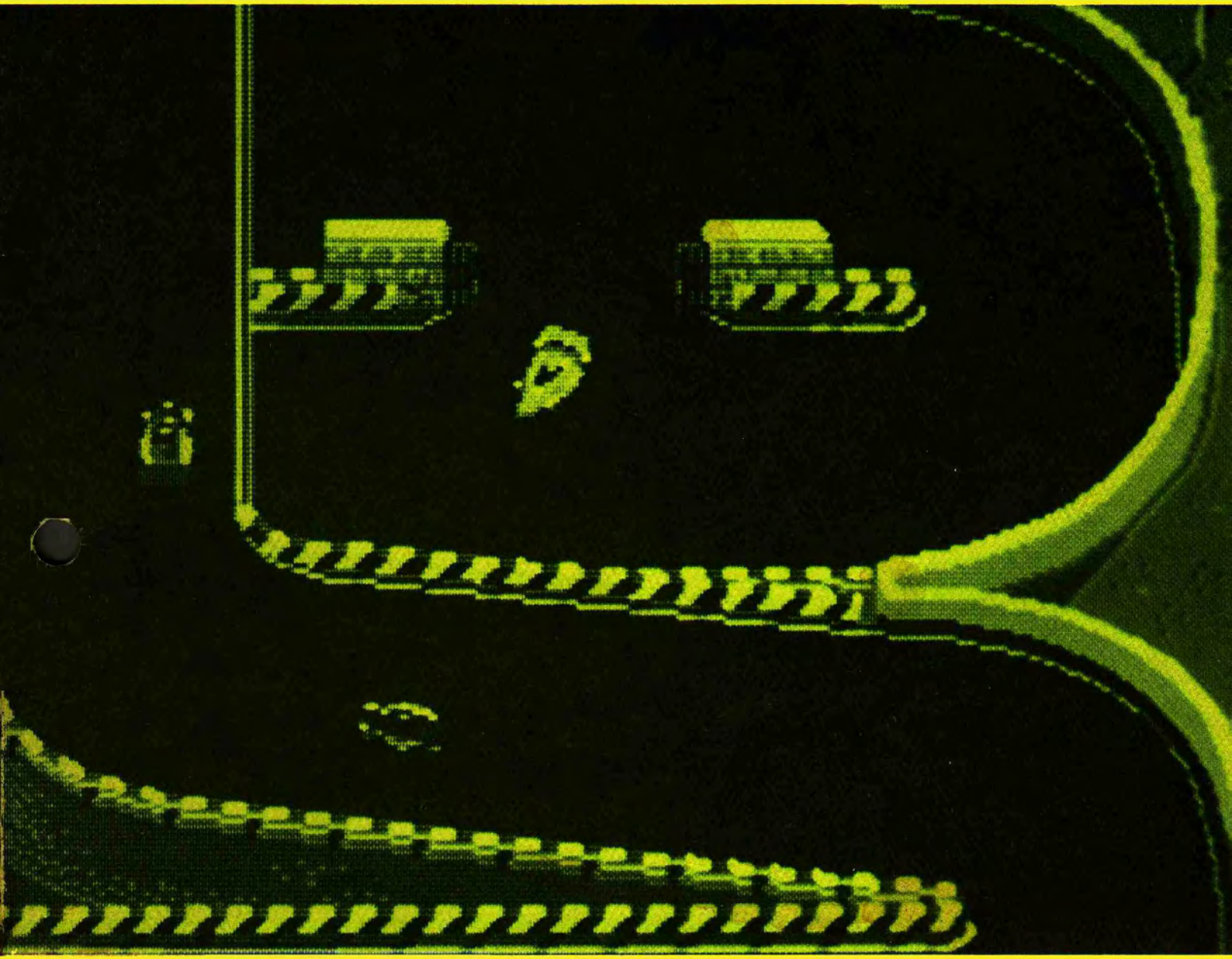




Operators Manual
with Illustrated Parts Lists



SUPER SPRINT™

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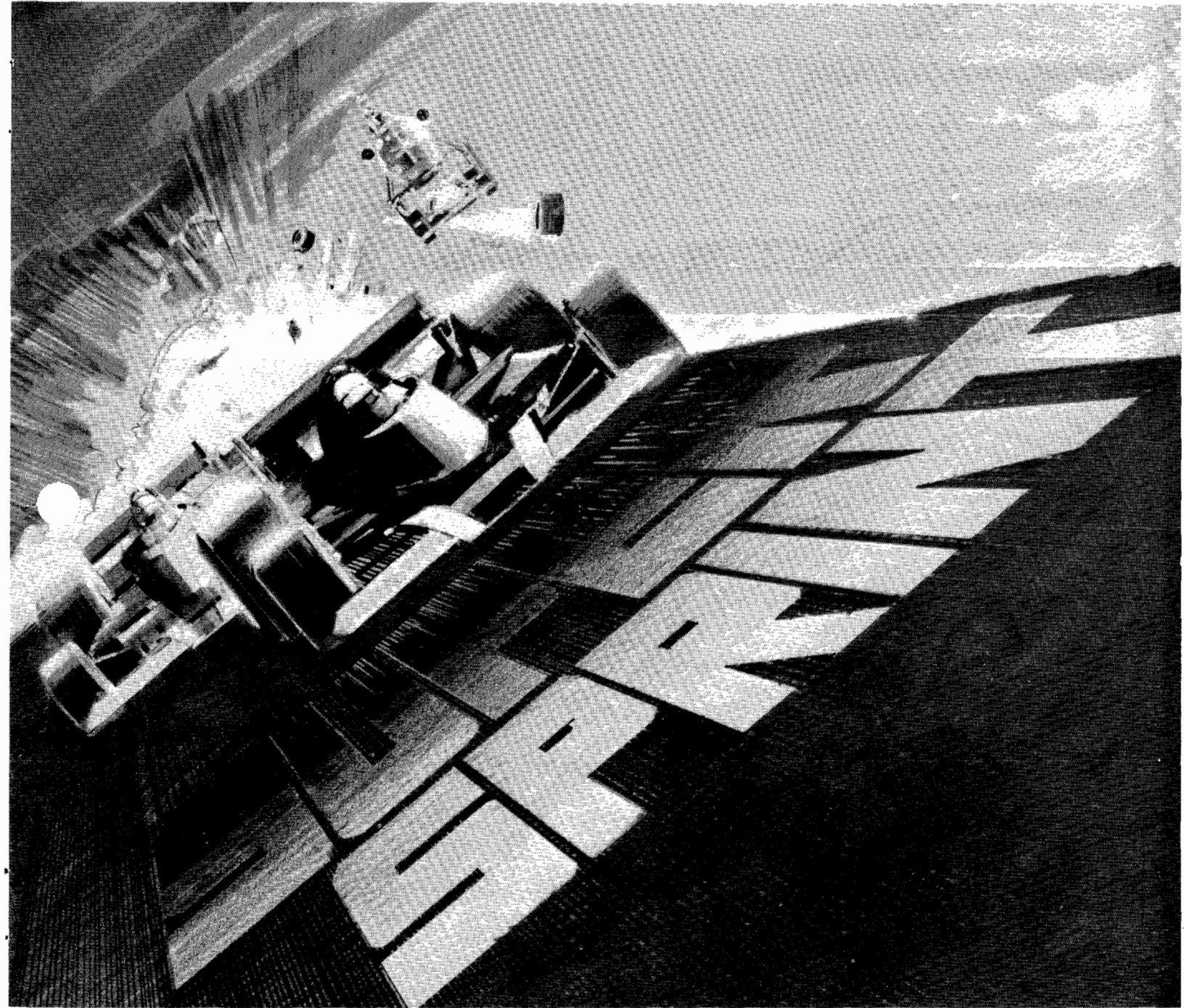
Parts and Service

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European Customer Service Office
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Telex 28165
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 **062-52155**

Super Sprint™ Operators Manual

with Illustrated Parts Lists



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Use of non-ATARI parts or modifications of any ATARI game circuitry may adversely affect the safety of your game, and may cause injury to you and your players.

You may void the game warranty (printed on the inside back cover of this manual) if you do any of the following:

- Substitute non-ATARI parts in the game.
- Modify or alter any circuits in the game by using kits or parts *not* supplied by Atari Games Corporation.
- Leave the video display enclosure in the shipping position when using the game.

NOTE

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of Federal Communications Commission (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 or modification to this equipment is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference. If you suspect interference from an ATARI® game at your location, check the following:

- All green ground wires in the game are properly connected as shown in the game wiring diagram.
- The power cord is properly plugged into a grounded three-wire outlet.
- The game printed-circuit boards (PCBs) are properly installed with the Electromagnetic Interference (EMI) ground plane.

If you are still unable to solve the interference problem, please contact Customer Service at Atari Games Corporation. See the inside front cover of this manual for service in your area.

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Safety Summary

The following safety precautions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply.

▲ WARNING ▲

Properly Ground the Game. Players may receive an electrical shock if this game is not properly grounded! To avoid electrical shock, do not plug in the game until it has been inspected and properly grounded. This game should only be plugged into a grounded three-wire outlet. If you have only a 2-wire outlet, we recommend you hire a licensed electrician to install a grounded outlet. Players may receive an electrical shock if the control panel is not properly grounded! After servicing any parts on the control panel, check that the grounding wire is firmly secured to the inside of the control panel. Only then should you lock up the game.

AC Power Connection. Before connecting the game to the AC power source, verify that the game's power supply is properly configured for the line voltage in your location.

Disconnect Power During Repairs. To avoid electrical shock, disconnect the game from the AC power source before removing or repairing any part of the game. When removing or repairing the video display, extra precautions must be taken to avoid electrical shock because high voltages may exist within the display circuitry and cathode-ray tube (CRT) even after power has been disconnected. Do not touch internal parts of the display with your hands or with metal objects! Always discharge the high voltage from the CRT before servicing this area of the game. To discharge the CRT: Attach one end of a large, well-insulated, 18-gauge jumper wire to ground. Momentarily touch the free end of the grounded jumper to the CRT anode by sliding it under the anode cap. Wait two minutes and discharge the anode again.

Use Only ATARI Parts. To maintain the safety integrity of your ATARI game, do not use non-ATARI parts when repairing the game. Use of non-ATARI parts or other modifications to the game circuitry may adversely affect the safety of your game, and injure you or your players.

Handle the CRT With Care. If you drop the CRT and it breaks, it may implode! Shattered glass can fly six feet or more from the implosion.

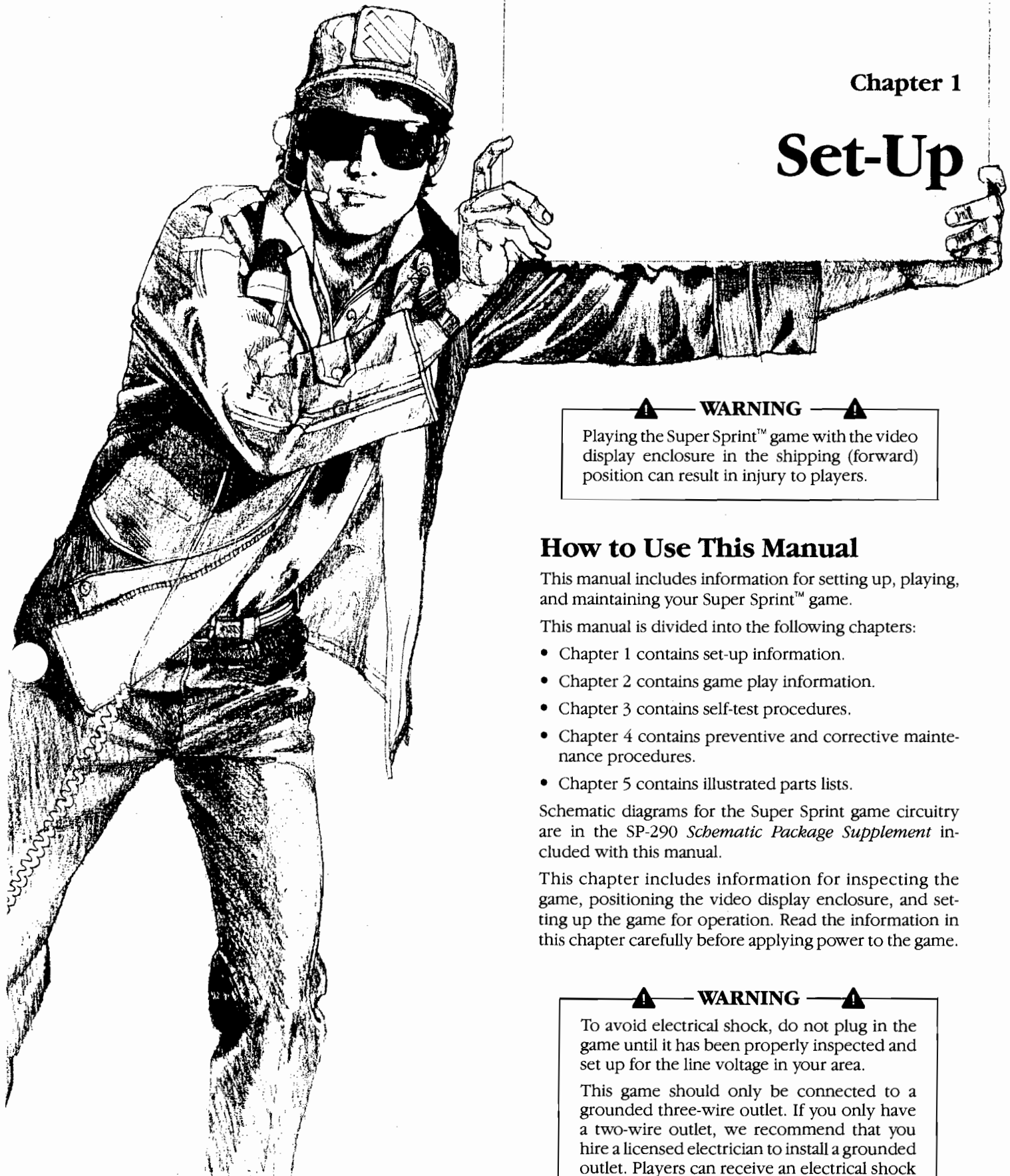
Use the Proper Fuses. To avoid electrical shock, use replacement fuses which are specified in the parts list for this game. Replacement fuses must match those replaced in fuse type, voltage rating, and current rating. In addition, the fuse cover must be in place during game operation.

CAUTION

Properly Attach All Connectors. Make sure that the connectors on each printed-circuit board (PCB) are properly plugged in. Note that they are keyed to fit only one way. If they do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty.

Ensure the Proper AC Line Frequency. Video games manufactured for operation on 60 Hz line power (i.e., United States) must not be operated in countries with 50 Hz line power (i.e., Europe). The fluorescent light ballast transformer will overheat, causing a potential fire hazard if 60 Hz games are operated on power lines using 50 Hz. Check the product identification label of your game for the line frequency required.

Set-Up



▲ — WARNING — ▲

Playing the Super Sprint™ game with the video display enclosure in the shipping (forward) position can result in injury to players.

How to Use This Manual

This manual includes information for setting up, playing, and maintaining your Super Sprint™ game.

This manual is divided into the following chapters:

- Chapter 1 contains set-up information.
- Chapter 2 contains game play information.
- Chapter 3 contains self-test procedures.
- Chapter 4 contains preventive and corrective maintenance procedures.
- Chapter 5 contains illustrated parts lists.

Schematic diagrams for the Super Sprint game circuitry are in the SP-290 *Schematic Package Supplement* included with this manual.

This chapter includes information for inspecting the game, positioning the video display enclosure, and setting up the game for operation. Read the information in this chapter carefully before applying power to the game.

▲ — WARNING — ▲

To avoid electrical shock, do not plug in the game until it has been properly inspected and set up for the line voltage in your area.

This game should only be connected to a grounded three-wire outlet. If you only have a two-wire outlet, we recommend that you hire a licensed electrician to install a grounded outlet. Players can receive an electrical shock if the game is not properly grounded.

Do not touch internal parts of the display with your hands or with metal objects.

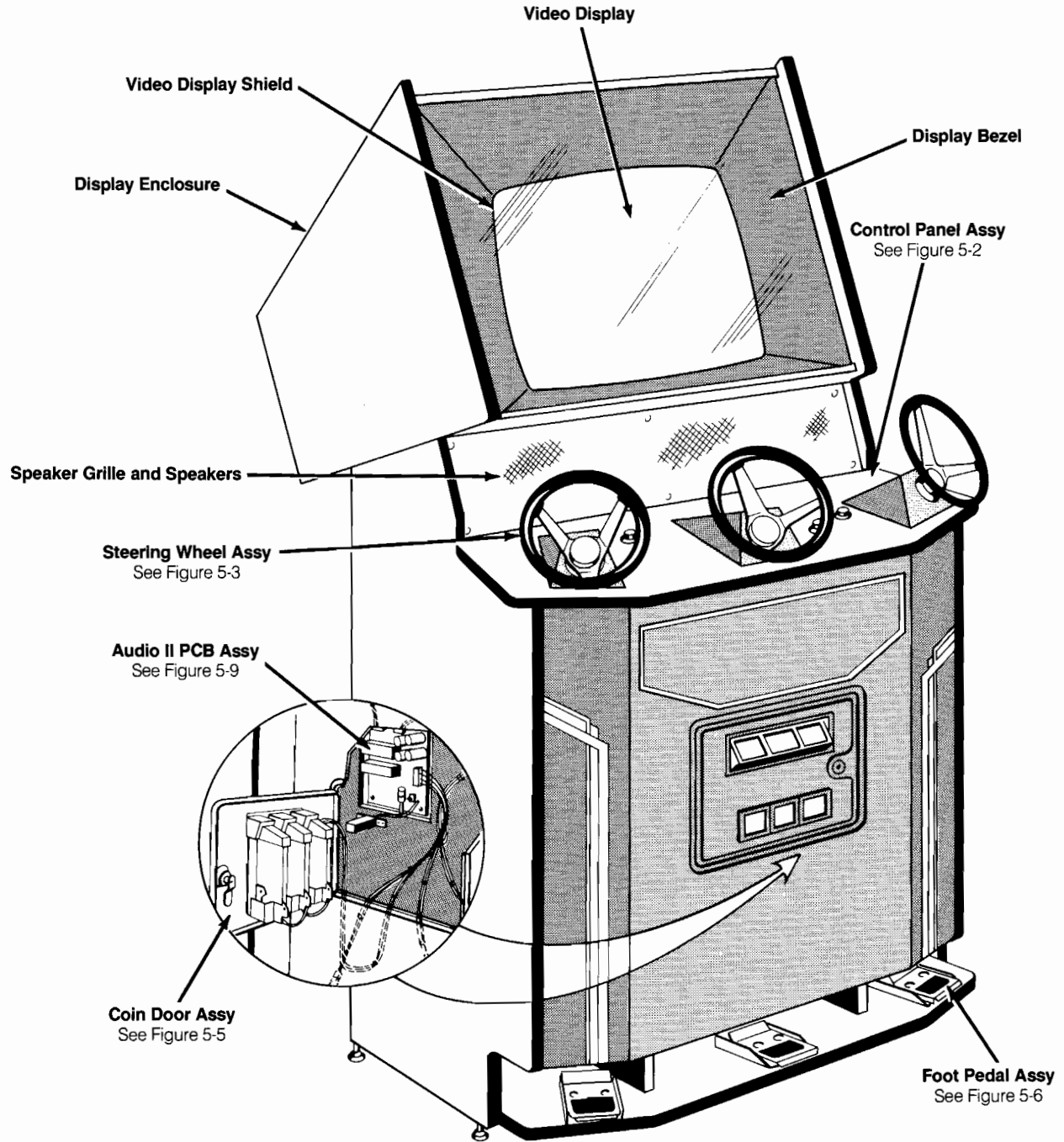


Figure 1-1 Game Overview

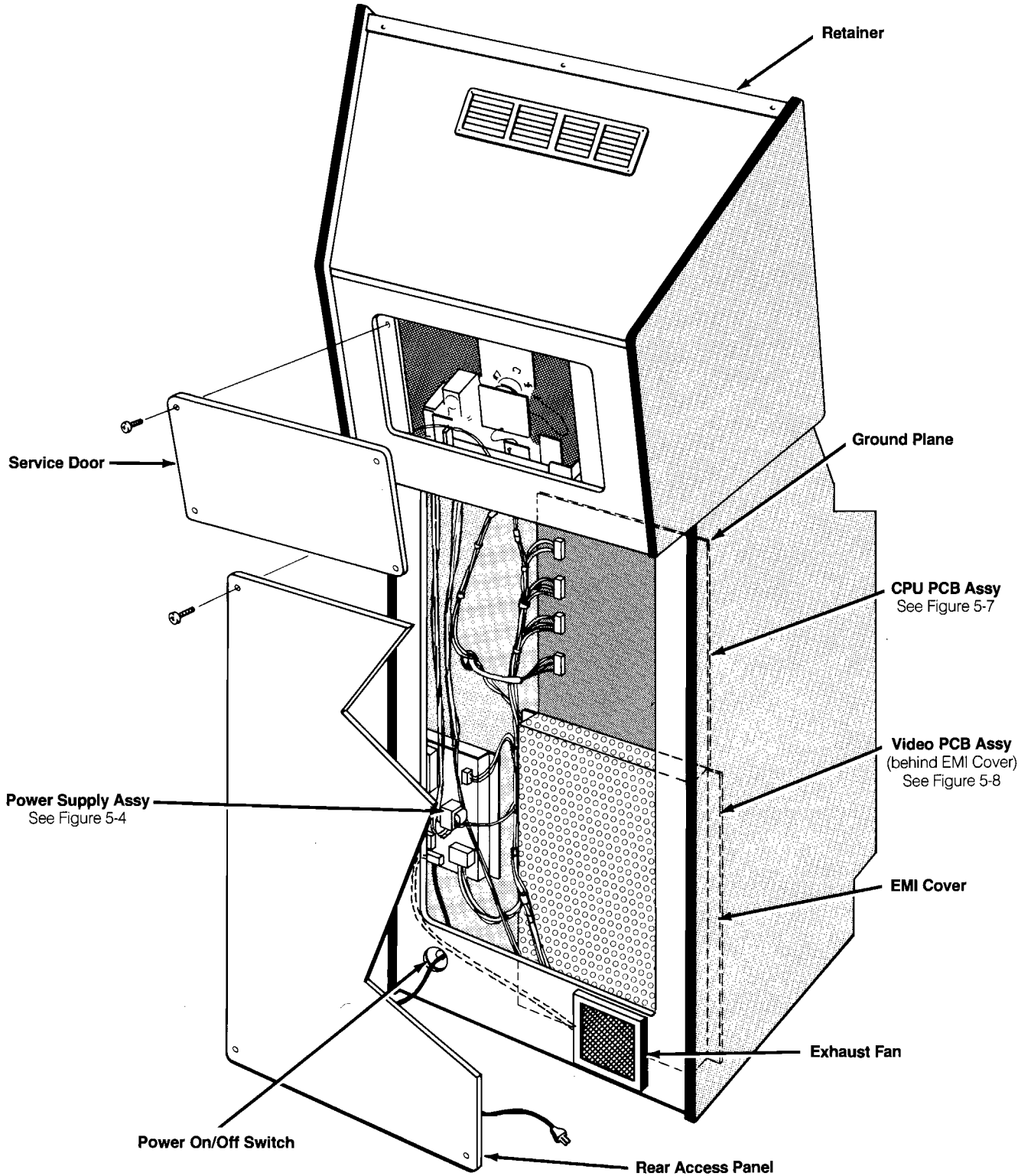


Figure 1-1 Game Overview, Continued

Inspecting the Game

CAUTION

Do not position the video display enclosure or plug in the game until you have completed the following inspection steps.

Please inspect your Super Sprint game carefully to ensure that the game is complete and delivered to you in good condition. Figure 1-1 shows the locations of the component parts of the game. Table 1-1 lists space, power, and environmental requirements. Do not position the video display enclosure until the following inspection is completed:

1. Examine the exterior of the cabinet and the control panel for dents, chips, or broken parts.
2. Use a Phillips screwdriver to remove the screws holding the upper and lower rear access panels to the cabinet. Unlock the lower rear-access panel, and remove both rear access panels. Unlock, and open the coin door. Inspect the interior of the cabinet as follows:
 - a. Ensure that all plug-in connectors (on the cabinet harnesses) are firmly plugged in. Do not force connectors together. The connectors are keyed so they only fit in the proper orientation.
 - b. Ensure that all plug-in integrated circuits on each PCB are firmly plugged into their sockets.
 - c. Inspect the power cord for any cuts or dents in the insulation.
 - d. Inspect the power supply. Make sure that the correct fuses are installed. Check that the harness is plugged in correctly and that the fuse-block cover is mounted in place. Check that the green ground wire is connected.
 - e. Inspect other major subassemblies, such as the video display, printed-circuit boards (PCBs), controls, and speakers. Make sure that they are mounted securely and that the green ground wires (where provided) are connected.
 - f. Make sure that the game power source and operating environment is within the limits specified in Table 1-1, Game Specifications.
 - g. Position the video display enclosure as described in the following procedure.

CAUTION

You will void the game warranty, printed on the inside back cover of this manual, if you leave the video display enclosure in the shipping (forward) position when using your Super Sprint game. The display enclosure must be in the playing (rear) position with the vent open when using your game to prevent overheating of the electronic components.

Table 1-1 Game Specifications

Characteristic	Specification
Power Consumption	315 V-A, 260 W RMS maximum
Temperature	+ 5° to + 38° C (+ 37° to + 100° F)
Humidity	Not to exceed 95% relative
Line Voltage	102 to 132 VAC (U.S. games) 198 to 264 VAC (Irish games)
Width	40½ in. (103 cm)
Depth	
Shipping:	35¾ in. (91 cm)
Game Play:	39¼ in. (100 cm)
Height	66¾ in. (170 cm)
Weight	340 lbs. (153 kg)

Moving the Super Sprint Cabinet

The size of the Super Sprint cabinet requires that your location entrance be large enough for the cabinet to clear the door. Refer to Table 1-2 for door sizes and respective moving instructions.

Positioning the Display Enclosure

Perform the following procedure to move the video display enclosure into position for game play. (See Figure 1-2.) Note that *this procedure requires a second person* to help slide the display enclosure toward the rear of the cabinet.

1. Using a 5/32-inch Allen wrench, remove the two button-head screws and washers located under the bottom front of the display enclosure.
2. Unlock and open the lower rear access door.
3. Loosen, *but do not remove*, the two wing nuts and the washers located under the rear of the display enclosure.

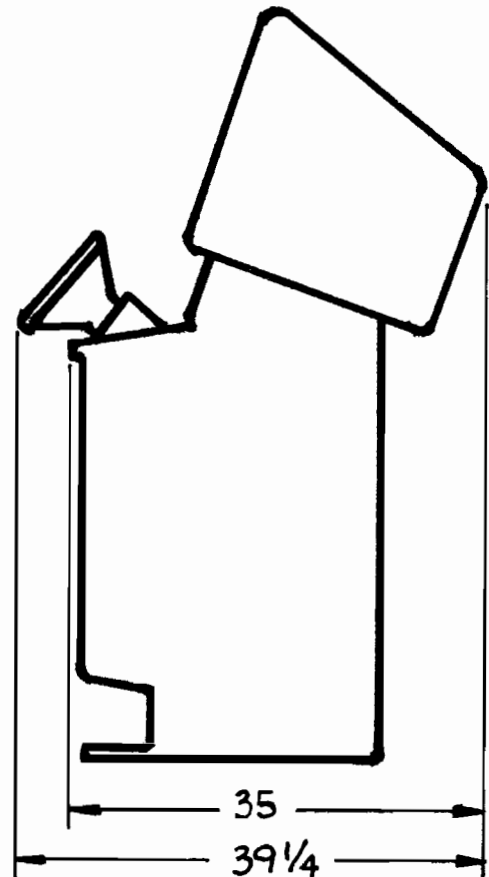
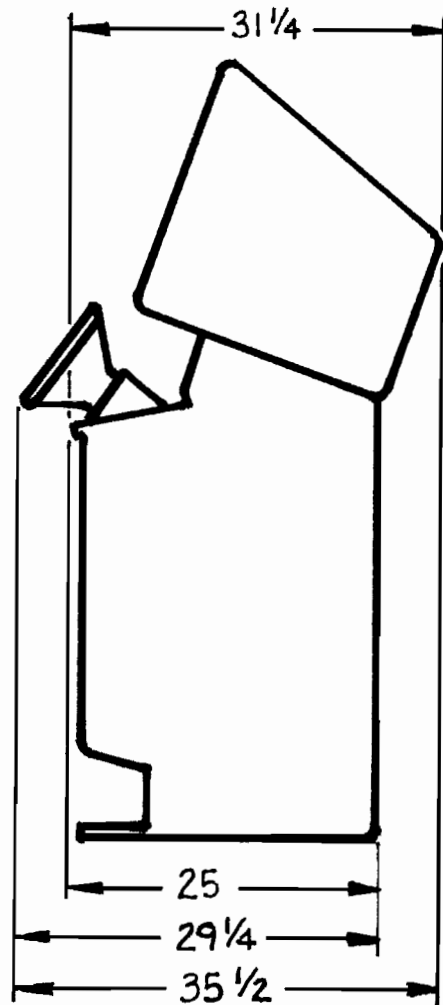
▲ — WARNING — ▲

To prevent the display enclosure from sliding off the cabinet base, do not remove the two wing nuts and the washers from the enclosure; loosen them only.

4. From the front, grasp the two sides of the display enclosure, and slide it backwards four inches from the control panel until the drilled holes, located on the bottom of the enclosure, are in position so that the screws can be replaced.
5. Replace the two button-head screws and washers.

Table 1-2 Super Sprint Moving Instructions

Door Size	With the Display Enclosure in the Shipping Position	With the Display Enclosure in the Playing Position
30 inches	Remove the display enclosure (29 1/4"). This is a two-person operation.	Remove the display enclosure (29 1/4"). This is a two-person operation.
32-34 inches	Remove the control panel (31 1/4").	Move the display enclosure forward, and remove the control panel (31 1/4").
36 inches	Remove the control panel (31 1/4").	Remove the control panel (35").
40 inches or greater	No adjustments or removal are necessary.	No adjustments or removal are necessary.



6. Tighten the two wing nuts underneath the display enclosure.
7. To return the display enclosure to the shipping (forward) position, reverse the order of these steps.

Control and Switch Locations

The following control and switch descriptions are for both the U.S. and the Irish versions of the Super Sprint game. See Figures 1-1 and 1-3 for the illustrations showing the locations of the controls and switches.

Power On/Off Switch

The power on/off switch is located at the bottom rear of the cabinet. (See Figure 1-1.)

Volume Control

The volume control is located opposite the coin door on the Audio II PCB on the inner cabinet wall. The volume control adjusts the level of sound produced by the game.

Coin Counter

The coin counter is located opposite the coin door on the inner cabinet wall below the Audio II PCB. The coin counter records the number of coins deposited.

Self-Test Switch

The self-test switch is located behind the coin door on the Audio II PCB. The self-test switch selects the Self-Test Mode to check game operation. Refer to Chapter 3 for a complete description of self-test operation.

Coin and Game Option Settings

The Super Sprint cabinet has two dual-in-line package (DIP) option switches located on the CPU printed circuit board (PCB).

- The option switch at location 6/7A is used for selecting coin options.
- The option switch at location 5/6A is used for selecting game options.

The coin and the game option settings are displayed in the Self-Test Mode. Refer to the *Switch Settings* section in Chapter 3 for information on the coin and credit option settings, and the game option settings. This section also provides the default (recommended) settings and the procedure for selecting the options.

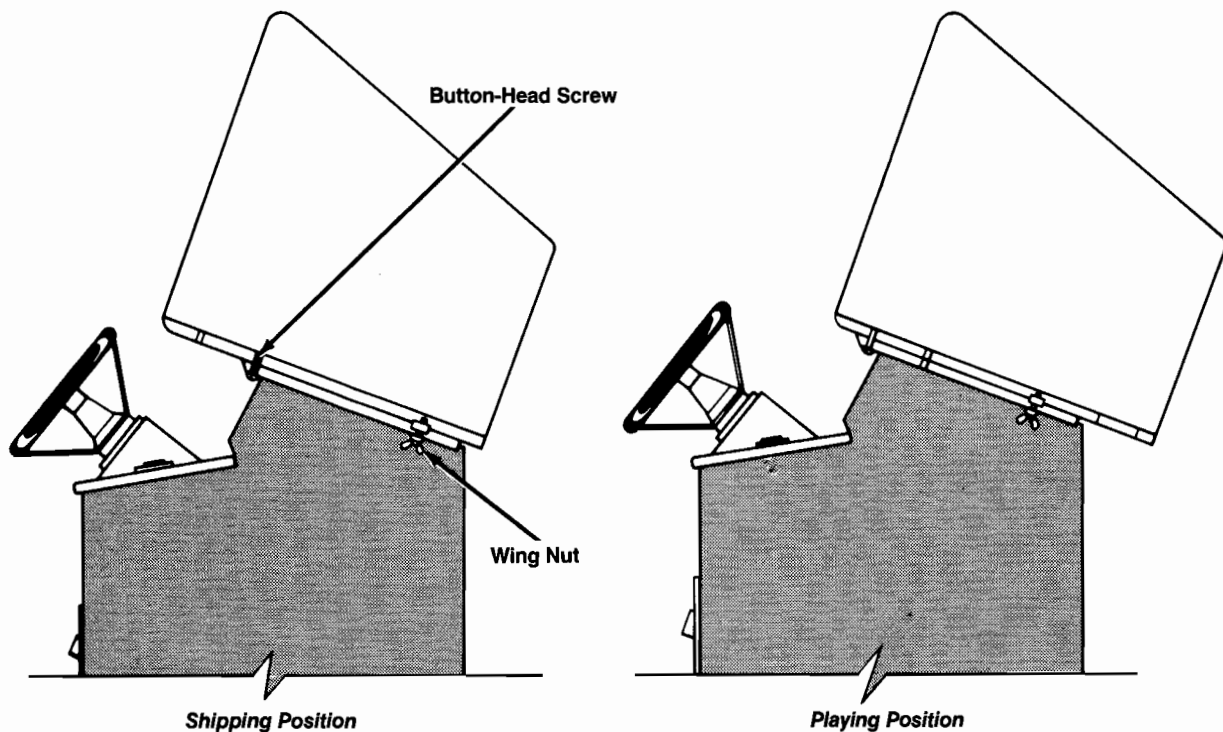


Figure 1-2 Moving the Display Enclosure into Position

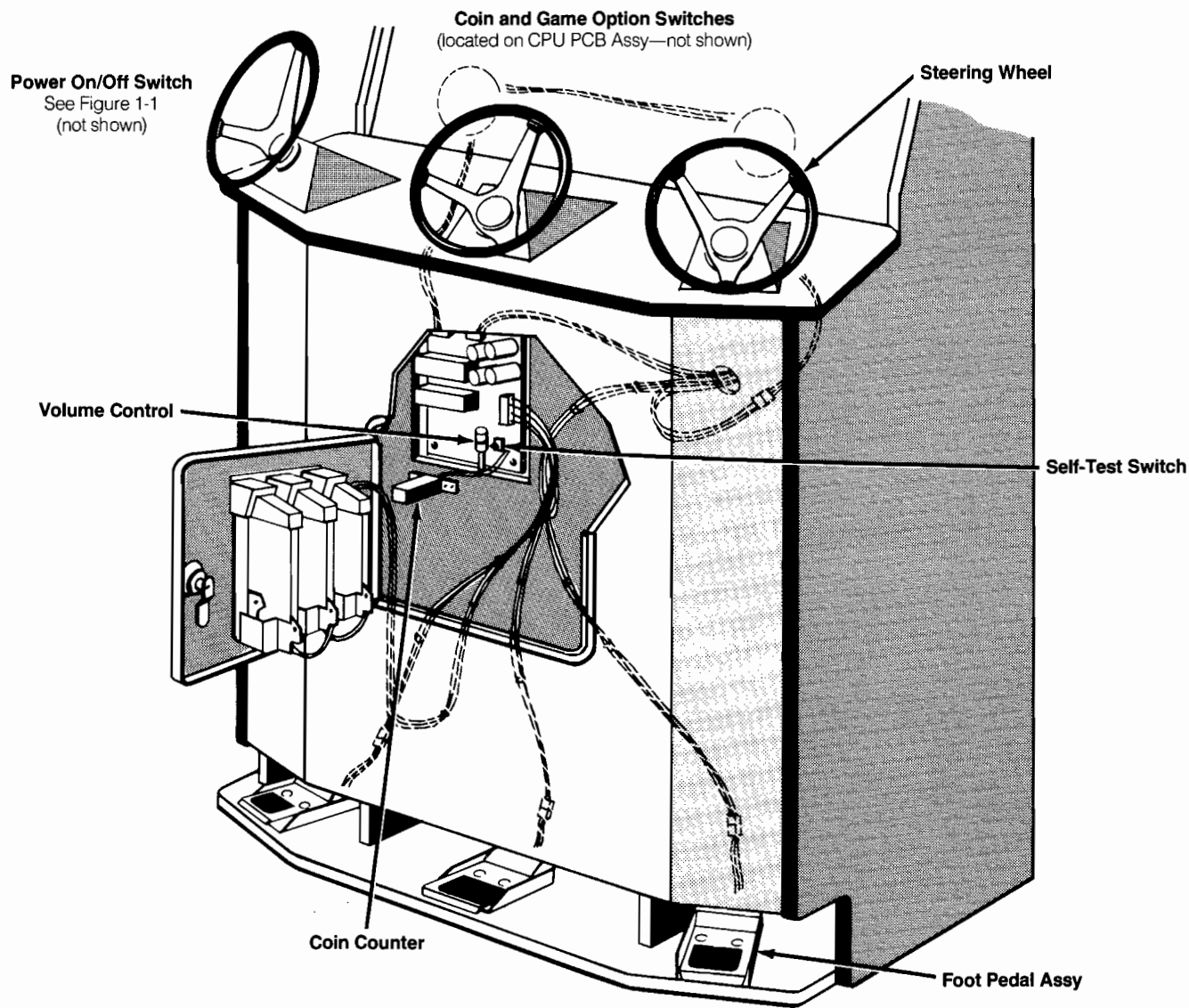


Figure 1-3 Control and Switch Locations

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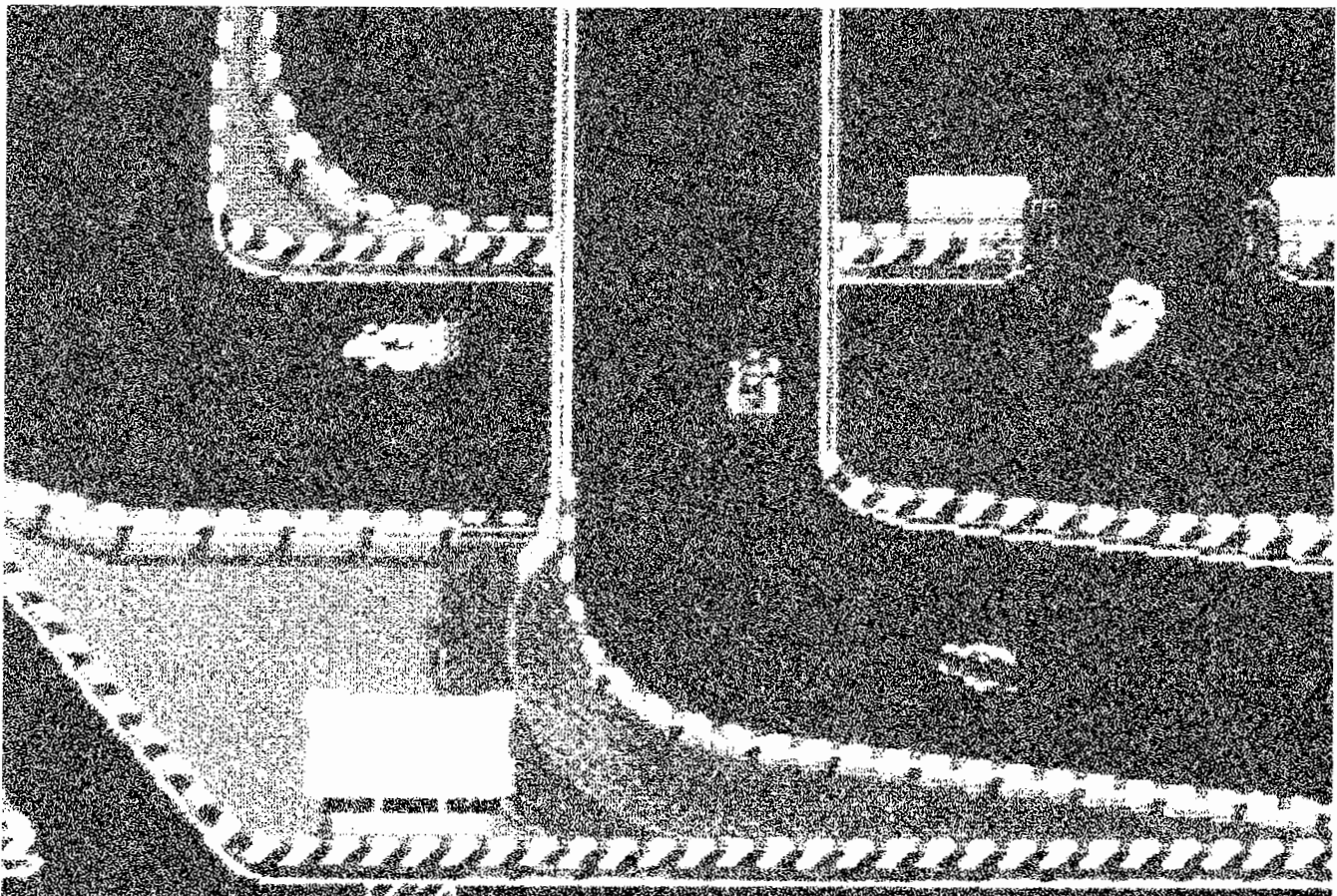
Game Play

Introduction

Super Sprint™ is a one, two, or three-player driving game where the players compete against each other and against computer-controlled cars, or drones. Each racing heat consists of four laps around the track. Four cars compete during each heat. The number of players determines the number of competing drone cars (e.g., if three players play, there will be only one drone car). Each player must beat all drone cars to continue on to the next heat. Losing players can stay in the game by adding another coin.

Player controls consist of a start button, a steering wheel, and an accelerator pedal.

Up to three players can play at once. A new player can enter the game whenever one of the steering wheels is available. If players enter during the middle of a heat, they are shown a *Please Stand By* message and will automatically be started on the next heat.



Operating Modes

Super Sprint has four operating modes: Attract, Play, High Score, and Self-Test.

Play Mode

The game play begins once players select a car by depositing coins into the proper coin slot. One coin slot is designated for each of the three player cars: blue, red, or yellow. The first player to press start is given the option to select one of eight unique starting tracks. A select screen displays all tracks. Players choose the desired starting track by using the steering wheel to indicate the desired track, and by pressing the accelerator pedal to start the game on the chosen track.

At the starting line, a green flag indicates the race is on. During the race, the lead player's score is flashing. A white flag appears when the last lap is on. At the finish line, a checkered flag awaits the winner. At the end of each heat, players go to the "Winner's Circle" where racing statistics show the players' rankings, their best lap times, and their average lap times. Players who beat the drone cars continue in the game by going on to the next heat. Each new heat takes place on a new track.

During each race, players compete to collect gold wrenches that appear randomly on each track. These wrenches are a key element in the game because players can trade them in for custom car features. Players can customize their cars to suit their driving skills with the following options:

Super Traction—gives players more maneuverability around sharp turns.

Turbo Acceleration—gets players off to a fast start at the beginning of the game or after they crash.

Higher Top Speed—helps players stay in the lead, only if they can handle the high speed. (Beginning players learn quickly that this feature should be used with more practice.)

There are five levels of each of these features for a total of 15 custom car bonuses. Players are also given an unlimited option of *increased score*, to motivate more skillful players who can gradually acquire all 15 car bonuses. Operators can select the number of wrenches required for each car bonus. Super Sprint is shipped on a 3-wrench-per-bonus setting.

These bonus wrenches also provide additional player incentives that result in higher earnings: Players get to keep acquired custom car features if they lose to a drone car, as long as they use the add-a-coin feature in the game. Also, bonus wrenches are awarded to new players who enter a game on the more difficult tracks.

Super Sprint has eight different tracks, each one introducing new challenges. Jump ramps, opening and closing gates, hidden short cuts, over/under passes, and banked turns all require special driving maneuvers. Throughout each heat, players are introduced to new track obstacles such as oil spills, twisters, traffic cones, and "poppers." Special bonus score pads also appear that players can run over for points. Players will crash whenever they hit a wall at high speeds. Each time they crash, they must wait for a recovery period, indicated by the rescue helicopter that comes on the screen.

To complete the driving experience, Super Sprint has detailed animation and custom stereo music with realistic sound effects.

High Score Mode

In the High Score Mode, if a player's score is among the top 30, initials can be entered by using the steering wheel to select and pressing the start button or accelerator pedal to insert the desired initial.

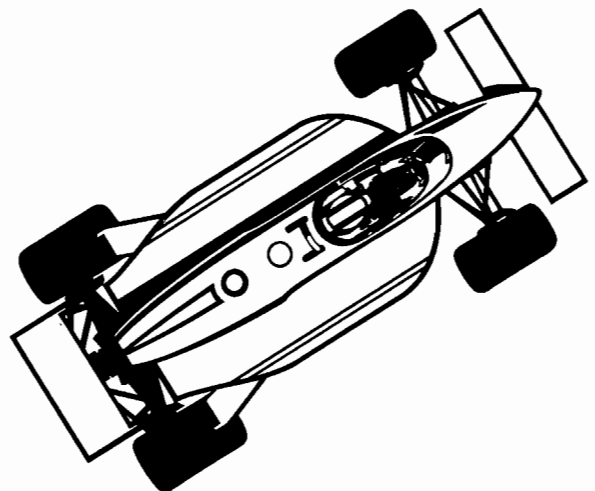
Maximizing Earnings

The key to maximum earnings is striking a midpoint on game times. Initially, game times should be short enough to allow higher player turnover. At the same time, game times must be long enough to give the player good value and ensure repeat play.

Super Sprint has a comprehensive statistics and coin accounting package, which is described in greater detail in Chapter 3 of this manual. To find out whether or not your players are getting adequate value for their money, you should evaluate the following information.

NOTE

For your convenience, a pre-printed, tear-out statistics sheet is included at the back of this manual. Use this sheet to track your Super Sprint game statistics.



Average Game Times/Average Time Between Coin Drop

Two statistics are crucial in evaluating the appropriate option settings on your Super Sprint game. First, check the average game time which is shown in the Accounting Information screen in the Self-Test Mode. If the game is set at the factory-recommended settings, initial game times should average between 2:00 and 3:00. If this is not the case, you should then check the average time between coin drop, which can be calculated by two readings shown on the Accounting Information screen.

To calculate: divide the total play time by the total games: $((\text{No. of hours played} \times 60 + \text{minutes}) \div \text{total games}) \times 60 = \text{seconds between coin drop}$. This number should range from 65 to 90 seconds.

If a high percentage of your average game times are under 90 seconds, and your average time between coin drop is under 50 seconds, the current game settings may be too difficult. You should consider changing the drone difficulty to the EASY setting. If game times are still too short

after one or two weeks, try changing the track hazard difficulty to the EASY setting.

Conversely, if a high percentage of your average game times are over 3:30, and your average time between coin drop is over 100 seconds, the current game settings may be too easy. Try changing the drone difficulty and the track hazard difficulty options to the MEDIUM HARD setting.

NOTE

The previously mentioned recommendations are based on one coin per play, U.S. currency.

Self-Test Mode

You can set the Super Sprint game to the Self-Test Mode by turning on the self-test switch located on the Audio II PCB. This printed-circuit board is mounted opposite the coin door on the inner cabinet wall. Refer to Chapter 3 of this manual for detailed self-test information.

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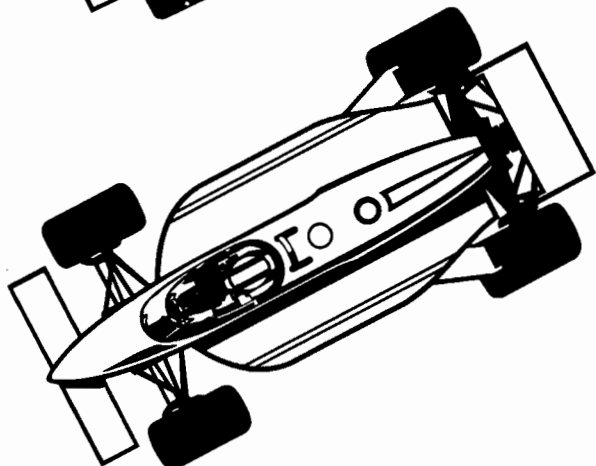
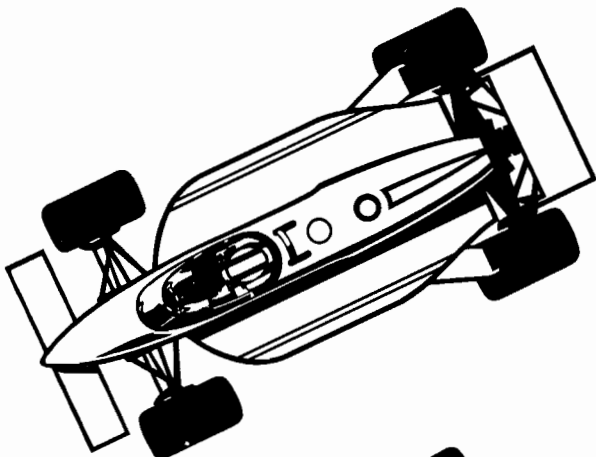
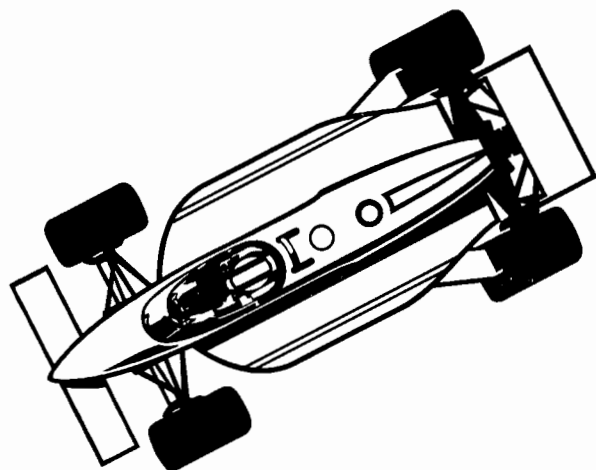
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Chapter 3

Self-Test



This game tests itself and provides visual and audible indications of the condition of the game circuitry and controls. Self-test information is displayed on the screen and sent through the sound system. No additional equipment is required.

We suggest that you perform a self-test when you first set up the game, each time you collect the money, or when you suspect game failure. Coin and game option settings are displayed in the Self-Test Mode.

Thirteen self-test screens provide a visual and audible check of the Super Sprint™ game circuits. Refer to Chapter 1 for the self-test switch location.

The Self-Test Mode can be entered immediately after turning on the game power, either from the Play Mode or from the Attract Mode. If the self-test switch is turned on during the Play or the Attract Mode, the first display to appear is the 6502 Processor Test. By pressing the red start (center) button, the self-test advances to the Pedal Test. The self-test then advances from the Pedal Test to the end. The game power must be turned off, the self-test switch turned on, and the game power turned on again to start the self-test with the RAM/Interrupt/ROM Test.

The following self-test procedure is presented in the sequence in which the self-test screens appear when the self-test switch is turned on and *then* the game power is turned on. Turning off the self-test switch at any time during the self-test causes the game to return to the Attract Mode.

NOTE

During any of the self-tests, press the red start (or center) button to advance to the next screen.

RAM/Interrupt/ROM Test

The RAM/Interrupt/ROM Test screens are shown in Figures 3-1, 3-2, and 3-3. These screens display the failure information for the RAM, interrupt, and program ROM circuitry on the CPU and Video PCBs. If the RAM/Interrupt/ROM test passes, the display advances to the 6502 Processor Test.

The RAM test checks the condition of the T-11 microprocessor RAM, zero page RAM, motion object RAM, play-field RAM, alphanumeric RAM, and associated circuitry located on the Video PCB. If the RAM test fails, an error message gives the location of the failed RAM or associated circuitry on the Video PCB as shown in Figure 3-1.

If the zero-page RAM or associated circuitry fails, the screen turns red and the address location of the failed component flashes continuously to facilitate troubleshooting.

After the RAM test passes, the interrupts on the CPU and Video PCB are checked. If the interrupt test fails, an error

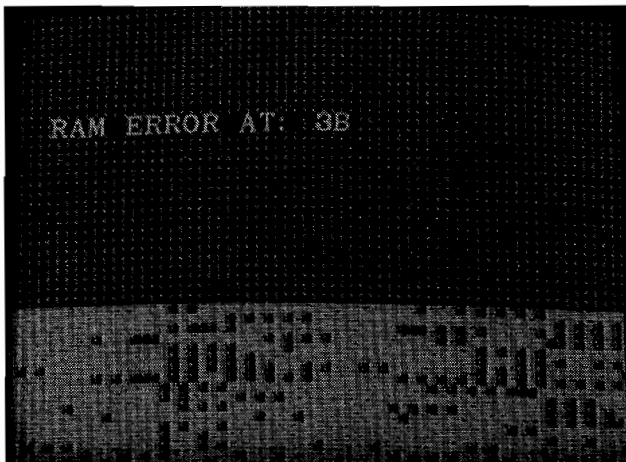


Figure 3-1 RAM Test Fails

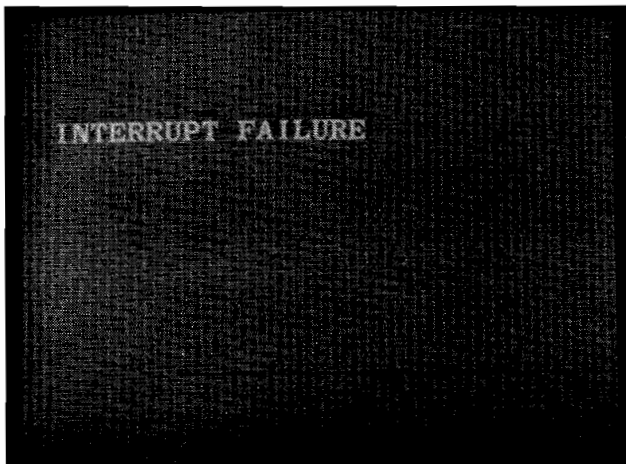


Figure 3-2 Interrupt Test Fails

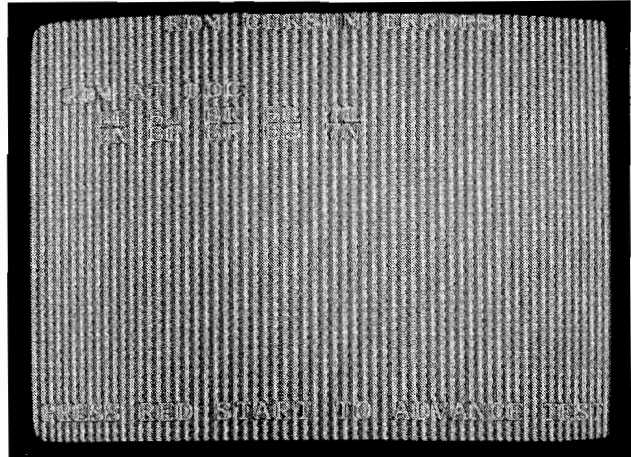


Figure 3-3 ROM Test Fails

message as shown in Figure 3-2 can appear on a green screen, which indicates a possible vertical-blanking or interrupt-logic failure.

After the interrupt test passes, all eight of the program ROMs on the CPU PCB are tested for checksums. If the ROM test fails, an error message gives the location of the failed ROM or associated circuitry as shown in Figure 3-3.

To exit from the RAM/Interrupt/ROM Test and obtain the Switch Test screen, press and hold down the red start button for about a second, and then release.

6502 Processor Test

The 6502 Processor Test screen provides visual and audible information to indicate the condition of the 6502 sound microprocessor and associated circuitry. All functions of the sound microprocessor are checked including: RAM/ROM, interrupts, music synthesizer, and sound-effects processor. Basic communication between the T-11 (master) and the 6502 (slave) microprocessors is also checked.

The 6502 test starts with a reset/communications check that first resets the 6502 and then checks for proper response to start up protocol. This test checks the communications ports (T-11 to 6502 and 6502 to T-11), the 6502 reset circuit, and the general condition of the 6502.

If the 6502 circuitry does not respond properly to the reset, the system retries the reset procedure ten times. Then an error message and retry count number is displayed as shown in Figure 3-4.

If the 6502 circuitry fails to reset through all ten attempts, a communications error message is displayed as shown in Figure 3-5.

If the reset/communications check passes, then the condition of the 6502 microprocessor, RAM, ROM, interrupts, music (Yamaha) synthesizer, and associated cir-

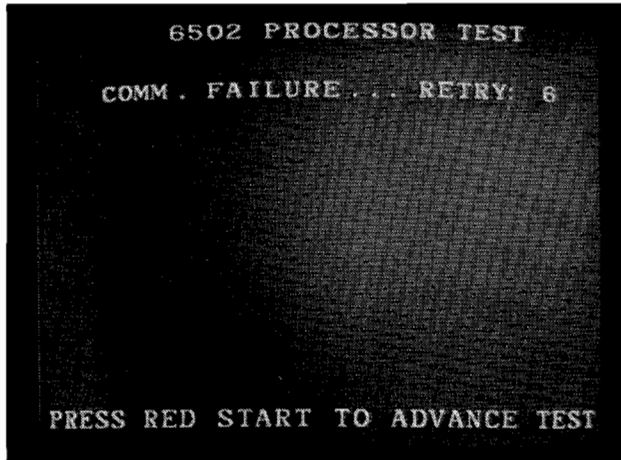


Figure 3-4 Reset Retry

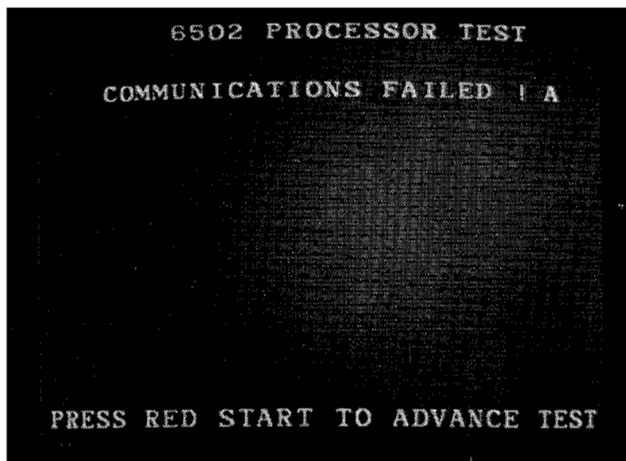


Figure 3-5 Communications Fails

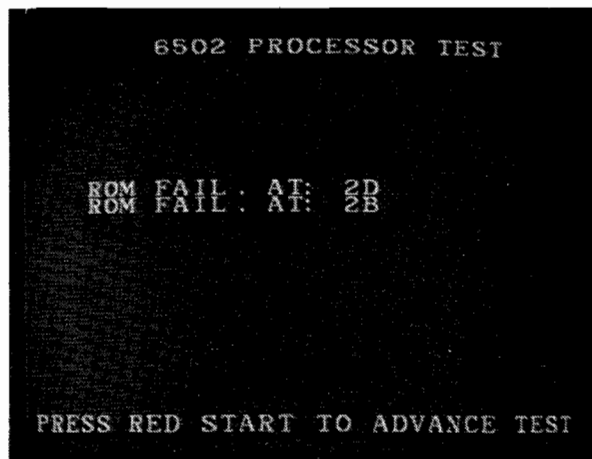


Figure 3-6 Music/RAM/ROM Fails

cuitry is checked. If one or more of these circuits fails, an error message is displayed as shown in Figure 3-6.

If the RAM, ROM, and music synthesizer check passes, then the music (Yamaha) synthesizer, and sound-effects generator (POKEY) sound outputs are checked. As each of these three tests is run, an appropriate message is displayed as shown in Figure 3-7.

- *YAMAHA TEST* consists of eight tones in a major scale that alternate between left and right sound channels (16 tones total).
- *L. POKEY TEST* consists of four tones in a major chord that come from the left sound channel.
- *R. POKEY TEST* consists of four tones in a major chord that come from the right sound channel.

After the three sound output tests are completed, the sound status messages are displayed as shown in Figure 3-8.

- *NUMBER OF SOUNDS* is the total number of sounds used in the Super Sprint game.
- *CURRENT SOUND* is the current sound selected for playing.

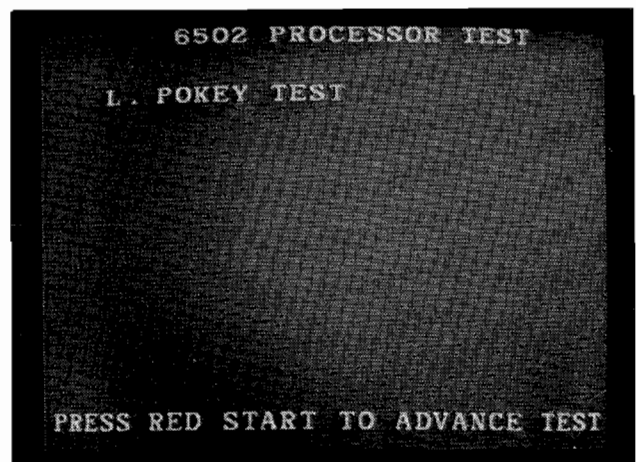


Figure 3-7 Sound Output

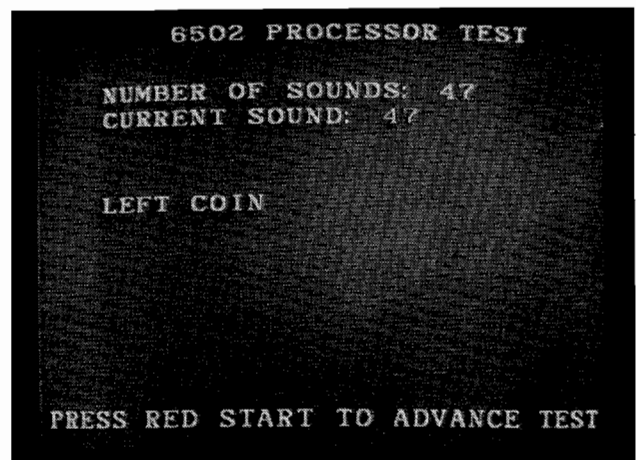


Figure 3-8 Sound Status

Press the blue car button to select the sound numbers indicated by the *CURRENT SOUND* message shown in Figure 3-8. Turn the blue car steering wheel to sequence through the selected sounds.

The sound status screen also indicates the condition of the left, right, and auxiliary coin switches. Press the left, center, and right coin switches, and check the screen for a corresponding *LEFT COIN*, *CENTER COIN*, and *RIGHT COIN* message. (See Figure 1-3 in Chapter 1 for the switch locations.)

Press the red start button to obtain the next screen.

Pedal Test

The Pedal Test screen is shown in Figure 3-9. This screen indicates the condition of the three foot pedal potentiometers, A/D converter, blue car and yellow car switches, and associated circuitry. (It is assumed that the red start switch works because it was used to advance to this screen.) The Pedal Test screen is also used to calibrate the foot pedal potentiometers.

Press the blue car button to obtain the Pedal Test screen shown in Figure 3-9.

If the range of the foot pedal potentiometers (low to high) is large enough, then the message *OK* is displayed next to the appropriate control range reading. If the range is too small, then the message *BAD* is displayed.

Calibration Procedure

The foot pedal controls are calibrated at the factory and should recalibrate themselves during game play. However, if the foot pedals do not respond correctly, calibrate each one as follows:

1. Press and hold down the blue car button. Press the red car button once.
2. While holding down the blue button, cycle each foot pedal to its extreme up and down positions. Check the

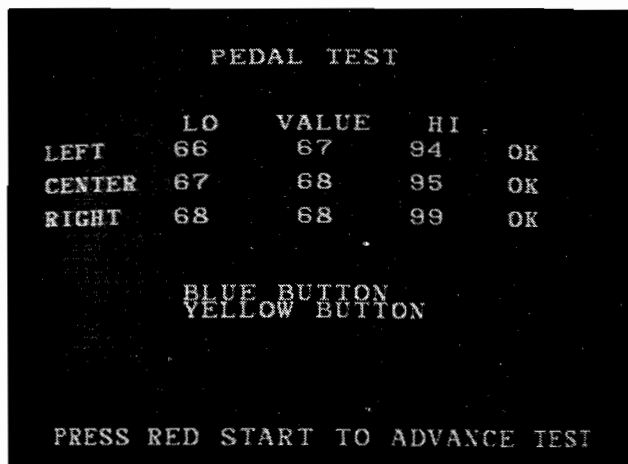


Figure 3-9 Pedal Test Passes

- display screen; each foot pedal range should read *OK*. Then release the blue car button.
3. If the problem persists, check the physical alignment of each foot pedal potentiometer.

Press the red start button to obtain the next screen.

Leta Test

The Leta Test screen is shown in Figure 3-10. This screen indicates the condition of the steering wheel circuitry. Each wheel should display a zero value when the wheel is idle. Turning each wheel in either direction should change at least one of the zero values to a non-zero value.

Press the red start button to obtain the next screen.

Alphanumeric Test

The Alphanumeric Test screen is shown in Figure 3-11. This screen indicates the condition of the alphanumeric ROM, alphanumeric color palettes, and associated circuitry.

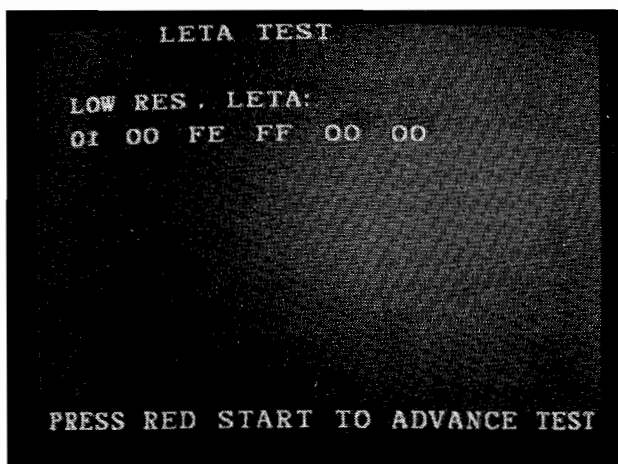


Figure 3-10 Leta Test

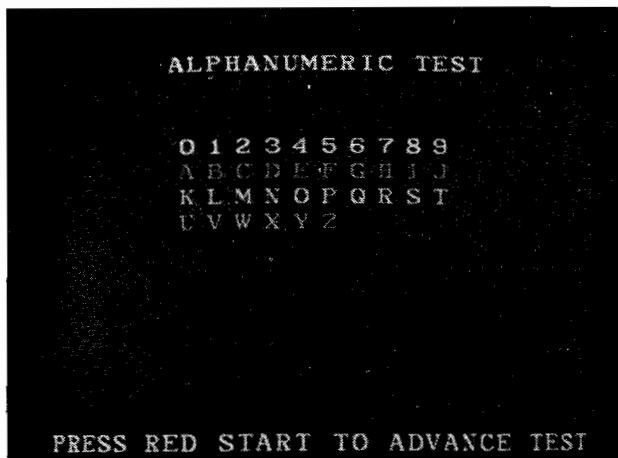


Figure 3-11 Alphanumeric Test

The displayed alphanumeric characters are in four rows, with the first row white, the second row red, the third row yellow, and the fourth row green. If not, then there may be a problem with the color palette select circuits.

Press the red start button to obtain the next screen.

Scrolling Playfield Test

The Scrolling Playfield Test screen is shown in Figure 3-12. This screen indicates the condition of the playfield ROM, playfield display circuits, and playfield color palettes.

The display in Figure 3-12 shows a racetrack. Turn the blue car (left) steering wheel to control forward and backward scrolling. Turn the red car (center) steering wheel to control the right and left scrolling. Note that the display scrolls correspondingly.

Press the red start button to obtain the next screen.

Motion Object Test

The first Motion Object Test screen is shown in Figure 3-13. This test indicates the motion object horizontal and vertical display locations, motion-object color palettes, and the motion/playfield prioritizing logic circuit.

The Motion Object Test screen should show 39 motion objects and four colored boxes (numbered 0 through 3). The left two boxes (0 and 1) should be red, and the right two boxes (2 and 3) should be green. The motion objects should be colored (from left to right) blue, light blue, purple, and white. Any error in color can indicate a problem with the color palette select circuits.

Turn the blue car steering wheel to control forward and backward scrolling, and the red car steering wheel to control right and left scrolling. Note that the currently displayed motion object moves correspondingly. Move the motion object across the four colored boxes. Note that the motion object moves *behind* the red boxes and *in*

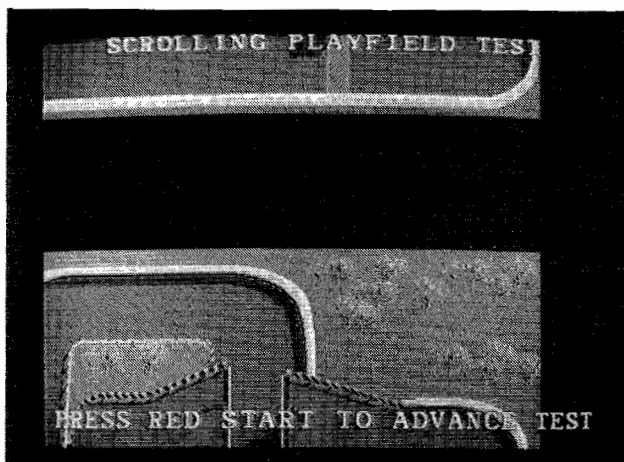


Figure 3-12 Scrolling Playfield Test

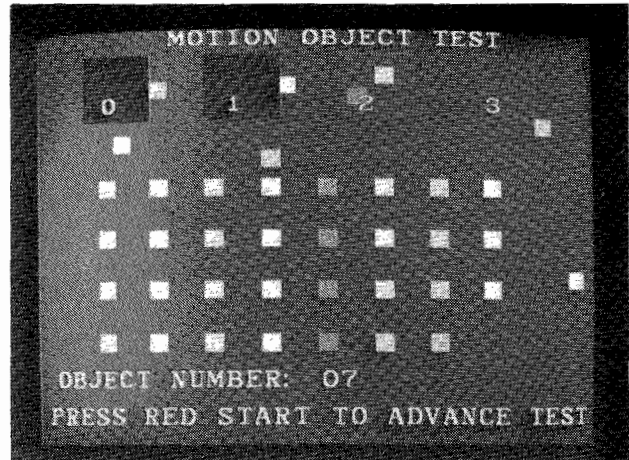


Figure 3-13 Motion Object Test

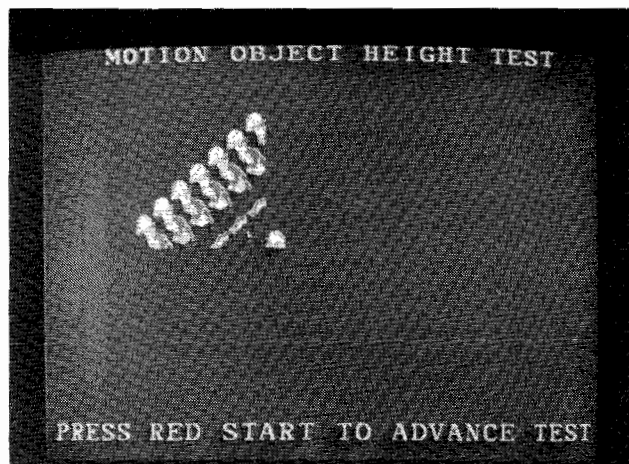


Figure 3-14 Motion Object Height Test

front of the green boxes. Press the blue car button to select the next motion object and repeat the preceding procedure. This procedure checks the prioritizing logic circuitry.

Press the red start button to obtain the next screen.

Motion Object Height Test

The Motion Object Height Test screen is shown in Figure 3-14. This test indicates the motion object height circuit and the horizontal load disable circuit.

Each successive column of motion objects should be 16 pixels taller than the last. The top 16 pixels of each column should be the same. Each column should add a new 16x16 pixel stamp picture to the bottom and slide the previous one up by 16 pixels. Turn the blue car and the red car steering wheels to move the entire picture around on the screen. Press the blue car button to obtain a new set of motion objects.

Press the red start button to obtain the next screen.

Color Bar Test

The Color Bar Test screen is shown in Figure 3-15. This test indicates the condition of the color RAM, video amplifiers, and associated circuitry.

Sixteen vertical grey-scale bars and three groups of sixteen vertical bars with shades of red, green, or blue are displayed. The brightest bar should be on the left and darkest (black) bar on the right, with a black frame around the screen. Each group of red, green, or blue should be split in half horizontally to show two fade scales. Each upper fade scale is ranged by changes in overall intensity (Z) and each lower fade scale by individual color intensity (R, G, B). This test helps to determine if white tracking is set properly (grey-scale bars range from white to grey). Refer to the white tracking procedure in the video display manual if adjustment is required.

Press the red start button to obtain the next screen.

Color Purity Test

The Color Purity Test consists of five color displays that indicate the condition of the display color-purity circuits. The first display to appear should be a red screen with the word *RED* displayed at the bottom of the screen as shown in Figure 3-16.

Press the blue car button, and the next display to appear should be a green screen with the word *GREEN* displayed at the bottom of the screen. Press the blue car button to obtain a blue, white, and finally a grey screen. After the grey screen, the display will repeat the same sequence.

If the display characteristics are not correct, refer to the video display manual for the color-purity adjustment procedure or the possible cause of failure.

Press the red start button to obtain the next screen.

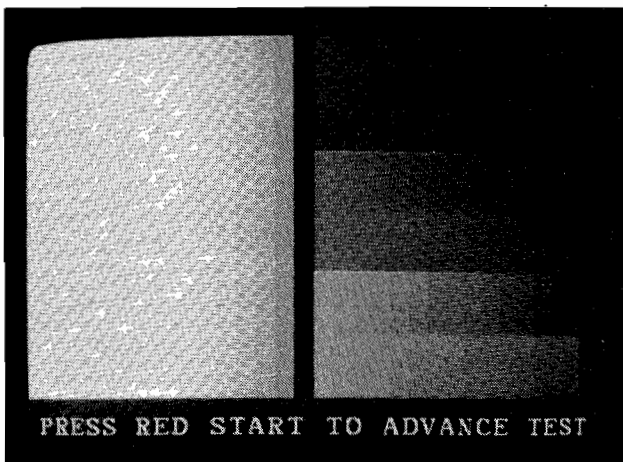


Figure 3-15 Color Bar Test

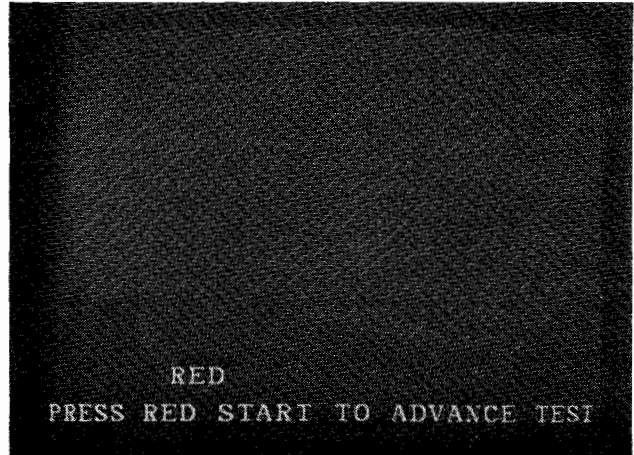


Figure 3-16 Color Purity Test

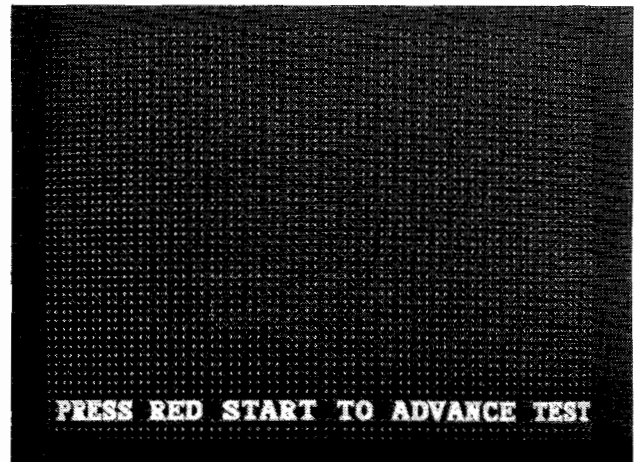


Figure 3-17 Convergence Test

Convergence Test

The Convergence Test screen is shown in Figure 3-17. This test indicates the condition of the display size, centering, linearity, and convergence.

A violet dot pattern displays the red-to-blue convergence. Press the blue car button to obtain a white-dot convergence pattern. Convergence between any two colors should not exceed 0.7 mm in the middle of the screen and 1.2 mm in the corners. This pattern can also be used to set up screen size, centering, and brightness (black level).

Press the red start button to obtain the next screen.

Accounting Information

The Accounting Information is shown in Figure 3-18. This screen provides a visual check of the current game statistics. The statistics information is accumulated either from the first time the game was turned on or from the last time the statistics were reset.

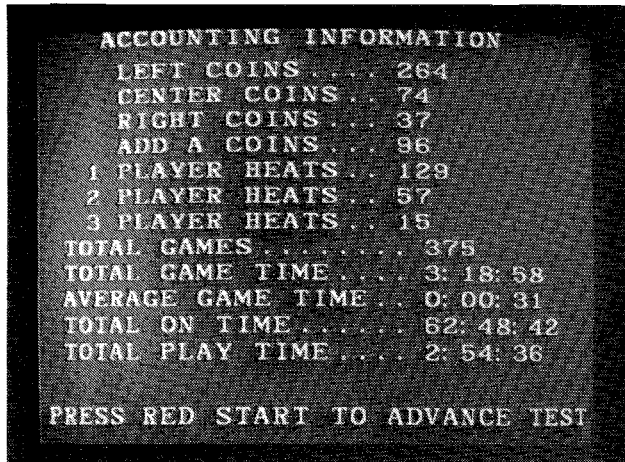


Figure 3-18 Accounting Information

The following game statistics appear on the Accounting Information screen:

- *LEFT COINS* shows the total number of coins deposited in the left or blue car coin mechanism.
- *CENTER COINS* shows the total number of coins deposited in the center or red car coin mechanism.
- *RIGHT COINS* shows the total number of coins deposited in the right or yellow car coin mechanism.
- *ADD A COINS* shows the total number of coins deposited in all coin mechanisms during the add-a-coin mode of game play only.
- *1 PLAYER HEATS* shows the total number of heats or races that were run with one player only.
- *2 PLAYER HEATS* shows the total number of heats or races that were run with one or two players.
- *3 PLAYER HEATS* shows the total number of heats or races that were run with one, two, or three players.
- *TOTAL GAMES* shows the total number of coins deposited in all coin mechanisms.
- *TOTAL GAME TIME* shows the accumulated time of all one-, two-, and three-player games played in hours, minutes, and seconds.
- *AVERAGE GAME TIME* shows the total game time divided by the total number of games in hours, minutes, and seconds.
- *TOTAL ON TIME* shows the total time in hours, minutes, and seconds that the game has been turned on.
- *TOTAL PLAY TIME* shows the total time in hours, minutes, and seconds that the game has been played (percent usage = total play time/total on time).

The game statistics are accumulated from the first time the game is turned on or from the last time the statistics were reset.

Reset Saved Information Screen

The Reset Saved Information screen is shown in Figure 3-19. This screen resets the high score table and the accounting information. Use the following procedure to reset these items:

1. Press the yellow car button to select the item to reset.
2. Press the blue car button to change the *NO* message to *YES*.
3. Press the red start button to reset the selected tables. After a brief *PLEASE WAIT* message is displayed, the self-test automatically advances to the next screen.

Switch Settings

The Switch Settings screen is shown in Figure 3-20. This screen indicates the current coin and credit option settings, and the game option settings of the two dual-in-line package (DIP) switches at locations 6/7A and 5/6A on the CPU PCB.

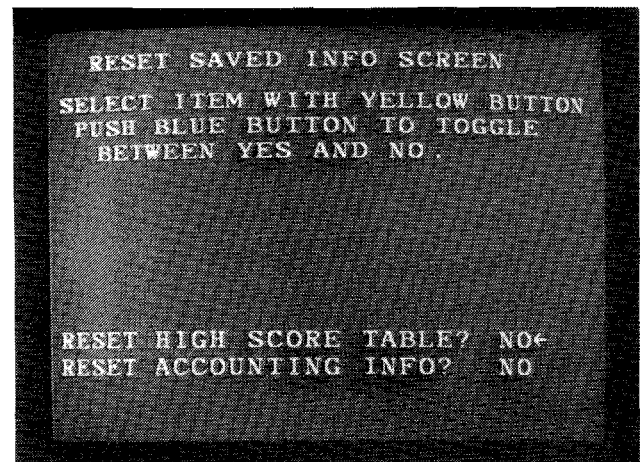


Figure 3-19 Reset Saved Information Screen

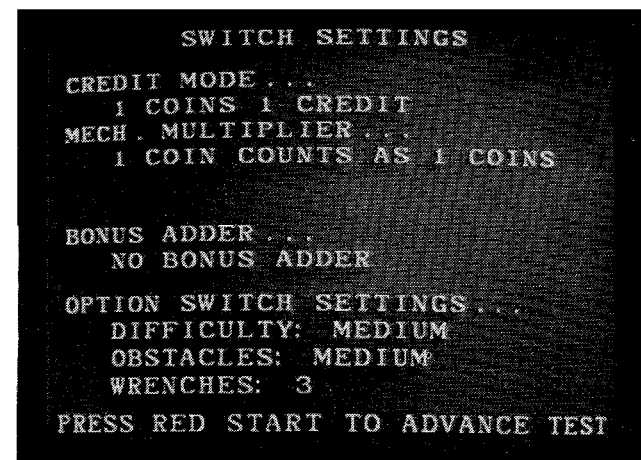


Figure 3-20 Switch Settings

- The option switch at location 6/7A is used for selecting the coin and credit options.
- The option switch at location 5/6A is used for selecting the game options.

Set the coin and credit option settings and the game option settings by changing the settings of the DIP switches located on the CPU PCB. Refer to Table 3-1 and Table 3-2 for the available options and default (recommended) settings.

To change these settings, first remove the thin film of plastic covering the option switch. Use a pen or a sharp-pointed instrument to slide the appropriate small buttons to different settings. Up is the *on position*, and down is the *off position*. The steering wheel controls and the push buttons are *not* used to change these settings.

Press the red start button to return to the 6502 Processor Test.

Table 3-1 Coin and Credit Option Settings

Settings of 8-Toggle Switch on Super Sprint CPU PCB (at 6/7A)								Option
1	2	3	4	5	6	7	8	
								Coins Per Credit
						Off	Off	1 Coin 1 Credit ◀
						Off	On	2 Coins 1 Credit
						On	Off	3 Coins 1 Credit
						On	On	4 Coins 1 Credit
								All Coin Mechanisms
			Off	Off	Off			1 Coin Counts as 1 Coin ◀
			Off	Off	On			1 Coin Counts as 2 Coins
			Off	On	Off			1 Coin Counts as 3 Coins
			Off	On	On			1 Coin Counts as 4 Coins
			On	Off	Off			1 Coin Counts as 5 Coins
			On	Off	On			1 Coin Counts as 6 Coins
			On	On	Off			1 Coin Counts as 7 Coins
			On	On	On			1 Coin Counts as 8 Coins
								Bonus Adder
Off	Off	Off						No Bonus Adder ◀
Off	Off	On						2 Coins Give 1 Extra Coin
Off	On	Off						4 Coins Give 1 Extra Coin
Off	On	On						4 Coins Give 2 Extra Coins
On	Off	Off						5 Coins Give 1 Extra Coin
On	Off	On						3 Coins Give 1 Extra Coin
On	On	On						Free Play

◀ *Manufacturer's recommended settings.*

Table 3-2 Game Option Settings

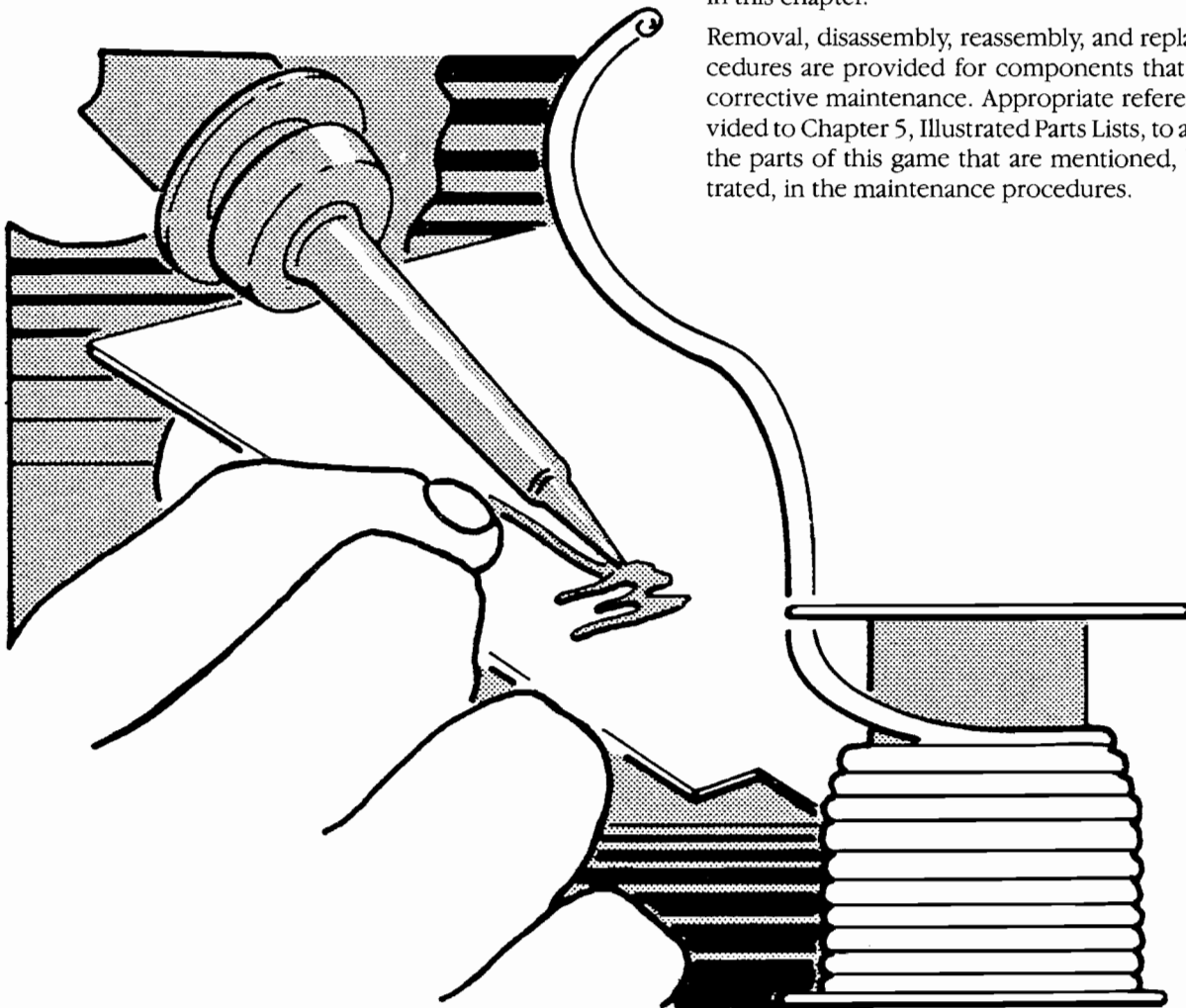
Settings of 8-Toggle Switch on Super Sprint CPU PCB (at 5/6A)								Option
1	2	3	4	5	6	7	8	
								Drone Difficulty
						Off	On	Easy
						Off	Off	Medium ◀
						On	Off	Medium Hard
						On	On	Hard
								Track Hazard Difficulty
				Off	On			Easy
				Off	Off			Medium ◀
				On	Off			Medium Hard
				On	On			Hard
								Number of Wrenches to Customize Car
		Off	On					2
		Off	Off					3 ◀
		On	Off					4
		On	On					5

◀ *Manufacturer's recommended settings.*

Maintenance

This chapter includes preventive and corrective maintenance procedures for the Super Sprint™ game components that are subject to the most use. To assure maximum trouble-free operation from this game, we recommend that preventive maintenance be performed as described in this chapter.

Removal, disassembly, reassembly, and replacement procedures are provided for components that may require corrective maintenance. Appropriate references are provided to Chapter 5, Illustrated Parts Lists, to aid in locating the parts of this game that are mentioned, but not illustrated, in the maintenance procedures.



Preventive Maintenance

Preventive maintenance includes cleaning, lubricating, and tightening hardware. How often preventive maintenance is performed depends upon the game environment and frequency of play. However, for those components listed in Table 4-1 Preventive-Maintenance Intervals, we recommend that preventive maintenance be performed at the intervals specified.

Preventive-Maintenance Intervals

The preventive-maintenance intervals specified in Table 4-1 are the recommended minimum requirements for the components listed.

⚠ WARNING ⚠

To avoid possible electrical shock, turn off the game before performing any maintenance procedures.

The 5-volt switching power supply for this game may not have a shield. This power supply has high voltages on it when power is turned on. Therefore, be sure you *do not touch this power supply* unless you have turned off the power to the game.

3. Grasp two steering wheels located on the top of the control panel, and gently tilt the control panel up toward you. Check that the control panel is held securely to the front edge of the cabinet by the hinges mounted under the front edge of the panel.
4. If you need to remove the control panel, disconnect the control panel harness from the cabinet control harness assembly located inside the coin door area.
5. Remove the three screws and washers from each of the two hinges holding the control panel to the cabinet.
6. Carefully lift the control panel from the cabinet.
7. Using a 1/8-inch hex driver, remove the six screws on the front of the speaker grille.
8. Lift the speaker grille from the cabinet.

CAUTION

Do not touch the speaker cones when handling the speakers. The cone material is fragile and can be easily damaged.

Opening the Control Panel and Removing the Speakers

Perform the following procedure to remove/replace the control panel. (See Figure 4-1.)

1. Unlock and open the coin door.
2. Carefully reach up through the coin door opening, and release the two spring-draw latches located under the control panel on each side of the cabinet. Then remove the two wing nuts and washers from the securing bracket on the underside of the control panel.

9. Using a Phillips screwdriver, remove the four screws holding the speaker to the cabinet. Do not let the speaker fall.
10. Lower the speaker just far enough to disconnect the two speaker wires.
11. Replace the speaker in the reverse order of removal. Ensure that the speakers are properly phased by placing the same color-coded connector on the same tab on each speaker.
12. Replace the control panel in the reverse order of removal.

Table 4-1 Recommended Preventive-Maintenance Intervals

Steering Wheel Control	Inspect weekly, lubricate, and tighten hardware at least every three months.
Foot Pedal Control	Lubricate, and tighten hardware at least every three months.
Coin Mechanism	Inspect and clean (if required) whenever you collect coins. Because there is only one mechanism per player, the mechanisms need to be cleaned more often than those in other games.

Cleaning the Pushbutton Leaf Switches

Perform the following procedure to clean the leaf switch contacts and tighten the securing hardware.

1. Follow the procedure described in steps 1–3 above for removing the control panel.
2. Use electrical contact cleaner to clean the contacts. Do not burnish them. When the pushbutton is pressed, the wiping action of the cross-bar contacts provides a self-cleaning feature. Then use the Self-Test to verify proper switch contact. (See Figure 1-3.)
3. Using a 15/16-inch open-end wrench, tighten the stamped nut securing the pushbutton leaf switches to the control panel.

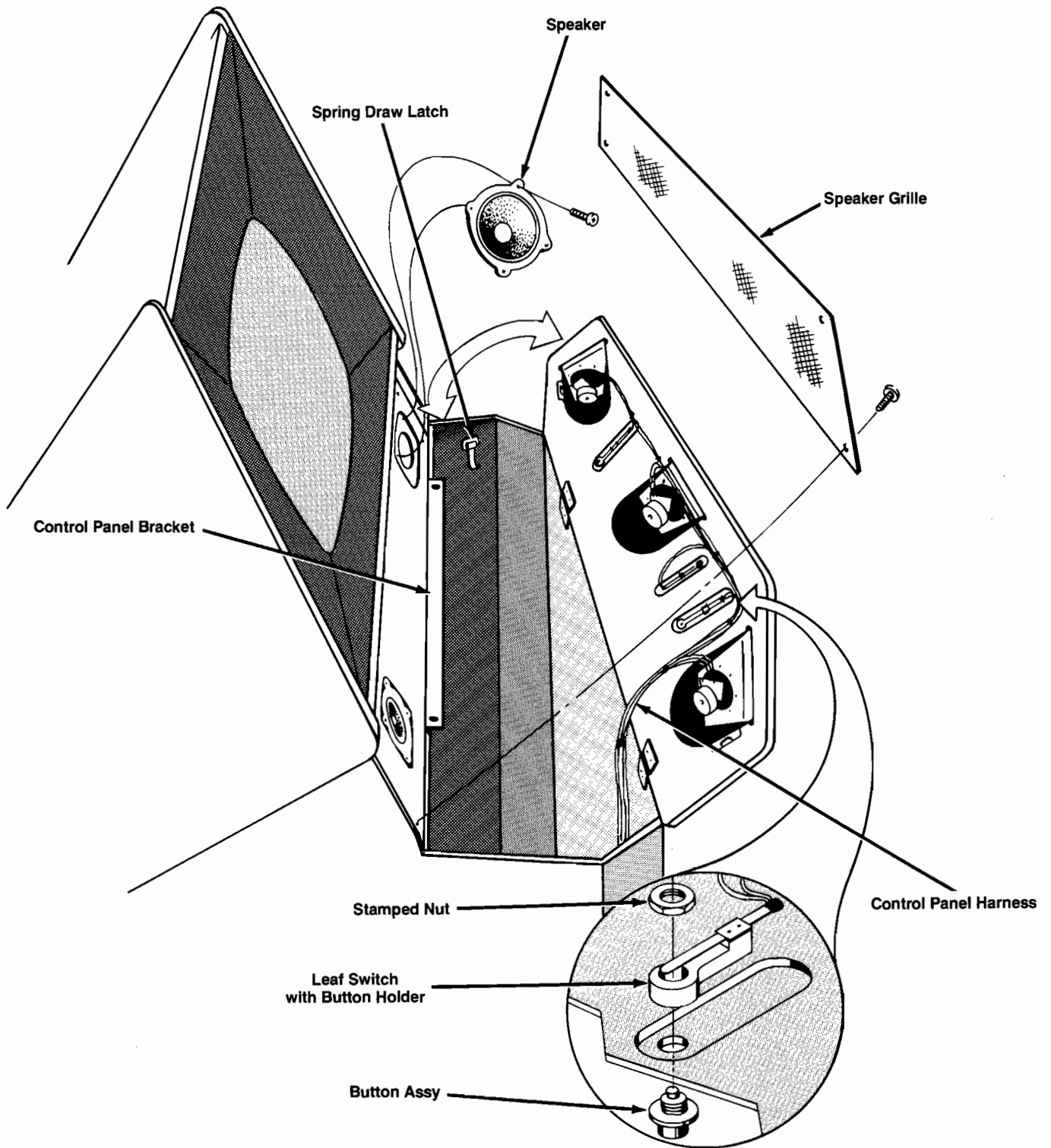


Figure 4-1 Opening the Control Panel and Removing the Speakers

Cleaning the Coin Mechanism

Use a soft-bristled brush to remove loose dust or foreign material from the coin mechanism. A toothbrush can be used to remove any stubborn build-up of residue in the coin path. After cleaning the coin mechanism, blow out all of the dust with compressed air.

Cleaning the Interior Components

Perform the following procedure to clean the components inside the cabinet.

⚠ WARNING ⚠

Turn off the game power, but do not unplug the power cord before cleaning inside the cabinet. The power cord provides a ground path for stray static voltages that may be present on the cleaning tools.

1. Unlock and remove the lower access panel.
2. Use a vacuum cleaner with a soft long-bristled brush attachment or a soft-bristled paint brush to remove loose dirt and dust accumulated on the inside of the cabinet. Be sure to clean the electrical components

thoroughly (power supplies, PCB assemblies, display, etc.).

CAUTION

Be extremely careful when cleaning the electrical components inside the cabinet. Avoid touching the electrical components with any solid object other than the soft bristles of the vacuum attachment or paint brush.

Steering Wheel Controls

Preventive maintenance on the steering wheel controls consists of inspecting the steering wheel housing for excessive wear or dirt, inspecting the Coupler PCB Assembly for damage, lubricating the friction-producing surfaces of both white bearings, and, if necessary, replacing or tightening the securing hardware.

Lubricating the Steering Wheel Controls

Perform the following procedure to lubricate and tighten the steering wheel controls. (See Figure 4-2.)

1. Open the control panel as previously described.
2. Apply a film of light oil (Atari part no. 107013-001) to the lubrication points shown in Figure 4-2.
3. Using a 5/16-inch nut driver (or an appropriate tool), tighten the screws holding the steering wheel assembly to the control panel.

Corrective Maintenance

Corrective maintenance consists of removing, disassembling, reassembling, and replacing the pushbutton leaf switches, steering wheel controls, game printed-circuit boards (PCBs), video display, foot pedal controls, and speakers.

Removing the Pushbutton Leaf Switches

Perform the following procedure to remove/replace the pushbutton leaf switches or contacts. (See Figure 4-1.)

1. Open the control panel as described in steps 1 through 3 under *Opening the Control Panel and Removing the Speakers*.
2. Using a 15/16-inch wrench, remove the stamped nut on the underside of the control panel. The button assembly on the outside of the control panel should not turn. (See Figure 4-1.)
3. Install the pushbutton switch in the reverse order of removal. Reconnect the harness wires to the switch terminals as shown in Figure 4-1.

Removing the Steering Wheel

Perform the following procedure to remove/replace the steering wheel. (See Figure 4-1.)

1. Open the control panel as described under *Preventive Maintenance*.
2. Disconnect the harness connectors from the coupler PCB connector.
3. Using a 5/16-inch nut driver, remove the six screws holding the steering wheel assembly to the control panel.
4. Lift the steering wheel assembly out of the control panel.
5. Replace the steering wheel in the reverse order of removal. Reconnect the harness connectors to the coupler PCB connector.

Disassembling the Steering Wheel

Perform the following procedure to disassemble the steering wheel assembly. (See Figure 4-2.)

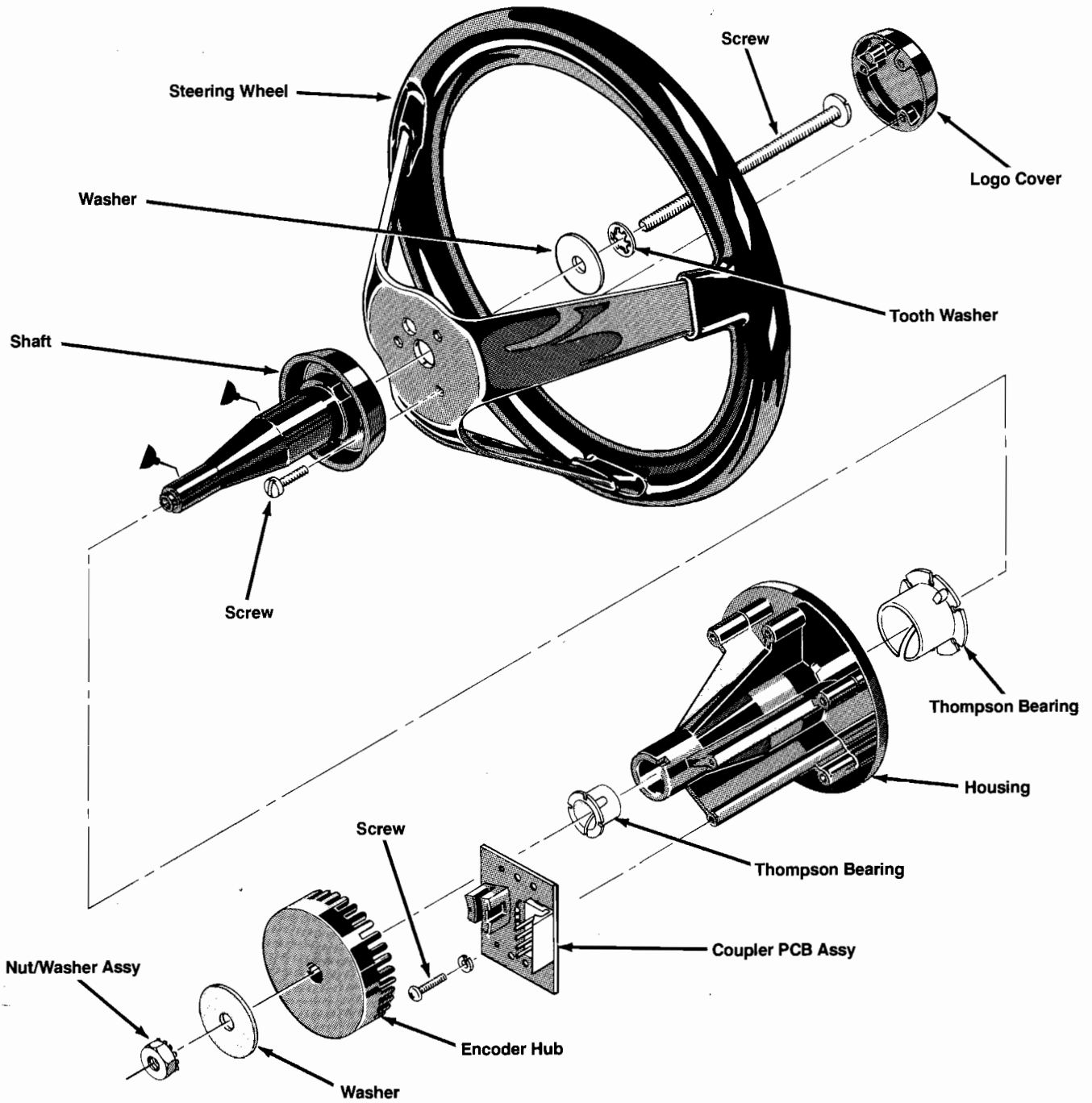


Figure 4-2 Maintaining the Steering Wheel Controls

1. Using a 5/16-inch nut driver (or appropriate tool), remove the six screws holding the steering wheel assembly to the control panel.
2. Using a 7/16-inch nut driver (or appropriate tool), remove the nut and washer from the bottom of the encoder hub.
3. Pull the shaft from the housing.
4. Remove the three screws holding the cover to the shaft.
5. Remove the ¼-inch × 5-inch screw from the shaft.

Reassembling the Steering Wheel

Replace the steering wheel parts in the reverse order of removal. After reassembling the steering wheel, be sure that the hub can spin freely in the slot of the optical coupler on the PCB.

Removing the Foot Pedal Controls

Perform the following procedure to remove/replace the foot pedal controls. (See Figure 5-6.)

1. Disconnect the foot cable assembly from the cabinet control harness assembly located inside the coin door area.
2. Using a 9/16-inch hex driver (or appropriate tool), remove the two bolts and washers holding the foot pedal frame to the cabinet base. Remove the foot pedal.
3. Replace the foot pedal in the reverse order of removal.

Removing the Game PCBs

Perform the following procedure to remove/replace the game PCBs.

CAUTION

Do not attempt to remove the CPU and Video PCBs while they are connected together. If you are going to remove both of these PCBs, remove the Video PCB first to avoid damaging the PCBs or the edge connectors.

Video PCB

Perform the following procedure to remove/replace the Video PCB. (See Figure 4-3.)

1. Turn the game power off.
2. Unlock and open the lower rear access panel.
3. Remove the four thumb nuts holding the EMI cover to the ground plane.

4. Disconnect the harness connectors from the bottom of the Video PCB.

NOTE

The brass thumb nuts are easy to cross-thread. Use care when installing and tightening them.

5. Remove *one* of the two thumb nuts and spacers holding the top of the Video PCB (and the bottom of the CPU PCB) to the ground plane. Loosen, but do not remove, the other thumb nut.
6. Remove the two thumb nuts holding the bottom of the Video PCB to the ground plane. Carefully hold the Video PCB in place to prevent the PCB from falling or causing excessive bending at the edge connector.
7. Remove the remaining thumb nut and spacer that was loosened in step 5. Gently disconnect the Video PCB from the CPU PCB.
8. Replace the Video PCB by first connecting the Video PCB to the CPU PCB edge connector. Carefully position both the Video and CPU PCBs so that the holes (in the bottom of the CPU PCB and at the top of the Video PCB) are aligned. Partially install one thumb nut and spacer through both of the PCBs and into the corresponding ground plane post.
9. Install and tighten the two thumb nuts holding the bottom of the CPU PCB to the ground plane.
10. Install the remaining thumb nut holding the top of the Video PCB (and bottom of the CPU PCB) to the ground plane.
11. Finger-tighten both thumb nuts holding the top of the Video PCB (and bottom of the CPU PCB) to the ground plane.
12. Connect the harness connector to the bottom of the Video PCB.

NOTE

To comply with emission requirements, the Federal Communications Commission requires that the Video PCB Assembly be housed in the EMI cover. *Do not operate* this game without properly installing the EMI cover, metal spacers, and thumb nuts.

CPU PCB

Perform the following procedure to remove/replace the Central Processing Unit (CPU) PCB. (See Figure 4-3.)

NOTE

To comply with emission requirements, the Federal Communications Commission requires that the Video PCB Assembly be housed in the EMI Cover. *Do not operate this game without properly installing the EMI Cover, metal spacers, and thumb nuts.*

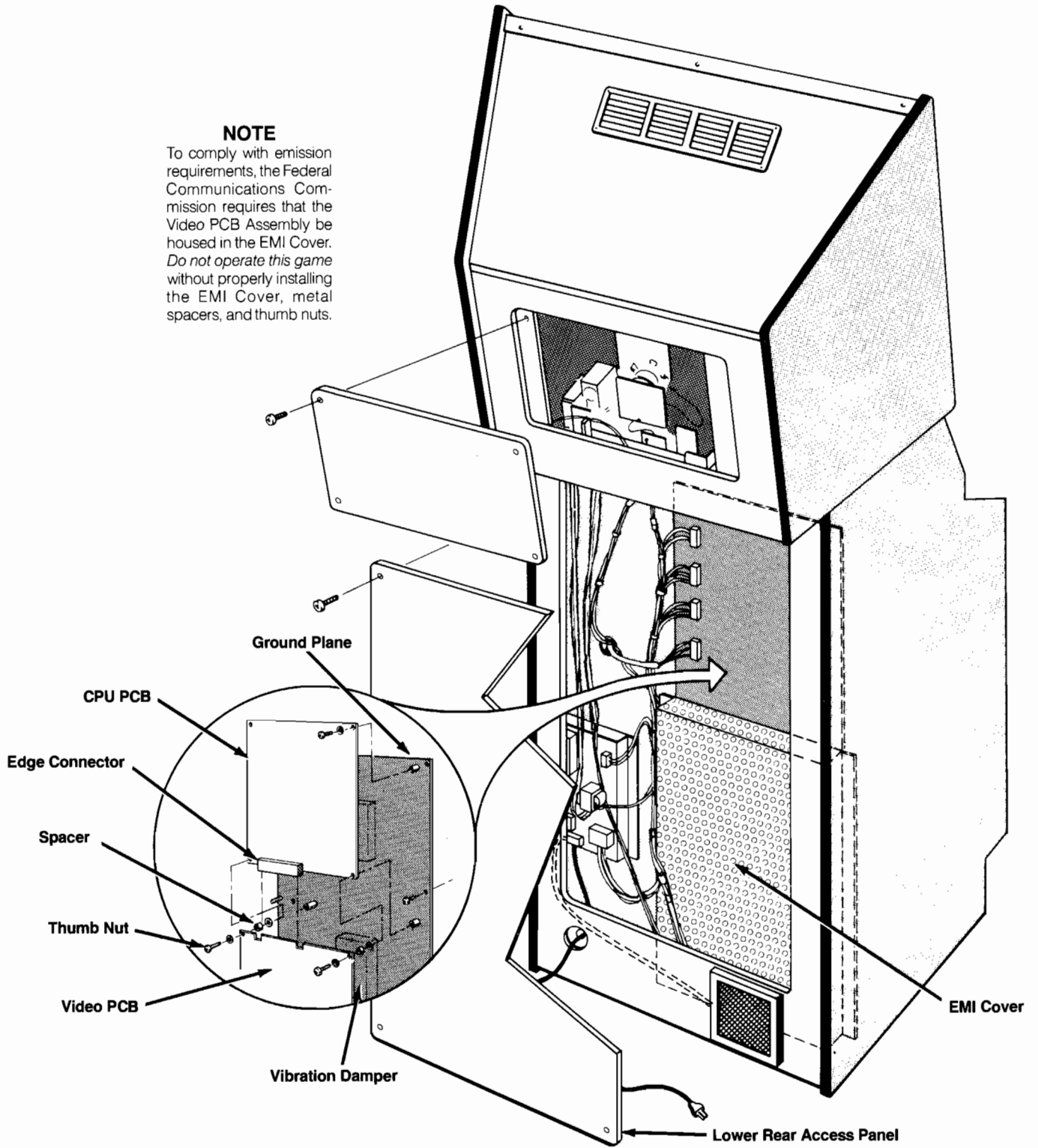


Figure 4-3 CPU and Video PCB Removal

NOTE

If the Video PCB has already been removed, disconnect the harness connectors from the left edge of the CPU PCB, then remove the two thumb nuts holding the top of the CPU PCB to the ground plane. Remove the CPU PCB.

1. Turn the game power off.
2. Unlock and open the lower rear access panel.
3. Remove the four thumb nuts holding the EMI cover to the ground plane.
4. Disconnect the harness connectors from the left edge of the CPU PCB.
5. Remove the four thumb nuts holding the CPU PCB (and the top of the Video PCB) to the ground plane.
6. Gently disconnect the CPU PCB from the Video PCB.
7. Replace the CPU PCB by first connecting the CPU PCB to the Video PCB edge connector. Carefully position both the CPU and the Video PCBs so that the holes (in the bottom of the CPU PCB and at the top of the Video PCB) are aligned. Partially install one thumb nut and spacer through both of the PCBs and into the corresponding ground plane post.
8. Install and tighten the two thumb nuts holding the top of the Video PCB to the ground plane.
9. Install the remaining thumb nut holding the bottom of the CPU PCB (and the top of the Video PCB) to the ground plane.
10. Finger-tighten both thumb nuts holding the bottom of the CPU PCB (and the top of the Video PCB) to the ground plane.
11. Connect the harness connectors to the left edge of the CPU PCB. (See Figure 4-3 for the proper connector locations.)

Removing the Video Display

Perform the following procedure to remove/replace the video display. (See Figure 4-4.)

1. Turn the game power off and wait two minutes. Unplug the power cord.
2. Using a 1/8-inch hex driver, remove the three screws holding the upper retainer to the cabinet. Remove the retainer.
3. Remove the video display shield and the display bezel.
4. Using a Phillips screwdriver, remove the four screws holding the service door to the cabinet.

WARNING**High Voltage**

The video display contains lethal high voltages. To avoid injury, do not attempt to service this display until you observe all precautions necessary for working on high-voltage equipment.

X-Radiation

The video display has been designed to minimize X-radiation. However, to avoid possible exposure to soft X-radiation, **never** modify the high-voltage circuitry.

Implosion Hazard

The cathode-ray tube may implode if struck or dropped. Shattered glass may cause injury within a 6-foot radius. Use care when handling the display.

5. Discharge the high-voltage from the cathode-ray tube (CRT) before proceeding. The display assembly contains a circuit for discharging the high voltage to ground when power is removed. However, to make certain, always discharge the display as follows.
 - a. Attach one end of a large, well-insulated, 18-gauge jumper wire to ground.
 - b. Momentarily touch the free end of the grounded jumper to the CRT anode by sliding it under the anode cap.
 - c. Wait two minutes, and repeat part b.
6. From the back of the cabinet, unplug the display harness connectors from the display.

WARNING

To avoid dropping the video display, use extreme care when removing the display from the cabinet. We recommend that a second person *carefully* hold the display chassis from the back of the cabinet while the other person lifts it from the front of the cabinet.

7. Using a 5/32-inch Allen wrench, reach through the front of the display enclosure, and remove the four screws and washers holding the video display to the display enclosure base.
8. Carefully slide the display out through the front of the cabinet.
9. Replace the video display as described in the following procedure.

NOTE

Whenever the cathode-ray tube is replaced, readjust the brightness, size, centering, purity, and convergence as described in the display manual.

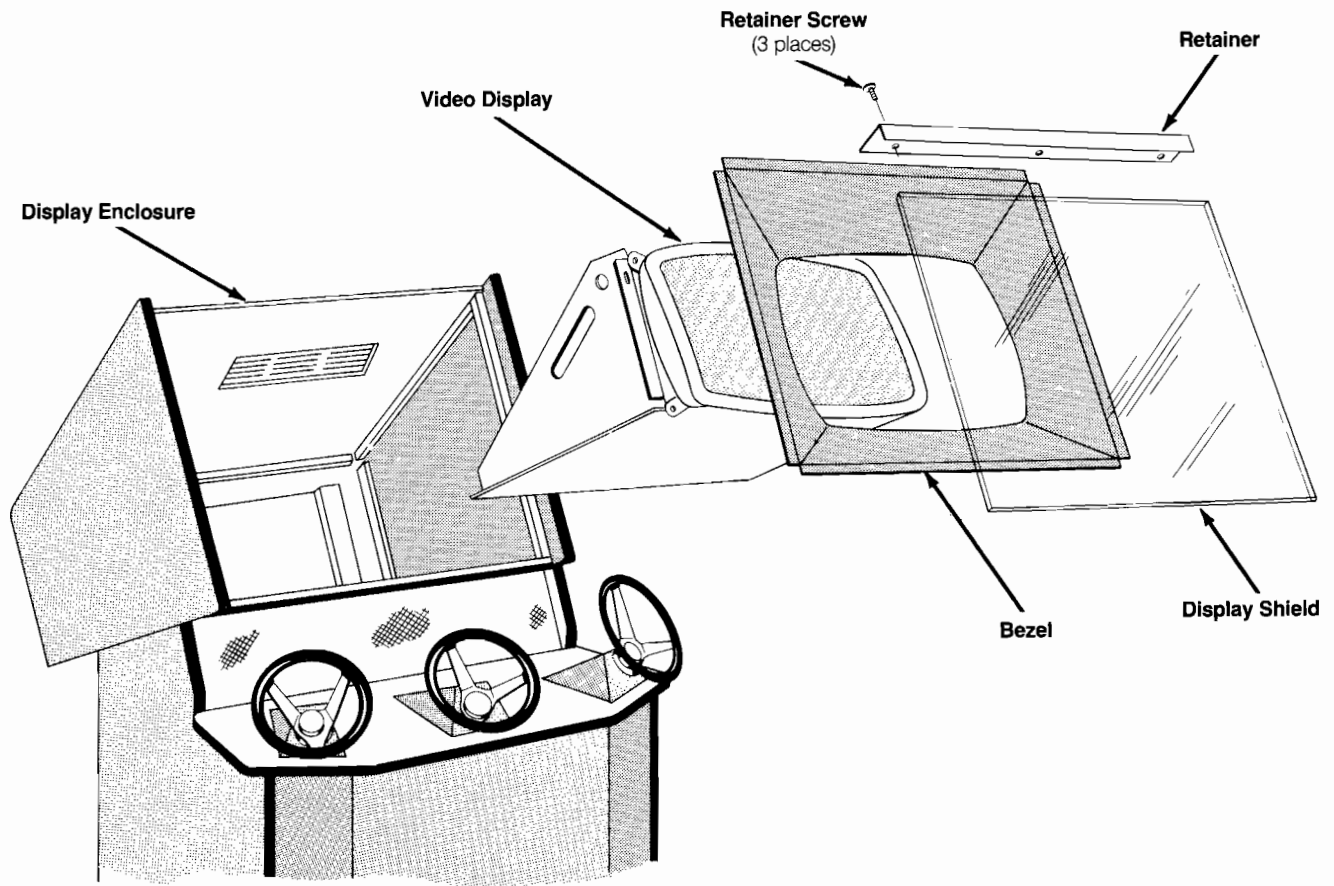


Figure 4-4 Video Display Removal

Replacing the Video Display

Perform the following procedure to replace the video display in the cabinet. (See Figure 4-4.) Note that *this procedure requires a second person* to help hold the display in position while the other person tightens the mounting screws.

⚠ WARNING ⚠

To avoid dropping the video display, use extreme care when replacing the display in the cabinet. We recommend that a second person *carefully* hold the display chassis from the back of the cabinet while the other person places it in the front of the cabinet.

1. Gently place the video display through the front of the display enclosure and onto the base.
2. Position the display so that the four slots in the chassis are aligned with the corresponding mounting holes in the display enclosure base.
3. From the front of the display enclosure, insert the four screws and washers into the four slots in the chassis and through the mounting holes in the base.
4. Place the display bezel into the display opening and position it so that it is centered.
5. Using a staple gun, staple the display bezel securely to the cabinet.
6. Connect the display harness to the display PCB.
7. Adjust the display. Refer to the the adjustment procedure in the video display manual shipped with this game.

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Illustrated Parts Lists

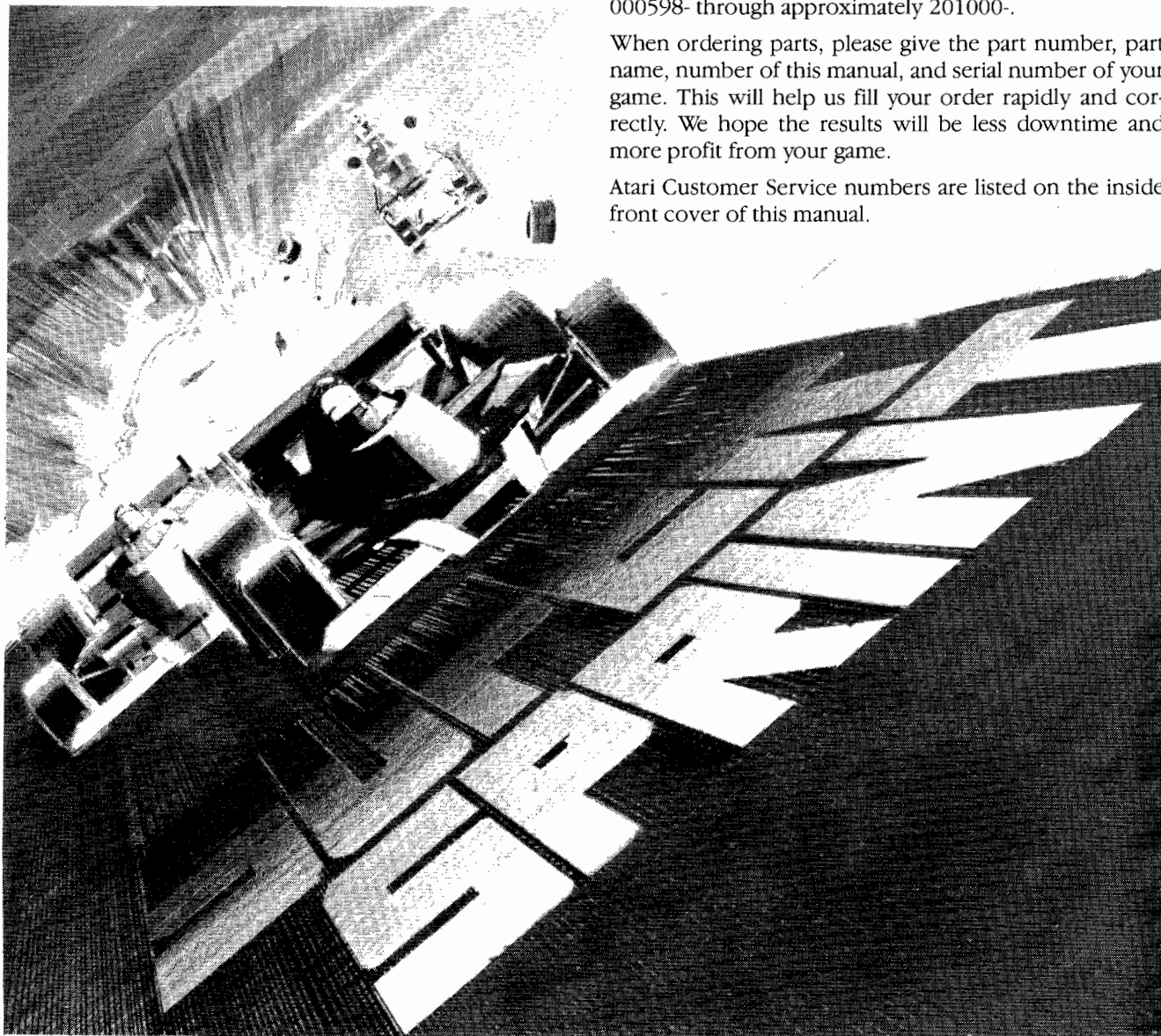
This chapter provides information you need to order parts for your game. Common hardware (screws, nuts, washers, etc.) has been deleted from most of the parts lists.

The PCB parts lists are arranged in alphabetical order by component. Each component subsection is arranged alphanumerically by reference designator.

Other parts lists are arranged alphanumerically by Atari part number. In these parts lists, all A-prefix numbers come first. Following these are numbers in sequence evaluated up to the hyphen, namely 00- through 99-, then 000598- through approximately 201000-.

When ordering parts, please give the part number, part name, number of this manual, and serial number of your game. This will help us fill your order rapidly and correctly. We hope the results will be less downtime and more profit from your game.

Atari Customer Service numbers are listed on the inside front cover of this manual.



- ★ Part used only in US-built cabinets
- ☼ Part used only in Ireland-built cabinets

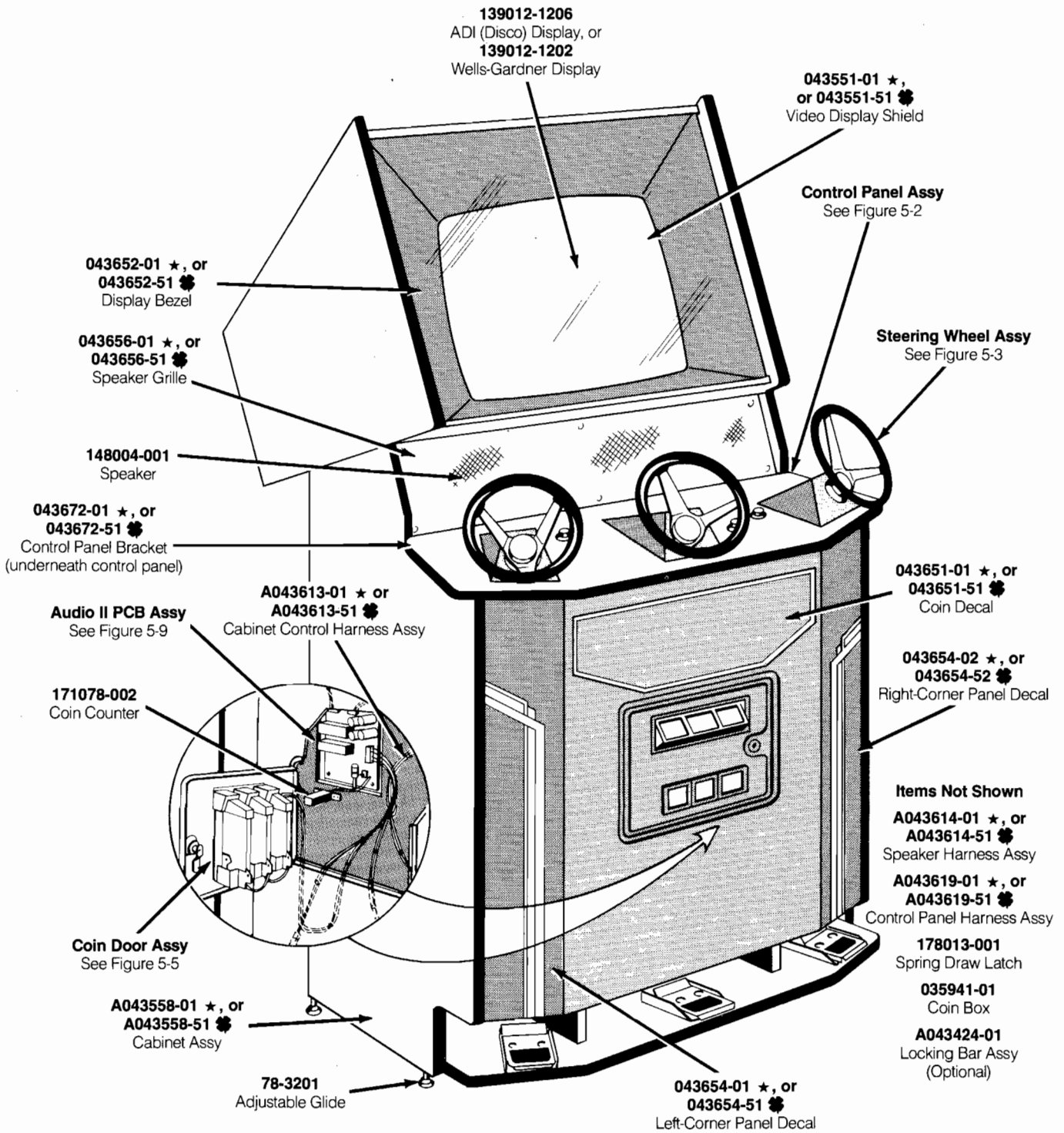


Figure 5-1 Cabinet-Mounted Assemblies
043558-01 B (US)
and A043558-51 B (Ireland)

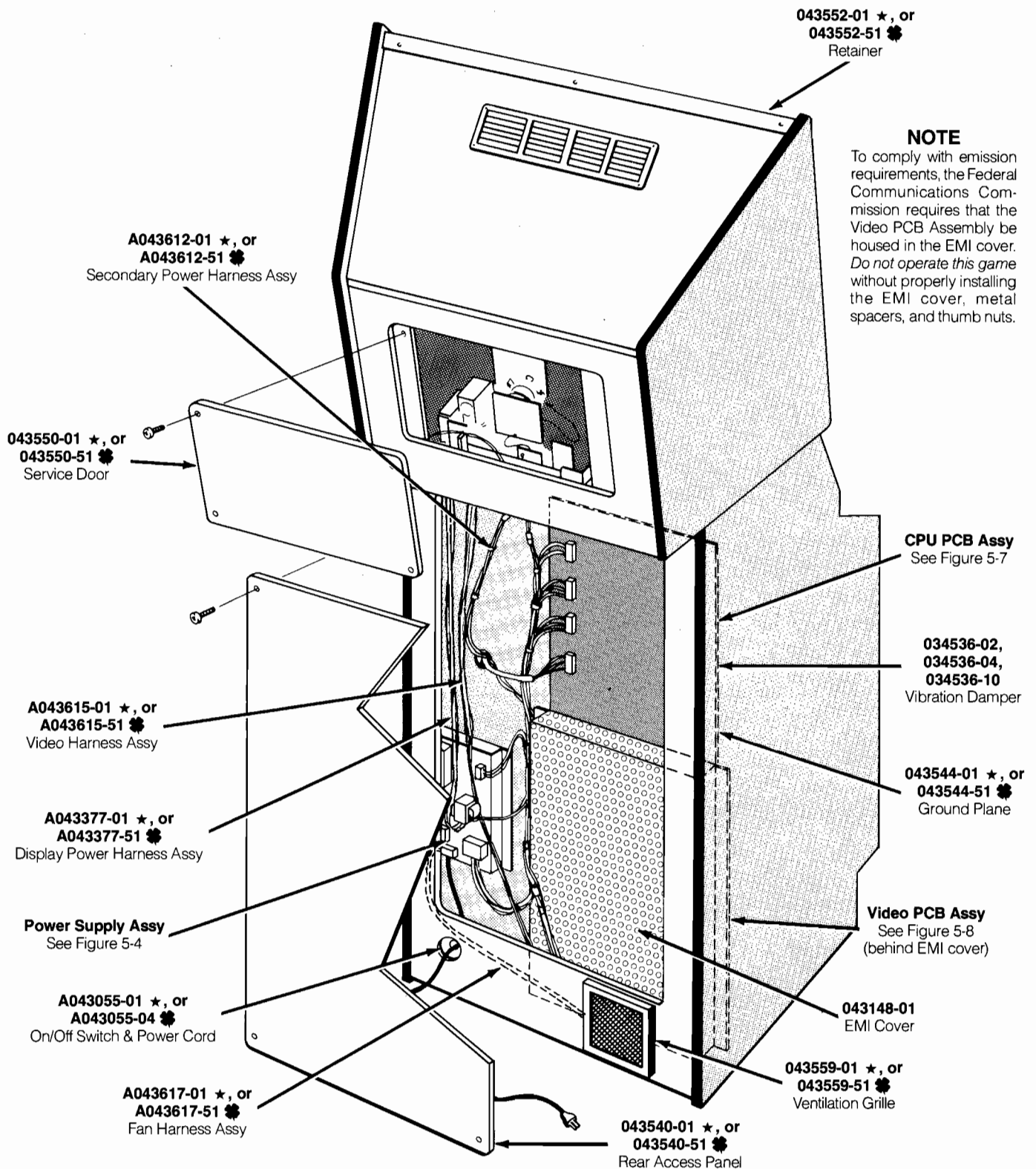


Figure 5-1 Cabinet-Mounted Assemblies, Continued

Cabinet-Mounted Assemblies Parts List

Part No.	Description
A043055-01	On/Off Switch with Power Cord (or A043055-04 for Ireland)
A043612-01	Secondary Power Harness Assembly (or A043612-51 for Ireland)
A043613-01	Cabinet Control Harness Assembly (or A043613-51 for Ireland)
A043615-01	Video Harness Assembly (or A043615-51 for Ireland)
A043617-01	Fan Harness Assembly (or A043617-51 for Ireland)
A043377-01	Display Power Harness Assembly (or A043377-51 for Ireland)
A043424-01	Locking Bar Assembly (optional—used with coin door)
A043558-01	Cabinet Assembly (A043558-51 for Ireland)
A043614-01	Speaker Harness Assembly (or A043614-51 for Ireland)
A043658-01	Cabinet Base and Display Enclosure Assembly (or A043658-51 for Ireland)
78-3201	Adjustable Glide
78-6900402	1/4-Inch-Wide × 1/8-Inch-Thick Foam Tape (32 inches required)
021699-01	Coin Box Lid (or 021699-51 for Ireland)
030247-01	Coin Box Handle (or 030247-51 for Ireland)
034536-02	1/2-Inch-Thick Foam Vibration Damper
034536-04	1/2-Inch-Thick Foam Vibration Damper
034536-10	5/8-Inch-Thick Foam Vibration Damper
035851-01	Control Panel Hinge
035941-01	Coin Box
043148-01	EMI Cover
043540-01	Rear Access Panel with Lock (or 043540-51 for Ireland)
043544-01	Ground Plane (or 043544-51 for Ireland)
043550-01	Display Enclosure Service Door (or 043550-51 for Ireland)
043551-01	Display Shield (or 043551-51 for Ireland)
043552-01	Display Enclosure Retainer (or 043552-51 for Ireland)
043559-01	Ventilation Grille (or 043559-51 for Ireland)
043607-01	Coin Box Bracket (or 043607-51 for Ireland)
043651-01	Coin Decal (or 043651-51 for Ireland)
043652-01	Video Display Bezel with Graphics (or 043652-51 for Ireland)
043654-01	Left-Corner Side-Panel Decal (or 043654-51 for Ireland)
043654-02	Right-Corner Side-Panel Decal (or 043654-52 for Ireland)
043656-01	Speaker Grille (or 043656-51 for Ireland)
043672-01	Control Panel Bracket (043672-51 for Ireland)
139012-1206	ADI (formerly known as Disco) 19-Inch Color Raster Display OR
139012-1202	Wells-Gardner 19-Inch Color Raster Display
148004-001	5-Inch, 8Ω, 5 W Speaker
171002-001	Fan (105 CFM) OR
171002-003	Fan (105 CFM)
171078-002	Non-Resettable Counter, 12 VDC
178013-001	Spring Draw Latch
	<i>The following items are the technical information supplements to this game:</i>
TM-290	Super Sprint™ Operators Manual
SP-290	Super Sprint Schematic Package Supplement
ST-290	Super Sprint Label with Self-Test Procedures and Option Settings
TM-279	ADI (formerly known as Disco) 19-Inch Color Raster Display Manual OR
TM-281	Wells-Gardner 19-Inch Color Raster Display Manual
CO-290-01	Schematic and Spare Parts List for Sierracin 5V Power Supply

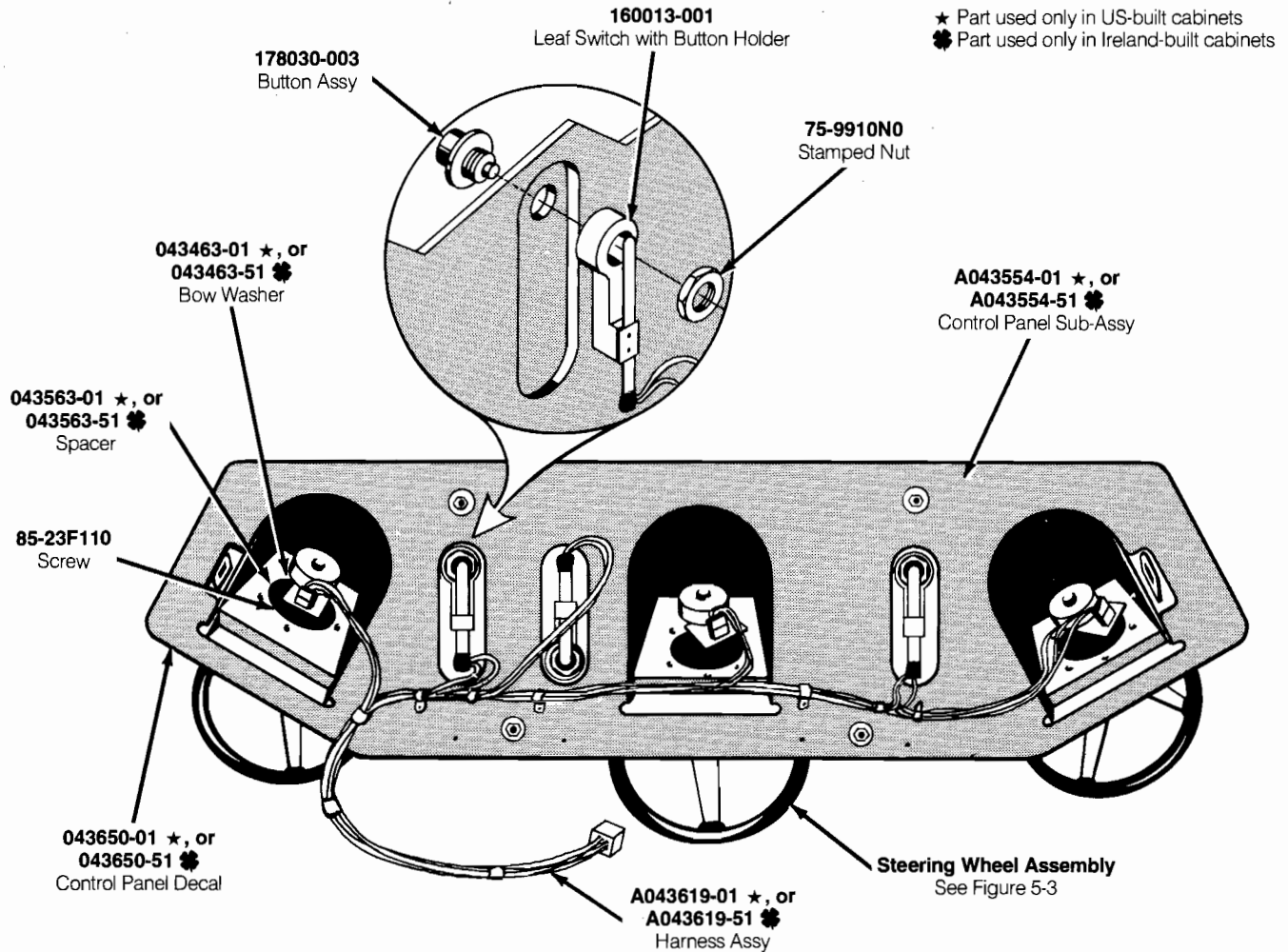


Figure 5-2 Control Panel Assembly
A043557-01 B (US)
and A043557-51 B (Ireland)

Control Panel Assembly
Parts List

Part No.	Description
A000598-09	Steering Wheel Assembly
A043554-01	Control Panel Sub-Assembly (or A043554-51 for Ireland)
A043619-01	Control Panel Harness Assembly (or A043619-51 for Ireland)
75-9910N0	#11 5/8-Inch Stamped Nut
85-23F110	#10-24 × 5/8-Inch Type F Washer-Head Hex Screw
043463-01	Bow Washer (or 043463-51 for Ireland)
043563-01	Spacer (or 043563-51 for Ireland)
043650-01	Control Panel Decal (or 043650-51 for Ireland)
150030-024	3/8-Inch Flat Tinned Copper Braid
160013-001	Leaf Switch with Button Holder
176015-112	#10 × 3/4-Inch Cross-Recessed Pan-Head Deep Thread-Forming Screw
178030-003	Black Button Assembly

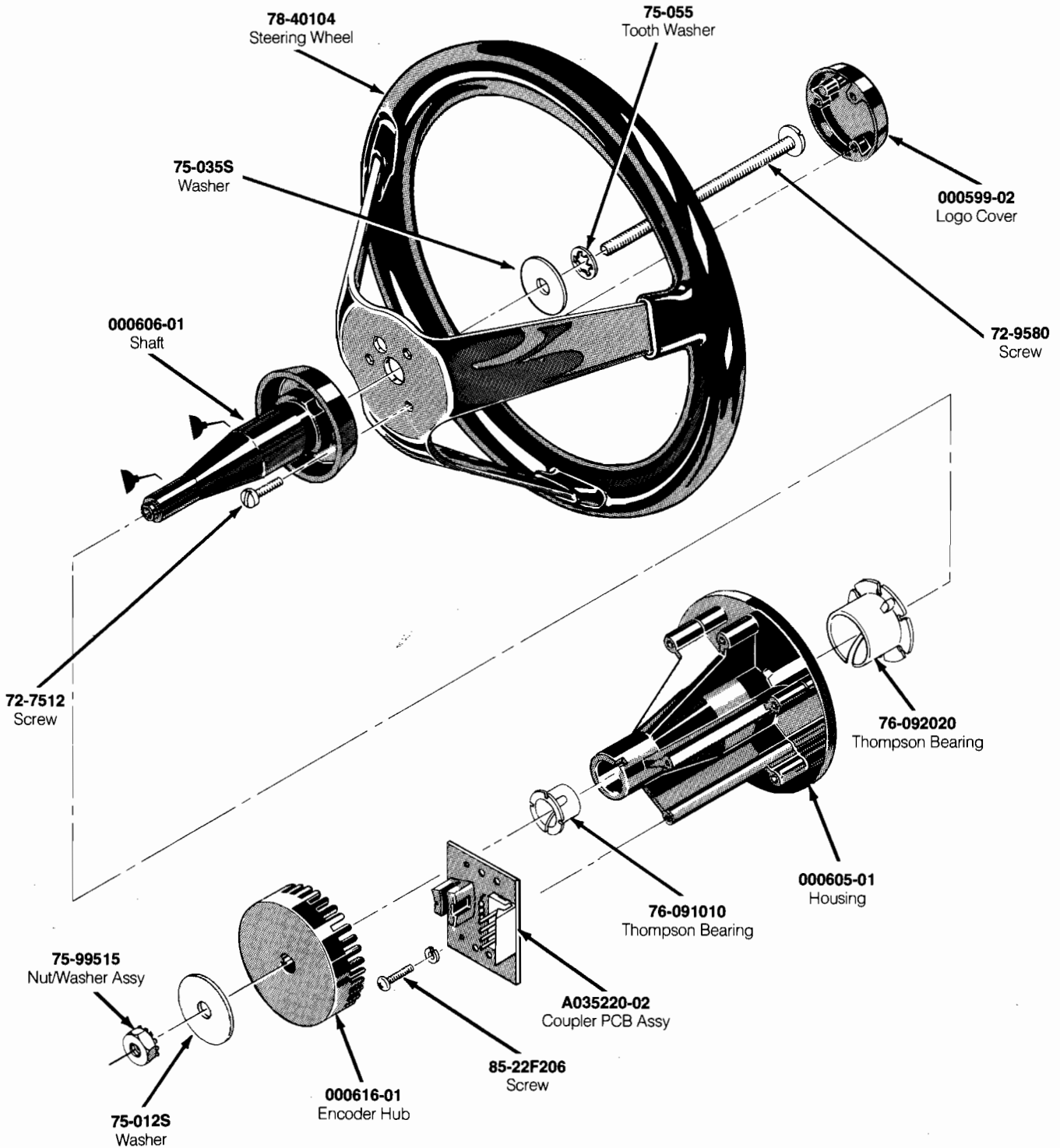


Figure 5-3 Steering Wheel Control Assembly
A000598-09 V

Steering Wheel Control Assembly Parts List

Part No.	Description
A035220-02	Coupler PCB Assembly
72-7512	1/4-20 × 3/4-Inch Slotted Fillister Head Machine Screw
72-9580	1/4-20 × 5-Inch Slotted Truss Head Machine Screw
75-012S	#2 Flat Plain Washer
75-035S	1/4-Inch Flat Washer
75-055	1/4-Inch Internal Tooth Washer
75-99515	1/4-20 Nut/Washer Assembly
76-091010	Type-10L10-FK Thompson Bearing
76-092020	Type-20L20-FK Thompson Bearing
78-40104	10-Inch Steering Wheel
85-22F206	#2-56 × 3/8-Inch Cross-Recessed Pan-Head Machine Screw
000599-02	Atari Logo Cover
000605-01	Housing
000606-01	Shaft
000616-01	Encoder Hub

⚠ WARNING ⚠

This 5-volt switching power supply may not have a shield as illustrated below. The power supply has high voltages on it when power is turned on. Therefore, be sure you *do not touch this power supply* unless you have turned off the power to the game.

★ Part used only in US-built cabinets

☼ Part used only in Ireland-built cabinets

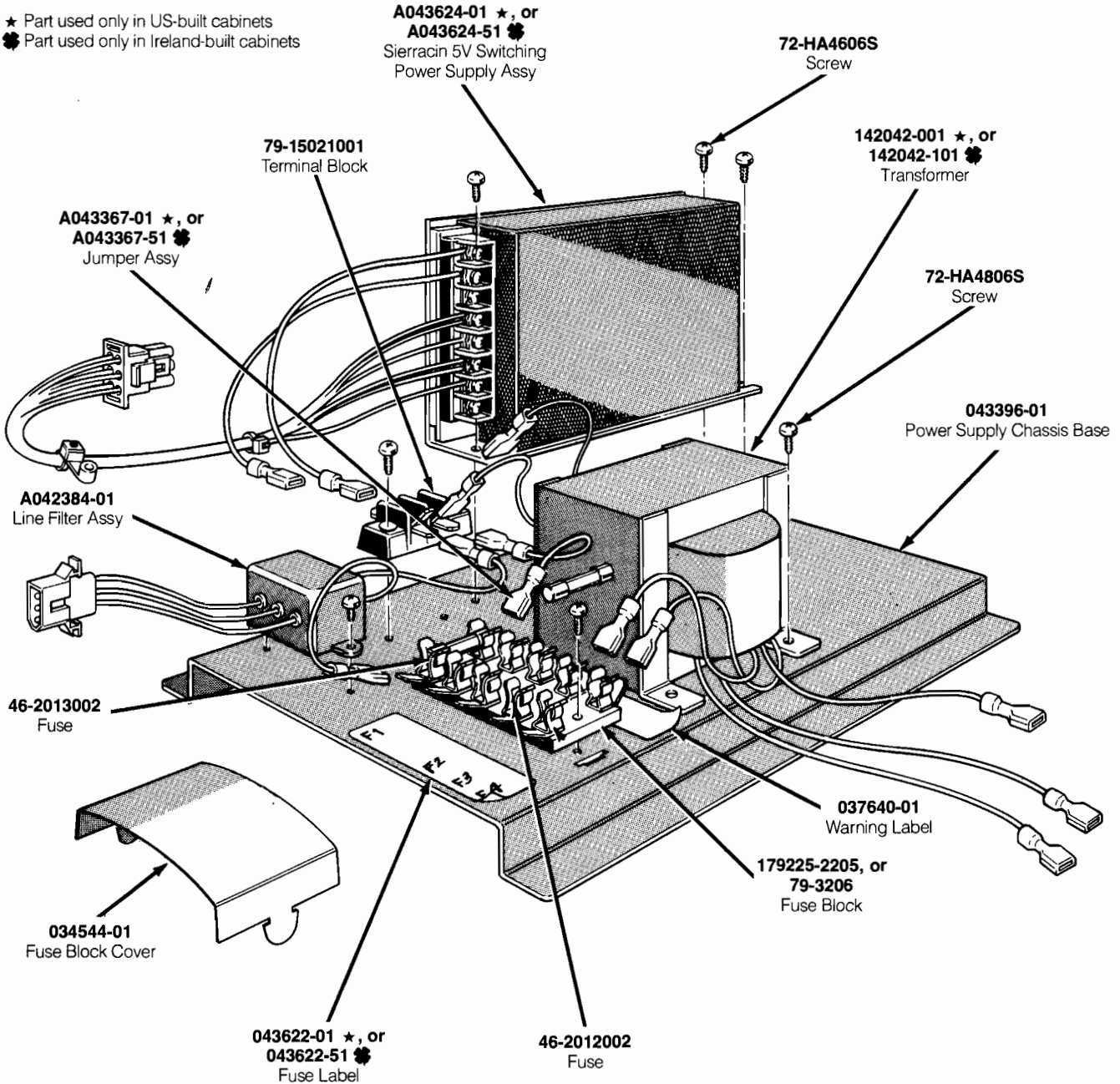
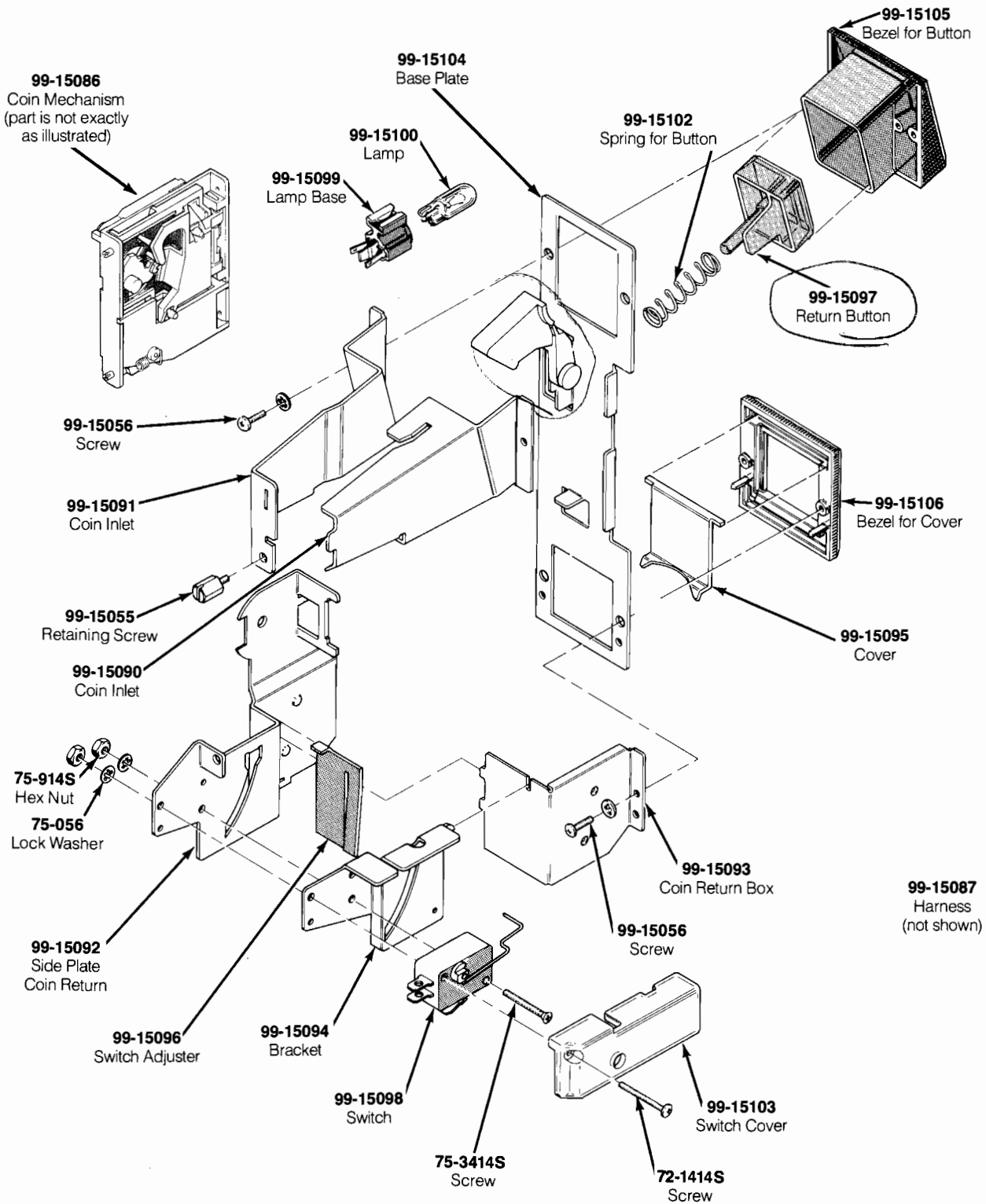


Figure 5-4 Switching/Linear (SL) Power Supply Assembly
A043625-01 C (US)
and A043625-51 C (Ireland)

Switching/Linear (SL) Power Supply Assembly Parts List

Part No.	Description
A042384-01	Line Filter Assembly
A043367-01	Jumper Assembly (or A043367-51 for Ireland)
A043624-01	Sierracin 5V Switching Power Supply Assembly (or A043624-51 for Ireland)
46-2012002	250 V Slow-Blow 2 A Fuse
46-2013002	250 V Slow-Blow 3 A Fuse
72-HA4606S	#6-32 × 3/8-Inch Cross-Recessed Pan-Head Thread-Forming Screw
72-HA4806S	#8-32 × 3/8-Inch Cross-Recessed Pan-Head Thread-Forming Screw
79-15021001	2-Position Terminal Block
034544-01	Fuse Block Cover
037640-01	Power Supply Warning Label
043396-01	Power Supply Chassis Base
043622-01	Power Supply Fuse Label (or 043622-51 for Ireland)
142042-001	Transformer (or 142042-101 for Ireland)
179225-2205	5-Position Fuse Block OR
79-3206	5-Position Fuse Block
CO-290-01	<i>The following items are technical information supplements to this power supply:</i> Schematic and Spare Parts List for Sierracin 5V Power Supply



**Figure 5-5 Coin Controls, Inc. Coin Door Assembly
171081-001 A**

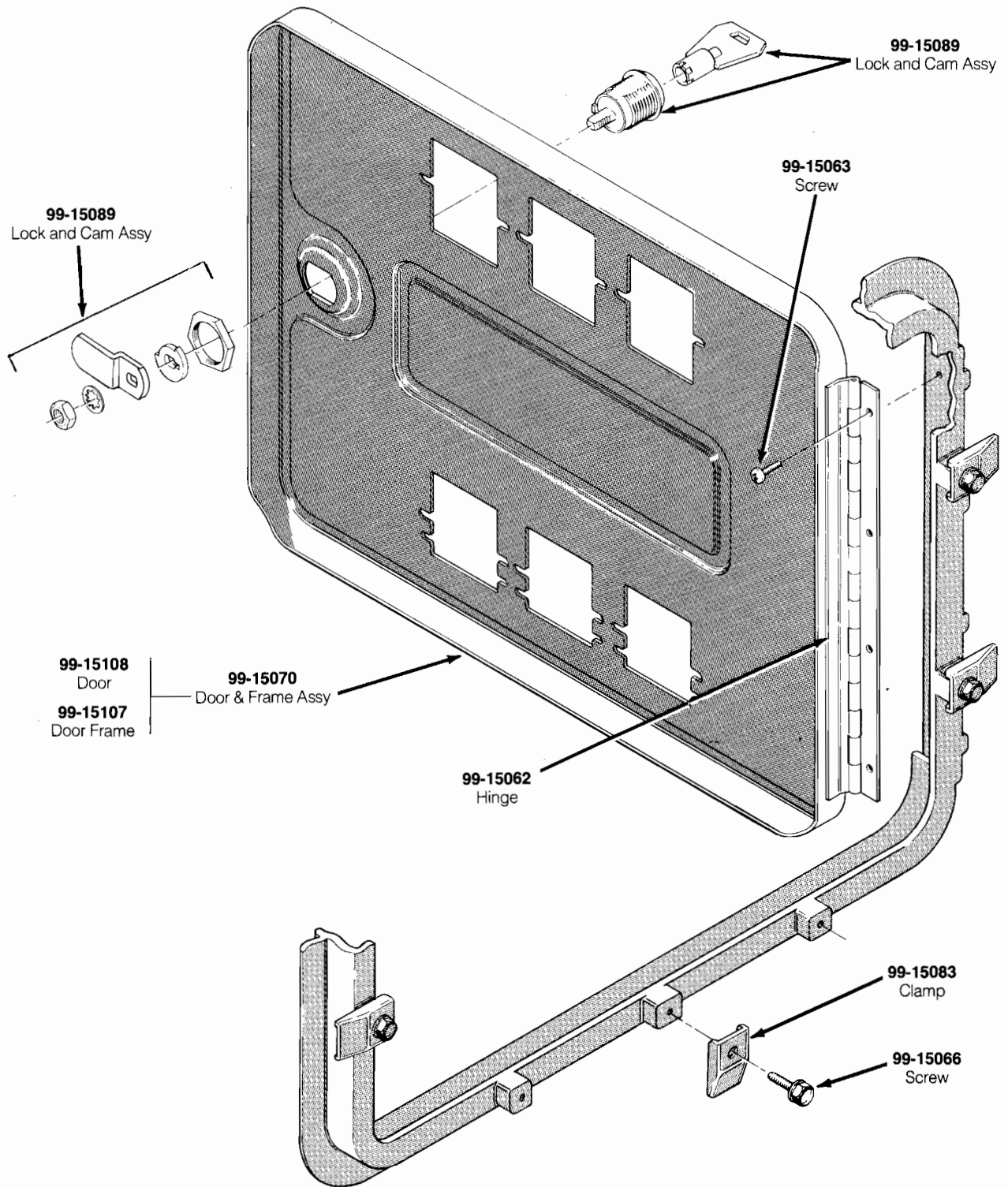
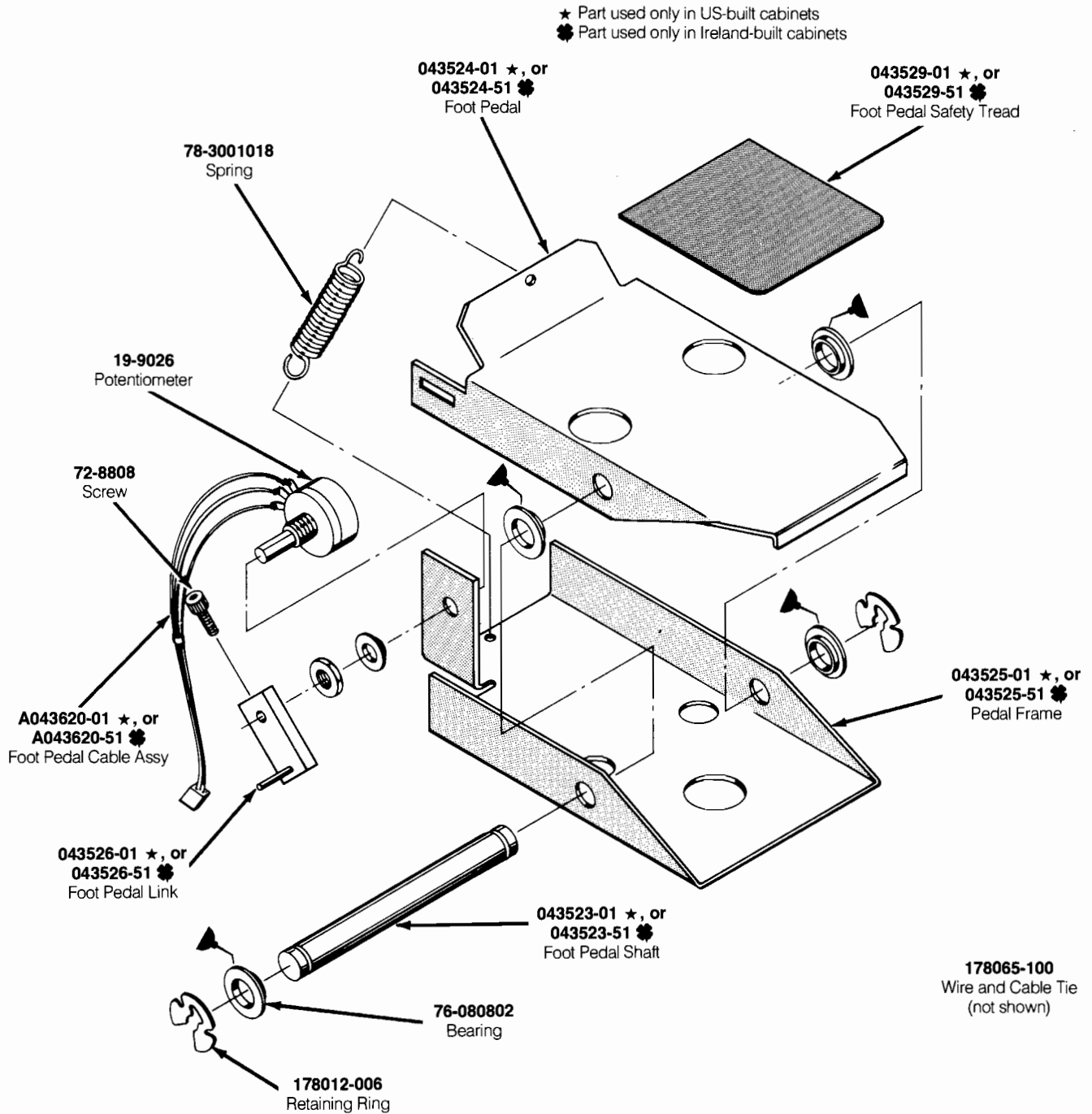


Figure 5-5 Coin Controls, Inc. Coin Door Assembly, continued
171081-001 A

Coin Controls, Inc. Coin Door Assembly Parts List

Part No.	Description
72-1414S	#4-40 × 7/8-Inch Cross-Recessed Pan-Head Steel Machine Screw
75-056	#6 Internal-Tooth Zinc-Plated Steel Lock Washer
75-3414S	#4-40 × 7/8-Inch 82° Cross-Recessed Flat-Head Steel Machine Screw
75-914S	#4-40 Steel Machine Hex Nut
99-15055	Retaining Screw
99-15056	#4-40 × 5/16-Inch Cross-Recessed Pan-Head Steel Machine Screw
99-15062	Hinge
99-15063	Screw for Hinge
99-15066	Screw for Clamp
99-15070	Door and Frame Assembly
99-15083	Clamp for Frame
99-15086	Metal Coin Mechanism
99-15087	Triple Entry Harness
99-15089	Lock and Cam Assembly
99-15090	Left Half of Coin Inlet
99-15091	Right Half of Coin Inlet
99-15092	Side Plate of Coin Return Box
99-15093	Base Plate of Coin Return Box
99-15094	Switch Bracket
99-15095	Metal Coin Return Cover
99-15096	Switch Adjuster
99-15097	Coin Return Button with U.S. 25-Cent Price Plate
99-15098	Coin Switch for U.S. 25 Cents
99-15099	Lamp Base
99-15100	6 V Miniature Wedge-Base Incandescent Lamp
99-15102	Spring for Coin Return Button
99-15103	Switch Cover
99-15104	Base Plate with Pivot and Stud
99-15105	Bezel for Coin Return Button
99-15106	Nylon Bezel for Coin Return Button
99-15107	Door Frame
99-15108	Triple-Entry Door

N O T E S



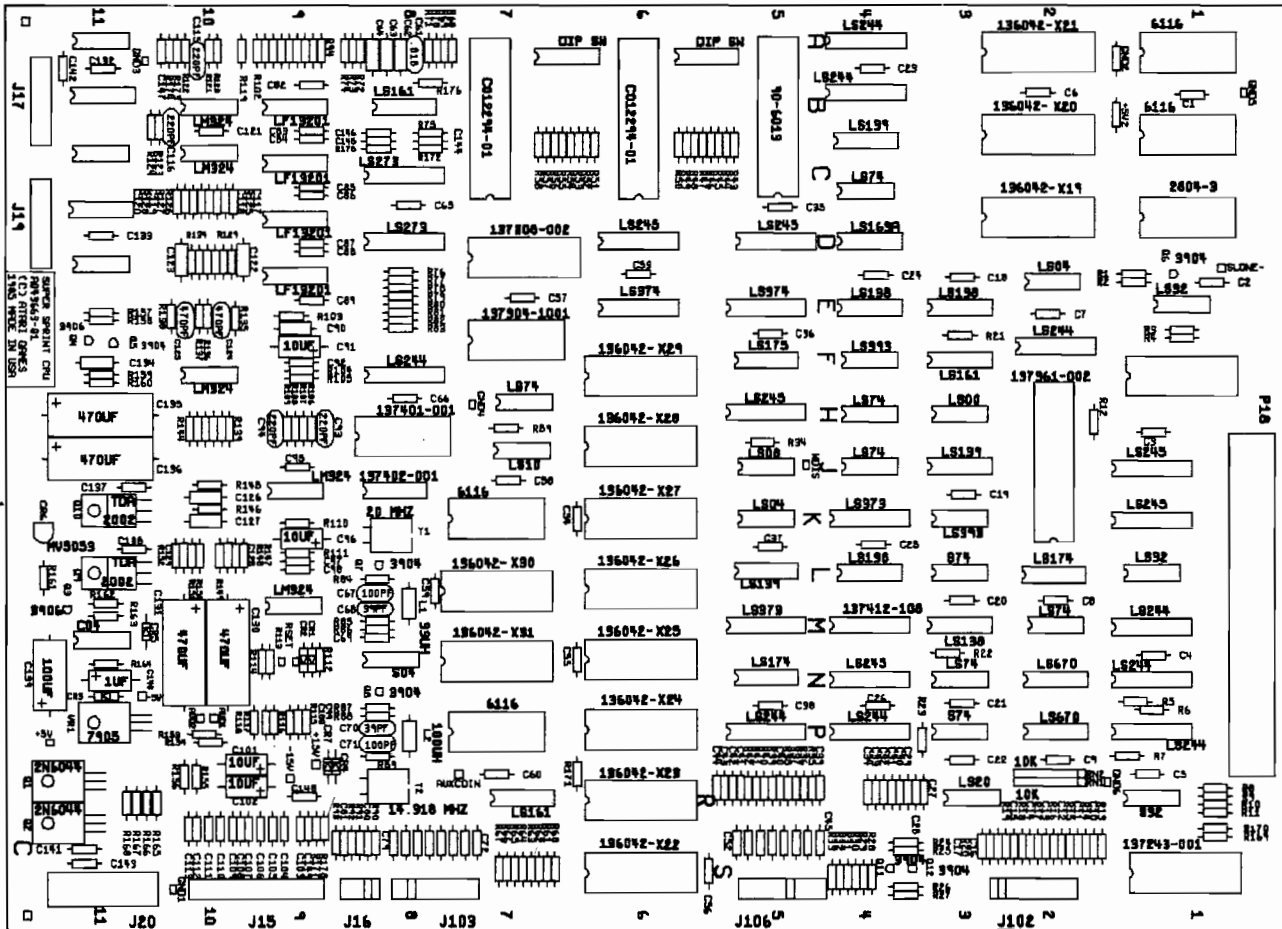
**Figure 5-6 Foot Pedal Assembly
A043527-01 A (U.S.)
and A043527-51 A (Ireland)**

Foot Pedal Assembly Parts List

Part No.	Description
A043620-01	Foot Pedal Cable Assembly (or A043620-51 for Ireland)
19-9026	5 k Ω Potentiometer with Hex Nut and Lock Washer
72-8808	#8-32 \times 1/2-Inch Hex Socket-Head Cap Screw
76-080802	1/2-Inch I.D. \times 1/8-Inch Bearing (Nyliner)
78-3001018	.50 O.D. \times 2.5-Inch Music-Wire Extension Spring
043523-01	Foot Pedal Shaft (or 043523-51 for Ireland)
043524-01	Foot Pedal (or 043524-51 for Ireland)
043525-01	Pedal Frame (or 043525-51 for Ireland)
043526-01	Foot Pedal Link (or 043526-51 for Ireland)
043529-01	Foot Pedal Safety Tread (or 043529-51 for Ireland)
178012-006	1/2-Inch Diagonal Shaft Retaining Ring
178065-100	4-Inch Loose Wire and Cable Tie

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**Figure 5-7 Central Processing Unit (CPU) PCB Assembly
A043663-01 A**

Central Processing Unit (CPU) PCB Assembly Parts List

Designator	Description	Part No.
Integrated Circuits		
1A	Integrated Circuit, Type-6116	137211-001
1B/C	Integrated Circuit, Type-6116	137211-001
1D	Integrated Circuit, Type-2804-3 EEPROM	137329-300
1E	Integrated Circuit, Type-74LS32	37-74LS32
1J	Integrated Circuit, Type-74LS245	37-74LS245
1K	Integrated Circuit, Type-74LS245	37-74LS245
1L	Integrated Circuit, Type-74LS32	37-74LS32
1M	Integrated Circuit, Type-74LS244	37-74LS244
1N	Integrated Circuit, Type-74LS244	37-74LS244
1P	Integrated Circuit, Type-74LS244	37-74LS244
1R	Integrated Circuit, Type-74S32	37-74S32
1S	Integrated Circuit, Type-ADC0809	137243-001
2A	Integrated Circuit, EPROM, Type-27128, 300 ns	136042-121
2B/D	Integrated Circuit, EPROM, Type-27128, 300 ns	136042-120
2D	Integrated Circuit, EPROM, Type-27128, 300 ns	136042-119
2D/E	Integrated Circuit, Type-74LS04	37-74LS04
2F	Integrated Circuit, Type-74LS244	37-74LS244
2J	Integrated Circuit, Type-T11 (DCT11-XA)	137361-002
2L	Integrated Circuit, Type-74LS174	37-74LS174
2M	Integrated Circuit, Type-74LS74	37-74LS74
2N	Integrated Circuit, Type-74LS670	37-74LS670
2P	Integrated Circuit, Type-74LS670	37-74LS670
3E	Integrated Circuit, Type-74LS138	137177-001
3F	Integrated Circuit, Type-74LS161	37-74LS161
3H	Integrated Circuit, Type-74LS00	37-74LS00
3J	Integrated Circuit, Type-74LS139	37-74LS139
3K	Integrated Circuit, Type-74LS393	37-74LS393
3L	Integrated Circuit, Type-74S74	37-74S74
3M	Integrated Circuit, Type-74LS138	137177-001
3N	Integrated Circuit, Type-74LS74	37-74LS74
3P	Integrated Circuit, Type-74S74	37-74S74
3R	Integrated Circuit, Type-74LS20	37-74LS20
4A	Integrated Circuit, Type-74LS244	37-74LS244
4A/B	Integrated Circuit, Type-74LS244	37-74LS244
4B/C	Integrated Circuit, Type-74LS139	37-74LS139
4C/D	Integrated Circuit, Type-74LS74	37-74LS74
4D	Integrated Circuit, Type-74LS163A	37-74LS163A
4E	Integrated Circuit, Type-74LS138	137177-001
4F	Integrated Circuit, Type-74LS393	37-74LS393
4H	Integrated Circuit, Type-74LS74	37-74LS74
4J	Integrated Circuit, Type-74LS74	37-74LS74
4K	Integrated Circuit, Type-74LS373	37-74LS373
4L	Integrated Circuit, Type-74LS138	137177-001
4M	Integrated Circuit, SLAPSTIC	137412-108

Central Processing Unit (CPU) PCB Assembly Parts List, Continued

Designator	Description	Part No.
4N	Integrated Circuit, Type-74LS245	37-74LS245
4P	Integrated Circuit, Type-74LS244	37-74LS244
5B	Integrated Circuit, Type-6502A	90-6013
5D	Integrated Circuit, Type-74LS245	37-74LS245
5E	Integrated Circuit, Type-74LS374	37-74LS374
5F	Integrated Circuit, Type-74LS175	37-74LS175
5H	Integrated Circuit, Type-74LS245	37-74LS245
5J	Integrated Circuit, Type-74LS08	37-74LS08
5K	Integrated Circuit, Type-74LS04	37-74LS04
5L	Integrated Circuit, Type-74LS139	37-74LS139
5M	Integrated Circuit, Type-74LS373	37-74LS373
5N	Integrated Circuit, Type-74LS174	37-74LS174
5P	Integrated Circuit, Type-74LS244	37-74LS244
6B	Integrated Circuit, POKEY	C012294-01
6D	Integrated Circuit, Type-74LS245	37-74LS245
6E	Integrated Circuit, Type-74LS374	37-74LS374
6F	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-129
6J	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-128
6K	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-127
6L	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-126
6N	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-125
6P	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-124
6R	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-123
6S	Integrated Circuit, EPROM, Type-27256, 300 ns	136042-122
7B	Integrated Circuit, POKEY	C012294-01
7D	Integrated Circuit, Type-TMS5220C	137308-002
7F	Integrated Circuit, Leta	137304-1001
7H	Integrated Circuit, Type-74LS74	37-74LS74
7J	Integrated Circuit, Type-74LS10	37-74LS10
7K	Integrated Circuit, Type-6116	137211-001
7L	Integrated Circuit, EPROM, Type-27128, 300 ns	136042-130
7N	Integrated Circuit, EPROM, Type-27128, 300 ns	136042-131
7P	Integrated Circuit, Type-6116	137211-001
7R	Integrated Circuit, Type-74LS161	37-74LS161
8B	Integrated Circuit, Type-74LS161	37-74LS161
8C	Integrated Circuit, Type-74LS273	37-74LS273
8D	Integrated Circuit, Type-74LS273	37-74LS273
8F	Integrated Circuit, Type-74LS244	37-74LS244
8H/J	Integrated Circuit, Type-Y2151	137401-001
8J/K	Integrated Circuit, Type-YM3012	137402-001
8N	Integrated Circuit, Type-74S04	37-74S04
9B	Integrated Circuit, Type-LF13201	137352-001
9C	Integrated Circuit, Type-LF13201	137352-001
9D	Integrated Circuit, Type-LF13201	137352-001
9D/E	Integrated Circuit, Type-LF13201	137352-001
9J/K	Integrated Circuit, Type-LM324	37-LM324
9L/M	Integrated Circuit, Type-LM324	37-LM324
10B	Integrated Circuit, Type-LM324	37-LM324

Central Processing Unit (CPU) PCB Assembly Parts List, Continued

Designator	Description	Part No.
10C	Integrated Circuit, Type-LM324	37-LM324
10F	Integrated Circuit, Type-LM324	37-LM324
11M	Integrated Circuit, Type-74C04	137309-001
Q9	Integrated Circuit, Type-TDA2002	137151-002
Q10	Integrated Circuit, Type-TDA2002	137151-002
Sockets		
	Socket, Medium-Insertion-Force, 16-Pin	79-42C16
	Socket, Medium-Insertion-Force, 20-Pin	79-42C20
	Socket, Medium-Insertion-Force, 24-Pin	79-42C24
	Socket, Medium-Insertion-Force, 28-Pin	79-42C28
	Socket, Medium-Insertion-Force, 40-Pin	79-42C40
Capacitors		
C1-C60	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C31-C60	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C61	Capacitor, Ceramic, .018 μ F, 50 V	122015-183
C62-C64	Capacitor, Ceramic, .22 μ F, 25 V	122004-224
C65	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C66	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C67	Capacitor, Mica, 100 pF, 100 V	128002-101
C68	Capacitor, Mica, 39 pF, 100 V	128002-390
C69	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C70	Capacitor, Mica, 39 pF, 100 V	128002-390
C71	Capacitor, Mica, 100 pF, 100 V	128002-101
C72-C79	Capacitor, Ceramic, .01 μ F, 25 V	122005-103
C80	Capacitor, Ceramic, .001 μ F, 50 V	122002-102
C81	Capacitor, Ceramic, .001 μ F, 50 V	122002-102
C82-C89	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C90	Capacitor, Ceramic, .22, 25 V	122004-224
C91	Capacitor, Tantalum, 10 μ F, 20 V	29-046
C92	Capacitor, Ceramic, .01 μ F, 25 V	122005-103
C93	Capacitor, Mica, 220 pF, 100 V	128002-221
C94	Capacitor, Mica, 220 pF, 100 V	128002-221
C95	Capacitor, Ceramic, .0027 μ F, 50 V	122015-272
C96	Capacitor, Tantalum, 10 μ F, 20 V	29-046
C97	Capacitor, Ceramic, .0027 μ F, 50 V	122015-272
C98-C100	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C101	Capacitor, Aluminum, 10 μ F, 35 V	24-350106
C102	Capacitor, Aluminum, 10 μ F, 35 V	24-350106
C103-C109	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C110	Capacitor, Ceramic, .01 μ F, 25 V	122005-103
C111	Capacitor, Ceramic, .01 μ F, 25 V	122005-103
C112	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C113	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C115	Capacitor, Mica, 220 pF, 100 V	128002-221
C116	Capacitor, Mica, 220 pF, 100 V	128002-221
C117	Capacitor, Ceramic, .01 μ F, 25 V	122005-103
C118	Capacitor, Ceramic, .001 μ F, 50 V	122002-102
C119	Capacitor, Ceramic, .001 μ F, 50 V	122002-102

Central Processing Unit (CPU) PCB Assembly Parts List, Continued

Designator	Description	Part No.
C120	Capacitor, Ceramic, .01 μ F, 25 V	122005-103
C121	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C122	Capacitor, Ceramic, .22 μ F, 25 V	122004-224
C123	Capacitor, Ceramic, .22 μ F, 25 V	122004-224
C124	Capacitor, Mica, 470 pF, 100 V	128002-471
C125	Capacitor, Mica, 470 pF, 100 V	128002-471
C126	Capacitor, Ceramic, .22 μ F, 25 V	122004-224
C127	Capacitor, Ceramic, .22 μ F, 25 V	122004-224
C128	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C129	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C130	Capacitor, Aluminum, 470 μ F, 25 V	24-250477
C131	Capacitor, Aluminum, 470 μ F, 25 V	24-250477
C132	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C133	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C134	Capacitor, Ceramic, .22 μ F, 25 V	122004-224
C135	Capacitor, Aluminum, 470 μ F, 25 V	24-250477
C136	Capacitor, Aluminum, 470 μ F, 25 V	24-250477
C137	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C138	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C139	Capacitor, Aluminum, 100 μ F, 35 V	24-350107
C140	Capacitor, Aluminum, 1 μ F, 50 V	24-500105
C141	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C143	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C144	Capacitor, Ceramic, .0027 μ F, 50 V	122015-272
C145	Capacitor, Ceramic, .0012 μ F, 50 V	122015-122
C146	Capacitor, Ceramic, .0039 μ F, 50 V	122015-392
C147	Capacitor, Ceramic, .0068 μ F, 50 V	122015-682
C148	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C149	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
Diodes		
CR1-CR3	Diode, Type-1N100	31-1N100
CR4	Diode, Type-1N4001	31-1N4001
CR5	Diode, Type-1N4001	31-1N4001
CR6	Diode, Light-Emitting, Type-MV5053	38-MV5053
CR7	Diode, Type-1N4001	31-1N4001
Connectors and Fasteners		
J15	Connector, Header, 17-Circuit, .100 ctr	179118-017
J16	Connector, Header, 5-Circuit, .100 ctr	179118-005
J20	Connector, Header, 9-Circuit, .156 ctr, pol	179014-009
J102	Connector, Header, 11-Circuit, .100 ctr	179118-011
J106	Connector, Header, 11-Circuit, .100 ctr	179118-011
P18	Connector, Card Edge, 80-Circuit (40 \times 2)	179221-180
Q1, Q2	Fastener, Nylon, Snap-in	81-4302
Q9, Q10	Fastener, Nylon, Snap-in	81-4302
VR1	Fastener, Nylon, Snap-In	81-4302
	Terminal, Fast-On Tab (Acceptable substitute is part number 020670-01)	179051-002

Central Processing Unit (CPU) PCB Assembly Parts List, Continued

Designator	Description	Part No.
Inductors		
L1	Inductor, 33 μ H	141016-007
L2	Inductor, 100 μ H	141002-001
Transistors		
Q1, Q2	Transistor, 2N6044	34-2N6044
Q3, Q4	Transistor, 2N3906	33-2N3906
Q5-Q8	Transistor, 2N3904	34-2N3904
Q11, Q12	Transistor, 2N3904	34-2N3904
Resistors		
R1, R2	Resistor, $\frac{1}{4}$ W, 10K Ω , $\pm 5\%$	110000-103
R3, R4	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R5-R7	Resistor, $\frac{1}{4}$ W, 220 Ω , $\pm 5\%$	110000-221
R8-R11	Resistor, $\frac{1}{4}$ W, 4.7K Ω , $\pm 5\%$	110000-472
R12	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R13-R20	Resistor, $\frac{1}{4}$ W, 100 Ω , $\pm 5\%$	110000-101
R21-R23	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R24-R27	Resistor, $\frac{1}{4}$ W, 4.7K Ω , $\pm 5\%$	110000-472
R28-R33	Resistor, $\frac{1}{4}$ W, 470 Ω , $\pm 5\%$	110000-471
R34	Resistor, $\frac{1}{4}$ W, 10K Ω , $\pm 5\%$	110000-103
R35	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R36	Resistor, $\frac{1}{4}$ W, 220 Ω , $\pm 5\%$	110000-221
R37	Resistor, $\frac{1}{4}$ W, 220 Ω , $\pm 5\%$	110000-221
R38-R42	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R43-R58	Resistor, $\frac{1}{4}$ W, 10K Ω , $\pm 5\%$	110000-103
R59	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R60-R67	Resistor, $\frac{1}{4}$ W, 3.3K Ω , $\pm 5\%$	110000-332
R68	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R69	Resistor, $\frac{1}{4}$ W, 1.8K Ω , $\pm 5\%$	110000-182
R70	Resistor, $\frac{1}{4}$ W, 10K Ω , $\pm 5\%$	110000-103
R71	Resistor, $\frac{1}{4}$ W, 5.6K Ω , $\pm 5\%$	110000-562
R72-R74	Resistor, $\frac{1}{4}$ W, 100K Ω , $\pm 5\%$	110000-104
R75	Resistor, $\frac{1}{4}$ W, 1K Ω , $\pm 5\%$	110000-102
R76-R85	Resistor, $\frac{1}{4}$ W, 10K Ω , $\pm 5\%$	110000-103
R86	Resistor, $\frac{1}{4}$ W, 220 Ω , $\pm 5\%$	110000-221
R87	Resistor, $\frac{1}{4}$ W, 220 Ω , $\pm 5\%$	110000-221
R88, R89	Resistor, $\frac{1}{4}$ W, 10K Ω , $\pm 5\%$	110000-103
R90	Resistor, $\frac{1}{4}$ W, 100 Ω , $\pm 5\%$	110000-101
R91	Resistor, $\frac{1}{4}$ W, 4.7K Ω , $\pm 5\%$	110000-472
R92	Resistor, $\frac{1}{4}$ W, 100 Ω , $\pm 5\%$	110000-101
R93	Resistor, $\frac{1}{4}$ W, 4.7K Ω , $\pm 5\%$	110000-472
R94	Resistor, $\frac{1}{4}$ W, 22K Ω , $\pm 5\%$	110000-223
R95	Resistor, $\frac{1}{4}$ W, 47K Ω , $\pm 5\%$	110000-473
R96	Resistor, $\frac{1}{4}$ W, 100K Ω , $\pm 5\%$	110000-104
R97	Resistor, $\frac{1}{4}$ W, 22K Ω , $\pm 5\%$	110000-223
R98	Resistor, $\frac{1}{4}$ W, 47K Ω , $\pm 5\%$	110000-473

Central Processing Unit (CPU) PCB Assembly Parts List, Continued

Designator	Description	Part No.
R99	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R100	Resistor, ¼ W, 2.2K Ω, ± 5%	110000-223
R101	Resistor, ¼ W, 47K Ω, ± 5%	110000-473
R102	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R103	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R104, R105	Resistor, ¼ W, 1K Ω, ± 5%	110000-102
R106	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R107, R108	Resistor, ¼ W, 18K Ω, ± 5%	110000-183
R109	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R110	Resistor, ¼ W, 390 Ω, ± 5%	110000-391
R111	Resistor, ¼ W, 560 Ω, ± 5%	110000-561
R112	Resistor, ¼ W, 1K Ω, ± 5%	110000-102
R113	Resistor, ¼ W, 5.6K Ω, ± 5%	110000-562
R114	Resistor, ¼ W, 10K Ω, ± 5%	110000-103
R115, R116	Resistor, ¼ W, 1K Ω, ± 5%	110000-102
R117	Resistor, ¼ W, 470 Ω, ± 5%	110000-471
R118	Resistor, ¼ W, 470 Ω, ± 5%	110000-471
R119	Resistor, ¼ W, 470K Ω, ± 5%	110000-474
R120-R124	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R125	Resistor, ¼ W, 2.2K Ω, ± 5%	110000-222
R126, R127	Resistor, ¼ W, 4.7K Ω, ± 5%	110000-472
R128	Resistor, ¼ W, 2.2K Ω, ± 5%	110000-222
R129	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R130	Resistor, ¼ W, 47K Ω, ± 5%	110000-473
R131-R133	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R134	Resistor, ¼ W, 47K Ω, ± 5%	110000-473
R135-R138	Resistor, ¼ W, 100K Ω, ± 5%	110000-104
R139	Resistor, ¼ W, 47K Ω, ± 5%	110000-473
R140	Resistor, ¼ W, 68K Ω, ± 5%	110000-683
R141, R142	Resistor, ¼ W, 47K Ω, ± 5%	110000-473
R143	Resistor, ¼ W, 68K Ω, ± 5%	110000-683
R144	Resistor, ¼ W, 47K Ω, ± 5%	110000-473
R145, R146	Resistor, ¼ W, 4.7K Ω, ± 5%	110000-472
R147	Resistor, ¼ W, 10 Ω, ± 5%	110000-100
R148	Resistor, ¼ W, 220 Ω, ± 5%	110000-221
R149	Resistor, ¼ W, 1 Ω, ± 5%	110000-010
R150	Resistor, ¼ W, 10 Ω, ± 5%	110000-100
R151	Resistor, ¼ W, 220 Ω, ± 5%	110000-221
R152	Resistor, ¼ W, 1 Ω, ± 5%	110000-010
R153, R154	Resistor, ¼ W, 1K Ω, ± 5%	110000-102
R155, R156	Resistor, ¼ W, 470 Ω, ± 5%	110000-471
R157	Resistor, ¼ W, 10K Ω, ± 5%	110000-103
R158, R159	Resistor, ¼ W, 3.3K Ω, ± 5%	110000-332
R160	Resistor, ¼ W, 1K Ω, ± 5%	110000-102

Central Processing Unit (CPU) PCB Assembly Parts List, Continued

Designator	Description	Part No.
R161	Resistor, ¼ W, 150 Ω, ± 5%	110000-151
R162	Resistor, ¼ W, 10K Ω, ± 5%	110000-103
R163	Resistor, ¼ W, 3.3K Ω, ± 5%	110000-332
R164-R168	Resistor, ¼ W, 1K Ω, ± 5%	110000-102
R169, R170	Resistor, ¼ W, 4.7K Ω, ± 5%	110000-472
R171	Resistor, ¼ W, 270 Ω, ± 5%	110000-271
R172	Resistor, ¼ W, 12 Ω, ± 5%	110000-123
R173	Resistor, ¼ W, 56 Ω, ± 5%	110000-563
R174	Resistor, ¼ W, 10K Ω, ± 5%	110000-103
R175	Resistor, ¼ W, 8.2 Ω, ± 5%	110000-822
R176	Resistor, ¼ W, 3.9K Ω, ± 5%	110000-392
R177	Resistor, ¼ W, 470 Ω, ± 5%	110000-471
R178	Resistor, ¼ W, 1K Ω, ± 5%	110000-102
RN1, RN2	Resistor Network, SIP, 10K × 8, 1/8 W	118002-103
Miscellaneous		
VR1	Voltage Regulator, Type-7905	37-7905
Y1	Crystal, 20 MHz	144000-003
Y2	Crystal, 14.318 MHz	90-101
5/6A	Switch, 8-Position, DIP	160031-008
6/7A	Switch, 8-Position, DIP	160031-008

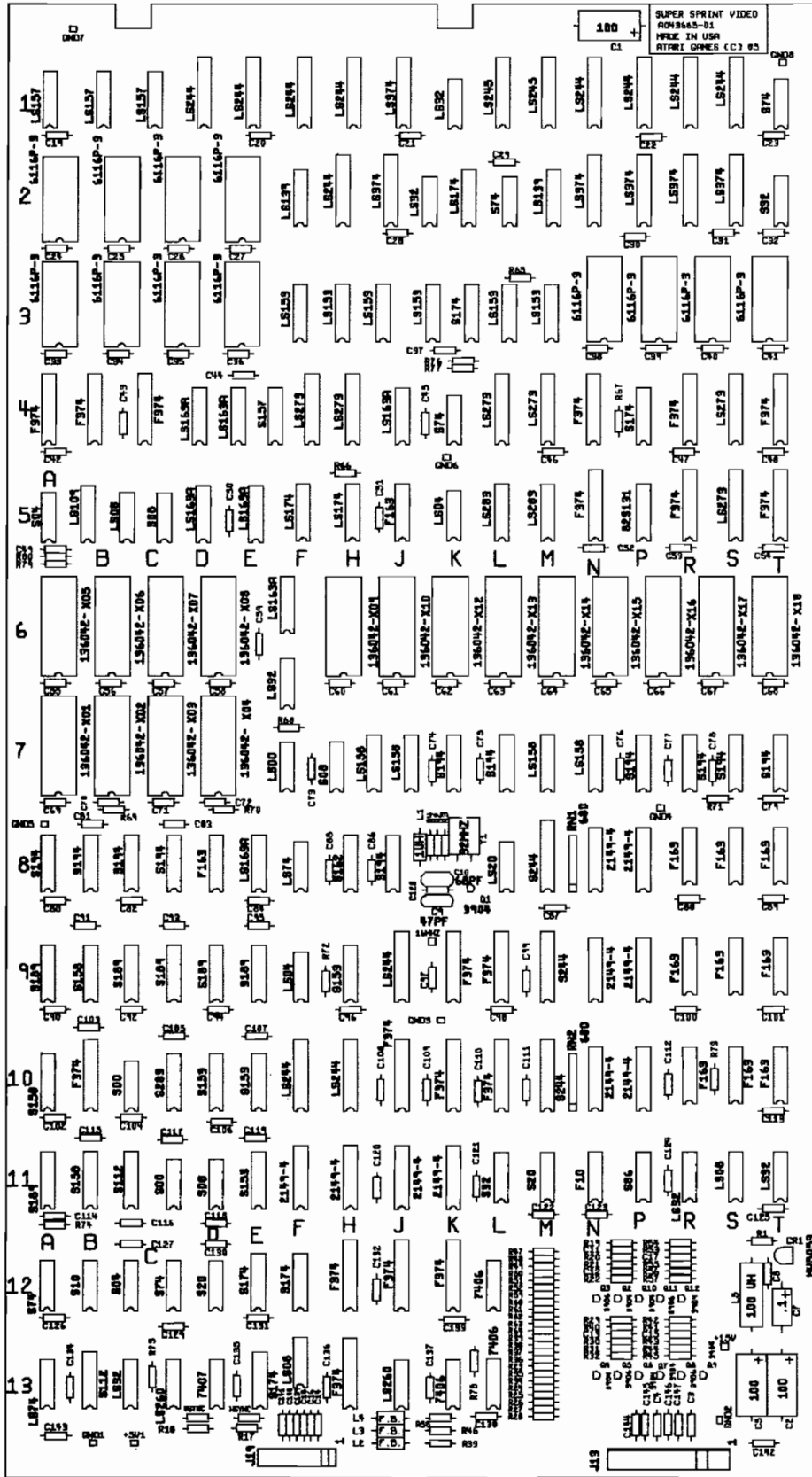


Figure 5-8 Video PCB Assembly
A043665-01 A

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Video PCB Assembly Parts List

Designator	Description	Part No.
Integrated Circuits		
1A	Type-74LS157 Integrated Circuit	37-74LS157
1B	Type-74LS157 Integrated Circuit	37-74LS157
1C	Type-74LS157 Integrated Circuit	37-74LS157
1D	Type-74LS244 Integrated Circuit	37-74LS244
1E	Type-74LS244 Integrated Circuit	37-74LS244
1F	Type-74LS244 Integrated Circuit	37-74LS244
1H	Type-74LS244 Integrated Circuit	37-74LS244
1J	Type-74LS374 Integrated Circuit	37-74LS374
1K	Type-74LS32 Integrated Circuit	37-74LS32
1L	Type-74LS245 Integrated Circuit	37-74LS245
1M	Type-74LS245 Integrated Circuit	37-74LS245
1N	Type-74LS244 Integrated Circuit	37-74LS244
1P	Type-74LS244 Integrated Circuit	37-74LS244
1R	Type-74LS244 Integrated Circuit	37-74LS244
1S	Type-74LS244 Integrated Circuit	37-74LS244
1T	Type-74S74 Integrated Circuit	37-74S74
2A	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
2B/C	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
2C/D	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
2E	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
2F	Type-74LS139 Integrated Circuit	37-74LS139
2H	Type-74LS244 Integrated Circuit	37-74LS244
2H/J	Type-74LS374 Integrated Circuit	37-74LS374
2J/K	Type-74LS32 Integrated Circuit	37-74LS32
2K/L	Type-74LS174 Integrated Circuit	37-74LS174
2L	Type-74S74 Integrated Circuit	37-74S74
2M	Type-74LS139 Integrated Circuit	37-74LS139
2N	Type-74LS374 Integrated Circuit	37-74LS374
2P	Type-74LS374 Integrated Circuit	37-74LS374
2R	Type-74LS374 Integrated Circuit	37-74LS374
2S	Type-74LS374 Integrated Circuit	37-74LS374
2T	Type-74S32 Integrated Circuit	37-74S32
3A	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
3B/C	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
3C/D	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
3E	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
3F	Type-74LS153 Integrated Circuit	37-74LS153
3H	Type-74LS153 Integrated Circuit	37-74LS153
3H/J	Type-74LS153 Integrated Circuit	37-74LS153
3J/K	Type-74LS153 Integrated Circuit	37-74LS153
3K/L	Type-74S174 Integrated Circuit	137209-001
3L	Type-74LS153 Integrated Circuit	37-74LS153
3M	Type-74LS153 Integrated Circuit	37-74LS153
3N	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001

Video PCB Assembly Parts List, Continued

Designator	Description	Part No.
3P/R	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
3R/S	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
3T	Type-6116P-3, 150 ns RAM Integrated Circuit	137211-001
4A	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
4B	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
4C	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
4D	Type-74LS163A Integrated Circuit	37-74LS163A
4E	Type-74LS163A Integrated Circuit	37-74LS163A
4E/F	Type-74S157 Integrated Circuit	37-74S157
4F	Type-74LS273 Integrated Circuit	37-74LS273
4H	Type-74LS273 Integrated Circuit	37-74LS273
4J	Type-74LS163A Integrated Circuit	37-74LS163A
4K	Type-74S74 Integrated Circuit	37-74S74
4L	Type-74LS273 Integrated Circuit	37-74LS273
4M	Type-74LS273 Integrated Circuit	37-74LS273
4N	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
4P	Type-74S174 Integrated Circuit	137209-001
4R	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
4S	Type-74LS273 Integrated Circuit	37-74LS273
4T	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
5A	Type-74S04 Integrated Circuit	37-74S04
5B	Type-74LS109 Integrated Circuit	37-74LS109
5B/C	Type-74LS08 Integrated Circuit	37-74LS08
5C/D	Type-74S08 Integrated Circuit	37-74S08
5D	Type-74LS163A Integrated Circuit	37-74LS163A
5E	Type-74LS163A Integrated Circuit	37-74LS163A
5F	Type-74LS174 Integrated Circuit	37-74LS174
5H	Type-74LS174 Integrated Circuit	37-74LS174
5J	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
5K	Type-74LS04 Integrated Circuit	37-74LS04
5L	Type-74LS283 Integrated Circuit	137204-001
5M	Type-74LS283 Integrated Circuit	137204-001
5N	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
5P	Type-82S131 Program PROM Integrated Circuit	136034-131
5R	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
5S	Type-74LS273 Integrated Circuit	37-74LS273

Video PCB Assembly Parts List, Continued

Designator	Description	Part No.
5T	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
6E/F	Type-74LS163A Integrated Circuit	37-74LS163A
6/7E/F	Type-74LS32 Integrated Circuit	37-74LS32
7E/F	Type-74LS00 Integrated Circuit	37-74LS00
7F/H	Type-74S08 Integrated Circuit	37-74S08
7H/J	Type-74LS158 Integrated Circuit	137203-001
7J	Type-74LS158 Integrated Circuit	137203-001
7K	Type-74S194 Integrated Circuit	137424-001
7L	Type-74S194 Integrated Circuit	137424-001
7M	Type-74LS158 Integrated Circuit	137203-001
7N	Type-74LS158 Integrated Circuit	137203-001
7P	Type-74S194 Integrated Circuit	137424-001
7R	Type-74S194 Integrated Circuit	137424-001
7S	Type-74S194 Integrated Circuit	137424-001
7T	Type-74S194 Integrated Circuit	137424-001
8A	Type-74S194 Integrated Circuit	137424-001
8B	Type-74S194 Integrated Circuit	137424-001
8B/C	Type-74S194 Integrated Circuit	137424-001
8C/D	Type-74S194 Integrated Circuit	137424-001
8D	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
8E	Type-74LS163A Integrated Circuit	37-74LS163A
8F	Type-74LS74 Integrated Circuit	37-74LS74
8H	Type-74S162 Integrated Circuit	137342-001
8J	Type-74S194 Integrated Circuit	137424-001
8L	Type-74LS20 Integrated Circuit	37-74LS20
8M	Type-74S244 Integrated Circuit	137333-001
8N	Type-2149, 35 ns Static RAM Integrated Circuit	137199-003
8P	Type-2149, 35 ns Static RAM Integrated Circuit	137199-003
8R	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
8S	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
8T	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
9A	Type-74S189 Integrated Circuit	37-74S189
9B	Type-74S158 Integrated Circuit	137312-001
9B/C	Type-74S189 Integrated Circuit	37-74S189
9C/D	Type-74S189 Integrated Circuit	37-74S189
9D	Type-74S189 Integrated Circuit	37-74S189
9E	Type-74S189 Integrated Circuit	37-74S189
9F	Type-74LS04 Integrated Circuit	37-74LS04
9H	Type-74S153 Integrated Circuit	137207-001
9J	Type-74LS244 Integrated Circuit	37-74LS244

Video PCB Assembly Parts List, Continued

Designator	Description	Part No.
9K	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
9L	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
9M	Type-74S244 Integrated Circuit	137333-001
9N	Type-2149, 35 ns Static RAM Integrated Circuit	137199-003
9P	Type-2149, 35 ns Static RAM Integrated Circuit	137199-003
9R	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
9S	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
9T	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
10A	Type-74S158 Integrated Circuit	137312-001
10B	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
10B/C	Type-74S00 Integrated Circuit	37-74S00
10C/D	Type-74S283 Integrated Circuit	137241-001
10D	Type-74S153 Integrated Circuit	137207-001
10E	Type-74S153 Integrated Circuit	137207-001
10F	Type-74LS244 Integrated Circuit	37-74LS244
10H	Type-74LS244 Integrated Circuit	37-74LS244
10J	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
10K	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
10L	Type-74F374 Integrated Circuit (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
10M	Type-74S244 Integrated Circuit	137333-001
10N	Type-2149, 35 ns Static RAM Integrated Circuit	137199-003
10P	Type-2149, 35 ns Static RAM Integrated Circuit	137199-003
10R	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
10S	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
10T	Type-74F163 Integrated Circuit (Acceptable substitute is Type-74AS163N Integrated Circuit, part no. 137421-001)	137345-001
11A	Type-74S189 Integrated Circuit	37-74S189
11B	Type-74S158 Integrated Circuit	137312-001
11B/C	Type-74S112 Integrated Circuit	137334-001
11C/D	Type-74S00 Integrated Circuit	37-74S00
11D	Type-74S08 Integrated Circuit	37-74S08
11E	Type-74S153 Integrated Circuit	137207-001
11F	Type-2149, 45 ns Static RAM Integrated Circuit	137199-002
11H	Type-2149, 45 ns Static RAM Integrated Circuit	137199-002
11J	Type-2149, 45 ns Static RAM Integrated Circuit	137199-002
11K	Type-2149, 45 ns Static RAM Integrated Circuit	137199-002
11L	Integrated Circuit Type-74S32	37-74S32

Video PCB Assembly Parts List, Continued

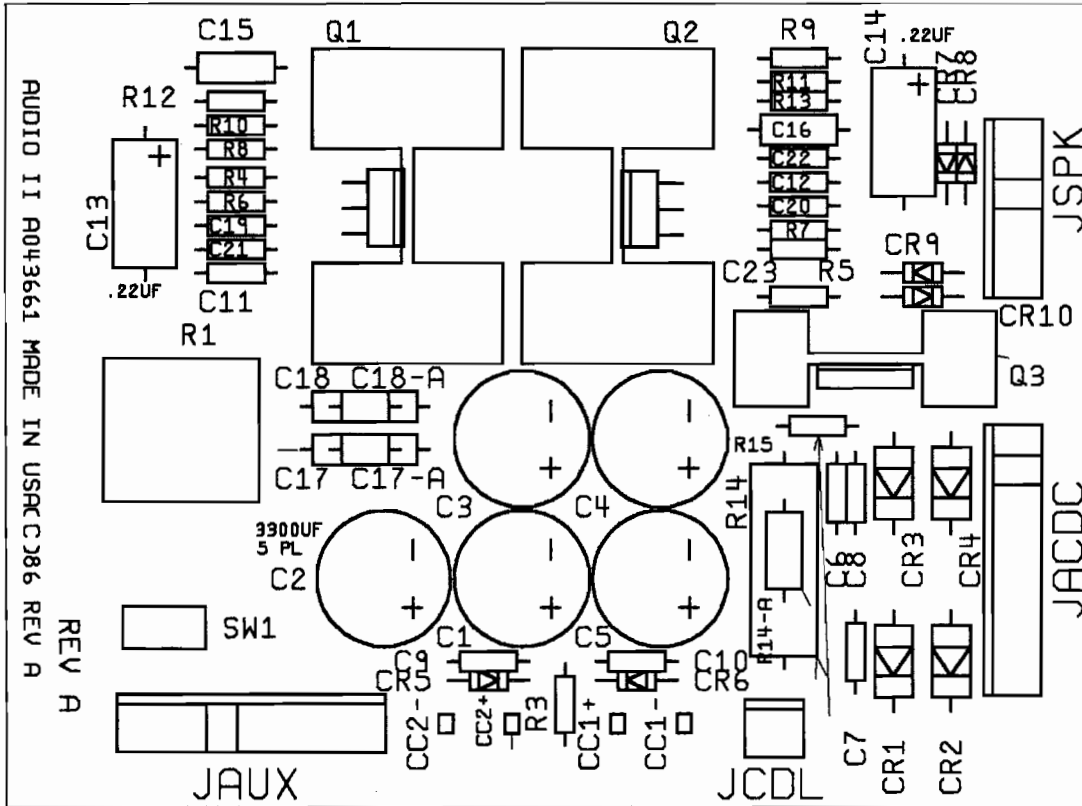
Designator	Description	Part No.
11M	Integrated Circuit Type-74S20	137423-001
11N	Integrated Circuit Type-74F10	137428-001
11P	Integrated Circuit Type-74S86	137002-001
11R	Integrated Circuit Type-74LS32	37-74LS32
11S	Integrated Circuit Type-74LS08	37-74LS08
11T	Integrated Circuit Type-74LS32	37-74LS32
12A	Integrated Circuit Type-74S74	37-74S74
12B	Integrated Circuit Type-74S10	137236-001
12B/C	Integrated Circuit Type-74S04	37-74S04
12C/D	Integrated Circuit Type-74S74	37-74S74
12D	Integrated Circuit Type-74S20	137423-001
12E	Integrated Circuit Type-74S174	137209-001
12F	Integrated Circuit Type-74LS174	37-74LS174
12H	Integrated Circuit Type-74F374 (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
12J	Integrated Circuit Type-74F374 (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
12K	Integrated Circuit Type-74F374 (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
12L	Integrated Circuit Type-7406	37-7406
13A	Integrated Circuit Type-74LS74	37-74LS74
13B	Integrated Circuit Type-74S112	137334-001
13B/C	Integrated Circuit Type-74LS32	37-74LS32
13C/D	Integrated Circuit Type-74LS260	137332-001
13D	Integrated Circuit Type-7407	37-7407
13E	Integrated Circuit Type-74S174	137209-001
13F	Integrated Circuit Type-74LS08	37-74LS08
13H	Integrated Circuit Type-74F374 (Acceptable substitute is Type-74AS374N Integrated Circuit, part no. 137422-001)	137420-001
13J	Integrated Circuit Type-74LS260	137332-001
13K	Integrated Circuit Type-7406	37-7406
13L	Integrated Circuit Type-7406	37-7406
Sockets		
	24-Contact, Medium-Insertion-Force IC Socket	79-42C24
	28-Contact, Medium-Insertion-Force IC Socket	79-42C28
Capacitors		
C1	Capacitor, Aluminum, 100 μ F, 35 V	24-350107
C2	Capacitor, Aluminum, 100 μ F, 35 V	24-350107
C3	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C4	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C5	Capacitor, Aluminum, 100 μ F, 35 V	24-350107
C7	Capacitor, Electrolytic, 1 μ F, 50 V	24-500105
C8	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C9	Capacitor, Mica, 47 pF, 100 V	128002-470
C10	Capacitor, Mica, 68 pF, 100 V	128002-680
C11-C13	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C14	Capacitor, Ceramic, 100 pF, 100 V	122016-101
C15	Capacitor, Ceramic, .1 μ F, 50 V	122002-104

Video PCB Assembly Parts List, Continued

Designator	Description	Part No.
C16	Capacitor, Ceramic, 100 pF, 100 V	122016-101
C17	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C18	Capacitor, Ceramic, 100 pF, 100 V	122016-101
C19-C138	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C139-C141	Capacitor, Ceramic, .001 μ F 50 V	122002-102
C142	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
C144-C147	Capacitor, Ceramic, .1 μ F, 50 V	122002-104
Connectors		
J13	Connector, Header, 11-Circuit, .156 ctr, pol	179014-011
J19	Connector, Header, Sq. Pin, 11-Circuit, .100 ctr	179118-011
Ferrite Beads and Inductors		
L1	Inductor, 1 μ H	141007-001
L2	Ferrite Bead	141003-005
L3	Ferrite Bead	141003-005
L4	Ferrite Bead	141003-005
L5	Inductor, 100 μ H	141019-001
Transistors		
Q1, Q2	Type-2N3904 Transistor	34-2N3904
Q3	Type-2N3906 Transistor	33-2N3906
Q4	Type-2N3904 Transistor	34-2N3904
Q5	Type-2N3906 Transistor	33-2N3906
Q6, Q7	Type-2N3904 Transistor	34-2N3904
Q8	Type-2N3906 Transistor	33-2N3906
Q9, Q10	Type-2N3904 Transistor	34-2N3904
Q11	Type-2N3906 Transistor	33-2N3906
Q12	Type-2N3904 Transistor	34-2N3904
Resistors		
R1	150 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-151
R2	10K Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-103
R4	68 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-680
R17, R18	220 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-221
R19	1K Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-102
R20	120 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-121
R21, R22	180 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-181
R23	220 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-221
R24	470 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-471
R25	1K Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-102
R26	2 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-202
R27	150 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-151
R28	3.9K Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-392
R29	390 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-391
R30	68 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-680
R31	470 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-471
R32	68 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-680
R33	10 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-100
R34	620 Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-621
R35	1.2K Ω , \pm 5%, $\frac{1}{4}$ W Resistor	110000-122

Video PCB Assembly Parts List, Continued

Designator	Description	Part No.
R36	2.4K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-242
R37	5.1K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-512
R38	820 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-821
R39	10K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-103
R40, R41	160 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-161
R42	390 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-391
R43	68 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-680
R44	470 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-471
R45	68 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-680
R46	10 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-100
R47	620 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-621
R48	1.2K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-122
R49	2.4K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-242
R50	5.1K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-512
R51	820 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-821
R52	10K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-103
R53	160 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-161
R54	390 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-391
R55	68 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-680
R56	470 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-471
R57	68 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-680
R58	10 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-100
R59	620 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-621
R60	1.2K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-122
R61	2.4K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-242
R62	5.1K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-512
R63	820 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-821
R64	10K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-103
R65-R76	1K Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-102
R77	Resistor $\frac{1}{4}$ W, $\pm 5\%$, 0 Ω	110005-001
R78	220 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-221
R79	270 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-271
R80	270 Ω , $\pm 5\%$, $\frac{1}{4}$ W Resistor	110000-271
RN1, RN2	680 $\Omega \times 7$ SIP Resistor Network	118007-681
HSYNC, VSYNC	Resistor $\frac{1}{4}$ W, $\pm 5\%$, 0 Ω	110005-001
Miscellaneous		
CR1	Diode, Light-Emitting, MV5053	38-MV5053
Y1	Crystal, 32 mhz	144003-002
	Terminal, Fast-On Tab (Acceptable substitute is Test Point, part no. 020670-001)	179051-002



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**Figure 5-9 Audio II PCB Assembly
 A043661-01 A**

Audio II PCB Assembly Parts List

Designator	Description	Part No.
Capacitors		
C1-C5	3300 μ F, 25 V Radial Electrolytic Capacitor	123003-338
C6-C12	.1 μ F, 50 V Ceramic Capacitor	122002-104
C13-C14	22 μ F, 35 V Electrolytic Capacitor	24-350226
C15-C18	.22 μ F, 25 V Ceramic Capacitor	122006-224
C19-C20	.001 μ F, 50 V Ceramic Capacitor	122002-102
C21-C23	.1 μ F, 50 V Ceramic Capacitor	122002-104
Diodes		
CR1-CR4	Type-1N5401 Diode	31-1N5401
CR5-CR10	Type-1N4001 Diode	31-1N4001
CR13	Type-1N4002 Diode	31-1N4002
Connectors		
JACDC	Key 6, 9 Ckt., .156-Inch Ctr. Header Connector	179213-009
JAUX	Key 6, 9 Ckt., .156-Inch Ctr. Header Connector	179213-009
JCDL	2 Ckt., .156-Inch Ctr. Header Connector	179213-002
JSPK	Key 3, 6 Ckt., .156-Inch Ctr. Header Connector	179213-006
Integrated Circuits		
Q1-Q2	Type-TDA-2030 Amplifier	137301-001
Q3	Standup Type-7815 Integrated Circuit	37-7815
Resistors		
R1	10 k Ω , Dual Horizontal Pot Resistor	119011-103
R3	10 Ω , \pm 5%, 1/4 W Resistor	110000-100
R4-R7	22 k Ω , \pm 5%, 1/4 W Resistor	110000-223
R8-R9	10 k Ω , \pm 5%, 1/4 W Resistor	110000-103
R10-R11	1 k Ω , \pm 5%, 1/4 W Resistor	110000-102
R12-R13	1 Ω , \pm 5%, 1/4 W Resistor	110000-010
R14-A	0 Ω , \pm 5%, 1/4 W Resistor	110005-001
Miscellaneous		
SW1	SPDT Miniature Slide Self-Test Switch	69-004
TP28-TP29	Type-TDA-230 Heat Sink	178190-032
TP101	Type-7815 Heat Sink	178190-124
	#6-32 \times 3/8-Inch Cross-Recessed Pan-Head Screw	72-1606S
	#6-32 Nut/Washer Assembly	75-99516
	Thermal Compound	78-16001
	Hot Melt Adhesive	106006-001
	Test Point	179051-001

N O T E S

THE STEERING WHEEL MECH. SUCK

THE GAS PEDALS SUCK.

LETS FACE IT, THE WHOLE GAME SUCKS.

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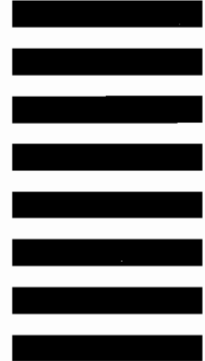
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Super Sprint™

Coin Information and Game Statistics

Date: _____

NOTE

Advance screens in the Self-Test Mode by pressing the red start (center) button.

Accounting Information

Left Coins	_____	Number of coins deposited in left coin mechanism	3 Player Heats	_____	Total number of heats/ races run with 1, 2, or 3 players
Center Coins	_____	Number of coins deposited in center coin mechanism	Total Games	_____	Total number of coins deposited in all coin mechanisms
Right Coins	_____	Number of coins deposited in right coin mechanism	Total Game Time	_____	Accumulated time of all 1-, 2-, or 3-player games played in hours, minutes, and seconds
Add-A-Coins	_____	Total number of coins deposited in all coin mechanisms during add-a-coin mode only	Average Game Time	_____	Total game time divided by total games in hours, minutes, seconds
1 Player Heats	_____	Total number of heats/ races run with 1 player only	Total On Time	_____	Total time in hours, minutes, and seconds that the game was turned on
2 Player Heats	_____	Total number of heats/ races run with 1 or 2 players	Total Play Time	_____	Total time in hours, minutes, and seconds that the game was played

Reset Saved Info Screen

NOTE

Use this screen only to reset high score table and accounting information.

How to reset: select item to be reset with yellow car (right) button. Push blue car (left) button to toggle between Yes and No. Press red start button to reset selected tables.

Reset Accounting Info?	Yes	No
Reset High Score Table?	Yes	No

Game Times*

0:30 _____	3:00 _____	5:30 _____
1:00 _____	3:30 _____	6:00 _____
1:30 _____	4:00 _____	6:30 _____
2:00 _____	4:30 _____	7:00 _____
2:30 _____	5:00 _____	7:30 _____
		8:00 & Up _____

**Note: It is possible for a limited number of players to play Super Sprint for over eight minutes. Generally, this can occur during a 3-player game when one or two players lose frequently and continue using the add-a-coin feature. In locations where there are many highly skilled players, you should expect to see 3-7% of total games played at over eight minutes (after four weeks on location).*

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Seller warrants that its printed-circuit boards and parts thereon are free from defects in material and workmanship under normal use and service for a period of ninety (90) days from date of shipment. Seller warrants that its video displays and laser video disc players (in games supplied with displays and video-disc players) are free from defects in material and workmanship under normal use and service for a period of thirty (30) days from date of shipment. None of the Seller's other products or parts thereof are warranted.

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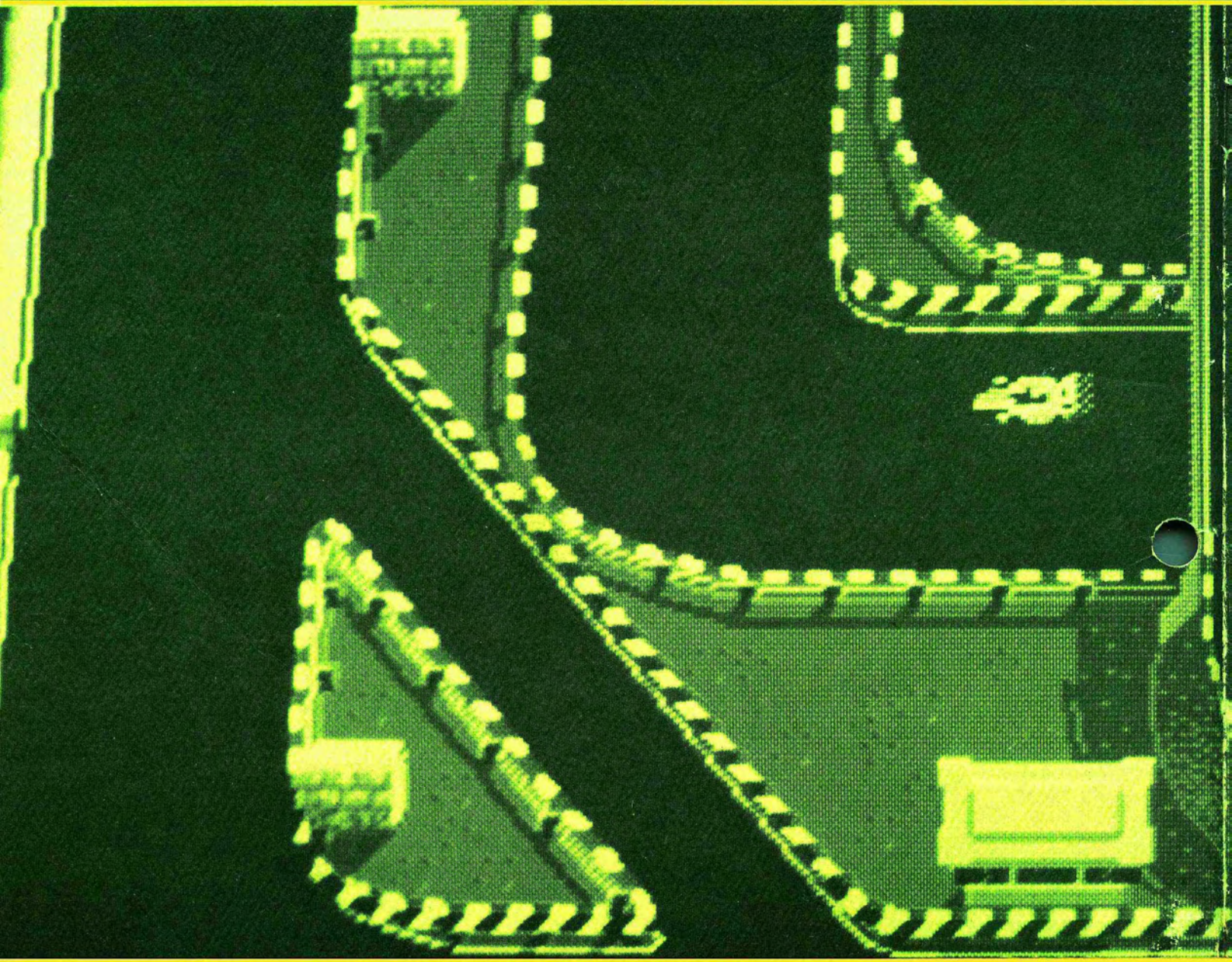
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