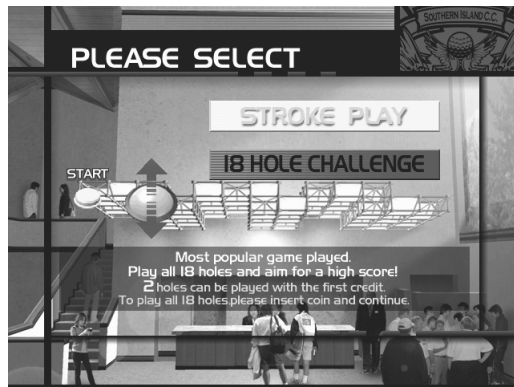
③ Minimum DIMM Memory Capacity

256 MB

Playable Persons : 1 to 4



Game Modes : "Stroke Play", "Match Play", "Skins Game". "18-Hole Challenge"



Courses : 1 (Selectable among from Start Hole, IN and OUT)

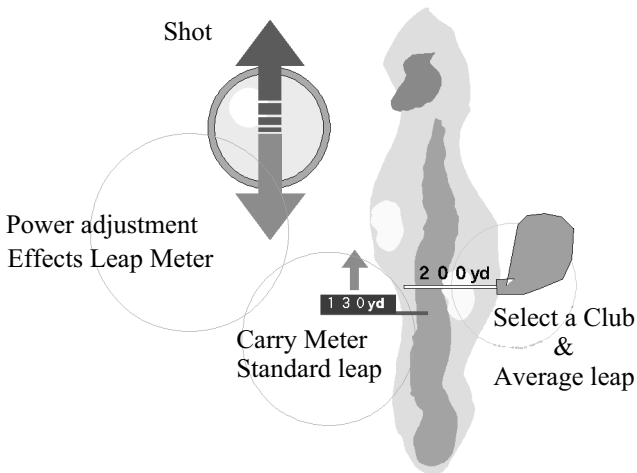


Characters : 4 (with parametric individual variation)



After throwing a coin into the slot, select the number of players, the game mode, the character, and the starting hole. Use the Track Ball to select the desired item before determining it with the Start button.

BASIC OPERATIONS



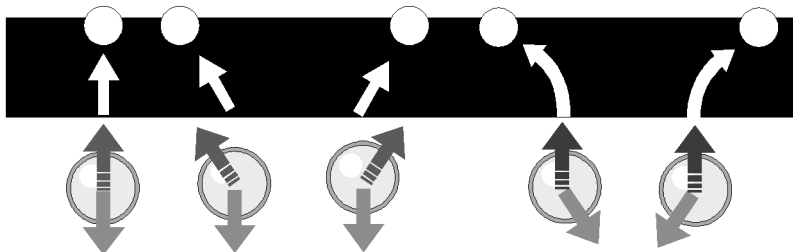
You can adjust the power by rolling the Track Ball toward you. Use the indication on the Carry Meter as a guide. Note that the carry value on the Meter is merely a guide. The actual carry greatly depends on the course conditions (i.e., wind and undulation of ground) and the force shot.



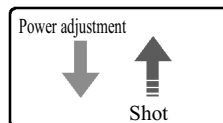
Shot
By rolling the Track Ball toward the monitor, you can enjoy a shot with the power adjusted with Power Adjustment. Note that this adjustment does not always cause the adjusted, exact carry. The actual result is determined by the power applied by the player who rolls the Track Ball.

SPINS

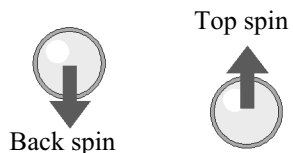
You can spin the ball in the following ways, in addition, make operations as desired ("Spin a little amount," "Spin a large amount," etc):



The spinning is determined by the angle of rolling the Track Ball.



BACK OR TOP SPIN BY ADDITIONAL INPUT



The spinning can be fine-tuned immediately after shooting.

Note that the effect of this varies greatly, depending on the slope or friction conditions of the location in which the ball falls.

For some clubs, these features may be unavailable.

1 TO 4 PERSONS CAN PLAY SIMULTANEOUSLY

You can enjoy a play of up to 2 holes (or of 3 or more holes in the Test Mode) with the predetermined charge, except for 18-Hole Challenge. The play can be CONTINUED.

Stroke Play (for 1 to 4 players)

This is the most popular mode.

The players play for all the 18 holes, and compete for the final total scores.

Match Play (only for 2 players)

This mode lets the 2 players compete with each other.

The players play for all the 18 holes. The player who gets more number of wins will be the final winner.

If they got the same number of wins, they start the Sudden Death Play Off match play beginning at the first hole.

The player who gets the first win in the Play Off will be the final winner.

Skins Game (for 2 to 4 players)

This is the prize mode.

The prize is rewarded for every hole.

The player who achieves the highest score for each hole gets the prize.

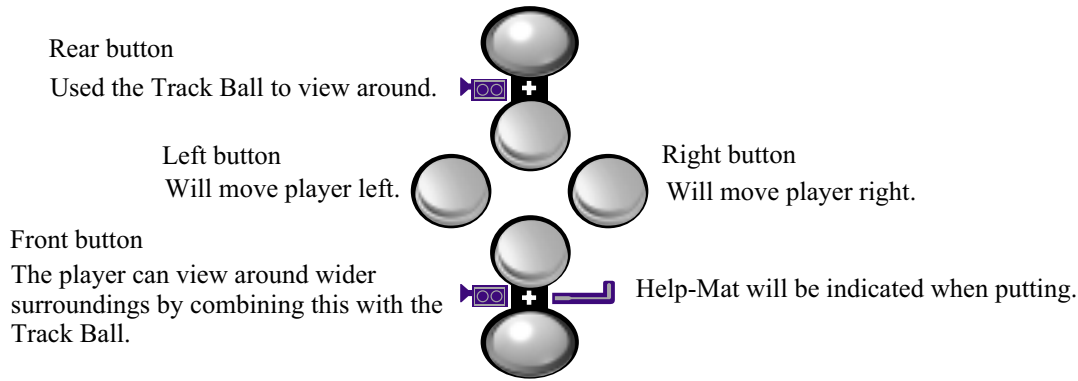
If 2 or more players achieve the highest identical score, the prize is carried over to the next hole (CARRY OVER).

18-Hole Challenge (only for 1 player)

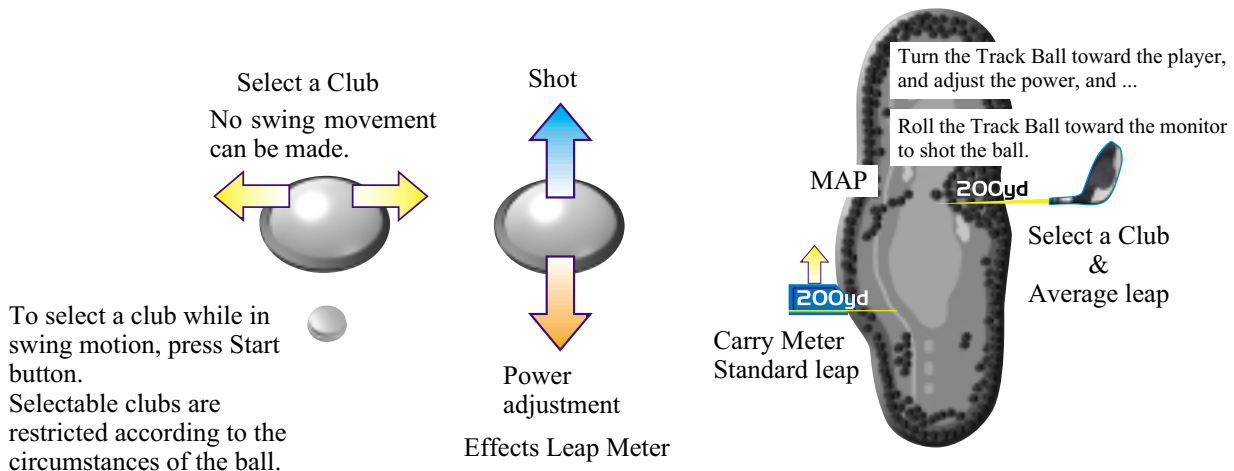
This is the endurance mode.

With a regulated number of shots, the player challenges to clear as many holes as he or she can.

Before you play....



Play !



This system has a special mode as a hidden element. To enter this mode, press the Start button while holding down the left and right buttons simultaneously when selecting the Starting Hole.

This special mode is intended for advanced players and should be used for special events such as grand meetings.

For ranking of this game, the month/day/time information is recorded; therefore, you must have completed matching of the time/calendar for the Board before operation.

Ranking Types and Conditions Ranked

- Stroke Rank: A score at the end of the 18 holes was ranked.
- Prize-based Rank: The total of the prizes at the end of the 18 holes was ranked in the prize mode (Skins Game).
- Near Pin Rank: A score for the holes with Near Pin Prize was ranked.
- DRACON Rank: A score for the holes with DRACON Prize was ranked.
- 18-Hole Challenge Rank: The number of holes through which the player went was ranked.

SCREEN DESCRIPTION



Top left: Player Information

In top-to-bottom order:

Name: Rewritten, depending on name entries that may be made while the game is in progress.

Present Score: Cumulative prize money for the Skins Game, or UP value for Match Play.

Number of Strokes

Pictorial Indication of Number of Strokes: The number of balls increases by 1 each time the player shots the ball.

REST, Remaining Distance Indication: Indicates the distance from the player to the cup.

Toward the player: Operations Assist

Always displayed for the first hole.

The Button and Track Ball descriptions are displayed alternately.

For all the subsequent holes, the Operations Assist displays if the machine is not operated at all for 10 seconds.

Rear in the screen:

The DW and UP values indicate the difference of elevation relative to the player position.

The larger the DW value, the longer the carry; the larger the UP value, the shorter the carry.

Example: DW 3.1yd

The cup position is down 3.1 yards relative to the player position.

This changes the indication in ft at the end of putting. When the ball is on the green, this value is indicated in ft instead of yd.

Right on the screen: Course Information

In top-to-bottom order:

Map Display - See "BASIC OPERATIONS" for Select a Club and Carry Meter.

Wind - Indicates the wind velocity in mph and the direction by the arrow.

Basic Information about Present Hole - Hole No. : Total Length : Par.

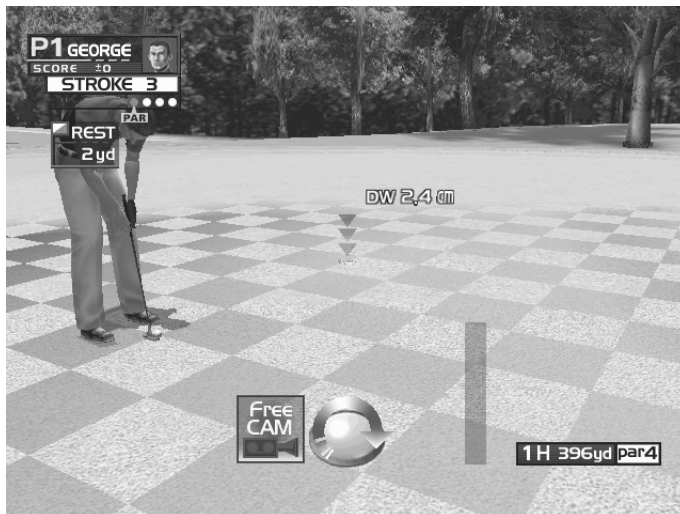
CAMERAS



If you desire to zoom out in on a far area, you can use a camera. One of the cameras is raised by pressing the button located toward you (Front button). Then, turn the Track Ball to view around wider surroundings. This function is useful to keep track of the green and the difference of elevation. While the button is held down, the camera is raised to the predetermined distance. The height of the camera is fixed if you roll the Track Ball at the desired height.

You can enter Semi Player View by pressing the Rear button. While holding down the button, again you can view around surroundings using the Track Ball. For example, if, in the top oblique position, there is a tree against which the ball you shoot may hit, this function is useful to examine this. The camera operated with the Rear button cannot be fixed at a certain height.

CAMERAS



While you are now selecting a putter, the functions of the Front and Rear button change.

Rear button : By rolling the Track Ball while holding down the button, the screen displays the video image shot by a camera that moves as if it views around the green with the cup in the center.

Front button : Used to show/hide the mat, which allows you to view the shape of the green clearly.

2. TEST MODE

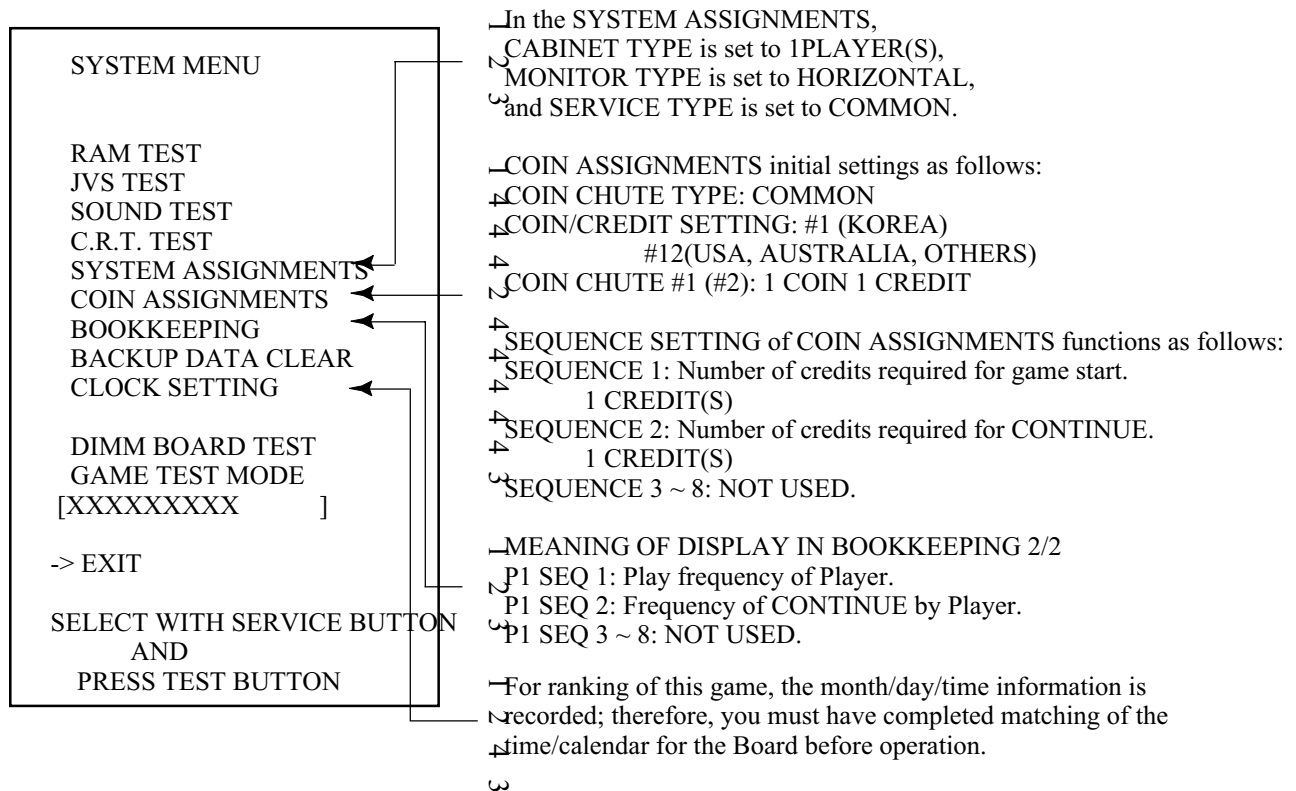
A. SYSTEM MENU



When settings are changed in SYSTEM ASSIGNMENTS, COIN ASSIGNMENTS, and GAME ASSIGNMENTS of GAME TEST MODE, be sure to exit from the test mode of SYSTEM MENU screen. The contents of setting changes are stored in the IC on the BOARD when exiting from the Test Mode. If the power is turned off in the Test Mode (before exiting), the contents of setting changes are ineffective. In this case, the settings remain unchanged.

This test mode mainly allows the IC Board to be checked for accurate functioning, monitor color to be adjusted as well as COIN ASSIGNMENTS and GAME ASSIGNMENTS to be adjusted.

- 1) Connect the power, and press the Test button. Then the following SYSTEM MENU screen appears.

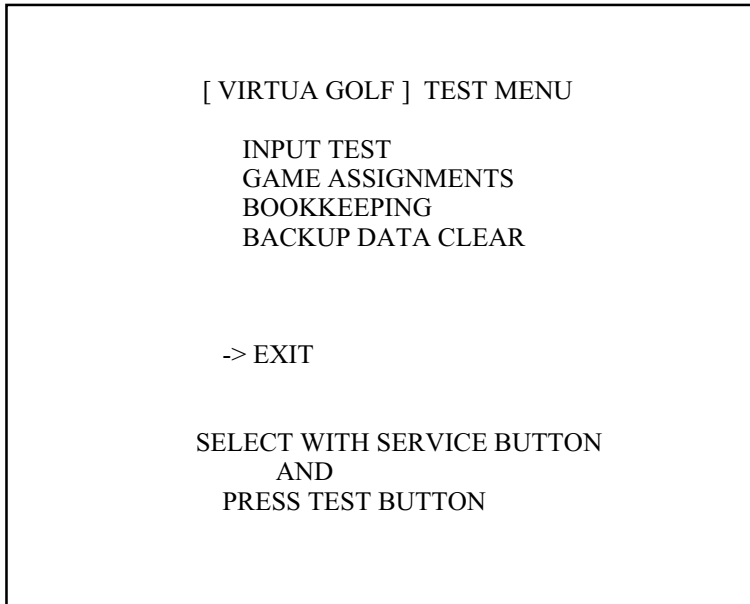


- 2) Press the Service button to move the -> mark to any desired item, and press the Test button.
- 3) Press the Service button to move the -> mark to GAME TEST MODE item, and press the Test button. Then the GAME TEST MENU screen appears that enables to test the items specific to this game. For the details, see the following pages.
- 4) After testing, select the EXIT and press the Test button. The game advertising screen reappears.

NOTE: For more information about the SYSTEM MENU screen, see the GD-ROM Service Manual (No.: 420-6620-01).

B. GAME TEST MODE

Press the Service button to move the -> mark to any desired item, and press the Test button. Then the corresponding screen appears.

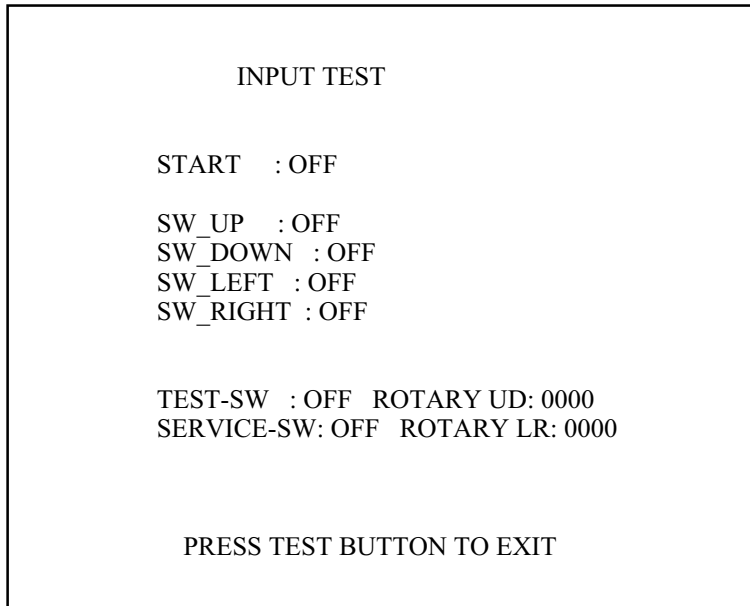


GAME TEST MENU Screen

After testing, select the EXIT and press the Test button. Then the SYSTEM MENU screen reappears.

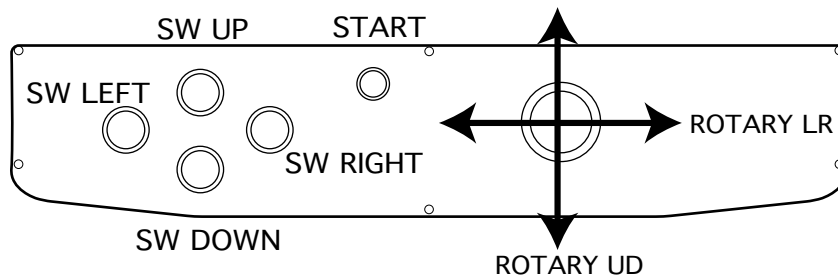
a. INPUT TEST

This screen tests the input devices. Make sure that each of the input devices can change its indication from OFF to ON as you operate the corresponding device. If the ROTARY UD and LR values and the data of the square in the right area on the screen vary according to operations of the Track Ball, this indicates that the input devices and wiring connections are normal.



INPUT TEST Screen

Press the Test button. Then the GAME TEST MENU screen reappears.



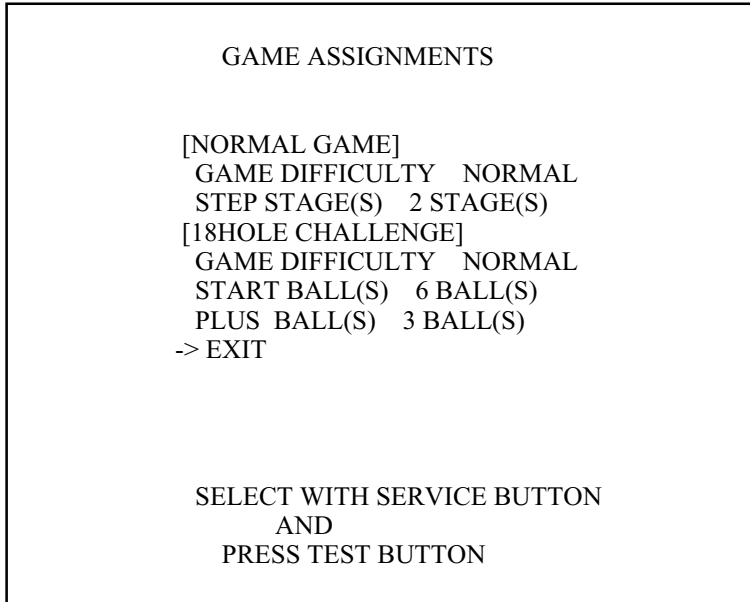
CONTROL PANEL

b. GAME ASSIGNMENTS

The settings such as the difficulty of the game can be made.

Press the Service button to move the arrow to the item for which you desire to change the setting.

Pressing the Test button changes the display located at the right of the currently selected item, resulting change in setting.



GAME ASSIGNMENTS Screen

[NORMAL GAME]

Sets the mode that enables you to enjoy a play for the set number of holes with the predetermined number of credits.

This is valid only when you set a game mode other than 18-Hole Challenge.

- **GAME DIFFICULTY:**
Set one of five levels of VERY EASY, EASY, NORMAL, HARD, and VERY HARD.
- **STEP STAGE(S):**
Set one of 1 to 6, and 9 for the number of holes this game operates with 1 credit.

[18HOLE CHALLENGE]

Sets the mode that lets the player challenge to clear as many holes as he or she can, with a regulated number of shots (or balls).

- **GAME DIFFICULTY:**
Set one of five levels of VERY EASY, EASY, NORMAL, HARD, and VERY HARD.
- **START BALL(S):**
3 to 10. The number of balls when the play begins.
- **PLUS BALL(S):**
1 to 10. The number of balls that are added when all the holes are cleared.

c. BOOKKEEPING

The following three BOOKKEEPING screens (PAGE 1/3, 2/3, and 3/3) display the operating data.

```
BOOKKEEPING
GAME REPORT PAGE1/3

NUMBER OF GAMES      0
 1P 3P GAMES      0 0
 2P 4P GAMES      0 0
NUMBER OF CONTINUE    0
 1P 3P GAMES      0 0
 2P 4P GAMES      0 0

TOTAL COIN           0
COIN CREDIT          0
SERVICE CREDIT      0
TOTAL CREDIT         0

PLAY      TIME 0D 0H 0M 0S
AVERAGE PLAY TIME 0D 0H 0M 0S
LONGEST PLAY TIME 0D 0H 0M 0S
SHORTEST PLAY TIME 0D 0H 0M 0S

PRESS TEST BUTTON TO CONTINUE
```

BOOKKEEPING Screen (1/3)

Press the Test button to migrate to the BOOKKEEPING (PAGE 2/3) screen.

"TIME HISTOGRAM" shows the number of players associated with the respective play times and contains the rate graph.

The rate graph indicates the rate of the count of plays by play time that is calculated assuming that the play time for the maximum number of plays is 100%.

This graph is shown with the corresponding number of asterisks (*).

Use the data to set a difficulty level.

BOOKKEEPING	
TIME HISTOGRAM PAGE 2/3	
0M00S ~ 0M29S	1
0M30S ~ 0M59S	0
1M00S ~ 1M29S	0
1M30S ~ 1M59S	0
2M00S ~ 2M29S	0
2M30S ~ 2M59S	0
3M00S ~ 3M29S	0
3M30S ~ 3M59S	0
4M00S ~ 4M29S	0
4M30S ~ 4M59S	0
5M00S ~ 5M29S	0
5M30S ~ 5M59S	0
6M00S ~ 6M29S	0
6M30S ~ 6M59S	0
7M00S ~ 7M29S	0
7M30S ~ 7M59S	0
8M00S ~ 8M29S	0
8M30S ~ 8M59S	0
9M00S ~ 9M29S	0
9M30S ~ 9M59S	0
OVER 10M00S	0

PRESS TEST BUTTON TO CONTINUE

BOOKKEEPING Screen (2/3)

Press the Test button to migrate to the BOOKKEEPING (PAGE 3/3) screen.

BOOKKEEPING	
PAGE3/3	
GAME(S)	
STROKE PLAY	: 00001
MATCH PLAY	: 00000
SKINS GAME	: 00000
18HOLE CHALLENGE:	00000

PRESS TEST BUTTON TO EXIT

BOOKKEEPING Screen (3/3)

This screen lists the count of plays in each mode, shows the rate graph.

The rate graph indicates the rate of the count of plays by mode, assuming that the maximum number is 100%, and is shown with the corresponding number of asterisks (*).

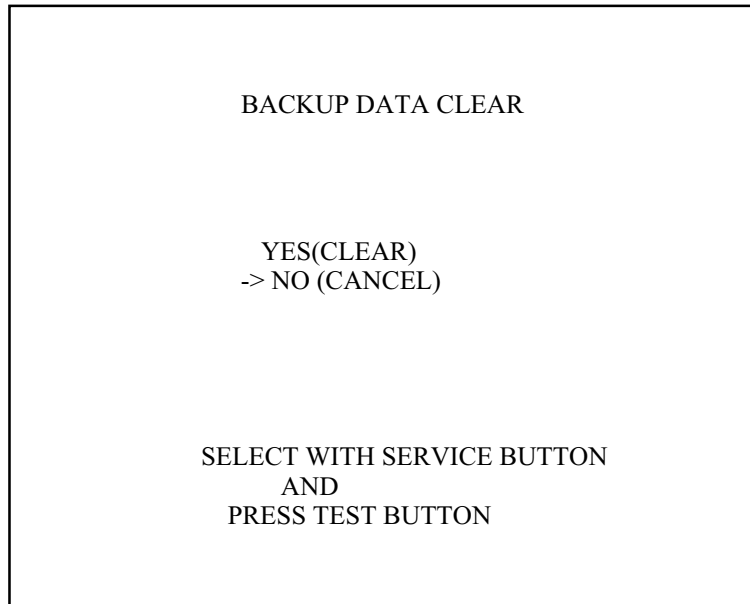
Pressing the Test button returns you to the GAME TEST MENU screen.

d. BACKUP DATA CLEAR

This screen is used to clear the data from the Score Ranking and Bookkeeping. You can clear the data by selecting YES (CLEAR) and then pressing the Test button.

Once the data is cleared, "COMPLETED" displays and the GAME TEST MENU screen returns automatically.

If you do not desire to clear the data, select NO (CANCEL) and then press the Test button to return to the GAME TEST MENU screen.



BACKUP DATA CLEAR Screen



GAME INFORMATION

1. GAME INSTRUCTIONS

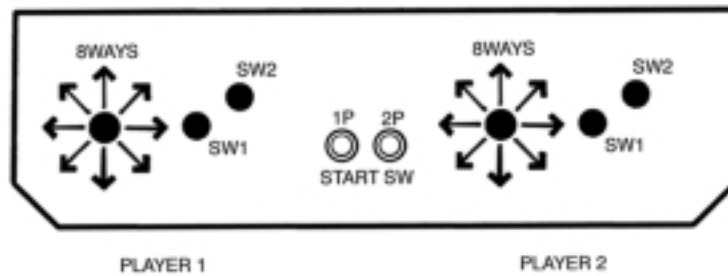
① ON-SCREEN DISPLAY

Monitor Position



Horizontal Synchronous Frequency
15/31 kHz

② CONTROL PANEL



LEVER



SHOT BUTTON
(SW1)



LOB BUTTON
(SW2)

- LEVER Character movement of shot direction
- SHOT BUTTON Ground stroke or volley (automatically chosen by the computer)
- LOB BUTTON Lob Shot

③ Minimum DIMM Memory Capacity

256 MB

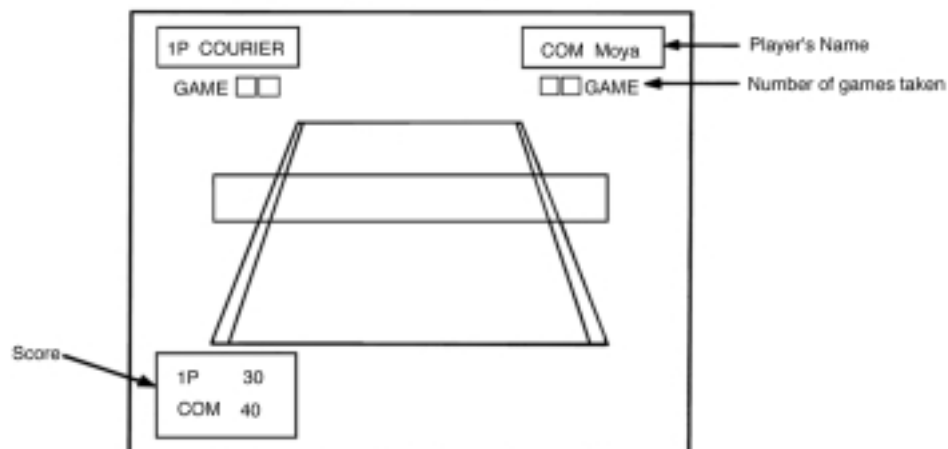
GAME SUMMARY

A vs. type tennis game featuring the 8 actual professional tennis players.
The type of game played is men's singles only.
Two players can play this game in versus competition, or one player against the computer.

HOW TO PLAY

- ① Insert a coin (s), and the credit display on the monitor counts up.
When the one credit equivalent coins are inserted, the display changes to "PRESS START BUTTON" from "INSERT COIN(S)."
- ② Press the START BUTTON while "PRESS START BUTTON" is displayed, and the character selection screen appears. Bring the arrow to the desired character and press the START BUTTON to decide the character being selected.
- ③ To win the game, you have got to take first the number of games that have been set in the GAME ASSIGNMENT (default setting is 2 games). If you win, you can proceed to the next stage. There are a total of 5 stages in this game, and winning all 5 stages results in proceeding to the ending screen and game over.
- ④ When you wish to buy in to play a versus game, insert coin(s) and press the START BUTTON.

GAME SCREEN



STAGES AND CHARACTERS

The featuring characters are the following 8 actual professional tennis players:

- Jim Courier (U.S.A.)
- Cedric Pioline (France)
- Tim Henman (England)
- Tommy Haas (Germany)
- Mark Philippoussis (Australia)
- Carlos Moya (Spain)
- Thomas Johansson (Sweden)
- Yevgeny Kafelnikov (Russia)

Tennis is played at all four Grand Slam venues and a special Sega venue:

- 1st round: Australia (hard court)
- 2nd round: France (clay court)
- 3rd round: U.S.A. (hard court)
- 4th round: England (grass)
- 5th round: SEGA Dorm (carpet)

During vs. mode, the computer randomly selects 1 from 4 of the Grand Slam venues for play to commence (stages 1 ~ 4).

2. TEST MODE

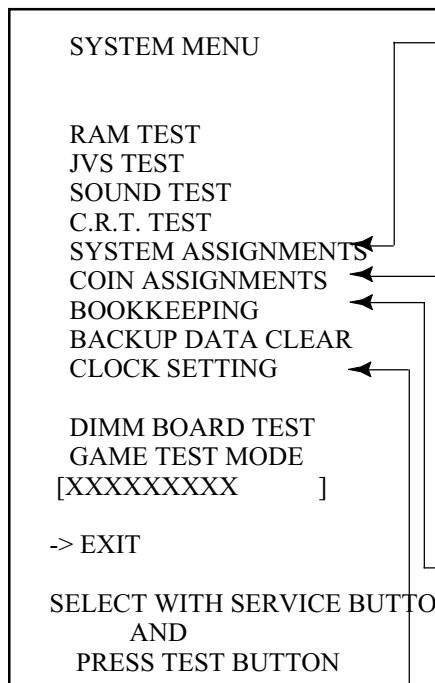
A. SYSTEM MENU



When settings are changed in SYSTEM ASSIGNMENTS, COIN ASSIGNMENTS, and GAME ASSIGNMENTS of GAME TEST MODE, be sure to exit from the test mode of SYSTEM MENU screen. The contents of setting changes are stored in the IC on the BOARD when exiting from the Test Mode. If the power is turned off in the Test Mode (before exiting), the contents of setting changes are ineffective. In this case, the settings remain unchanged.

This test mode mainly allows the IC Board to be checked for accurate functioning, monitor color to be adjusted as well as COIN ASSIGNMENTS and GAME ASSIGNMENTS to be adjusted.

- 1) After turning power on, press the TEST Button to have the following SYSTEM MENU displayed.



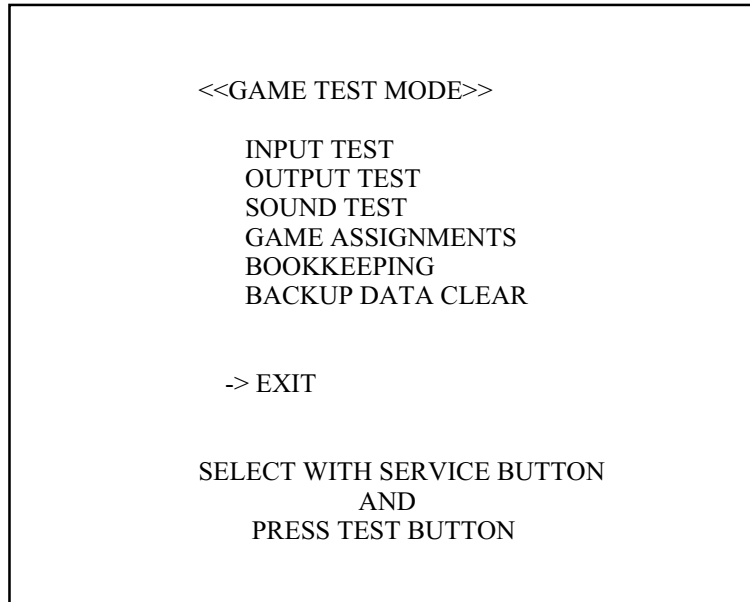
- 1 In the SYSTEM ASSIGNMENTS,
 - 2 CABINET TYPE is set to 2PLAYER(S),
 - 2 MONITOR TYPE is set to HORIZONTAL,
 - 3 and SERVICE TYPE is set to COMMON.
- 1 COIN ASSIGNMENTS initial settings as follows:
 - 4 COIN CHUTE TYPE: COMMON
 - 4 COIN/CREDIT SETTING: #1
 - 4 COIN CHUTE #1 (#2): 1 COIN 1 CREDIT
- 2 SEQUENCE SETTING of COIN ASSIGNMENTS functions as follows:
 - 4 SEQUENCE 1: Number of credits required for game start.
 - 4 1 CREDIT(S)
 - 4 SEQUENCE 2: Number of credits required for CONTINUE.
 - 4 1 CREDIT(S)
 - 4 SEQUENCE 3 ~ 8: NOT USED.
- 1 MEANING OF DISPLAY IN BOOKKEEPING 2/2
 - 2 P1 (P2)SEQ 1: Play frequency of Player 1 (Player2).
 - 2 P1 (P2)SEQ 2: Frequency of CONTINUE by Player 1 (Player 2).
 - 3 P1 (P2)SEQ 3 ~ 8: NOT USED.
- 1 For ranking of this game, the month/day/time information is
 - 2 recorded; therefore, you must have completed matching of the
 - 4 time/calendar for the Board before operation.

- 2) Press the Service button to move the arrow. Bring the arrow to the desired item and press the TEST Button.
- 3) Press the TEST Button in the GAME TEST MODE to display the GAME TEST MODE particular to this game. See the next page onward.
- 4) Upon finishing the test, bring the arrow to EXIT and press the TEST Button to return to the Game mode.

For detailed explanations as regards the SYSTEM TEST MODE, refer to NAOMI SERVICE MANUAL (420-6620-01).

B. GAME TEST MODE

Bring the arrow to the GAME TEST MODE in the SYSTEM MENU and press the TEST button to display the TEST MENU screen particular to VIRTUAL TENNIS.

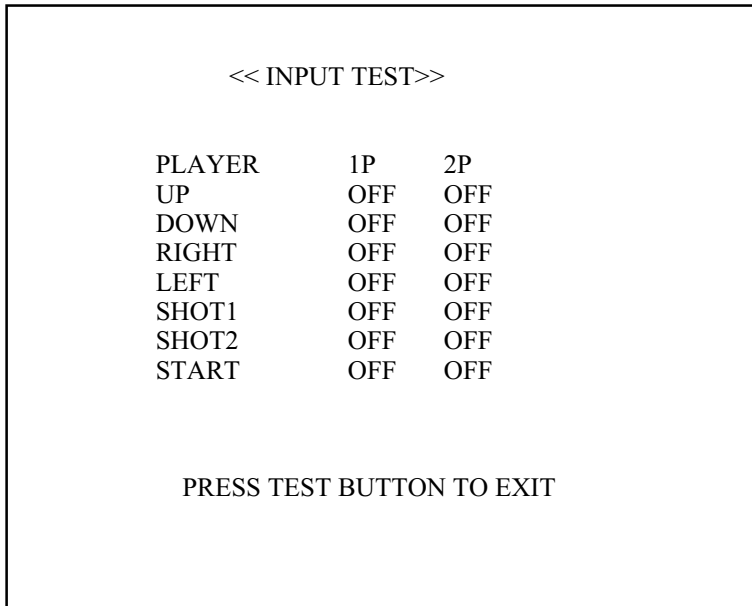


TEST MENU

- Bring the arrow to the desired item with the SERVICE BUTTON and press the TEST BUTTON to confirm.
- Bring the arrow to EXIT and press the TEST BUTTON to return to the SYSTEM MENU screen.

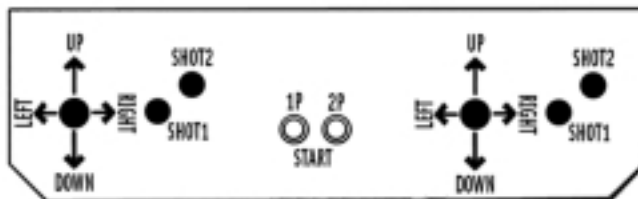
a. INPUT TEST

This test displays the state of each switch & button. If the display goes ON when the switch or button is activated, the connection is satisfactory.



- UP Changes to ON when inclining the LEVER towards the monitor.
- DOWN Changes to ON when inclining the LEVER towards you.
- RIGHT Changes to ON when inclining the LEVER to the right.
- LEFT Changes to ON when inclining the LEVER to the left.
- SHOT 1 Changes to ON when pressing the SHOT BUTTON.
- SHOT 2 Changes to ON when pressing the LOB BUTTON.
- START Changes to ON when pressing the START BUTTON.

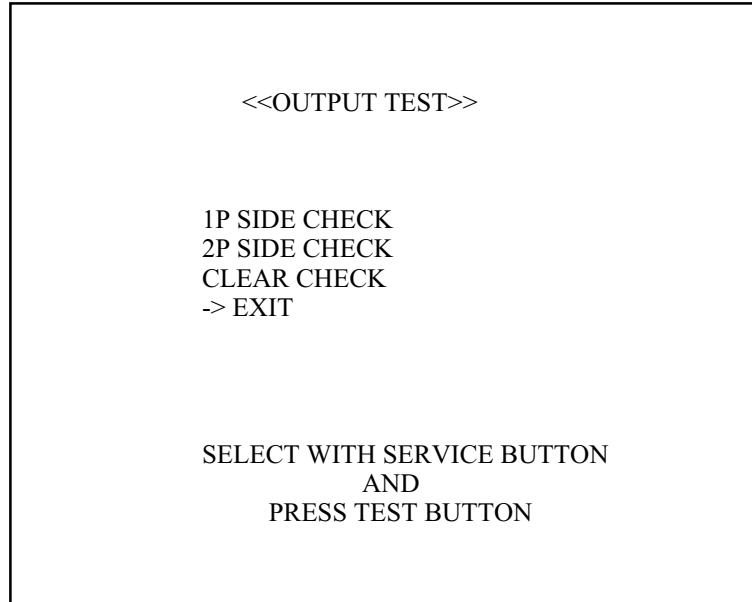
Press the TEST BUTTON to return to the TEST MENU screen.



CONTROL PANEL

b. OUTPUT TEST

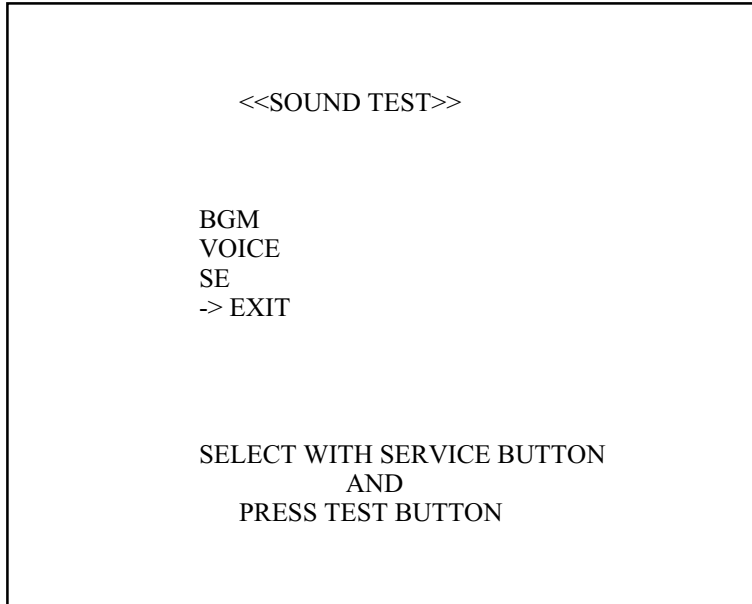
In this test, each lamp and the 7 SEG display in the SEGA versus cabinet's BILLBOARD can be checked.



- Bring the arrow to the desired item with the SERVICE BUTTON and press the TEST BUTTON to have the selected item checked.
- When “1P (2P) SIDE CHECK” is selected, various messages are indicated in the 7 SEG display while the WINNER lamp in the 1P (2P) is flashing. To stop the test, bring the arrow to “CLEAR CHECK” and press the TEST BUTTON.
- Bring the arrow to EXIT and press the TEST BUTTON to return to the TEST MENU screen.

c. SOUND TEST

In this test, each sound can be checked.



- Bring the arrow to the desired item with the SERVICE BUTTON and press the TEST BUTTON to have the selected item checked.
- Each time the TEST BUTTON is pressed, the number displayed next to the item counts up and the corresponding sound is played.
- Bring the arrow to “EXIT” and press the TEST BUTTON to return to the TEST MENU.

d. GAME ASSIGNMENTS

In this test, setting for the difficulty, the number of games to take first, etc. can be changed. Select the item with the SERVICE BUTTON and press the TEST BUTTON to change the setting.

<<GAME ASSIGNMENTS>>	
DIFFICULTY	[NORMAL]
MATCH COUNT (1P)	[2]
MATCH COUNT (2P)	[2]
DEUCE	[ON]
TOURNAMENT MODE	[OFF]
BILLBOARD	[ON]
-> EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

DIFFICULTY: Game Difficulty setting. Select from among EASY, NORMAL, HARD, and VERY HARD. The standard setting is NORMAL.

MATCH COUNT (1P): Sets the number of games to win when playing 1P mode against the computer. Range is from 1 to 5. The standard setting is 2.

MATCH COUNT (2P): Sets the number of games to win when playing in versus mode against another player. Range is from 1 to 5. The standard setting is 2.

DEUCE: Sets whether or not the game ends after ADVANTAGE. If set to OFF, the next point scored after DEUCE (40-40) wins the game. The standard setting is ON.

TOURNAMENT MODE: This mode allows the player in 1P mode to earn the score (PRIZE MONEY) as much as possible by winning one game after another.
There is no continue or versus play in this mode. The standard setting is OFF.

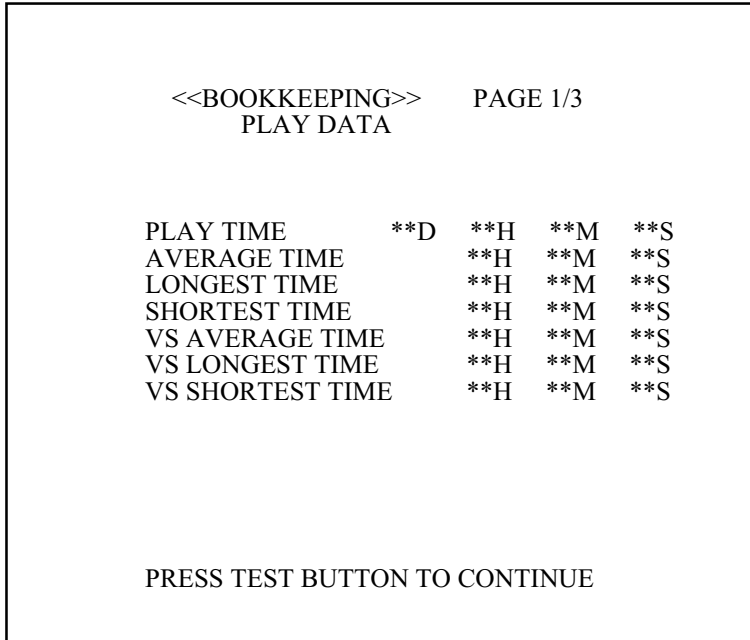
BILLBOARD: Sets whether an institutional ad is displayed in the game.
The standard setting is ON.

EXIT: Returns to the TEST MENU screen.

e. BOOKKEEPING

PLAY DATA (PAGE 1/3)

This mode displays the play time related data.



- PLAY TIME: Displays game play time.
- AVERAGE TIME: Displays the average game time.
- LONGEST TIME: Displays the longest game time.
- SHORTEST TIME: Displays the shortest game time.
- VS AVERAGE TIME: Displays the average versus game time.
- VS LONGEST TIME: Displays the longest versus game time.
- VS SHORTEST TIME: Displays the shortest versus game time.

- Press the TEST BUTTON to proceed to the next page (2/3).

TIME HISTOGRAM (2/3)

By-playtime play frequency is displayed.

BOOKKEEPING	
TIME HISTOGRAM PAGE 2/3	
0M00S ~ 0M29S	
0M30S ~ 0M59S	0
1M00S ~ 1M29S	0
1M30S ~ 1M59S	0
2M00S ~ 2M29S	0
2M30S ~ 2M59S	0
3M00S ~ 3M29S	0
3M30S ~ 3M59S	0
4M00S ~ 4M29S	0
4M30S ~ 4M59S	0
5M00S ~ 5M29S	0
5M30S ~ 5M59S	0
6M00S ~ 6M29S	0
6M30S ~ 6M59S	0
7M00S ~ 7M29S	0
7M30S ~ 7M59S	0
8M00S ~ 8M29S	0
8M30S ~ 8M59S	0
9M00S ~ 9M29S	0
9M30S ~ 9M59S	0
OVER 10M00S	0
PRESS TEST BUTTON TO CONTINUE	

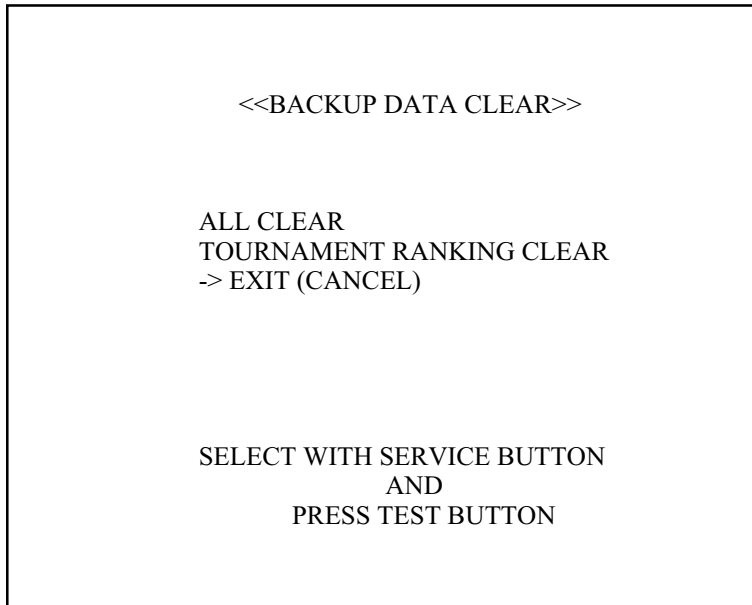
Press the Test button to migrate to the BOOKKEEPING (PAGE 3/3) screen.

<<BOOKKEEPING>>		PAGE3/3	
CHARACTER DATA			
	SELECT	VS WIN	VS LOSE
COURIER(USA)	***	***	***
PIOLINE(FRA)	***	***	***
HENMAN(GBR)	***	***	***
HAAS(GER)	***	***	***
PHILIP.(AUS)	***	***	***
MOYA(ESP)	***	***	***
JOHANSSON(SWE)	***	***	***
KAFELNIKOV(RUS)	***	***	***
PRESS TEST BUTTON TO EXIT			

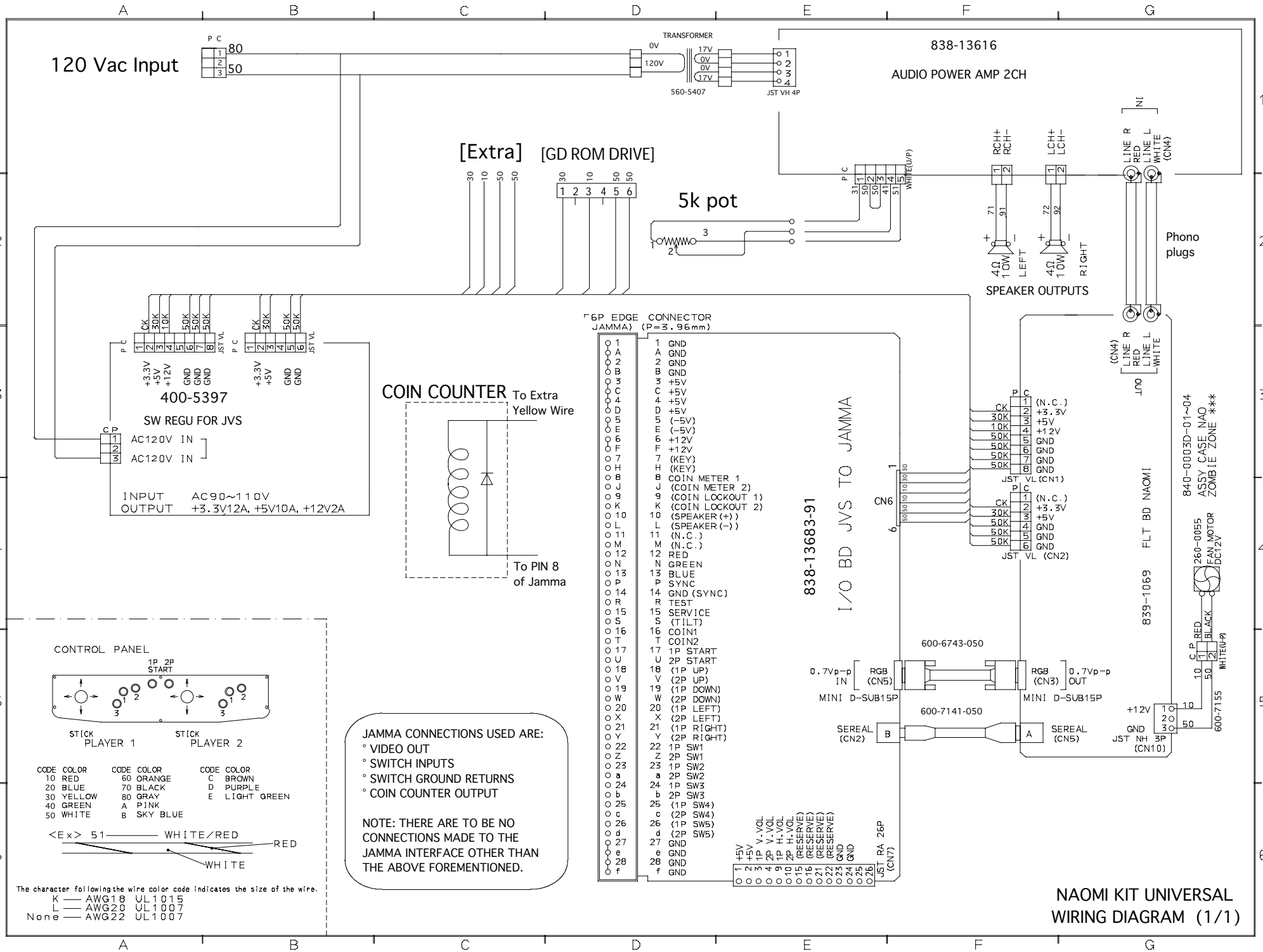
- Press the TEST BUTTON to return to the TEST MENU screen.

f. BACKUP DATA CLEAR

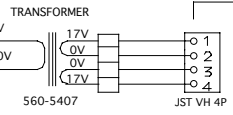
This allows the contents of BOOKKEEPING to be cleared.



- When clearing, use the SERVICE BUTTON to bring the arrow to the desired item and press the TEST BUTTON. When the data has been cleared, “COMPLETED” is displayed.
- Selecting “ALL CLEAR” clears both the contents of BOOKKEEPING and the ranking data in TOURNAMENT MODE.
- Selecting “TOURNAMENT RANKING CLEAR” clears only the ranking data in the TOURNAMENT MODE.
- Bring the arrow to “EXIT” and press the TEST BUTTON to return to the TEST MENU.



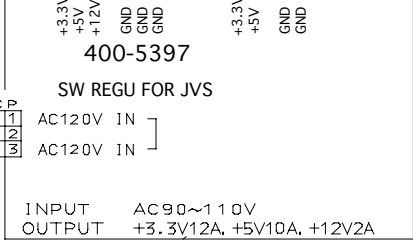
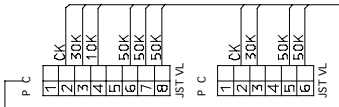
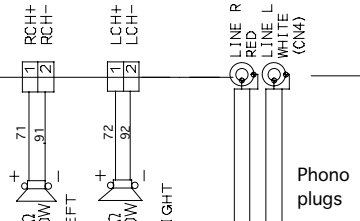
120 Vac Input



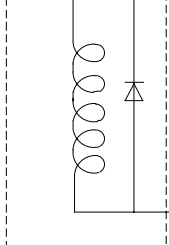
838-13616
AUDIO POWER AMP 2CH

[Extra] [GD ROM DRIVE]

5k pot



COIN COUNTER To Extra Yellow Wire



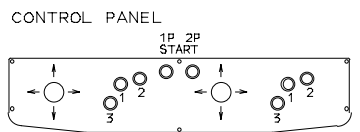
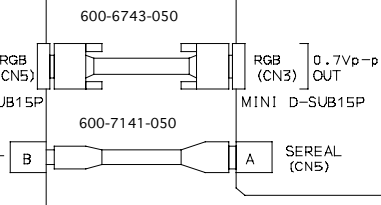
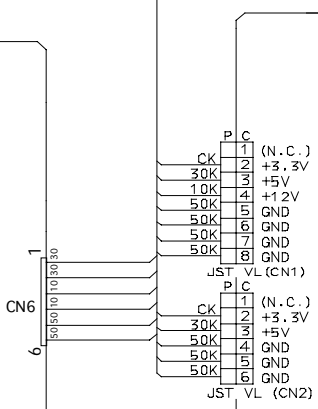
To PIN 8 of Jamma

16P EDGE CONNECTOR (JAMMA) (P=3.96mm)

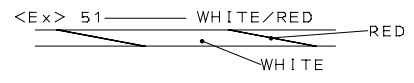
- 1 GND
- 2 GND
- 3 +5V
- 4 +5V
- 5 (-5V)
- 6 (-5V)
- 7 +12V
- 8 +12V
- 9 (KEY)
- 10 (KEY)
- 11 (N.C.)
- 12 RED
- 13 BLUE
- 14 GND (SYNC)
- 15 SERVICE
- 16 COIN1
- 17 COIN2
- 18 1P START
- 19 2P START
- 20 1P UP
- 21 2P UP
- 22 1P DOWN
- 23 2P DOWN
- 24 1P LEFT
- 25 2P LEFT
- 26 1P RIGHT
- 27 2P RIGHT
- 28 1P SW1
- 29 2P SW1
- 30 1P SW2
- 31 2P SW2
- 32 1P SW3
- 33 2P SW3
- 34 1P SW4
- 35 2P SW4
- 36 1P SW5
- 37 2P SW5
- 38 GND
- 39 GND
- 40 GND
- 41 GND
- 42 GND
- 43 GND
- 44 GND
- 45 GND
- 46 GND
- 47 GND
- 48 GND
- 49 GND
- 50 GND
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- 67 GND
- 68 GND
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- 70 GND
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- 75 GND
- 76 GND
- 77 GND
- 78 GND
- 79 GND
- 80 GND

838-13683-91

I/O BD JVS TO JAMMA



CODE	COLOR	CODE	COLOR	CODE	COLOR
10	RED	60	ORANGE	C	BROWN
20	BLUE	70	BLACK	D	PURPLE
30	YELLOW	80	GRAY	E	LIGHT GREEN
40	GREEN	A	PINK		
50	WHITE	B	SKY BLUE		

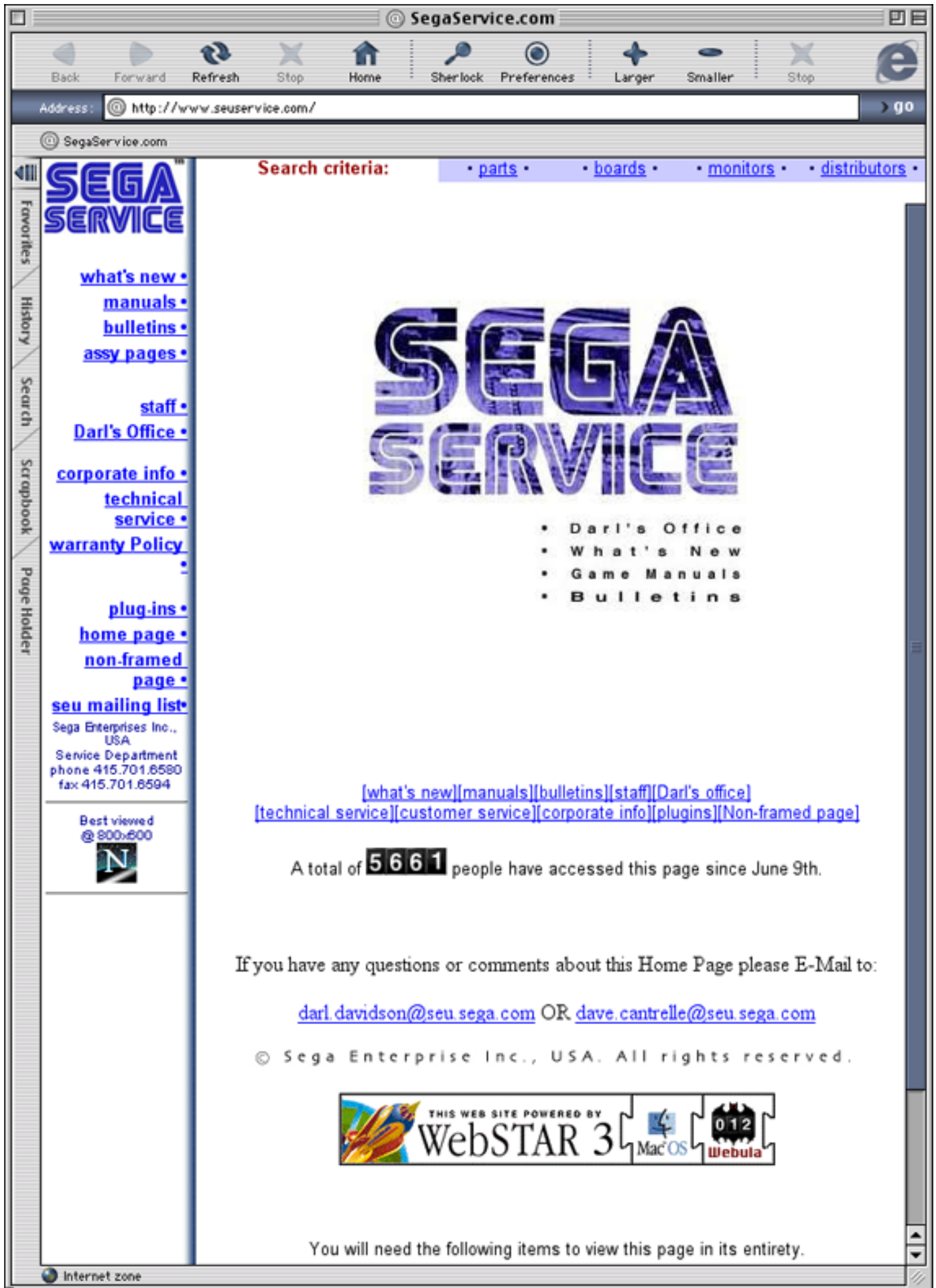


The character following the wire color code indicates the size of the wire.
 K — AWG18 UL1015
 L — AWG20 UL1007
 None — AWG22 UL1007

JAMMA CONNECTIONS USED ARE:
 ° VIDEO OUT
 ° SWITCH INPUTS
 ° SWITCH GROUND RETURNS
 ° COIN COUNTER OUTPUT

NOTE: THERE ARE TO BE NO CONNECTIONS MADE TO THE JAMMA INTERFACE OTHER THAN THE ABOVE FOREMENTIONED.

NAOMI KIT UNIVERSAL
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