

# SEGA

# STV<sup>TM</sup>

## SEGA TITAN VIDEO GAME SYSTEM

### SERVICE MANUAL



**IMPORTANT!**

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

## SEGA ENTERPRISES, LTD.

MANUAL NO. 420 - 6170 - 01



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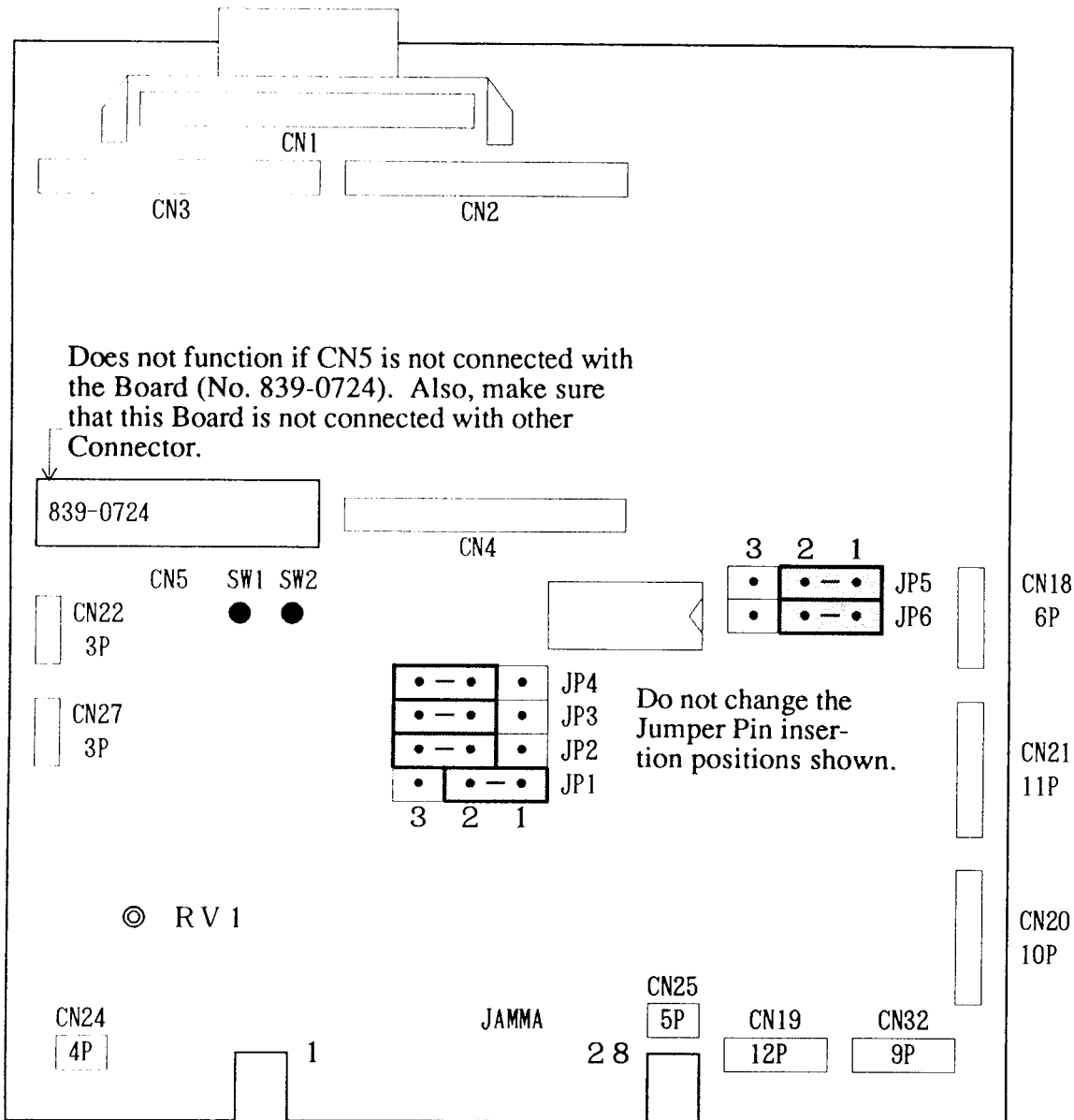
## 1. HANDLING PRECAUTIONS

- (1) When installing and removing the IC Board, make sure that the cabinet's main power is OFF.
- (2) Foreign bodies, such as dust on the IC Board, may cause damage (short circuit, fire, etc. due to the Board's generation of heat). Therefore, ensure the IC Board surfaces are always kept clean.
- (3) Completely connect up the IC Board's and other items' connectors. Insufficient connector insertion may damage the IC Board. Therefore, pay careful attention to this point. Also, for the IC Board circuit inspection, only the use of a logic tester is permitted. The use of a tester is not allowed, therefore, also be careful of this point.
- (4) The applicable frequency for the monitor compatible with the ST-V Board is 15 kHz. The ST-V Board can not be used for a cabinet which employs a monitor or projection display which has 24 kHz frequency only.
- (5) The contents of the product herein described are subject to change without notice.

## 2. SPECIFICATIONS

### ① NAME & POSITION OF ON-BOARD CONNECTORS, SWITCHES, ETC.

- In the case where the cabinet has neither the Test button nor Service button, utilize the Push SW which is on the Main Board. (SW1 : Test button SW2 : Service button).
- For adjusting the sound volume, use the on-Board VR 1.



JAMMA(56P, P=3.96mm)

CN22 (JST NH 3P) MIDI OUT  
 CN27 (JST NH 3P) LIGHT GUN TRIGGER  
 CN24 (JST NH 4P) AUDIO LINE OUTPUT

CN25 (JST NH 5P) RESERVED OUTPUT 4bit.

CN19 (JST NH 12P) A/D INPUT 8Ch.

CN32 (JST NH 9P) EXTENSION I/O 8bit.

CN18 (JST NH 6P) SERIAL COMMUNICATION

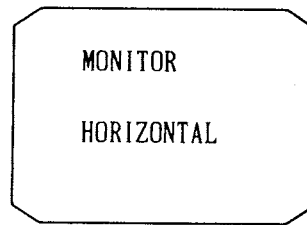
CN21 (JST NH 11P) EXTENSION I/O 8bit.

CN20 (JST NH 10P) EXTENSION INPUT 8bit.

### CAUTION

Although a Connector similar to the one used for SEGA's SYSTEM 32 is used for the ST-V BD CN24 audio output, the pin assignments are different. When using the ST - V Board for the MEGALO 50 DX, SD3, and SUPER MEGALO 2 Cabinets, make sure that the AUDIO OUT ON/OFF Switch is OFF. Also, do not connect the 4P Connectors from the Cabinet to CN24. Otherwise, ST-V or the cabinet may be damaged.

② MONITOR DIRECTION, HORIZONTAL FREQUENCY



HORIZONTAL FREQUENCY  
15.7kHz

③ COIN ASSIGNMENTS AND COIN PORT

- Setting the Coin Chute Type (COMMON, INDIVIDUAL)

**COMMON (Initialization):**

Used for the type of cabinet whose coin acceptance is a common type for plural players. Coins inserted by each player are handled as common credits. In spite of Cabinet Type setting (or the number of players), COIN 1 and COIN 2 coin ports are used, which respectively correspond to N0.16, 56P Connector and N0. T, 56P Connector.

COIN/CREDIT setting can be set for COIN 1 port and COIN 2 port separately.

**INDIVIDUAL**

Used for the type of cabinet which has a coin chute for each player, with each coin chute being able to accept coins. Coins inserted by each player are handled as that player's credits. The relationship between the cabinet type setting and the coin port is shown in the following table:

Note that COIN/CREDIT setting applies in common to each coin port.

INDIVIDUAL COIN PORT			
CABINET TYPE	PLAYER	ST-V COIN PORT	SYSTEM 32 COIN PORT
1 P	1 P	COIN 1 (56P, 16)	COIN 1
	2 P	COIN 1 (56P, 16)	COIN 2
3 P	2 P	COIN 2 (56P, T)	COIN 1
	1 P	COIN 1 (56P, 16)	COIN 3
	2 P	COIN 2 (56P, T)	COIN 2
4 P	3 P	COIN 3 (56P, 25)	COIN 1
	1 P	COIN 1 (56P, 16)	COIN 4
	2 P	COIN 2 (56P, T)	COIN 3
	3 P	COIN 3 (56P, 25)	COIN 2
	4 P	COIN 4 (56P, c)	COIN 1

The Player/  
Coin Port  
relationship  
differs from  
that of exist-  
ing SEGA  
Boards (Sys-  
tem 32, etc.)

For example, neither COIN 3 port nor COIN 4 port can be used for the 2P cabinet type. The <3P COIN> and <4P COIN> of ST - V Board respectively corresponds to N0. 25 and N0. c of the 56P Connector. Connect them as applicable. Should any button on the Control Panel be wired, be sure to remove the wiring.

Cabinet Type and Coin Chute Type setting changes can be made in the TEST mode. Refer to ⑤ SYSTEM ASSIGNMENTS and ⑥ COIN ASSIGNMENTS of Section 4 TEST MODE.

#### ④ CONTROL PANEL AND BOARD I/O

##### a) 56P CONNECTOR (JAMMA)

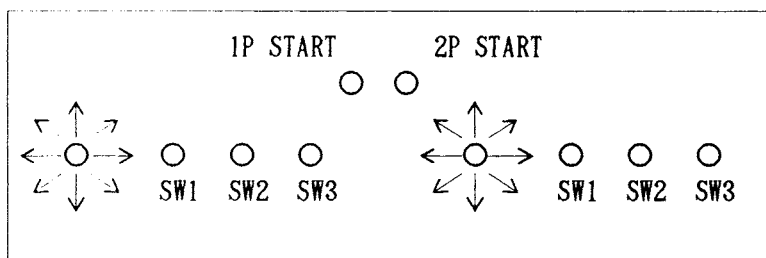
The following < > refers to the Coin Setting set to "INDIVIDUAL."

#### 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	SERVICE
TEST		15	S	(NOT USED)
<1P COIN> COIN 1		16	T	COIN 2 <2P 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 SW1		22	Z	2P SW1
1P SW2		23	a	2P SW2
1P SW3		24	b	2P SW3
<3P COIN> (NOT USED)		25	c	(NOT USED) <4P COIN>
(GAME SELECT)		26	d	(PAUSE)
GND		27	e	GND
GND		28	f	GND

56P P=3.96mm

#### 2L6B CONTROL PANEL



PLAYER 1

PLAYER 2

- GAME SELECT (Pin NO.26, 56P Connector)

Only the Multi-Cartridge mode is used.

In the case where the cabinet has a button which allows the player to select the desired game, wire NO. 26 Pin. When using the SELECT button, change the setting in the TEST mode accordingly.

- PAUSE (PIN NO. d, 56P Connector) used for photographing on-screen image

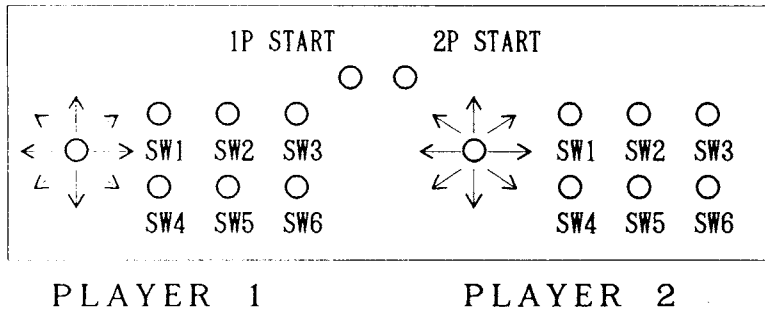
connect up GND and Pin NO. d to have a PAUSE function. Normally, these should not be wired.



b) EXTENSION I/O PORT (2L12B)

CN2 1 JST 11P	1	GND
	2	GND
	3	1P SW4
	4	1P SW5
	5	1P SW6
	6	(1P SW7) NOT USED
	7	2P SW4
	8	2P SW5
	9	2P SW6
	10	(2P SW7) NOT USED
	11	GND

2L12B CONTROL PANEL

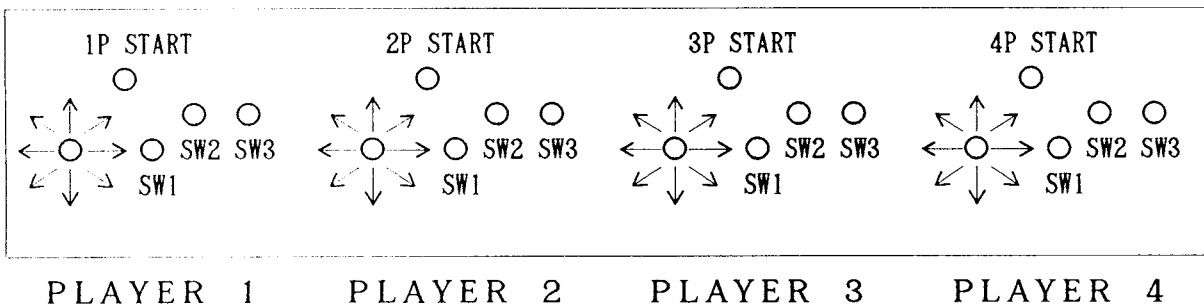


c) EXTENSION I/O PORT (3L9B, 4L12B)

CN3 2 JST 9P	1	3P SW1
	2	3P SW2
	3	3P SW3
	4	3P START
	5	3P DOWN
	6	3P UP
	7	3P RIGHT
	8	3P LEFT
	9	GND

CN2 1 JST 11P	1	GND
	2	GND
	3	4P SW1
	4	4P SW2
	5	4P SW3
	6	4P START
	7	4P DOWN
	8	4P UP
	9	4P RIGHT
	10	4P LEFT
	11	GND

4L12B CONTROL PANEL



d) OTHERS (V. R., Light Gun, and Control Panels (for Mah-jong, Hanafuda, Dial and Control Ball), etc.

Refer to applicable Instruction Manual which comes with the software.

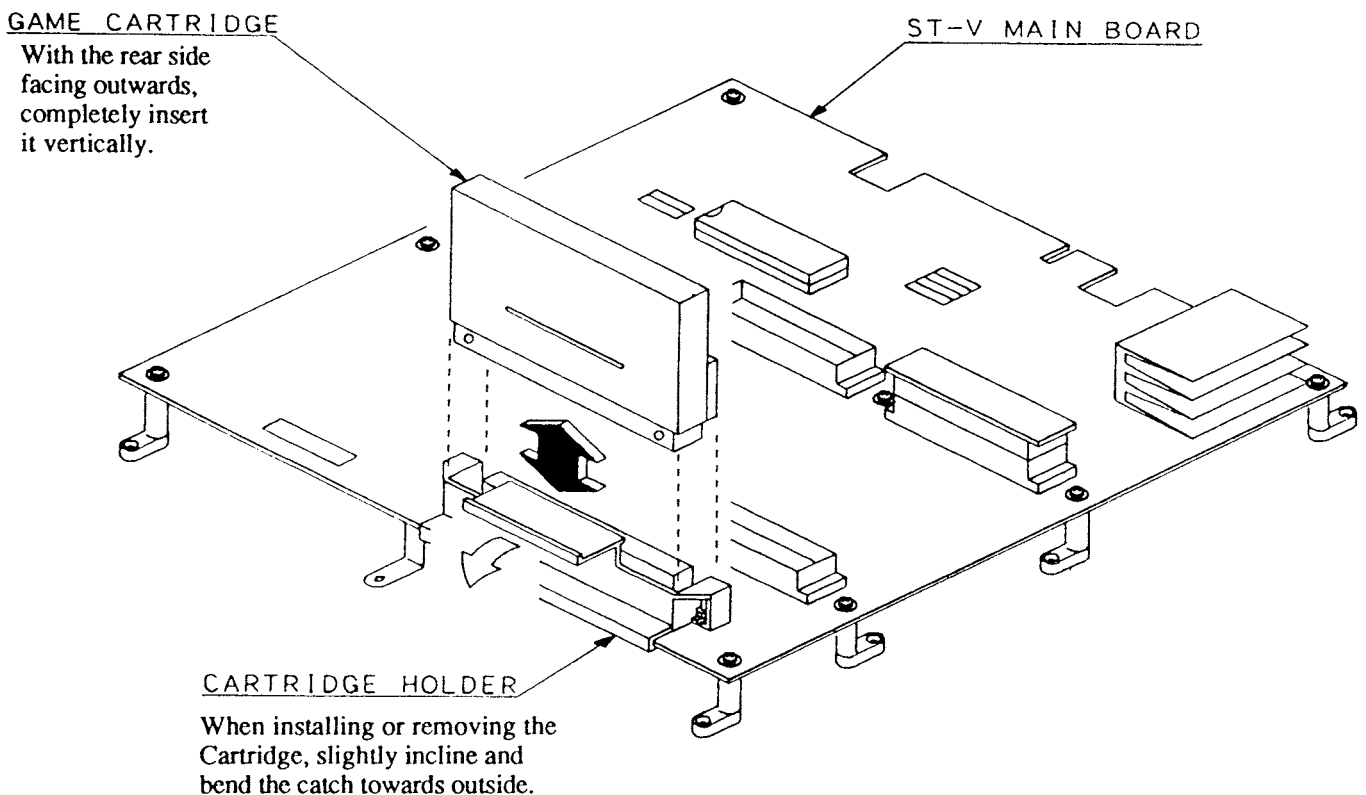
### 3. PLACING & REMOVING THE CARTRIDGE, AND INSTALLING THE BOARD

When installing and removing a Cartridge, or installing the ST-V Board, ensure that the Cabinet's main power is OFF.

#### CAUTION

When removing the Cartridge, do not try to force it, with the Holder still remaining in a secured status. Applying excessive force to the Board may cause damage such as soldering defects, etc.

When installing the Board in the Cabinet, secure all of the "L" LOCKs on the outer portions of the Board and the Board Brackets in the periphery of the Cartridge Holder to the wood base by using the wood screws which come with the Kit.



## 4. TEST MODE

### A) NORMAL TEST MODE

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

#### SELECTION OF TEST ITEMS

- 1) After the power is turned ON, push the TEST button to have the following TEST TEM MENU appear on the screen.

```

                ST-V TEST MENU

MEMORY TEST
C. R. T. TEST
INPUT TEST
CLOCK ADJUSTMENTS
SYSTEM ASSIGNMENTS
COIN ASSIGNMENTS
SYSTEM BOOKKEEPING
BACKUP DATA CLEAR
EACH GAME TEST
      [GOLDEN AXE DUEL ]
      [                  ]
      [                  ]
      [                  ]
-> EXIT
SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON

```

} \*1

- 2) By pushing the SERVICE button, bring the arrow mark ">" to the desired item and press the TEST button.
- 3) When the test has been completed, bring ">" to EXIT and press the TEST button to have the Game mode return to the screen.

\* 1 : [ ] below EACH GAME TEST displays the name of each game which is connected to the Board. The example in the above menu indicates the case where GOLDEN AXE THE DUEL is in SLOT 1.

#### CAUTION

The contents which are set by the user in SYSTEM ASSIGNMENTS and COIN ASSIGNMENTS are registered when the test mode has been completed after EXIT in the menu mode. As such, if the power is turned OFF before registering the contents, the settings made are ineffective. Therefore, pay careful attention to this point.

## ① MEMORY TEST

First, check if MEMORY IC functioning on the Main Board is accurate. If 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                PAGE1/2
          * * *   ROM   * * *
IC8  GOOD
          * * *   RAM   * * *
IC9  GOOD  IC10 GOOD  IC11 GOOD
IC24 GOOD  IC25 GOOD  IC27 GOOD
IC28 GOOD  IC30 GOOD  IC33 GOOD
IC34 GOOD  IC37 GOOD

                PRESS TEST BUTTON TO NEXT

```

After the test has been completed, press the TEST button to cause the Cartridge MEMORY TEST to be performed.

EXAMPLE: The following shows the display when four "GOLDEN AXE THE DUEL" Cartridges are inserted in the Board.

```

                MEMORY TEST                PAGE 2/2
          * * * CARTRIDGE ROM CHECK * * *
CART #1 [GOLDEN AXE DUEL ]
IC1  GOOD IC2  GOOD IC3  GOOD IC4  GOOD
IC5  GOOD IC6  GOOD IC13 GOOD

CART #2 [GOLDEN AXE DUEL ]
IC1  GOOD IC2  GOOD IC3  GOOD IC4  GOOD
IC5  GOOD IC6  GOOD IC13 GOOD

CART #3 [GOLDEN AXE DUEL ]
IC1  GOOD IC2  GOOD IC3  GOOD IC4  GOOD
IC5  GOOD IC6  GOOD IC13 GOOD

CART #4 [GOLDEN AXE DUEL ]
IC1  GOOD IC2  GOOD IC3  GOOD IC4  GOOD
IC5  GOOD IC6  GOOD IC13 GOOD

                PRESS TEST BUTTON TO EXIT

```

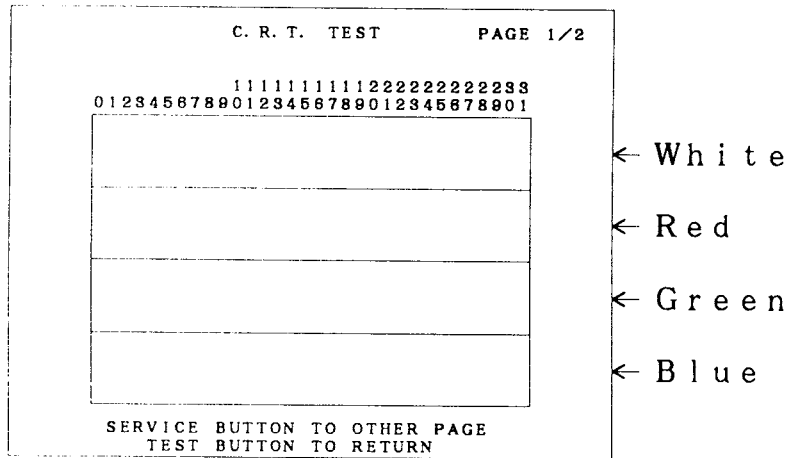
Note that the display of the slot in which the Cartridge is not inserted will be omitted.

After the test has been completed, press the TEST button to return to the menu mode.

② C. R. T. TEST

A) RGB COLOR ADJUSTMENT SCREEN

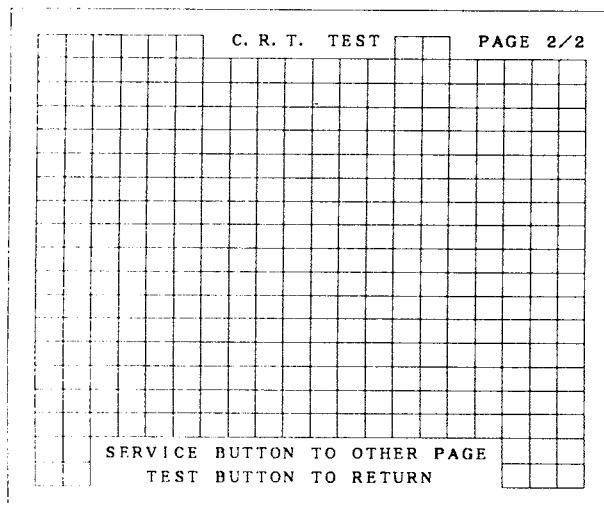
This page allows for checking the monitor color adjustment.



Each of the R (red), G (green) and B (blue) colors is darkest 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.

B) MONITOR SIZE ADJUSTMENT SCREEN

This page allows for 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 proceed to the next page.

Each time the SERVICE button is pressed, the above color bar screen (1/2) and checkered screen (2/2) alternate. Press the TEST button to have MENU return to the screen.

### ③ INPUT TEST

This test displays the state of the START button, COIN SW, TEST button, SERVICE button, etc., which are used in common for each game. Depending on the contents of Cabinet setting, the screen display varies somewhat (refer to examples below). If the switch/button goes ON (from OFF) when activated, it is satisfactory.

EXAMPLE 1) CABINET TYPE 2  
 GAME SELECT NO  
 COIN CHUTE TYPE COMMON

```

      INPUT TEST

START      1P          2P
          OFF          OFF

      COIN CHUTE #1-OFF #2-OFF

      TEST-OFF          SERVICE-OFF

      PRESS TEST BUTTON TO EXIT
  
```

EXAMPLE 2) CABINET TYPE 4P  
 GAME SELECT YES  
 COIN CHUTE TYPE INDIVIDUAL

```

      INPUT TEST

START      1P      2P      3P      4P
          OFF      OFF      OFF      OFF
COIN      OFF      OFF      OFF      OFF

      TEST-OFF          SERVICE-OFF

      SELECT-OFF

      PRESS TEST BUTTON TO EXIT
  
```

Note that the INPUT TEST except for START (Joystick, push button, etc.) should be performed in the EACH GAME TEST mode.

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

#### ④ CLOCK ADJUSTMENT

This allows for setting the date (day/month/year) and time on the Main Board.

<pre>CLOCK ADJUSTMENTS  01/JAN/1995 (SUN) 23:59:59  28/FEB/1995 (TUE) 10:00:00  SET -&gt; EXIT  SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON</pre>	<p>← On-BD present time</p> <p>← Time set by the user</p> <p>← Applies the time set by the user to On-BD present time.</p> <p>← Return to MENU mode</p>
--	---

- 1) Each time the SERVICE button is pressed, the setting position moves sequentially in order of TIME set by the user (day/month/year/day of the week/hour/ minute), SET and EXIT. Second is fixed at 00. Press the TEST button at the desired position to set the time.
- 2) Bring the arrow to SET and press the TEST button to apply the time set by the user to the On-BD present time.
- 3) After the time setting is finished, bring the arrow to EXIT and press the TEST button to have the MENU mode return to the screen.

```
28 / FEB / 1995 (TUE)
day month year ( day of week)

10 : 00 : 00
H M S
```

Note that when setting the date, it is possible to set Feb. 30 or Feb. 31. In these cases, however, accurate functioning would not be maintained thereafter. Therefore, be very careful of this point.

## ⑤ SYSTEM ASSIGNMENTS

In this mode, various cabinet and board settings can be changed. Game settings such as difficulty levels, etc. are performed in EACH GAME TEST.

- 1) Press the SERVICE button to move the arrow "->" and bring it to the desired item.
- 2) Press the TEST button to change the setting.
- 3) After the setting is finished, bring "->" to EXIT and press the TEST button.

SYSTEM ASSIGNMENTS	
CABINET TYPE	2P
SELECT BUTTON	NO
ADVERTISE SELECT	ON
GAME SELECT TIME	10 [SEC]
ST-V LOGO	OFF
ADVERTISE SOUND	ON
ALONE/MULTI	MULTI
-> EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

FIG. 4-5A (MULTI-CARTRIDGE mode)

SYSTEM ASSIGNMENTS	
CABINET TYPE	2P
ADVERTISE SOUND	ON
ALONE/MULTI	ALONE
-> EXIT	
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON	

FIG. 4-5B (STAND ALONE mode)

### (A) CABINET TYPE (1P, 2P, 3P, 4P)

Set to the applicable one from the 4 types.

### (B) SELECT BUTTON (NO, YES)

Set to YES or NO depending on whether the cabinet has the SELECT button.

YES •• Set to this if the cabinet has the SELECT button.

For wiring, refer to Section 2 SPECIFICATIONS ④ CONTROL PANEL AND I/O

NO •• Set to this if the cabinet does not have the SELECT button.

Buttons on the CONTROL PANEL (except for the Start button) can be utilized in lieu of the SELECT button.

### (C) ADVERTISE SELECT (ON, OFF)

Determines whether ADVERTISE (during advertise) can be skipped with the SELECT button.

ON •• Set to this when skipping ADVERTISE (during advertise) to proceed to a desired game.

OFF •• The game is selected when credits to start are available.

### (D) GAME SELECT TIME (NO, 10 [SEC], 20 [SEC], NO LIMIT)

This determines the time to choose a game once credits to start are available.

NO •• When credits to start are available, the game advertised during ADVERTISE is automatically selected.

NO LIMIT •• When set to this, there will be NO SELECT TIME LIMIT.

### (E) ST-V LOGO (ON, OFF)

This determines whether the ST-V LOGO is displayed or not during ADVERTISE in the Multi-Cartridge mode.



(F) ADVERTISE SOUND (ON, OFF)

Determines whether ADVERTISE SOUND is to be emitted or not.

(G) ALONE / MULTI (ALONE, MULTI)

This allows STAND ALONE (ALONE) mode or MULTI-CARTRIDGE (MULTI) mode to be set.

In the STAND ALONE mode, items regarding MULTI-CARTRIDGE mode are not displayed (refer to FIGs. . 4-5A and 4-5B in the preceding page).

**CAUTION 1:**

Depending on the contents of SYSTEM ASSIGNMENTS settings, the game may not start up. Refer to the applicable game manual.

For example, in the GOLDEN AXE THE DUEL, when the cabinet is set to other than 2P, the game is not ready for play even if tests in the test mode are finished, with CAUTIONS being displayed. Be sure to reenter the TEST mode and correct the contents of the settings.

**CAUTION 2:**

Changing the contents of (A) CABINET TYPE or (G) ALONE/MULTI results in clearing the contents of SYSTEM BOOKKEEPING and the BOOKKEEPING of each game.

## ⑥ COIN ASSIGNMENTS

In this mode, the setting of credit increments, etc., as against coin insertion can be changed.

- 1) Press the SERVICE button to bring the "- >" 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.

### CAUTION:

Changing the contents of COIN ASSIGNMENTS settings results in clearing the contents of SYSTEM BOOKKEEPING and the BOOKKEEPING of each game.

```
COIN ASSIGNMENTS

COIN CHUTE TYPE      COMMON
CREDIT TO START     1 CREDIT
COIN/CREDIT SETTING  #1
COIN CHUTE #1       1 COIN 1 CREDIT

COIN CHUTE #2       1 COIN 1 CREDIT

MANUAL SETTING
->EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

FIG. 4-6A (COMMON)

```
COIN ASSIGNMENTS

COIN CHUTE TYPE     INDIVIDUAL
CREDIT TO START     1 CREDIT
COIN/CREDIT SETTING #1
COIN CHUTE #1       1 COIN 1 CREDIT

MANUAL SETTING
->EXIT

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

FIG. 4-6B (INDIVIDUAL)

### (A) COIN CHUTE TYPE (COMMON, INDIVIDUAL)

Set this in accordance with Cabinet Coin Chute Specifications.

#### COMMON

Used for the type of the cabinet whose coin acceptance is a common type for plural players. Regardless of the number of players, COIN 1 / COIN 2 ports are used.

#### INDIVIDUAL

Used for the type of the cabinet which has a coin acceptance chute for each player.

For the COIN SW port, refer to Section 2 SPECIFICATIONS,

④ CONTROL PANEL AND BOARD I/O.

### (B) CREDIT TO START (1 CREDIT, 2 CREDITS)

Sets the number of credits required when starting the game (1 CREDIT, 2 CREDITS).

(Note that in both settings, the number of credits required for CONTINUE is one).

### (C) COIN / CREDIT SETTING (#1 ~ #26)

Sets the CREDIT increase increment per coin insertion. There are 26 settings from #1 to #26, expressed in OO credit as against OO COINS inserted. #26 refers to FREE PLAY. For details, refer to Table 1 (COMMON) and Table 2 INDIVIDUAL.

(D) MANUAL SETTING

The CREDIT's incremental increase settings as against a coin insertion are shown in further details than in (C) above (refer to Table 3). Also, note that when this MANUAL setting is performed, the COIN/CREDIT setting becomes ineffective.

MANUAL SETTING SCREEN

COIN ASSIGNMENTS											
MANUAL SETTING											
COIN TO CREDIT					1	COIN	1	CREDIT			
BONUS ADDER					NO BONUS ADDER						
COIN CHUTE #1				MULTIPLIER							
COIN	1	2	3	4	5	6	7	8	9	10	
1	2	3	4	5	6	7	8	9	9	9	
1	2	3	4	5	6	7	8	8	8	8	
CREDIT											
COIN CHUTE #2				MULTIPLIER							
COIN	1	2	3	4	5	6	7	8	9	10	
1	2	3	4	5	6	7	8	9	9	9	
1	2	3	4	5	6	7	8	8	8	8	
CREDIT											
->EXIT											
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON											

FIG.4-6C (COMMON)

COIN ASSIGNMENTS											
MANUAL SETTING											
COIN TO CREDIT					1	COIN	1	CREDIT			
BONUS ADDER					NO BONUS ADDER						
COIN CHUTE #1				MULTIPLIER							
COIN	1	2	3	4	5	6	7	8	9	10	
1	2	3	4	5	6	7	8	9	9	9	
1	2	3	4	5	6	7	8	8	8	8	
CREDIT											
->EXIT											
SELECT WITH SERVICE BUTTON AND PRESS TEST BUTTON											

FIG.4-6D (INDIVIDUAL)

(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 #1 / #2 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	1 COIN	1 CREDIT	1 COIN	1 CREDIT
SETTING # 2	1 COIN	1 CREDIT	1 COIN	2 CREDITS
SETTING # 3	1 COIN	1 CREDIT	1 COIN	3 CREDITS
SETTING # 4	1 COIN	1 CREDIT	1 COIN	4 CREDITS
SETTING # 5	1 COIN	1 CREDIT	1 COIN	5 CREDITS
SETTING # 6	1 COIN	2 CREDITS	1 COIN	2 CREDITS
SETTING # 7	1 COIN	2 CREDITS	1 COIN	5 CREDITS
SETTING # 8	1 COIN	3 CREDITS	1 COIN	3 CREDITS
SETTING # 9	1 COIN	4 CREDITS	1 COIN	4 CREDITS
SETTING # 1 0	1 COIN	5 CREDITS	1 COIN	5 CREDITS
SETTING # 1 1	1 COIN	6 CREDITS	1 COIN	6 CREDITS
SETTING # 1 2	2 COINS	1 CREDIT	2 COINS	1 CREDIT
SETTING # 1 3	2 COINS	1 CREDIT	1 COIN	1 CREDIT
SETTING # 1 4	2 COINS	1 CREDIT	1 COIN	2 CREDITS
SETTING # 1 5	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	3 CREDITS	2 COINS	3 CREDITS
SETTING # 1 6	1 COIN	1 CREDIT	1 COIN	3 CREDITS
	2 COINS	3 CREDITS		
SETTING # 1 7	3 COINS	1 CREDIT	3 COINS	1 CREDIT
SETTING # 1 8	4 COINS	1 CREDIT	4 COINS	1 CREDIT
SETTING # 1 9	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	2 CREDITS	2 COINS	2 CREDITS
	3 COINS	3 CREDITS	3 COINS	3 CREDITS
	4 COINS	5 CREDITS	4 COINS	5 CREDITS
SETTING # 2 0	1 COIN	1 CREDIT	1 COIN	5 CREDITS
	2 COINS	2 CREDITS		
	3 COINS	3 CREDITS		
	4 COINS	5 CREDITS		
SETTING # 2 1	3 COINS	1 CREDIT	1 COIN	2 CREDITS
	5 COINS	2 CREDITS		
SETTING # 2 2	2 COINS	1 CREDIT	2 COINS	1 CREDIT
	4 COINS	2 CREDITS	4 COINS	2 CREDITS
	5 COINS	3 CREDITS	5 COINS	3 CREDITS
SETTING # 2 3	2 COINS	1 CREDIT	1 COIN	3 CREDITS
	4 COINS	2 CREDITS		
	5 COINS	3 CREDITS		
SETTING # 2 4	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	2 CREDITS	2 COINS	2 CREDITS
	3 COINS	3 CREDITS	3 COINS	3 CREDITS
	4 COINS	4 CREDITS	4 COINS	4 CREDITS
	5 COINS	6 CREDITS	5 COINS	6 CREDITS
SETTING # 2 5	1 COIN	1 CREDIT	1 COIN	6 CREDITS
	2 COINS	2 CREDITS		
	3 COINS	3 CREDITS		
	4 COINS	4 CREDITS		
	5 COINS	6 CREDITS		
SETTING # 2 6	FREE PLAY		FREE PLAY	

Table 2 : COIN/CREDIT SETTING (COIN CHUTE INDIVIDUAL TYPE)

NAME OF SETTING	EACH STATION'S COIN CHUTE	NAME OF SETTING	EACH STATION'S COIN CHUTE
SETTING # 1	1 COIN 1 CREDIT	SETTING # 2 1	3 COINS 1 CREDIT
SETTING # 6	1 COIN 2 CREDITS		5 COINS 2 CREDITS
SETTING # 8	1 COIN 3 CREDITS	SETTING # 2 2	2 COINS 1 CREDIT
SETTING # 9	1 COIN 4 CREDITS		4 COINS 2 CREDITS
SETTING # 1 0	1 COIN 5 CREDITS		5 COINS 3 CREDITS
SETTING # 1 1	1 COIN 6 CREDITS	SETTING # 2 4	1 COIN 1 CREDIT
SETTING # 1 2	2 COINS 1 CREDIT		2 COINS 2 CREDITS
SETTING # 1 5	1 COIN 1 CREDIT		3 COINS 3 CREDITS
	2 COINS 3 CREDITS		4 COINS 4 CREDITS
SETTING # 1 7	3 COINS 1 CREDIT		5 COINS 6 CREDITS
SETTING # 1 8	4 COINS 1 CREDIT	SETTING # 2 6	FREE PLAY
SETTING # 1 9	1 COIN 1 CREDIT		
	2 COINS 2 CREDITS		
	3 COINS 3 CREDITS		
	4 COINS 5 CREDITS		

Table 3 : MANUAL SETTING

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

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/#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

## ⑦ SYSTEM BOOKKEEPING

Allows for checking data such as number of coins inserted / number of credits / time / game frequency.

SYSTEM BOOKKEEPING		PAGE 1/2
COIN CHUTE #1	0	} (*1)
COIN CHUTE #2	0	
COIN CHUTE #3	0	
COIN CHUTE #4	0	
TOTAL COINS	0	
COIN CREDITS	0	
SERVICE CREDITS	0	
TOTAL CREDITS	0	
NUMBER OF GAMES	0	
TOTAL TIME	0D00H00M00S	
GAME PLAY TIME	0D00H00M00S	
SERVICE BUTTON TO OTHER PAGE		
TEST BUTTON TO RETURN		

(\* 1) COIN CHUTE #1, #2, (#3, #4)

Depending on Cabinet Type setting and Coin Chute setting, the number of display items and meanings are different.

When the Coin Chute Type is COMMON:

Regardless of the Cabinet Type setting, Items #1 / #2 are displayed.

Displays the number of coins inserted per COIN 1 and COIN 2 are displayed.

When the Coin Chute Type is INDIVIDUAL:

Depending on the Cabinet Type setting (1P ~ 4P), the number of items vary.

Each value for #1 ~ #4 represents the number of coins inserted by the corresponding 1P ~ 4P Players.

SYSTEM BOOKKEEPING					PAGE2/2
CART#1	[GOLDEN AXE DUEL ]				
CART#2	[GOLDEN AXE DUEL ]				
CART#3	[GOLDEN AXE DUEL ]				
CART#4	[GOLDEN AXE DUEL ]				
	CART#1	CART#2	CART#3	CART#4	
NUMBER OF GAMES					
NEW GAME	0	0	0	0	0
CONT GAME	0	0	0	0	0
TOTAL GAME	0	0	0	0	0
GAME TIME					
AVERAGE	0M00S	0M00S	0M00S	0M00S	0M00S
LONGEST	0M00S	0M00S	0M00S	0M00S	0M00S
SHORTEST	0M00S	0M00S	0M00S	0M00S	0M00S
SERVICE BUTTON TO OTHER PAGE					
TEST BUTTON TO RETURN					

(MULTI-CARTRIDGE mode)

SYSTEM BOOKKEEPING		PAGE2/2
NUMBER OF GAMES		
NEW GAME	0	
CONT GAME	0	
TOTAL GAME	0	
GAME TIME		
AVERAGE	0M00S	
LONGEST	0M00S	
SHORTEST	0M00S	
SERVICE BUTTON TO OTHER PAGE		
TEST BUTTON TO RETURN		

(STAND ALONE mode)

The display on page 2/2 varies depending on the cartridge mode.

Press the SERVICE button to alternate page 1/2 and 2/2.

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

## ⑤ BACKUP DATA CLEAR

Clears the contents of BOOKKEEPING.

```
BACKUP DATA CLEAR

SYSTEM DATA CLEAR
ALL DATA CLEAR
-> NO CLEAR (CANCEL)

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

Press the SERVICE button to bring the "- >" to the desired item and press the TEST button to execute the desired item as follows:

- (A) SYSTEM DATA CLEAR  
Clears the contents of SYSTEM BOOKKEEPING.
- (B) ALL DATA CLEAR  
Clears each game's BOOKKEEPING in addition to clearing the SYSTEM BOOKKEEPING.
- (C) NO CLEAR (CANCEL)  
This does not execute clearing and causes the MENU mode to return on the screen.

```
ALL DATA CLEAR

BACKUP DATA CLEAR

SYSTEM DATA CLEAR
-> ALL DATA CLEAR
NO CLEAR (CANCEL)

SYSTEM BACKUP DATA AREA CLEAR
GAME1 BACKUP DATA AREA CLEAR
GAME2 BACKUP DATA AREA CLEAR
GAME3 BACKUP DATA AREA CLEAR
GAME4 BACKUP DATA AREA CLEAR
COMPLETED

SELECT WITH SERVICE BUTTON
AND PRESS TEST BUTTON
```

### CAUTION:

Apart from the above, the contents of BOOKKEEPING can be cleared as in (B) ALL DATA CLEAR above by changing the setting of CABINET TYPE or ALONE / MULTI of ⑤ SYSTEM ASSIGNMENTS, or the setting of ⑥ COIN ASSIGNMENTS.

## ⑨ EACH GAME TEST

This allows for entering the TEST mode of each game which is connected to a Cartridge Slot. The TEST MENU includes each game's INPUT TEST (Control Panel), GAME ASSIGNMENTS including Game Difficulty, BOOKKEEPING, etc. Depending on games, there are some increases/decreases as regards the necessary / unnecessary items, and also the contents vary. For details, refer to the specific Instruction Manual of each game.

### EXAMPLE: MENU SCREEN, GOLDEN AXE THE DUEL

```
TEST MENU

INPUT TEST
SOUND TEST
GAME ASSIGNMENTS
BOOKKEEPING
BACKUP DATA CLEAR
-> EXIT

SELECT BY SERVICE BUTTON
AND PRESS TEST BUTTON
```



## B) FACTORY TEST MODE

This mode is intended for the development of games which employ the STV-Board, and for Factory Hardware-Check. Unless instructions are specifically given in an applicable Manual elsewhere, do not use this mode. When so required, however, enter the mode by turning the power on while keeping the TEST button pressed down. If the mode is used without specific instructions, normal operation can not be guaranteed. (During test, the COIN METER may suddenly function sometimes.)

```

                                BOOTROM ver1.10s
          ST-V TEST MENU (In Factory)

-> CONTINUOUS HARDWARE TEST

      MEMORY      CHECK
      C. R. T     CHECK
      VDP1/VDP2   CHECK
      I/O (IOGA)  CHECK
      I/O (SMPC)  CHECK
      SOUND       CHECK
      EEPROM      CHECK
      DUAL-CPU    CHECK
      CLK-CHANGE  CHECK

      SIMM        CHECK
      RS-232C     CHECK
      SCSI-2      CHECK
      SYSTEM CONFIGURATION

      IF YOU WANT TO EXIT.
      PLEASE POWER ON AGAIN.
```

## SYSTEM CONFIGURATION

This allows for environmental setting at the development stage. For initialization, refer to the following:

```

          SYSTEM CONFIGURATION

      DEVELOP-MODE          NO
      SCSI-ID              0
      SIMM-ALLOCATE        CART-AREA
      SCSI                  UNUSE
      SCSI-BOOT            NON-BOOT
      HOST-TYPE             PC
      ST-V LOGO             OFF
      ALONE/MULTI          ALONE

-> EXIT

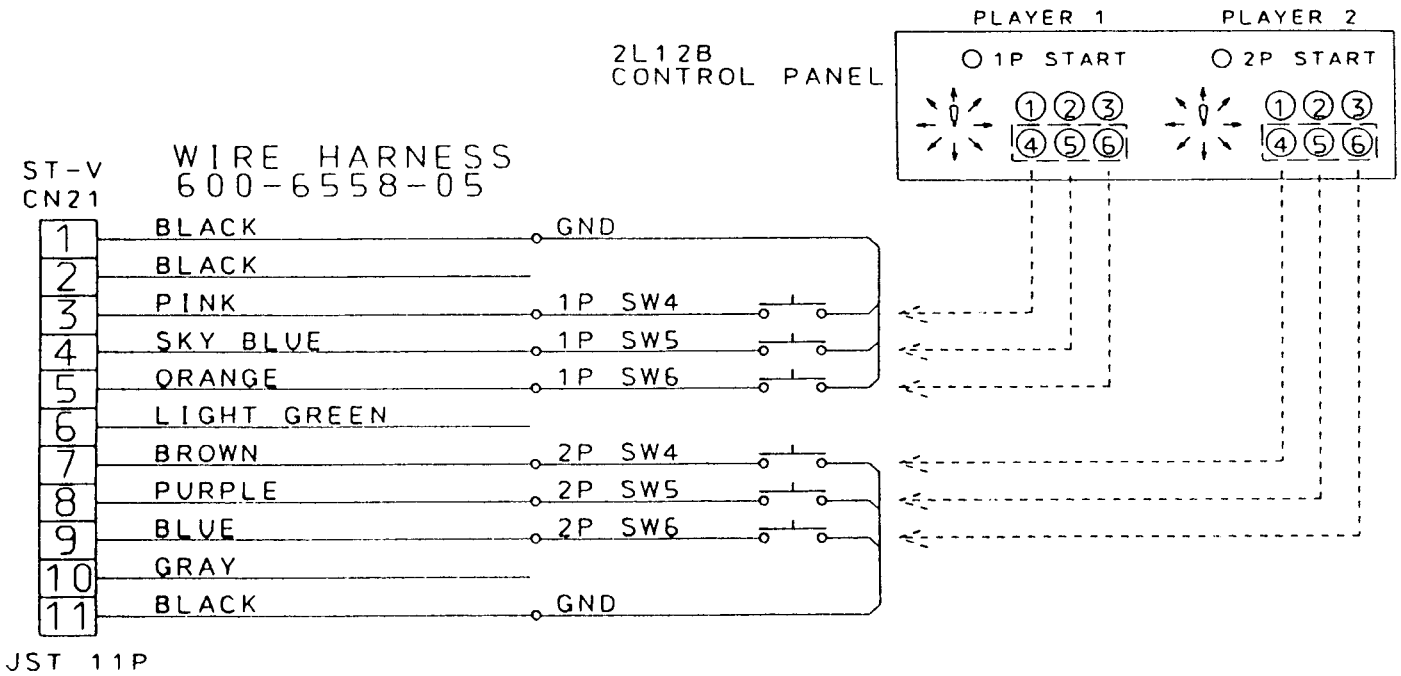
      SELECT WITH SERVICE BUTTON
      AND PRESS TEST BUTTON
```

## 5. WIRING FOR THE BOARD

### A) 2-PLAYER SIMULTANEOUS PLAY, 6-BUTTON SPECIFICATIONS (2L12B)

WIRE HARNESS used: WIRE HARN ST-V EXT8B (PART No. 600-6558-05)

The GND wire of this WIRE HARNESS is black, so be careful of this point.  
 SW 1 ~ 3 correspond to JAMMA Connector. Wire SW4, SW5 and SW6. No wiring is required for yellow and gray wires which come from Pin Nos. 6 & 10.



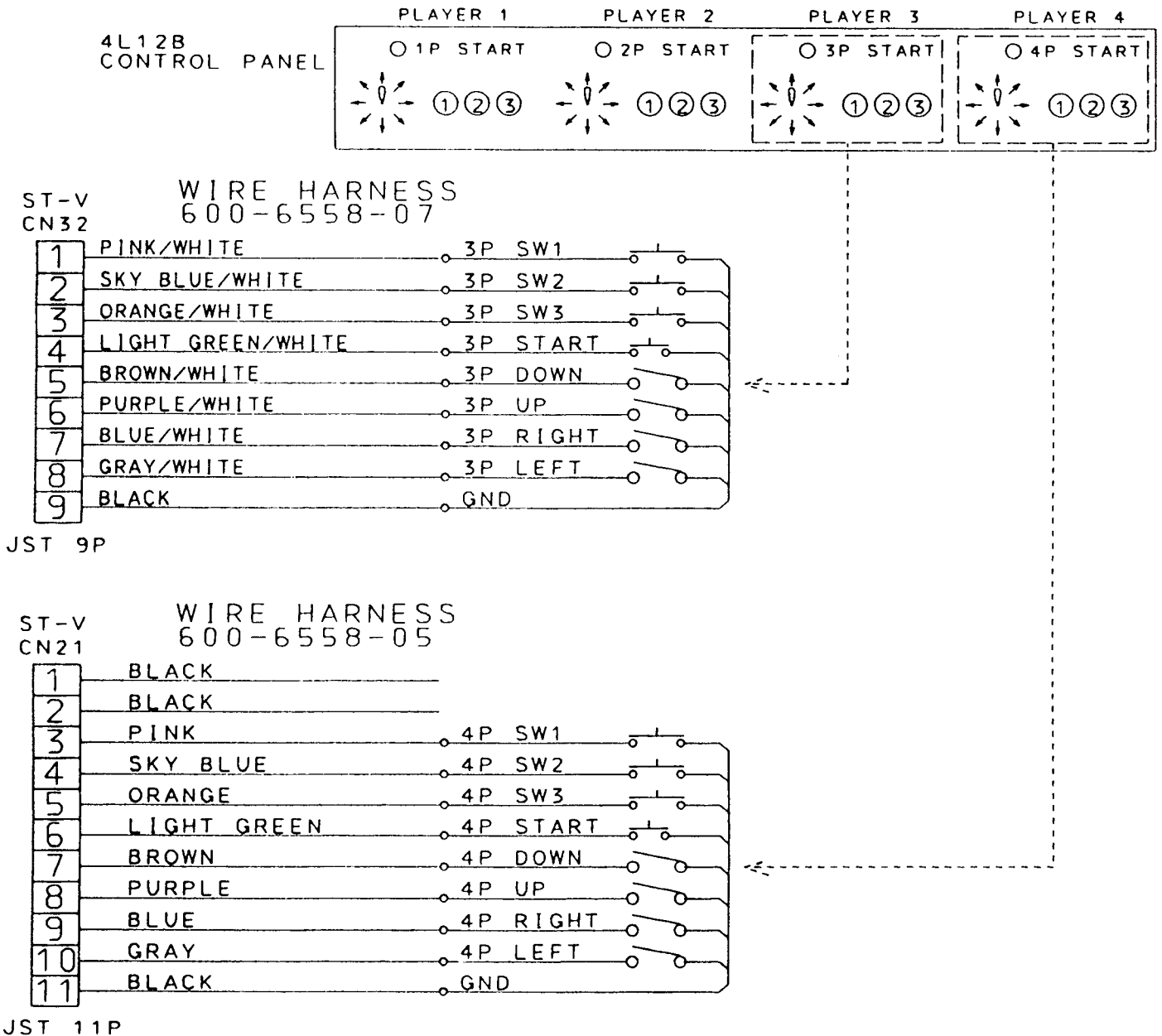
B) 3-4 PLAYER SIMULTANEOUS PLAY, 3-BUTTON SPECIFICATIONS (3L9B,4L12B)

WIRE HARNESS used: 3 PLAYER; WIRE HARN ST-V EXT3P  
(PART No. 600-6558-07)

4 PLAYER; WIRE HARN ST-V EXT 8B  
(PART No. 600-6558-05)

The GND wire of this WIRE HARNESS is black, so be careful of this point.

1P and 2P correspond to JAMMA Connector. Wire for 3P and 4P







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