SEGA™

GOLDEN AXE

REVENGE OF DEATH ADDER

CONVERSION MANUAL

SEGA ENTERPRISES, INC.

999-0144

GOLDEN AXE II CONVERSION

by:

SEGA Enterprises, Inc. (U.S.A.)
2149 Paragon Drive
San Jose, California 95131
Phone Number (408) 435-0201
FAX Number (408) 435-0294

A Kit for
Upright Cabinet with Horizontal Monitor

The Federal Communication Commission requires the verification of game kits. This game kit will meet these requirements when installed in accordance with the instructions in this Manual and using only components and materials supplied with this kit.

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Introduction

SEGA ENTERPRISES. LTD., supported by its high electronic technology of Large Scale Integration, microprocessors, etc., and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This OWNER'S AND KIT INSTALLATION manual is intended to provide detailed comments together with all the necessary in formation covering the operation and installation of electronic assemblies. electro-mechanical assemblies. control assemblies. and spare or replacement parts for the GOLDEN AXE coin operated game. This manual is intended for those who have knowledge of electricity and technical expertise in video games Carefully read the enclosed information before starting the kit installation or troubleshooting procedures.

Handling and Installation Precautions

During Installation:

1. Be sure to remove power plug when working on the machine.
2. Be sure all connections and harness routing are secure.
3. Make sure all grounding connections are secure and properly affixed.
4. Do not use any fuse that does not meet the specified rating.

Prevention of Counterfeiting and Conversion Labeling

To prevent counterfeit and unauthorized conversions. the following label is sup plied with all authorized SEGA kit products. When handling such goods, be sure to locate and confirm the label. It is used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards.

Precautions Concerning the Place of Installation

The CONVERSION KIT is intended to be installed in an indoor game cabinet. Absolutely do not install it outdoors. When installed indoors the following places mentioned below should be avoided to ensure proper operation and usage:

- Places subject to rain or water leakage. or condensation due to humidity
- In the proximity of an indoor swimming pool and/or shower
- Places subject to direct sunlight
- Places subject to heat sources from heating units, hot air, etc.
- Vicinity of highly flammable/volatile chemicals or hazardous materials
- Sloped surfaces
- Vicinity of anti-disaster facilities such as fire exits and fire extinguishers
- Places subject to any type of violent impact
- Dusty environment

System Requirements

Power Supply:

- Input voltage 90 VAC to 13 5 VAC 60 Hz
- + 5 volts at 6 amps
- + 12 volts at 2 amps
- Over-voltage protected at + 5.8 volts
- Current limit set at 8 amps

RFI Line Filter:

1. If a switching power supply is used:
   - Current rating of 6 amps
   - Frequency attenuation of the following:

0.15 MHz	40db
0.5 MHz	65db
1.0 MHz	65db
5.0 MHz	55db
10.0 MHz	50db
30.0 MHz	50db

2. If a linear power supply is used:
   - Current rating of 5 amps
   - Frequency attenuation of the following:

0.15 MHz	6db
0.5 MHz	1 9db
1.0 MHz	28db
5 .0 MHz	42db
10.0 MHz	45db
30.0 MHz	50db

Miscellaneous:

Line Fuse:	4 amp 120 VAC
Speaker:	8 ohms 10 watt
On/Off Switch:	6 amp 120 VAC
Isolation Transformer:	115 VAC primary. 115 VAC secondary. 100 Watts
Coin Door:	Dual coin acceptors
Coin Meter:	+ 5 Volt DC
Power Cord:	Three conductor with ground

Color Monitor:

- Video input I volt to 5 volt peak-to~peak positive polarity
- Sync TTL negative polarity separate horizontal and vertical
- Horizontal frequency 15 . 7 50 KHz
- Vertical frequency 60 Hz
- Video bandwidth 1 2 MHz or greater
- Horizontal mounted
- Recommended size 19 inch

Tools Required

- Drill
- Hole cutter 1-3/16 "
- Phillips screw driver
- Flat blade screw driver
- Small flat blade screw driver
- Scissors
- Sand paper
- Paint
- Xacto knife
- Wood patch

Cabinet Preparation

1. Remove old PCB. and all existing game harnesses.
2. Remove and disassemble the control panel.
3. Remove any side decals. monitor bezel. and marquee.
4. Using sandpaper and/or paint thinner. clean and smooth the cabinet for paint preparation. Use wood patch to fill any nicks or flaws in the cabinet.
5. Paint cabinet if required.
6. Wipe down and vacuum cabinet as necessary.

NOTE: You are building a new game. not just changing an old one. A nice, clean, and new looking conversion not only earns better. but lasts longer.

Kit Component Verification

Verify each component with the kit list provided to assure your kit is complete. If any part is missing after the inventory is taken, please contact your distributor and provide to them the following information:

1. Kit Serial Number
2. Part Number and description of missing item/s
3. Date received

KIT LIST

Part Number	Quantity	Description
0002-0000	2	#6 x 3/8 P/H Phil Tek
0002-0001	4	#6 x 3/4 P/H Phil "AB" SMS
0312-0024	16	#10-24 x 1 3/4 Carr Bolt (Blk)
0502-0024	16	#10-24 Hexnut
0612-0024	16	#10 Split Lock Washer
0692-0024	16	#10 Flat Washer 1/2" OD
2112-0000	2	Wire Nut #18
421-5801-139	1	License Seal
4750-0049	1	Vol Control 100 Ohm 10 Watt
5090-5028	2	PB SPST Switch Momentary
833-8932-02	1	Game Board, Golden Axe II
999-0047	1	FCC Plate
999-0094	1	I/O Harness, Generic
JAM-0000	1	Standard Jamma Harness
KRO-1721	1	Service Switch Bracket
999-0122	4	Joystick, Red
999-0121	4	Vertical Microswitch,White
999-0123	4	Vertical Microswitch, Red
999-0124	4	Vertical Microswitch, Yellow
999-0142	4	Vertical Microswitch, Blue
999-0126-K	1	Marquee, Golden Axe II
999-0128-K	1	Control Panel Overlay
999-0137	1	Monitor Bezel w/Instructions
999-0140	2	Side Decals, Golden Axe II
999-0141	1	Label Sheet (1) Test, Service, Volume Sticker (4) Joystick Stickers (4) Jump (4) Magic (4) Attack (4) Player Start Stickers (1) Play Instructions

Installation Procedure

Monitor Bezel

Locate MONITOR BEZEL (999-0137). Measure the size of existing monitor bezel or the required size to fit and cut cardboard monitor bezel to size. (see figure I)

License Seal

Locate the LICENSE SEAL (421-5809-139) and place seal as shown in figure 1. Install Monitor Bezel on game cabinet. Note: Verify that the License Seal will be visible when the bezel is installed on game cabinet.

Side Decal

Locate the SIDE ART (999-0140). Install on the left and right side panels of the cabinet (see figure 1). Note: A mild glass cleaner can be used on the cabinet to position the artwork as desired. A squeegee may be used to remove any wrinkles in the artwork if soapy water is used.

Marquee Plex.

Locate the MARQUEE PLEX (999-0126-K). Measure the size of existing marquee plex or required size to fit and trim the marquee plex to size. Install on cabinet. (see figure I)

Control Panel

Locate the CONTROL PANEL OVERLAY (999-0128-K). Measure the size required and cut the control panel overlay to fit the existing control panel.

Define the location of the player push buttons and joystick(s) on the control panel.

Cut holes in control panel to locate buttons and joystick(s). See template for button and joystick.

Install the "PLAYER START STICKERS" on the control panel overlay.

Install player control button labels, MAGIC, ATTACK and JUMP on the control panel overlay

Install the JOYSTICK label(s) on the control panel overlay

Install YELLOW buttons (999-0124) in the "MAGIC" locations.

Install RED buttons (999-0123) in the "ATTACK" locations.

Install BLUE buttons (999-0142) in the 'JUMP" locations.

Install WHITE buttons (999-0121) in 1 PLAYER START and 2 PLAYER START locations.

NOTE: When buttons are securely placed and tightened in the control panel assembly, a small amount of clear RTV Silicone may be placed on two or three areas of the lock-nut to keep the switches from being unscrewed from the top of the panel.

Locate the JOYSTICK(S) (999-0122). This package consists of the following six components:

a. Pre-assembled joystick(s) base assembly with microswitches
b. E-ring
c. Black knob & shaft
d. 2" Dia. washer
e. Actuator plastic
f. Pivot cone

The final assembly of the joystick(s) must be performed after the joystick(s) base assembly is mounted on the control panel. Locate the following:

a. #10-24 X 1 3/4" Carr/Bolt Black (0312-0024)	(16 ea)
b. #10-24 Hex nut (0502-0024)	(16 ea)
c. # 10 Flat Washer 1/2" OD (0692-0024)	(16 ea)
d. #10 Split Lock Washer (0612-0024)	(16 ea)

Use the above components to secure the joystick base assembly to the control panel. The final assembly of the joystick(s) is performed by:

a. Placing the 2 " Dia. washer over the Black knob & shaft.
b. Install the Pivot cone on the shaft.
c. Install the Red knob & shaft assembly through the joystick(s) base assembly on the control panel.
d. Install the Actuator micro/switch on the shaft.
e. Install the E-ring on the shaft to secure the assembly.

Service Switch Assembly

Locate SERVICE SWITCH BRACKET (KRO-1721) and install two PUSH BUTTON SPST SWITCH MOMENTARY (5090-5028) into bracket.

Locate VOLUME CONTROL 100 OHM 10 WATT (4750-0049) and install into service switch bracket.

Locate TEST, SERVICE, VOLUME STICKER and place on the service switch bracket.

Install the Service Switch Assembly using 2 ea #6 x 3/8 P/H PHIL TEK screws (0002-0000) in the cabinet at either of the following locations (see figure 2):

- On top of the steel enclosure for the Cash Box, inside the coin door.

NOTE: The TEK screws have a drill point and will drill through the steel enclosure.

- Inside to the left of the coin door, mounted to the wood cabinet.

Harness Installation

Locate the JAMMA HARNESS (JAM-0000) and install as shown in figure 2.

Connect the harness to the POWER SUPPLY as follows: (see figure 3)

a. + 5 volt source. (Pins 3,4, C, D of Jamma Harness)
b. + 12 volt source. (Pins 6, F of Jamma Harness)
c. GND source. (Pins B, 27, e, 28, f of JAMMA HARNESS)

Connect the harness to the COIN DOOR as follows: (see figure 4)

a. Connect the wire to coin chute 2 acceptor microswitch COMMON terminal. (Pin T of JAMMA)
b. Connect the wire to coin chute I acceptor microswitch COMMON terminal. (Pin 16 of JAMMA)
c. Connect the wire to coin chute 1 and 2 acceptor microswitch NORMALLY OPEN terminal. (Pin A of JAMMA)
d. Also connect Pin A JAMMA to one side of each lamp on the coin door.
e. Connect + 5 volts from the power supply to the other side of each lamp on the coin door.

Connect the harness to the COIN METER by using two WIRE NUTS (2112-0000). (see figure 5)

NOTE: Some coin meters have an internal diode.

Connect the harness to the CONTROL PANEL as follows:

a. Route and connect the daisy chained wire to the terminal of the PLAYER PUSH BUTTONS and JOYSTICK.

b. Connect the control panel harness wires as follows:

Use the 56P EDGE CONNECTOR which is on the MAIN BD; and JST 05P, JST 10P, and JST 11P CONNECTORs which are on the I/O BD.
The inside of ( ) refers to the PIN ASSIGNMENT with the COIN CHUTE TYPE set to INDIVIDUAL.

4 PLAYER TYPE

PIN ASSIGNMENT
(JAMMA)

COMPONENT SIDE			SOLDER SIDE
GND	1	A	GND
GND	2	B	GND
+5V	3	C	+5V
+5V	4	D	+5V
(NOT USED)	5	E	(NOT USED)
+12V	6	F	+12V
(NOT USED)	7	H	(NOT USED)
COIN METER 1	8	J	COIN METER 2
(NOT USED)	9	K	(NOT USED)
SPEAKER (+)	10	L	SPEAKER (-)
(NOT USED)	11	M	(NOT USED)
RED	12	N	GREEN
BLUE	13	P	SYNC
GND (SYNC)	14	R	ALL SERVICE
TEST	15	S	(NOT USED)
(4P COIN) COIN 1	16	T	COIN 2(3P COIN)
1P START	17	U	2P START
1P UP	18	V	2P UP
1P DOWN	19	W	2P DOWN
1P LEFT	20	X	2P LEFT
1P RIGHT	21	Y	2P RIGHT
1P ATTACK	22	Z	2P ATTACK
1P JUMP	23	a	2P JUMP
1P MAGIC	24	b	2P MAGIC
(NOT USED)	25	c	(NOT USED)
(NOT USED)	26	d	(NOT USED)
GND	27	e	GND
GND	28	f	GND

56P P=3.96mm

JST 05P
(I/O BD CN4)

1	3P START
2	4P START
3	(NOT USED)(COIN 3(2P COIN))
4	(NOT USED)(COIN 4(1P COIN))
5	GND

JST 10P
(I/O BD CN2)

1	3P UP
2	3P DOWN
3	3P LEFT
4	3P RIGHT
5	GND
6	3P ATTACK
7	3P JUMP
8	3P MAGIC
9	(NOT USED)
10	GND

JST 11P
(I/O BD CN3)

1	4P UP
2	4P DOWN
3	4P LEFT
4	4P RIGHT
5	GND
6	4P ATTACK
7	4P JUMP
8	4P MAGIC
9	(NOT USED)
10	GND
11	

Cabinet 115 VAC System Grounding

Locate the GROUND lead (green) of the 115 volt input power Line This must be connected to all components of the game system. This is a safety requirement for the players protection. This AC GROUND must be of # 18 AWG wire or larger.

Cabinet System Checkout

Apply power to cabinet system and check for the following voltages. If any voltage is incorrect, remove power and correct problem before proceeding any further.

a. + 5 Volts on pins 3,4,C, and D of the 56 pin PCB connector. (Interface Connector)
b. + 12 Volts on pins 5 and E of the 56 pin PCB connector.
c. No voltage present on any other pins of the 56 pin PCB connector.

Check that the monitor has power. This can be accomplished by observing the glow of the filament inside the neck of the picture tube.

Check that the Marquee lamp has power.

Check that the system ON/OFF switch functions properly

WARNING: PROCEED ONLY IF THE ABOVE CHECKS ARE CORRECT

PCB Installation

Locate the GAME and install the logic PCB inside the cabinet (see figure 2). Use ~4 ea) #6 x 3/4 P/H PHIL "AB" SMS (0002-0001) to secure the PCB through its' mounting feet.

Locate the Switch Setting Sheet. Place this sheet on the inside of the game so that it is visible when the back door is removed or opened. This will allow the DIP SWITCH OPTIONS to be handy when service or changes in options are required.

Connect the 56 pin connector of the Interface Harness to the PCB with the label on the same side as the components on the PCB. The 56 pin connector is marked with "COMPONENT SIDE".

NOTE: If not connected properly, the system will not function and damage can occur to the PCB.

Test Mode

This mainly checks if the operation of the game BD is accurate, makes monitor color adjustments, and allows for COIN ASSIGNMENTS/GAME ASSIGNMENTS setting adjustments.

Selection of TEST ITEMS

1) Push the TEST SW to cause the following TEST ITEM MENU to appear:

```
        TEST MODE
        INDIVIDUAL
        MEMORY TEST
        INPUT TEST
        SOUND TEST
        C.R.T. TEST
        GAME ASSIGNMENTS
        COIN ASSIGNMENTS
        BOOKKEEPING
        BACKUP DATA CLEAR
        OUTPUT TEST
      →EXIT
SELECT BY SERVICE BUTTON
AND PUSH TEST BUTTON
```

——— (NOTE 1)

2) By pushing the SERVICE SW, bring the arrow mark "→" to the desired item and press the TEST button.

3) When the test has been completed, bring "→" to EXIT and push the TEST button.

NOTE 1: Normally, this will not be displayed. Only when the BD is used for the SEGA's cabinet MEGALO 50 (with DIP SW No.1 being turned ON), it will be displayed.

Bring "→" to "INDIVIDUAL" and push the TEST button to change it to "CONTINUE".

Bringing "→" to "CONTINUE" and pushing the TEST button without pressing the SERVICE button will change the screen sequentially.

①MEMORY TEST

Check the PCB's MEMORY ICs.
When the IC is in good operating condition, "GOOD" will be indicated.
If there exists any malfunctioning of the IC's, "BAD" will be indicated.

MEMORY TEST			
<ROM>			
IC 8	GOOD	IC 9	GOOD
IC17	GOOD	IC18	GOOD
<RAM>		IC16	GOOD
IC36	GOOD	IC37	GOOD
IC61	GOOD	IC62	GOOD
IC63	GOOD	IC64	GOOD
IC65	GOOD	IC66	GOOD
IC68	GOOD	IC69	GOOD
IC70	GOOD	IC71	GOOD
IC74	GOOD	IC75	GOOD
PUSH TEST BUTTON TO EXIT			

Push the TEST button to have the MENU return on to the screen.

②INPUT TEST

This test displays the state of each switch. If the switch goes ON when activated it is satisfactory.

The display changes when the CABINET TYPE and START BUTTON settings in the GAME ASSIGNMENTs as well as the COIN CHUTE TYPE setting in the COIN ASSIGNMENTs are changed.

```
        INPUT TEST
    PLAYER   1P    2P
       UP    Off   Off
     DOWN    Off   Off
    RIGHT    Off   Off
     LEFT    Off   Off
   ATTACK    Off   Off
     JUMP    Off   Off
    MAGIC    Off   Off
    START    Off   Off

 COIN CHUTE #1-Off #2-Off
    SERVICE AT CABINET   Off
    SERVICE ON BOARD     Off
   PUSH TEST BUTTON TO EXIT
```

CABINET TYPE ... 2P

COIN ASSIGNMENTS ... COMMON

In the case of the above setting:

```
              INPUT TEST
    PLAYER   1P    2P    3P    4P
       UP    Off   Off   Off   Off
     DOWN    Off   Off   Off   Off
    RIGHT    Off   Off   Off   Off
     LEFT    Off   Off   Off   Off
   ATTACK    Off   Off   Off   Off
     JUMP    Off   Off   Off   Off
    MAGIC    Off   Off   Off   Off
    START    Off   Off   Off   Off
     COIN    Off   Off   Off   Off
 SERVICE AT CABINET     Off
 SERVICE ON BOARD       Off
   PUSH TEST BUTTON TO EXIT
```

CABINET TYPE ... 4P

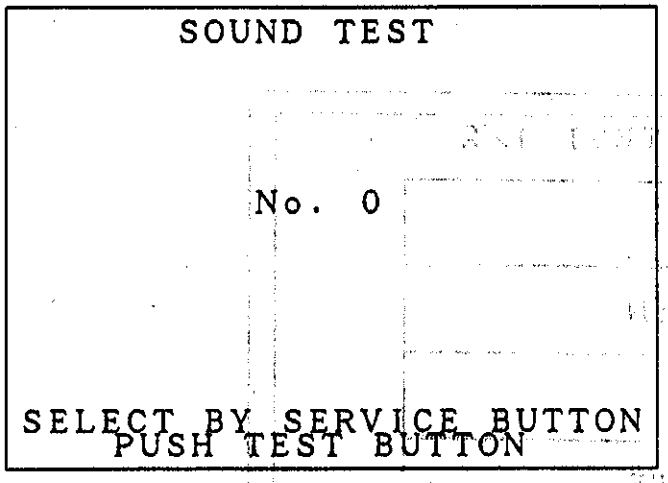
COIN ASSIGNMENTS .. INDIVIDUAL

In the case of the above setting:

Push the TEST button to have the MENU return on to the screen.

③SOUND TEST

This allows sound used in the game to be tested.



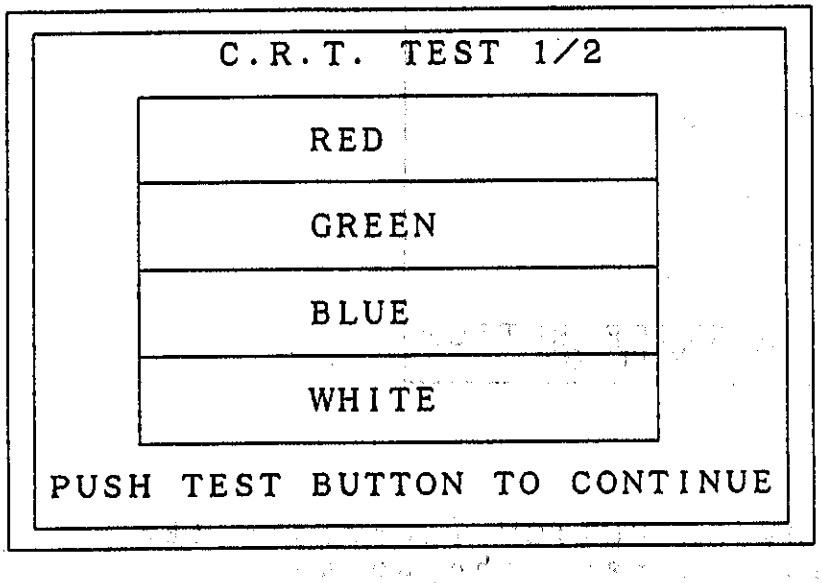
Pressing the SERVICE BUTTON increases the number by one and changes the sound.

Push the TEST button to have the MENU return on to the screen.

④C.R.T. TEST

I.RGB COLOR ADJUSTMENT SCREEN

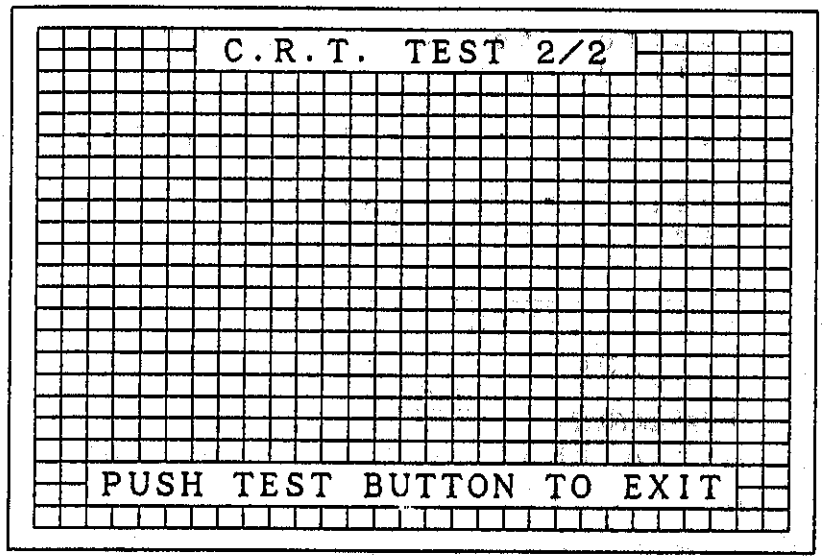
This page allows for checking the monitor color check.



Each of the R(red), G(green) and B(blue) colors is most dark at the left-hand end and becomes brighter in 31 gradations towards the right-hand end. The monitor brightness is satisfactory if the white color bar is black at the left-hand end and white at the right-hand end. Pressing the TEST button causes the screen to proceed to the next page.

II. MONITOR SIZE ADJUSTMENT SCREEN

This page allows the monitor size to be checked.



Make adjustments in a manner so that the checkered portions for checking do not go beyond the screen.

Press the TEST button to have the MENU return on to the screen.

⑤GAME ASSIGNMENTS

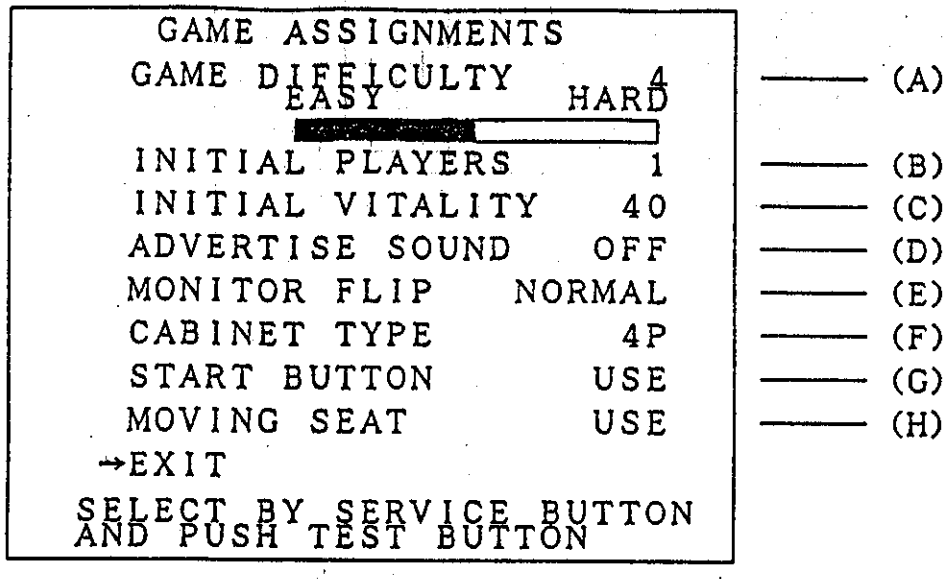
Allows game difficulty adjustments and the CABINET TYPE setting to be changed.

SELECTION OF DESIRED ITEM

1) Press the SERVICE button to move the "→" and bring it to the desired item.

2) Press the TEST button to change the setting.

3) After the desired setting is finished, bring the "→" to "EXIT" and press the TEST button.



(A) GAME DIFFICULTY
Sets the game's overall difficulty (EASY1~HARD8; set to 4 in the standard setting).

(B) INITIAL PLAYERS
Sets the number of players allotted. The same number applies to both cases of starting and continuing (Min.1, Max.5, with the standard setting being 1).

(C) INITIAL VITALITY
Sets the on-screen player's vitality.
(Min.16, Max.48, with the standard setting being 40)

(D) ADVERTISE SOUND
Determines whether ADVERTISE SOUND is to be emitted or not (set to OFF in the standard setting).

(E) MONITOR FLIP
Determines whether the screen is to be inverted or not (set to NORMAL in the standard setting).

(F) CABINET TYPE
Sets the number of persons who can play simultaneously.
Set this in a manner to meet the type of the CONTROL PANEL (2P, 3P, or 4P; set to 4P in the standard setting).

(G) START BUTTON
Determines whether the START button is to be used or not used (USE, NO USE). NO USE is set for the type of CABINET which does not have the START button and in this case, either the ATTACK button or JUMP button, MAGIC button is used in lieu of the START button (set to USE in the standard setting).

(H) MOVING SEAT
Normally, this will not be displayed. Only when the BD is used for the SEGA's cabinet MEGALO 50 (with DIP SW No. 1 being turned ON), it will be displayed. Said SW being turned USE allows for moving and NO USE does not (in the STANDARD SETTING, it is set to USE).

⑥COIN ASSIGNMENTS

In this mode, the COIN/CREDIT setting, etc. can be changed.

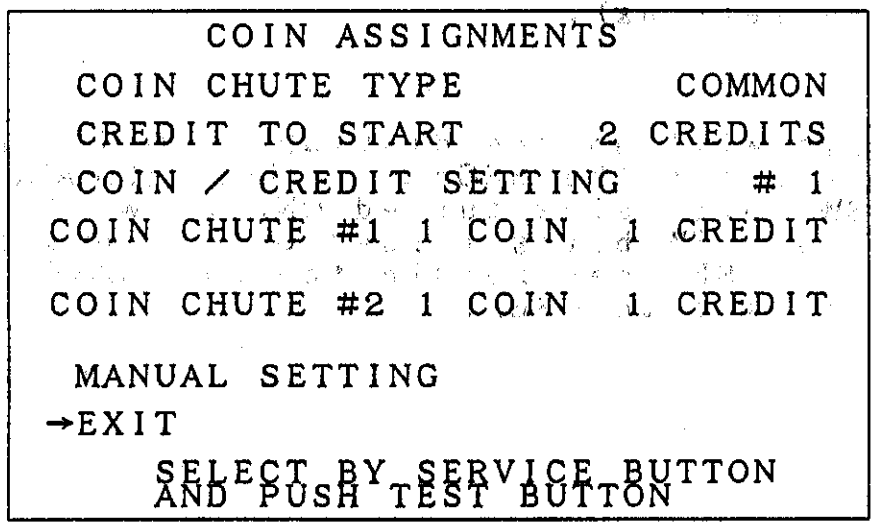
SELECTION OF DESIRED ITEM

1) Press the SERVICE button to move "→" and bring it to the desired item.

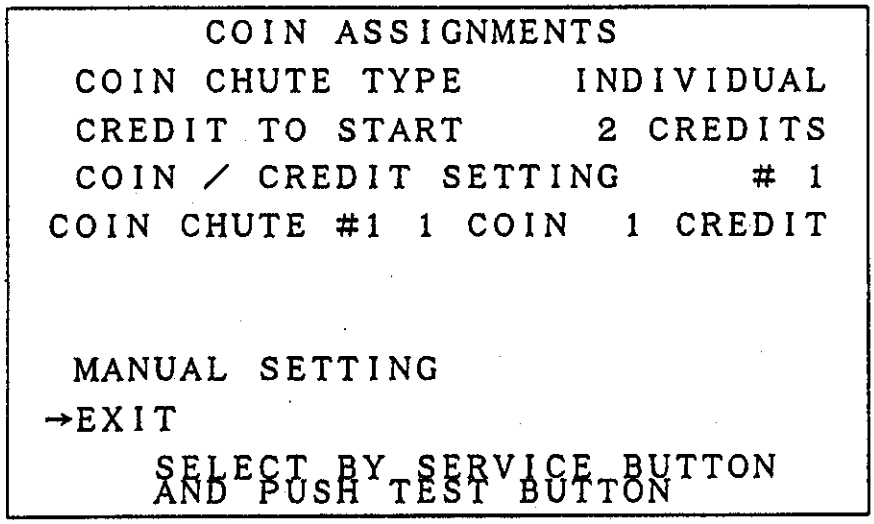
2) Press the TEST button to change the setting.

3) After the desired setting is finished, bring the "→" to "EXIT" and press the TEST button.

"COMMON" SETTING



"INDIVIDUAL" SETTING



(A) COIN CHUTE TYPE

This determines whether coins are accepted in common or separately for each station (set to INDIVIDUAL in the standard setting).

COMMON:
Used for the type of CABINET whose coin acceptance is a COMMON type one. In this setting, use COIN 1/COIN 2 coin port regardless of the number of players.

INDIVIDUAL:
Used for the type of CABINET which has a coin chute for each player, with each coin chute being able to accept coins.
In addition, with this setting, as regards the coin port, refer to PIN ASSIGNMENT for each PLAYER TYPE.

(B) CREDIT TO START
Sets the number of CREDITs required when starting the game (1 CREDIT, 2 CREDITS).
Even when set to 2 CREDITS, you can CONTINUE with 1 CREDIT (set to 2 CREDITS in the standard setting).

(C) COIN/CREDIT SETTING
Sets the CREDIT increase increment per coin insertion. There are 26 settings from #1 to #26, expressed in ○○ CREDIT as against ○○ COINS inserted.
#26 refer to FREE PLAY (SETTING #1 in the standard setting).
Also, there are some setting numbers not shown in the INDIVIDUAL setting (for details, refer to Table 1~3).

(D) MANUAL SETTING
The CREDIT's incremental increase settings as against a coin insertion are shown in further details than in (C)... for details, refer to Table 4. Also, note that when this MANUAL SETTING is performed, the COIN/CREDIT setting becomes ineffective.

"COMMON" SETTING

```
        COIN ASSIGNMENTS

  COIN TO CREDIT   1 COIN   1 CREDIT     —(E)
  BONUS ADDER      NO BONUS ADDER       —(F)
  COIN CHUTE #1 MULTIPLIER              —(G)
 COIN      1 COIN COUNTS AS 1 COIN
    1  2   3   4   5   6   7   8   9
    1  2   3   4   5   6   7   8   9
 CREDIT

  COIN CHUTE #2 MULTIPLIER
 COIN      1 COIN COUNTS AS 1 COIN
    1  2   3   4   5   6   7   8   9
    1  2   3   4   5   6   7   8   9
 CREDIT

→ EXIT
    SELECT BY SERVICE BUTTON
    AND PUSH TEST BUTTON
```

"INDIVIDUAL" SETTING

```
        COIN ASSIGNMENTS

  COIN TO CREDIT   1 COIN   1 CREDIT     —(E)
  BONUS ADDER      NO BONUS ADDER       —(F)
  COIN CHUTE     MULTIPLIER             —(G)
 COIN      1 COIN COUNTS AS 1 COIN
    1  2   3   4   5   6   7   8   9
    1  2   3   4   5   6   7   8   9
 CREDIT



→ EXIT
    SELECT BY SERVICE BUTTON
    AND PUSH TEST BUTTON
```

(E) COIN TO CREDIT
Determines COIN/CREDIT setting.

(F) BONUS ADDER
This sets how many COINS should be inserted to obtain one SERVICE COIN.

(G) COIN CHUTE MULTIPLIER
This sets how many tokens one COIN represents.

TABLE 1:COIN/CREDIT SETTING(COIN CHUTE COMMON TYPE)

NAME OF SETTING	COIN CHUTE 1	COIN CHUTE 2
SETTING #1	1COIN 1CREDIT	1COIN 1CREDIT
SETTING #2	1COIN 1CREDIT	1COIN 2CREDITS
SETTING #3	1COIN 1CREDIT	1COIN 3CREDITS
SETTING #4	1COIN 1CREDIT	1COIN 4CREDITS
SETTING #5	1COIN 1CREDIT	1COIN 5CREDITS
SETTING #6	1COIN 2CREDITS	1COIN 2CREDITS
SETTING #7	1COIN 2CREDITS	1COIN 5CREDITS
SETTING #8	1COIN 3CREDITS	1COIN 3CREDITS
SETTING #9	1COIN 4CREDITS	1COIN 4CREDITS
SETTING #10	1COIN 5CREDITS	1COIN 5CREDITS
SETTING #11	1COIN 6CREDITS	1COIN 6CREDITS
SETTING #12	2COINS 1CREDIT	2COINS 1CREDIT
SETTING #13	2COINS 1CREDIT	1COIN 1CREDIT
SETTING #14	2COINS 1CREDIT	1COIN 2CREDITS
SETTING #15	1COIN 1CREDIT 2COINS 3CREDITS	1COIN 1CREDIT 2COINS 3CREDITS
SETTING #16	1COIN 1CREDIT 2COINS 3CREDITS	1COIN 3CREDITS
SETTING #17	3COINS 1CREDIT	3COINS 1CREDIT
SETTING #18	4COINS 1CREDIT	4COINS 1CREDIT
SETTING #19	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 5CREDITS	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 5CREDITS
SETTING #20	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 5CREDITS	1COIN 5CREDITS

TABLE 2:COIN/CREDIT SETTING(COIN CHUTE COMMON TYPE)

NAME OF SETTING	COIN CHUTE 1	COIN CHUTE 2
SETTING #21	3COINS 1CREDIT 5COINS 2CREDITS	1COIN 2CREDITS
SETTING #22	2COINS 1CREDIT 4COINS 2CREDITS 5COINS 3CREDITS	2COINS 1CREDIT 4COINS 2CREDITS 5COINS 3CREDITS
SETTING #23	2COINS 1CREDIT 4COINS 2CREDITS 5COINS 3CREDITS	1COIN 3CREDITS
SETTING #24	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 4CREDITS 5COINS 6CREDITS	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 4CREDITS 5COINS 6CREDITS
SETTING #25	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 4CREDITS 5COINS 6CREDITS	1COIN 6CREDITS
SETTING #26	FREE PLAY	FREE PLAY

TABLE 3:COIN/CREDIT SETTING
(COIN CHUTE INDIVIDUAL TYPE)

NAME OF SETTING	EACH STATION'S COIN CHUTE
SETTING #1	1COIN 1CREDIT
SETTING #6	1COIN 2CREDITS
SETTING #8	1COIN 3CREDITS
SETTING #9	1COIN 4CREDITS
SETTING #10	1COIN 5CREDITS
SETTING #11	1COIN 6CREDITS
SETTING #12	2COINS 1CREDIT
SETTING #15	1COIN 1CREDIT 2COINS 3CREDITS
SETTING #17	3COINS 1CREDIT
SETTING #18	4COINS 1CREDIT
SETTING #19	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 5CREDITS
SETTING #21	3COINS 1CREDIT 5COINS 2CREDITS
SETTING #22	2COINS 1CREDIT 4COINS 2CREDITS 5COINS 3CREDITS
SETTING #24	1COIN 1CREDIT 2COINS 2CREDITS 3COINS 3CREDITS 4COINS 4CREDITS 5COINS 6CREDITS
SETTING #26	FREE PLAY

TABLE 4:MANUAL SETTING

COIN TO CREDIT	1COIN 1CREDIT
	2COINS 1CREDIT
	3COINS 1CREDIT
	4COINS 1CREDIT
	5COINS 1CREDIT
	6COINS 1CREDIT
	7COINS 1CREDIT
	8COINS 1CREDIT
	9COINS 1CREDIT

BONUS ADDER	NO BONUS ADDER
	2 COINS GIVE 1 EXTRA COIN
	3 COINS GIVE 1 EXTRA COIN
	4 COINS GIVE 1 EXTRA COIN
	5 COINS GIVE 1 EXTRA COIN
	6 COINS GIVE 1 EXTRA COIN
	7 COINS GIVE 1 EXTRA COIN
	8 COINS GIVE 1 EXTRA COIN
	9 COINS GIVE 1 EXTRA COIN

COIN CHUTE #1 MULTIPLIER	1 COIN COUNTS AS 1 COIN
	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

COIN CHUTE #2 MULTIPLIER	1 COIN COUNTS AS 1 COIN
	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

EXAMPLES FOR THE CALCULATION OF CREDITS SET IN THE "MANUAL" SETTING

Example 1

COIN CHUTE TYPE•••INDIVIDUAL
COIN TO CREDIT••••4 COINS 1 CREDIT
BONUS ADDER•••••••2 COINS GIVE 1 EXTRA COIN
COIN CHUTE MULTIPLIER
•••1 COIN COUNTS AS 2 COINS

In the above setting, when 7 coins are inserted in the 1P COIN CHUTE, the number of 1P credits will be as follows:

1) As per the COIN CHUTE MULTIPLIER setting, since 1 coin inserted counts as 2 coins, 7 coins inserted will be equivalent to 14 coins.

2) According to the BONUS ADDER setting, every 2 coins earn one service coin, therefore, the equivalent of 14 coins will have 7 service coins added, resulting in the equivalent of 21 coins.

3) According to the COIN TO CREDIT setting, 4 coins make 1 credit, therefore, the equivalent of 21 coins makes 5 and a quarter credits.

Example 2

```
COIN CHUTE TYPE•••COMMON
COIN TO CREDIT••••6 COINS 1 CREDIT
BONUS ADDER•••••••3 COINS GIVE 1 EXTRA COIN
COIN CHUTE #1 MULTIPLIER
                •••1 COIN COUNTS AS 4 COINS
COIN CHUTE #2 MULTIPLIER
                •••1 COIN COUNTS AS 5 COINS
```

In the above settings, when 3 coins are inserted into COIN CHUTE #1 and 5 coins into COIN CHUTE #2, the number of CREDITs will be as follows:

1) According to COIN CHUTE #1 MULTIPLIER setting, one coin inserted counts as 4 coins, therefore, 3 coins are equivalent to 12 coins.

2) According to the COIN CHUTE #2 MULTIPLIER setting, one coin inserted counts as 5 coins, therefore, 5 coins inserted into COIN CHUTE #2 will be equivalent to 25 coins.

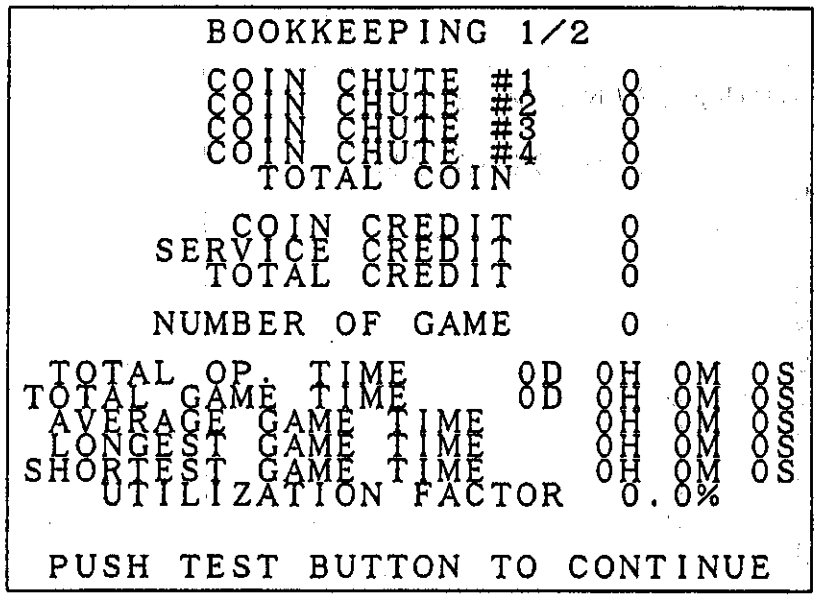
3) The total number of coins in COIN CHUTE #1 and #2 will be equivalent to 37 coins.

4) According to BONUS ADDER setting, every 3 coins will earn one service coin, therefore, the equivalent of 37 coins with 12 service coins added will be equivalent to 49 coins.

5) According to the COIN TO CREDIT setting, 6 coins make 1 CREDIT, therefore, the equivalent of 49 coins equals 8 and one sixth CREDITs.

⑦BOOKKEEPING

This test mode allows each of the CREDIT/TIME/GAME data to be ascertained.



(A) COIN CHUTE #1~#4
Number of times each COIN CHUTE is actuated. Note that CHUTE #3 and #4 or #4 alone may not be displayed depending on the settings as regards CABINET TYPE in the GAME ASSIGNMENTS and COIN CHUTE TYPE in the COIN ASSIGNMENTS).

(B) TOTAL COIN
Total number of times the COIN CHUTE is actuated.

(C) COIN CREDIT
Number of CREDITs registered by COIN insertion only.

(D) SERVICE CREDIT
The SERVICE SWITCH usage frequency.

(E) TOTAL CREDIT
Total number of CREDITs.

(F) NUMBER OF GAME
Total number of games.

(G) TOTAL OP. TIME
Total time the machine is energized.

(H) TOTAL GAME TIME
Total game playtime.

(I) AVERAGE GAME TIME
Average game playtime

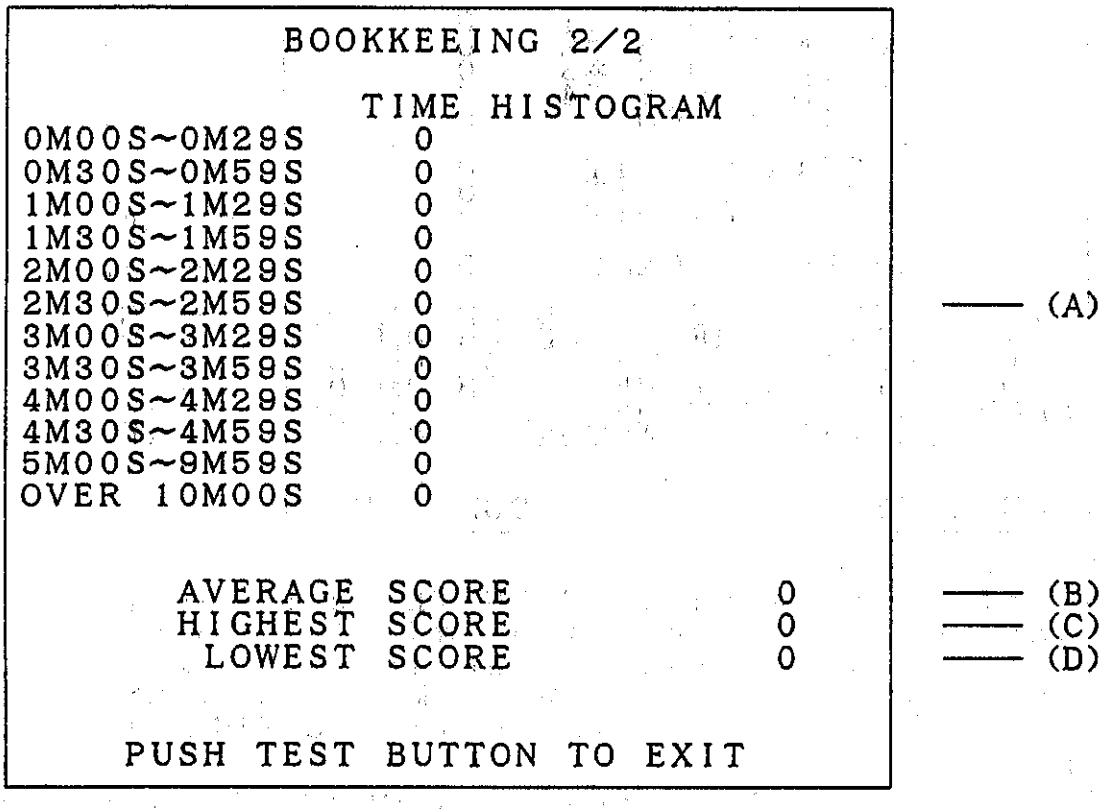
(J) LONGEST GAME TIME
Longest game playtime.

(K) SHORTEST GAME TIME
Shortest game playtime.

(L) UTILIZATION FACTOR
TOTAL GAME TIME/TOTAL OP. TIME displayed as percentage (%).

Press the TEST button to proceed to the next page.

Pressing the TEST button causes the following screen to appear:



(A) TIME HISTOGRAM
Game frequency by game hours.

(B) AVERAGE SCORE
Average game score.

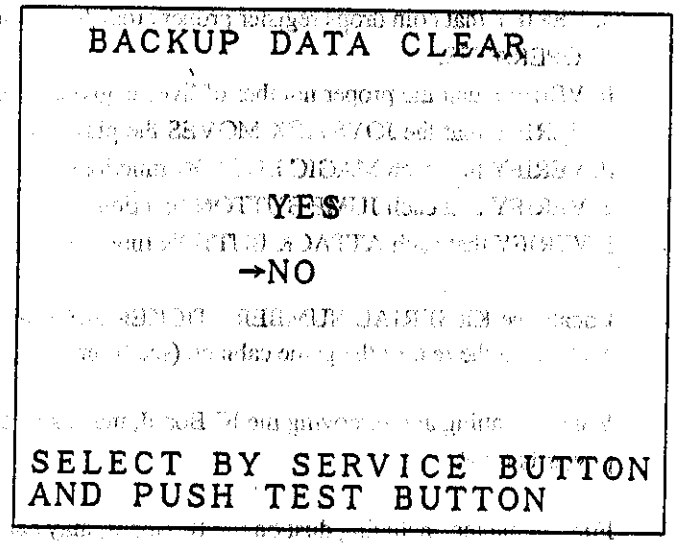
(C) HIGHEST SCORE
Highest game score.

(D) LOWEST SCORE
Lowest game score.

Pressing the TEST button causes the MENU to return on to the screen.

⑧BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING.



When clearing, bring "→" to "YES" and when not clearing, to "NO", by using the SERVICE SW, and then push the TEST button.

When clearing has been finished, "COMPLETED" will be displayed.

Pressing the TEST button will have the MENU return on to the screen.

Function Testing

Functionally test the game by:

a. VERIFY that coin drops register proper credit/s and the COIN METER OPERATES.
b. VERIFY that the proper number of lives is given for each CREDIT
c. VERIFY that the JOYSTICK MOVES the player left, right, and down.
d. VERIFY that each MAGIC BUTTON functions.
e. VERIFY that each JUMP BUTTON functions.
f. VERIFY that each ATTACK BUTTON functions.

Locate the Kit SERIAL NUMBER STICKER and FCC STICKER. Install these stickers on the rear of the game cabinet. (see figure 1)

Handling

When installing and removing the IC Board, make sure that the cabinet's main power is OFF.

Foreign matter, including dust on the IC Board, may cause malfunctioning (short circuit, combustion, etc..., due to the Board's generation of heat) to occur. Therefore, keep the IC Board surfaces clean.

Completely perform the connections of the IC Board's and other item's connectors. Insufficient connector insertion may cause the IC Board to be damaged. Therefore, pay careful attention to this point. Also, for the IC Board circuit inspection, only the usage of logic testers is permitted. The use of a tester is not allowed, therefore, also be careful of this point.

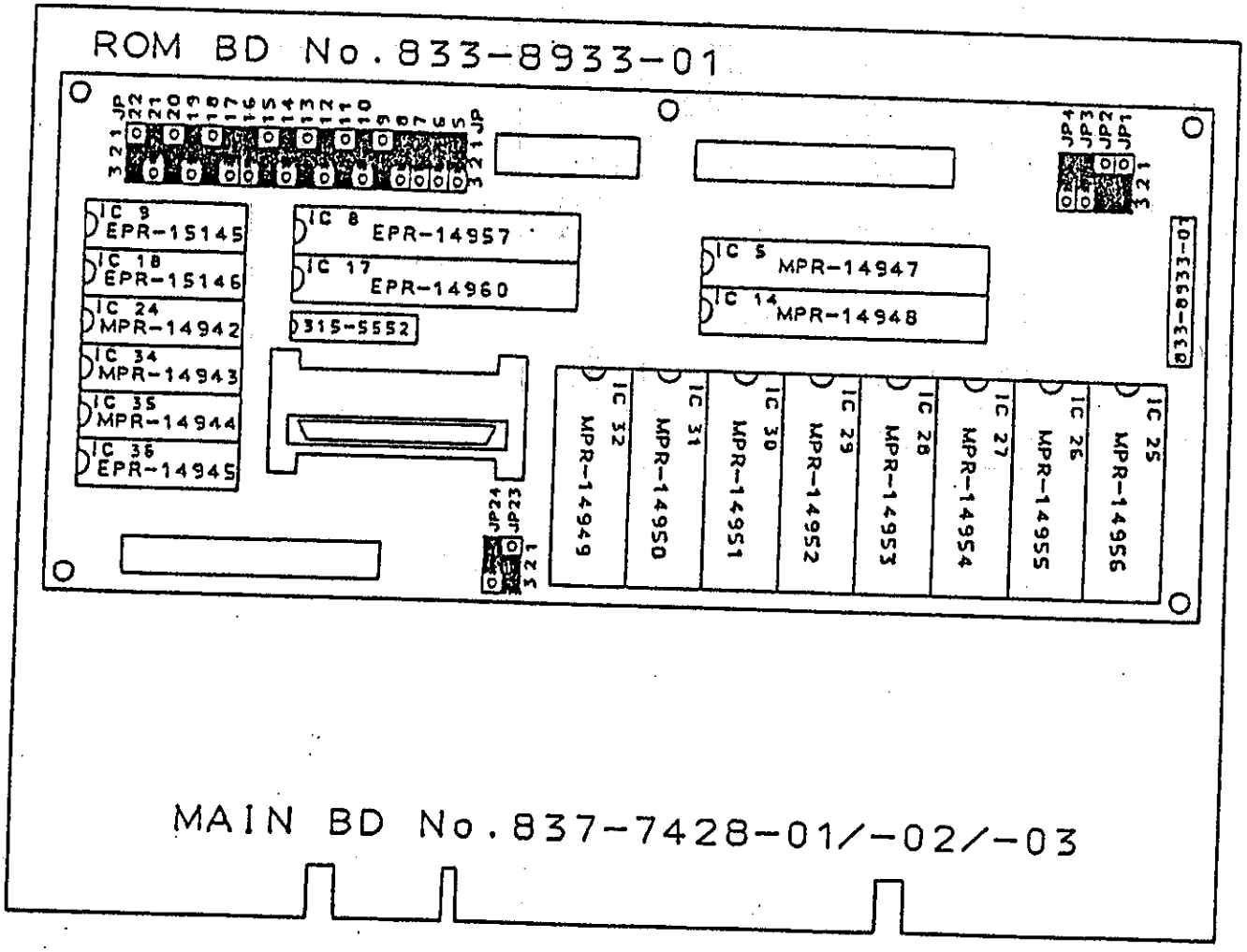
The SYSTEM 32, when used without the SHIELD CASE, may have a radio wave fault. Therefore, be sure to utilize the ancillary SHIELD CASE. Sould any problem arise when the above mentioned SHIELD CASE is not utilized, Sega will not be held responsible whatsoever. As such, pay careful attention to this point.

The contents of the product herein described are subject to change without notice.

GAME BD ROM LOCATION

※The 834-8529-02 SECURITY BD GOLDEN AXE II AC is mounted on the ROM BD.

GAME BD No. 833-8932-02 (W/ I/O BD)



GOLDEN AXE The Revenge of DEATH=ADDER				
IC LOCATION		ROM NUMBER		MAIN WORK
1	IC 9	EPR-15145	2M	MAIN PROGRAM
2	IC 18	EPR-15146	2M	
3	IC 8	EPR-14957	1M	
4	IC 17	EPR-14960	1M	
5	IC 24	MPR-14942	8M	SOUND
6	IC 34	MPR-14943	8M	
7	IC 35	MPR-14944	8M	
8	IC 36	EPR-14945	1M	
9	IC 5	MPR-14947	16M	SCROLL
10	IC 14	MPR-14948	16M	
11	IC 25	MPR-14956	16M	OBJECT
12	IC 26	MPR-14955	16M	
13	IC 27	MPR-14954	16M	
14	IC 28	MPR-14953	16M	
15	IC 29	MPR-14952	16M	
16	IC 30	MPR-14951	16M	
17	IC 31	MPR-14950	16M	
18	IC 32	MPR-14949	16M	
ROM BD No.		833-8933-01		

In Case of Difficulty

No Raster/No Video
- -Check A.C. line cord
- -Check line fuse
- -Check monitor brightness
- -Check power switch and/or interlock switch
- -Check all solder connections on line filter and transformer
- -Check for proper orientation of the 56 pin PCB connector

Raster/No Video
- -Check all PCB to monitor connections
- -Check power supply voltage on PCB

No Video/ Game sounds can be heard
- -Check monitor brightness
- -Check all PCB to monitor connections

Incorrect Colors
- -Monitor needs degaussing
- -Check for proper wiring between PCB and monitor
- -Check monitor adjustment and adjust if necessary

Wavy Picture
- -Check monitor ground is properly connected to monitor
- -Be certain sync inputs are properly connected to monitor
- -Check horizontal hold adjustment

Vertical Roll/Horizontal Tear
- -Check horizontal and/or vertical hold adjustments
- -Check for proper wiring of sync from PCB to monitor

No Sound
- -Check volume control potentiometer adjustment
- -Check for + 12 volts on edge connector of PCB
- -Check wiring from PCB to speaker
- -Check speaker for low resistance between the " + " and " - " tabs

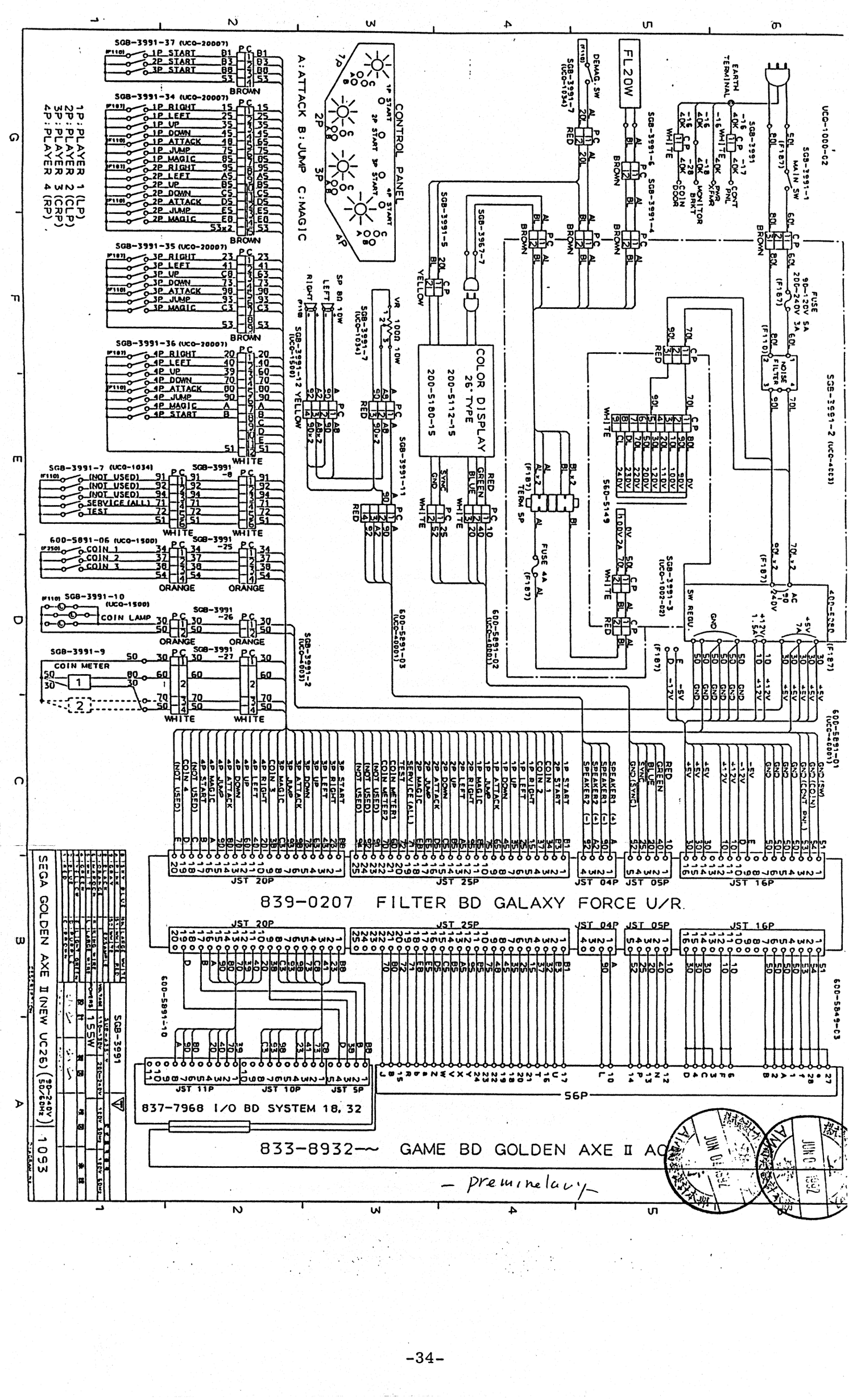
Bad Sound
- -Check wiring to speaker for bad solder connections.
- -Check sound with another speaker

No Switch Input
- -Check ground connection to switch/es
- -Check wiring between PCB and switch/es for proper connect:on
- -Check switch/es with an ohm meter to verify proper operation

Switch Operates Incorrect Function
- -Check wiring between PCB and switches for proper orientation
- -Check wiring for shorts between switch inputs

No Coin Meter
- -Check wiring to coin meter
- -Check that + 5 volts is on + side of meter
- -Verify a + 5 volt meter is used

When coin switch is made and meter pulses, the screen blanks out and/or game resets.
- -Verify that a meter with a diode is used
- -If no diode is built in meter a 1N4004 can be used across the meter.Cathode to "+" side of meter and anode to "-"side of meter.


1P:PLAYER 1 (LP)
2P:PLAYER 2 (CLP)
3P:PLAYER 3 (CRP)
4P:PLAYER 4 (RP)
A:ATTACK B:JUMP C:MAGIC
CONTROL PANEL
COLOR DISPLAY 26" TYPE
200-5112-15
200-5180-15
FL20W
SGB-3991-1
SGB-3991-2 (UCO-4003)
UCO-1000-02
SGB-3991-37 (UCO-20007)
SGB-3991-34 (UCO-20007)
SGB-3991-35 (UCO-20007)
SGB-3991-36 (UCO-20007)
SGB-3991-7 (UCO-1034)
600-5891-06 (UCO-1500)
SGB-3991-10 (UCO-1500)
SGB-3991-9
SGB-3991-12 YELLOW (UCO-1500)
SGB-3991-11
600-5891-03 (UCO-40001)
600-5891-02 (UCO-40001)
600-5891-01 (UCO-40001)
600-5849-03
SGB-3991-3 (UCO-1002-02)
600-5880
560-5149
FUSE 4A AL (F187)
TERM 5P
SW REGU.
839-0207 FILTER BD GALAXY FORCE U/R.
837-7968 I/O BD SYSTEM 18, 32
833-8932~~ GAME BD GOLDEN AXE II AC
SEGA GOLDEN AXE II (NEW UC26) (90-240V 50/60Hz) 1093
SGB-3991
155W
- preminelary -

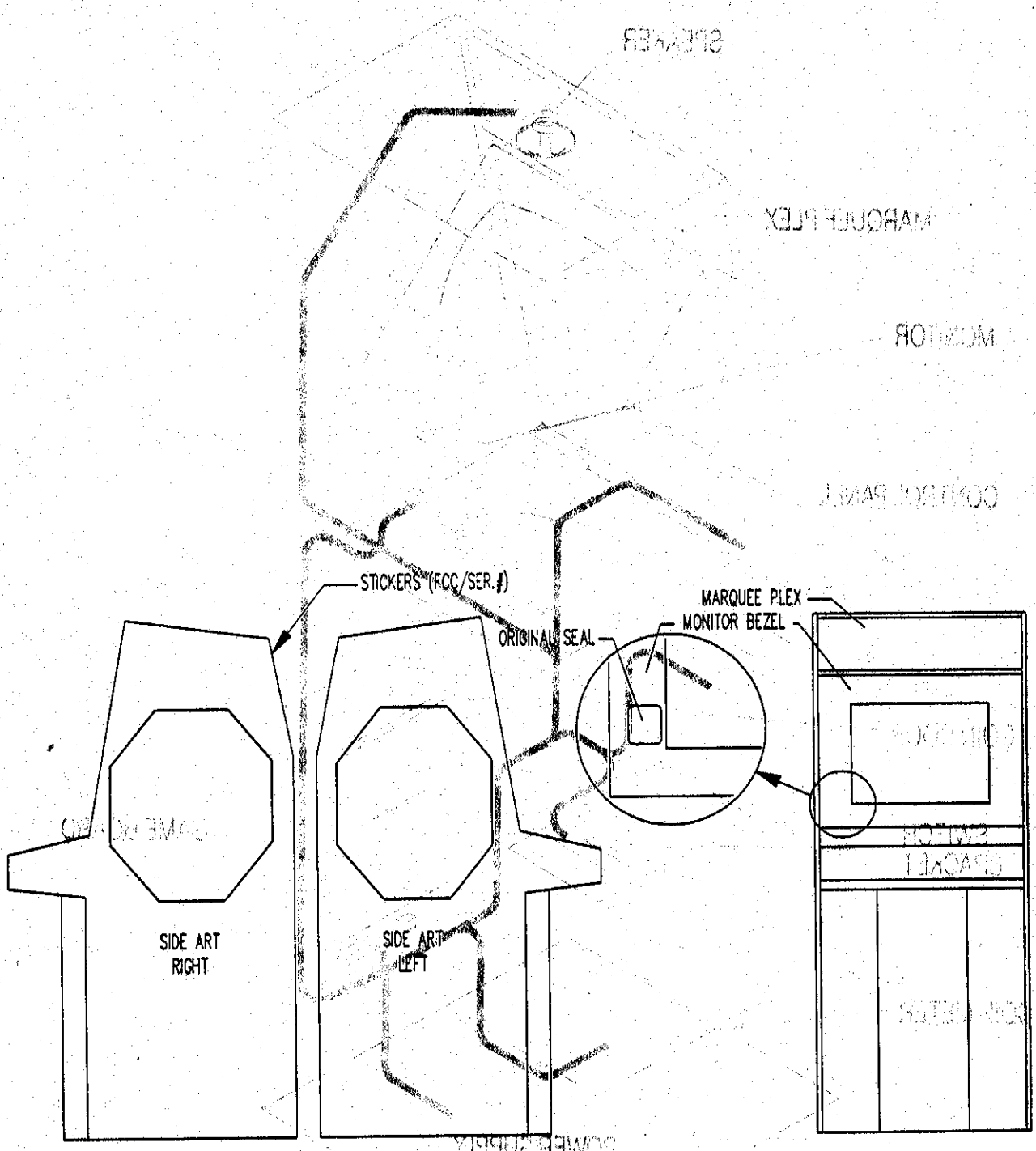
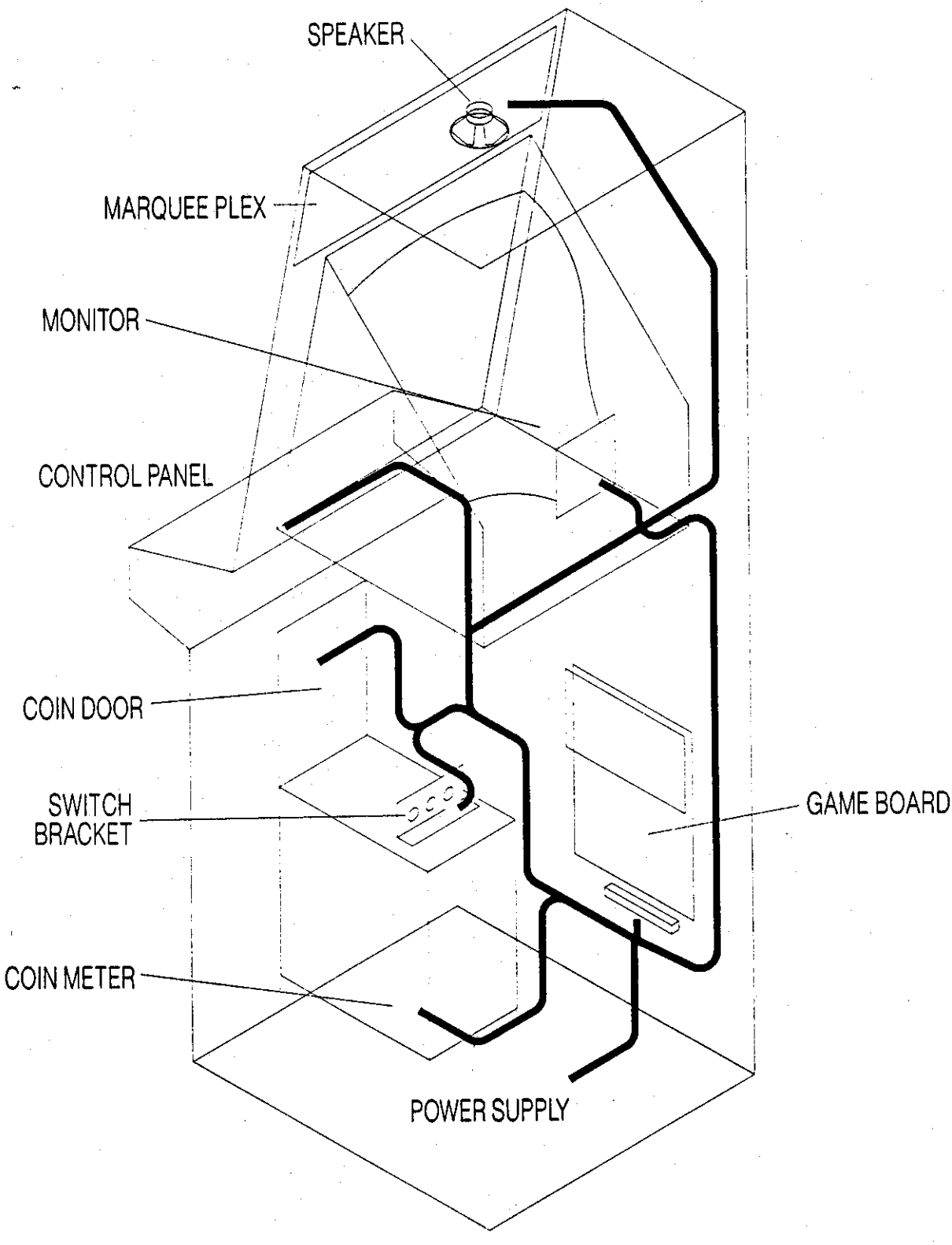

STICKERS (FCC/SER.#)
ORIGINAL SEAL
MARQUEE PLEX
MONITOR BEZEL
SIDE ART
RIGHT
SIDE ART
LEFT

FIGURE 1



SUGGESTED HARNESS ROUTING

FIGURE 2

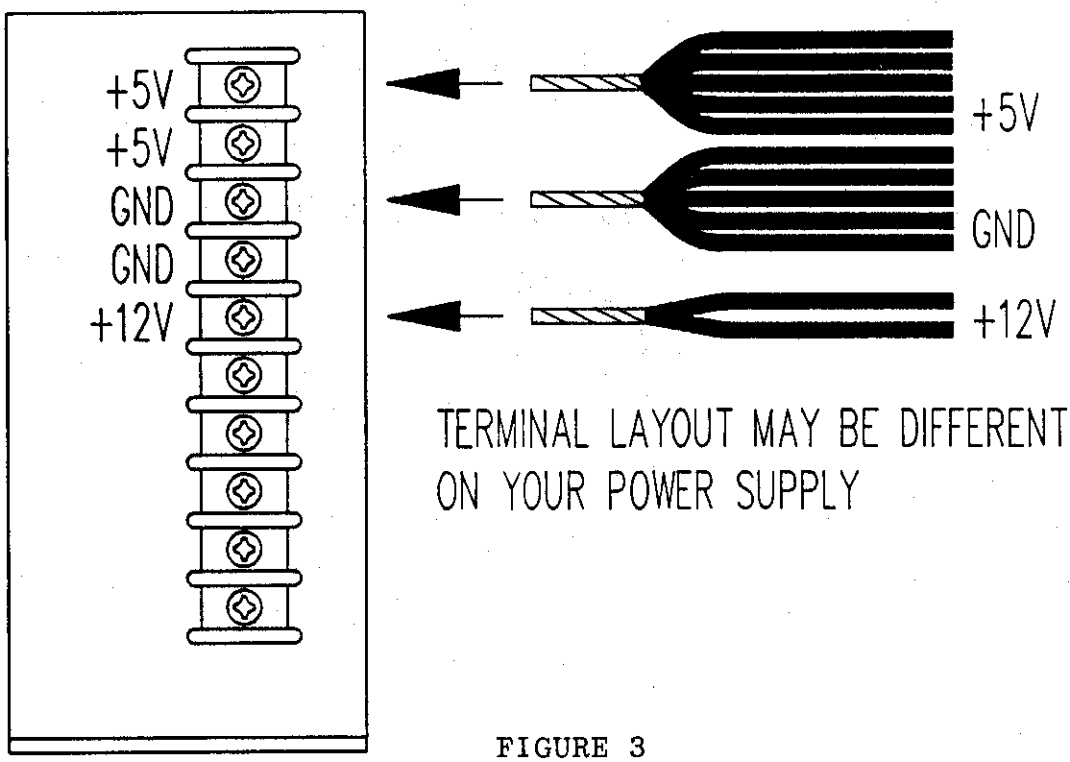


FIGURE 3

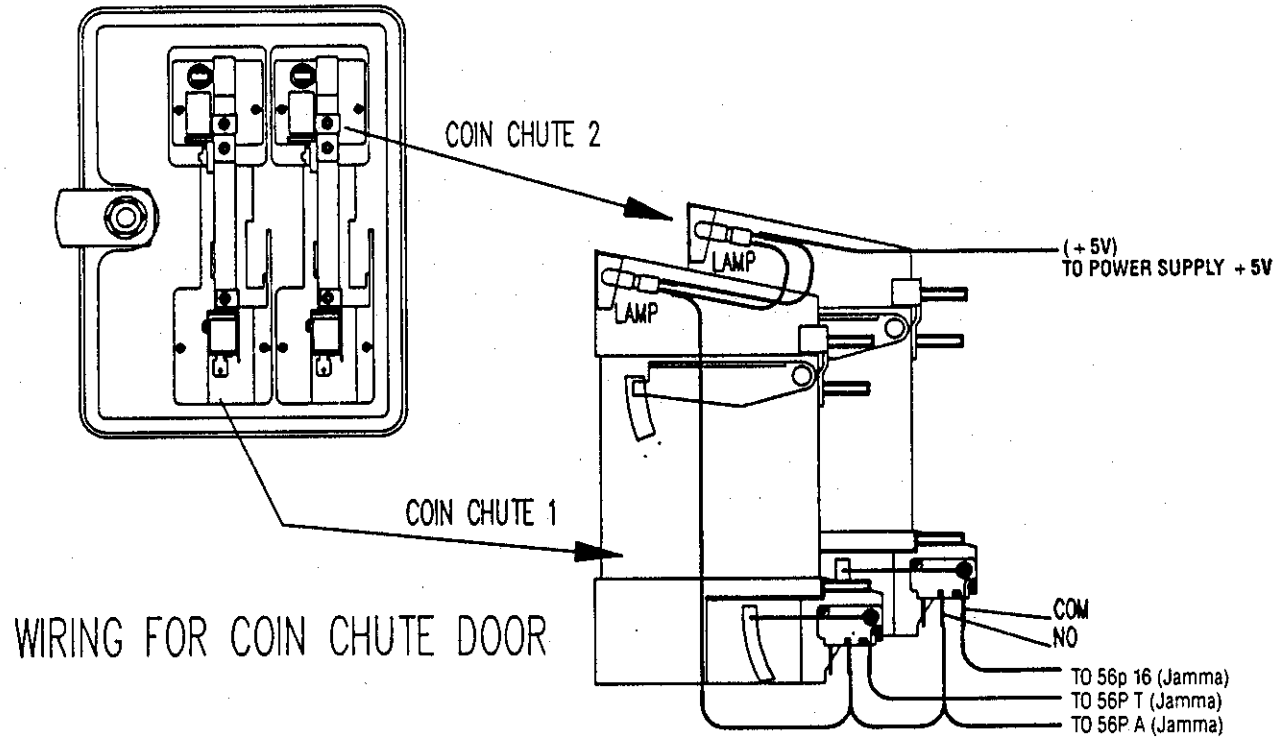


FIGURE 4

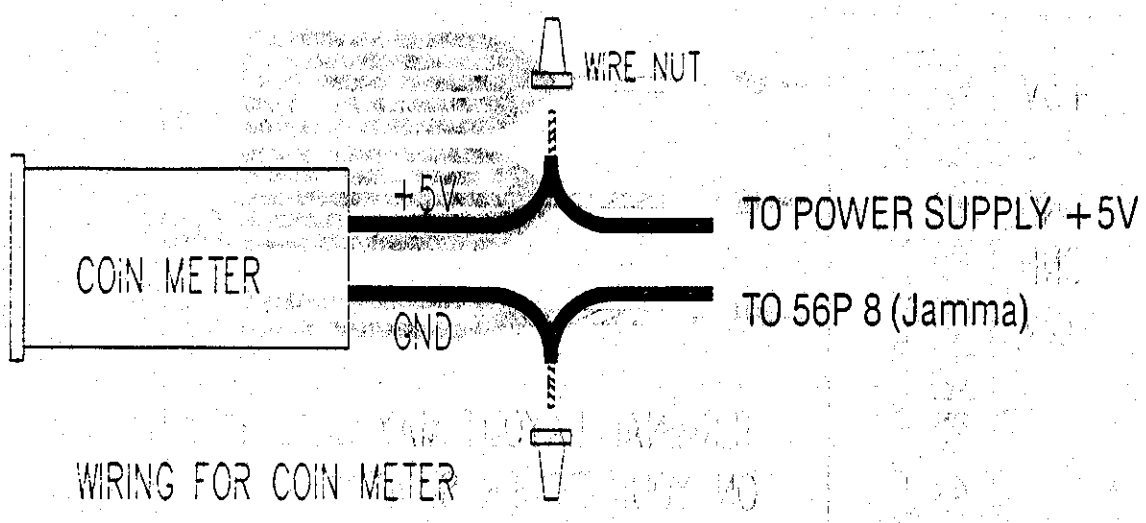

WIRE NUT
+5V
TO POWER SUPPLY +5V
COIN METER
GND
TO 56P 8 (Jamma)
WIRING FOR COIN METER

FIGURE 5