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SEGA[®]

**Virtua Striker**[™]
2002

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. 999-1540

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Triforce is a trademark of Nintendo.

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 WARNING, CAUTION, etc. are used. Be sure to understand the contents of the displays before reading the text.



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



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.

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



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

- **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 running 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?

Virtua Striker 2002

Triforce System

Kit Contains List

Part #	Desc	Qty
840-0106D-01	ASSY CASE TRF 512 DIMM BD	1
610-0651-0002	GD SOFT KIT VS2002 ENG	1
605-0040-500	CABLE SCSI ST-L TYPE2 500MM	1
400-5397-01	SW REGU FOR JVS	1
560-5407-UL	TRANSFORMER 120V 17V2A	1
600-7009-2500	RGB CABLE	1
600-7141-250	CABLE JVS TYPE A-B 250CM	1
838-13616	AUDIO POWER AMP	1
838-13683-02	JAMMA I/O BOARD	1
XKT-0833	GD ROM SYSTEM	1
999-1541	MARQUEE ART	1
999-1543	INST SHT CONTROLS	1
999-1542	DECAL SIDE ART	2
999-1544	CONTROL PANEL STND	1
999-1540	KIT MANUAL - VS2002	1

Parts not supplied in kit, but required for operation.

Suggested Happ #	Desc	Qty
42-2093-00	6vdc Coin Meter	1
	Test Switch	1
	Service Switch	1
	5k Pot (for Volume Control)	1
50-7608-XX	8way JoyStick	2
58-9111-LXPLY	SPST Momentary Switch (Start)	2
58-91XX-L	SPST Momentary Switch (S Pass)	2
58-91XX-L	SPST Momentary Switch (L Pass)	2
58-91XX-L	SPST Momentary Switch (Shot)	2
	VGA or NTSC RGB Monitor	1

DESIGNED RELATED PARTS

MARQUEE ART

999-1541



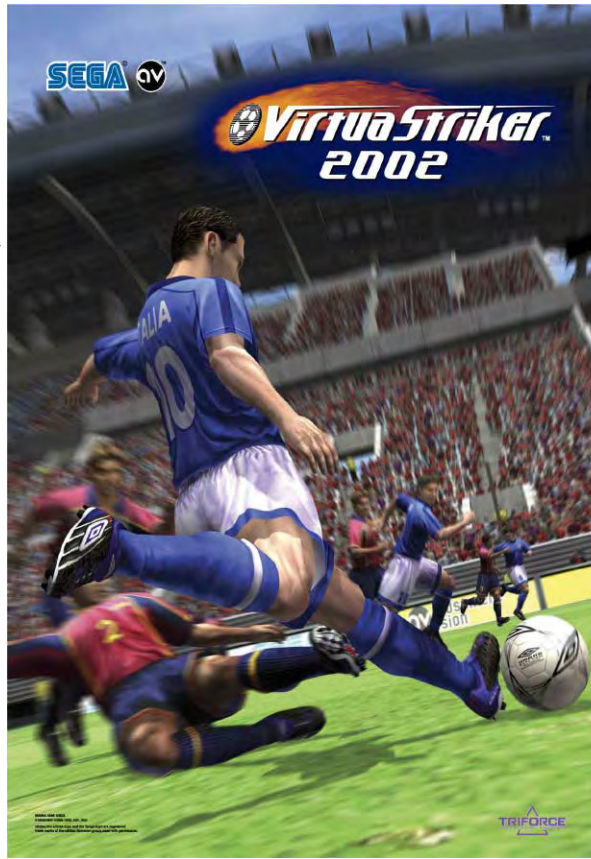
CTRL PNL OVERLAY

999-1544



SIDE ART

999-1542



INSTR. SHEET (PLAYER)

999-1543





SERVICE BULLETIN

SEGA Service Department
45133 Industrial Drive
Fremont, Ca. 94538

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

SPECIAL NOTICE FOR ALL SEGA NAOMI/TRIFORCE KITS

PROBLEM:

The SEGA Naomi/Triforce 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 A COIN METER WITH DIODE to assure proper Coin acceptance. A minimum 18 Gauge wire should be used from the Coin Meter 1 output line on your JAMMA Harness. A 5vdc wire 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) Turn off power and unplug machine. Open all access panels. Locate the original game Power Supply, Game BD, I/O BD, Sound BD etc... Remove these items from your cabinet. Remove all artwork from cabinet. Clean Cabinet Exterior and repair as necessary to assure good appearance.
- 2) Remove all existing harnesses. Install a new JAMMA Harness (Recommended). Please note that this harness is NOT SUPPLIED with your kit. DO NOT connect the 5vdc, 12vdc, GND or any other power line from the JAMMA Harness to the Power Supply. 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.
- 3) Install the Components supplied in your kit (Game BD, Power Supply, Amp, Transformer etc.). Follow the wiring diagram for proper electrical connection (located at the end of the kit manual). Be careful to fasten all components securely. Route wires in a manner not to allow for pinching or binding. Secure wires once connected.

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

 Good Idea!

 Good Idea!

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 your cabinet's existing Service Switch Bracket Assy to the Kit Harness (Follow Diagram). Please note that you MUST USE a COIN METER for the game system to properly accept coins (Refer to Diagrams and Service Bulletin included in this manual).
- 5) Remove all Joystick Buttons and Pushbuttons from your Control Panel. Remove the existing overlay. Clean off all glue residues, and fill in or plug existing holes to give you a blank work area for your new game.
- 6) Install your Control Panel Art supplied with the kit. Cut holes in the overlay where controls are to be installed. Install and connect your controls. Please note that Joysticks and Pushbuttons are NOT SUPPLIED with your kit. You will need to supply 2ea 8way Joysticks, 2ea Start Buttons, and 2ea Punch, Kick and Defense buttons.
- 7) Connect your Coin Switches to the game harness following the diagram in the back of the manual.
- 8) Turn on Power to the game and check for proper voltages on either connector entering the Game BD Filter BD. The proper voltages are: 5.1vdc between Yellow and White, 3.30vdc between Brown and White. Adjust where necessary. Adjustment can be made at the Power Supply by using an insulated flat screwdriver. Turn clockwise to increase. Turn counter-clockwise to decrease.

INSTALLATION INSTRUCTIONS

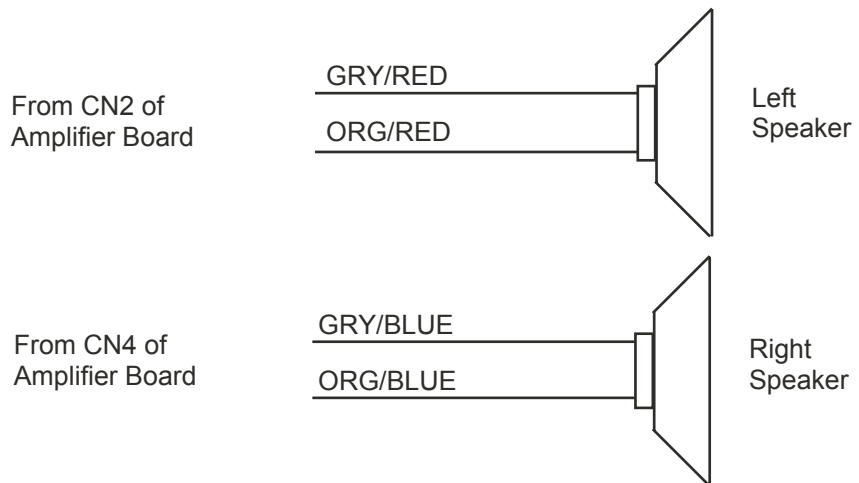
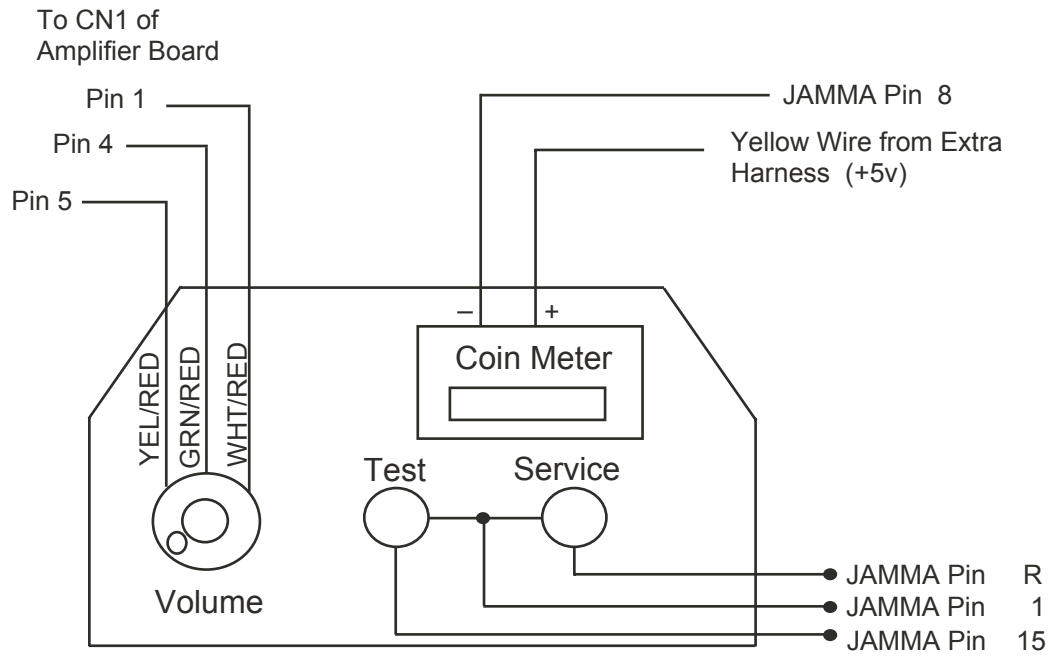
- 9) Finish installation by installing Side Decals, Marquee and any instruction decals. Play your machine to verify proper operation. Set up options as desired.

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

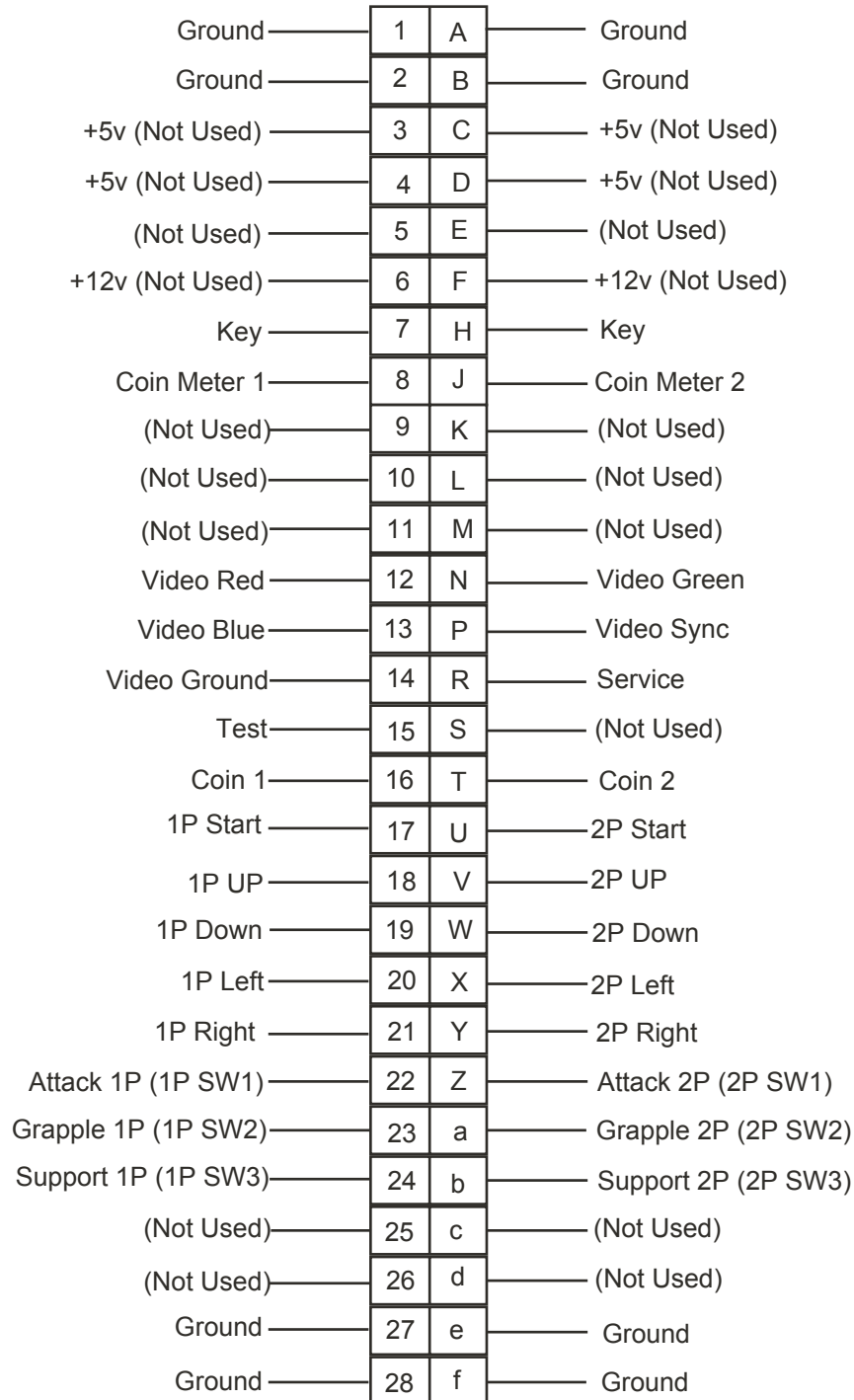


Enter **DIAGNOSTICS** and adjust the Volume Level, test all Buttons & Joystick for proper operation & wiring. Adjust Pricing. Coin-Up and test out a game to ensure proper play functions are as they should be.

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



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



1. HANDLING PRECAUTIONS



- 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.
- Keep the IC board well cooled.
The TRIFORCE and GD-ROM drive are provided with ventilating fans. Do not block the air outlets of these fans. Also do not place anything closely to the TRIFORCE and GD-ROM drive. Failure to observe these instructions may cause an overheating and fire.



- 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 TRIFORCE without the Shield Case can cause electric wave trouble. Be sure to use TRIFORCE together with the accessory Shield Case.
- The monitor frequency corresponding to TRIFORCE is 15 kHz or 31 kHz. TRIFORCE can not be used for the cabinet incorporating a monitor or projector not corresponding to 15 kHz or 31 kHz.
- Use the TRIFORCE board with the JVS-compatible cabinet. Using it with the non-JVS-compatible cabinet may cause an overheating and fire.
- Some of the parts included in this kit are commercially available parts that have been altered for use with SEGA products. Should you find a defective part or encounter machine trouble, please contact your retailer or the office listed in this manual.
Please refrain from contacting manufacturers with enquiries or service requests, as individual parts manufacturers may not accept support calls or be able to provide support services immediately.
- Some parts are the ones designed and manufactured not specifically for this game machine. The manufacturers may discontinue, or change the specifications of, such general-purpose parts. If this is the case, Sega cannot repair or replace a failed game machine whether or not a warranty period has expired.

- JAMMA VIDEO STANDARD references in this manual
The JAMMA VIDEO STANDARD used by TRIFORCE is abbreviated as JVS in this manual. The previous JAMMA STANDARD that used a 56P Edge Connector is referred to here as the OLD JAMMA STANDARD.

Manuals provided with each game may use the one of the following terms when referring to JVS: JV STANDARD, NEW JAMMA STANDARD, JAMMA 2 STANDARD. The following terms may also be used when referring to the OLD JAMMA STANDARD: JAMMA STANDARD, JS.

- We reserve the right to alter the content of manuals without prior notice.

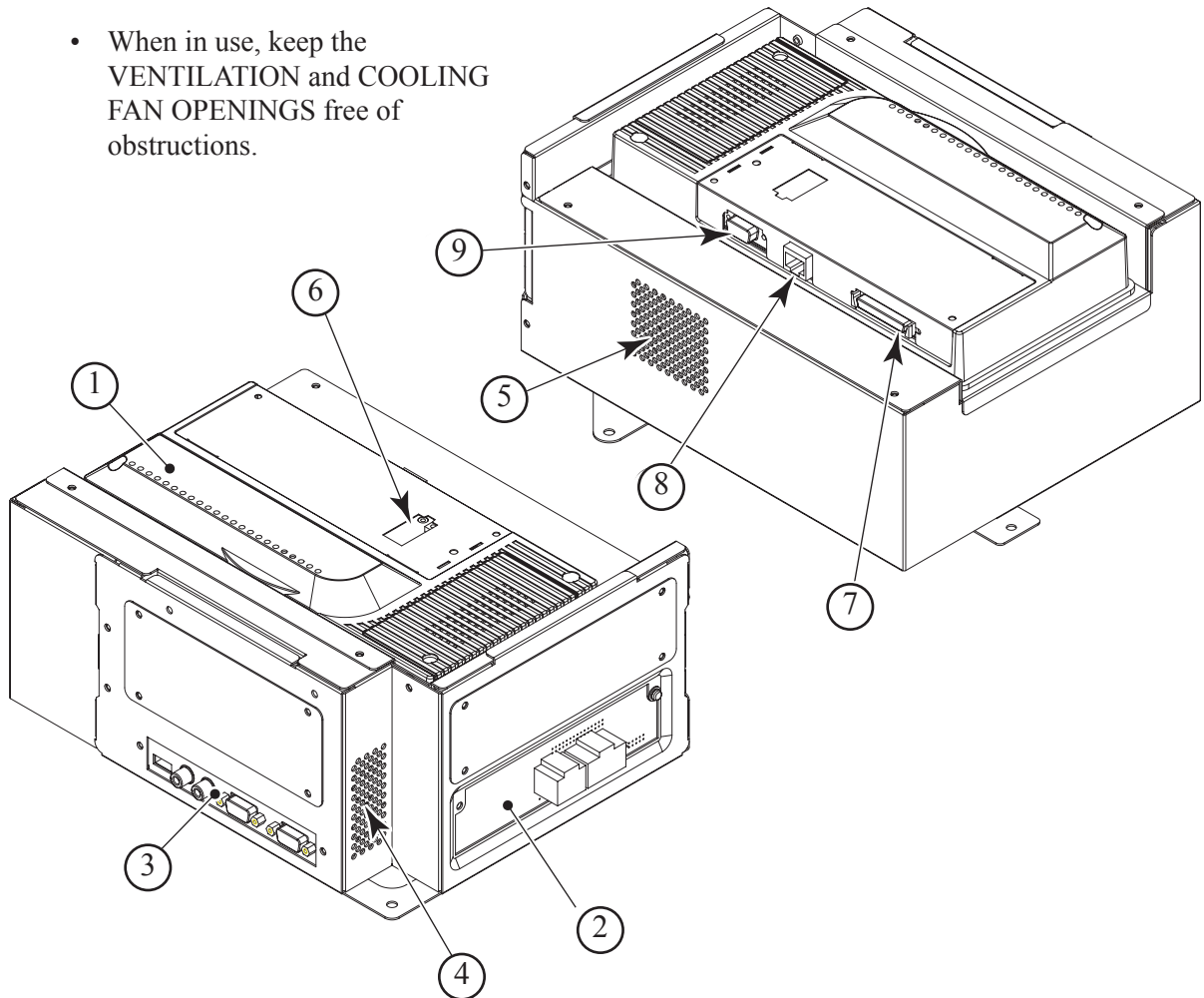
2. SYSTEM SPECS

2 - 1 PARTS INFORMATION



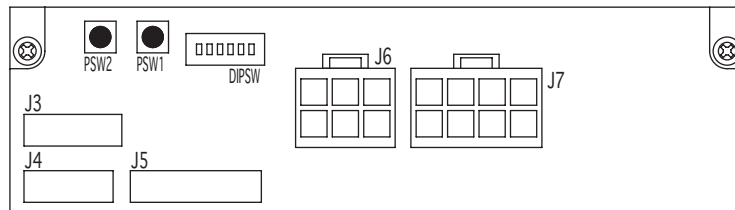
Be sure to connect the connector to the specified terminal. If it is connected carelessly, the parts can scorch, emit smoke, or catch fire.

- The TRIFORCE MAIN BOARD is located inside the SHIELD CASE. The TRIFORCE should be used with the MAIN BOARD inside the SHIELD CASE.
- When in use, keep the VENTILATION and COOLING FAN OPENINGS free of obstructions.



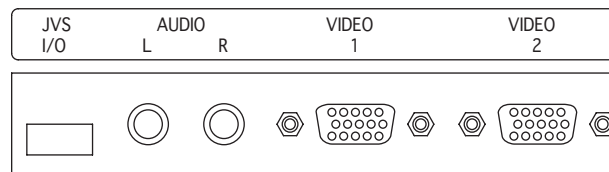
- (1) DIMM BOARD CASE (MEDIA BOARD)
- (2) CONNECTOR BOARD: Refer to "2-2 CONNECTOR BOARD"
- (3) I/O PANEL: Refer to "2-3 I/O PANEL"
- (4) VENTILATION OPENING
- (5) COOLING FAN OPENING
- (6) KEY CHIP SLOT
- (7) GD CABLE CONNECTOR
- (8) ETHER CABLE CONNECTOR: not used by this game
- (9) RS232C CABLE CONNECTOR: not used by this game

2 - 2 CONNECTOR BOARD



- J3-J5: Not used by this game
(If a connector is connected carelessly, the board can emit smoke or catch fire.)
- J6: DC Power Supply Input (JST VL 6P)
1: (N.C), 2: +3.3V, 3: +5V, 4-6: GND
- J7: DC Power Supply Input (JST VL 8P)
1: (N.C), 2: +3.3V, 3: +5V, 4: +12V, 5-8: GND
- PSW1: Used as the TEST BUTTON
- PSW2: Used as the SERVICE BUTTON
- DIPSW: Used for changing the video frequency and other settings
Refer to "2-4 DIP SWITCHES (DIPSW)"

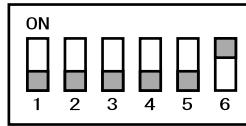
2 - 3 I/O PANEL



- JVS I/O: Standard I/O (SERIES A TYPE)
Connect to I/O BOARD through USB cable.
- AUDIO: Stereo/Audio Output (RCA PIN JACK FEMALE)
Connect WHITE CONNECTOR to L and RED CONNECTOR to R.
- VIDEO: R.G.B. Video Output (MINI D-SUB 15P)
Both VIDEO 1 and 2 output the same video signal.

2 - 4 DIP SWITCHES (DIPSW)

Be sure to check the DIP SWITCH settings before powering on the cabinet.
Since switches 1-3 are not used, set them to OFF.



- Monitor Direction Setting

Use DIP SWITCH #4 to set the game screen direction (horizontal or vertical).
Refer to the manual included with the game and select the appropriate setting.
Use the HORIZONTAL (#4 OFF) setting for this game.

DIPSW 4 OFF: HORIZONTAL
DIPSW 4 ON: VERTICAL

- Sync Signal Setting

Use DIP SWITCH #5 to set whether the video output should be in separate horizontal and vertical sync signals or in a composite signal.
Select the appropriate setting for each cabinet (monitor).
The SEPARATE (#5 OFF) setting is the normal setting.

DIPSW 5 OFF: SEPARATE
DIPSW 5 ON: COMPOSITE

- Horizontal Sync Frequency

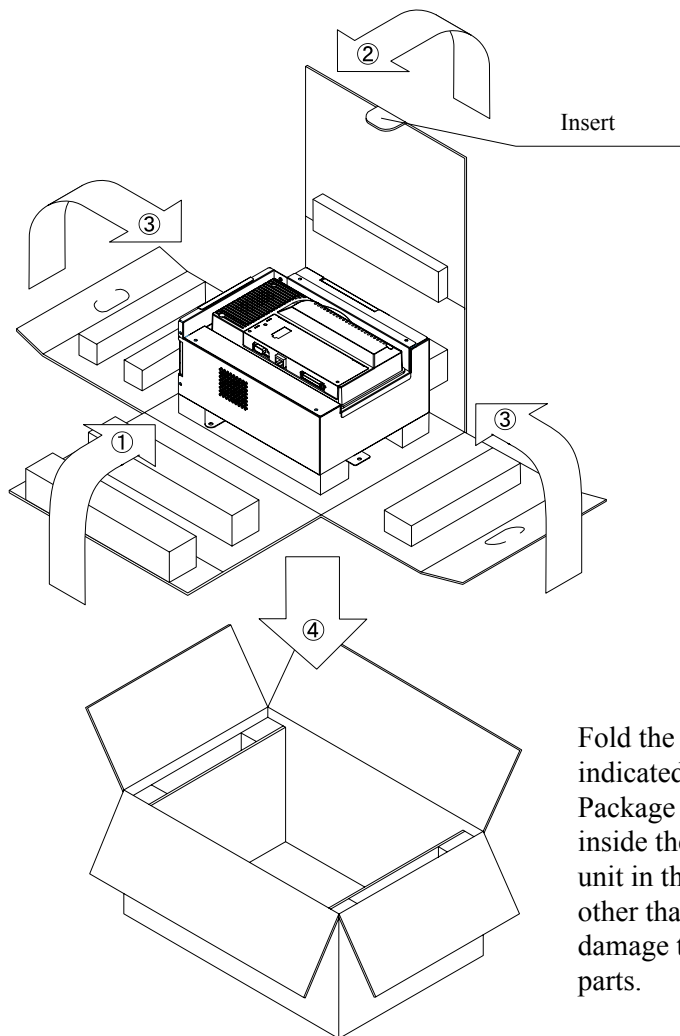
Use DIP SWITCH #6 to set the horizontal sync frequency to either 15.734 kHz or 31.469 kHz.
Refer to the manual included with the cabinet and select the appropriate setting.

DIPSW 6 OFF: 15 kHz
DIPSW 6 ON: 31 kHz

2 - 5 REPAIRS and CARTON BOX

Follow the instructions below when sending the TRIFORCE or GD-ROM DRIVE for repairs. The CARTON BOX included with the kit will be used for repair requests, so keep it in a safe place.

- The following sets should be used when sending units out for repair.
 - (1) TRIFORCE (with DIMM BOARD CASE attached)
 - *Do not remove the KEY CHIP before sending the TRIFORCE for repair.
 - (2) TRIFORCE (without DIMM BOARD CASE)
 - * Remove the DIMM BOARD CASE and send only the TRIFORCE for repair.
 - (3) GD-ROM DRIVE
 - * Remove the GD DRIVE bracket.
 - * Remove the GD-ROM disc, place it in the case and store it in a safe place.
- Remove the wire harness and cables from the TRIFORCE and GD-ROM DRIVE before sending either unit for repair.
- Do not attempt to dismantle the TRIFORCE or GD-ROM DRIVE. Simply place the unit in the CARTON BOX and send it for repair.
- Record the name of the game that was running and details about the problem encountered then send the unit to the designated repair facility.



Fold the packing supplies in the order indicated by the numbers shown in the figure. Package the SHIELD CASE and place it inside the CARTON BOX. Packaging the unit in the wrong direction or in a fashion other than that shown in the figure may cause damage to the GAME BOARD and/or other parts.

FIG. 2 . 5 a

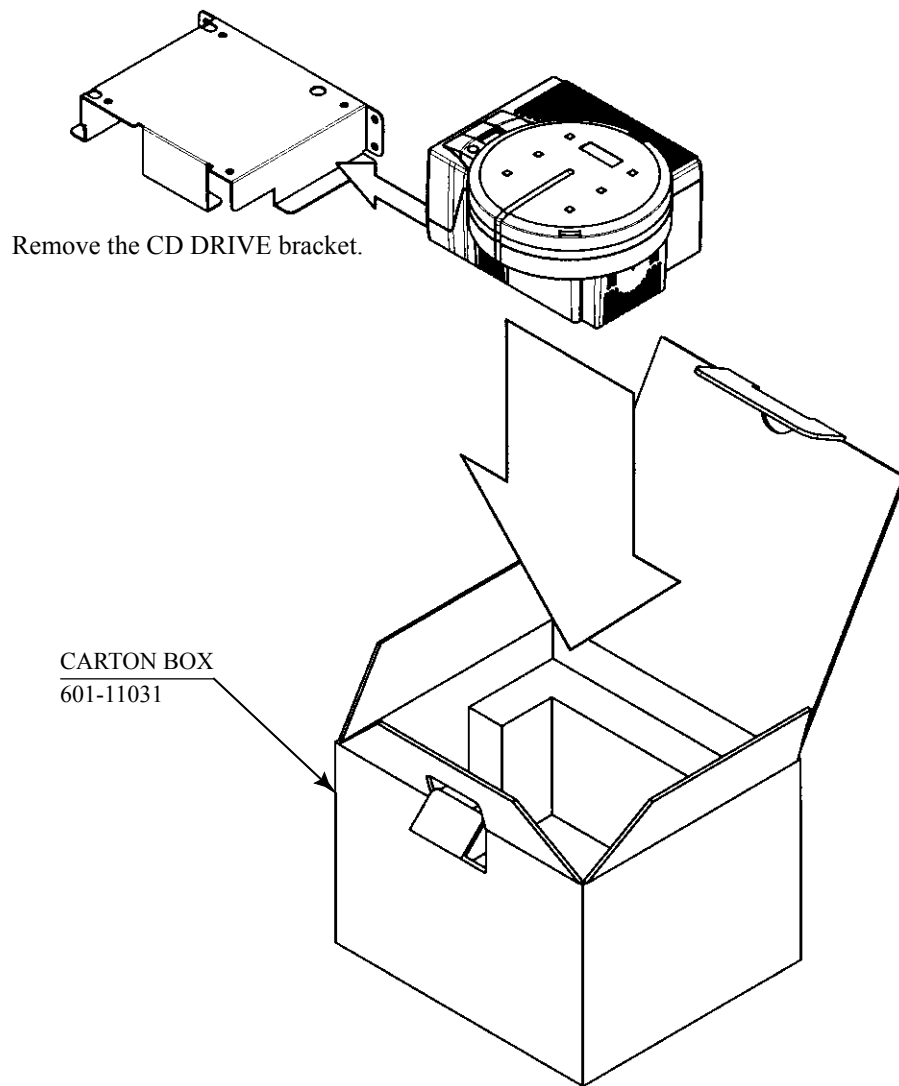


FIG. 2 . 5 b

2 - 6 GAME SPECS

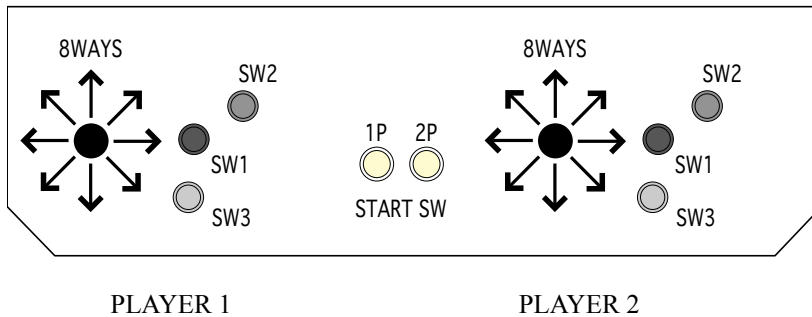
(1) Screen Display

Monitor Direction



Horizontal Sync Frequency
15/31 kHz

(2) Control Panel



When connecting 2 cabinets (2 I/O BOARDS) for versus play, connect the PLAYER 1 CONTROL PANEL wires to the 1P side of the I/O BOARD closest to the TRIFORCE and the PLAYER 2 CONTROL BOARD wires to the 2P side of the I/O BOARD farthest from the TRIFORCE.

(3) Required Operating Environment

FIRMWARE

- MAIN BOARD BOOT Ver. 1.03 or higher
- MAIN BOARD FIRM Ver. 0.29 or higher
- MAIN BOARD FPGA Ver. 7.06 or higher
- DIMM BOARD FIRM Ver. 3.01 or higher

DIMM MEMORY

- 512MB or more

Information about the operating environment for the TRIFORCE is available from the SYSTEM INFORMATION section of TEST MODE (refer to 6-1-3).

3. CONNECTING THE POWER



The disc in the GD-ROM drive starts to turn when the power is connected. If you open the GD-ROM drive lid in this instance, the disc may jump out causing danger. Disconnect the power in advance, therefore, when opening the lid. Do not open the lid immediately after disconnecting power, because the disc has inertia and can continue turning.



- Readout time varies depending on the charge of the DIMM board battery pack. It may be as long as several minutes when the power is connected for the first time or reconnected after a long-term power disconnection.
- Readout time varies depending on the game you play.

- (1) After making sure that the system has been correctly assembled, connect the power to the cabinet.
- (2) Make sure that a TRIFORCE logo appears.
- (3) Make sure that the system starts to read out the game from the GD-ROM. Percentage is displayed during readout.
- (4) Make sure that an advertising screen appears several minutes after readout.
 - If an error message appears, immediately disconnect the power to the cabinet. Referring to the Section 5, "ERROR MESSAGES," take necessary actions and reconnect the power.
 - When a readout time seems to be longer than before, the cause may be a reduction of DIMM board battery pack's charge.

The DIMM board battery pack reduces its maximum charge each time when it is discharged/recharged. After discharging/recharging of about 500 times, the maximum charge may be only 70 to 80% of the initial charge. In other words, the DIMM board battery pack reaches its service life about 16 months after starting to use, based on that you connect and disconnect the power everyday. If this is the case, therefore, refer to "7-3 REPLACING THE DIMM BOARD BATTERY PACK" and replace the DIMM board battery pack.

4. GAME DESCRIPTION

GAME PLAY

- ◆ Choose a national team from one of 63 countries
This tournament style football game captures the essence of international competition. Other players can interrupt a 1P game and initiate a competitive 2P game.
- ◆ Flow of the Game
If you enjoy the game alone, you will compete with the CPU through a world tournament imaged.
If your final score is more than that of the CPU after the end of a match, you can advance to the next match. If it is equal to or fewer than the score of the CPU, Game Over takes place. You can also make settings of the Extension Ending with G-Goal and Penalty Shootout Mode (PK SYSTEM). Even for Penalty Shootout, if your count of success is equal to or fewer than that of the CPU, Game Over takes place.
 - *You can change the time of Extension and the maximum allowable number of shots in Penalty Shootout.
 - You can also enjoy a match of intrusion style and compete with another player of the game.
 - *Apart from matches with the CPU, you can make settings of the time of Extension, the maximum allowable number of shots in Penalty Shootout, and the first/second half option, etc.
 - If the final scores are identical at the end of the match, Game Over takes place or the winner is determined by Penalty Shootout.
 - *Determination of the winner can be selected with Settings.
- ◆ New Features
 - Participating teams from 63 countries.
The number of teams has doubled from the 32 countries represented in the previous version "Virtua Striker 3" to a total of 63.
 - The Stamina Concept
Each player on the pitch has stamina level that decreases over time.
Work one man too hard and he'll slow down noticeably.
- ◆ Operations
You use one lever and three buttons for operations.



- Lever: Move
- Green: [For Offense] Short Pass (Heading for the ball in the air)
(SW3) [For Defense] Sliding (varies with the distance to the player of the opposite team)
- Blue: [For Offense] Long Pass (Centering in the Centering Area)
(SW1) [For Defense] Sliding (varies with the distance to the player of the opposite team)
- Red: [For Offense] Shot (varies with the size of the Power Gauge)
(SW2) [For Defense] Sliding (varies with the distance to the player of the opposite team)

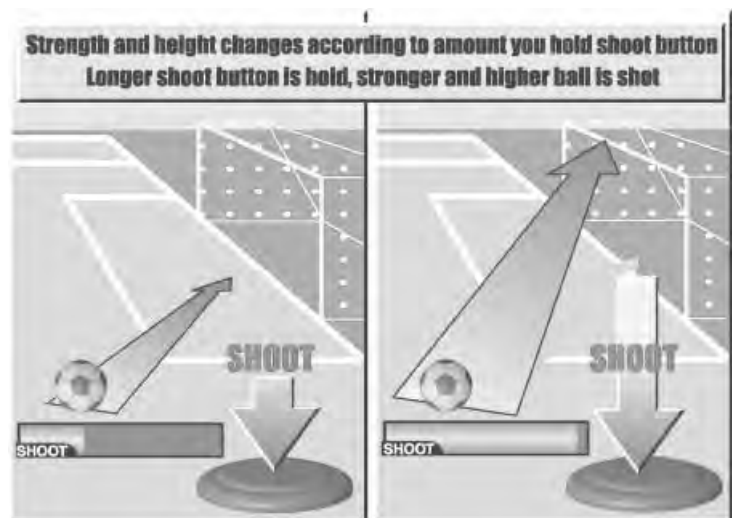
<For Offense>

- Short Pass
By pressing the Short Pass button, a short pass to a player of your team is achieved in the direction in which you move the lever.

- Long Pass
By pressing the Long Pass button, a long pass to a player of your team is achieved in the direction in which you move the lever.
By pressing the Long Pass button in a Centering Area, the ball is centered.



- Shot
By pressing the Shot button while keeping the ball, the Power Gauge is displayed. Pressing and holding down the Shot button extends the gauge; the shooting strength depends on how the gauge is long when you release the button.



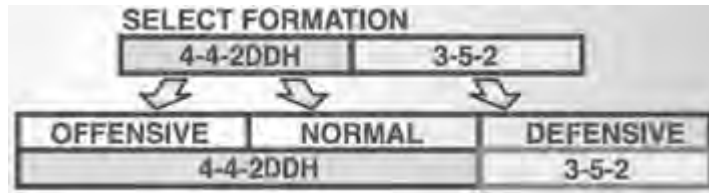
<For Defense>

- Sliding
Pressing the Short Pass button in the defense mode allows the player to slide to the one who is keeping the ball.

<Selecting Formation>

Before beginning a match, you can select the formation using the Start button. The options from which you can select the desired one depend on the team.

With the selected formation as NORMAL, an OFFENSIVE or DEFENSIVE formation is assigned automatically.



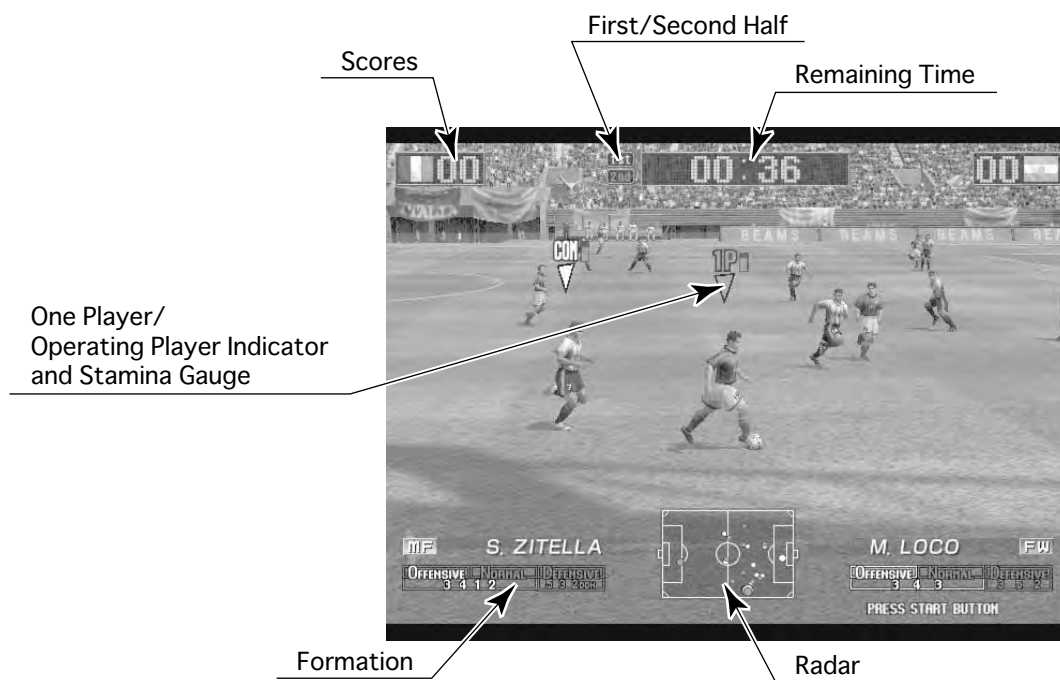
If you have set the first/second half system, you can change the formation during the half time.

<Tactics Switching>

By pressing the Start button while the match is in progress, you can switch the tactics of the team and its associated formation. Note that it takes some time to allow the tactics to spread and function throughout the team.



◆ Game Screen



5. ERROR MESSAGES

TRIFORCE displays on-screen error messages indicating various types of malfunction. Games cannot be played when error messages are displayed. Below are listed some causes and countermeasures.

MEDIA BOARD IS NOT FOUND.

[DISPLAY]	MEDIA BOARD IS NOT FOUND.
[CAUSE]	MAIN BOARD or MEDIA BOARD is broken.
[COUNTERMEASURES]	With the MEDIA BOARD still attached to the MAIN BOARD, send the TRIFORCE for repair.

Error 01

[DISPLAY]	Error 01
[CAUSE]	This game is not acceptable by main board. MEDIA BOARD is not inserted (completely) into the MAIN BOARD.
[COUNTERMEASURES]	Power off the unit, then reinsert the MEDIA BOARD. Should the problem persist, the BOARD may be damaged.

Error 02

[DISPLAY]	Error 02
[CAUSE]	Main board malfunctioning. MAIN BOARD is inoperative.
[COUNTERMEASURES]	Verify that the MAIN BOARD is connected properly.

Error 03

[DISPLAY]	Error 03
[CAUSE]	Bad serial number on main board. Unable to read MAIN BOARD serial ID.
[COUNTERMEASURES]	Disconnect the MEDIA BOARD from the MAIN BOARD and send the MAIN BOARD for repair.

Error 04

[DISPLAY]	Error 04
[CAUSE]	Bad serial number on media board. Unable to read MEDIA BOARD serial ID.
[COUNTERMEASURES]	With the MEDIA BOARD still attached to the MAIN BOARD, send the TRIFORCE for repair.

Error 05

[DISPLAY]	Error 05
[CAUSE]	This game is not acceptable by main board. The game is a foreign edition.
[COUNTERMEASURES]	Use the domestic version of the game.

<p>Error 11 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 11 JVS I/O board is not connected to main board. (1) I/O BOARD is not connected. (2) Unreliable connection between MAIN BOARD and I/O BOARD. (1) Connect the I/O BOARD to the MAIN BOARD. Verify that the power cable is connected to I/O BOARD. (2) Reconnect or replace the USB CABLE that connects the I/O BOARD to the MAIN BOARD.</p>
<p>Error 12 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 12 JVS I/O board does not fulfill the game spec. Correct I/O BOARD is not connected. Use an I/O BOARD that provides the proper input/output for the game.</p>
<p>Error 21 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 21 This game is not acceptable by main board. Game data loaded from the GD-ROM to the DIMM BOARD is corrupted. Verify the GD-ROM DRIVE and TRIFORCE connection. Check the GD-ROM disc for scratches, dust or dirt.</p>
<p>Error 22 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 22 Communication error occurred between main board and media board. No response from DIMM BOARD to MAIN BOARD. Ensure that the DIMM BOARD and the GD INTERFACE BOARD are properly connected. Should the problem persist, the DIMM BOARD or GD INTERFACE BOARD may be damaged.</p>
<p>Error 23 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 23 GD-ROM drive cover is open. The GD-ROM DRIVE cover is open. Ensure the GD-ROM DRIVE cover is firmly closed.</p>
<p>Error 24 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 24 GD-ROM is not found. GD-ROM disc is not found. Insert the GD-ROM disc correctly. Verify that the disc is a TRIFORCE GD-ROM disc. Check the GD-ROM disc for scratches, dust or dirt.</p>

<p>Error 25 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 25 Cannot access GD-ROM drive. (1) Unable to access GD-ROM DRIVE. (2) The GD-ROM DRIVE cover is open. (1) Verify that the GD CABLE and the power cable are properly connected to the GD-ROM DRIVE. (2) Close the GD-ROM cover securely. Should the problem persist, the GD-ROM DRIVE may be damaged.</p>
<p>Error 26 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 26 Media board malfunctioning. KEY CHIP is not found. Attach the proper KEY CHIP for the game. Insert the KEY CHIP securely.</p>
<p>Error 27 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 27 DIMM memory is not enough. (1) Insufficient DIMM MEMORY on DIMM BOARD. (2) DIMM MEMORY is not connected securely. (1) Provide a suitable amount of DIMM MEMORY for the software. (2) Verify that the DIMM MEMORY is connected securely to the DIMM BOARD.</p>
<p>Error 31 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 31 This game is not acceptable by main board. The game has not been downloaded into the DIMM BOARD from the HOST MACHINE. Check network connections. Verify that the PC is connected to the network. Reset the main power. Wait until the game is displayed on the main screen, then turn the satellite power on and reboot. In Test Mode, select NETWORK SETTING from the SYSTEM MENU and check that the NETWORK TYPE is set to ETHER. In Test Mode, select NETWORK SETTING from the SYSTEM MENU, go to SET IP ADDRESS and verify that the REMOTE setting is appropriate for the game in use. Check the internal DIMM BOARD battery is functioning correctly.</p>

<p>Error 32 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 32 DIMM memory is not enough. (1) Insufficient DIMM MEMORY on DIMM BOARD. (2) DIMM MEMORY is not connected securely. (1) Ensure there is sufficient DIMM MEMORY for the software. (2) Verify that the DIMM MEMORY is connected securely to the DIMM BOARD.</p>
<p>Error 33 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 33 Gateway is not found. HOST MACHINE is not found. Attach the KEY CHIP designed to support the game. Make certain that the KEY CHIP is inserted completely.</p>
<p>Error 51 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 51 Wrong video output setting of horizontal scanning frequency. The game does not support horizontal sync frequency setting. Change the No. 6 DIPSW on the CONNECTOR BOARD. ON is 31 kHz, OFF is 15 kHz. The monitor must support these frequencies.</p>
<p>Error 52 [DISPLAY]</p> <p>[CAUSE]</p> <p>[COUNTERMEASURES]</p>	<p>Error 52 Wrong video output setting of horizontal/vertical screen. The game does not support the vertical/horizontal screen settings. Change the No. 4 DIPSW on the CONNECTOR BOARD. ON is for vertically placed monitor screens, OFF is for horizontally placed monitor screens. Change the monitor placement from vertical to horizontal or vice versa if necessary.</p>

6. TEST MODE



- Any settings that are changed by users during TEST MODE are saved upon exiting TEST MODE with the EXIT command in the SYSTEM MENU. If the unit is powered off prior to exiting, changes to settings will not take effect.
- You may not enter GAME TEST MODE while the unit is reading from or checking the GD-ROM. If error messages are displayed when exiting TEST MODE, you should power the unit off and on again.

6 - 1 SYSTEM TEST MODE

SYSTEM TEST MODE is used primarily to check if boards are functioning properly, to adjust monitor colours and change coin/credit settings.

- (1) Press the TEST Button after powering on the unit to display the following SYSTEM MENU.

```
SYSTEM MENU

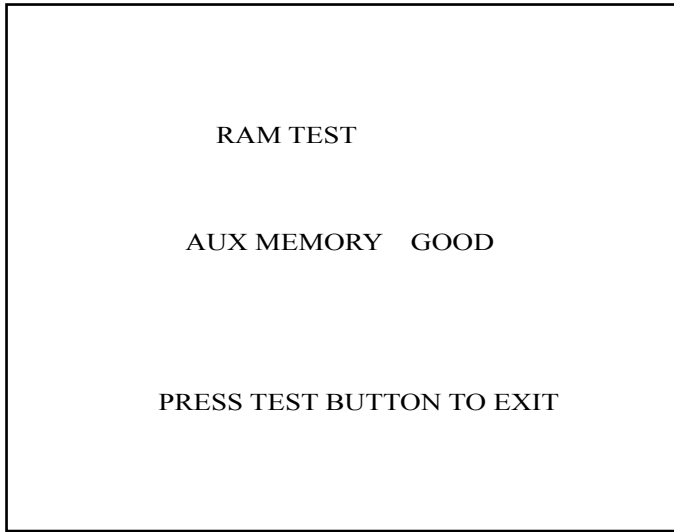
RAM TEST
MEDIA BOARD TEST
SYSTEM INFORMATION
JVS TEST
SOUND TEST
C.R.T. TEST
COIN ASSIGNMENTS
CLOCK SETTING
NETWORK SETTING
ENTER GAME TEST
[*****]
EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

- (2) Press the SERVICE Button to move the cursor to the desired test item.
- (3) Move the cursor to the desired item and press the TEST Button to display each test screen.
- (4) Move the cursor to ENTER GAME TEST and press the TEST Button to enter the individual test menus for each game. Refer to "6-2 GAME TEST MODE".
- (5) When testing is complete, move the cursor to EXIT and press the TEST Button. The game advertisement screen should be displayed.

6 - 1 - 1 RAM TEST

Use RAM TEST to run a check of the TRIFORCE MAIN BOARD memory IC.



- (1) RAM TEST begins immediately upon entering this test mode.
- (2) If "GOOD" is displayed at the right-hand side of the screen, memory IC is functioning properly.
- (3) After the test is complete, move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

6 - 1 - 2 MEDIA BOARD TEST



Powering off the system during the MEDIA BOARD TEST with a DIMM BOARD will erase the game programme data. It may be necessary to reload the data.
Always wait for the test to complete before attempting to exit.

MEDIA BOARD TEST is used to check the memory and IC on the MEDIA BOARD connected to the TRIFORCE. Test screens and test times may differ depending on the type of MEDIA BOARD connected to the unit.

* The following is the MEDIA BOARD TEST screen for a unit with a DIMM BOARD.

```
MEDIA BOARD TEST

VERSION ****
STATUS GOOD
CHECKING 100%

SYSTEM TEST
DIMM0 - GOOD
DIMM1 - GOOD
IC34,35S - GOOD
IC10,11S - GOOD
GD DRIVE - GOOD
-- COMPLETED --

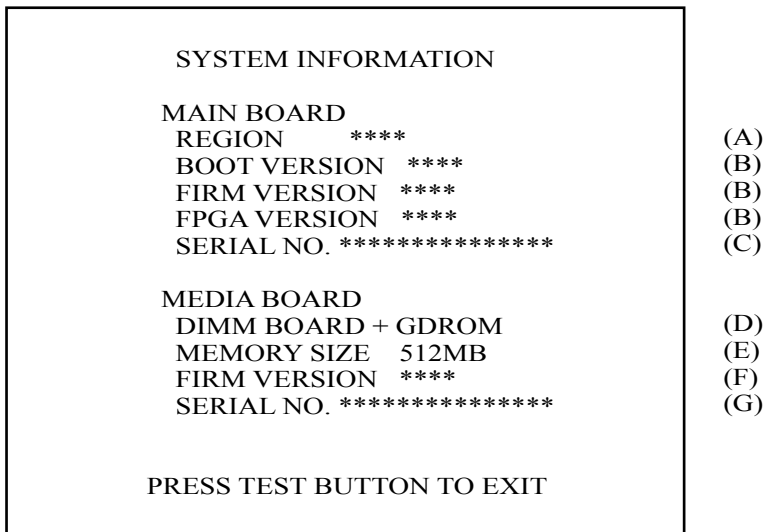
PRESS TEST BUTTON TO EXIT
```

- (1) MEDIA BOARD TEST begins immediately upon entering this test mode.
- (2) If "GOOD" is displayed to the right of each item, the MEDIA BOARD components are functioning properly.
- (3) After the test is complete, move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

6 - 1 - 3 SYSTEM INFORMATION

Use SYSTEM INFORMATION to check version and other information for system programmes. Screens may differ depending on the type of MEDIA BOARD connected to the unit.

※ The following is the SYSTEM INFORMATION screen for a unit with a DIMM BOARD.



Press the TEST Button to return to the SYSTEM MENU screen.

- (A) REGION
The COUNTRY CODE of the MAIN BOARD.
- (B) BOOT VERSION, FIRM VERSION, FPGA VERSION
Version information for the MAIN BOARD system programmes.
- (C) SERIAL NO.
Serial number of the MAIN BOARD.
- (D) DIMM BOARD + GDROM
Type of MEDIA BOARD. This example shows a DIMM BOARD with a GD-ROM DRIVE connected.
- (E) MEMORY SIZE
Capacity of DIMM memory installed on the DIMM BOARD.
- (F) FIRM VERSION
Version information for the DIMM BOARD system programme.
- (G) SERIAL NO.
Serial number of the DIMM BOARD.

6 - 1 - 4 JVS TEST

JVS TEST is used to verify the specs of the I/O BOARD connected to the TRIFORCE and to run input tests.

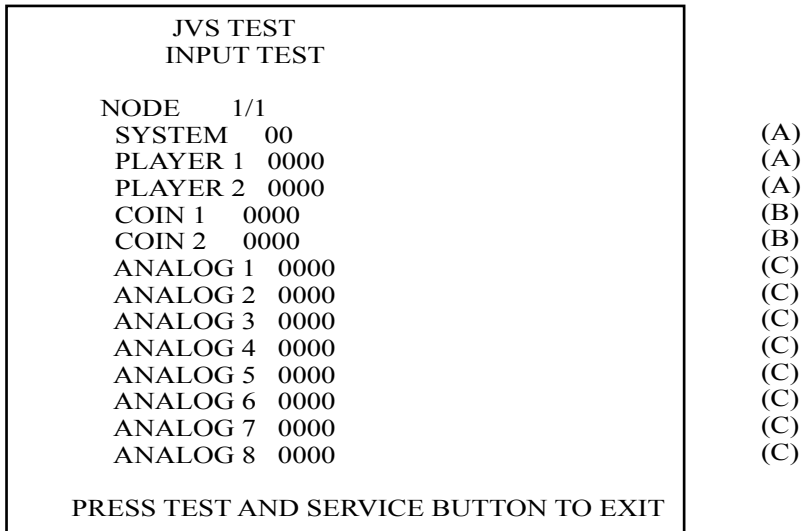
I/O BOARD specs are displayed initially.

Screens may differ depending on the type of I/O BOARD connected to the unit.

```
JVS TEST
INPUT TEST
NEXT NODE
EXIT
NODE 1/1
NAME *****
I/O BD JVS
*****
Ver****
CMD VER 1.1
JVS VER 2.0
COM VER 1.0
SWITCH 2 PLAYER(S) 13 BITS
COIN 2 SLOT
ANALOG 8 CH
ROTARY 0 CH
KEYCODE 0
SCREEN X:0 Y:0 CH:0
CARD 0 SLOT
HOPPER OUT 0 CH
DRIVER OUT 6 CH
ANALOG OUT 0 CH
CHARACTER CHARA:0 LINE:0
BACKUP 0
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

- (1) Use the SERVICE Button to move the cursor to the desired test item.
- (2) Move the cursor to INPUT TEST and press the TEST Button to enter the INPUT TEST screen for the I/O BOARD currently displayed.
- (3) When 2 or more I/O BOARDS are connected, move the cursor to NEXT NODE and press the TEST Button to enter the test screen for the next I/O BOARD. The lower the NODE number, the further away the node is from the TRIFORCE.
- (4) Move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

INPUT TEST Screen



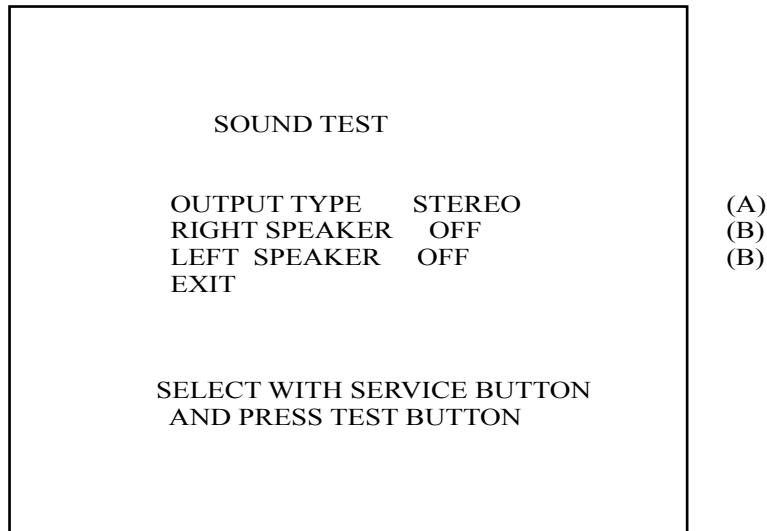
(1) On-screen values change according to the input from switches and the volume.

- (A) SYSTEM, PLAYER
Values change with input from control panel/other switches.
- (B) COIN
Increases with input from the COIN SWITCH. The count is cleared when exiting TEST MODE.
- (C) ANALOG
Displays analog values from "0000" to "FFFF".

(2) Press the SERVICE and TEST Buttons simultaneously to return to the JVS TEST main screen.

6 - 1 - 5 SOUND TEST

Use SOUND TEST to test sound output and to toggle the stereo/mono setting.



(1) Use the SERVICE Button to move the cursor to the desired test item.

(2) Press the TEST Button to enter the selected item.

(A) OUTPUT TYPE(STEREO, MONO)

Toggle the sound output from the I/O PANEL audio output interface setting between STEREO and MONO.

(B) RIGHT/LEFT SPEAKER(ON, OFF)

When set to "ON", the test sends a beep to each right and left audio output interface. Only the word "SPEAKER" is displayed when the OUTPUT TYPE is set to "MONO", and when set to "ON", the test sends the same beep to both the left/right audio output interfaces.

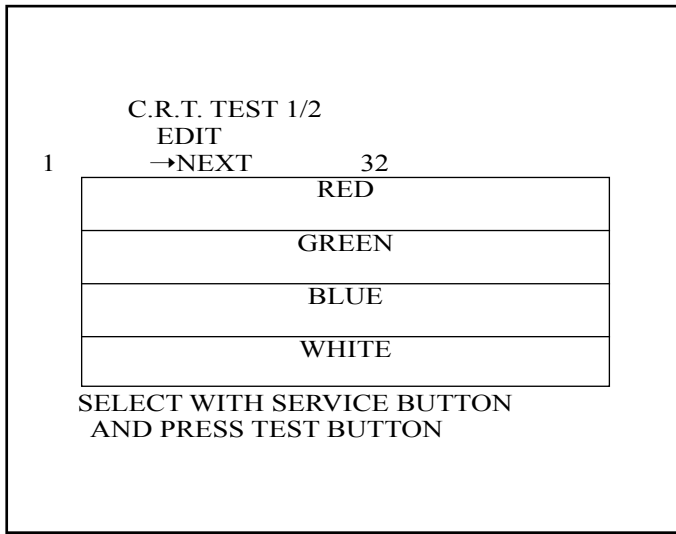
(3) Move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

6 - 1 - 6 C.R.T. TEST

Use the C.R.T. TEST to adjust monitor colours and verify screen size.

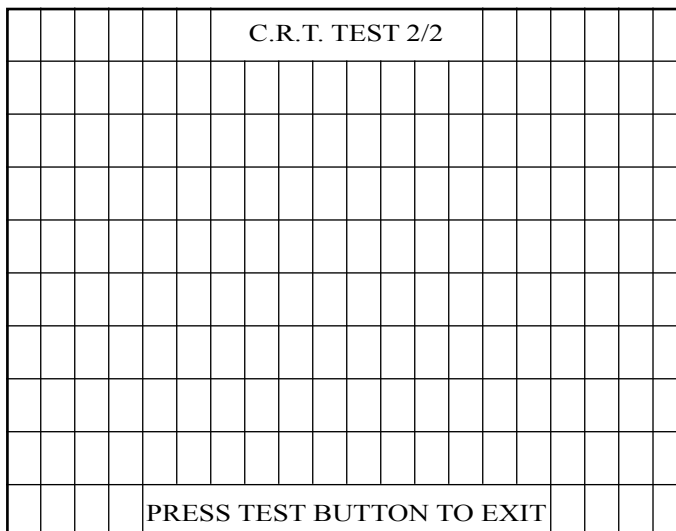
COLOUR CHECK Screen

- (1) Monitor COLOUR CHECK screen is displayed initially.
Each of the colours (red, green and blue) is darkest at the far left and gets progressively lighter (32 steps) towards the right.
Monitor brightness is set correctly if the white colour bar is black at the left edge and white at the right edge.



- (2) Use the SERVICE Button to move the cursor to the desired test item.
- (3) Move the cursor to EDIT and press the TEST Button to enter COLOUR ADJUST mode.
- (4) Move the cursor to NEXT and press the TEST Button to enter the SIZE CHECK screen.

SIZE CHECK Screen

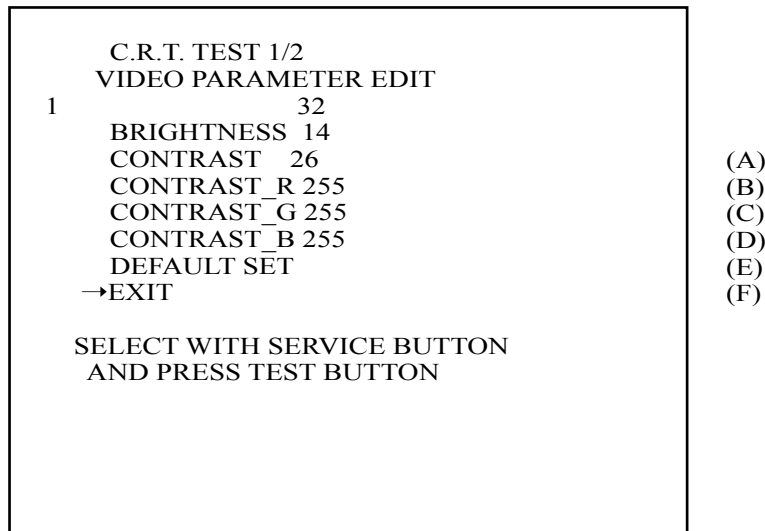


- (5) Adjust the CHECK GRID so that the entire GRID is displayed on the screen.
- (6) Press the TEST Button to return to the SYSTEM MENU screen.

COLOUR ADJUST MODE Screen

This mode is for monitors that do not have colour adjustment features.
Normally the colour should be adjusted through the monitor.

- (1) Use the SERVICE Button to move the cursor to the item to be adjusted.
- (2) Press the TEST Button to enter the selected item.



- (A) BRIGHTNESS(10-60)
Adjust the brightness of the screen.
- (B) CONTRAST(10-44)
Adjust the colour contrast.
- (C) CONTRAST_R(155-255)
Adjust the RED contrast.
- (D) CONTRAST_G(155-255)
Adjust the GREEN contrast.
- (E) CONTRAST_B(155-255)
Adjust the BLUE contrast.
- (F) DEFAULT SET
Return colour settings to the default values.

- (3) Move the cursor to EXIT and press the TEST Button to enter the SIZE CHECK screen.

6 - 1 - 7 COIN ASSIGNMENTS

Use COIN ASSIGNMENTS to set the credit rate for each coin inserted.

- (1) Use the SERVICE Button to move the cursor to the desired test item.
- (2) Press the TEST Button to change the setting or to open the detailed settings.
- (3) Move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

COIN ASSIGNMENTS		COIN ASSIGNMENTS
COIN CHUTE TYPE COMMON	(A)	COIN CHUTE TYPE INDIVIDUAL
SERVICE TYPE COMMON	(B)	SERVICE TYPE INDIVIDUAL
COIN CHUTE #1 COIN TO CREDIT RATE	(C)	COIN CHUTE #1 COIN TO CREDIT RATE
1 COIN(S) COUNT AS 1 CREDIT(S)		1 COIN(S) COUNT AS 1 CREDIT(S)
COIN CHUTE #2 COIN TO CREDIT RATE	(C)	
1 COIN(S) COUNT AS 1 CREDIT(S)		
DETAIL SETTING	(D)	DETAIL SETTING
GAME COST SETTING	(H)	GAME COST SETTING
→EXIT		→EXIT
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON		SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON

COIN CHUTE TYPE...COMMON

COIN CHUTE TYPE...INDIVIDUAL

(A) COIN CHUTE TYPE(COMMON, INDIVIDUAL)

Adjust settings according to the specs of the cabinet COIN CHUTE.

COMMON

This is for cabinets where a single COIN CHUTE is used by multiple players.

Coins inserted by each player are treated as common credits.

Up to 2 COIN CHUTES (#1 and #2) may be used. The (C) COIN TO CREDIT RATE setting for COIN CHUTE #1 and #2 may be set differently.

INDIVIDUAL

This is for cabinets with individual COIN CHUTES for each player.

Coins inserted by each player are treated as individual player credits.

The (C) COIN TO CREDIT RATE setting is used by all COIN CHUTES.

(B) SERVICE TYPE(COMMON, INDIVIDUAL)

Use this to set the function of each SERVICE Button when there is more than one SERVICE Button.

COMMON

Pressing any SERVICE Button enters service credits for all players.

INDIVIDUAL

Pressing the SERVICE Button enters service credits only for the corresponding player.

- (C) COIN TO CREDIT RATE
 Set the CREDIT RATE for each coin inserted.
 The " x COIN(S) COUNT AS x CREDIT(S)" setting indicates that "Inserting x coins equals y credits".
 Set this to "FREE PLAY" to allow game play without credits.
 When (A) COIN CHUTE TYPE is set to "COMMON", COIN CHUTE #2 settings are restricted to some extent by the settings for COIN CHUTE #1.
- (D) DETAIL SETTING
 This mode allows for more detailed credit rate settings than the (C) COIN TO CREDIT RATE setting.
 Changes made in DETAIL SETTING override any (C) COIN TO CREDIT RATE settings.

DETAIL SETTING Screen

```

COIN ASSIGNMENTS
DETAIL SETTING
COIN CHUTE #1 MULTIPLIER
1 COIN COUNT AS 1 COIN(S)
COIN CHUTE #2 MULTIPLIER
1 COIN COUNT AS 1 COIN(S)
BONUS ADDER      NO BONUS ADDER
COIN TO CREDIT  1 COIN(S) 1 CREDIT
→EXIT
COIN CHUTE #1 OPERATION
COIN  1 2 3 4 5 6 7 8 9
CREDIT 1 2 3 4 5 6 7 8 9
COIN CHUTE #2 OPERATION
COIN  1 2 3 4 5 6 7 8 9
CREDIT 1 2 3 4 5 6 7 8 9
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
  
```

COIN CHUTE TYPE...COMMON

```

COIN ASSIGNMENTS
DETAIL SETTING
COIN CHUTE #1 MULTIPLIER
1 COIN COUNT AS 1 COIN(S)
(E)
(E)
(F)      BONUS ADDER      NO BONUS ADDER
(G)      COIN TO CREDIT  1 COIN(S) 1 CREDIT
→EXIT
COIN CHUTE #1 OPERATION
COIN  1 2 3 4 5 6 7 8 9
CREDIT 1 2 3 4 5 6 7 8 9

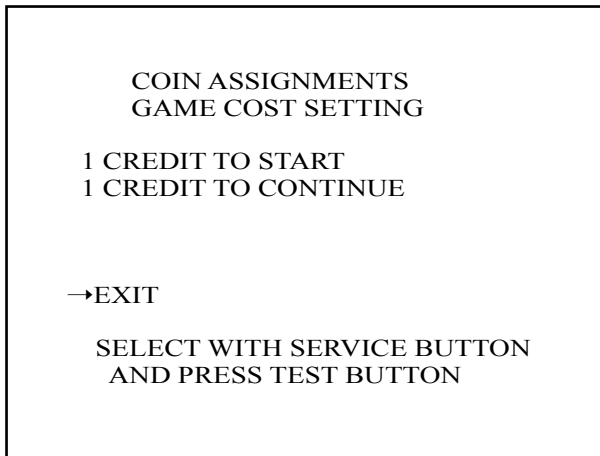
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
  
```

COIN CHUTE TYPE...INDIVIDUAL

- (E) COIN CHUTE MULTIPLIER
 Use this to set how many coins will be counted for each coin inserted.
 The " 1 COIN COUNT AS x COIN(S)" setting indicates that "Each coin will be counted as x coins".
 When the (A) COIN CHUTE TYPE is set to "COMMON", the setting may be set individually for COIN CHUTE #1 and #2.
- (F) BONUS ADDER
 Use this to set the number of coins calculated with the (E) COIN CHUTE MULTIPLIER setting that need to be inserted to get 1 bonus coin. When the (A) COIN CHUTE TYPE is set to "COMMON", the sum of the coins for COIN CHUTE #1 and #2 is used for the calculation.
 The " x COINS GIVE 1 EXTRA COIN" setting indicates that "For every x coins, 1 bonus coin is given".
 Set this to "NO BONUS ADDER" to disable bonus coins entirely.
- (G) COIN TO CREDIT
 Use this to set how many coins calculated with the (F) BONUS ADDER setting count as 1 credit.
 The " x COIN(S) 1 CREDIT" setting indicates that "Every x coins equals 1 credit."

(H) GAME COST SETTING

Use this mode to set the number of credits required to start a game.
Screens may differ depending on the game.



(I)
(J)

(I) Set the number of credits required to start a game.

(J) Set the number of credits required to continue a game.

6 - 1 - 8 CLOCK SETTING

Use CLOCK SETTING to set the TRIFORCE internal clock.

CLOCK SETTING

2002/11/15(FRI) 05:10:34

YEAR
MONTH
DAY
HOUR
MINUTE
→EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

- (1) Use the SERVICE Button to move the cursor to the item to be set.
- (2) Move the cursor to the desired item and press the TEST Button to increase values.
The max value for YEAR is "2099"; further increases return the value to "2000".
- (3) Move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

6 - 1 - 9 NETWORK SETTING

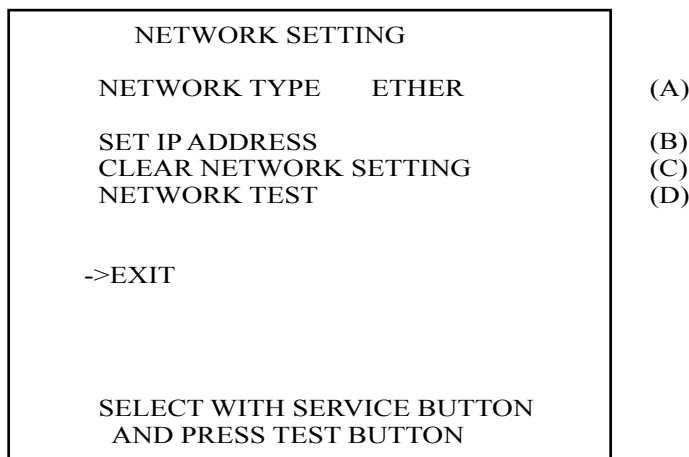
Use NETWORK SETTING to establish and test network connections.

This is only displayed when a network enabled MEDIA BOARD is connected to the TRIFORCE.

✳ This game does not support network communication connections.

Set (A) NETWORK TYPE to "NONE".

- (1) Use the SERVICE Button to move the cursor to the desired test item.
- (2) Press the TEST Button to change the setting or to open the detailed settings.
- (3) Move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.



(A) NETWORK TYPE

Choose a type of the communication network.

NONE: Sets that the communication system does not perform. Sets to NONE when you don't set the network system.

ETHER: Sets ETHER for the communication network.

MOBILE: Sets a mobile communication terminal for the communication network.

ETHER+MOBILE

DEFAULT ETHER: Set ETHER or MOBILE automatically for the communication network. Priority is given to ETHER.

ETHER+MOBILE

DEFAULT MOBILE: Set ETHER or MOBILE automatically for the communication network. Priority is given to MOBILE.

(B) SET IP ADDRESS

This sets up the details of the communication network. Depending on the NETWORK TYPE setting, the contents of setting vary. If setting to NONE, it does not appear.

●ETHER Setting

SET IP ADDRESS 1/1	
->REMOTE ENABLE	(E)
IP ADDRESS(E)	(F)

SUBNET MASK(E)	(G)

EXIT	
CURRENT *****	(I)
*** **	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

●MOBILE Setting

SET IP ADDRESS 1/1	
->IP ADDRESS(M)	(H)

EXIT	
CURRENT *****	(I)
*** **	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

●ETHER+MOBILE Settings

```

SET IP ADDRESS 1/1
->REMOTE      ENABLE      (E)
IP ADDRESS(E) (F)
-----
SUBNET MASK(E) (G)
-----
IP ADDRESS(M) (H)
-----
EXIT

CURRENT ***** (I)
***.***.***.***
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

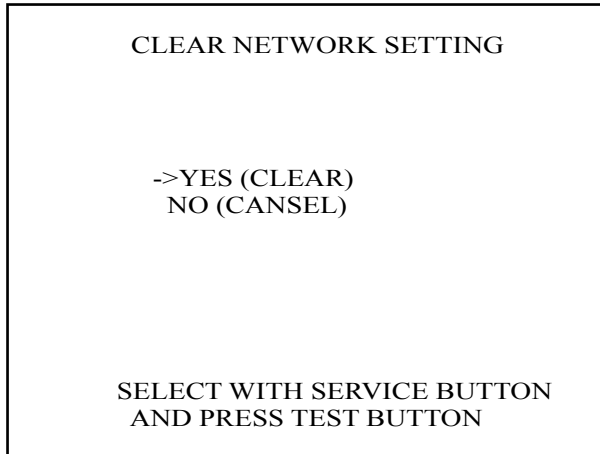
```

- (1) Use the SERVICE Button to move the cursor to the desired test item.
(When setting IP ADDRESS or SUBNET MASK, use the underline as a guide.)
- (2) Press the TEST Button to change the setting.
- (3) Move the cursor to EXIT and press the TEST Button to return to the NETWORK SETTING screen.

- (E) REMOTE
This sets up whether a communication setting is automatic or manual.
ENABLE: Sets the communication setting automatically.
DISABLE: Sets the communication setting manually.
- (F) IP ADDRESS (E)
This is one of the settings required for communication network. After setting the number, press TEST Button on SET position to memorize the setting. If you set the REMOTE setting to ENABLE, you cannot select this.
- (G) SUBNET MASK (E)
This is one of the settings required for communication network. After setting the number, press TEST Button on SET position to memorize the setting. If you set the REMOTE setting to ENABLE, you cannot select this.
- (H) IP ADDRESS (M)
This is one of the settings required for communication network. After setting the number, press TEST Button on SET position to memorize the setting.
- (I) CURRENT
This displays the present setting value during a setup of each item [(F), (G), (H)]. Pressing TEST Button on SET position, the settings are memorized and the screen is changed.

(C) CLEAR NETWORK SETTING

Use this to return all values in the NETWORK SETTING to the default values and turn off network communication.



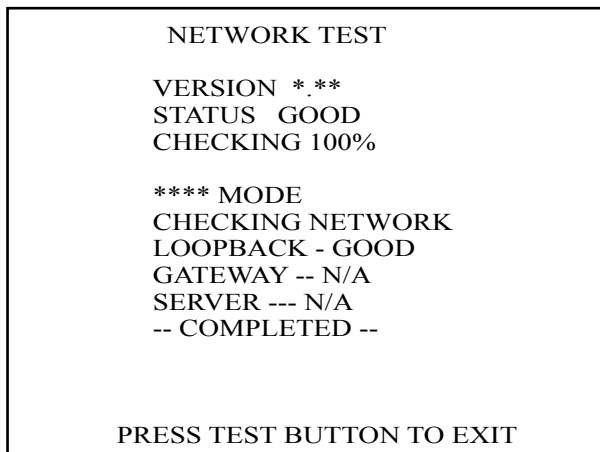
To clear data, use the SERVICE Button to move the cursor to YES (CLEAR) and press the TEST Button. When the data has been cleared, the message "COMPLETED" is displayed.

Press the TEST Button again to return to the NETWORK SETTING main screen.

Move the cursor to NO (CANCEL) and press the TEST Button to return to the NETWORK SETTING main screen without clearing the data.

(C) NETWORK TEST

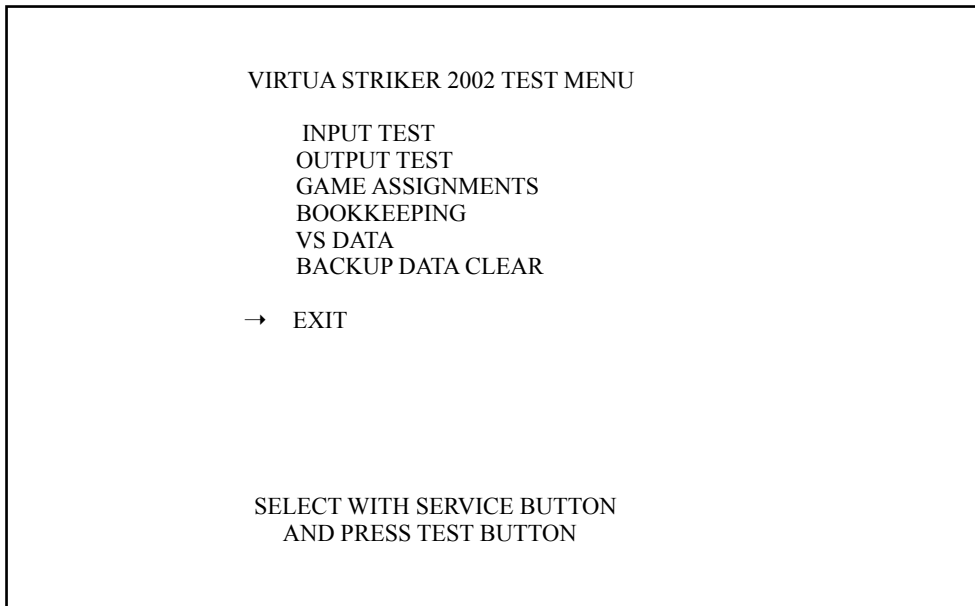
In this test, the checking for the communication network can be performed. Entering this test mode, checking starts immediately.



The display changes to GOOD when the checking is finished successfully, and changes to BAD when any problem is detected. If the connection is not permitted, the display will change to N/A. If you perform this test immediately after the setting change, it may not display the correct result. In this case, be sure to turn the power off and on, and enter this test mode again.

6 - 2 GAME TEST MODE

Use GAME TEST MODE to check game settings and play data.



- (1) Use the SERVICE Button to move the cursor to the desired test item.
- (2) Press the TEST Button to enter the selected item.
- (3) After the test is complete, move the cursor to EXIT and press the TEST Button to return to the SYSTEM MENU screen.

6 - 2 - 1 INPUT TEST

Select INPUT TEST to display the following screen and check the status of input devices. This test should be used periodically to check that each input device is functioning correctly.

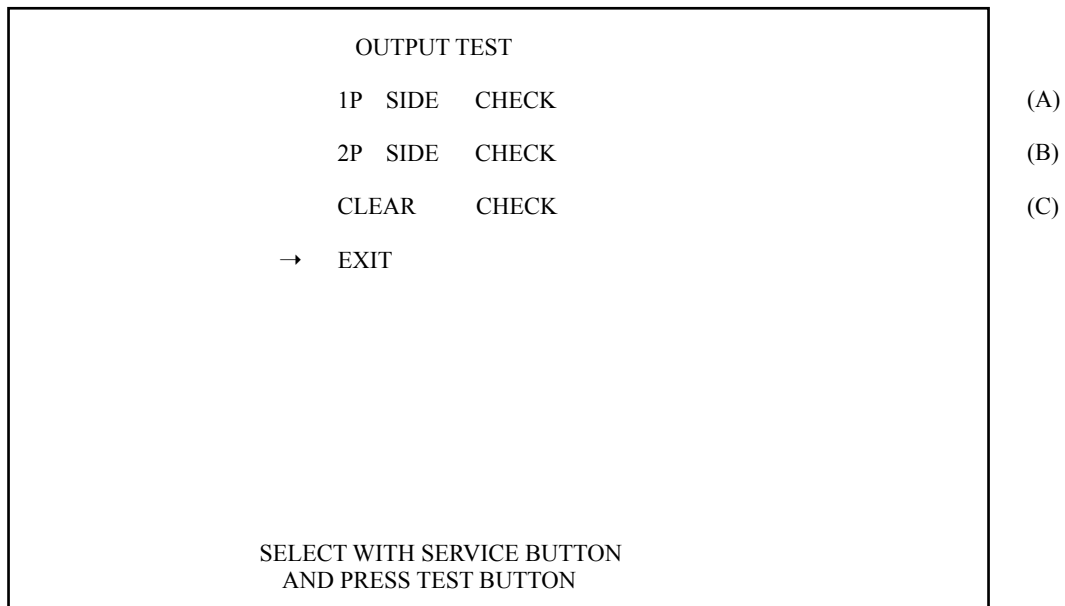
INPUT TEST		
	1P	2P
UP	OFF	OFF
DOWN	OFF	OFF
RIGHT	OFF	OFF
LEFT	OFF	OFF
SHORT PASS	OFF	OFF
LONG PASS	OFF	OFF
SHOOT	OFF	OFF
START	OFF	OFF
SERVICE TEST	OFF	OFF

PRESS TEST AND SERVICE BUTTON TO EXIT

- (1) Make sure that the indicator for each of the input devices can be changed from OFF to ON as you operate the corresponding device.
- (2) Press the SERVICE and TEST Buttons simultaneously to return to the GAME TEST MENU screen.

6 - 2 - 2 OUTPUT TEST

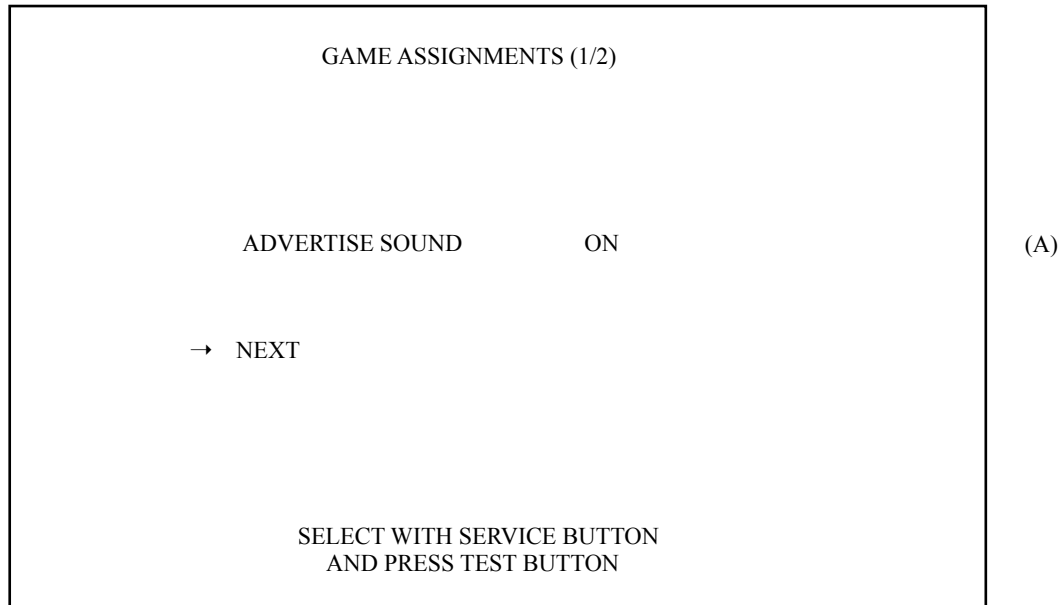
Use OUTPUT TEST to check the SEGA VERSUS CITY 7 SEGMENTS display and flash the billboard lamp.



- (1) Use the SERVICE Button to move the cursor to the desired test item.
- (2) Press the TEST Button to enter the selected item.
 - (A) 1P SIDE CHECK
Display the 7 segments on the 1P side and flash the billboard lamp.
 - (B) 2P SIDE CHECK
Display the 7 segments on the 2P side and flash the billboard lamp.
 - (C) CLEAR CHECK
Turn off 1P and 2P 7 segment displays and billboard lamp.
- (3) After changing the settings, select EXIT and press the TEST Button to return to the GAME TEST MENU screen.

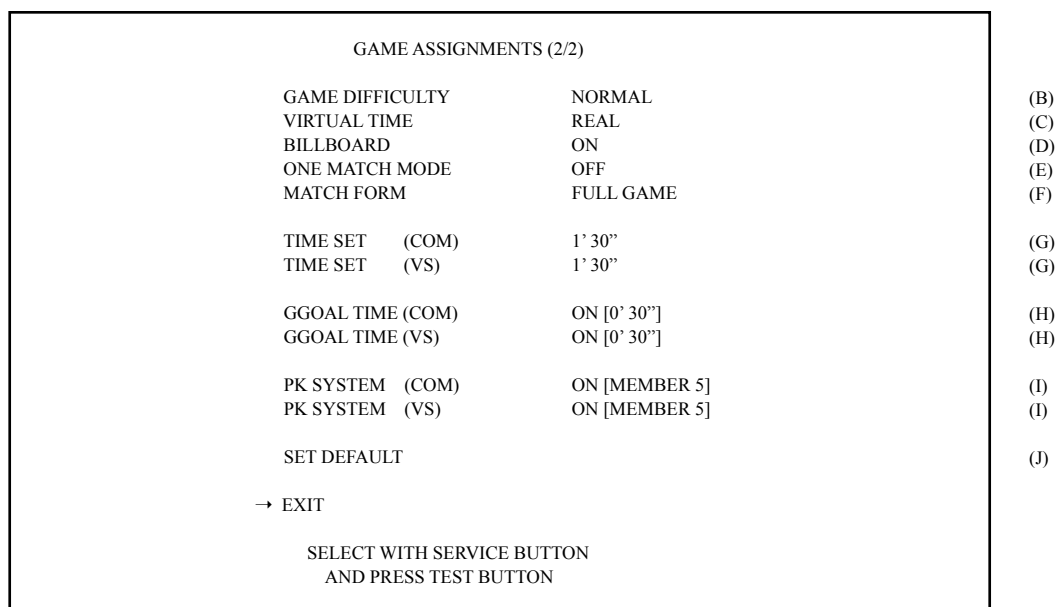
6 - 2 - 3 GAME ASSIGNMENTS

Select GAME ASSIGNMENTS to display the current game settings and make changes. Changes to settings are not enabled until Test Mode is exited. After changing settings, be sure to exit Test Mode.



- (1) Use the SERVICE Button to move the cursor to the desired item.
- (2) Press the TEST Button to enter the selected item.
- (3) Move the cursor to NEXT and press the TEST Button to enter the next GAME ASSIGNMENTS screen.

(A) ADVERTISE SOUND(ON, OFF)
Turn advertisement sounds ON/OFF.



- (4) After changing the settings, select EXIT and press the TEST Button to return to the GAME TEST MENU screen.

- (B) GAME DIFFICULTY (VERY EASY, EASY, NORMAL, HARD, HARDEST)
Set the level of game difficulty.
- (C) VIRTUAL TIME (REAL, 2 HOUR, 4 HOUR)
Set the number of hours that pass in one game day.
Internal game time will progress according to this setting and the graphics used in the game will progressively change from "DAYTIME"- "DUSK"- "NIGHT".
Use "REAL" to set the internal game time to real time.
- (D) BILLBOARD (ON, OFF)
Set whether to display corporate advertisements or not.
Use "ON" to display corporate advertisements and "OFF" to display only SEGA/fictitious company billboards.
- (E) ONE MATCH MODE (ON, OFF)
Set whether the end of 1 match equals Game Over.
Use "ON" to signal game over at the end of each match; however, this unit is designed for game tournaments and other events and therefore the setting should normally be set to "OFF".
- (F) MATCH FORM (FULL GAME, HALF ONLY)
Set the match format.
Use "FULL GAME" for a match with both first and second halves, and "HALF ONLY" for a match with only one half.
- (G) TIME SET (1'30", 1'45", 2'00", 2'15", 2'30", 3'00", 4'00", 5'00")
Set the time allowed for 1 match.
(COM) setting is for matches against the CPU and (VS) is for matches against two players.
- (H) GGOAL TIME (ON [0'15"]/ON [0'30"]/ON [0'45"]/ON [1'00"]/ON [1'30"]/ON [2'00"]/INFINITE/OFF)
Set the amount of time for Golden Goals.
When set to "ON", the period of extra time after normal match time in a drawn game is equal to [**]. If either team scores a goal within the set amount of time, the match is over. If neither team scores a goal within the set time and the (I) PK SYSTEM is not set, then the match is declared a draw and the game ends.
The "INFINITE" setting should only be used in special circumstances, such as a game tournament, since in this case the game will not end unless one of the teams is able to score a goal.
(COM) setting is for matches against the CPU and (VS) is for matches against two players.
- (I) PK SYSTEM (ON [3 MEMBERS]/ON [4 MEMBERS]/ON [5 MEMBERS]/ON [REAL PK]/OFF)
Set the Penalty Shootout configuration.
When set to "ON", in the event of a draw after normal playing time has elapsed, [**] members from each team participate in a Penalty Shootout. If (H) GGOAL TIME is set, then the Penalty Shootout occurs only if the game is still drawn after the extra period of time. If the match is still drawn after [**] members have taken kicks, then the game ends. However, when set to "ON [REAL PK]", the game continues and teams continue the Penalty Shootout until a winner is declared in the same fashion as real football matches.
(COM) setting is for matches against the CPU and (VS) is for matches against two players.
- (J) SET DEFAULT
Return GAME ASSIGNMENTS values to the defaults.

6 - 2 - 4 BOOKKEEPING

Use BOOKKEEPING to display five screens of operating status data.

Press the TEST Button to scroll through the BOOKKEEPING screens in the following order:
(1/5)→(2/5)→(3/5)→(4/5)→(5/5).

BOOKKEEPING (1/5)		
[CREDIT DATA]		
COIN 1	0	(A)
COIN 2	0	(A)
COIN 3	0	(A)
COIN 4	0	(A)
TOTAL COIN	0	(B)
COIN CREDIT	0	(C)
SERVICE CREDIT	0	(D)
TOTAL CREDIT	0	(E)
PRESS TEST BUTTON TO CONTINUE		

- (A) COIN 1-4
Displays the number of COINS inserted into each COIN CHUTE.
- (B) TOTAL COIN
Displays the total number of COINS.
- (C) COIN CREDIT
Displays the number of CREDITS generated by insertion of COINS.
- (D) SERVICE CREDIT
Displays the number of CREDITS generated using the SERVICE Button.
- (E) TOTAL CREDIT
Displays the total number of CREDITS.

BOOKKEEPING (2/5)		
[GLOBAL DATA]		
NUMBER OF GAMES	0	(F)
TOTAL TIME	0 d 0 h 0 m 0 s	(G)
TOTAL PLAY TIME	0 d 0 h 0 m 0 s	(H)
1P PLAY TIME	0 d 0 h 0 m 0 s	(I)
VS PLAY TIME	0 d 0 h 0 m 0 s	(J)
PLAY TIME RATE	0.0%	(K)
1P PLAY RATE	0.0%	(L)
VS PLAY RATE	0.0%	(M)
AVERAGE PLAY TIME	0 d 0 h 0 m 0 s	(N)
LONGEST PLAY TIME	0 d 0 h 0 m 0 s	(O)
SHORTEST PLAY TIME	0 d 0 h 0 m 0 s	(P)
PRESS TEST BUTTON TO CONTINUE		

- (F) NUMBER OF GAMES
Displays the total number of games played.
- (G) TOTAL TIME
Displays the total amount of time the unit has been operational.
- (H) TOTAL PLAY TIME
Displays the amount of game play time.
- (I) 1P PLAY TIME
Displays the amount of CPU vs. Player game play time.
- (J) VS PLAY TIME
Displays the amount of Player vs. Player game play time.
- (K) PLAY TIME RATE
Displays the percentage (rate of operation) of game play to total operational time.
- (L) 1P PLAY RATE
Displays the percentage of CPU vs. Player games to total play time.
- (M) VS PLAY RATE
Displays the percentage of Player vs. Player games to total play time.
- (N) AVERAGE PLAY TIME
Displays the average amount of time for game play.
- (O) LONGEST PLAY TIME
Displays the longest game play time.
- (P) SHORTEST PLAY TIME
Displays the shortest game play time.

BOOKKEEPING (3/5)

[TIME HISTOGRAM]

~ 1'59"	0
2'00" ~ 2'59"	0
3'00" ~ 3'59"	0
4'00" ~ 4'59"	0
5'00" ~ 5'59"	0
6'00" ~ 6'59"	0
7'00" ~ 7'59"	0
8'00" ~ 8'59"	0
9'00" ~ 9'59"	0
10'00" ~ 10'59"	0
11'00" ~ 11'59"	0
12'00" ~ 12'59"	0
13'00" ~ 13'59"	0
14'00" ~ 14'59"	0
15'00" ~	0

PRESS TEST BUTTON TO CONTINUE

(Q)

- (Q) TIME HISTOGRAM
 Shows the number of plays and the respective play times.
 Refer to this histogram when setting GAME DIFFICULTY.

BOOKKEEPING (4/5)

[GAME COUNT]

TOTAL	GAME COUNT	0
CONTINUE	GAME COUNT	0
PLAYER1	GAME COUNT	0
PLAYER2	GAME COUNT	0

[TOURNAMENT REPORT]

1ST MATCH	0
2ND MATCH	0
SEMIFINAL	0
FINAL MATCH	0
FINAL WINNER	0

PRESS TEST BUTTON TO CONTINUE

(R)

(S)

(T)

(U)

(V)

- (R) TOTAL GAME COUNT
Displays the total number of games played.
- (S) CONTINUE GAME COUNT
Displays the total number of continues in CPU vs. Player games.
- (T) PLAYER1 GAME COUNT
Displays the total number of games played on PLAYER 1 side.
- (U) PLAYER2 GAME COUNT
Displays the total number of games played on PLAYER 2 side.
- (V) TOURNAMENT REPORT
Displays the number of times game over was recorded for each round in CPU vs. Player game play.

BOOKKEEPING (5/5)			
[GAME DATA]			
DRAW COUNT		0	
VS WINS MAXIMUM		0	
[VS WINS HISTOGRAM]			
WINS	COUNT	WINS	COUNT
1	0	10~14	0
2	0	15~19	0
3	0	20~24	0
4	0	25~29	0
5	0	30~39	0
6	0	40~49	0
7	0	50~	
8	0		
9	0		
PRESS TEST BUTTON TO EXIT			

- (W)
- (X)
- (Y)

Press the TEST Button to return to the GAME TEST MENU screen.

- (W) DRAW COUNT
Displays the number of drawn matches.
- (X) VS WINS MAXIMUM
Displays the maximum number of wins recorded in Player vs. Player game play.
- (Y) VS WINS HISTOGRAM
Displays the distribution of wins in Player vs. Player game play.

6 - 2 - 5 VS TEAM DATA

Use VS TEAM DATA to view data from competitive play for each team.

Press the TEST Button to scroll through the VS TEAM DATA screens in the following order: (1/8)→(2/8)(3/8) and so on.

Screens (1/8)~(4/8) display TEAM USED RANK and screens (5/8)~(8/8) display VS WIN RANK.

TEAM USED RANK Screen

This ranking is based on the number of times each team was selected.

Teams are ranked from the highest number of selections to the lowest.

VS DATA (1/8)			
[TEAM USED RANK]			
RANK	TEAM_NAME	USED_NUM	USED_RATE
1	BRAZIL	0	_____%
2	FRANCE	0	_____%
3	GERMANY	0	_____%
4	CROATIA	0	_____%
5	ARGENTINA	0	_____%
6	ITALY	0	_____%
7	YUGOSLAVIA	0	_____%
8	NETHERLEND	0	_____%
9	ENGLAND	0	_____%
10	MEXICO	0	_____%
11	ROMANIA	0	_____%
12	CHILE	0	_____%
13	SPAIN	0	_____%
14	USA	0	_____%
15	DENMARK	0	_____%
16	KOREA	0	_____%

PRESS TEST BUTTON TO CONTINUE

USED_NUM: Indicates the number of times the team was selected.

USED_RATE: Shows the number of times each team was selected as a percentage of the total number of team selections.

VS WIN RANK Screen

Teams are ranked by their respective percentage of wins.
Teams are ranked from the highest winning percentage to the lowest.

VS DATA (5/8)					
[VS WIN RANK]					
RANK	TEAM	RATE	WIN	LOSE	DRAW
1	BRA	_____	0	0	0
2	FRA	_____	0	0	0
3	GER	_____	0	0	0
4	CRO	_____	0	0	0
5	ARG	_____	0	0	0
6	ITA	_____	0	0	0
7	YUG	_____	0	0	0
8	NET	_____	0	0	0
9	ENG	_____	0	0	0
10	MEX	_____	0	0	0
11	ROM	_____	0	0	0
12	CHI	_____	0	0	0
13	ESP	_____	0	0	0
14	USA	_____	0	0	0
15	DEN	_____	0	0	0
16	KOR	_____	0	0	0

PRESS TEST BUTTON TO CONTINUE

RATE: Displays the win percentage of the team.

WIN: Displays the number of matches won.

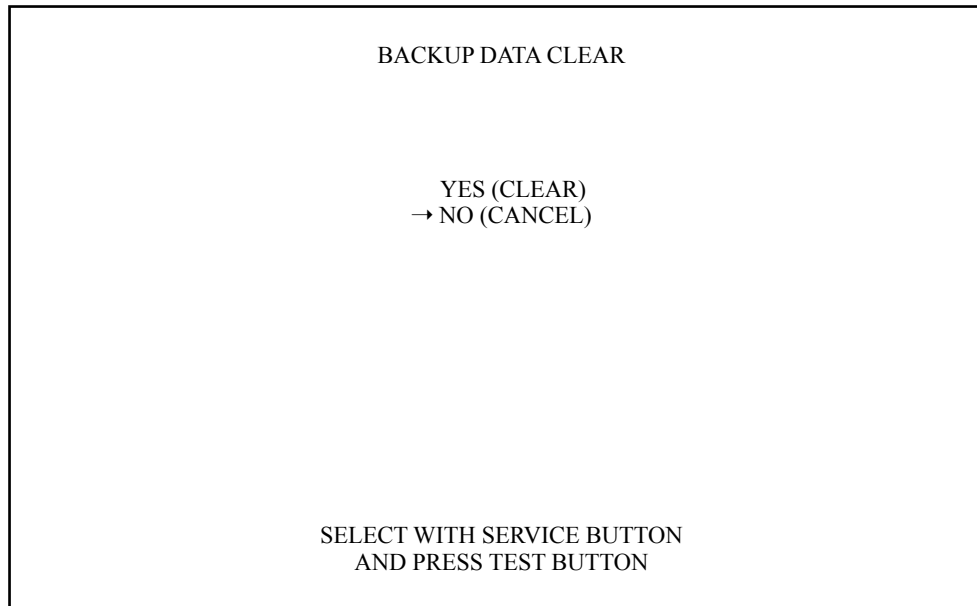
LOSE: Displays the number of matches lost.

DRAW: Displays the number of matches drawn.

Press the TEST Button when page (8/8) is displayed to return to the GAME TEST MENU.

6 - 2 - 6 BACKUP DATA CLEAR

Select BACKUP DATA CLEAR to clear the contents of BOOKKEEPING.



To clear data, use the SERVICE Button to move the cursor to YES (CLEAR) and then press the TEST Button. When the data has been cleared, the message "COMPLETED" will be displayed.

Press the TEST Button again to return to the GAME TEST MENU screen.

Move the cursor to NO (CANCEL) and press the TEST Button to return to the GAME TEST MENU screen without clearing the data.

7. TRIFORCE ASSEMBLY

7 - 1 REMOVING/INSTALLING THE DIMM BOARD CASE

Removing the case

- Remove the three (M3×16) screws and one (M3×50) screw which hold together the TRIFORCE and the DIMM BOARD.
- Hold the DIMM BOARD CASE by the sides and lift it up and out of the TRIFORCE.

Installing the case

- Insert the DIMM BOARD CASE into the TRIFORCE, ensuring it is facing in the right direction. Align the connectors and insert them securely.
- Fix the DIMM BOARD CASE to the TRIFORCE using the three (M3×16) screws and one (M3×50) screw.

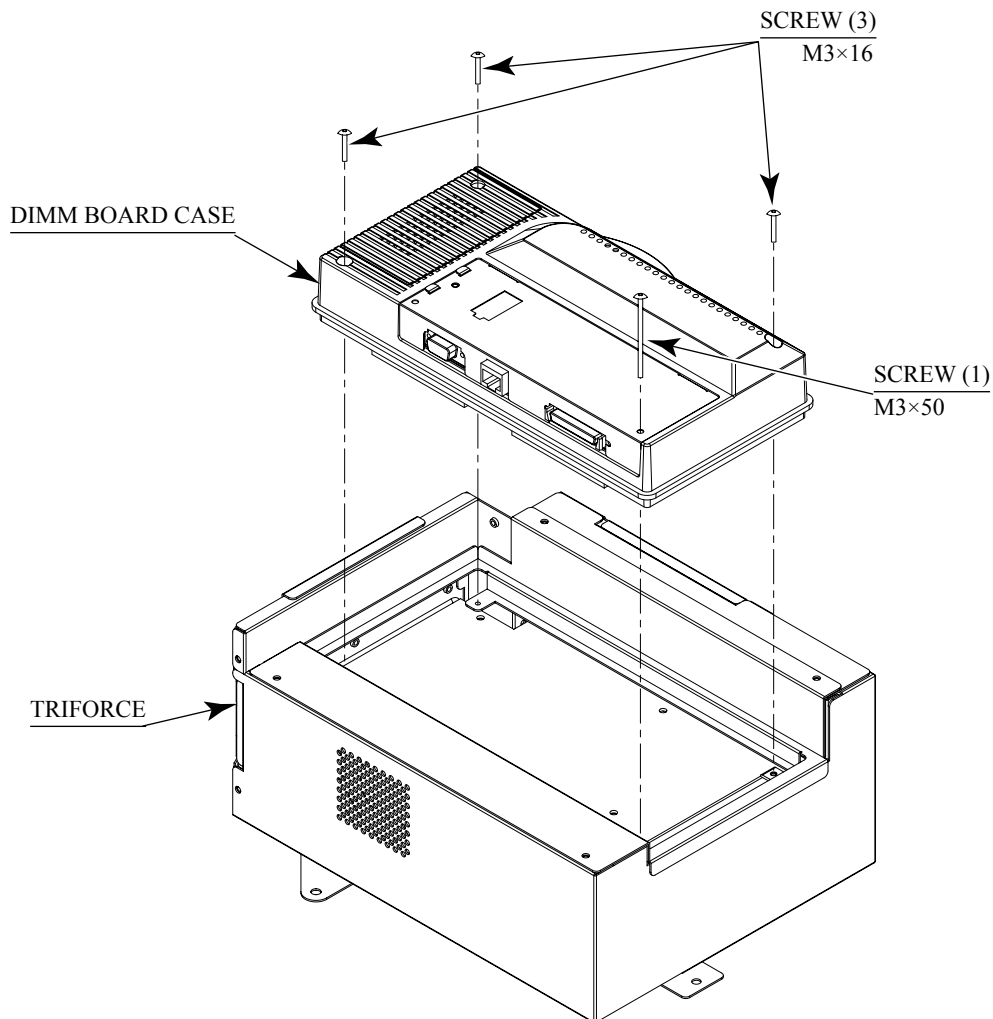


FIG. 7. 1

7 - 2 REPLACING THE MAIN BOARD BATTERY



- To prevent overheating, explosion, or fire:
 - Do not recharge, disassemble, heat, incinerate, or short the battery.
 - Do not allow the battery to come into direct contact with metallic objects or other batteries.
 - To preserve the battery, wrap it in tape or other insulating material.
- Follow local regulations when disposing of the battery. Improper disposal can damage the environment.



- To avoid risk of malfunction and damage:
- Make sure the positive and negative ends are aligned correctly.
 - Use only batteries approved for use with this unit.



If an error appears indicating that the battery power is very low within the first year of use, it is usually an indication of a problem or abnormality with something other than the battery. Be sure to inspect the board that the battery is connected to.

- Refer to "7-1 REMOVING/INSTALLING THE DIMM BOARD CASE" and remove the DIMM BOARD CASE from the TRIFORCE.
- Remove the four (M3×6) screws holding the lid cover to the TRIFORCE.
- Remove the lid cover.
- Remove the 5 (M3×6) screws holding the COVER to the MAIN BOARD BASE.
- Slide the COVER out from the MAIN BOARD BASE, taking care not to damage the catches.
- Carefully remove the battery from the battery holder at the very bottom of the MAIN BOARD.
- Insert the new batter (CR2032) into the holder, with the plus terminal upward.
- Slide the cover into the MAIN BOARD BASE, ensuring that the catch on the cover fits securely into the MAIN BOARD BASE.
- Fix the COVER to the MAIN BOARD BASE with the five (M3×6) screws.
- Fix the lid cover to the TRIFORCE.
- Secure the lid cover to the TRIFORCE using the four (M3×6) screws.
- Refer to "7-1 REMOVING/INSTALLING THE DIMM BOARD CASE" and fix the DIMM BOARD CASE to the TRIFORCE.

Dispose of the discarded battery in accordance with local rules and regulations.

TRIFORCE MAIN BOARD BATTERY
 SEGA PART No. 401-0054
 SEGA PART NAME BATTERY CR2032/1F MATSUSHITA

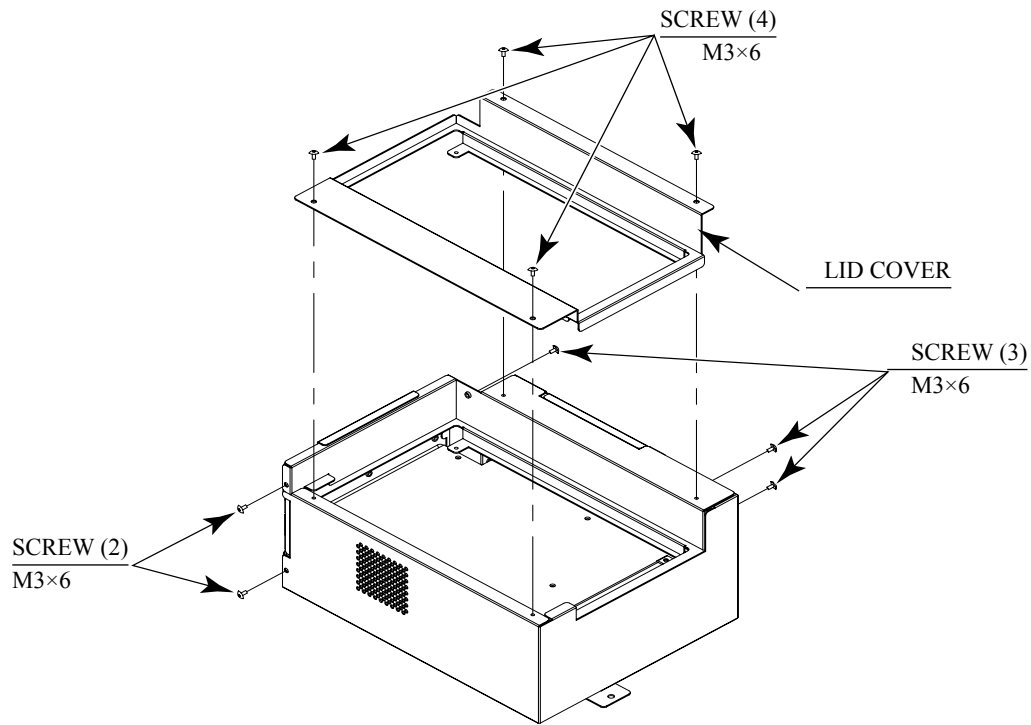


FIG. 7.2 a

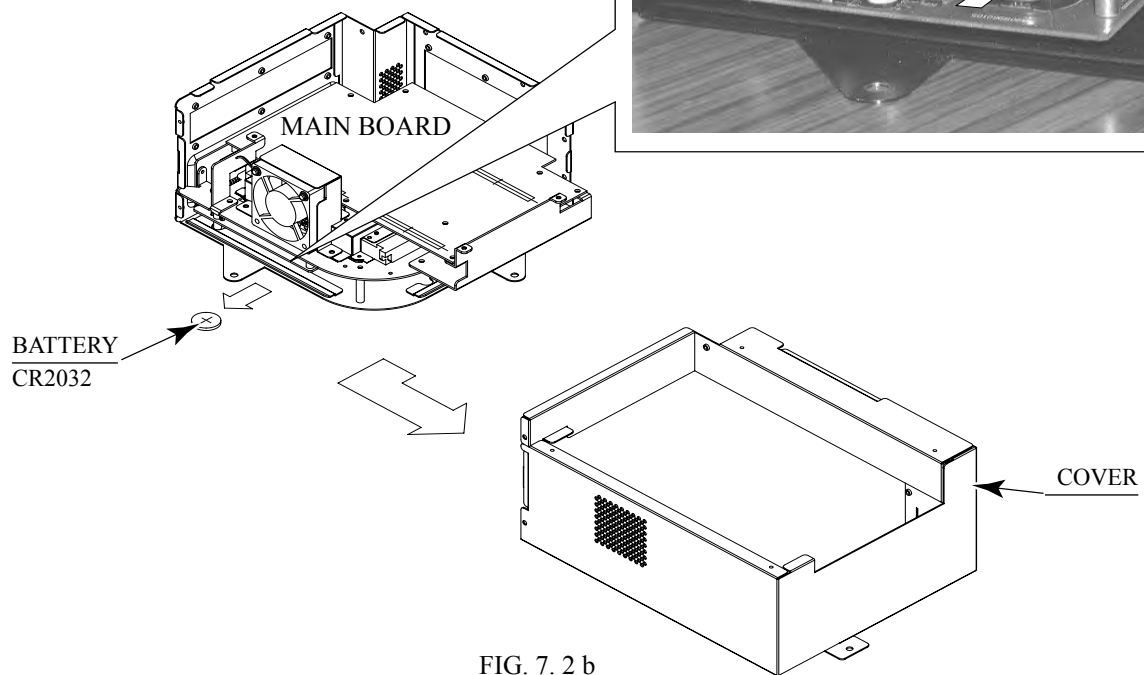
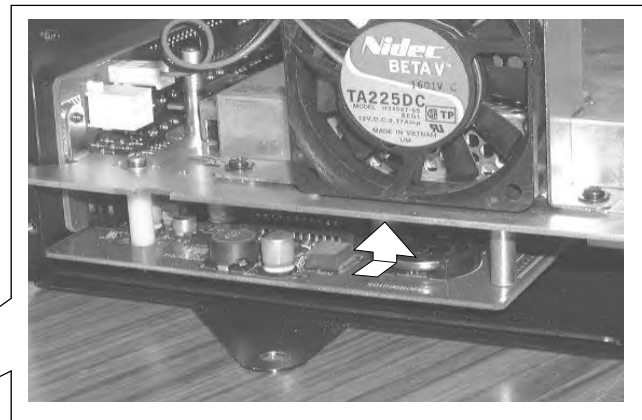


FIG. 7.2 b

Prohibitions and Cautions to Handle the Battery Pack

When handling the battery pack, observe the following instructions. If you do not observe the instructions described by this book, the Sega bears no responsibilities against any resulted problems.



- Do not disassemble the battery pack and the batteries.
If you should fail to observe this instruction, the internal wires and/or protective devices may be damaged; as a result the safety system may not function when discharging and recharging, eventually causing an overheating, fire and explosion. If you should disassemble the batteries, the generated gases may harm your throat and the negative plate may overheat and make a fire.
- Do not make an external short circuit of the battery pack and the batteries.
If you should fail to observe this instruction, the batteries may overheat, make a fire, and explode.
- Do not fire the battery pack and the batteries.
If you should fail to observe this instruction, the batteries may make a fire and explode.
Do not leave the battery pack and the batteries nearby the heat source (fire or heater) or under the intense direct sunlight and flaming sun. If you should fail to observe this instruction, the batteries may reduce the service life and in the worst case may overheat, make a fire, and explode.
- Do not leave the battery pack and the batteries in water or seawater. Also do not apply water or seawater onto the battery pack and the batteries. If you should fail to observe this instruction, the internal wires and/or protective devices may be damaged; as a result the safety system may not function when discharging and recharging, eventually causing an overheating, fire and explosion. Also water may be electrolyzed into oxygen and hydrogen, and eventually the battery's sealed section may be corroded and the internal liquid may leak.
- Do not solder on the battery pack's terminals.
If you should fail to observe this instruction, the armor may be heated and melted or the internal wires may be damaged, eventually causing an overheating, fire and explosion. Also, when the battery's temperature reaches to 100° or more, the battery may leak its internal liquid due to destruction of its plastic parts (gasket, separator, etc.), or may overheat, make a fire, or explode due to internal short-circuit.
- Do not insert or connect the battery in a reversal polarity.
If you should fail to observe this instruction, the battery may be externally short-circuited and eventually overheat, make a fire, or explode, depending on the device you connect with.



- Do not tightly seal the battery pack when installing it onto an external device. Flammable gas is generated from the battery when its safety mechanism has functioned. If you should fail to observe the above-described instruction, sparks from motors, switches, etc. may cause the gas to fire. Therefore, install the battery pack so that the gas can be quickly released from the external device.
- Do not use the battery pack for the device/usage other than this game system. If you should fail to observe this instruction, the battery and/or the device may be damaged due to non-applicable specifications.
- Do not strike a nail in, hammer, step on, or apply any other forms of pressures and shocks on, the battery.
If you should fail to observe this instruction, the battery may be deformed. As a result, the battery may burst at its sealed sections to leak the internal liquid, or may be short-circuited internally to overheat, make a fire, and explode.
- Do not use a battery charger because any battery charger is not usable for this battery pack.
If you should fail to observe this instruction, the gas may be suddenly generated in the battery and eventually the battery may overheat, make a fire or explode.
- If the battery in use or in keeping shows an abnormal indication (deformation, change of color, bursting of the armor cover, etc.), immediately stop using or keeping it. If it leaks and smells abnormally, immediately keep it away from fire and put it in a safety box.
- If the liquid leaks from the battery and gets in your eyes, do not rub your eyes but immediately wash them with clean water (city water etc.); and consult a medical doctor for a treatment. If you should fail to observe this instruction, the liquid may harm your eyes.
- The battery pack armor (a polyvinyl chloride tube) may be damaged or deformed by external force or heat. When transporting the battery pack or replacing it with a new one, therefore, be careful not to drop or excessively shock it. Do not continue to use any damaged or deformed battery pack. If you should fail to observe this instruction, the battery may overheat, make a fire, or explode.
- The battery pack contains a printed circuit board (PCB) for protective circuitry. It may be destroyed by the static electricity. When handling or servicing the battery pack, therefore, take preventive measures against the static electricity.
If your battery pack has shown destruction of a protective circuitry PCB, do not continue to use it. If you should fail to observe this instruction, the battery may overheat, make a fire, or explode.
- When wiring the battery pack to a device, be careful not to apply excessive force onto the connectors and lead wires. The battery may overheat, make a fire, or explode if the connectors and lead wires are damaged.
- Do not do away with the used battery packs carelessly because they may contaminate the environment. Submit them to an industrial waste disposal plant.
- Pack the used battery packs and thereby avoid damaging them, before delivering them to an industrial waste disposal plant.

When a GD-ROM readout time seems to be longer than before, the cause may be a reduction of DIMM board battery pack's charge. Usually, the DIMM board battery pack reaches its service life about 16 months after starting to use.

Do not use a battery charger because any battery charger is not usable for this battery pack. Instead, replace the battery pack with a new one as follows:

- Refer to "7-1 REMOVING/INSTALLING THE DIMM BOARD CASE" and remove the DIMM BOARD CASE from the TRIFORCE.
- Using a flat-blade screwdriver, lift up the battery cover and thus remove it from the DIMM board case.
- Press the tab of the battery pack connector and pull it; thus remove it from the DIMM board.
- Firmly connect the connector of a new battery pack into the DIMM board.
- Return the battery cover to the DIMM board case.
- Refer to "7-1 REMOVING/INSTALLING THE DIMM BOARD CASE" and fix the DIMM BOARD CASE to the TRIFORCE.

Submit the used battery packs to an industrial waste disposal plant. Thus they must be disposed according to the local laws and regulations.

DIMM Board Battery Pack

SEGA PART No. 401-0076

SEGA PART NAME BATTERY PACK CGR-B/241A

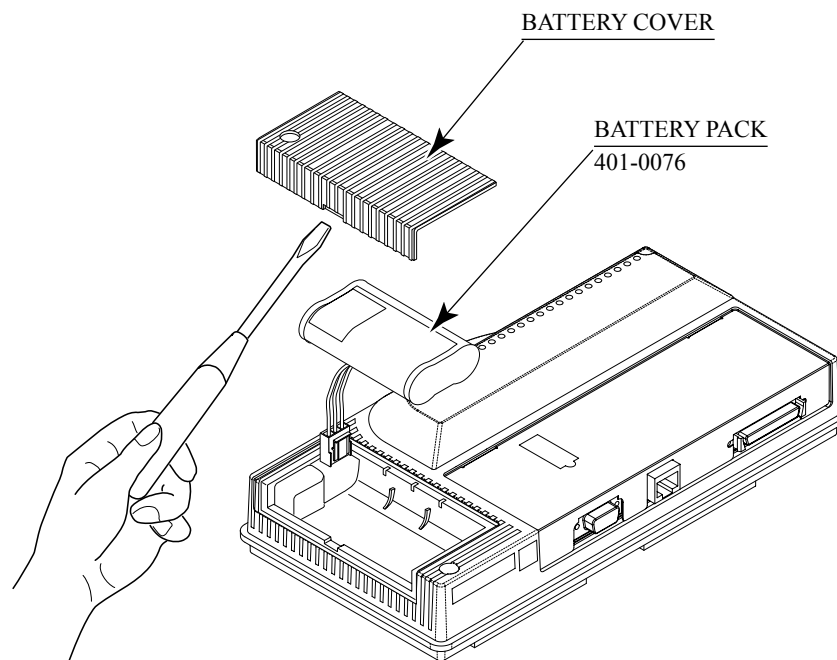


FIG. 7.3

7 - 4 KEY CHIP



- The key chip is a precision device. Handle it carefully because it may be damaged by heat, shock, and static electricity.
- The key chip is contained in the GD-ROM disc case. Always use them as a set.

Installing the key chip

- Remove the key chip from the GD-ROM disc case.
- Insert the key chip vertically into the slot of the DIMM board case for TRIFORCE; be careful about an inserting direction in this instance. Make sure that the key chip is seated firmly and completely.

Removing the key chip

- Pressing the tab of the key chip, hold its end and remove it from the DIMM board case.
- Keep the GD-ROM disc and the key chip as a set.

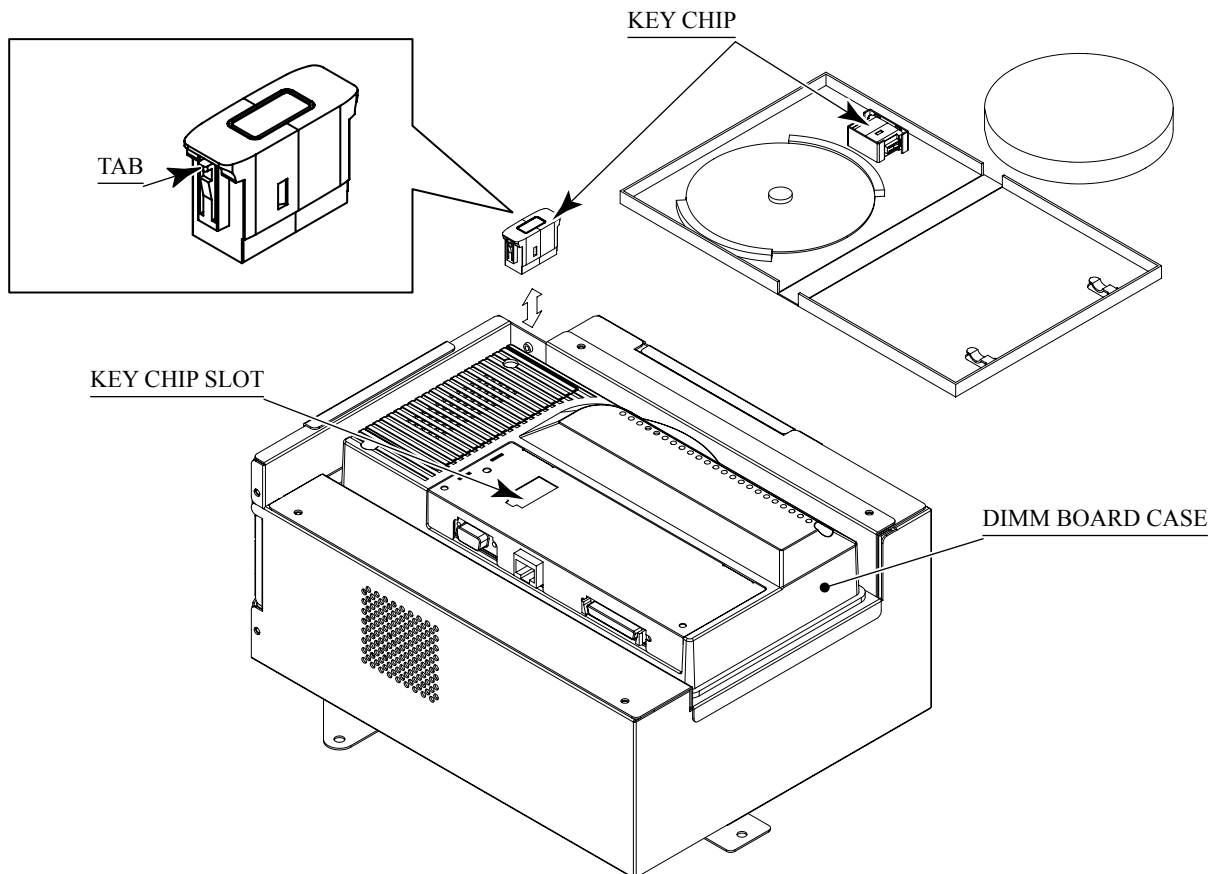
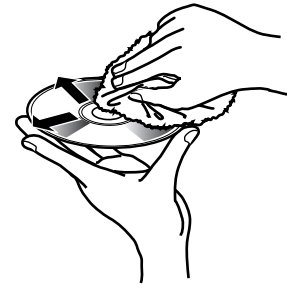


FIG. 7. 4



Handling the GD-ROM Disc

- Do not contaminate the discs with your fingerprints or dust particles. Contaminated discs may lower audio and video quality.
- When cleaning the discs, do not use volatile chemicals (benzine, thinner, etc.), cleaning sprays, and antistatic agents.
- Do not use cracked, warped, or damaged discs. Do not attach papers or seals onto the discs; do not scratch the discs. Do not use the discs with a sign of peeled seals, tapes, etc. Observing these instructions, do not insert such a non-usable disc into the GD-ROM drive. Otherwise the inserted disc can not be ejected.
- When cleaning a heavily contaminated disc, use clean cloth that has been soaked in water and squeezed. Then remove moisture with dry cloth.
- When holding a disc, be careful not to contaminate it with your fingerprints.



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

How to Hold a Disc

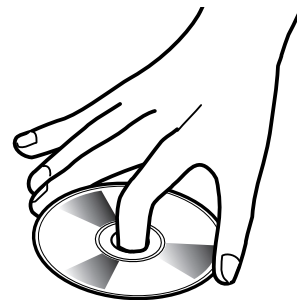
With both hands:

Put your thumbs and forefingers of both hands on the disc's 4 edges.



With one hand:

Insert your forefinger into a central hole and at the same time put your thumb and middle finger on the disc's 2 edges.



Installing the GD-ROM disc

- Remove the 1 truss head screw that fixes the GD-ROM drive lid (DISC LID). And turn clockwise the lid to remove.
- Take out the GD-ROM disc from its case, and set it onto the GD-ROM drive with a printed side facing you.
- Return the lid to its original place, and fix it with 1 truss head screw. Be careful not to fasten it too tightly.

Removing the GD-ROM disc

- Remove the 1 truss head screw that fixes the GD-ROM drive lid (DISC LID). And turn clockwise the lid to remove.
- Take out the GD-ROM disc and store it in the case. In this instance, be careful not to touch its grooves where the data is stored.
- Return the lid to its original place, and fix it with 1 truss head screw. Be careful not to fasten it too tightly.

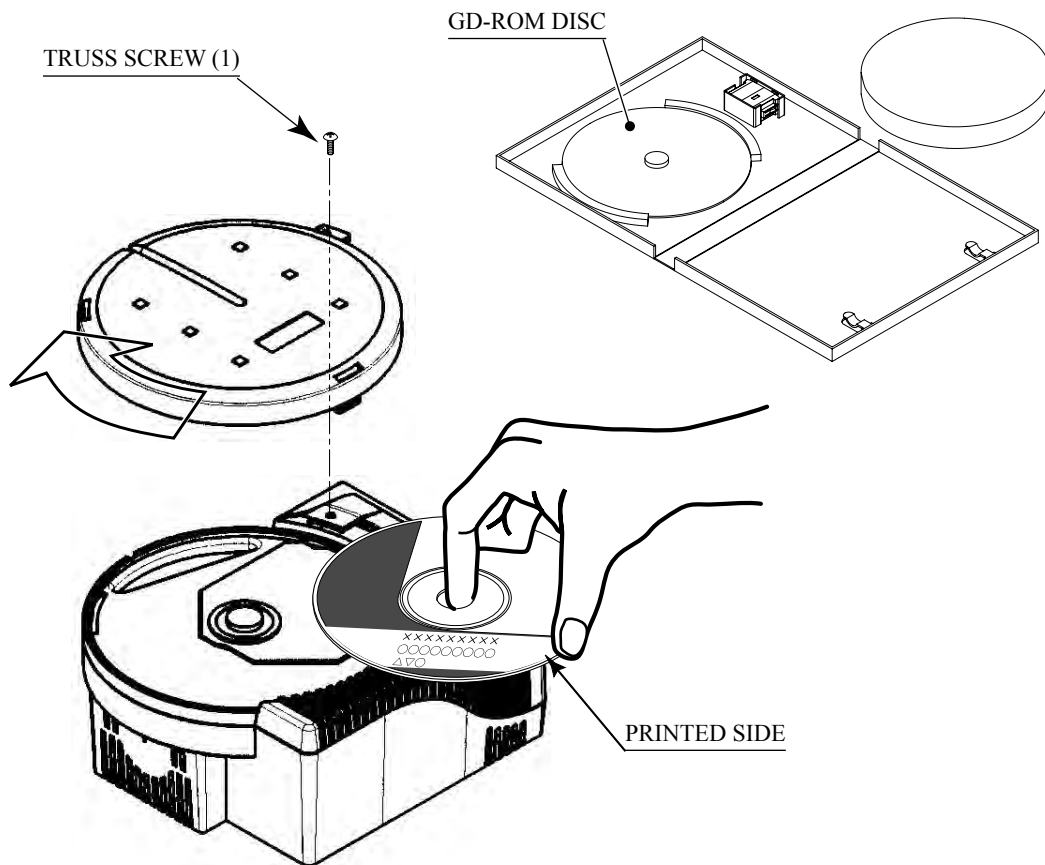
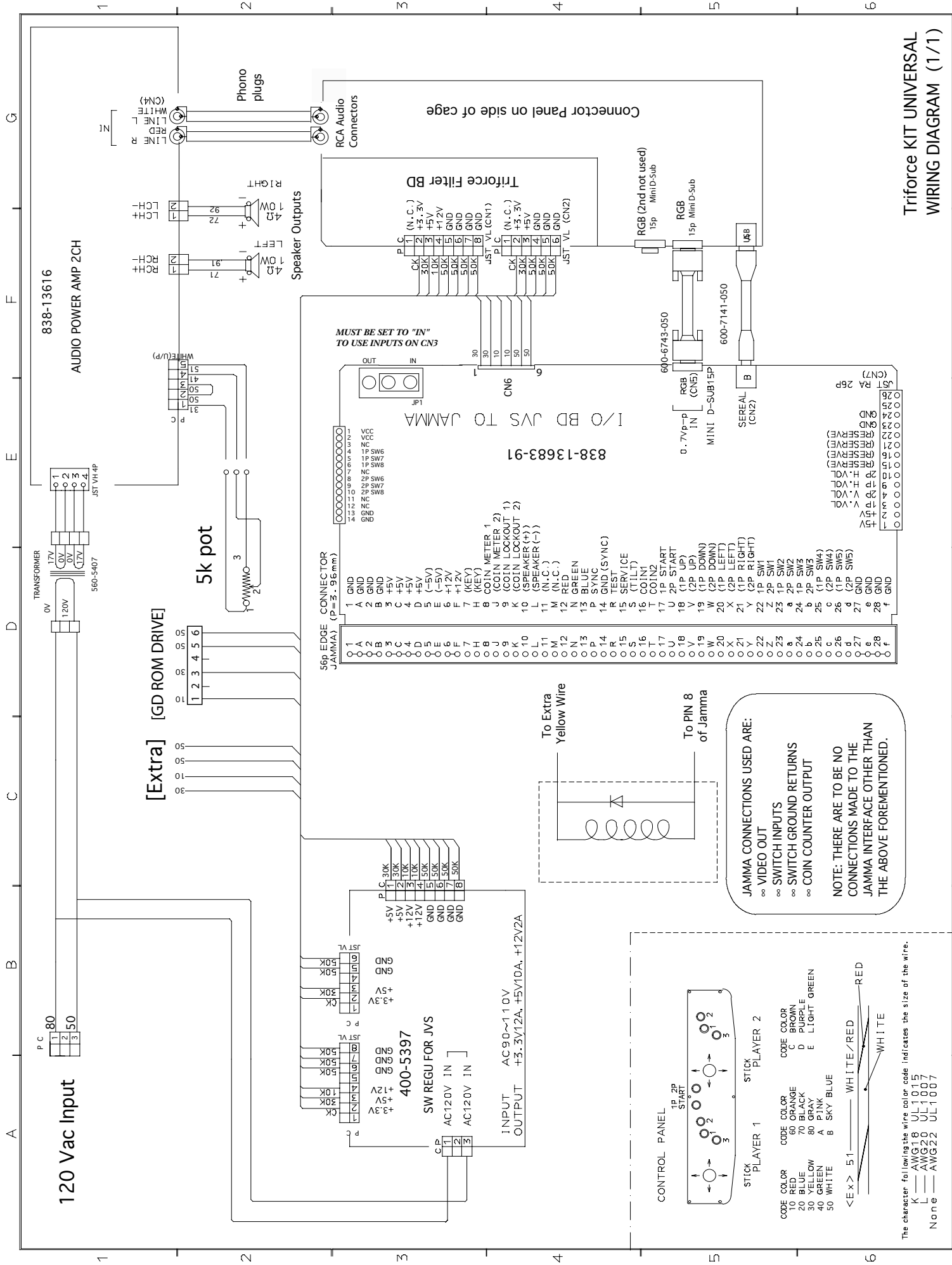


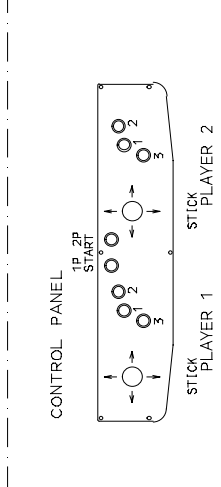
FIG. 7.5



**Triforce KIT UNIVERSAL
WIRING DIAGRAM (1/1)**

The character following the wire color code indicates the size of the wire.

K	AWG18	UL1015
L	AWG20	UL1007
None	AWG22	UL1007



Notes:

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.



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