Printed in Japan

SEGA

VIRTUA GOLF ™

SERVICE MANUAL

STOP
IMPORTANT

- ● Before using this product, read this MANUAL carefully to understand the contents herein stated.
- ● After reading this manual, be sure to keep it available nearby the product or elsewhere convenient for referring to it anytime when necessary.

SEGA CORPORATION

MANUAL NO. 420 - 6621 - 0009E

BEFORE USING THE PRODUCT, BE SURE TO READ THE FOLLOWING:

To maintain the safety:

To ensure the safe usage of the product, be sure to read the following before using the product. The following instructions are intended for the users, operators and the personnel in charge of the operation of the product. After carefully reading and sufficiently understanding the warning displays and cautions, handle the product appropriately. Be sure to keep this manual nearby the product or elsewhere convenient for referring to it when necessary.

Herein, explanations which require special attention are enclosed with dual lines. Depending on the potentially hazardous degrees, the terms of DANGER, WARNING, CAUTION, etc. are used. Be sure to understand the contents of the displays before reading the text.

DANGER — Indicates that mishandling the product by disregarding this pictograph will cause severe injury or death.

CAUTION — Indicates that mishandling the product by disregarding this caution will cause a slight hazardous situation which can result in personal injury and or material damage.

WARNING — Indicates that mishandling the product by disregarding this warning will cause a potentially hazardous situation which can result in death or serious injury.

For the safe usage of the product, the following pictographs are used:

Indicates "HANDLE WITH CARE." In order to protect the human body and equipment, this display is attached to places where the Owner's Manual and or Service Manual should be referred to.

Indicates a "Protective Earth Terminal." Before operating the equipment, be sure to connect it to the Ground.

○ **Perform work in accordance with the instructions herein stated.**
Instructions for work are explained by paying attention to the aspect of accident prevention. Failing to perform work as per the instructions can cause accidents. In the case where only those who have technical expertise should perform the work to avoid hazardous situation, the instructions herein state that the serviceman should perform such work.

○ **Be sure to turn off power before working on the machine.**
To prevent electric shock, be sure to turn off power before starting the work in which the worker touches the interior of the product. If the work is to be performed in the power-on status, the Instruction Manual herein always states to that effect.

○ **Be sure to ground the Earth Terminal** (this, however, is not required in the case where a power cord with earth is used).
This product is equipped with the Earth Terminal. When installing the product, Connect the Earth Terminal to the "accurately grounded indoor earth terminal" by using an earth wire. Unless the product is grounded appropriately, the user can be subject to electric shock. After performing repair, etc. for the Control equipment, ensure that the Earth Wire is firmly connected to the Control equipment.

○ **Ensure that the Power Supply used is equipped with an Earth Leakage Breaker.**
This product does not incorporate the Earth Leakage Breaker. Using a power supply which is not equipped with the Earth Leakage Breaker can cause a fire when earth leakage occurs.

○ **Be sure to use fuses which meet the specified rating.** (only for the machines which use fuses).
Using fuses exceeding the specified rating can cause a fire and electric shock.

○ **Specification changes (removal of equipment, conversion and addition) not designated by SEGA are not allowed.**
The parts of the product include warning labels for safety, covers for personal protection, etc. It is very hazardous to operate the product by removing parts and or modifying the circuits. Should doors, lids and protective parts be damaged or lost, refrain from operating the product, and contact where the product was purchased from or the office herein stated.
SEGA shall not be held responsible for any accidents, compensation for damage to a third party, resulting from the specifications not designated by SEGA.

○ **Ensure that the product meets the requirements of appropriate Electrical Specifications.**
Before installing the product, check for Electrical Specifications. SEGA products have a nameplate on which Electrical Specifications are described. Ensure that the product is compatible with the power supply voltage and frequency requirements of the location. Using any Electrical Specifications different from the designated Specifications can cause a fire and electric shock.

○ **Install and operate the product in places where appropriate lighting is available, allowing warning labels to be clearly read.**
To ensure safety for the customers, labels and printed instructions describing potentially hazardous situation are applied to places where accidents can be caused. Ensure that where the product is operated has sufficient lighting allowing the warnings to be read. If any label is peeled off, apply it again immediately. Please place an order with where the product was purchased from or the office herein stated.

○ **When handling the Monitor, be very careful. (Applies only to the product w/monitor.)**
Some of the monitor (TV) parts are subject to high tension voltage. Even after turning off power, some portions are still subject to high tension voltage sometimes. Monitor repair and replacement should be performed only by those technical personnel who have knowledge of electricity and technical expertise.

○ **Be sure to adjust the monitor (projector) properly. (Applies only to the product w/ monitor.)**
Do not operate the product leaving on-screen flickering or blurring as it is. Using the product with the monitor not properly adjusted may cause dizziness or a headache to an operator, a player, or the customers.

○ **When transporting or reselling this product, be sure to attach this manual to the product.**

In the case where commercially available monitors and printers are used in this product, only the contents relating to this product are explained herein. Some commercially available equipment has functions and reactions not stated in this manual. Read this manual together with the specific Instruction Manual of such equipment.

• Descriptions herein contained may be subject to improvement changes without notice.
• The contents described herein are fully prepared with due care. However, should any question arise or errors be found, please contact SEGA.

INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION.

Normally, at the time of shipment, SEGA products are in a status allowing for usage immediately after transporting to the location. Nevertheless, an irregular situation may occur during transportation. Before turning on power, check the following points to ensure that the product has been transported in a satisfactory status.

❑ Are there any dented portions or defects (cuts, etc.) on the external surfaces of the cabinet?
❑ Are Casters and Adjusters, damaged?
❑ Do the power supply voltage and frequency requirements meet with those of the location?
❑ Are all wiring connectors correctly and securely connected? Unless connected in the correct direction, connector connections can not be made accurately. Do not insert connectors forcibly.
❑ Do power cords have cuts and dents?
❑ Do the fuses used meet specified rating? Is the Circuit Protector in an energized status?
❑ Are all accessories available?
❑ Can all Doors and Lids be opened with the Accessory keys? Can Doors and Lids be firmly closed?

Use of this product is unlikely to cause physical injuries or damages to property. However, where special attention is required this is indicated by a thick line, the word "IMPORTANT" and its sign in this manual.

(STOP) IMPORTANT   Indicates that mishandling the product by disregarding this display can cause the product's intrinsic performance not to be obtained, resulting in malfunctioning.

(STOP) IMPORTANT
● When having connected the power for the first time, open the SYSTEM MENU — GAME TEST MODE — INPUT TEST screen and test the input devices; thereby make sure that they can function normally.
● This game is available only with the NAOMI GD-ROM system. It is not available with other hardware.
● This game is incompatible with the competition connection kit of the NAOMI CABINET or NET CITY and NEW VERSUS CITY. When connecting the wire to the control panel, be sure to connect it to a single I/O board.

1. HANDLING PRECAUTIONS

⚠️ **WARNING**

- To prevent electric shock or IC Board malfunctioning, be sure to turn off the power for the cabinet when installing or removing the IC Board.

- Extraneous matter such as dust on the IC Board can cause the IC Board to generate heat and result in a fire due to short circuit, etc. Ensure the IC Board surfaces are always kept clean.

- Use NAOMI for the cabinets compatible with JVS. Using NAOMI for the cabinet other than those compatible with JVS can cause generation of heat and a fire.

🛑 **IMPORTANT**

- Be sure to connect the IC Board and connectors completely. Insufficient insertion can damage IC Board, etc.

- For the IC Board circuit inspection, only the use of Logic Tester is permitted.
  The use of ordinary testers is not permitted as these can damage the IC Board.

- Do not subject the IC Board to static electricity when installing the IC Board in the cabinet or when connecting wire harness connectors to the IC Board.

- When soldering buttons, etc. to the wire harnesses, be sure to remove the wire harnesses from the IC Board so as not to subject the IC Board to heat.

- Using NAOMI without the Shield Case can cause electric wave trouble. Be sure to use NAOMI together with the accessory Shield Case.

- The monitor frequency corresponding to NAOMI is 15kHz or 31kHz.
  NAOMI can not be used for the cabinet incorporating a monitor or projector not corresponding to 15kHz or 31kHz.

● Concerning the display of JAMMA VIDEO STANDARD:
JAMMA VIDEO STANDARD adopted by NAOMI is referred to as JVS. As against this Standard, the conventional JAMMA STANDARD which employs 56P Edge Connectors adopted by ST-V, etc. is displayed as Old JAMMA STANDARD.

The specific Manual attached to each game sometimes displays JVS as JV STANDARD, New JAMMA STANDARD, or JAMMA 2 STANDARD against OLD JAMMA STANDARD as JAMMA STANDARD, JS, etc.

● The contents herein described are subject to change without notice.

2. INTRODUCTION OF THE KIT

This GAME BOARD KIT is used on the following cabinets.
- NAOMI UNIVERSAL CABINET (NAOMI CABINET)
- NET CITY
- BLAST CITY
- ASTOR CITY series

One set of the Kit allows one cabinet to be converted.
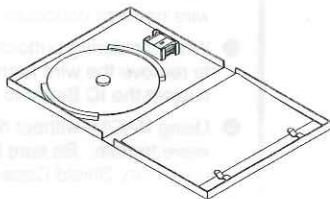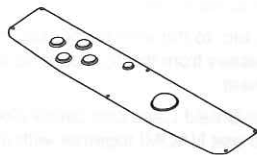
3. CONTENTS OF THE KIT

Before performing work, please make sure that the following parts are available.
A tag indicating a part number is attached to each HARNESS.

The explanation of the accessory is as follows.

Description   SERVICE MANUAL
Part No. (Qty.)   420-6621-0009E (1)
Note
Figures

CONTROL PANEL
NOA-20007-01 (1)

GD-ROM
610-0630-0009 (1)

CAUTION STICKER
440-CS0240-EG (1)
Used for installation.

CAUTION
Please be careful not to hit
this area with your hand
while using the trackball.
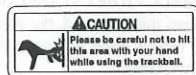
PLAY INSTRUCTION SHEET
422-0863-01 (1)
Used for installation.
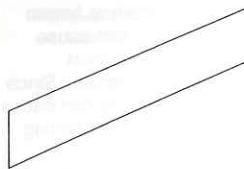
SUB INSTRUCTION SHEET
422-0864-01 (1)
Used for installation.
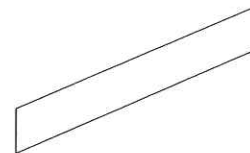
DISPLAY CARD
429-0706 (1)
Used for installation.
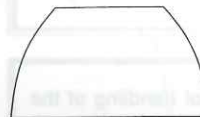
JVS CABLE (2m)
605-0002-20 (1)

STICKER
442-00065B (1)

840-0065B

4. INSTALLING PROCEDURE

⚠️ **WARNING**

- Perform assembly work by following the procedure herein stated. Failing to comply with the instructions can cause electric shock hazard.
- Assembling should be performed as per this manual. Since this is a complex machine, erroneous assembling can cause an electric shock, machine damage and or not functioning as per specified performance.
- Be careful so as not to damage wiring. Damaged wiring can cause electric shock and short circuit hazards.
- Be sure to turn off the power and disconnect from the mains supply before working on the machine.
- This work should be performed by the Location's Maintenance Man or Serviceman. Working by those who do not have technical expertise can cause such severe accidents as electric shock.

🛑 **IMPORTANT**

- For the name of parts and the details of handling of the cabinet, refer to each cabinet's manual. For performing work on the cabinet that has been converted in accordance with the JVS CVT Kit, refer to the manual supplied with the Kit.
- To perform work, a Phillips type screwdriver and the tools (Master Key, Tamperproof Wrench, etc.) supplied with each cabinet are necessary.
- The setting items vary depending on the game. Before performing work, be sure to read the Service Manual of each game.

4 — 1 SET THE GD-ROM DISK

① Set the GD-ROM disk (VIRTUA GOLF) onto the GD-ROM drive.

② On the NAOMI DIMM Board, paste the accompanying sticker (442-00065B) in the position indicated in the figure below.

STICKER
442-00065B
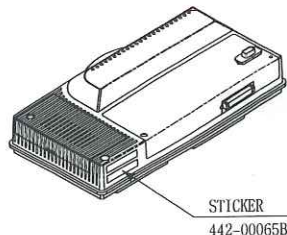
4 — 2 REPLACING THE CONTROL PANEL

① By referring to the cabinet's manual, remove the existing CONTROL PANEL.

② Install the CONTROL PANEL, a Kit accessory, with the screws which have been removed in the procedure ①. At this time, use care so as not to pinch the Harness.

③ Connect the U-P CONNECTOR white, PLUG 12P and PLUG 2P of the CONTROL PANEL side Harness to the U-P CONNECTOR white, CAP 12P and CAP 2P.

(ACCESSORY)
CONTROL PANEL
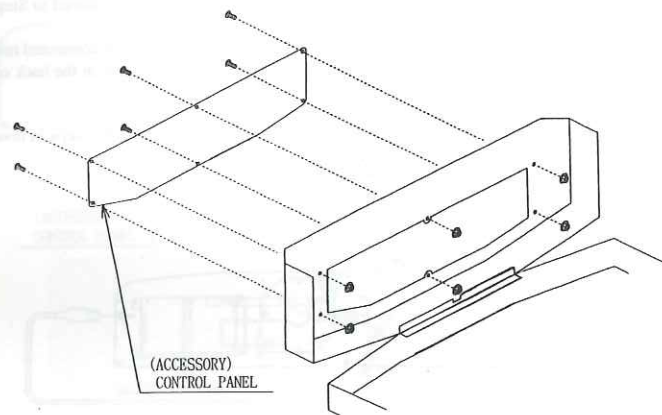
4 — 3 CONNECTING THE JVS CABLE

Connect the BD in the CONTROL PANEL reverse and the cabinet side's JVS I/O BD by the JVS CABLE, a Kit accessory. At this time, use care so as not to pinch the JVS CABLE.
The following Fig. is the connector of the JVS CABLE.

A-TYPE CONNECTOR
(Connecting portion wider)

JVS CABLE

B-TYPE CONNECTOR
(Connecting portion narrower)

The connecting procedure is as follows.

4 — 3 — 1　NAOMI CABINET / NET CITY

① Remove the Front Panel according to the instructions of the steps ① to ④ in Section 11-4, "VERTICAL/HORIZONTAL TRANSPOSITION" in the "NAOMI Universal Cabinet (or NET CITY) Instruction Manual," which is included with the cabinet.

② Remove the Front Panel to locate the JVS I/O Board (in the Cabinet) that has 2 JVS cables already connected. Out of them, remove the A-TYPE connector connected to CN 5.

③ Connect the A-TYPE connector of the 2m accompanying JVS CABLE to connector CN 5 of the JVS I/O Board the cable of which was removed in Step ② .

④ Connect the B-TYPE connector of the JVS CABLE, which was connected to the JVS I/O board in Step ③ , to the connector of the board located on the back of the Control Panel.

⑤ Reinstall the Front Panel, removed in Step ① , by performing the steps in reverse order.

(ACCESSORY)
CONTROL PANEL

605-0002-20(2m)

Not used

To NAOMI

JVS I/O BD

CN5
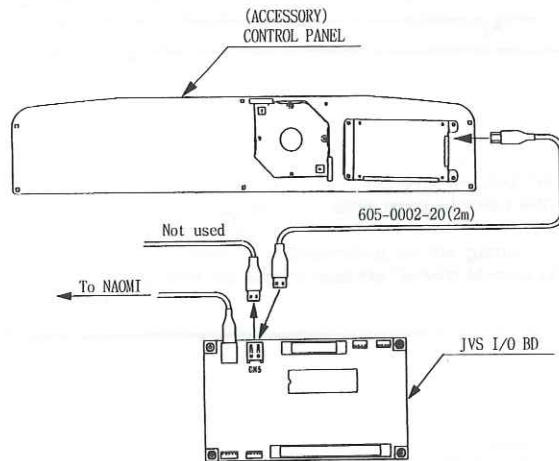
4 — 3 — 2　BLAST CITY, ASTRO CITY SERIES

① Connect the A-TYPE CONNECTOR of the 2m JVS CABLE (an accessory) to the connector CN1 of the I/O BD corresponding to the JVS incorporated in the cabinet.

② Wire the JVS CABLE which has been connected to the I/O BD in the procedure ① to the CONTROL PANEL from the cabinet inside. Connect the B-TYPE CONNECTOR of that JVS CABLE to the connector of the BD at the CONTROL PANEL reverse side.

605-0002-20(2m)

(ACCESSORY)
CONTROL PANEL

I/O BD corresponding to JVS

CN1
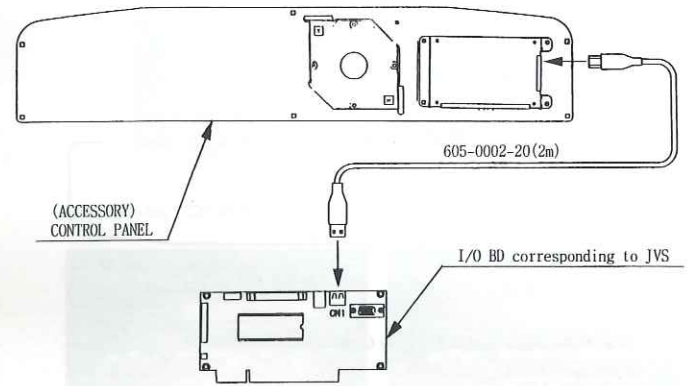
4 — 4　INSTALLING THE DESIGN RELATED PARTS

By referring to each cabinet's manual, install the PLAY INSTRUCTION SHEET, the SUB INSTRUCTION SHEET, and the DISPLAY CARD (Kit accessories) to the cabinet.
Paste the Caution Sticker to a location where the players participating in the game easily see it.

440-CS0240-EG
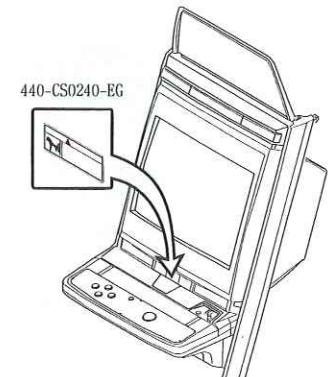
5. SPECIFICATIONS

① ON-SCREEN DISPLAY

Monitor Position

HORIZONTAL

Horizontal Synchronous Frequency
15/31 kHz

② CONTROL PANEL

SW UP   START
SW LEFT   TRACK BALL
SW RIGHT
SW DOWN
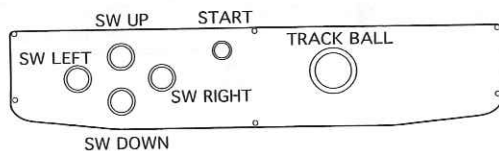
③ Minimum DIMM Memory Capacity

256 MB

6. CONTENTS OF GAME

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)

SELECT PLAYERS

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

Shot

Power adjustment
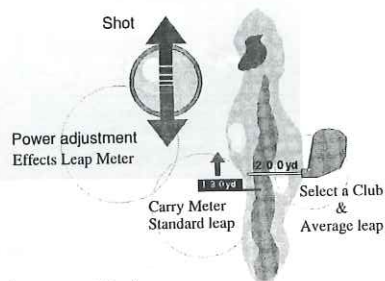Effects Leap Meter

Carry Meter
Standard leap

Select a Club
&
Average leap

Power adjustment (Effects Leap Meter)

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.

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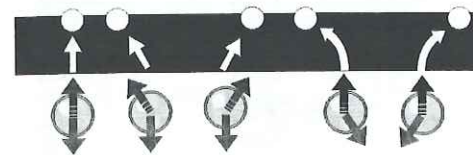
The spinning is determined by the angle of rolling the Track Ball.

Power adjustment

Shot
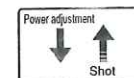
BACK OR TOP SPIN BY ADDITIONAL INPUT

Top spin

Back spin

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.

— 11 —

Before you play....

Rear button
Used the Track Ball to view around.

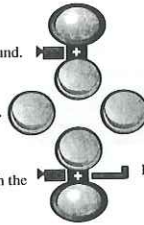**Left button**
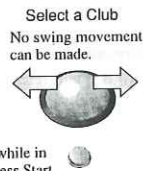Will move player left.

Right button
Will move player right.

Front button
The player can view around wider surroundings by combining this with the Track Ball.

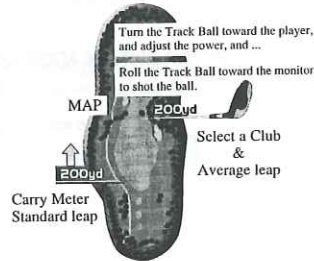Help-Mat will be indicated when putting.

Play !

Select a Club
No swing movement can be made.

To select a club while in swing motion, press Start button.
Selectable clubs are restricted according to the circumstances of the ball.

Shot

Power adjustment
Effects Leap Meter

MAP

200yd

200yd

Carry Meter
Standard leap

Turn the Track Ball toward the player, and adjust the power, and ...

Roll the Track Ball toward the monitor to shot the ball.

Select a Club
&
Average leap

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.
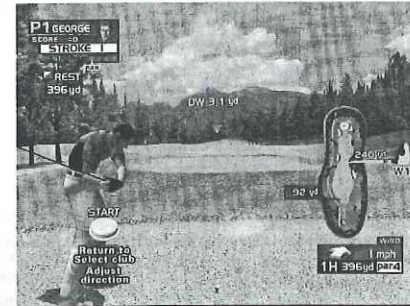
Top left: Player Information
In top-to-bottom order:
Name: Rewritten, depending on name entries that may be made while the game is in progress.
Present Score: Cumulative prize money for the Skins Game, or UP value for Match Play.
Number of Strokes
Pictorial Indication of Number of Strokes: The number 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.

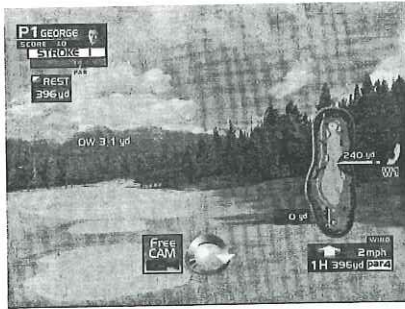**Right on the screen: Course Information**
In top-to-bottom order:
Map Display - See "BASIC OPERATIONS" for Select a Club and Carry Meter.
Wind - Indicates the wind velocity in mph and the direction by the arrow.
Basic Information about Present Hole - Hole No. : Total Length : Par.

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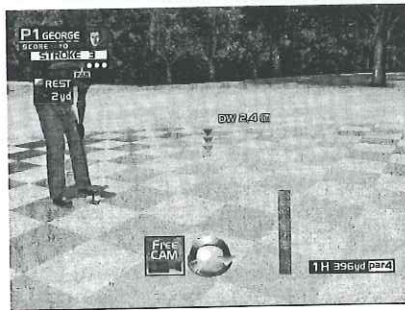
While you are now selecting a putter, the functions of the Front and Rear button change.

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.

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7. TEST MODE

A. SYSTEM MENU

(STOP) IMPORTANT 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.

In the SYSTEM ASSIGNMENTS,
CABINET TYPE is set to 1PLAYER(S),
MONITOR TYPE is set to HORIZONTAL,
and SERVICE TYPE is set to COMMON.

COIN ASSIGNMENTS initial settings as follows:
COIN CHUTE TYPE: COMMON
COIN/CREDIT SETTING: #1 (KOREA)
                    #12(USA, AUSTRALIA, OTHERS)
COIN CHUTE #1 (#2): 1 COIN 1 CREDIT

SEQUENCE SETTING of COIN ASSIGNMENTS functions as follows:
SEQUENCE 1: Number of credits required for game start.
                1 CREDIT(S)
SEQUENCE 2: Number of credits required for CONTINUE.
                1 CREDIT(S)
SEQUENCE 3~8: NOT USED.

MEANING OF DISPLAY IN BOOKKEEPING 2/2
P1 SEQ 1: Play frequency of Player.
P1 SEQ 2: Frequency of CONTINUE by Player.
P1 SEQ 3~8: NOT USED.

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.

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).

— 15 —

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.

```
[ VIRTUA GOLF ]  TEST MENU

     INPUT TEST
     GAME ASSIGNMENTS
     BOOKKEEPING
     BACKUP DATA CLEAR


  -> EXIT


  SELECT WITH SERVICE BUTTON
            AND
     PRESS TEST BUTTON
```
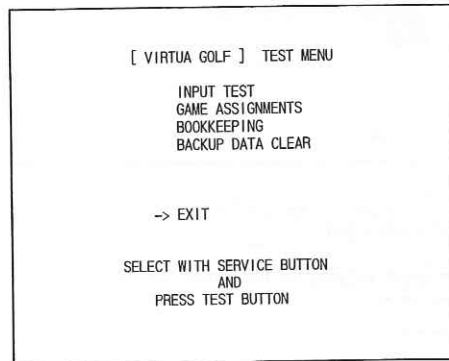
GAME TEST MENU Screen

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

                       * * * * * * * *
  START     : OFF       *           *
                        *           *
  SW_UP     : OFF       *           *
  SW_DOWN   : OFF       *     *     *
  SW_LEFT   : OFF       *           *
  SW_RIGHT  : OFF       *           *
                        *           *
                       * * * * * * * *

  TEST-SW   : OFF    ROTARY UD: 0000
  SERVICE-SW: OFF    ROTARY LR: 0000


       PRESS TEST BUTTON TO EXIT
```
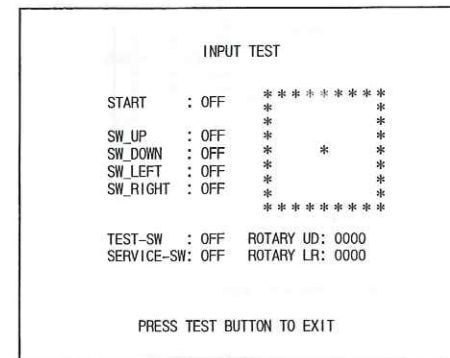
INPUT TEST Screen

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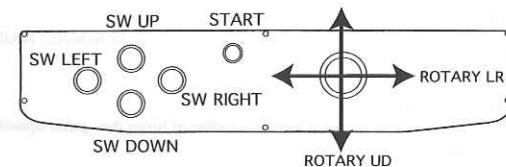
CONTROL PANEL

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


        [NORMAL GAME]
          GAME DIFFICULTY      NORMAL
          STEP STAGE(S)      2 STAGE(S)
        [18HOLE CHALLENGE]
          GAME DIFFICULTY      NORMAL
          START BALL(S)      6 BALL(S)
          PLUS  BALL(S)      3 BALL(S)
        -> EXIT




              SELECT WITH SERVICE BUTTON
                        AND
                 PRESS TEST BUTTON
```

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



            YES(CLEAR)
        ->  NO (CANCEL)




        SELECT WITH SERVICE BUTTON
                   AND
           PRESS TEST BUTTON
```

BACKUP DATA CLEAR Screen

8. GAME BOARD

⚠️ **CAUTION**
- Do not expose the Game Board so as to avoid causing an accident or malfunctioning.
- Static electricity discharge can damage electronic parts on the IC Board. Before starting work by opening the Shield Case Lid, be sure to touch grounded metallic surfaces to discharge physically charged static electricity.
- When replacing the Game Board, refer to the CVT Manual and Instruction Manual.
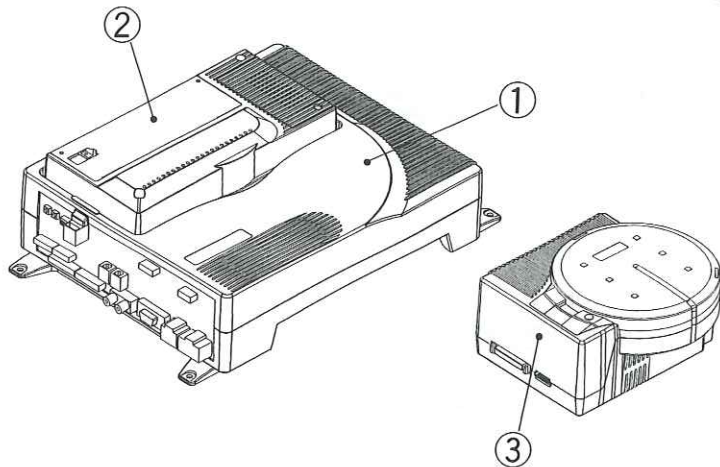
	PART NO.	DESCRIPTION
①+②	840-0051D-01 840-0051D-02 840-0051D-03 840-0051D-04	ASSY CASE NAO PCI DIMM BD USA ASSY CASE NAO PCI DIMM BD EXP ASSY CASE NAO PCI DIMM BD KOR ASSY CASE NAO PCI DIMM BD AUS
①	840-0001A-01 840-0001A-02 840-0001A-03 840-0001A-04	ASSY CASE NAOMI MAIN BD USA ASSY CASE NAOMI MAIN BD EXP ASSY CASE NAOMI MAIN BD KOR ASSY CASE NAOMI MAIN BD AUS
②	840-0001F	ASSY CASE NAO DIMM BD COM
③	610-0617	GD-ROM DRIVE UNIT NAOMI

442-00065B (STICKER 840-0065B)
Attached place
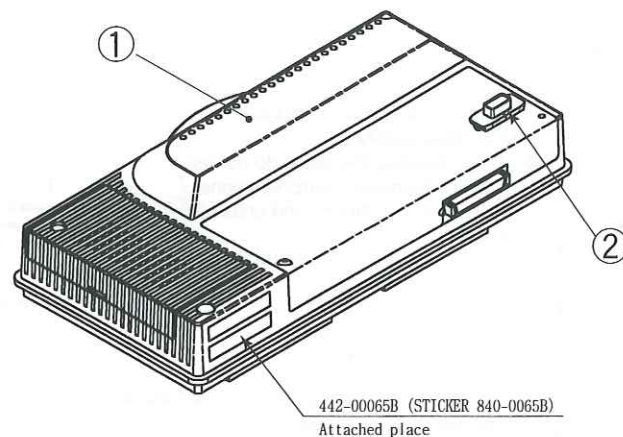
	PART NO.	DESCRIPTION
①	840-0001F	ASSY CASE NAO DIMM BD COM
②	————	KEY CHIP
①+②	840-0065B	DIMM BD NAO DYNAMIC GOLF

9. SOFT KIT

STOP
IMPORTANT

Handling the GD-ROM Disk

● Do not contaminate the disks with your fingerprints or dust particles. Contaminated disks may lower audio and video quality.
● When cleaning the disks, do not use volatile chemicals (benzine, thinner, etc.), cleaning sprays, and antistatic agents.

Use clean cloth to wipe the disk gently and into a radial direction.

● Do not use cracked, warped, or damaged disks.
 Do not attach papers or seals onto the disks; do not scratch the disks.
 Do not use the disks with a sign of peeled seals, tapes, etc. Observing these instructions, do not insert such a non-usable disk into the GD-ROM drive. Otherwise the inserted disk can not be ejected.
● When cleaning a heavily contaminated disk, use clean cloth that has been soaked in water and squeezed. Then remove moisture with dry cloth.
● When holding a disk, be careful not to contaminate it with your fingerprints.

How to Hold a Disk

With both hands:
Put your thumbs and forefingers of both hands on the disk's 4 circumference tips.

With one hand:
Insert your forefinger into a central hole and at the same time put your thumb and middle finger on the disk's 2 circumference tips.

How to Handle the Key Chip

● The key chip is a precision device. Handle it carefully because it may be damaged by heat, shock, and static electricity.
● Use the key chip with the GD-ROM disk of the corresponding game that has been shipped together with the key chip.
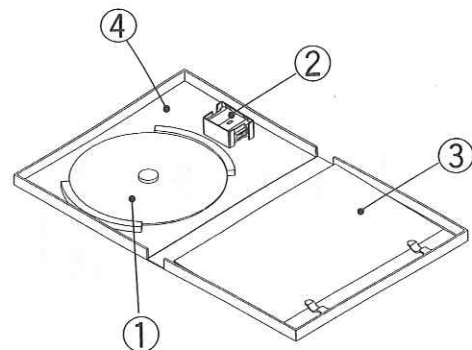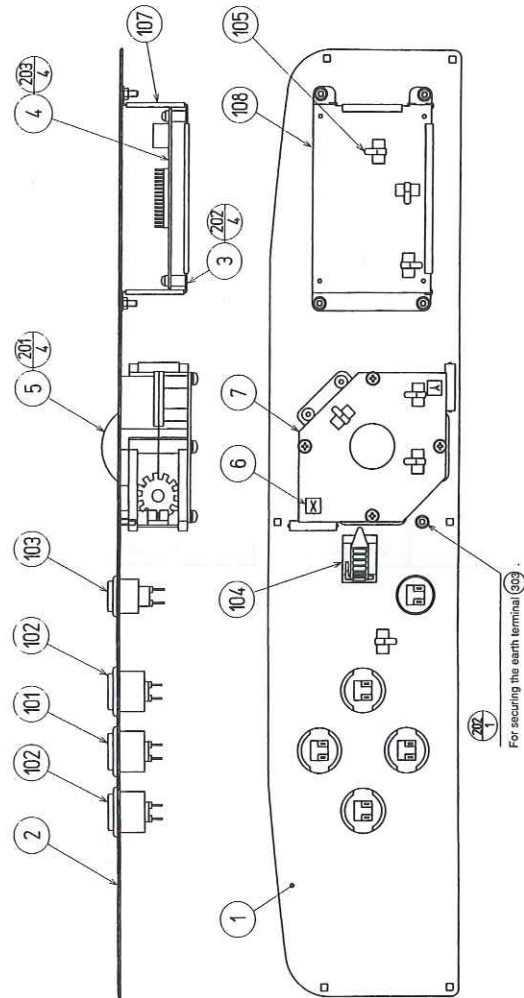
	PART NO.	DESCRIPTION
①+②+③+④	610-0630-0009	GD SOFT KIT D.GOLF ENG
①	GDS-0009 *	NAOMI GDROM D.GOLF
②	————	KEY CHIP
③	420-6621-0009E	SERVICE MANUAL D.GOLF ENG
④	253-5507	DISK CASE WITH IC HOLDER

10. PARTS LIST (CONTROL PANEL)

① ASSY CTRL PNL 1T4B ENG (NOA-20007-01)   (D-1/2)

ITEM NO.	PART NO.	DESCRIPTION	NOTE
1	NOA-2018	CTRL PNL BASE 1T4B	
2	NOA-2017-01	CTRL PNL PLATE 1T4B ENG	
3	NOA-2006	I/O BD BRKT	
4	837-13938	I/O CONTROL BD FOR JVS ENCODER	
5	610-0595	ASSY TRACK BALL	
6	421-11172	STICKER XY	
7	MJ-2016	REINFORCE PLATE	
101	509-5755-08	SW PB D30 VERMILION	
	509-5903-01	SW PB D30 VERMILION	
102	509-5755-01	SW PB D30 GREEN	
	509-5903-03	SW PB D30 GREEN	
103	509-5756-01	SW PB D24 YELLOW	
104	280-5009-01	CORD CLAMP 21	
105	280-5275-SR10	CORD CLAMP SR10	
106	601-0460	PLASTIC TIE BELT 100 MM	
107	601-6231-A040	EDGING NEW TYPE	
108	601-6231-A100	EDGING NEW TYPE EO-10N L=100MM	
201	000-P00445-W	M SCR PH W/FS M4 × 45	
202	050-F00400	FLG NUT M4	
203	000-P00320-W	M SCR PH W/FS M3 × 20	
301	600-7259-001	WH CTRL PNL 1T4B 01	
302	600-7259-002	WH CTRL PNL 1T4B 02	
303	600-6227-09	WIRE HARN CONT PNL EARTH	

11. WIRE COLOR CODE TABLE

THE WIRE COLOR CODE is as follow:

A   PINK
B   SKY BLUE
C   BROWN
D   PURPLE
E   LIGHT GREEN

Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

1   RED
2   BLUE
3   YELLOW
4   GREEN
5   WHITE
7   ORANGE
8   BLACK
9   GRAY

If the right-hand side numeral of the code is 0, then the wire will be of a single color shown by the left-hand side numeral (see the above).

Note 1: If the right-hand side alphanumeric is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.

<Example>   51 ········· WHITE / RED

RED   WHITE
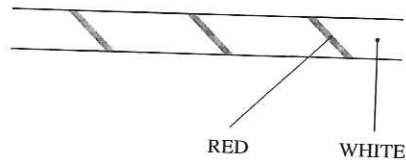
Note 2: The character following the wire color code indicates the size of the wire.

U: AWG16
K: AWG18
L: AWG20
None: AWG22

12. WIRING DIAGRAM (CONTROL PANEL)