
ATAXX

Owner's Manual



Part Number B-701-00018-00 Rev. A

Your Responsibility for Maintenance

It is the owner's responsibility to make sure that the specified maintenance is performed. The Troubleshooting Section of this manual provides details on these maintenance requirements. Also included in the Troubleshooting Section is information regarding other requirements for games operated under severe playing conditions.

Machine Information

Purchase Date: _____

Distributor: _____

Game Serial Numbers

Program: _____
(see lower left corner of bookkeeping main menu screen)

PC Board: _____

Introduction

Welcome to the growing number of value conscious people who operate Leland Corporation products. We are proud of the advanced engineering and quality of each product we build.

Please take a few moments to read through this manual. It has been designed to acquaint you with the features of your new "ATAXX™" game and to help you make the most profit from this machine.

When it comes to service, remember that your Authorized Leland Distributor knows your game best and is dedicated to your complete satisfaction. He can provide quality parts, service, and any other assistance you may require.

The Leland Corporation

Please leave this owner's manual in the game at the time of resale. The next owner will also need this important information.

All information and specifications in this manual are current at the time of printing. However, because of The Leland Corporation's policy of continual product improvement, we reserve the right to make changes at any time without notice.

Non-Leland Replacement Parts Notice

The Leland Corporation recommends the use of genuine Leland Corporation parts when replacing any malfunctioning component or assembly in this game. For safety and reliability, The Leland Corporation does not recommend or authorize any substitution parts or modifications of Leland equipment. Such alterations may adversely affect game play or cause serious injury, and will void your warranty. Unauthorized parts and/or modifications may also void FCC compliance.

FCC Warning

This equipment generates, uses, and can radiate radio frequency energy and if not installed in accordance with the Owner's Manual, may cause interference to radio communications. This game has been tested and found to comply with the limits for a Class "A" computing device pursuant to subpart "J" of part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be responsible to correct the interference.

ATAXX

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Ataxx Game Play

Ataxx is a thought-provoking, highly interactive 1- or 2-player strategy game based on a 7-by-7 tiled playing grid. The player attempts to secure a greater number of tiles than his opponent by moving his pieces in a manner similar to checkers.

When the game begins, each player starts with his pieces occupying one corner of the board. On any move, the player selects one of his pieces and moves it to any vacant tile no more than two squares away from his starting place. Unlike checkers, when the player moves his piece to an adjacent tile, a duplicate piece remains in the starting position to fill that tile.

If a player should move more than one tile away, he will leave the starting tile vacant— an opening which can be utilized by his opponent.

When the player moves his piece to a new tile which is adjacent to his opponent, the player will vanquish his opponent's piece(s) and occupy its tile. If the player has no valid move available, he forfeits his turn. If his personal clock expires, he loses the game.

The personal clock (initialized to 100 units) works much the same as a chess clock and runs only when it is the player's turn. When the clock gets down to 25 units of time remaining, an "Insert Coin" message will flash on the screen, permitting the player to buy an additional 100 units of time.

The Red player makes the first move, followed by a move by the Blue player. The game continues until no valid moves remain. At the end, the player with the greater number of tiles occupied wins. A message announcing the winner will flash in the status box on the play screen. This screen will then fade to another screen depicting the results of the game and how it has affected the player's rating and classification. A continuation prompt will then appear.

If a single player elects to continue, any time remaining from his previous game will be carried forward and a new game board will appear (if he won earlier— if he lost, the same game board will reappear). If he won, his subsequent computer opponent will be one level of difficulty higher than his previous level; the opposite is true if he lost. This sequence will continue until the player has played all available screens.

If two players elect to continue, any left over time from the previous game will be carried forward. The loser of the previous game may then select a new game board by rolling his track ball to cycle through the screens. A new game board may be chosen using the "Select" button.

A player's performance is rated the same way as in chess, with five distinct classification levels: Champion, Ace, Expert, Fighter, and Reserve. These ratings are based on the number of points gained in each round of play. The High-Score list will consist of those top-ranked players and will display initials, rating, and classification.

Features Information

Two sets of player controls beckon new players to join the game. Individual scores are kept for each player. New players can enter their initials and have their outstanding scores appear on the rating classification board.

Normal operating checks are made easy with complete diagnostic screens. All player controls and both coin mechanisms are easily tested.

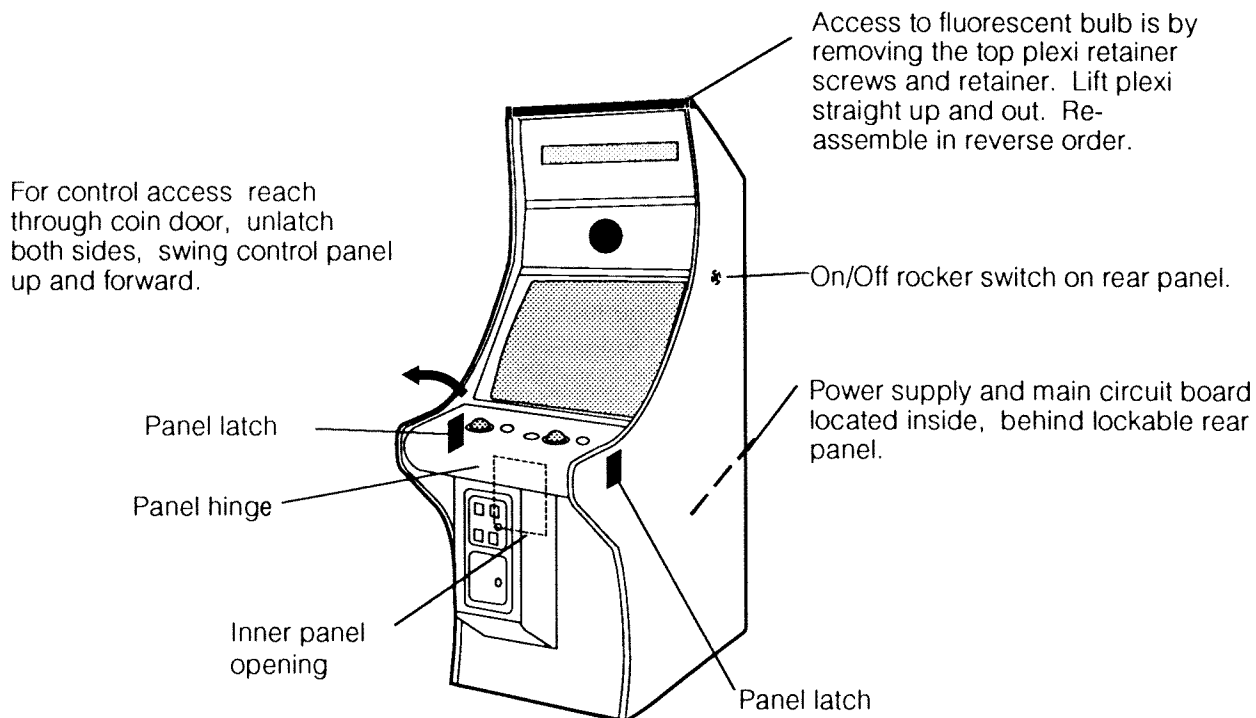
Other features of Ataxx include:

- 21 different game boards.
- One or two-players.
- Player's personal clock time length adjustable through game set-up menu.
- Prompts to purchase additional time throughout game.
- When playing against the computer, the level of difficulty changes depending upon the skill of the player.
- Five levels of computer "skill" versus players are tabulated on the "AI" (Artificial Intelligence) Statistics screen.

Assembly Instructions

1. Remove all parts from the shipping containers and check for damage. Notify your distributor (and the shipper) immediately if you find any parts broken.
2. Keys for the coin doors are taped in the coin return slots. Inside the coin door you'll find the rear panel keys attached to the door with a clip (see page 13). The AC power cord will be found inside the rear panel. Close the rear compartment before turning on the game.
3. Lift the monitor plexi and clean or dust any debris that may have settled on the monitor during shipping. This would also be a good time to gently wipe down the inside of the monitor plexi as well. Use only a soft, dry cloth to wipe the plexi to prevent scratching.

To lift the monitor plexi, reach through the upper coin mech door and an inner panel opening to unlatch the player control panel. Latch locations are shown below. Swing the panel as shown. With the player controls accessible, you can see the bottom edge bracket. Slide the plexi up until the bottom edge of the plexi clears the bracket, then lift out. Re-install in the reverse order.
4. Plug in the game and verify proper operation by going through the built-in diagnostic screens (see page 13). Check coin mechanism operation by feeding each one with a few coins.
5. This is also a good time to check your coins-per-credit and game play time settings. "Ataxx" is shipped with most adjustments set in the middle of their range.



Maintenance and Upkeep

Maintaining your ATAXX game is of utmost importance in order to enjoy good, steady earnings. A dirty cabinet, sticky coin mech, or poorly adjusted player controls are all suspect when a significant drop in revenue is noticed.

The following are recommended procedures to follow when servicing your machine:

Every Collection—

Make sure that the cabinet and especially the control panel and glass are clean and free of gum, grease, and dirt.

Play the game. Check the trackballs and buttons for proper adjustment and response (see the buttons and controls test in the Diagnostics sections).

NOTE: Be sure to adjust, clean, or replace any marginal switches.

Clean and adjust the monitor to insure that the picture is "rich" and inviting.

Once a Month—

Check the inside of the cabinet for dirt and dust.

HINT: Carry a portable "Dustbuster"-type vacuum.

Confirm proper adjustment of game volume, brightness, and contrast controls.

Use diagnostic screens to help you adjust color or horizontal/vertical size and position if required.

Check the screen corners for "rainbows" or color "fringing." This can indicate a need for degaussing.

Look for proper fluorescent lamp operation. The reduced brightness caused by one inoperative bulb is highly noticeable. Also, check coin slot lamps.

At first these steps may seem annoying or excessive, but when viewed with respect to the income generated by a clean, well-maintained machine (as opposed to income lost by a dirty, "trashed" game), the benefit of spending a few extra minutes will be seen as a wise investment.

Troubleshooting

A Note About Power

DC Power

The microprocessor in this machine operates most efficiently when the power supply is providing a steady +5.00 VDC to 5.05 VDC. When checking the DC power, always put your leads across the +5 VDC test points on the board and be sure that the +5 volt supply is between +5.00 VDC and +5.05 VDC. Also, be sure that there is less than .005 volts AC riding on the +5 volt line. If you do find AC on the DC line, inspect the filter capacitor or the rectifier on the power supply. Low voltage and AC on the DC lines are the main causes of the following problems:

- "Garbage" on the monitor screen
- Computer freeze-up
- A variety of seemingly unrelated problems

AC Power

Connect this game only to a grounded three-wire outlet which provides between 108 and 132 volts AC. If you have only a two-wire outlet, we recommend that you hire a licensed electrician to install a grounded outlet. This will reduce the possibility of a player receiving a shock. The possibility exists that players may receive an electrical shock if this system is not properly grounded.

Our Service Department

For parts, service, and technical information, first contact your authorized Leland Corporation Distributor. If additional technical aid is required, please contact the Leland Corporation Technical Support Department at (619) 562-7000, Monday through Friday, 8:00 a.m. to 5:00 p.m. Pacific Standard Time.

To provide you with the quickest possible response to your questions, please have the following information ready when you call:

- Your game name and serial number
- Any reference materials and a list of observations

NOTE: Schematics for this game are available in the form of a service manual. Contact our Customer Service department and order publication number B-703-00008-00.

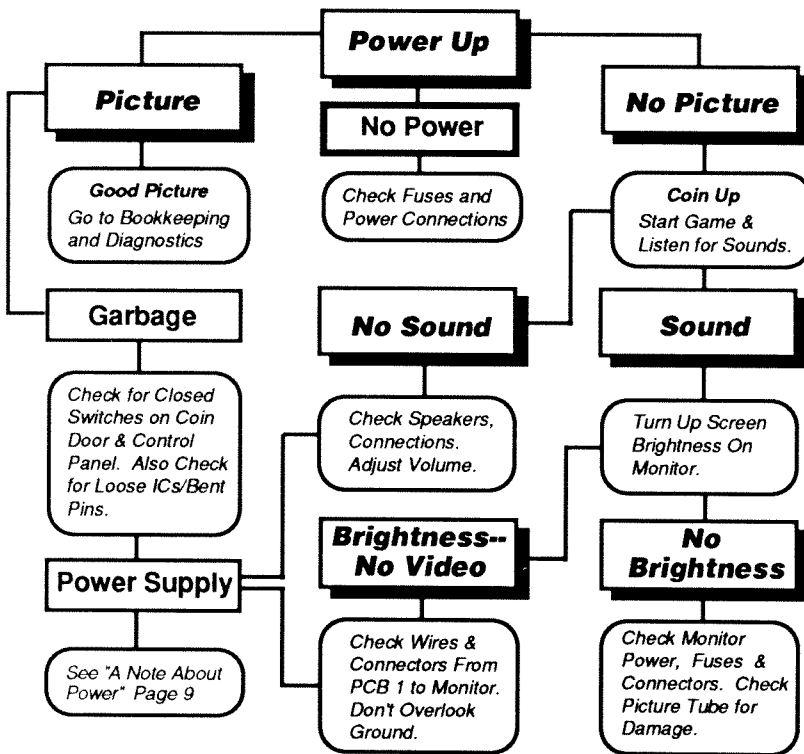
Troubleshooting Flow Chart

Don't Touch That Switch!

Before you reach for the power switch, take a look at the game. Open it and check for loose wires, bad connections, or burned spots. Also look for spilled fluids or signs of vandalism. These quick checks could save you a lot of time.

Once you've eliminated the obvious, it's time to do some detective work.

Never take anything for granted. This is easy to do if you're in a hurry. Locating a broken wire or loose connection at the beginning could save you many expensive hours looking in the wrong place.



Troubleshooting Tips

General Troubleshooting

Monitor screen filled with "garbage"—

- Press reset switch on main circuit board (see figure at right).
- Verify proper adjustment of monitor sync controls.
- Check power supply voltages.
- Check closed switches on the control panel or coin door.
- Look for loose connections on connectors VID1, VID2, M1 and M2. Examine J1 Pins 16-18, 20-22.
- Measure the voltage on Pins 1 & 10 on Connector J1. If the voltage is less than +5 VDC, check the switching power supply and its voltage adjustment.

No sound—

- Check for loose connections.
- Low +12 VDC supply.
- Defective speaker or volume pot.

No control or function switches (includes coin switches)—

- Check all connections (especially ground).
- Check wire continuity between board and switch.
- Look for closed or broken switches.
- Check the input buffers (see "Buffers" below).

Monitor Troubleshooting

No picture—

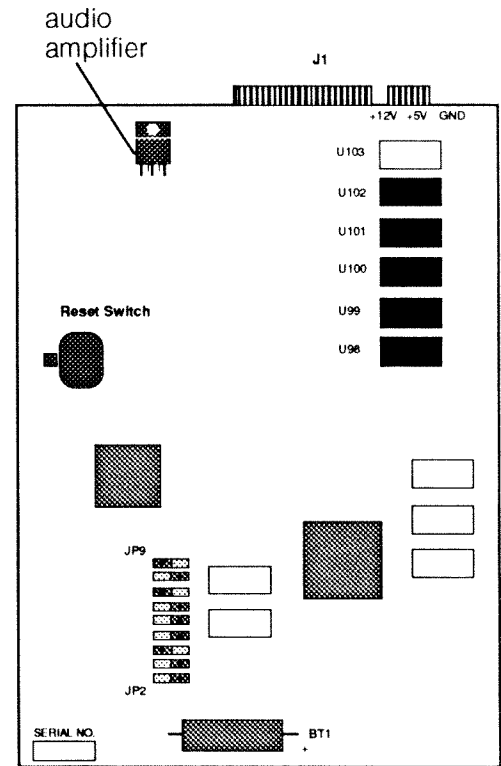
- Proceed carefully, high voltages present.
- Check all power connections including isolation transformer.
- Examine the picture tube filament, verify that it is on.
- Listen for the sound of the horizontal oscillator/flyback (a high pitched squeal).

Sync problems—

- Check sync and ground connections (see wiring diagrams on Pages 18 - 20).
- Check sync polarity.
- Check the video output buffer.

Buffers

An input or output (I/O) buffer is the component that produces/receives the signals required to connect the game computer to the outside world. Static discharges and other forms of electronic "stress" encounter the buffers first. For these reasons the I/O buffers sometimes fail (while protecting the more delicate electronics). An oscilloscope is recommended to verify proper I/O function.



Main Circuit Board

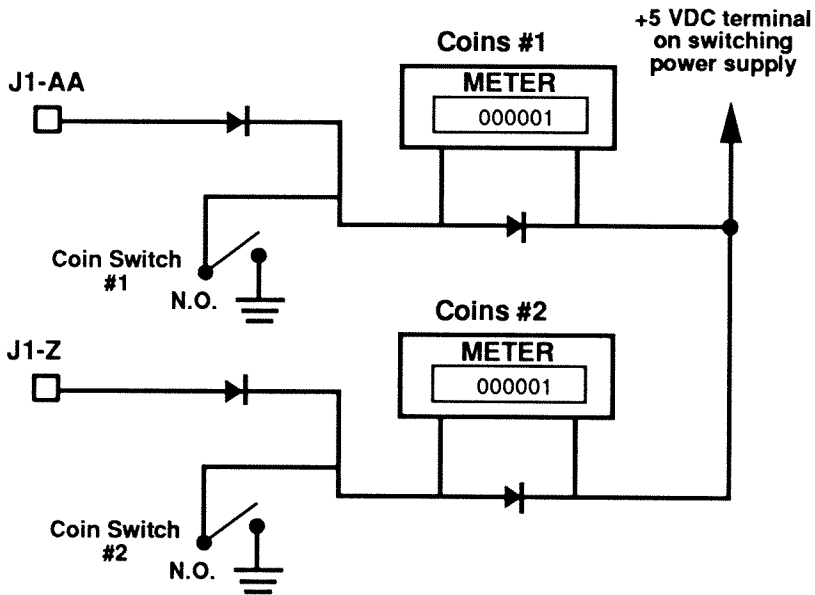
Important Note: Any unauthorized board repair or attempted repair will void your warranty! Refer to the Leland Corporation Limited Warranty statement at the back of this manual for restrictions and or limitations.

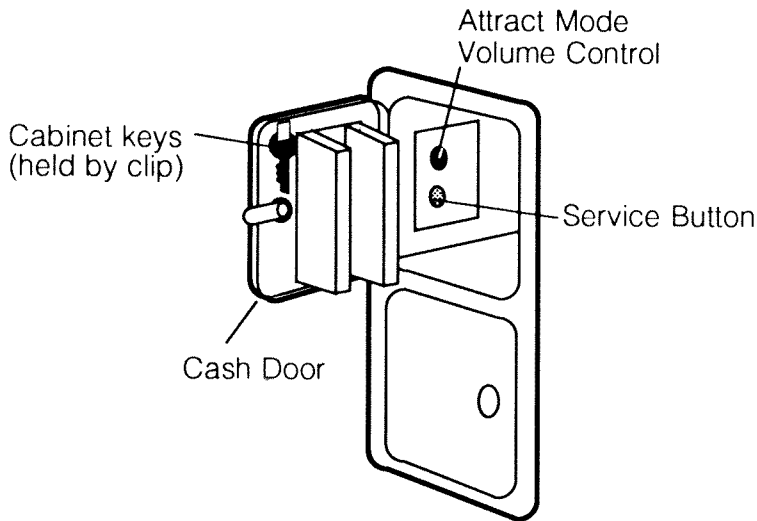
About Mechanical Coin Counters

We have not installed mechanical coin counters on this game for the following reasons:

- The bookkeeping program for this game is extremely accurate and includes not only the number of coins dropped and the dollars earned, but also keeps track of the number of coins in a given period. (See "Bookkeeping" in the Diagnostics Section.)
- Mechanical coin counters can produce an inductive "kick" that could damage circuit board components, "checker-board video" being the most common problem.

If your situation requires mechanical coin counters, please use the following diagram. (Diodes may be 1N4001 to 1N4004.)



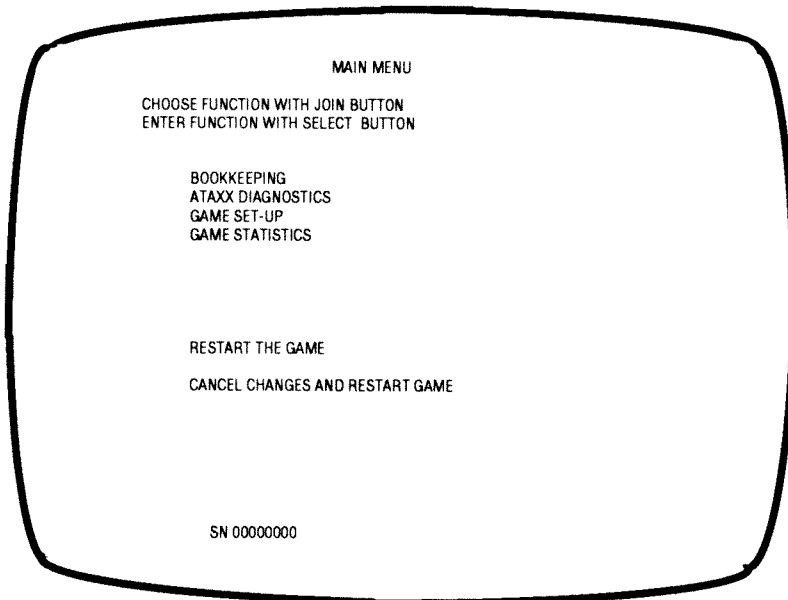


Service Switch Location

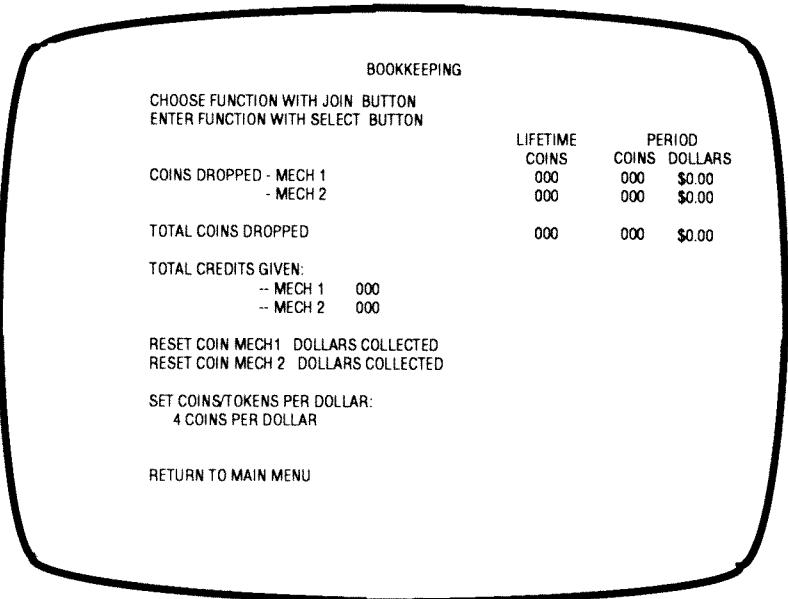
Bookkeeping and Diagnostics

To enter the Bookkeeping and Diagnostics Sections:

- Press either "Select" button on the control panel
- Press and hold the service button (located inside the front door-- see figure at left)
- Release both buttons



The Main Menu will appear on the screen. Follow the instructions on this menu to select and enter the desired function. All screens contain instructions for using them on the top or bottom-most lines.

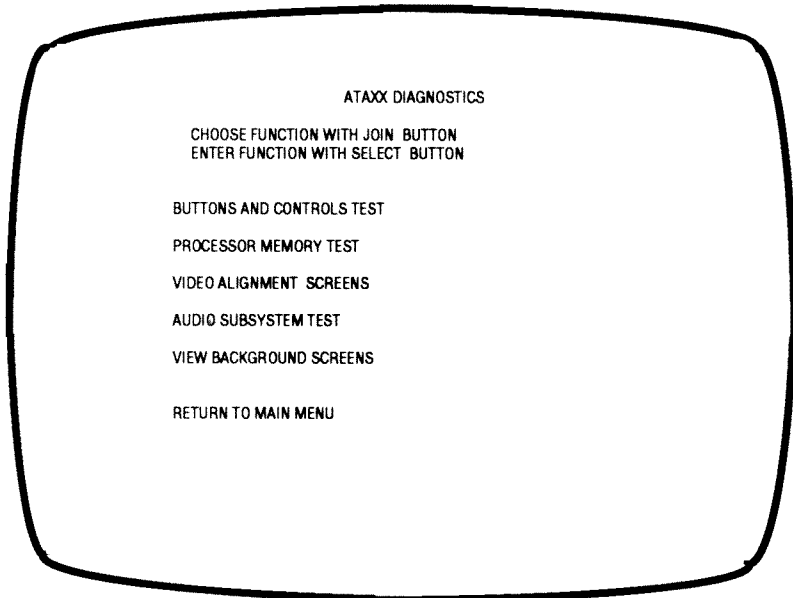


Bookkeeping

The Bookkeeping function is your game accountant. It records the lifetime earnings of your game and allows you to keep track of weekly, monthly, or location earnings by using the resettable "Period" totals.

NOTE: The "Set Coins/Tokens per dollar" category must be set to the location standard to maintain accurate accounting data (i.e., 6 coins/tokens per dollar).

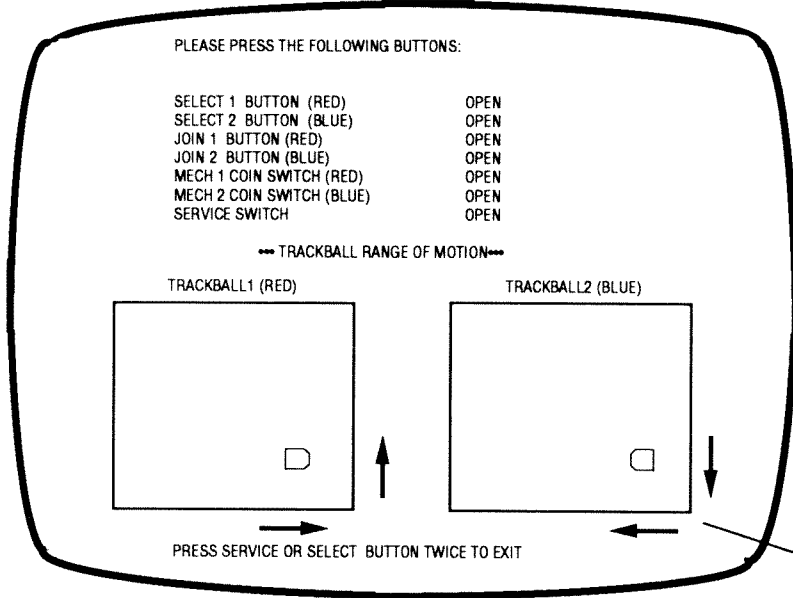
This function does not affect the number of coins per credit. (See "Game Set-up" for further information.)



Diagnostics Menu

Calling up the Diagnostics menu will open a very complete and easy-to-use set of tests to make adjusting, troubleshooting, and servicing your machine quick and simple.

You will notice that the diagnostics section has a sub-menu of its own.



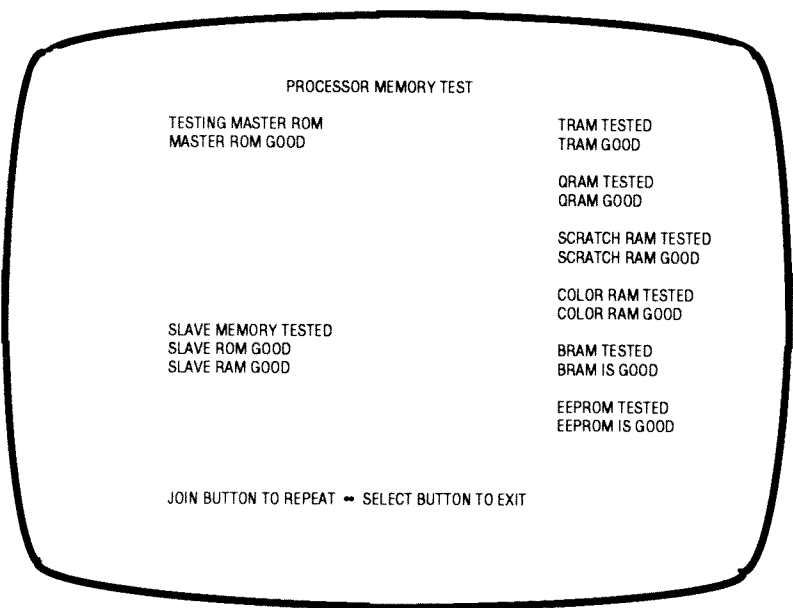
Buttons and Controls Test

This test provides a quick examination of the condition of all player buttons and controls.

As each item is tested, its change of status is shown on the screen. Any blinking or intermittent screen indications mean that switch cleaning or replacement is required.

Note that the arrows and icons in the trackball test will change according to the direction in which the trackball is moved.

Trackball arrows and icons



Processor Memory Test

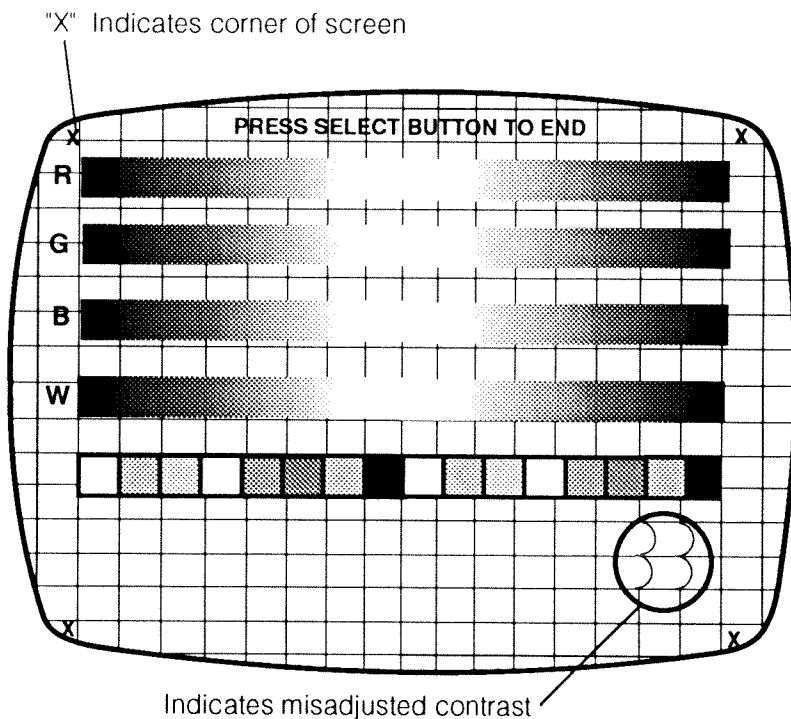
The erasable programmable read only memory (EPROM) and random access memory (RAM) ICs are storage areas for the actual game guidelines and are accessed by the microprocessor. The percentage of field failures in these areas is very low, but when problems do arise they can be difficult to track down. This processor memory test samples the action of the microprocessor and notes any malfunctions.

CAUTION: Read your limited warranty on the back cover of this document before attempting any printed circuit board repairs.

Video Alignment Screens

The picture on the video monitor is the most important and most neglected part of any game. It has been proven that a dirty, misaligned, or unfocused screen is the biggest cause for reduced collections—players will simply walk away if the game is not operating properly.

Making the effort to go through the following adjustment screens can make a big difference in revenues. Use all three screens to adjust your picture and then go to the Background Screens section to make the game look "rich."



Cross Hatch Screen

Use the cross hatch screen to adjust focus, alignment, size, and contrast. Wavy horizontal lines denote misadjusted contrast. The screen's background should be black and the lines solid white.

The four "x" marks will be in the screen corners when vertical and horizontal size and position adjustments are correct.

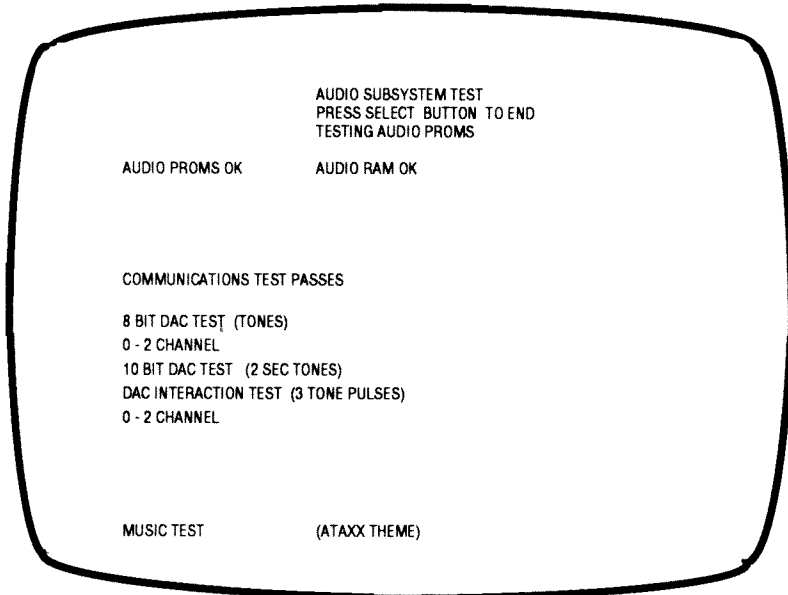
If the crosshatch squares are rectangular, use the size controls to make them square, then the position adjustments to put the "x"s in the corners.

Adjust the screen or brightness control so that the green color bar shows green in the center and tapers to black on the ends.

Use the red cutoff control to adjust the red color bar to the same intensity as the green color bar.

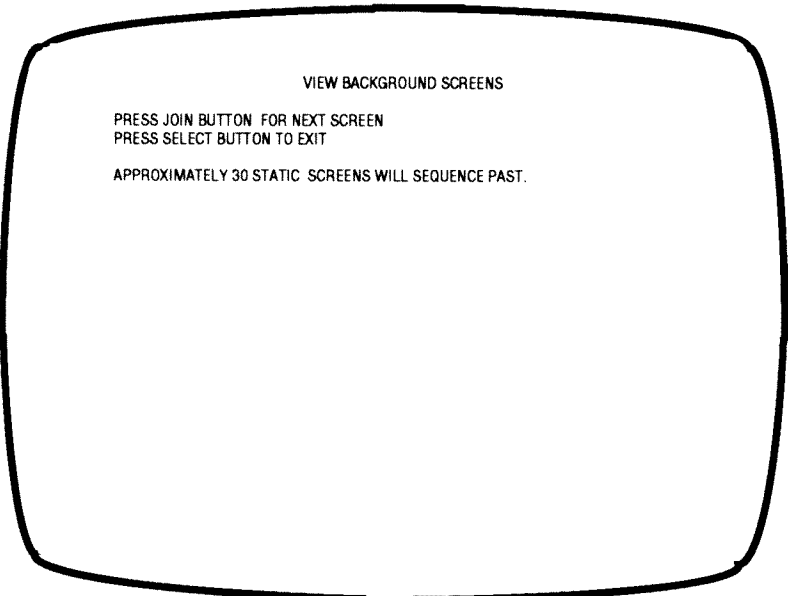
Use the blue cutoff control to make the gray color bar appear gray (not brownish).

Adjust the red and green drive controls slightly to make the white blocks white.



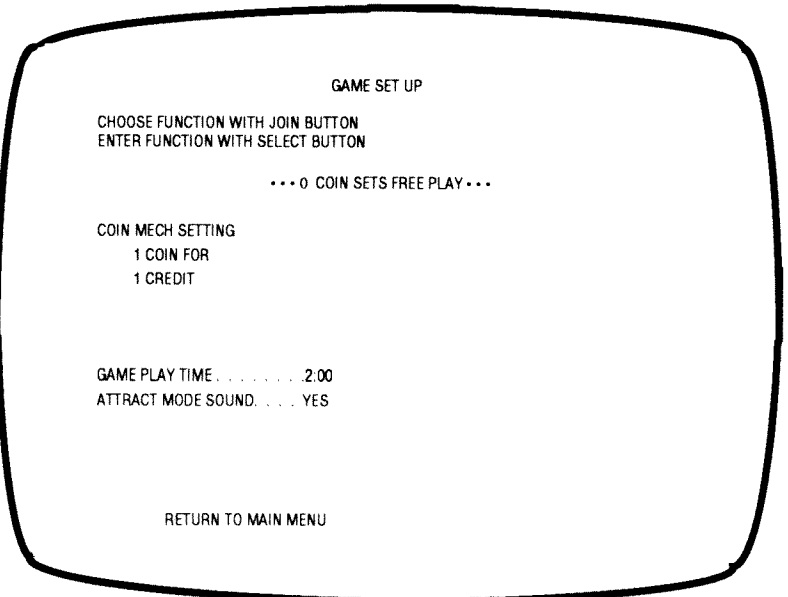
Audio Subsystem Test

The sounds are the second most important feature of any game. The volume of the game's sound, for the most part, is dictated by the location. However, the quality of the sound is a function of the program. This test will help you in your quest to find "odd" sounds or to remedy the lack of certain sounds.



Background Screens

In this test, the background screens are shown while the EPROMS containing the information for these screens are displayed at the right side of the screen. This test is not only helpful when looking for glitches, but may also be viewed as a visual test of the colors and picture clarity after the Video Alignment test has been completed.



Game Set-up

This section is vital to the condition of your cashbox. When used in conjunction with the Bookkeeping section of the Diagnostics package, the Game Set-up function will keep your game on the top of your earners list. The coins-per-credit settings range from 1 coin/1 credit to 20 coins/20 credits. Game play time can be adjusted from 1 to 4 minutes in 30 second increments. Difficulty level range is 1 to 8. Use "Join" button to move highlight to desired function, use the "Select" button to step through choices.

GAME STATISTICS
 CHOOSE FUNCTION WITH JOIN BUTTON
 ENTER FUNCTION WITH SELECT BUTTON

	1 PLAYER	2 PLAYER
GAMES	0	0
	[RED]	[BLUE]
START	0	0
JOIN	0	0
CONTINUE	0	0
REPLAY	0	0
AFTER WIN	0	0
AFTER LOSS	0	0
COMPUTER	0	0

RESET GAME STATISTICS

ERASE HALL OF FAME ON EXIT - NO

DISPLAY AI RECORDS

RETURN TO MAIN MENU

Game Statistics

This section lets you know how well you've done in setting your game for maximum earning power.

AI RECORD STATISTICS

NAME	RATING	WINS	LOSSES	TOP RATING BEATEN	AVG. RATING BEATEN	AVG. RATING PLAYED
AIA	0	0	0	0	0	0
AIB	0	0	0	0	0	0
AIC	0	0	0	0	0	0
AID	0	0	0	0	0	0
AIE	0	0	0	0	0	0
TOTAL REAL GAMES		0	0	0		

PRESS SELECT BUTTON TO EXIT

Artificial Intelligence Statistics

This screen compares the five levels of computer "skill" versus the human opponents played against. This information can help you determine if the game difficulty level and play time are set properly for a particular location.

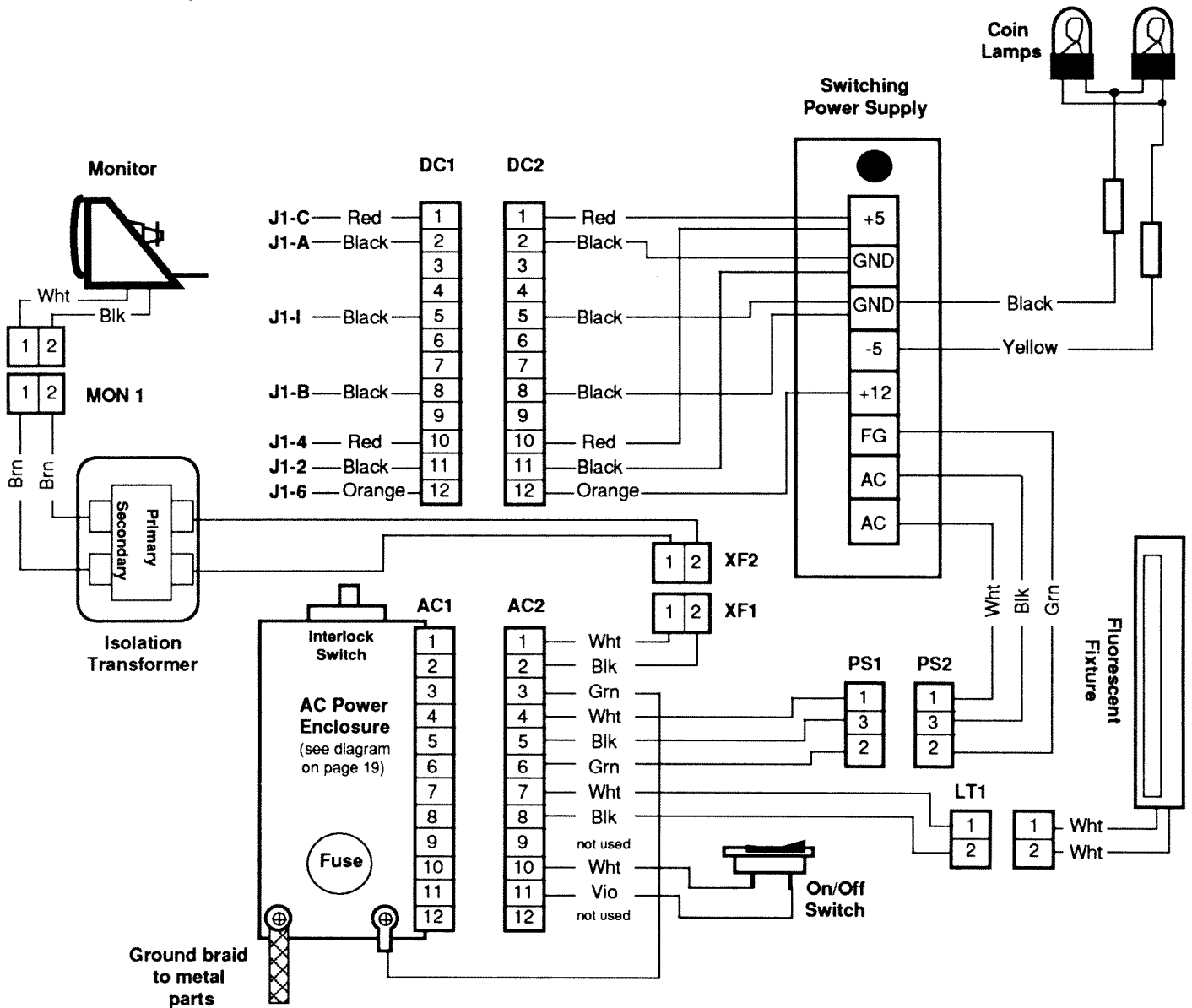
Cabinet Wiring Diagram

AC Power

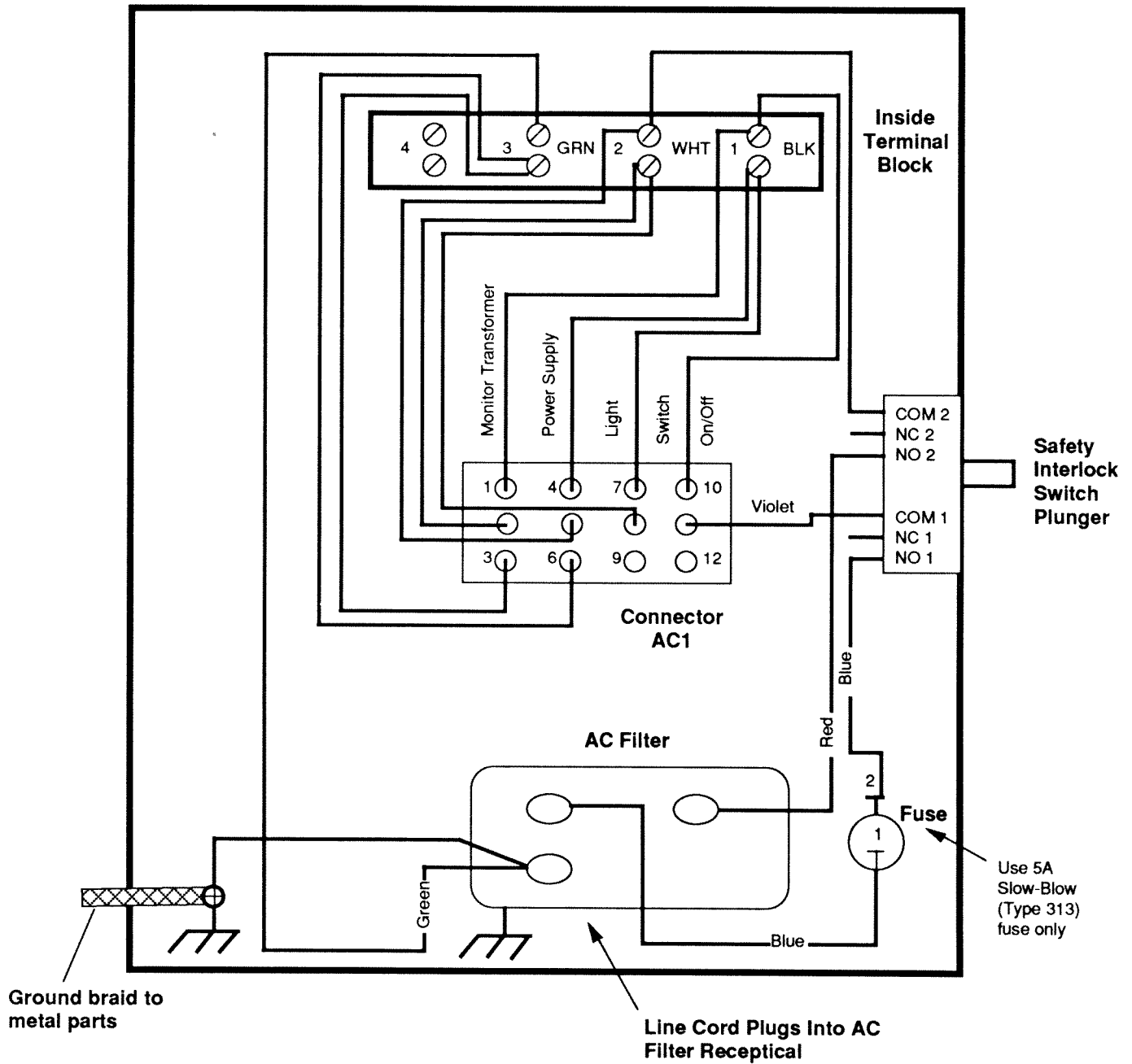
108 - 132 VAC
2.5 A Max

DC Power

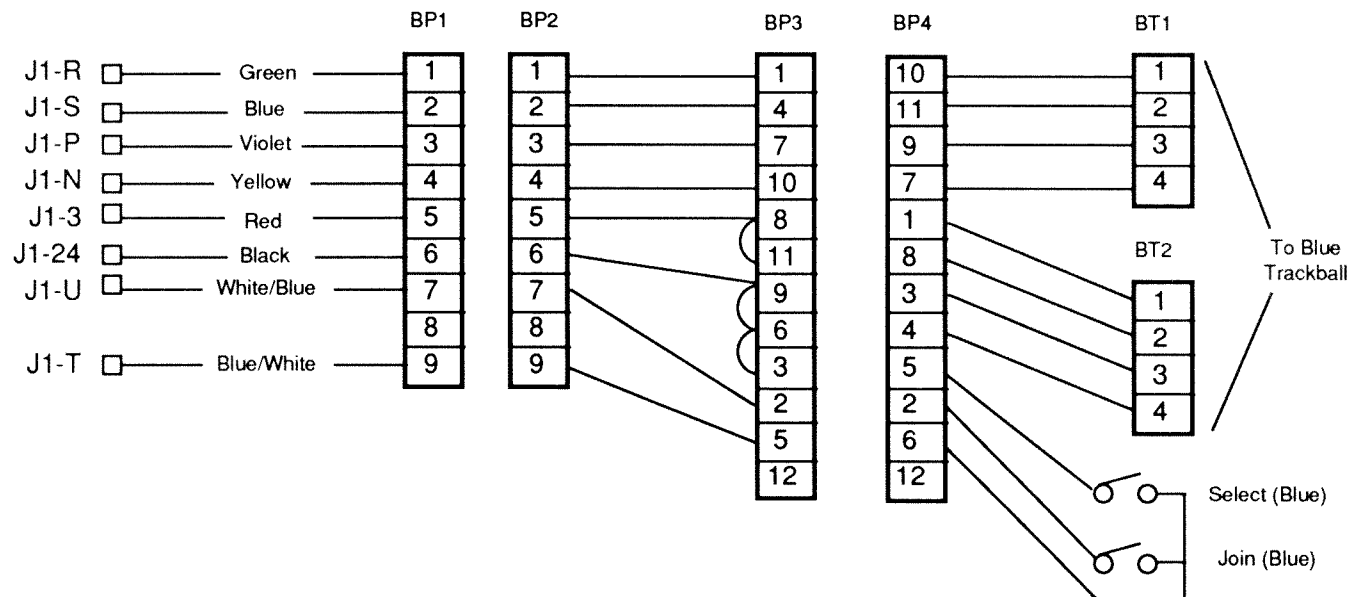
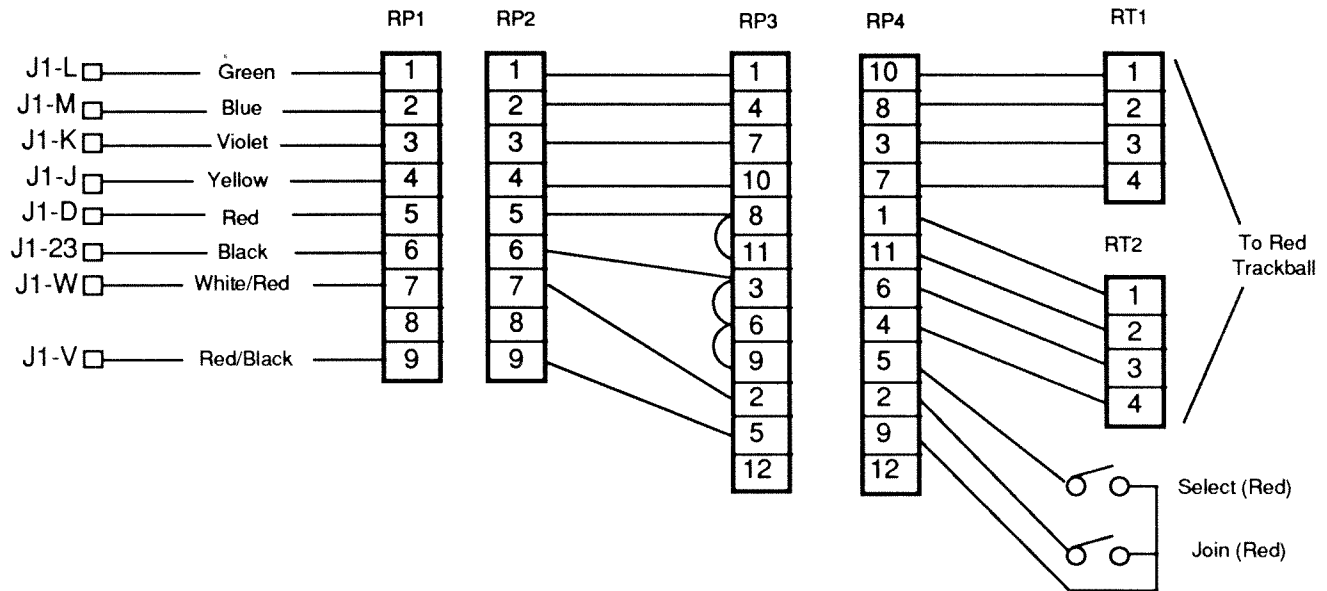
+5 VDC @ 11A
+12 VDC @ 2A
-5 VDC @ 1A



AC Power Enclosure Wiring Diagram



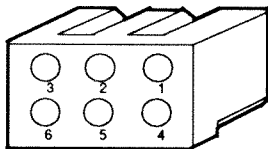
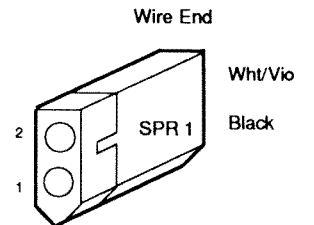
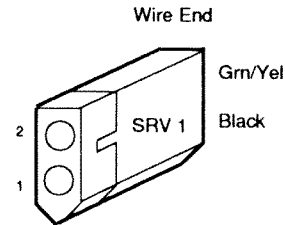
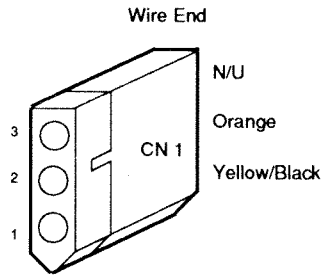
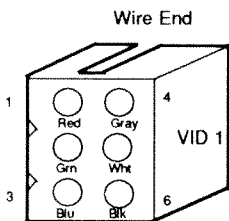
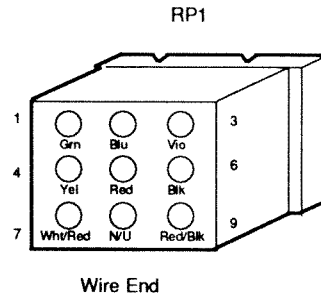
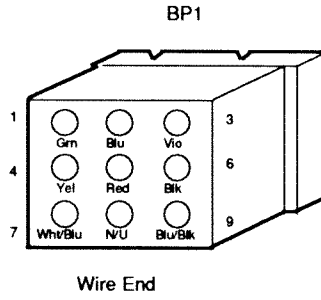
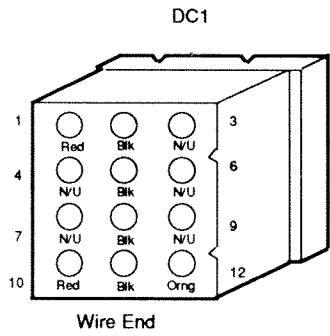
Player Control Wiring



J1 Connector

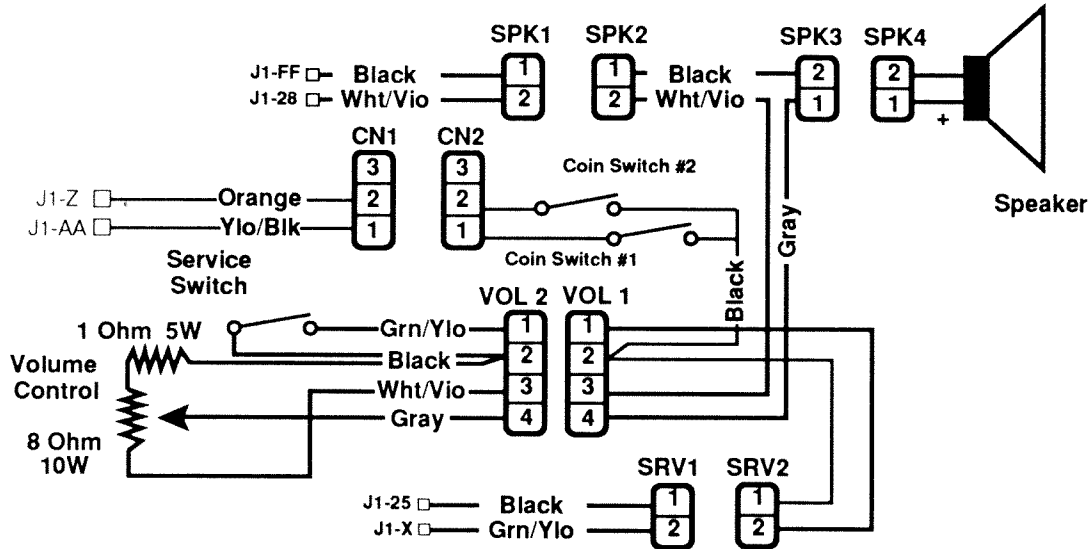
DC1-2	(GND) Black	A	1	Black (GND)	DC1-5
DC1-8	(GND) Black	B	2	Black (GND)	DC1-11
DC1-1	(+5VDC) Red	C	3	Red (+5VDC)	BP1-5
RP1-5	(+5VDC) Red	D	4	Red (+5VDC)	DC1-10
		E	5		
		F	6	Orange (+12VDC)	DC1-12
		H	7	Key	
	Yellow	J	8		
RP1-4	Violet	K	9		
RP1-3	Green	L	10		
RP1-1	Blue	M	11		
RP1-2	Yellow	N	12		
BP1-4	Violet	P	13		
BP1-3	Green	R	14		
BP1-1	Blue	S	15		
BP1-2	(Blue Select) Blue/White	T	16	Red (Video R)	VID1-1
BP1-9	(Blue Join) White/Blue	U	17	Blue (Video B)	VID1-3
BP1-7	(Red Select) Red/Black	V	18	Green (Video G)	VID1-2
RP1-9	(Red Join) White/Red	W	19		
RP1-7	(Service) Green/Yellow	X	20	White (V Sync -)	VID1-5
SRV1-2		Y	21	Gray (H Sync -)	VID1-4
CN1-2	(Coin 2) Orange	Z	22	Black (Video GND)	VID1-6
CN1-1	(Coin 1) Yellow/Black	AA	23	Black (Red PL GND)	RP1-6
		BB	24	Black (Blue PL GND)	BP1-6
		CC	25	Black (Coin GND)	SRV1-1
		DD	26		
		EE	27		
SPK1-1	(Speaker -) Black	FF	28	White/Violet (Speaker +)	SPK1-2

Male Molex Connectors Typical Pin-Out



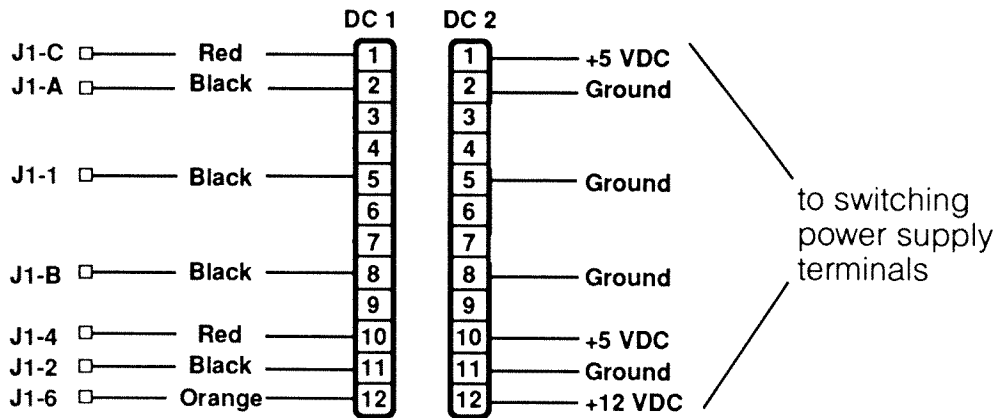
**See main board layout for board
connector locations**

Speaker, Switches Wiring Diagram

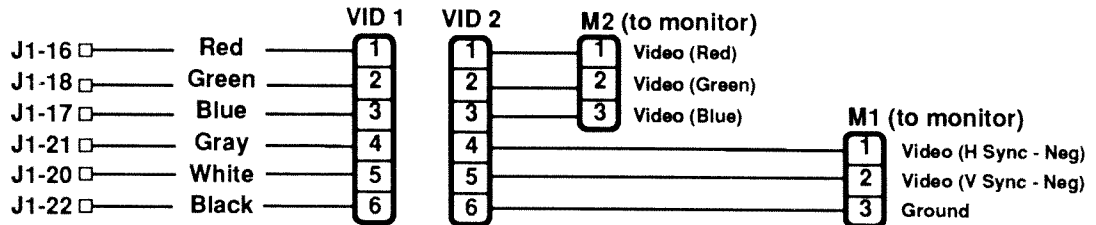


Wiring Diagrams

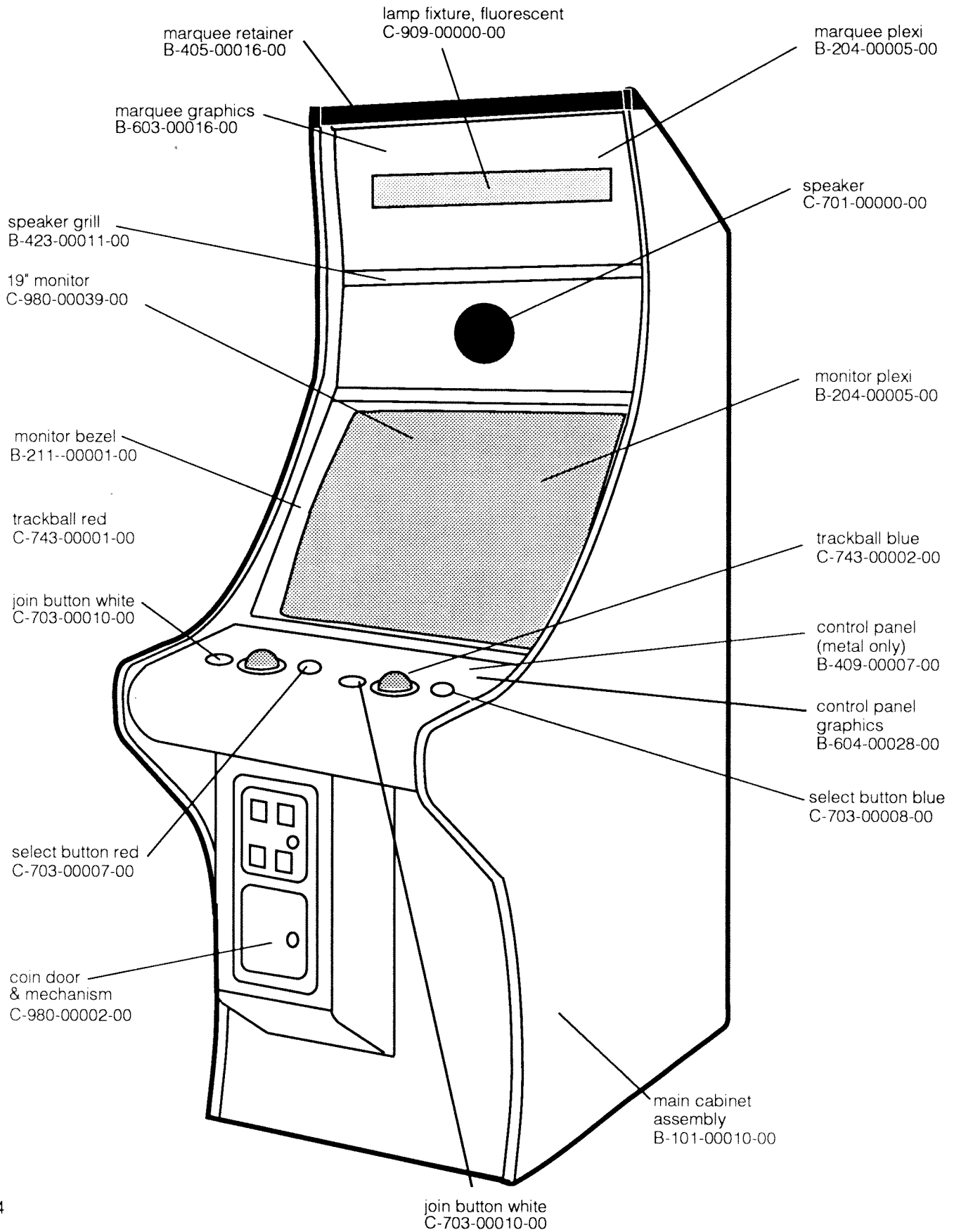
DC Power



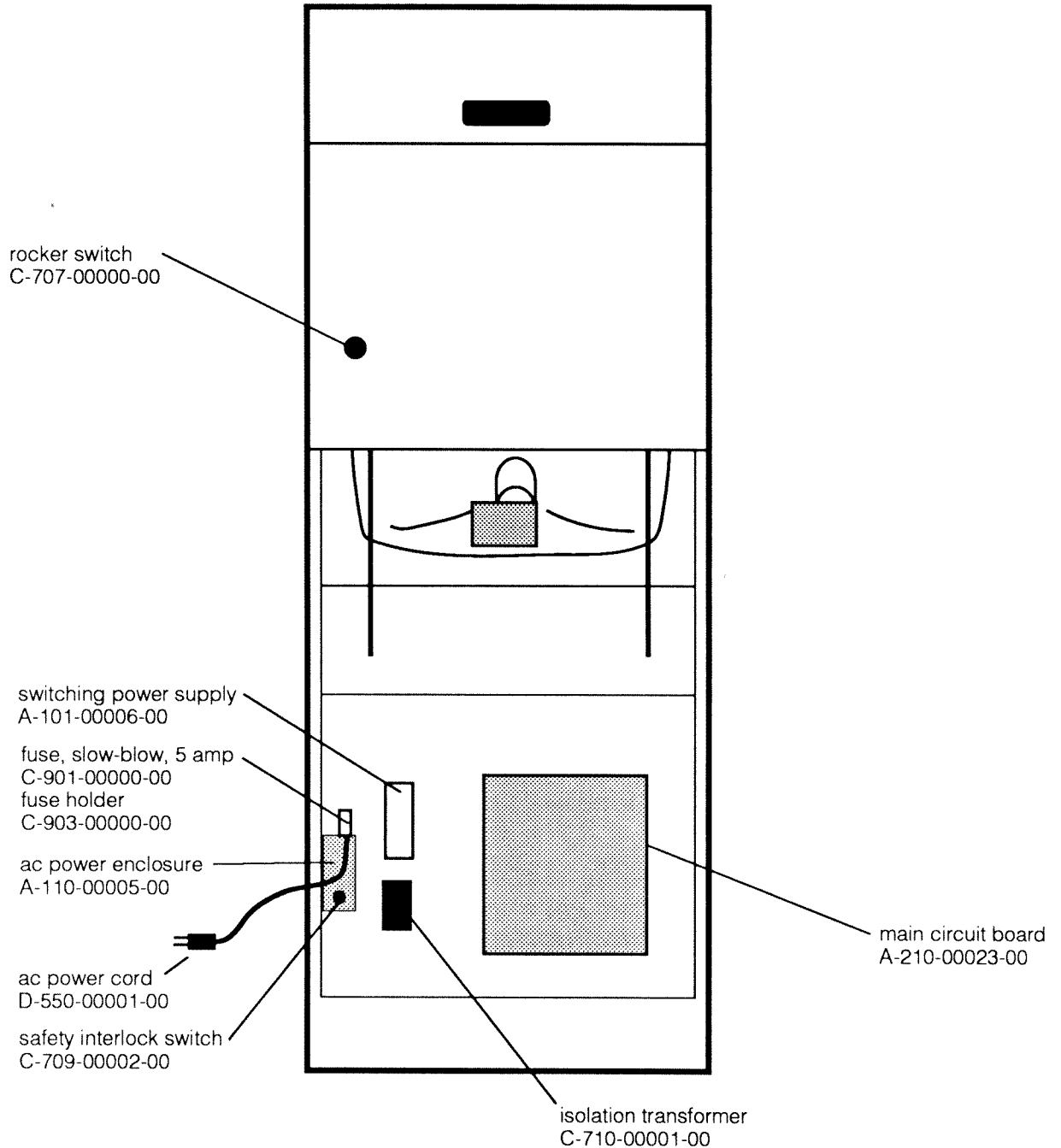
Video



Illustrated Parts List



Illustrated Parts List (cont'd)



Other Parts

power supply gnd harness
A-301-00135-00

power supply harness
A-301-00131-00

speaker harness
A-301-00123-00

volume control harness
A-301-00126-00

monitor gnd harness
A-301-00139-00

cntrl panel harness player red
A-301-00127-00

gnd volume harness
A-301-00138-00

ac line filter
C-905-00002-00

ac main power harness
A-301-00130-00

cntrl panel harness player blue
A-301-00128-00

main harness
A-301-00132-00

ac power harness
A-301-00129-00

dc power harness
A-301-00122-00

volume control assembly
A-110-00002-00

video harness
A-301-00125-00

The Leland Corporation Warranty

The Leland Corporation warrants that whenever the power supply and/or the printed circuit boards and/or all parts contained therein are furnished with its product, that such part or parts will be free from all defects in materials and workmanship for a period of sixty (60) days from the date of shipment. The Leland Corporation's warranty of above parts is subject to the normal use and service of its product. No other products or parts thereof are warranted. If the products described in this manual fail to conform to this warranty, The Leland Corporation's sole liability shall be, as mutually agreed, to replace or repair such products which are returned to The Leland Corporation during stated warranty period, provided:

- A. The Leland Corporation is notified **in writing** upon discovery by the buyer that said products are defective.
- B. The defective product or part is returned **pre-paid** to The Leland Corporation's plant with a Leland Corp. Returned Merchandise Authorization (RMA) number clearly visible on the outside of the package.
- C. The Leland Corporation's examination of the returned product(s) or part(s) determines, to our satisfaction, that the alleged defects existed and were not caused by accident, misuse, neglect, alteration, improper repair, installation, or testing.

The Leland Corporation is not responsible for bent pins on ICs not installed by our employees. In no event shall The Leland Corporation be liable for loss of profits, loss of use, or incidental or consequential damages.

EXCEPT FOR THIS WARRANTY, THE LELAND CORPORATION DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON THE LELAND CORPORATION'S BEHALF, AND IT NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR THE LELAND CORPORATION ANY OTHER LIABILITIES IN CONNECTION WITH THE SALE OF PRODUCTS MANUFACTURED BY THE LELAND CORPORATION.

**The Leland Corporation
1841 Friendship Drive
El Cajon, CA 92020
(619) 562-7000**

ATAXX™

Owner's Manual Addendum

Part Number B-701-00020-00 Rev. C

A Word About Compatibility...

The edge connector on the game circuit board is not directly compatible with the JAMMA standard pinout. All functions on the game circuit card are accurately detailed in the owner's manual.

Adapting the game to the JAMMA standard pinout requires the use of the included adapter board. The pinouts of the adapter board and harness are indicated on the following page

ATAXX Kit Parts List

Part Number	Qty.	Description
A-210-00029-00	1	ATAXX Circuit Panel
A-210-00030-00	1	JAMMA Interface
A-301-00153-00	1	Harness, Kit
B-603-00019-00	1	Marquee Graphics
B-604-00028-01	1	Control Panel Graphics
B-701-00018-00	1	Owner's Manual
B-701-00020-00	1	Owner's Manual Addendum
C-741-00003-00	2	Joystick, Digital
C-703-00007-00	2	Pushbutton, Red
C-703-00008-00	2	Pushbutton, Blue
A-110-00007-00	1	Service Switch

ATAXX™ JAMMA Adapter Board Connector/Harness

Solder Side	J1	Component Side
(GND) Black	A 1	(GND) Black
(GND) Black	B 2	(GND) Black
(+5VDC) Red	C 3	(+5VDC) Red
(+5VDC) Red	D 4	(+5VDC) Red
(+12VDC) Orange	E 5	(+12VDC) Orange
Key	F 6	Key
	H 7	
	J 8	
	K 9	
(Speaker -) White/Black	L 10	(Speaker +) White/Violet
	M 11	
(Video Green) Green	N 12	(Video Red) Red
(Video Sync) Grey	P 13	(Video Blue) Blue
(Service Switch) Grn/Ylo	R 14	(Video Ground) Black
	S 15	
(Coin Switch #2) Brn/Wht	T 16	(Coin Switch #1) Grey/Red
	U 17	
(2P Control Up) Green	V 18	(1P Control Up) Blue
(2 P Control Down) Blue	W 19	(1P Control Down) Green
(2P Control Left) Violet	X 20	(1P Control Left) Yellow
(2P Control Right) Yellow	Y 21	(1P Control Right) Violet
(Blue "Select" Button) Blu/Wht	Z 22	(Red "Select" Button) Red/Blk
(Blue "Join" Button) Wht/Blue	AA 23	(Red "Join" Button) Wht/Red
	BB 24	
	CC 25	
	DD 26	
(GND) Black	EE 27	(GND) Black
(GND) Black	FF 28	(GND) Black

Plug adapter board onto edge connector of main circuit board. Adapter board edge connector is now game I/O (standard JAMMA). Plug harness onto adapter board and connect wires as indicated above.