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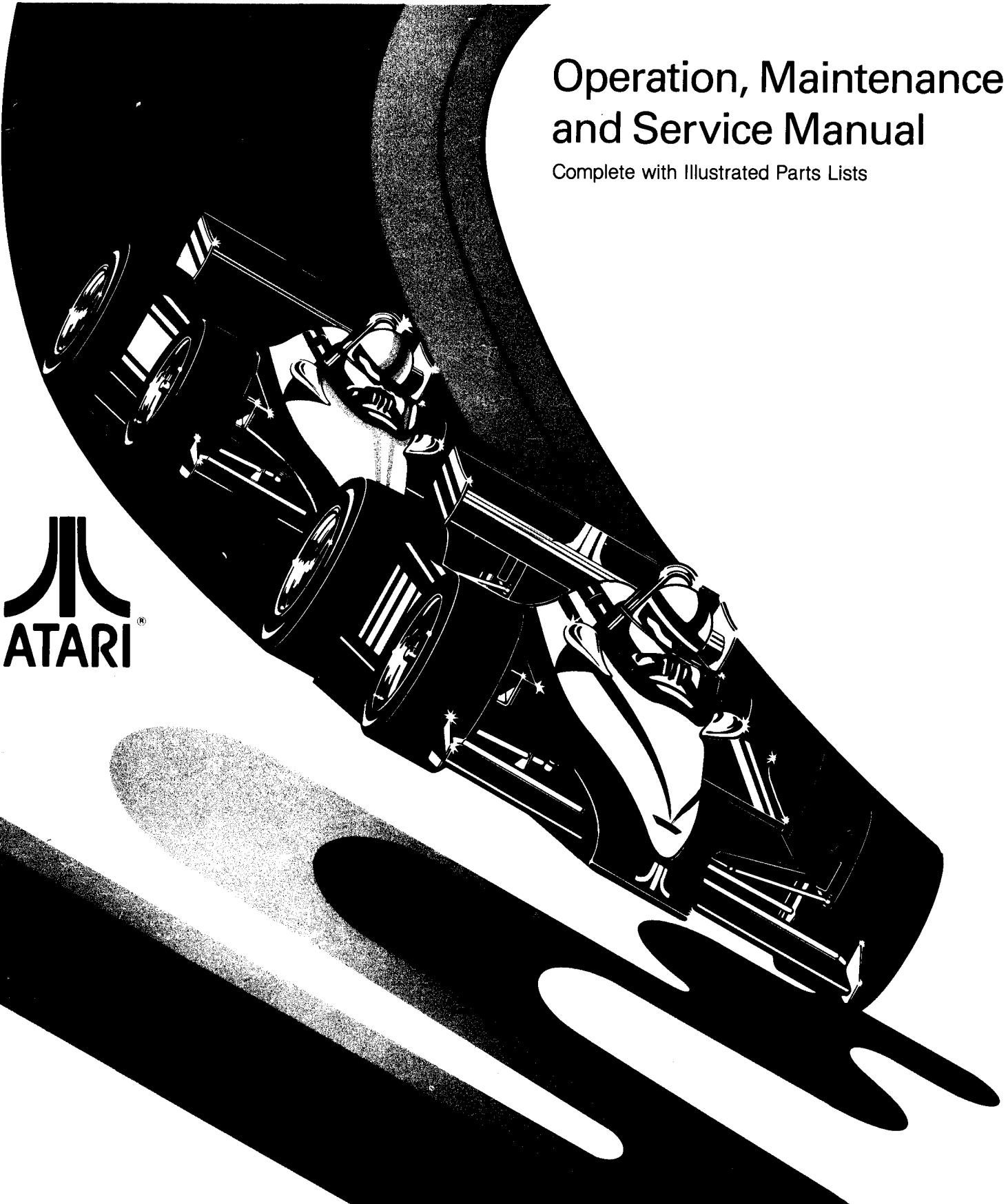
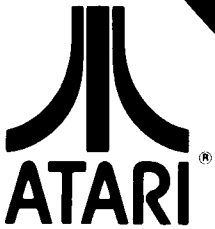


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Monte Carlo™

Operation, Maintenance and Service Manual

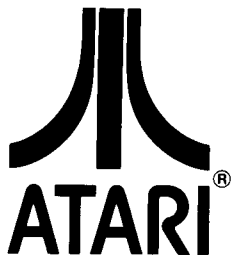
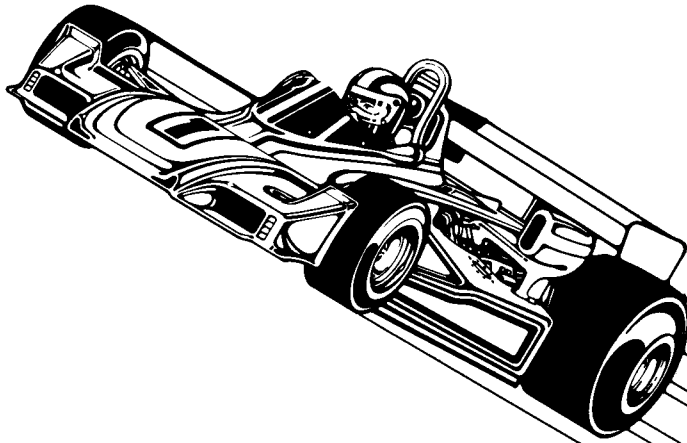
Complete with Illustrated Parts Lists



MONTÉ CARLO™

Operation, Maintenance and Service Manual

Complete with Illustrated Parts Lists



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NOTE

If reading through this manual does not lead to solving a certain maintenance problem, call Tele-Help™ at the Atari Customer Service office in your geographical area, as shown in one of the two maps below. Order all parts from the California office.

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Telex 17-1103

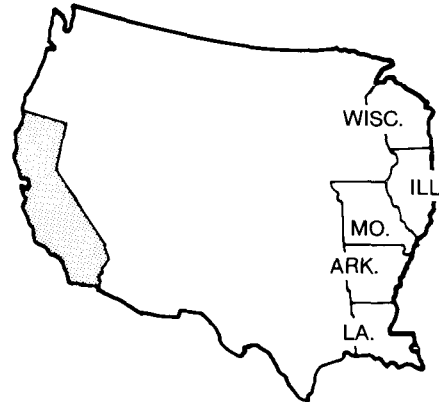
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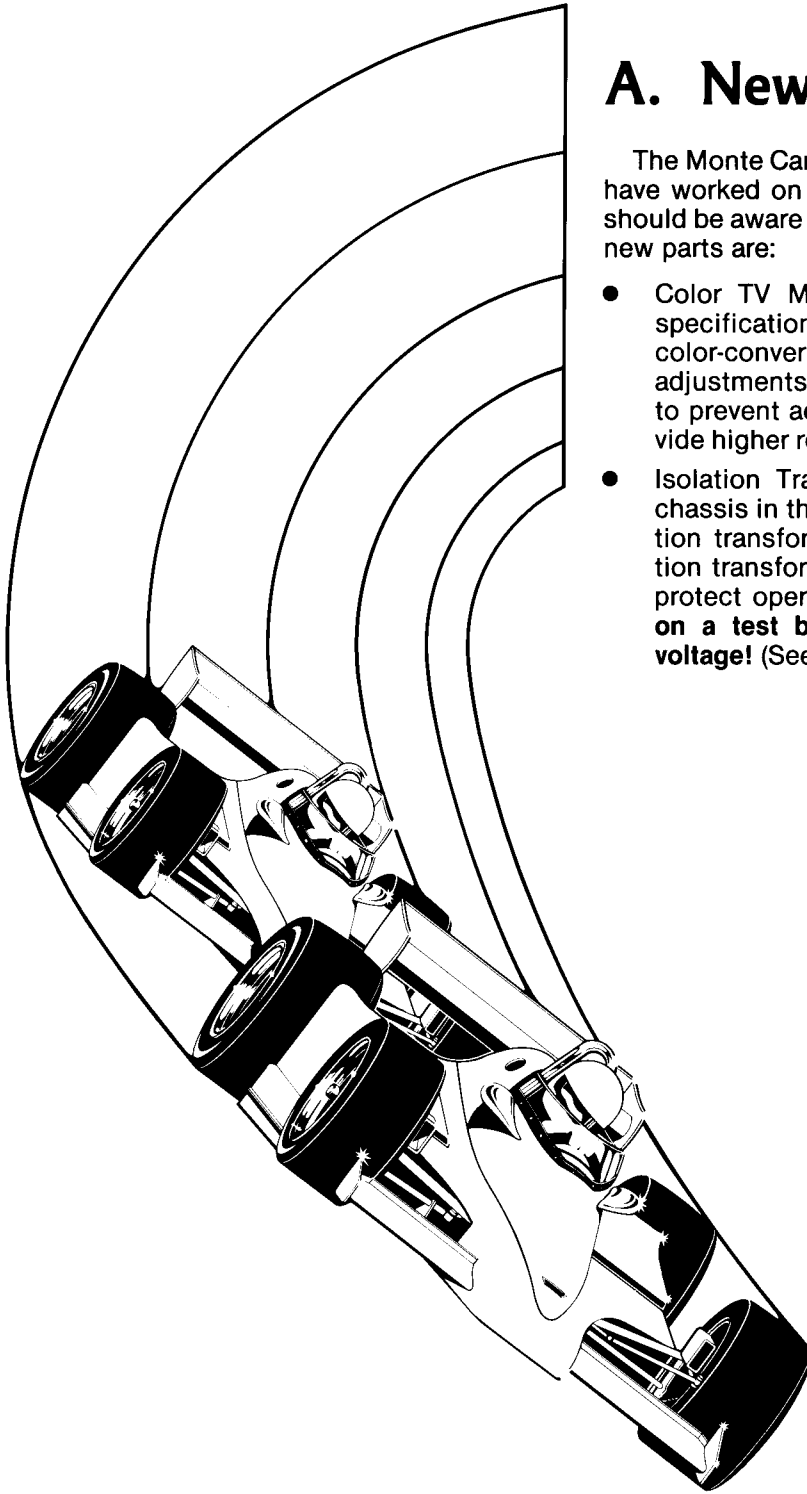


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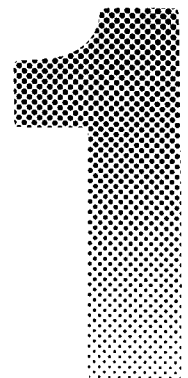




A. New Parts

The Monte Carlo™ game has five new parts. If you have worked on Atari games in the past, then you should be aware of these important differences. The new parts are:

- Color TV Monitor. Made especially to Atari specifications, the 19-inch monitor has been color-converged at the factory. All convergence adjustments are cemented and locked in place, to prevent accidental changes. This helps provide higher reliability for the service technician.
- Isolation Transformer. The color TV monitor chassis in this game does not contain an isolation transformer. Atari has mounted an isolation transformer on the floor of the cabinet to protect operators. **If you service this color TV on a test bench, you must isolate the line voltage!** (See instructions on pages 16 and 17.)



Location Setup

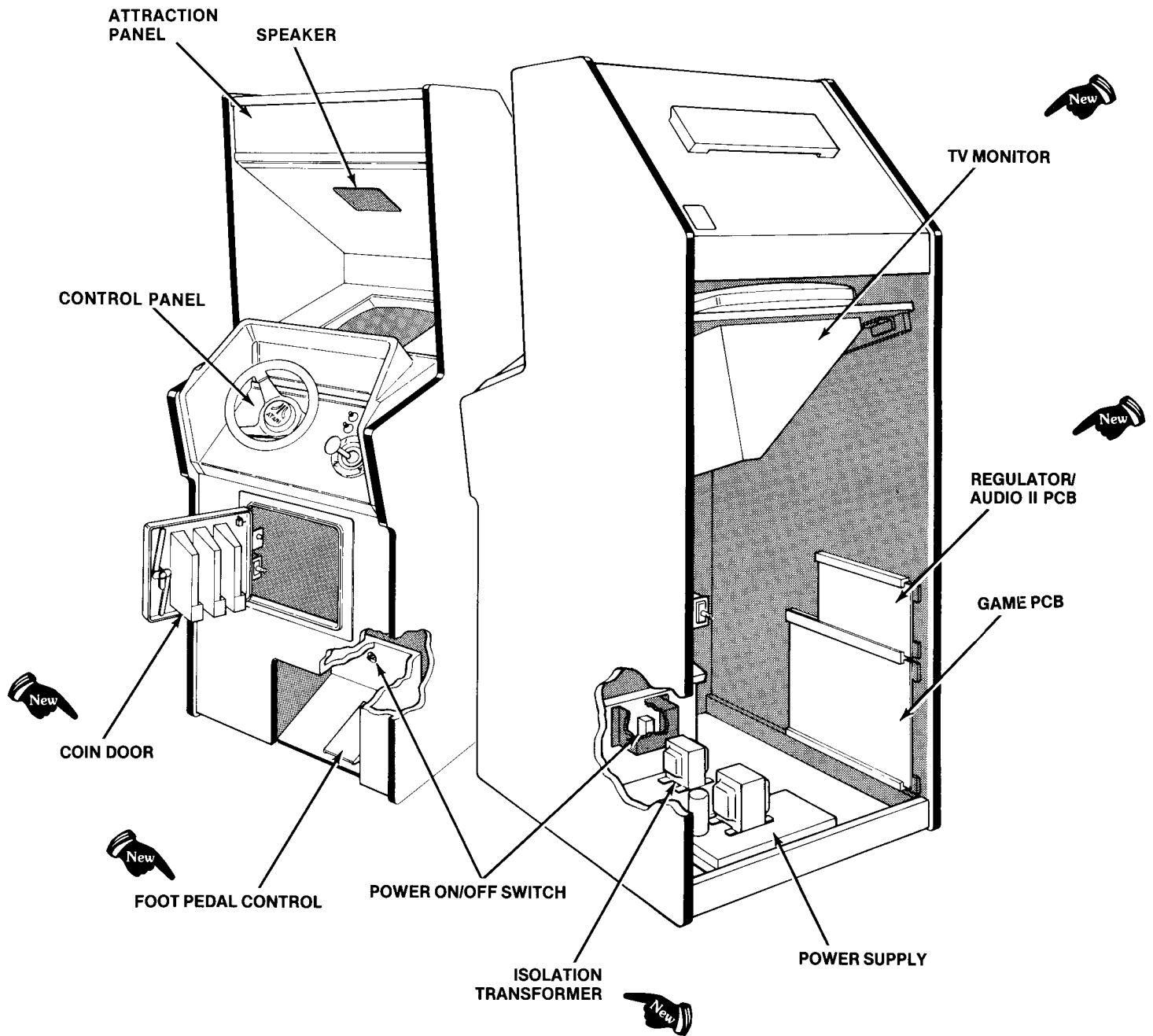


Figure 1 Overview of Game

- **Foot Pedal Assembly.** This redesigned control will universally fit Monte Carlo and all future games with foot pedal controls. It functions more smoothly and quietly because the hinge is built to tighter tolerances; the whole control is also more compact and less expensive to replace than the old style. In addition, the control's switch actuator is stronger—it is now a flat blade, not a thin wire.
- **New Coin Door.** This door will accommodate two or three mechanisms, and up to four coin counters. Its triple-arm locking bar provides added security. For greater ease of access, the self-test switch is now mounted on the door, rather than inside the cabinet. Also, for simpler maintenance the door's coin mechanisms require no adjustments.
- **Regulator/Audio II PCB.** This slightly redesigned printed-circuit board has two additional voltage regulators for games using 2708 EPROM memory chips. The board's new +12V and -5V regulators are both mounted on the heat sink. Otherwise this board is the same as past Regulator/Audio PCBs.

These new parts, as well as all other major parts in the game, are illustrated in Figure 1. Throughout this manual, wherever one of these new parts is mentioned, you will see this symbol:



B. Game Inspection

This new game is ready to play upon removal from the shipping carton. However, your careful inspection is needed to supply the final touch of quality control. Please follow these steps to help us insure that your new game was delivered to you in good condition.

NOTE

Do not plug the game in yet!

1. Examine the exterior of the game cabinet for dents, chips, or broken parts.
2. Unlock and open the access panel of the cabinet and inspect the interior of the game as follows:
 - Check that all plug-in connectors (on the game harness) are firmly seated. Replug any connectors found unplugged. **DON'T FORCE CONNECTORS TOGETHER.** The connectors are keyed so they only go on in the proper orientation. **A reversed edge connector will damage a PCB.**



WARNING



To avoid possible unpleasant electrical shock, do not touch internal parts of the TV monitor with your hands or metal objects held in your hands!

- Check that all plug-in integrated circuits on the game PCB are firmly seated in their sockets.
- Note the location of the game's serial number—it is printed on the special label on the outside of the game cabinet. Verify that the serial numbers also stamped on the Game PCB, Regulator/Audio II PCB and TV Monitor are all identical. A drawing of the serial number locations is on the inside front cover of this manual. Please mention this number whenever you call your distributor for service.
- Check all major subassemblies such as the power supply, control panel and TV monitor for secure mounting. For the safety of players, be certain that all green ground wires are secured at their terminations.

C. Game Installation

Figure 2 Installation Requirements

| | |
|----------------|---------------------------|
| Power | 125 watts |
| Temperature | 0 to 38°C (32 to 100°F) |
| Humidity | Not over 95% relative |
| Space Required | 64 × 99 cm (25¼ × 39 in.) |
| Game Height | 179 cm (70½ in.) |

1. Voltage Selection

Before plugging in your game, make sure that the voltage selection plug on the power supply (see Figure 3) is correct for your location's line voltage. Check the wire color on the plug and see if it is correct per the list below.

| Line Voltage Range | Voltage Selection Plug Color |
|--------------------|------------------------------|
| 86-104 VAC (95) | Black |
| 100-125 VAC (110) | Orange |
| 190-220 VAC (205) | Green |
| 210-240 VAC (220) | Red |

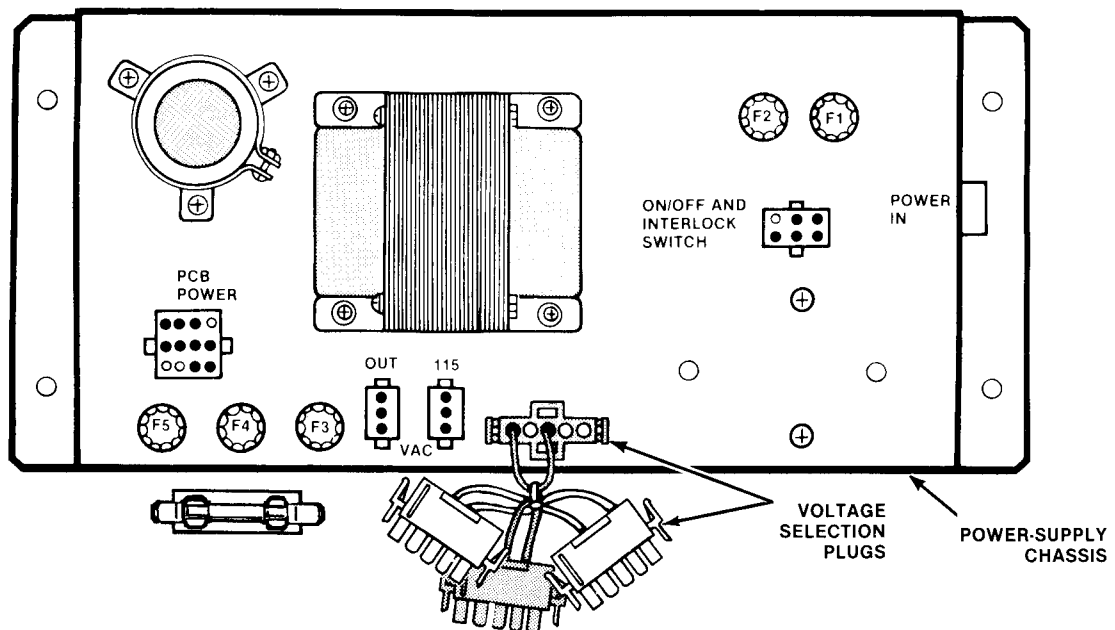


Figure 3 Power Supply

2. Interlock and Power On/Off Switches

To minimize the hazard of electrical shock while working on the inside of the game cabinet, two interlock switches have been installed (see Figure 4). One is located behind the access panel and one is behind the coin door. These switches remove all AC line power from the game circuitry when a door or panel is opened. The power on/off switch is installed in a recessed area above the foot pedal.

Check for proper operation of the interlock switches by performing the following steps:

- Unlock and open the access panel and the coin door.
- Plug the AC line power cord into an AC outlet.
- Close the access panel and coin door.
- Set the power on/off switch to the on position. Within approximately 30 seconds the TV monitor should display a picture.
- Slowly open the access panel. The TV monitor picture should disappear when the panel is opened approximately 2.5 cm (1 inch). Close and lock the access panel and repeat this step with the coin door.

- If the results of the previous step are satisfactory, the interlock switches are operating properly. If the TV monitor doesn't go off as described, check to see if the corresponding interlock switch is broken from its mounting or stuck in the "on" position.

D. Self-Test Procedure

This game will test itself and provide data to demonstrate that the game's circuitry and controls are operating properly. The data is provided on the TV monitor and the game speaker; no additional equipment is necessary.

Part of the self-test procedure includes a display of the operator-selectable game options. Therefore, we suggest you run the self-test procedure anytime you need to change the game's options.

To run the self-test, follow the instructions outlined in Figure 6.

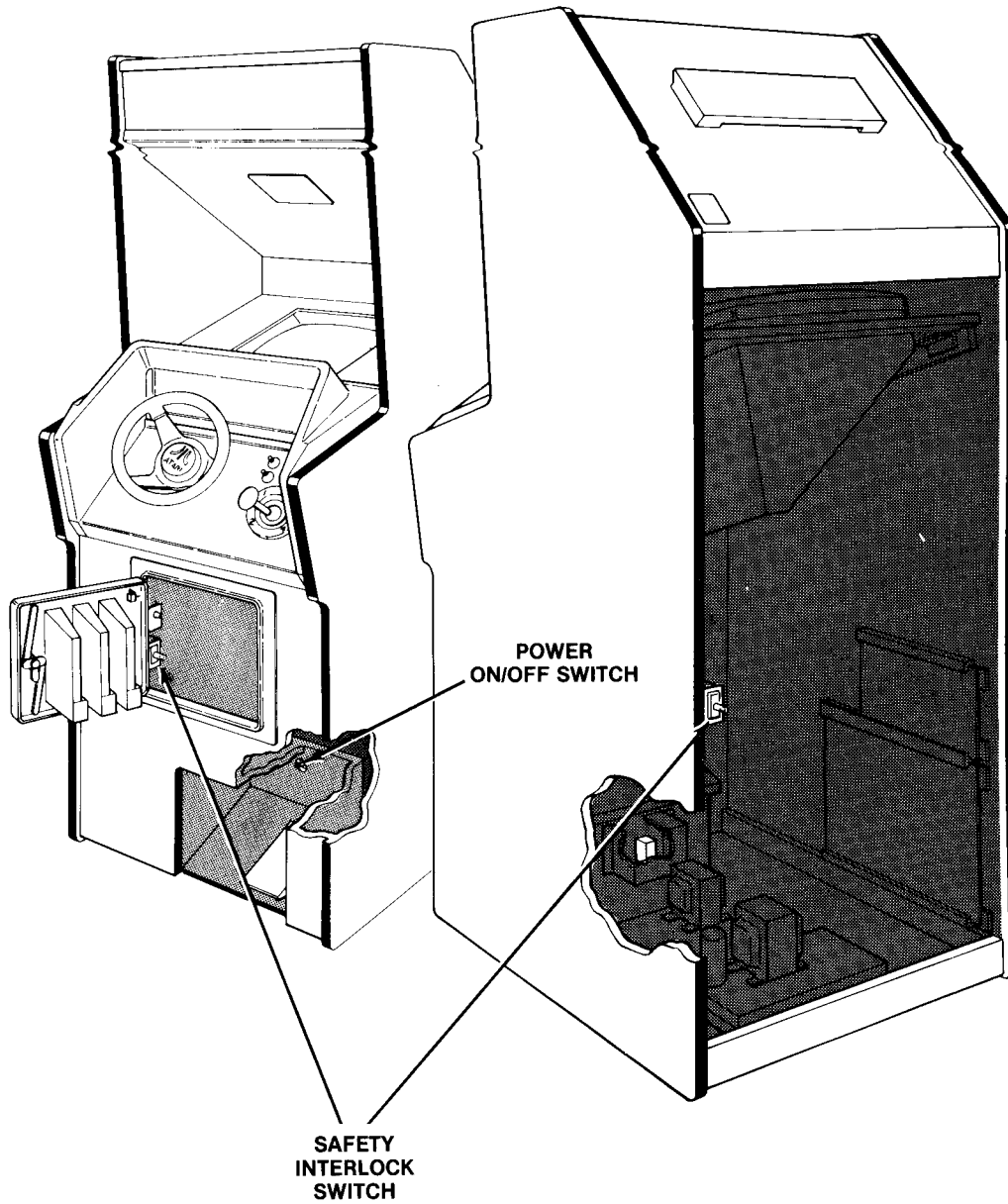


Figure 4 Interlock and Power On/Off Switches

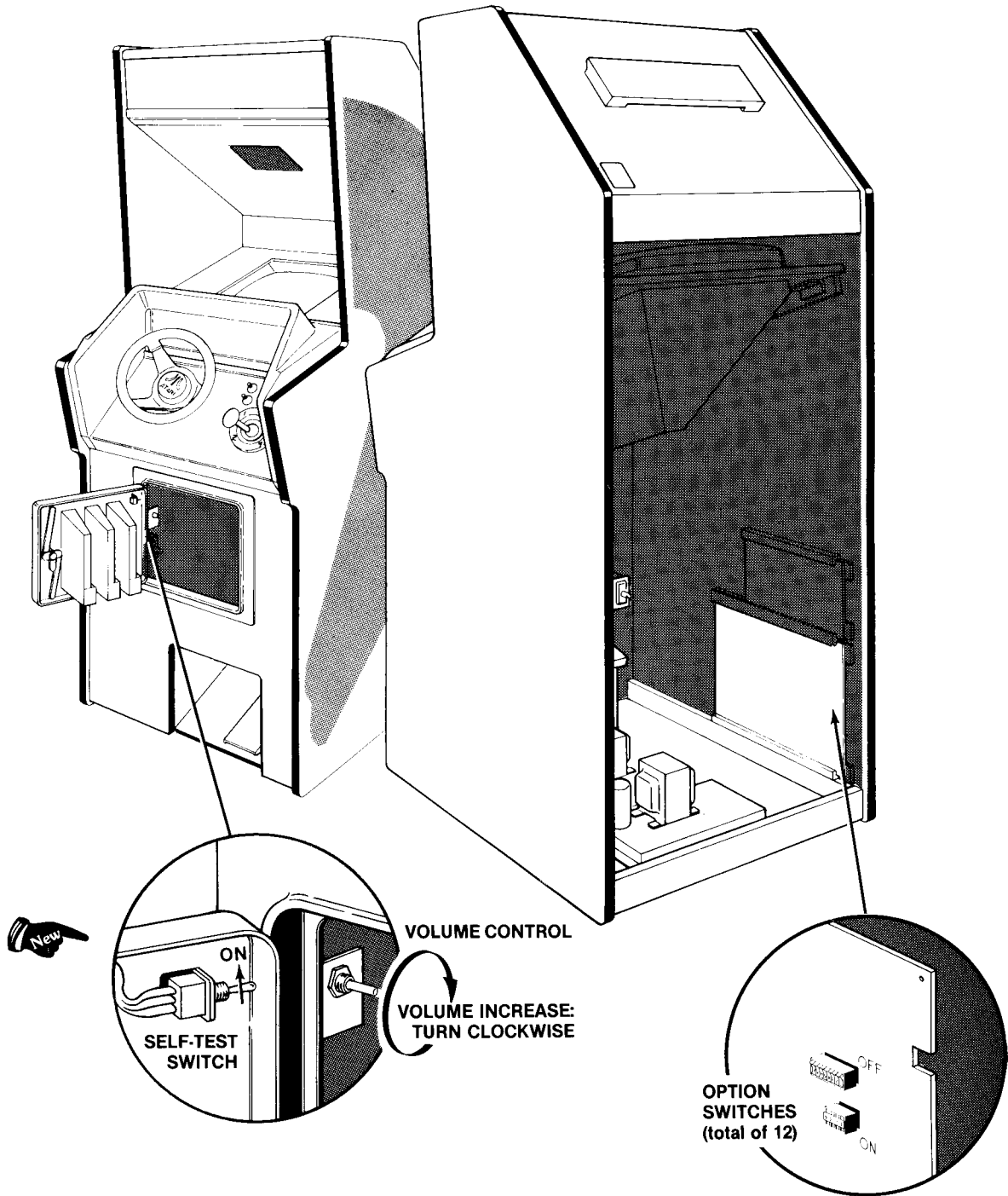


Figure 5 Location of Self-Test Switch, Volume Control and Option Switch

Figure 6 Self-Test Procedure

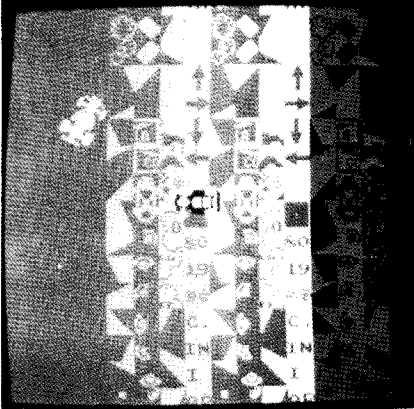
| Instruction | Result if Test Passes | Result if Test Fails |
|---|--|---|
| <p>1. Set self-test switch to on position (see Figure 5).</p> | <p>Game displays the following in the lower right corner of the TV monitor screen:</p>  <p>RAM 1 OK RAM 2 OK</p> <p>ROM OK</p> | <p><i>RAM 1 Test:</i> Screen shows “garbage” (scrolling sideways) and you hear a constantly repeated series of 8 crashes and/or skids. Crash sound(s) during any of the first four tones: bad RAM at L3 or its associated circuitry. Crash sound(s) during any of the last four tones: bad RAM at K3 or its associated circuitry. Crash sound during all eight tones: address line problems. Self-test will always stop here until you replace the proper RAM.</p> <p>Note: If self-test displays “garbage” (the playfield objects scroll sideways) and no series of crash and skid sounds occurs, then PROM at location J/K1 or ROM at location C1 is probably bad. These chips contain the self-test program.</p> <p><i>RAM 2 Test:</i> RAM 2 OK message is replaced by one of these messages: BAD RAM 2 H or BAD RAM 2 L or BAD RAM 2 HL</p> <p>“H” means a bad RAM at location K6. “L” means a bad RAM at L6. Both letters H & L displayed means both chips are bad.</p> <p><i>ROM Test:</i> ROM OK message is replaced by BAD ROM, plus one or more of the letters A thru H. See Figure 23 for location and part number of bad ROM(s) that must be replaced.</p> |
| <p>2. Activate the switches in all of the following controls:</p> <ul style="list-style-type: none"> • Gas pedal • 1st, 2nd, 3rd gears • Track select button • Start button • Steering wheel (left and right movement) • All coin trip wires • Slam switch | <p>A very short skid sound is produced, and track select and start buttons light up in unison when each switch is opened and closed. Note: activating the coin trip wires during self-test will not increment the coin counters, so your accounting will still be accurate.</p> | <p>No skid sound is produced, and track select/start buttons don’t light up when control or switch is activated. This indicates a bad switch, loose harness wires or connectors, or a bad steering PCB on the steering wheel control. Note: If all of the switches produce no sound but light the start and track select buttons, then the speaker, its wiring, or the audio circuitry on the Regulator/Audio II or game PCB is bad. If all of the switches being activated cause the track select/start buttons to remain dark, then the light-emitting diodes in these buttons have burned out, or their wiring is loose.</p> |
| <p>3. Set the self-test switch to off position. For diagnostic procedures, see schematic drawings.</p> | | |

Figure 7 Option Switch Settings

To change toggle positions on the switch assemblies, you need not remove the game PCB. The switches, usually colored blue, are easily accessible when the game PCB is mounted in place.

When changing the options, verify proper results on the TV monitor display during self-test. A switch toggle in the **on** position is indicated by a 1 for that switch on the TV monitor display. A

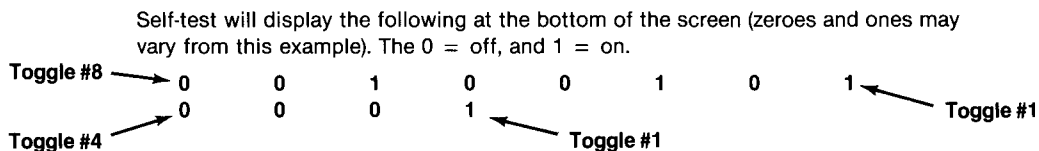
switch in the **off** position is indicated by the number 0 (see example given at bottom of this figure).

All switch settings are displayed on the monitor exactly as you view the corresponding switches on the game PCB, with toggles #1 on the right and toggles #4 and #8 on the left.

| Toggle Settings of 8-Toggle Switch on Game PCB | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|--------------------------------------|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Option |
| | | | | | | Off | Off | Free play |
| | | | | | | Off | On | 1 coin* for 1 play |
| | | | | | | On | Off | 1 coin* for 2 plays |
| | | | | | | On | On | 2 coins* for 1 play |
| | | | | | | | | Bonus Level (bonus = 40 fuel units): |
| | | | | Off | Off | | | No bonus |
| | | | | On | Off | | | Liberal |
| | | | | Off | On | | | Moderate |
| | | | | On | On | | | Conservative |
| | | | | | | | | Time (always equals 90 fuel units): |
| | | Off | Off | | | | | 1 minute per play |
| | | On | Off | | | | | 1½ minutes per play |
| | | Off | On | | | | | 2 minutes per play |
| | | On | On | | | | | 2½ minutes per play |
| Off | Off | | | | | | | English language |
| On | Off | | | | | | | French language |
| Off | On | | | | | | | Spanish language |
| On | On | | | | | | | German language |

* Note: In the U.S. and Germany only, a "coin" is defined as 25¢ or 1 DM. If your game also has \$1, 2 DM or 5 DM mechanisms, you must set the center and right coin mechanism multipliers as per your choice.

| Toggle Settings of 4-Toggle Switch on Game PCB | | | | | Option |
|--|-----|-----|-----|--|--------|
| 4 | 3 | 2 | 1 | | |
| U | | Off | Off | Right coin mech × 1 | |
| N | | Off | On | Right coin mech × 4 | |
| U | | On | Off | Right coin mech × 5 | |
| S | | On | On | Right coin mech × 6 | |
| E | | | | | |
| D | Off | | | Center coin mech × 1 (Both settings are for left | |
| | On | | | Center coin mech × 2 mech, if a 2-mech door) | |



E. Game Play

Atari's Monte Carlo™ is a one-player video game that simulates driving in a grand prix race. Various video-display phrases indicate score, time elapsed ("FUEL"), speed, and which track was selected at the beginning of the game (eight different ones ranging from easy to hard). Players drive the grand prix car thru the streets, while spectators observe from the side. Bales of hay, cola stands, trees, and bushes also line the roadway.

Four computer-controlled cars provide challenge: they pass the player's car at high speed and may cause it to skid or even crash. However, the computer cars are not infallible and may also skid or crash occasionally. Realistic engine revving, screeching tires and crash sounds accompany game play.

The Monte Carlo™ game has four possible modes of operation: Attract, Ready-to-Play, Play, and Self-Test. Self-test is a special mode for checking the game switches and computer functions. You may enter this mode at any time. When entered, all game credits are cancelled and the high score today is zeroed.

1. Attract Mode

The attract mode begins when power is applied to the game, after a play mode, or after self-test. This mode is continuous and is only interrupted when a game is paid for and accepted or when in self-test. In this mode, the TV monitor displays a simulated game with the computer cars zipping by and the player's car in the center of the screen. In addition, this mode shows the last player's score, the high score today for the current track being displayed, and the score required for bonus play.

2. Ready-to-Play Mode

This mode begins when sufficient coins have been accepted for a game. It ends when the START pushbutton is pressed. When this mode begins, the messages *SELECT TRACK* and *PUSH START* flash at the bottom of the screen. At this point the player may choose from eight tracks that vary in difficulty,

by repeatedly pushing the TRACK SELECT pushbutton (the numbers 1 thru 8 will appear in the lower right corner of the screen). The monitor pictures are otherwise the same as those shown in the attract mode.

3. Play Mode

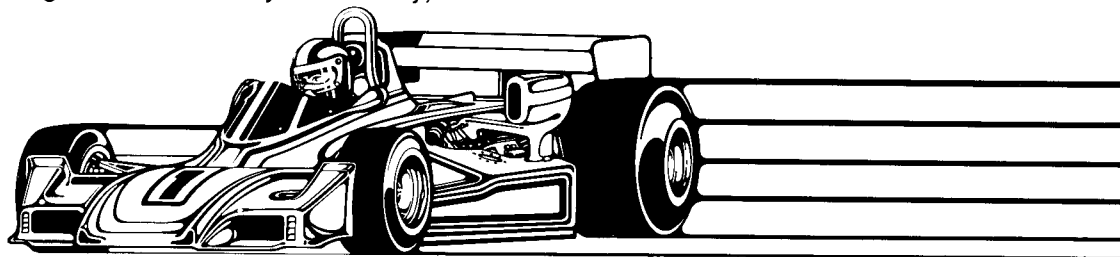
The play mode begins when the START pushbutton is pressed. The mode ends when the player's fuel has run out, including any earned for bonus play. After pressing the START button, the game will set the player's car behind the checkerboard start line, 90 fuel units are granted, and the steering wheel, gear shifter and accelerator are immediately enabled. Note that regardless of the operator option setting for game time, players will always be granted 90 fuel units, to make all Monte Carlo games appear equal in game length.

As the player rounds the turns, he or she is permitted to drive somewhat off the road without crashing. However, this will cause a screeching sound and will slow down the car. Touching an obstacle on the side, such as a tree or bale of hay, will, however, cause a crash. To continue, you must straighten out the car, shift into first gear and accelerate back onto the roadway.

Bottlenecks and hairpin curves in the road provide added challenge to the player, in addition to the computer cars that constantly pass by. Scoring is automatically calculated: each track has many invisible checkpoints that players must drive over, in order to increment their scores.

When the fuel reaches "0", the computer checks the score and compares it with the bonus level (operator-adjustable to three levels, or can be eliminated entirely). If this score has been achieved, then extra time of 40 fuel units is instantaneously awarded. All colors are reversed: the dark road turns light and the landscape turns dark. (Game play goes on continuously while all this is happening.)

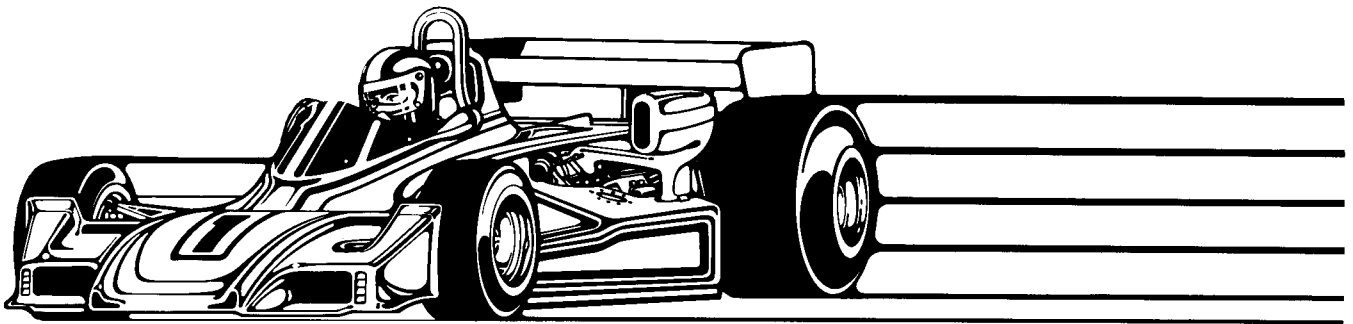
In addition, six beeps notify the player of achieving this bonus level. Only one bonus play per game is granted, i.e., another bonus cannot be earned on top of the first bonus.



All games require certain maintenance to keep them in good working order. Clean, properly maintained games will attract players and earn more profits.

The most important maintenance item is running the self-test every time you collect money from the cash box. Just looking at a game will not tell you if the foot pedal, steering wheel or gear shifter controls, LED switches or coin door switches are broken, or if LEDs have burned out. The self-test will inform you of any of these possible problems.

Second, you should regularly clean the outside of the game and the coin mechanisms. In addition, you will need to regularly lubricate the steering wheel, foot pedal, and gear shifter—for details see this chapter.



Maintenance and Repair



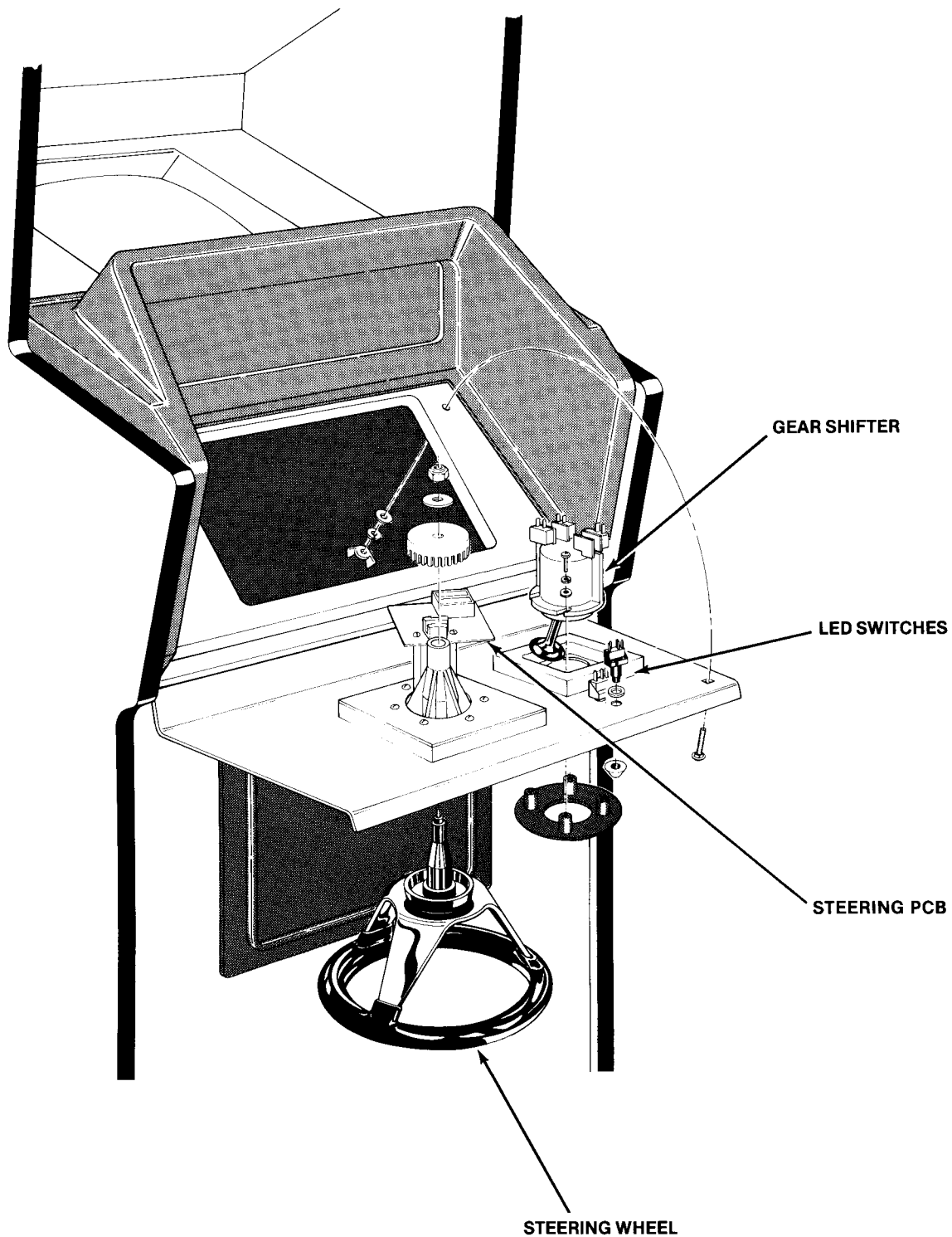


Figure 8 Opening and Removing Parts from the Control Panel

A. Cleaning

The exterior of the game cabinet and the metal and acrylic surfaces may be cleaned with any non-abrasive household cleaner. If desired, special coin machine cleaners that leave no residue can be obtained from your distributor. **Do not** dry-wipe any of the acrylic panels, because any dust can scratch the surface and result in fogging the plastic.

B. Fuse Replacement

This game contains six fuses—all on or near the power supply assembly (not including the TV monitor fuses). Replace fuses only with the same type as listed in Chapter 3 of this manual: the single fuse mounted on the floor of the cabinet and the five fuses on the power supply are all described in Figure 28. See the color TV monitor manual, TM-148, for the monitor fuse data.

C. Opening the Control Panel

Prior to repairing or replacing any item on the control panel or prior to removing the TV monitor, unplug the game. Then open the coin door.

Reach through the opening and remove both sets of carriage bolts, wing nuts, split lock washers, and flat washers, located on the underside of the control panel (see Figure 8).

Lift up on the control panel and swing it down towards you. The three different types of controls (steering wheel, gear shifter, and LED switches) on this panel are now easily accessible for maintenance or repair. Figure 8 also provides details on how to remove the three controls.

1. Steering Wheel Maintenance and Repair

Lubrication

Depending on usage, your game's steering wheel will need lubrication approximately every 3 to 6 months. To do so, open the control panel as described previously. Refer to Figure 9 and unplug the harness connector on the small steering printed-circuit board (PCB). Then remove the hex nut on the end of the wheel, along with the large washer and toothed wheel.

Pull the steering wheel out of the control panel (towards the floor).

Apply a light coat of Shell Alvania #EPRO lithium-based lubricant (Atari part no. 78-1707) to the friction-producing surfaces of both white bearings—Figure 9 shows these areas in detail.

Then reassemble the steering wheel in the control panel, making sure the notches in the bearings, housing, and toothed hub all match up. **Be certain that the hub can spin freely in the slot of the optical coupler on the PCB!** Carefully plug the connector back onto the small PCB, but do not exert too much pressure, or you will break the board. Close the control panel.

Repair

Probably the only repair this control would normally require is replacement of the steering PCB. Simply remove the two small cross-recessed screws and split lock washers that mount this board onto the black housing (the toothed hub must be off first). Replace the board, mount the hub, large washer and hex nut back on the shaft, and then plug the harness connector onto the PCB.

2. LED Switch Replacement

The light-emitting-diode (LED) switches on the control panel have a very low failure rate. In case a switch should ever be suspect, first test it per the description that follows. To replace the switch, refer to Figure 10.

- Remove the wires from the suspected switch.
- Set multimeter to ohms scale. Set ohms scale to $R \times 1$, then zero the meter.
- Connect multimeter leads to appropriate LED switch contacts (see Figure 10 for designation of switch contacts and meter lead placement).
- Check contacts (push and release the switch button) for closed and open continuity.
- If the contacts do not operate sharply or always remain closed or open, then replace the LED switch as outlined in Figure 10.

3. Gear Shifter Maintenance and Repair

Normal maintenance involves lubricating two parts in the shifter every three to six months (this requires removing the control). First open the control panel as described previously in Figure 8. Then

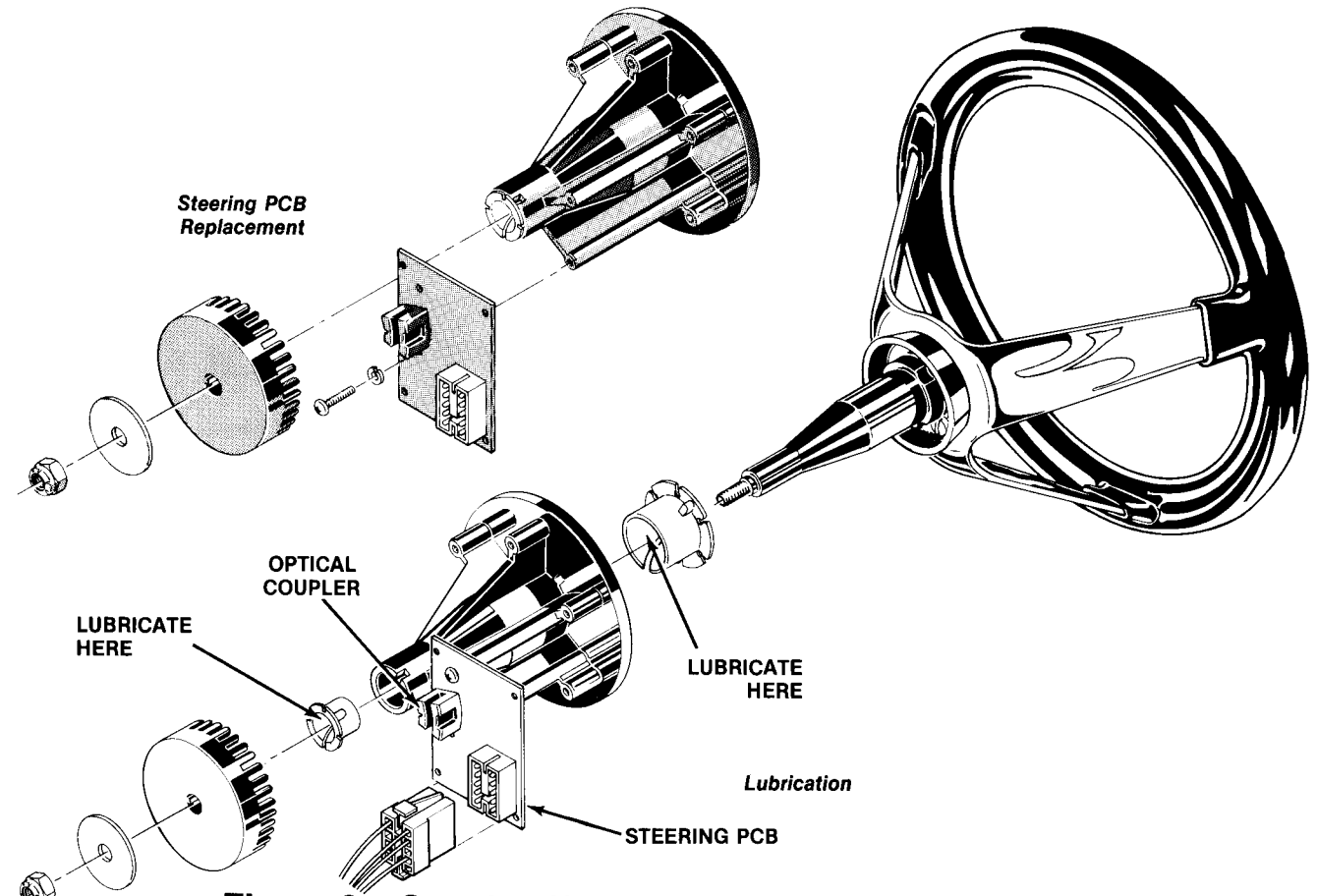
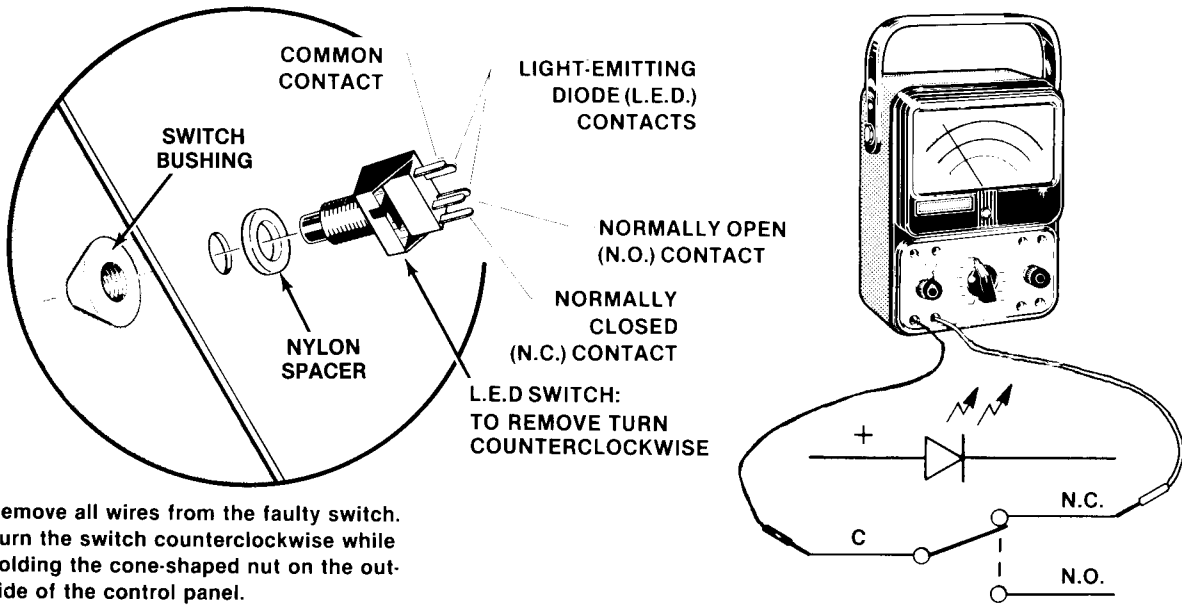


Figure 9 Steering Wheel Maintenance and Repair



- Remove all wires from the faulty switch.
- Turn the switch counterclockwise while holding the cone-shaped nut on the outside of the control panel.
- Install a new switch using the reverse procedure.
- Reconnect the harness wires.

Figure 10 LED Switch Testing and Replacement

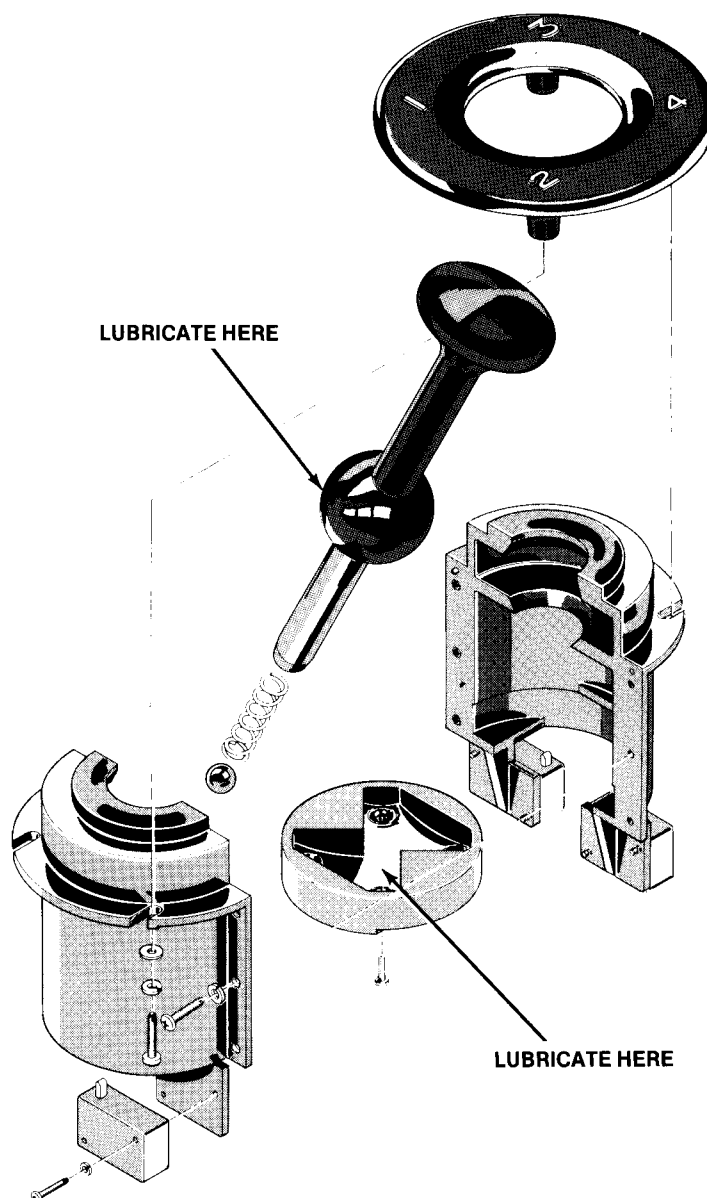


Figure 11 Gear Shifter Maintenance and Repair

unplug the “quick-disconnect” connectors on the shifter’s three switches.

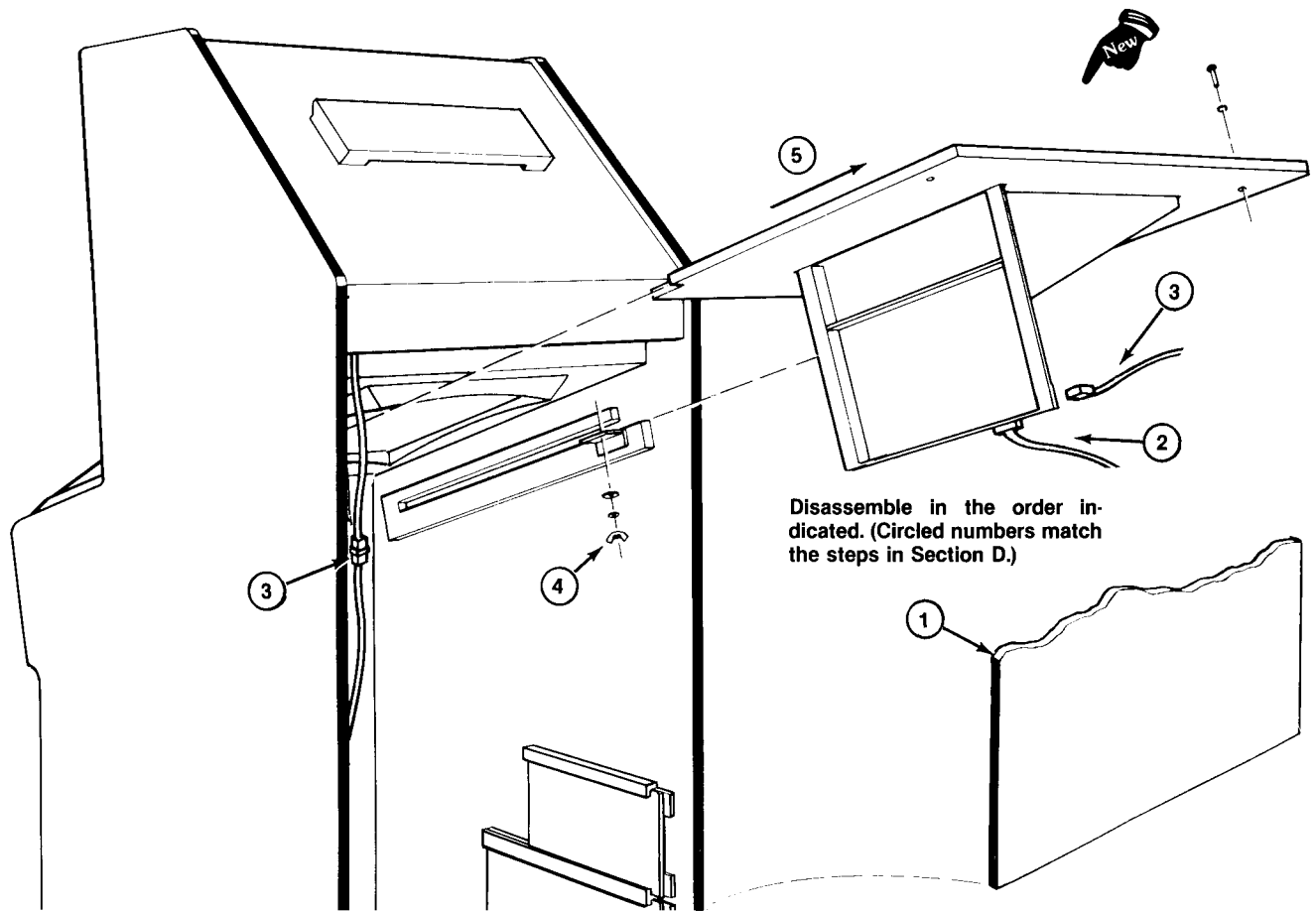
From the inside of the control panel, remove the four flat and lock washers and four screws that mount the gear shifter onto the panel and the gear-numbers bezel. Then open up the shifter assembly by removing the six split lock washers and screws (see Figure 11).

Lubricate the spherical part of the handle and the H-pattern recess of the black detent, as shown in Figure 11. Use only Dow Corning silicone compound #5 (Atari part no. 78-16002) on these surfaces.

Reassemble the gear shifter control and reinstall it in the control panel. Reconnect the harness wires as follows, making sure the right colors go to each switch:

- Black wires—one terminal on each switch (doesn’t matter which terminal)
- White/brown wire—1st gear
- White/black wire—2nd gear
- White/red wire—3rd gear

Repairs on the gear-shifter control would probably only involve replacement of switches. When removing a switch, be careful not to lose the small



Disassemble in the order indicated. (Circled numbers match the steps in Section D.)

Figure 12 TV Monitor Removal

rivet that sits above the white switch actuator. Note: the flat head of the rivet must always face towards the switch actuator.

D. TV Monitor Replacement

⚠ WARNING ⚠

High voltages may exist in any television unit, even with power disconnected. Use extreme caution and do not touch electrical parts or the TV yoke area with your hands or with metal objects in your hands!
If you drop the TV monitor and it breaks, it **will implode!** Shattered glass and the yoke can fly 6 feet or more from the implosion. Use care when replacing any TV monitor.

If you should need to remove the television monitor, follow steps 1 thru 4 as listed on this page. Refer to Figure 12 above.

1. Open the access panel. **Be sure the game is unplugged from its wall outlet!**
2. **If Color Monitor:** Unplug the harness connectors as follows: one is a 2-pin connector in the harness, the other is a 6-pin connector on the monitor's printed-circuit board.

⚠ DANGER ⚠

The color TV monitor does not contain an isolation transformer on its chassis (it is mounted instead on the floor of the cabinet). When servicing the color monitor on a test bench, **you must isolate the monitor from AC voltage with an isolation transformer.**

If B&W Monitor: Unplug the 12-pin harness connector on the rear of the TV monitor chassis.

3. **Be extremely careful and never touch the red anode wire or the high-voltage tube on the rear of the monitor!** Then unscrew the green ground wire that is attached to the TV monitor chassis. Also unplug the harness connector for the fluorescent light (located at the left side of the cabinet's rear opening).
4. Remove the wing nuts and washers underneath the wood television shelf. (This hardware is attached to the metal "L" brackets.)
5. Carefully slide the TV monitor chassis, still on its wood shelf, out towards the rear of the game. After replacing a monitor, be sure to run the self-test.
6. **To Change from Color to B&W Monitor:** Buy the larger cardboard bezel and install it. Buy the black-and-white TV assembly and install it; plug other 12-pin connector into its chassis. Reattach ground wire. Remove isolation transformer; buy shorting plug and install it where transformer connector used to be. (B&W monitor will not work if you leave transformer connected.)
7. **To Change from B&W to Color Monitor:** Buy the smaller cardboard bezel and install it. Buy the

color TV assembly and install it; plug the other 2-pin and 6-pin connectors into it. Reattach ground wire. Remove the small monitor shorting plug. Buy the isolation transformer and install it; plug its harness connectors together. **The isolation transformer is mandatory with the color TV—for your own safety and for the safety of all players.**

E. Printed Circuit Board Replacement

You may wish to remove the game printed circuit board (PCB) or the Regulator/Audio II PCB for service or inspection. To do this, refer to Figure 13 and proceed as follows:

1. Open the access panel.
2. Locate the securing screw and fiber washer that hold down the PCB in its slots, and remove them.
3. If you are removing the game PCB, first remove the two tie wraps that fasten the edge connector to the game PCB. Then unplug the edge con-

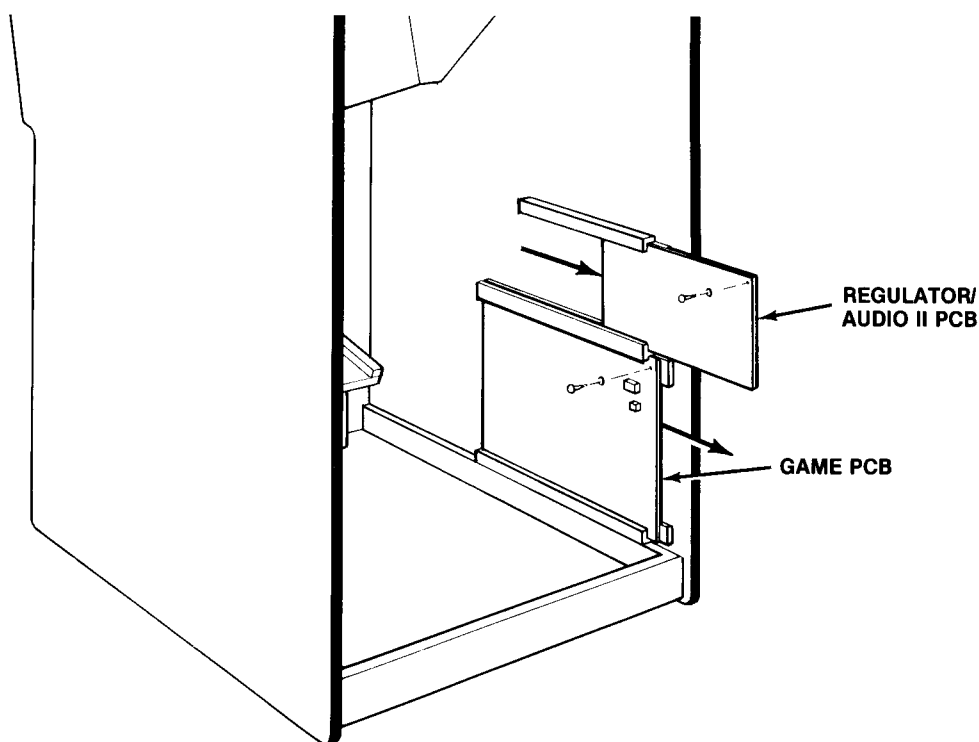


Figure 13 PCB Replacement

necter from the game PCB. If you are removing the Regulator/Audio II PCB, simply disconnect the five small harness connectors on this board.

4. Carefully slide either PCB straight out of its slots. Be careful not to twist the board, as this may loosen connections or components. Replace or repair as required.
5. Reinstall the PCB, making sure that the connectors are properly plugged in. Note that they are keyed to fit on only one way, so if they don't slip on easily, don't force them! **A reversed connector will probably damage your game and will void the warranty.**
6. Replace the securing screws and fiber washers in the PCB. If reinstalling the game PCB, secure the edge connectors with tie wraps. Close and lock the rear access panel.
7. Check that the operation of the game is correct **by performing the self-test.** This is especially important with any game when you replace a PCB. Normally the **only** adjustments on the Monte Carlo™ game are option switch changes (made on the 4- and 8-toggle DIP switches). Unless you are a qualified technician, **do not attempt to turn the small knob on the Regulator/Audio II PCB.** For information pertaining to

these controls, refer to the schematic drawings DP-149-01 and -02.

F. Fluorescent Tube Replacement

⚠ WARNING ⚠

If you drop a fluorescent tube and it breaks, **it will implode!** Shattered glass can fly 6 feet or more from the implosion. Use care when replacing any fluorescent tube.

To replace the white fluorescent tube behind the graphics attraction panel, follow this procedure (see Figure 14).

1. Remove the three Allen-head screws at the top of the game. They secure the metal retainer for the silk-screened panel. Remove the retainer completely.

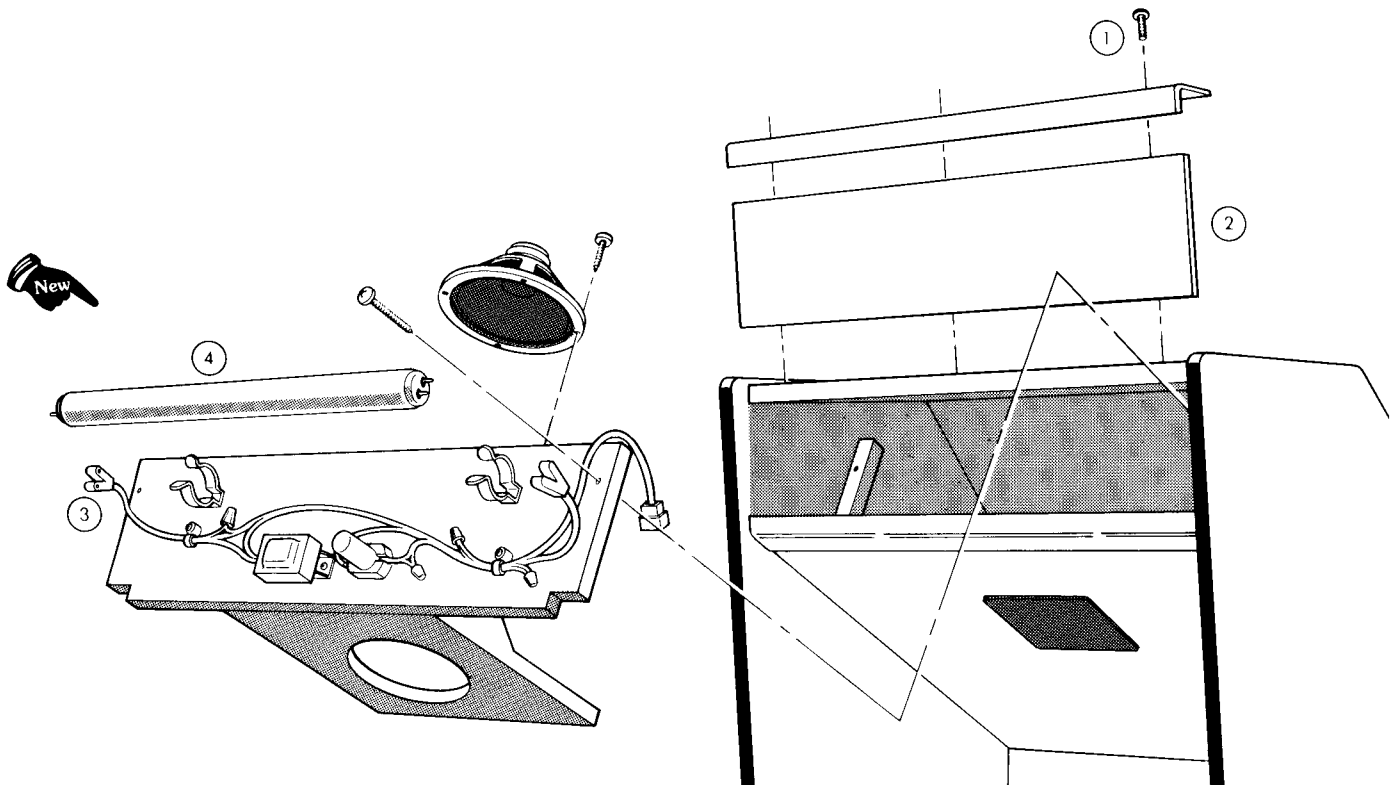


Figure 14 Fluorescent Tube Replacement

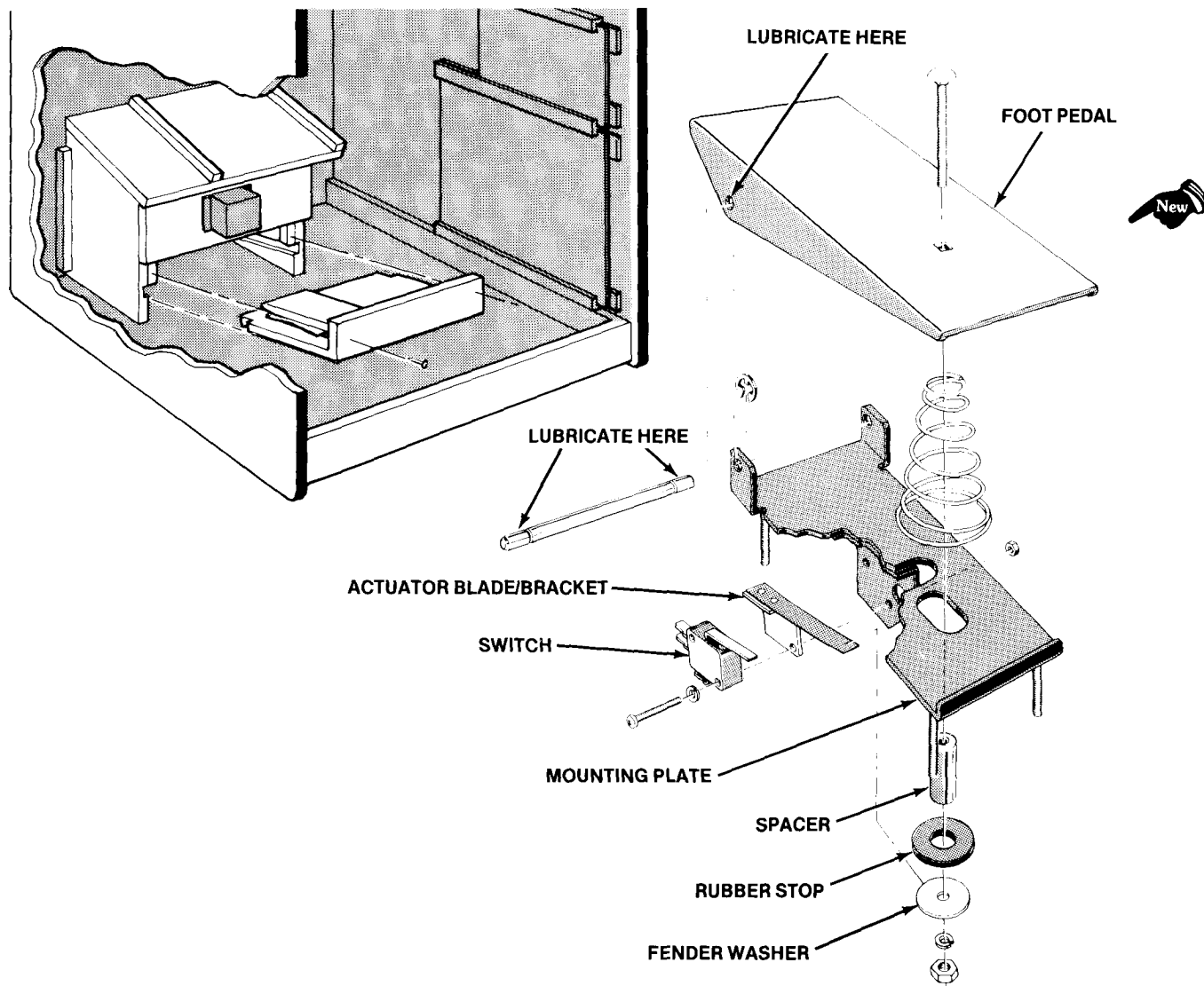


Figure 15 Foot Pedal Maintenance and Repair

2. Tilt the top of the attraction panel towards you, then lift it up and out of the bottom retainer.
3. Remove the two Y-shaped connectors from the ends of the fluorescent tube. Now carefully remove the tube from its clamps by pulling it towards you.
4. Replace with a new tube. Do not snap the tube in vigorously—you may break it, causing an implosion!
5. Close up the game by following Section F in reverse order.

G. Foot Pedal Maintenance and Repair

The only maintenance required on this newly designed foot pedal control is lubrication. Every 3 to 6 months, or whenever the pedal becomes squeaky, you should apply a small amount of Dow Corning Molykote G-n paste to the wearing surfaces of the steel pin. Also apply this lubricant to the flat surfaces around the pin holes on the pedal.

See Figure 15 for details on how to remove the pedal from the wood enclosure and exactly where to lubricate it.

The most likely repair would be replacing the switch; perhaps the spring or the blue tempered-steel actuator may also break from abuse. Again, refer to Figure 15 for details on how to replace these items.



H. Coin Door Repairs

The new Atari coin door has been totally redesigned, as described on page 3 of this manual. For

ease of maintenance, the coin door mechanisms require no adjustments. For plastic mechs, use only hot soapy water to clean them: boiling water is not needed nor even recommended, as this would soften the plastic.

To remove any mechanisms, or to replace the small lamps, switches or trip wires, follow the illustrations and instructions given in Figures 16 through 18. To obtain part numbers for ordering purposes, refer to the detailed exploded drawing of the coin door and parts list in Figure 30.

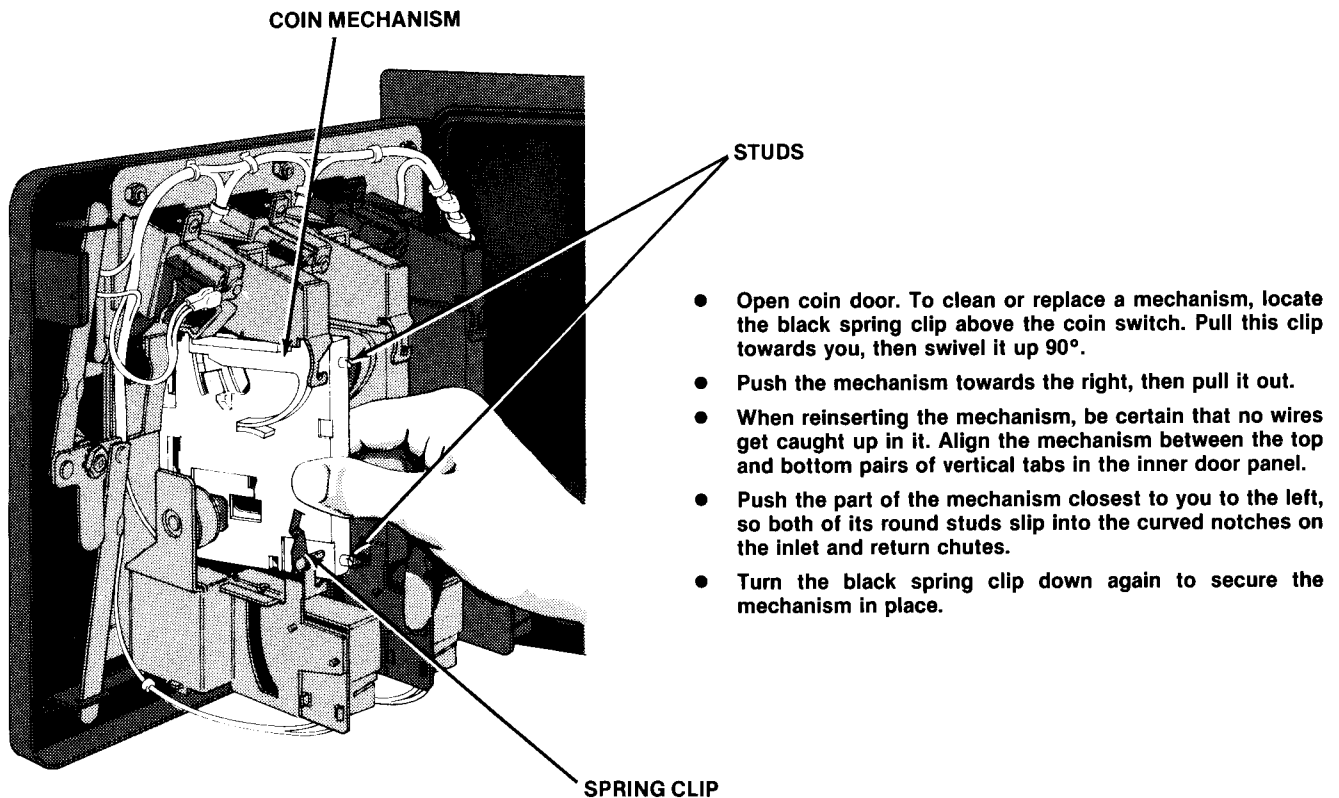
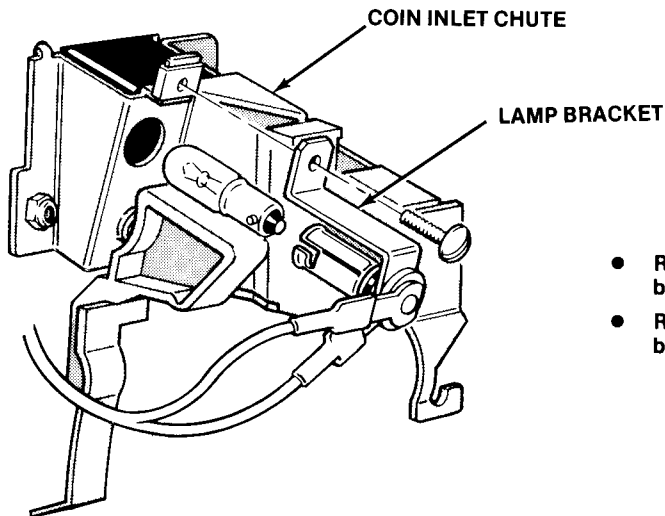


Figure 16 Removing Coin Mechanism



- Remove the screw that secures the lamp and its “Z” bracket to the coin inlet chute.
- Replace the burned-out bulb. Then mount the lamp holder bracket back on the coin inlet chute.

Figure 18 Coin Door Lamp Replacement

I. Game Operation

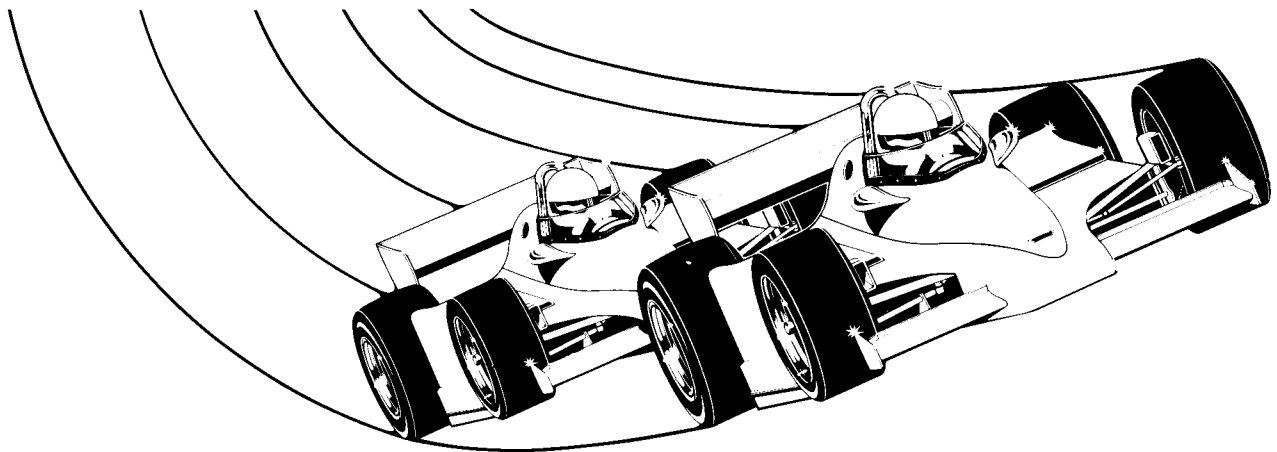
Monte Carlo™ is a microprocessor-controlled game. The microprocessor is mounted on the game PCB. The game PCB receives switch inputs from the control panel, foot pedal and coin door. These inputs are processed by the game PCB and output to the TV monitor, loudspeaker, Regulator/Audio II PCB, and control panel.

The Regulator/Audio II PCB performs two functions: first, it regulates the + 10 VDC from the power supply to + 5 VDC, the 6.3 VAC is regulated to - 5 VDC, and 25 VAC is regulated to + 12 VDC. Second, it amplifies the audio output from the game PCB. The + 5 VDC from the Regulator/Audio II PCB pro-

vides most logic power to the game PCB. The audio output from the Regulator/Audio II PCB directly drives the game speaker and is controlled by the volume control, mounted inside the coin door.

The power supply is the source of all voltages in the game. These voltages are protected by three fuses (F3, F4, and F5) on the power supply chassis. The primary winding of the power supply transformer is protected by the fuses F1 and F2 on the power supply chassis.

Figures 19A thru 19C are the wiring diagrams that show the electrical connections of the Monte Carlo game. Figures 20A thru 20D are the schematic diagrams of the Monte Carlo game.



WIRING AND SCHEMATIC DIAGRAMS

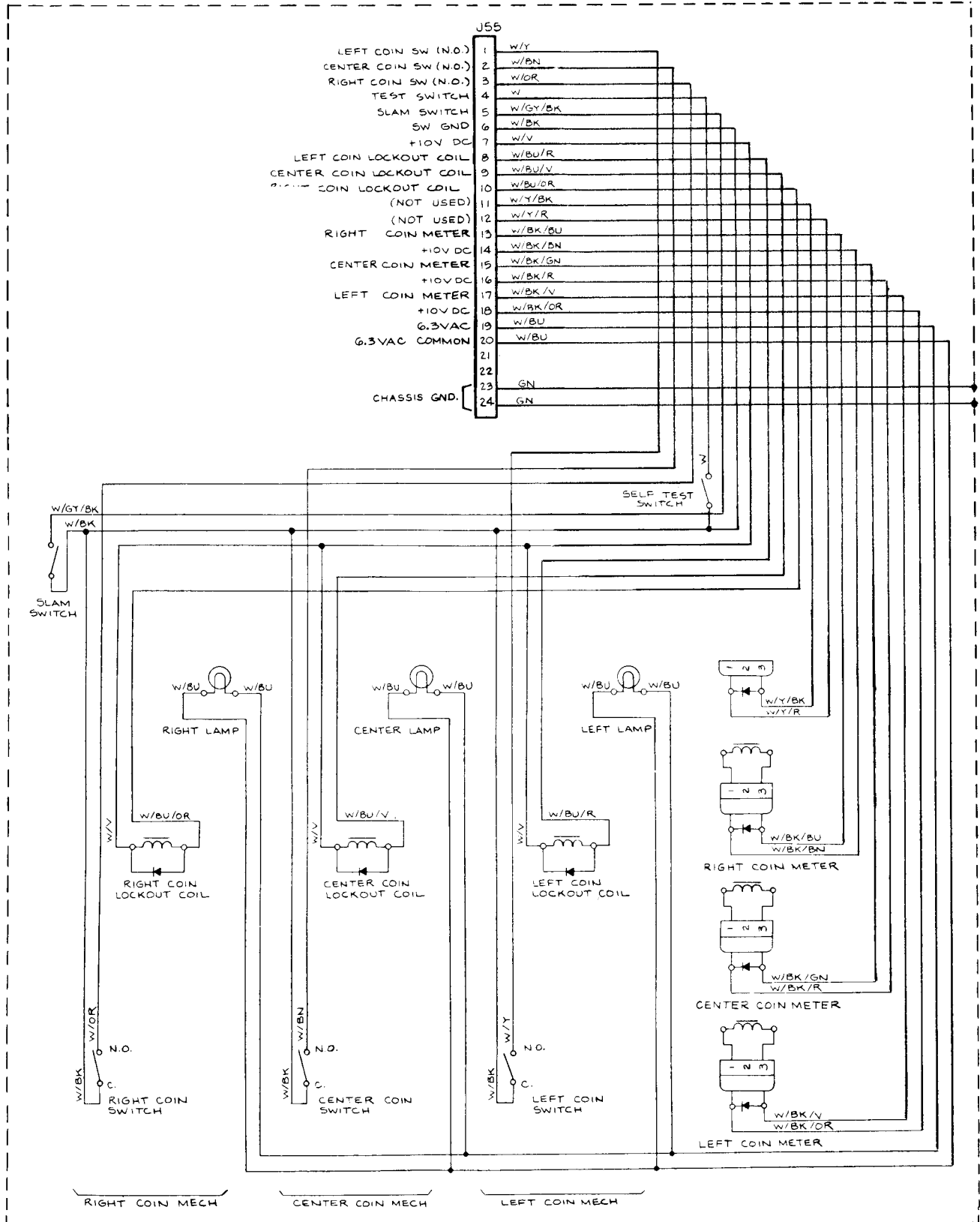


Figure 19B Coin Door Wiring Diagram

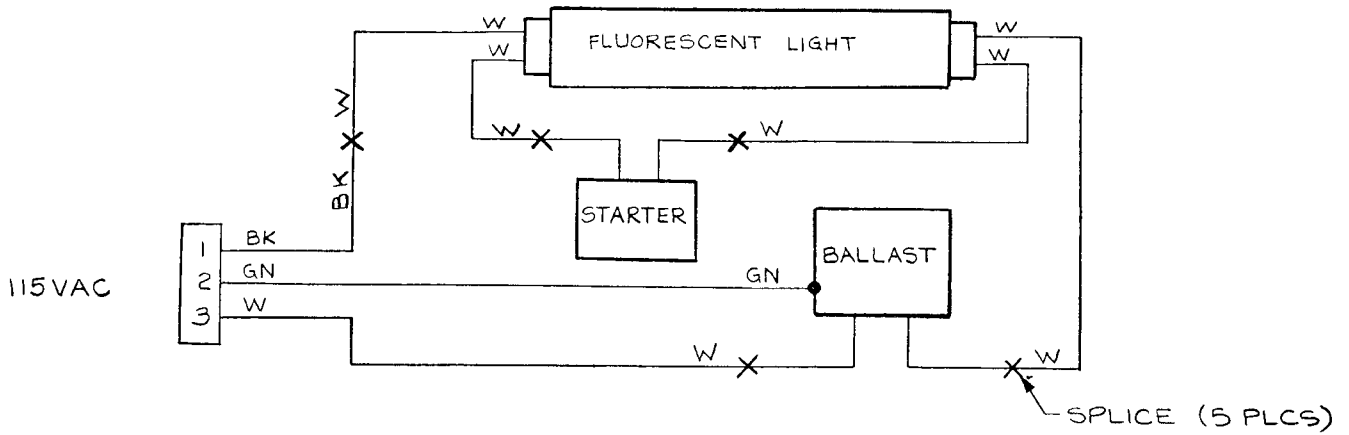


Figure 19C Fluorescent Light Wiring Diagram

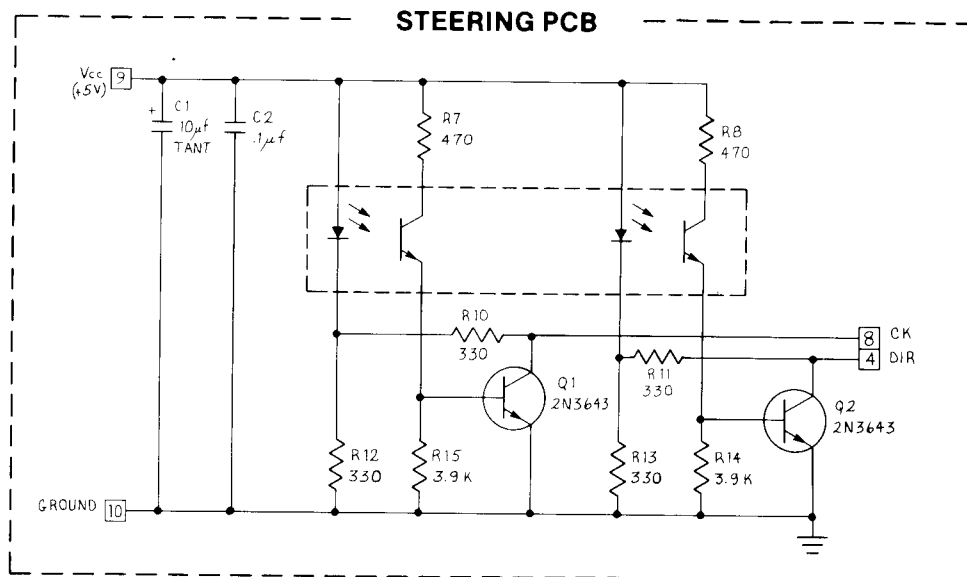


Figure 20A Steering PCB Schematic Diagram

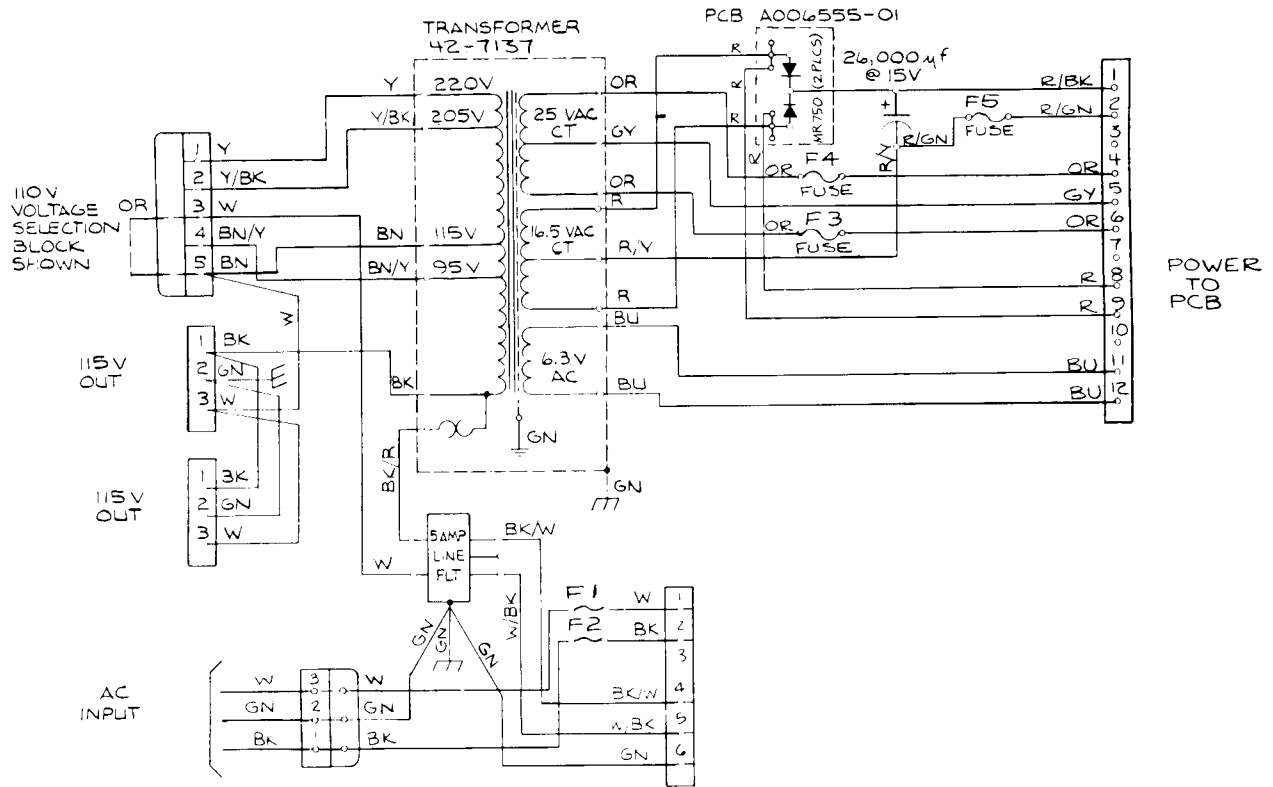


Figure 20B Power Supply Schematic Diagram

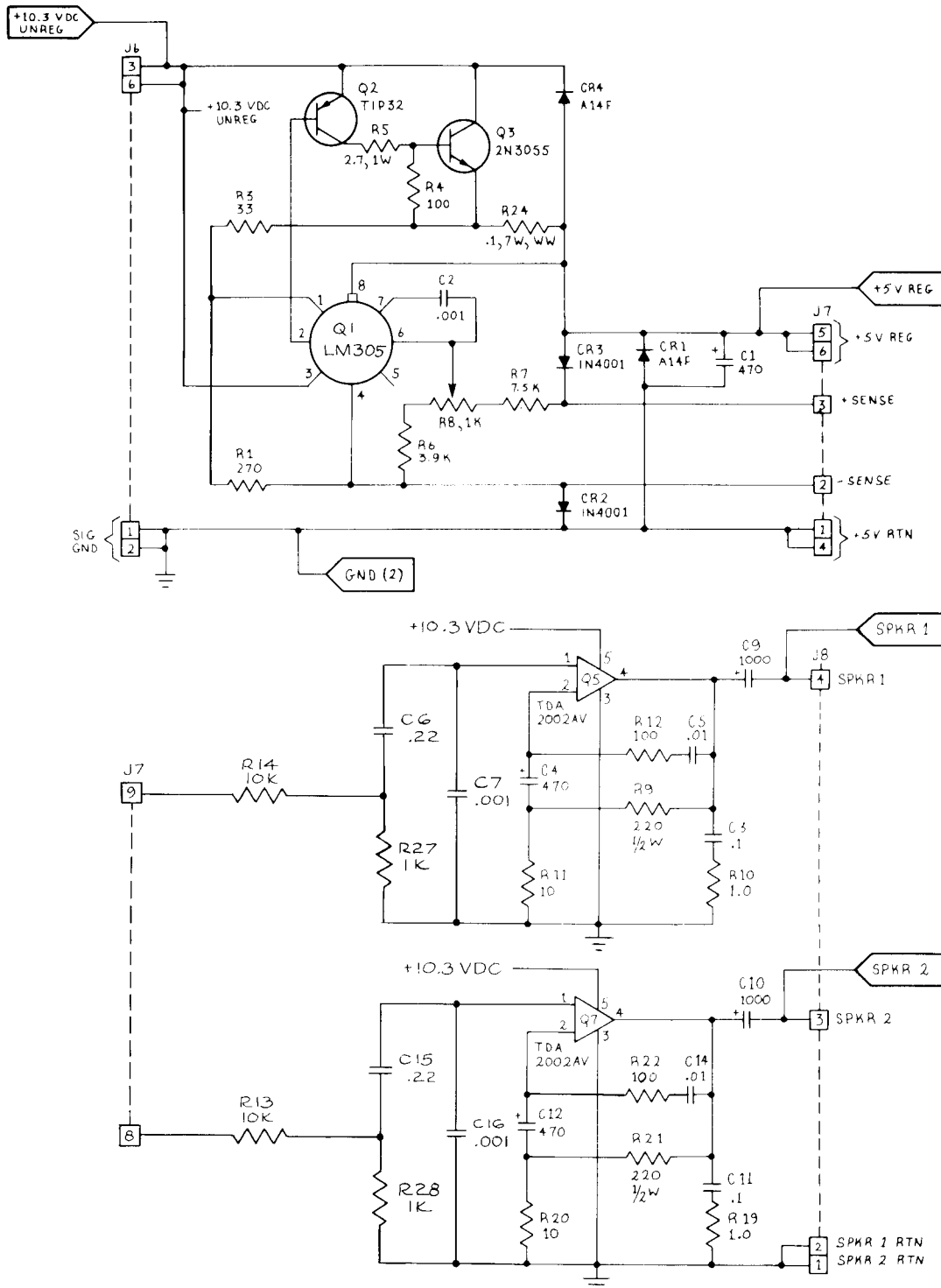


Figure 20C Regulator/Audio II PCB Schematic Diagram

Diagnostics

The Monte Carlo™ diagnostics are a subsection of the self-test procedure. Start the series of 13 diagnostics by first entering the self-test. Then simultaneously hold slam switch on coin door closed while pressing START button. Letter **A** will appear on the screen below last digit of option switch display—meaning Test A is in progress. This letter increments with each press of START button.

To advance to next test, press START button. To freeze the screen image during any test, put the gear shifter into 1st gear (exception: image will not be frozen in Tests G and M). To unfreeze the image, shift into any other gear or “neutral.”

Test A, Horizontal Playfield Scrolling

Playfield characters and colors are displayed scrolling smoothly.

Test B, Vertical Playfield Scrolling

Test C, Player Car Rotation

Car in center of screen rotates clockwise (playfield will be blanked out).

Test D, Drone Car Vertical Scrolling

The drone or computer-controlled car will scroll across the screen.

Test E, Drone Car Horizontal Scrolling

Test F, Drone Car Rotation and Colors

The drone car rotates clockwise and jumps to all 4 corners of the screen while rotating. After each complete revolution, its color will change (4 colors in all).

Test G, Video Invert and Beeper Sound

The solid background will alternate between normal and a lighter value of grey or a lighter color. The beeper sound will go on and off.

Test H, Player Car Motor Frequency

This sound will start at a high frequency or pitch and gradually go to a low frequency, then repeat. (You will also hear the player car sound in Tests I, J, K, and L.)

Test I, Drone Car Motor Frequency

Test J, Drone Car Motor Loudness

This sound will start at a high volume and gradually go to silence, then repeat. *Do not adjust the volume control during this test.*

Test K, Skid Sound

Test L, Crash Sound

Test M, Convergence Pattern

The convergence pattern is used to adjust color convergence on games with color monitors. For instructions on how to converge your monitor, refer to the service manual for this color TV, TM-148. *Do not attempt to perform any color TV adjustments unless you are a qualified technician!*

Push the START switch one more time to return game to self-test. Then set self-test switch to “off” to return to the attract mode.

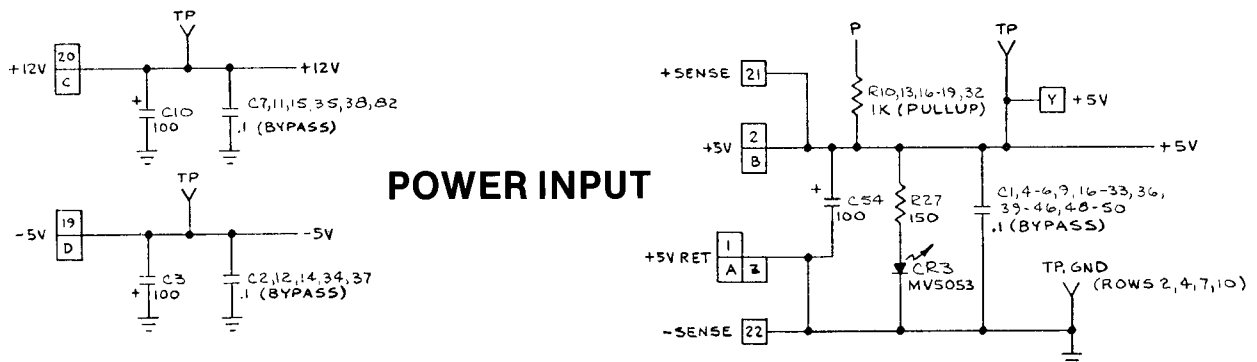
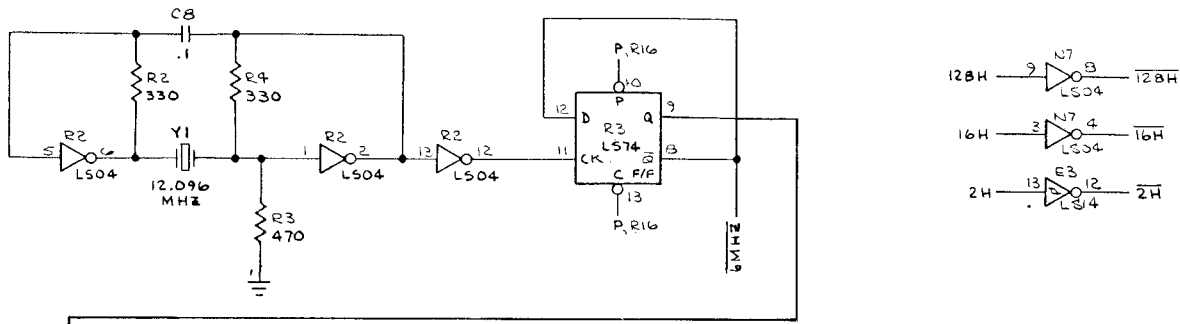
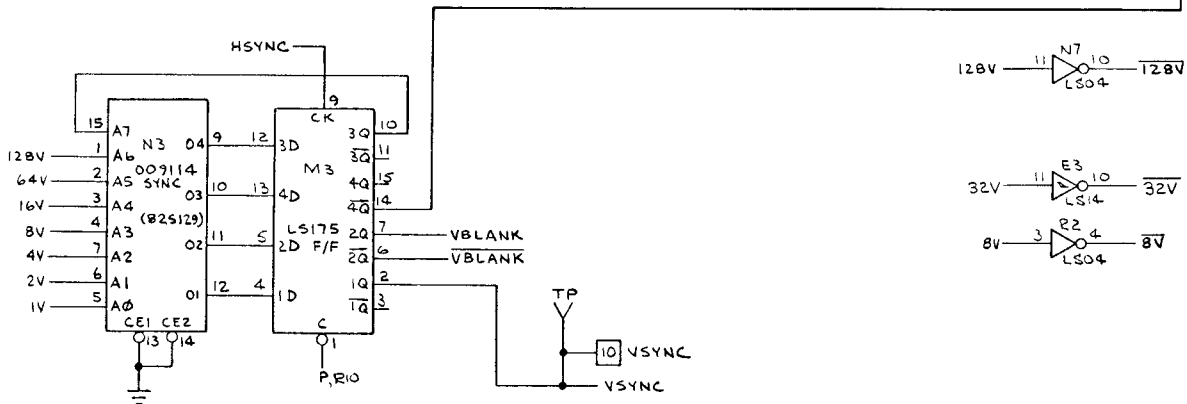
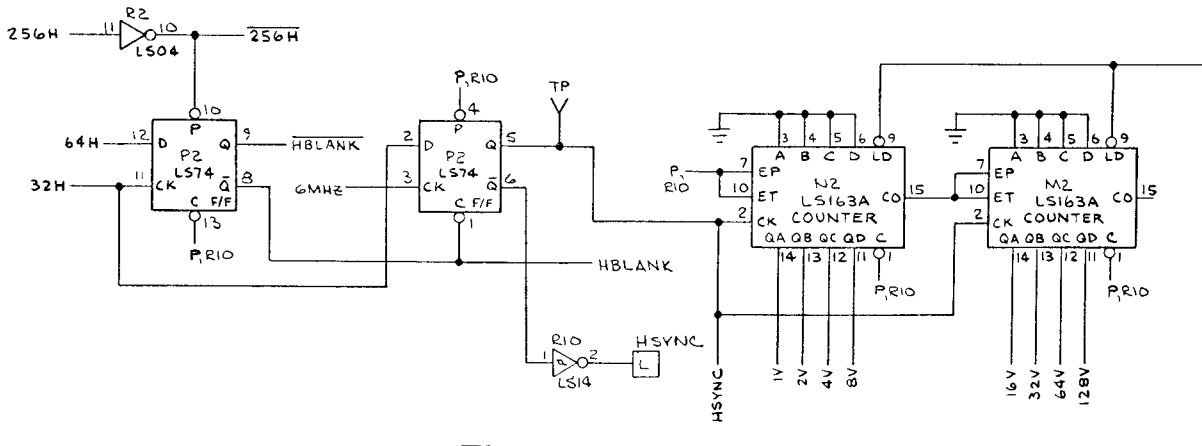
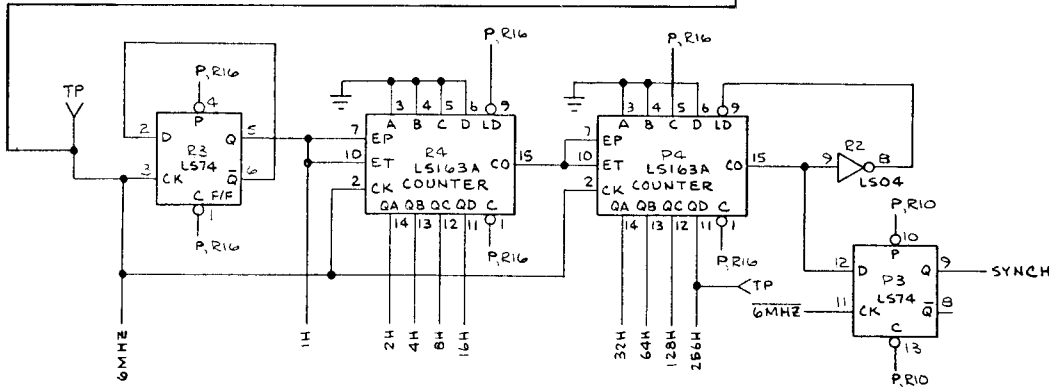


Figure 20D Game PCB Schematic Diagram



SYNC



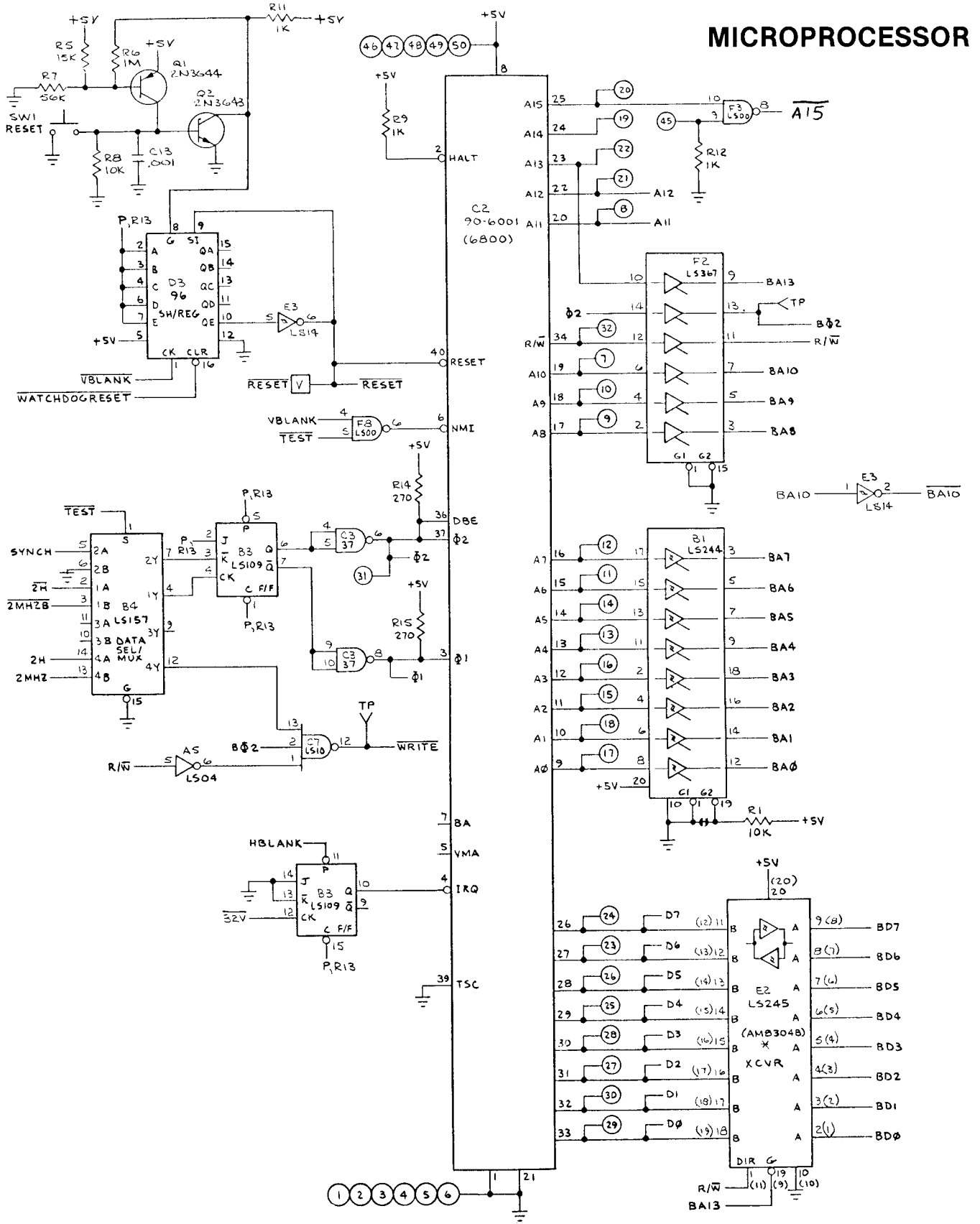
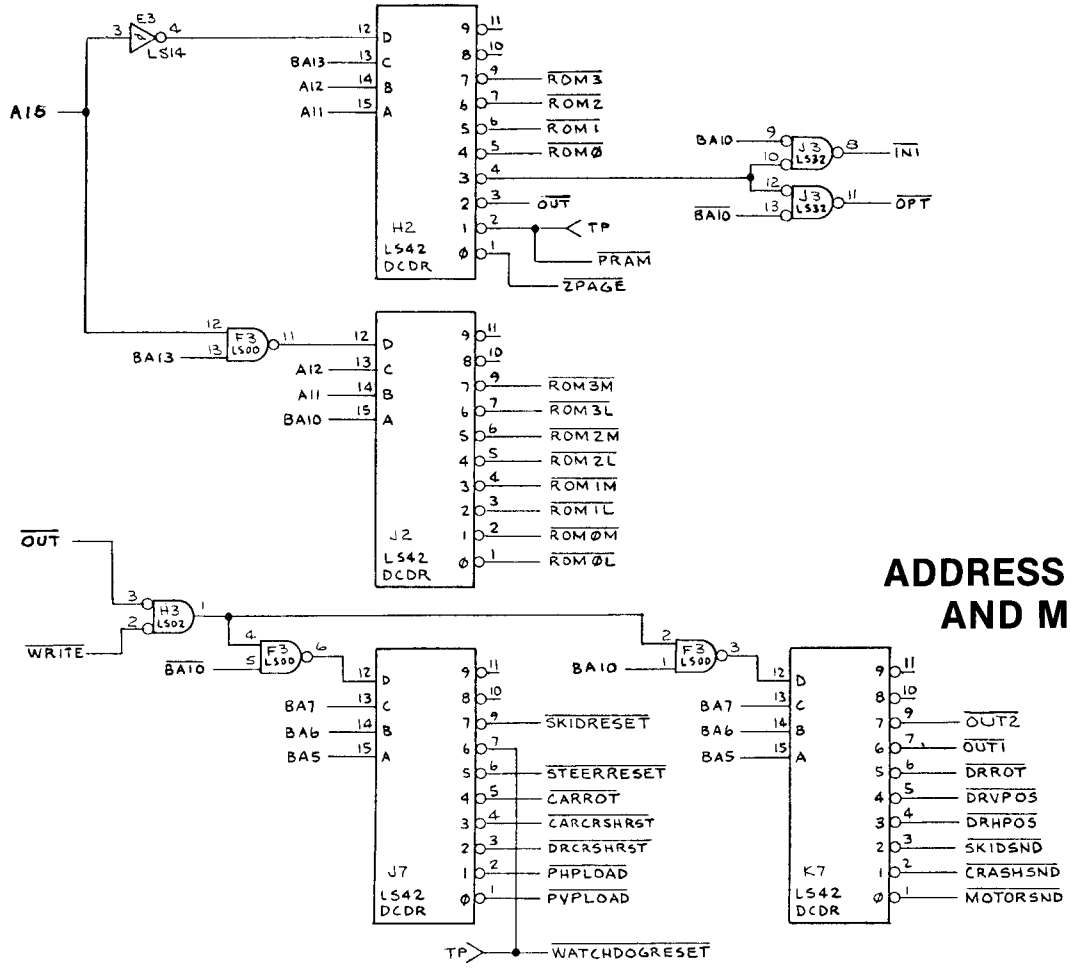


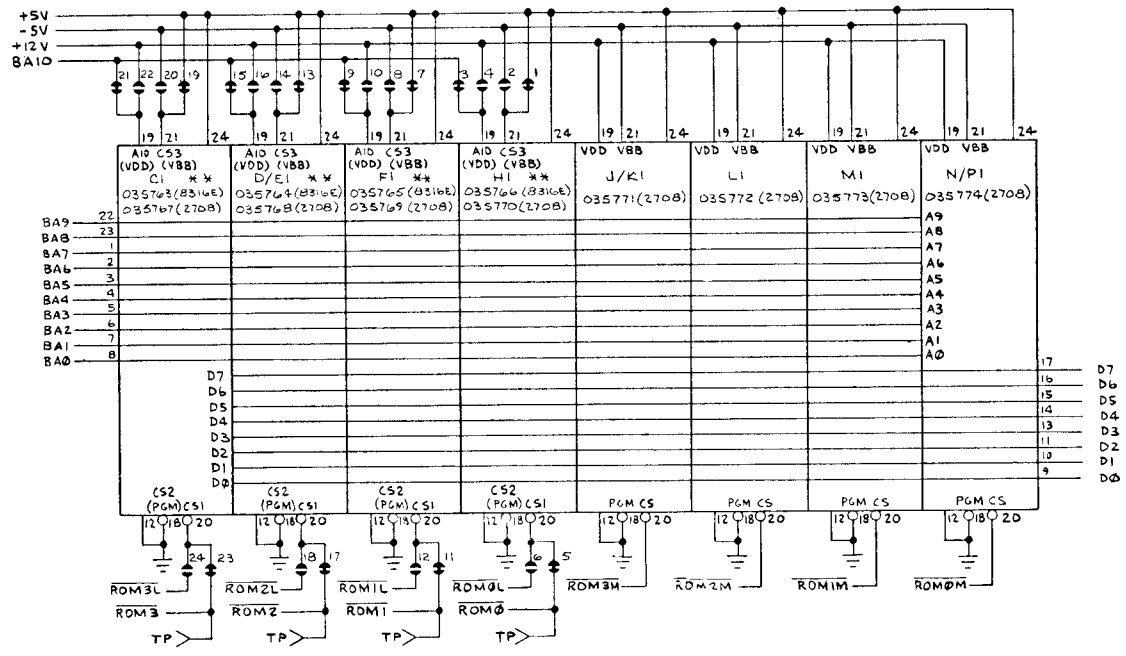
Figure 20D Game PCB Schematic (Continued)

MEMORY MAP

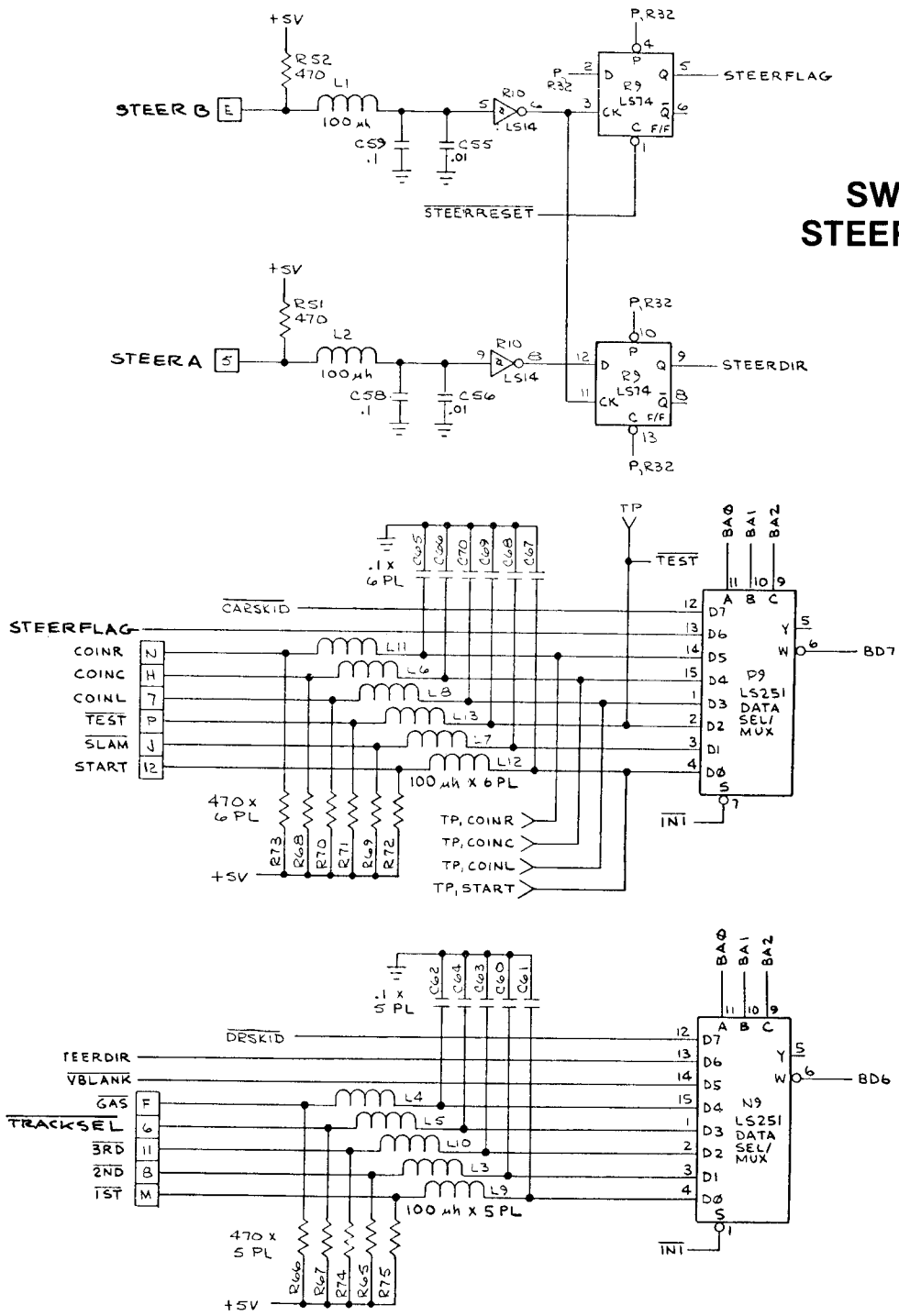
| HEXADECIMAL | ADDRESS | | | | | | | | | | | | | | | | R/W | DATA | | | | | | | | FUNCTION |
|-------------|---------|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|-----|------|----|----|----|----|----|----|--------|---------------------------------------|
| | A15 | A14 | A13 | A12 | A11 | A10 | A9 | A8 | A7 | A6 | A5 | A4 | A3 | A2 | A1 | A0 | | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 | |
| 0000-00FF | 0 | 0 | 0 | | | | | | A | A | A | A | A | A | A | A | | D | D | D | D | D | D | D | D | PAGE ZERO RAM |
| 00FE-003F | 0 | 0 | 0 | | | | | | 0 | 0 | A | A | A | A | A | A | | D | D | D | D | D | D | D | D | ALPHA-NUMERICS |
| 0800-08FF | 0 | 0 | 1 | | | | | | A | A | A | A | A | A | A | A | | D | D | D | D | D | D | D | D | PLAYFIELD RAM |
| 1000 | 0 | 1 | 0 | 0 | | | | | 0 | 0 | 0 | | | | | | W | D | D | D | D | D | D | D | D | PLAYFIELD VERT POS |
| 1020 | 0 | 1 | 0 | 0 | | | | | 0 | 0 | 1 | | | | | | W | D | D | D | D | D | D | D | D | PLAYFIELD HORIZ POS |
| 1040 | 0 | 1 | 0 | 0 | | | | | 0 | 1 | 0 | | | | | | W | | | | | | | | | DRONE CRASH RESET |
| 1060 | 0 | 1 | 0 | 0 | | | | | 0 | 1 | 1 | | | | | | W | | | | | | | | | CAR CRASH RESET |
| 1080 | 0 | 1 | 0 | 0 | | | | | 1 | 0 | 0 | | | | | | W | | | | | | | | | DRONE COLOR 2, CAR ROTATION |
| 10A0 | 0 | 1 | 0 | 0 | | | | | 1 | 0 | 1 | | | | | | W | | | | | | | | | STEER RESET |
| 10C0 | 0 | 1 | 0 | 0 | | | | | 1 | 1 | 0 | | | | | | W | | | | | | | | | WATCHDOG RESET |
| 10E0 | 0 | 1 | 0 | 0 | | | | | 1 | 1 | 1 | | | | | | W | | | | | | | | | SKID RESET |
| 1400 | 0 | 1 | 0 | 1 | | | | | 0 | 0 | 0 | | | | | | W | D | D | D | D | D | D | D | D | MOTOR SOUNDS |
| 1420 | 0 | 1 | 0 | 1 | | | | | 0 | 0 | 1 | | | | | | W | D | D | D | D | | | | | CRASH SOUNDS |
| 1440 | 0 | 1 | 0 | 1 | | | | | 0 | 1 | 0 | | | | | | W | | | | | | | | | SKID SOUND ON |
| 1460 | 0 | 1 | 0 | 1 | | | | | 0 | 1 | 1 | | | | | | W | D | D | D | D | D | D | D | D | DRONE HORIZ POS |
| 1480 | 0 | 1 | 0 | 1 | | | | | 1 | 0 | 0 | | | | | | W | D | D | D | D | D | D | D | D | DRONE VERT POS |
| 14A0 | 0 | 1 | 0 | 1 | | | | | 1 | 0 | 1 | | | | | | W | D | D | D | D | D | D | D | D | DRONE COLOR 1, ROTATION |
| 14C0 | 0 | 1 | 0 | 1 | | | | | 1 | 1 | 0 | | | | | | W | D | D | D | | | | | | COIN COUNTERS (L.C.R.—1 = ON) |
| 14C0 | 0 | 1 | 0 | 1 | | | | | 1 | 1 | 0 | | | | | | W | | | | | D | | | | ATTRACT (0 = ATTRACT) |
| 14C0 | 0 | 1 | 0 | 1 | | | | | 1 | 1 | 0 | | | | | | W | | | | | | D | | | TRACK SEL LAMP (0 = ON) |
| 14C0 | 0 | 1 | 0 | 1 | | | | | 1 | 1 | 0 | | | | | | W | | | | | | | D | | START LAMP (0 = ON) |
| 14E0 | 0 | 1 | 0 | 1 | | | | | 1 | 1 | 1 | | | | | | W | D | | D | | | | | D | VIDEO INVERT (1 = ON) BEEPER (0 = ON) |
| 14E0 | 0 | 1 | 0 | 1 | | | | | | | | | | | | | W | | | | | D | D | D | D | DRONE MOTOR LOUDNESS |
| 1800 | 0 | 1 | 1 | 0 | | | | | | | 0 | 0 | 0 | | | | R | D | | | | | | | | START SW (1 = ON) |
| 1800 | 0 | 1 | 1 | 0 | | | | | | | 0 | 0 | 0 | | | | R | D | | | | | | | | 1st GEAR (1 = ON) |
| 1800 | 0 | 1 | 1 | 0 | | | | | | | 0 | 0 | 0 | | | | R | | | | | | | D | | CAR CRASH IN (1 = CRASH) |
| 1800 | 0 | 1 | 1 | 0 | | | | | | | 0 | 0 | 0 | | | | R | | | | | | | D | D | DRONE CRASH IN (1 = CRASH) |
| 1801 | 0 | 1 | 1 | 0 | | | | | | | 0 | 0 | 1 | | | | R | D | | | | | | | | SLAM SW (1 = ON) |
| 1801 | 0 | 1 | 1 | 0 | | | | | | | 0 | 0 | 1 | | | | R | D | D | | | | | | | 2nd GEAR (1 = ON) |
| 1802 | 0 | 1 | 1 | 0 | | | | | | | 0 | 1 | 0 | | | | R | D | D | | | | | | | TEST SW (1 = ON) |
| 1802 | 0 | 1 | 1 | 0 | | | | | | | 0 | 1 | 0 | | | | R | D | D | | | | | | | 3rd GEAR (1 = ON) |
| 1803 | 0 | 1 | 1 | 0 | | | | | | | 0 | 1 | 1 | | | | R | D | D | | | | | | | COIN SW (LEFT) (1 = ON) |
| 1803 | 0 | 1 | 1 | 0 | | | | | | | 0 | 1 | 1 | | | | R | D | D | | | | | | | TRACK SEL SW (1 = ON) |
| 1804 | 0 | 1 | 1 | 0 | | | | | | | 1 | 0 | 0 | | | | R | D | | | | | | | | COIN SW (CENTER) (1 = ON) |
| 1804 | 0 | 1 | 1 | 0 | | | | | | | 1 | 0 | 0 | | | | R | D | D | | | | | | | GAS SW (1 = ON) |
| 1805 | 0 | 1 | 1 | 0 | | | | | | | 1 | 0 | 1 | | | | R | D | D | | | | | | | COIN SW (RIGHT) (1 = ON) |
| 1805 | 0 | 1 | 1 | 0 | | | | | | | 1 | 0 | 1 | | | | R | D | D | | | | | | | VBLANK (1 = TRUE) |
| 1806 | 0 | 1 | 1 | 0 | | | | | | | 1 | 1 | 0 | | | | R | D | | | | | | | | STEER FLAG (0 = TRUE) |
| 1806 | 0 | 1 | 1 | 0 | | | | | | | 1 | 1 | 0 | | | | R | D | D | | | | | | | STEER DIR |
| 1807 | 0 | 1 | 1 | 0 | | | | | | | 1 | 1 | 1 | | | | R | D | | | | | | | | CAR SKID (1 = ON) |
| 1807 | 0 | 1 | 1 | 0 | | | | | | | 1 | 1 | 1 | | | | R | D | D | | | | | | | DRONE SKID (1 = ON) |
| 1C00 | 0 | 1 | 1 | 1 | | | | | | | | | | 0 | 0 | | R | | D | D | D | D | | | | OPTION |
| 1C00 | 0 | 1 | 1 | 1 | | | | | | | | | | | 0 | 0 | R | | | | | | D | D | OPTION | |
| 1C01 | 0 | 1 | 1 | 1 | | | | | | | | | | | 0 | 1 | R | | | | | | | D | D | OPTION |
| 1C02 | 0 | 1 | 1 | 1 | | | | | | | | | | | 1 | 0 | R | | | | | | | D | D | OPTION |
| 1C03 | 0 | 1 | 1 | 1 | | | | | | | | | | | 1 | 1 | R | | | | | | | D | D | OPTION |
| 2000-3FFF | 1 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | R | D | D | D | D | D | D | D | D | 8K PROGRAM ROM/PROM |

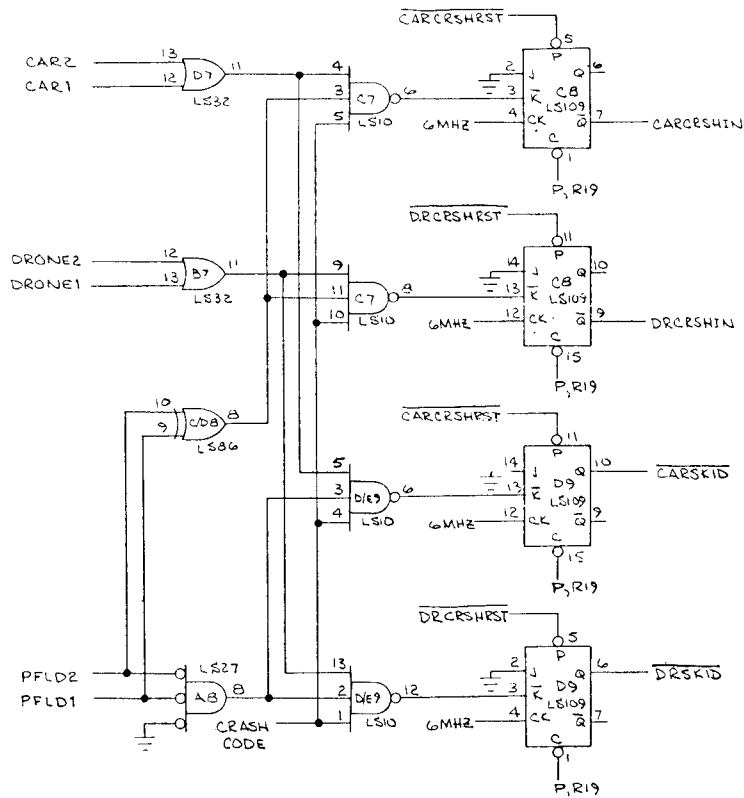
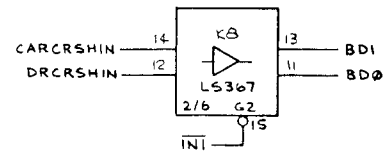
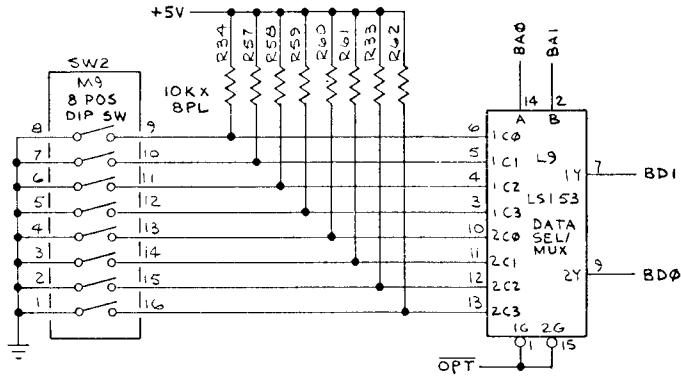
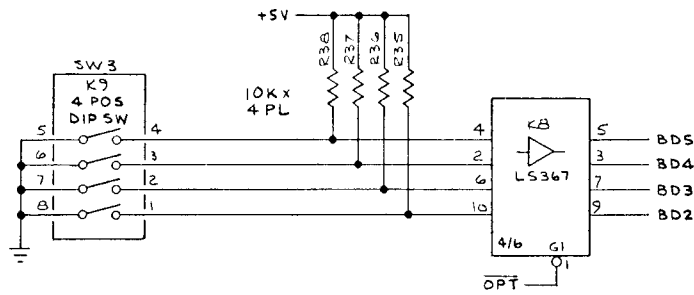


ADDRESS DECODER AND MEMORY



SWITCH AND STEERING INPUTS

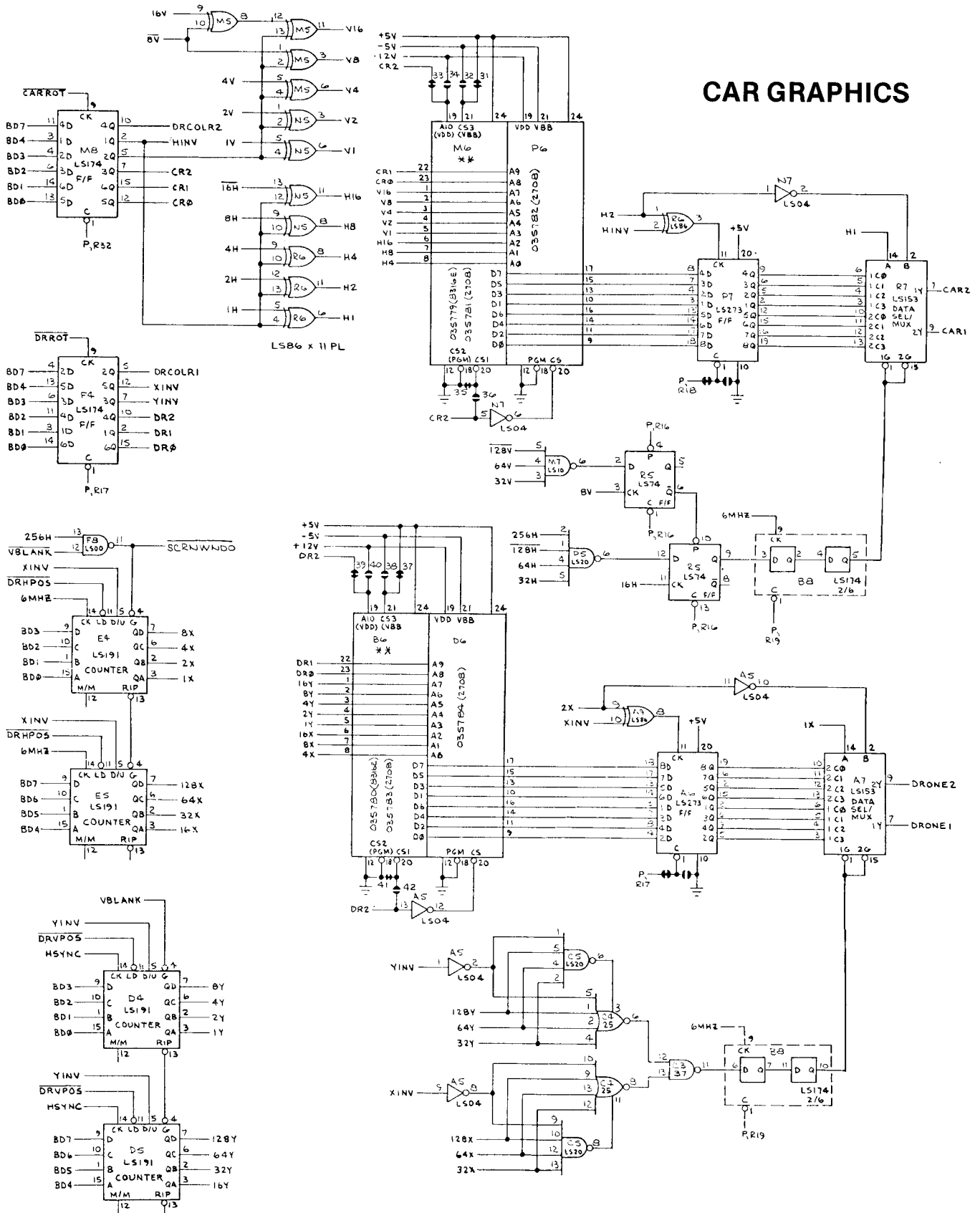


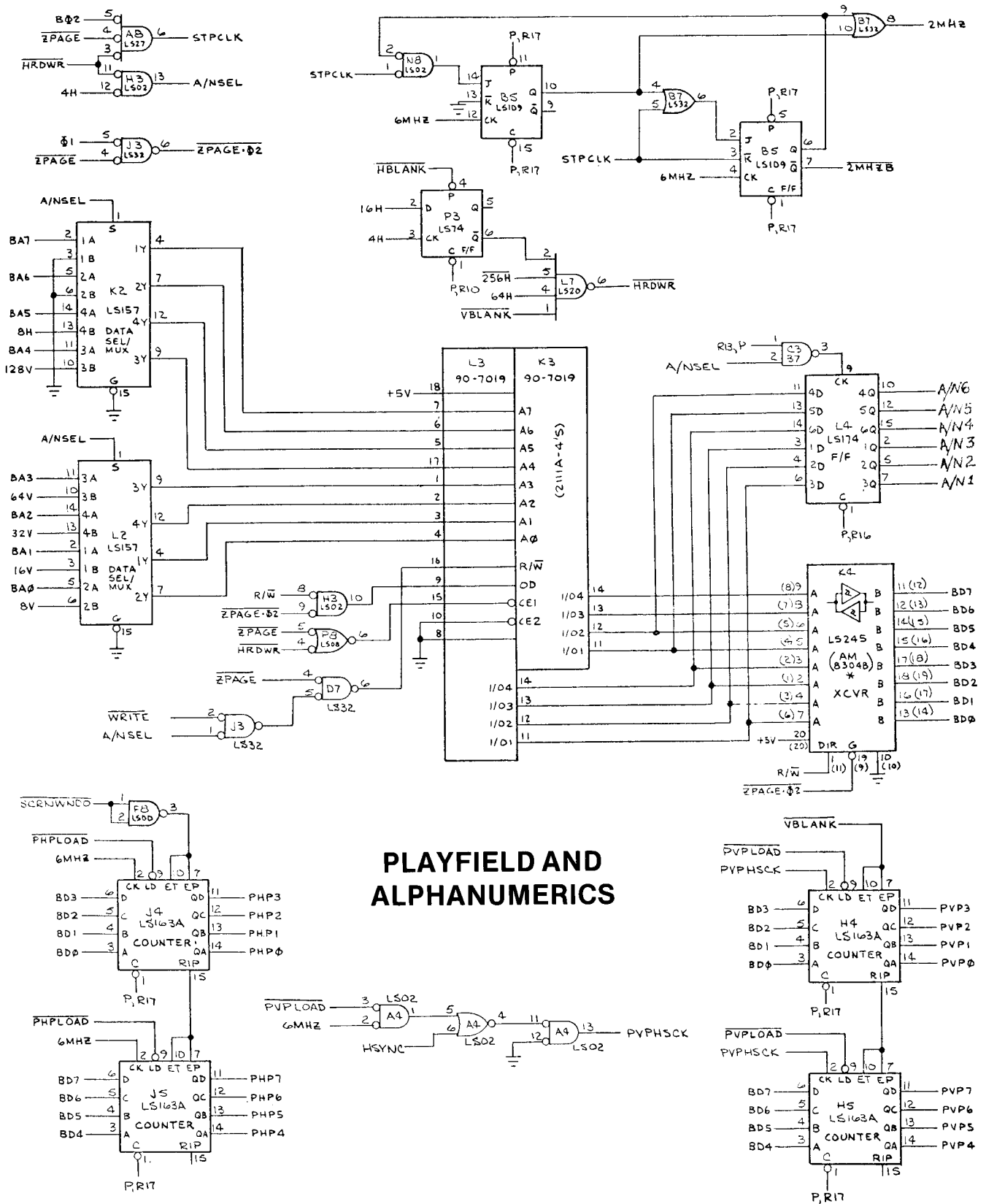


OPTION AND CRASH DETECTOR INPUTS

Figure 20D Game PCB Schematic (Continued)

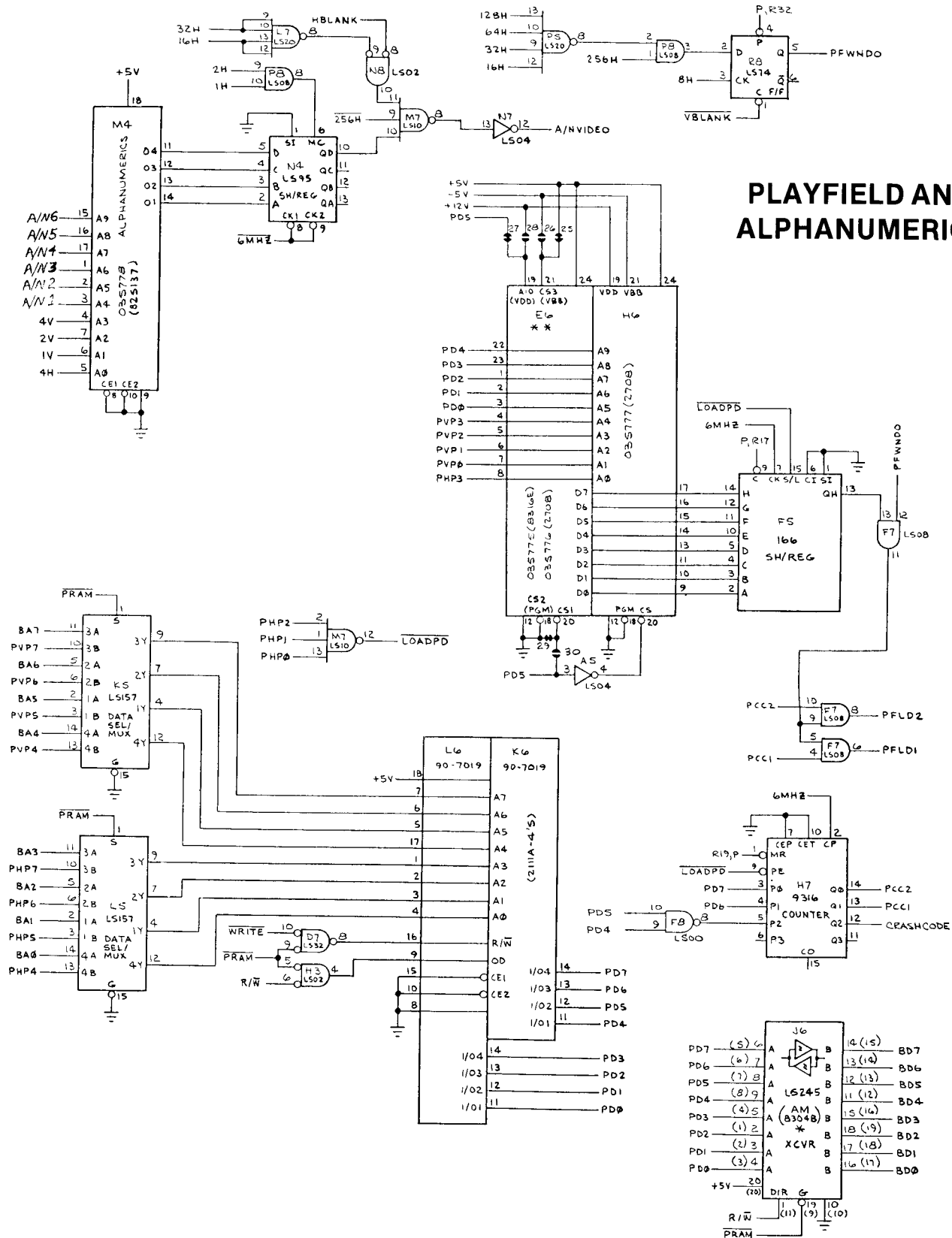
CAR GRAPHICS





PLAYFIELD AND ALPHANUMERIC

Figure 20D Game PCB Schematic (Continued)



AUDIO

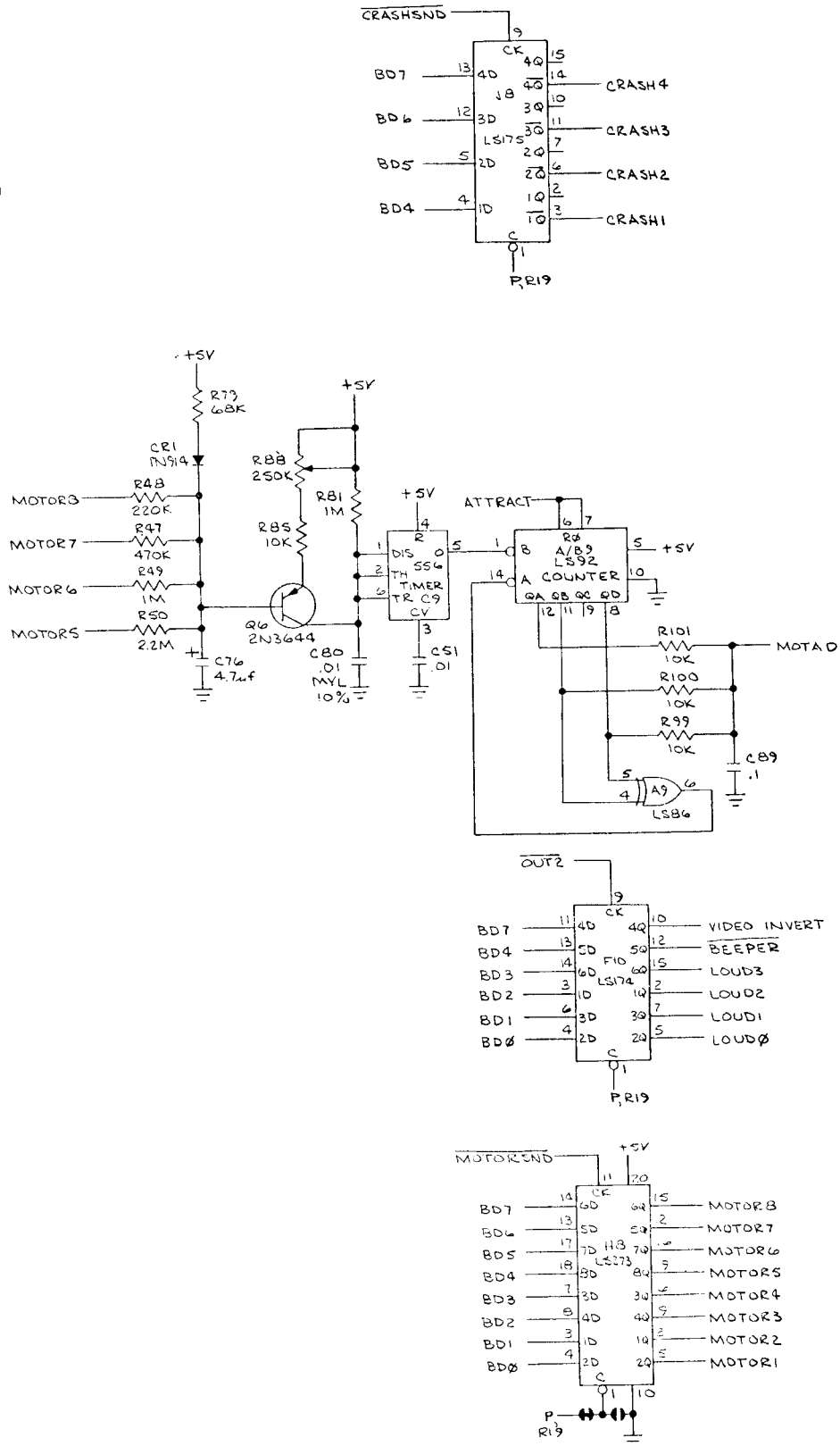
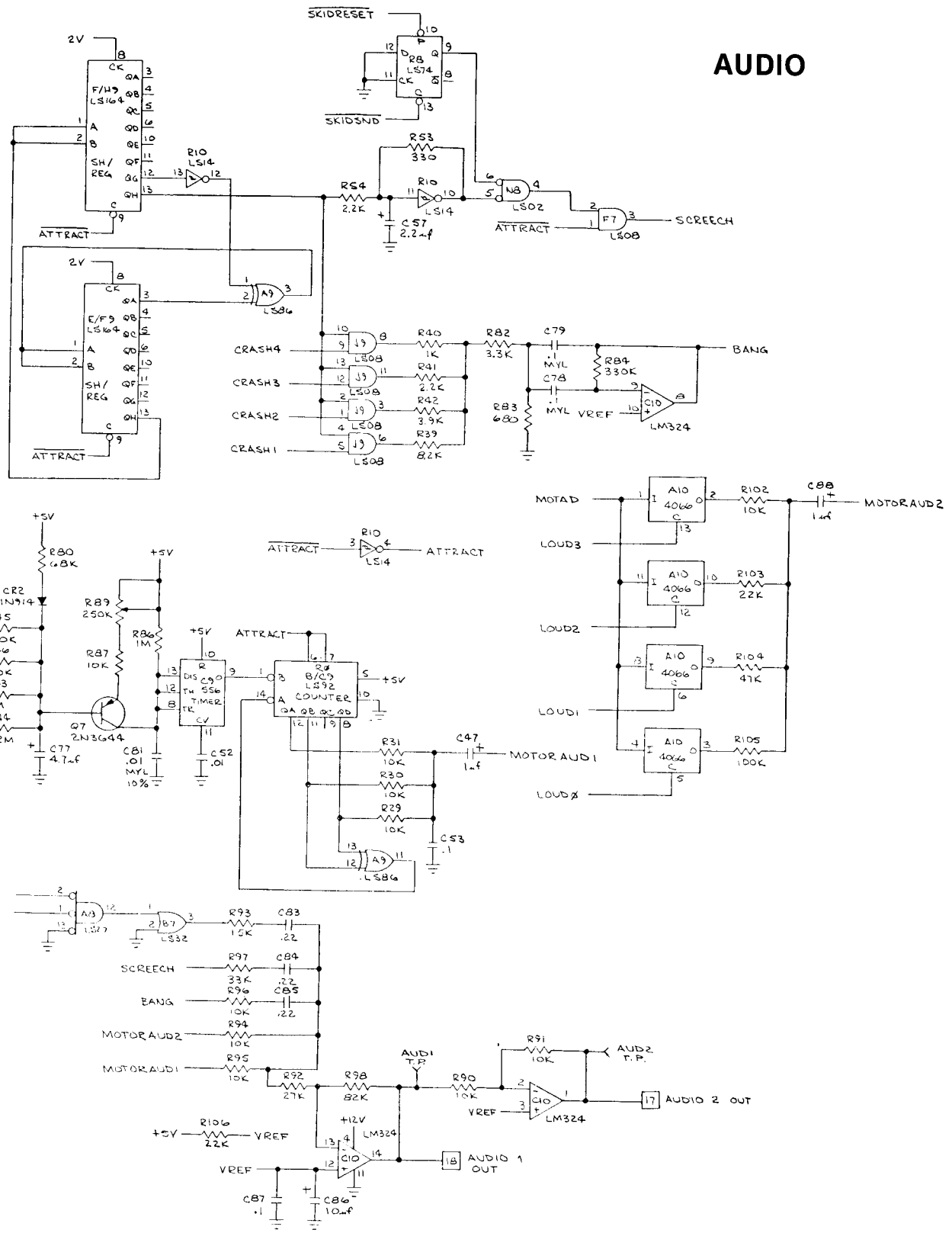
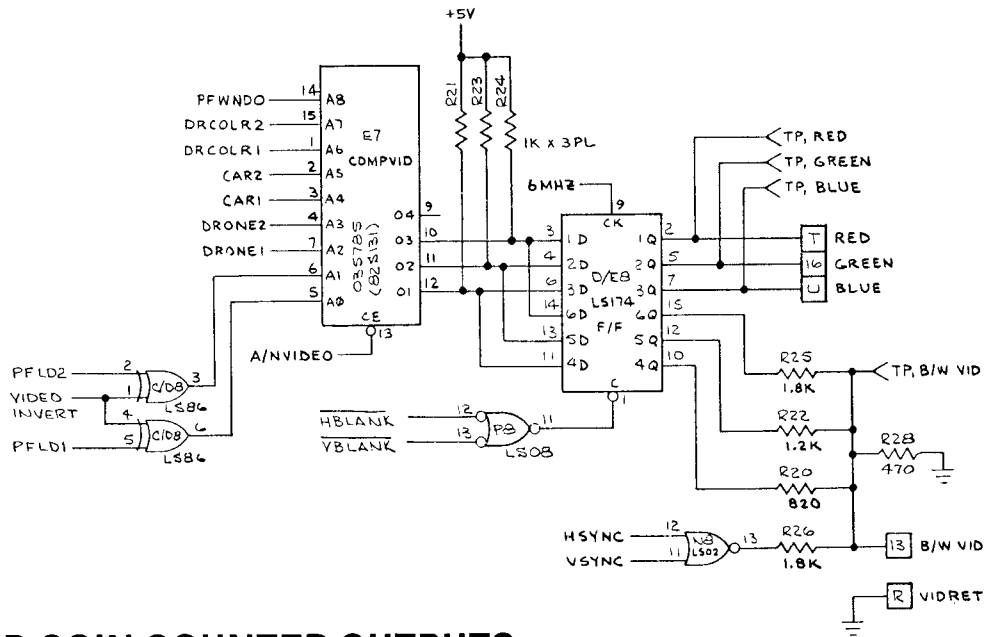


Figure 20D Game PCB Schematic (Continued)

AUDIO





VIDEO AND COIN COUNTER OUTPUTS

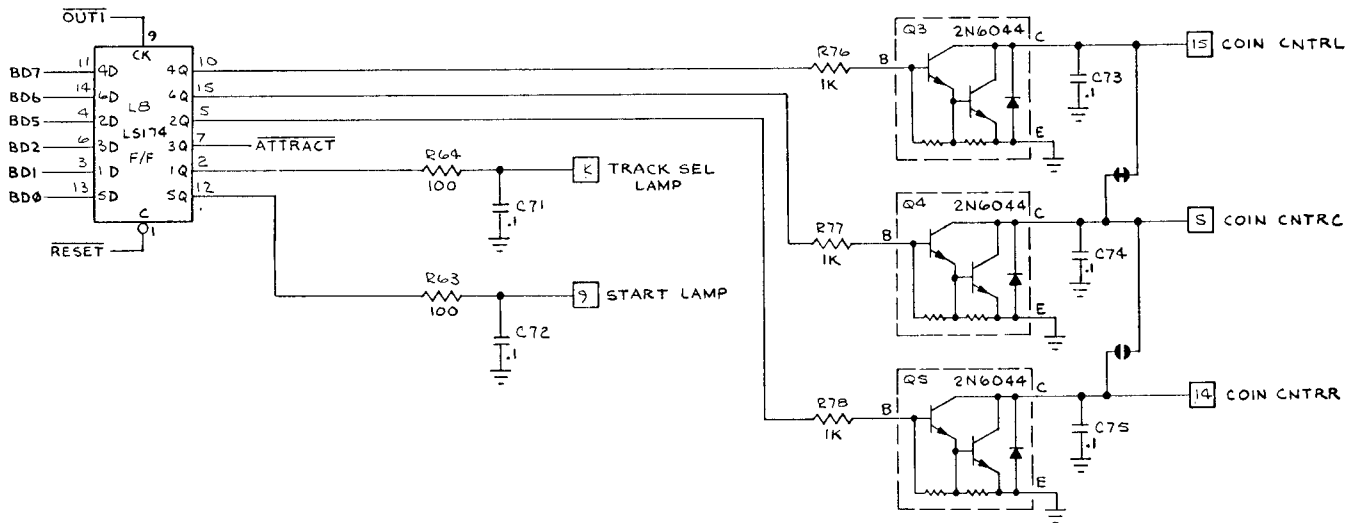
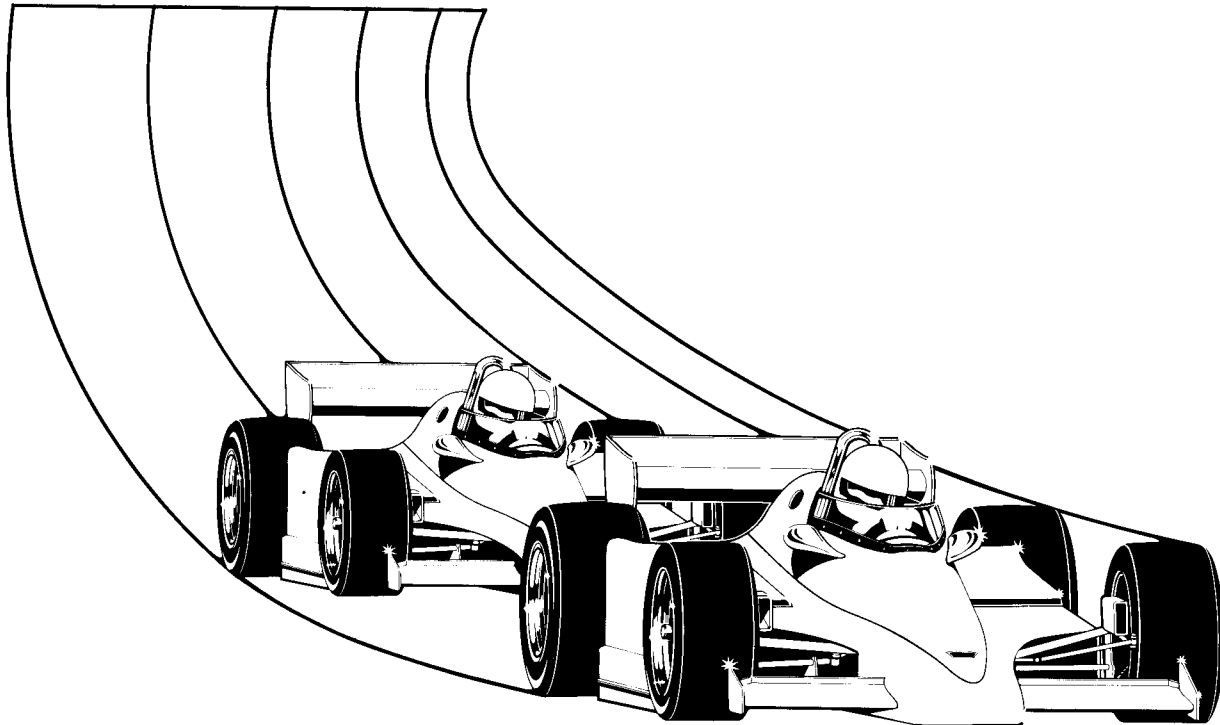


Figure 20D Game PCB Schematic (Continued)

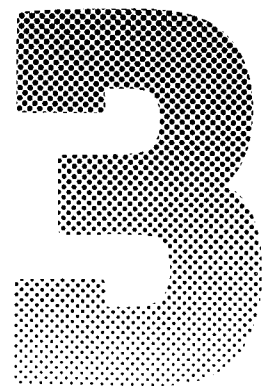
The purpose of this chapter is to provide you with the necessary information for ordering replacement parts for your game. Please note that, for simplicity, **common hardware has been deleted** from some of these parts lists. This includes screws, nuts, bolts, washers, etc.

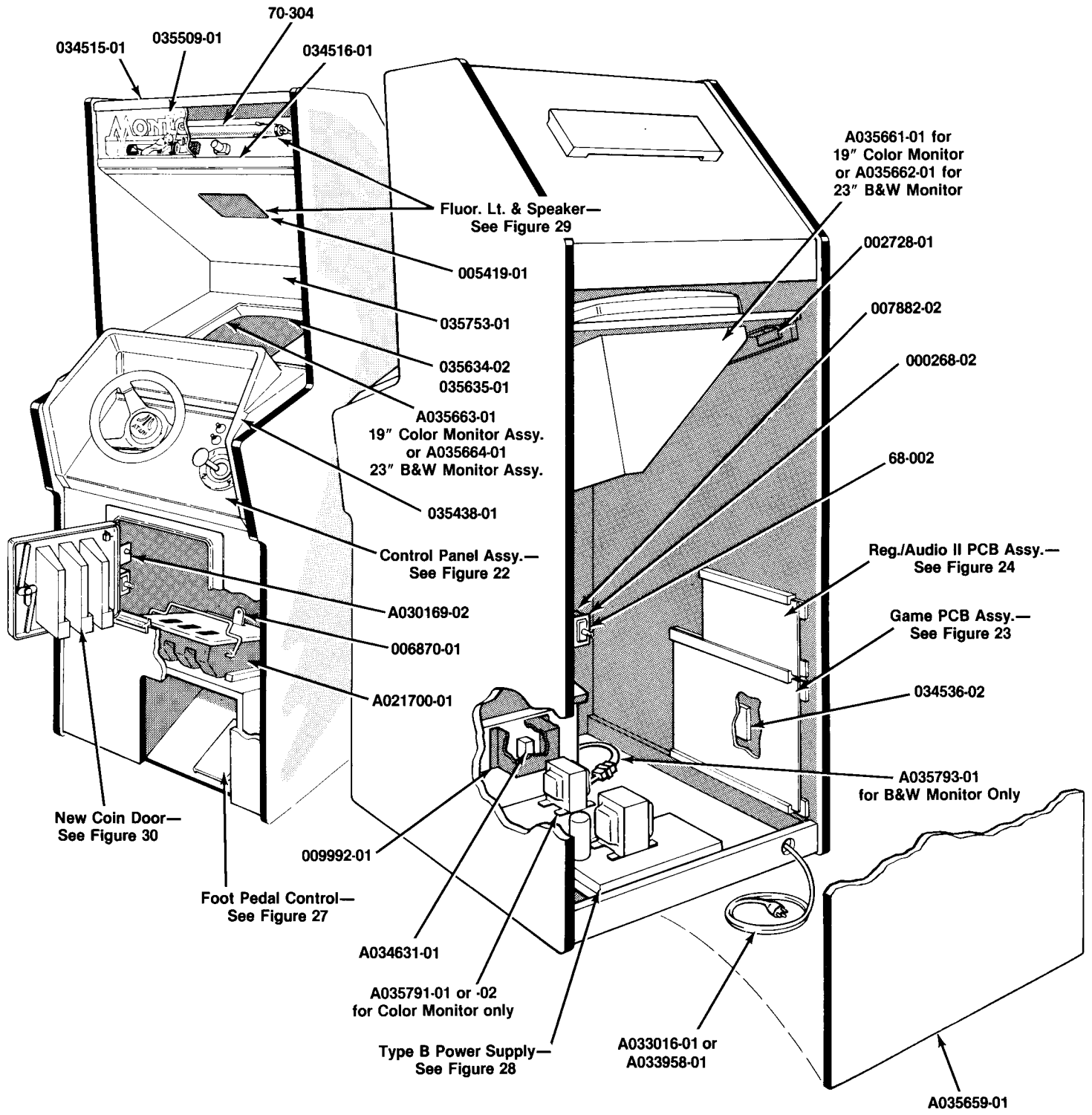
The parts lists have been arranged in alphanumeric order. For example, all "A-" prefix numbers come first. Following this are numbers in sequence evaluated up to the hyphen, namely 00-thru 99-, then 000598- thru approximately 110000-.

When ordering parts from your distributor, give the part number, part name, applicable figure number of this manual, and serial number of your game. This will help to avoid confusion and mistakes in your order. We hope the results will be less downtime and more profit from your game.



Illustrated Parts Lists



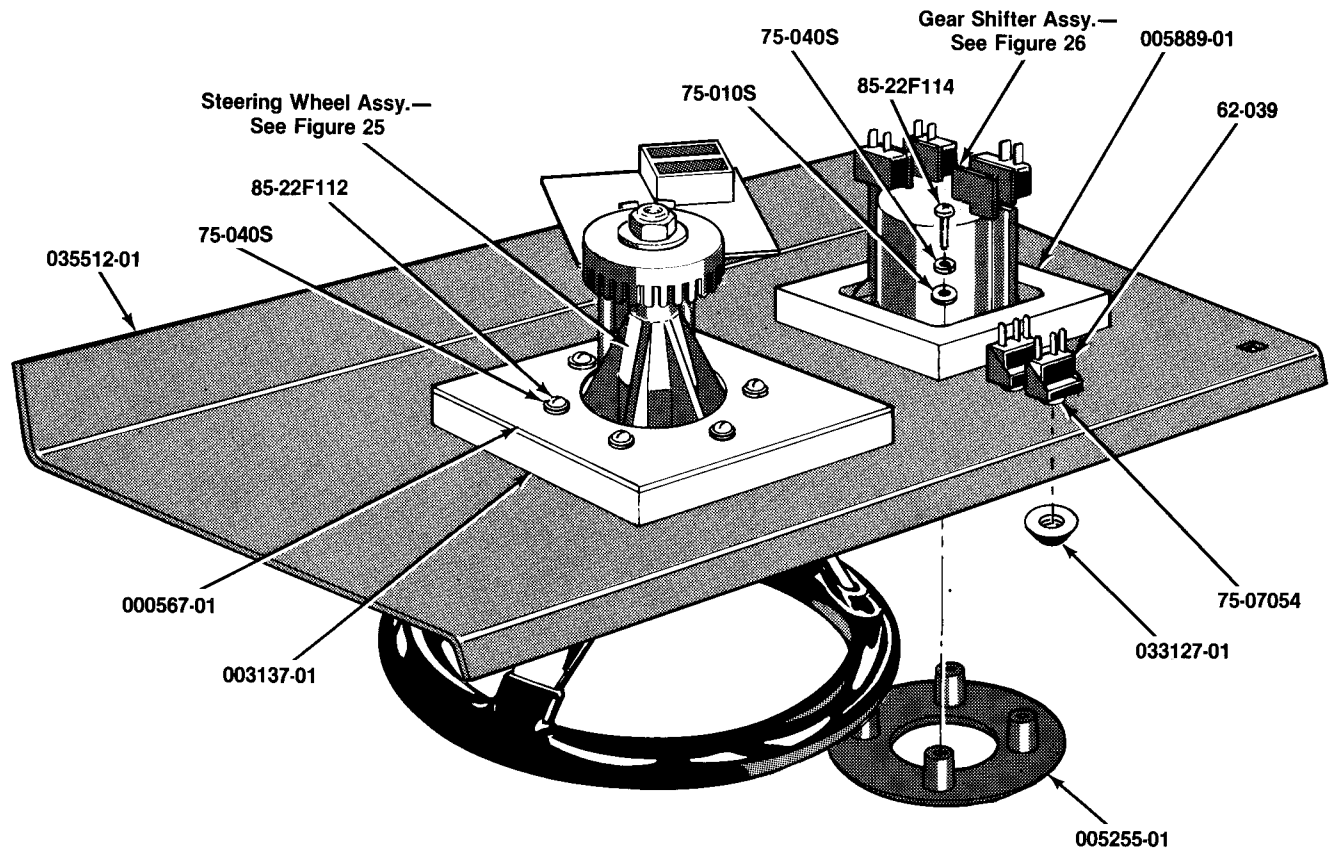


**Figure 21 Final Assembly
A035656-xx B and A035667-xx B**

Figure 21 Final Assembly Parts List

| Part No. | Description |
|-------------------|---|
| | Control Panel Assembly—see Figure 22 |
| | Game PCB Assembly—see Figure 23 |
| | Regulator/Audio II PCB Assembly—see Figure 24 |
| | Foot Pedal Control—see Figure 27 |
| | Type B Power Supply Assembly—see Figure 28 |
| | Fluorescent Light and Speaker—see Figure 29 |
| | New Coin Door—see Figure 30 |
| A021700-01 | Coin Box Assembly (3 holes) |
| A030169-02 | Volume Control/Bracket Assembly |
| A030268-01 | Coin Box Assembly (2 holes) |
| A033016-01 | Strain Relief Power Cord (domestic) |
| OR | |
| A033958-01 | Strain Relief Power Cord (German) |
| A034631-01 | On/Off Switch Assembly |
| A035659-01 | Access Panel Assembly |
| A035663-01 | 19" Color TV Monitor Assembly (includes wood shelf) |
| A035664-01 | 23" Black-and-White TV Monitor Assembly (includes wood shelf) |
| A035791-01 or -02 | Isolation Transformer (for color monitor only) |
| A035793-01 | Monitor Shorting Plug (for b&w monitor only) |
| DP-149-01 | Monte Carlo™ Schematic Drawings, Sheet 1 |
| DP-149-02 | Monte Carlo Schematic Drawings, Sheet 2 |
| TM-149 | Monte Carlo Operation, Maintenance, Service Manual |
| TM-148 | Instruction and Service Manual for G07-901 R.G.B. Color Monitor |
| 68-002 | Interlock Switch (two per game) |
| 70-304 | 18" 15-Watt Cool White Fluorescent Lamp |
| 71-2114 | Panel Cartridge Lock Mechanism (for access panel) |
| 75-07017 | Spacer for Mounting Printed-Circuit Boards |
| 78-24012 | 5" Beaded Nylon Tie Wrap (for Game PCB edge connector) |
| 79-3210 | Single-Pole Fuse Block, with ¼" × 1/32" Tab |
| 000268-02 | Interlock Switch Mounting Bracket |
| 002728-01 | Control-Panel Mounting Bracket |
| 005419-01 | Speaker Grille |
| 006870-01 | Coin Box Bracket |
| 007882-02 | Interlock Switch Cover |
| 009992-01 | On/Off Switch Cover |
| 034515-01 | Upper Retainer Strip |
| 034516-01 | Lower Retainer Strip |
| 034536-02 | Foam Vibration Damper |
| 035438-01 | Molded Dashboard |
| 035509-01 | Attraction Panel with Graphics |
| 035634-02 | Monitor Shield without Graphics (smoke color) |
| 035635-01 | Monitor Shield with Graphics |
| 035661-01 | Cardboard Bezel (for 19" color monitor) |
| 035662-01 | Cardboard Bezel (for 23" black-and-white monitor) |
| 035723-01 | Product Identification Label |
| 035753-01 | Graphics Panel with "GO" Design |





**Figure 22 Control Panel Assembly
A035657-01 A
Parts List**

| <i>Part No.</i> | <i>Description</i> |
|-----------------|--|
| | Steering Wheel Assembly—see Figure 25 |
| | Gear Shifter Assembly—see Figure 26 |
| 62-039 | SPDT Momentary Pushbutton Switch, with Red Cap and Light-Emitting Diode |
| 75-010S | #10 Plain Flat Regular-Pattern Steel Washer |
| 75-040S | #10 Steel Split Lock Washer |
| 75-07054 | Flat Nylon Washer, 0.470" inside diameter × 0.968" outside diameter × 0.075" thick |
| 85-22F112 | #10-24 × 3/4" Pan-Head Phillips Self-Threading Type F Steel Machine Screw |
| 85-22F114 | #10-24 × 7/8" Pan-Head Phillips Self-Threading Type F Steel Machine Screw |
| 000567-01 | Metal Backup Plate for Steering Wheel |
| 003137-01 | Wood Backup Panel for Steering Wheel |
| 005255-01 | Shift Bezel ("H" Pattern) |
| 005889-01 | Wood Backup Panel for Gear Shifter |
| 033127-01 | Black Molded Switch Bushing |
| 035512-01 | Control Panel with Graphics |

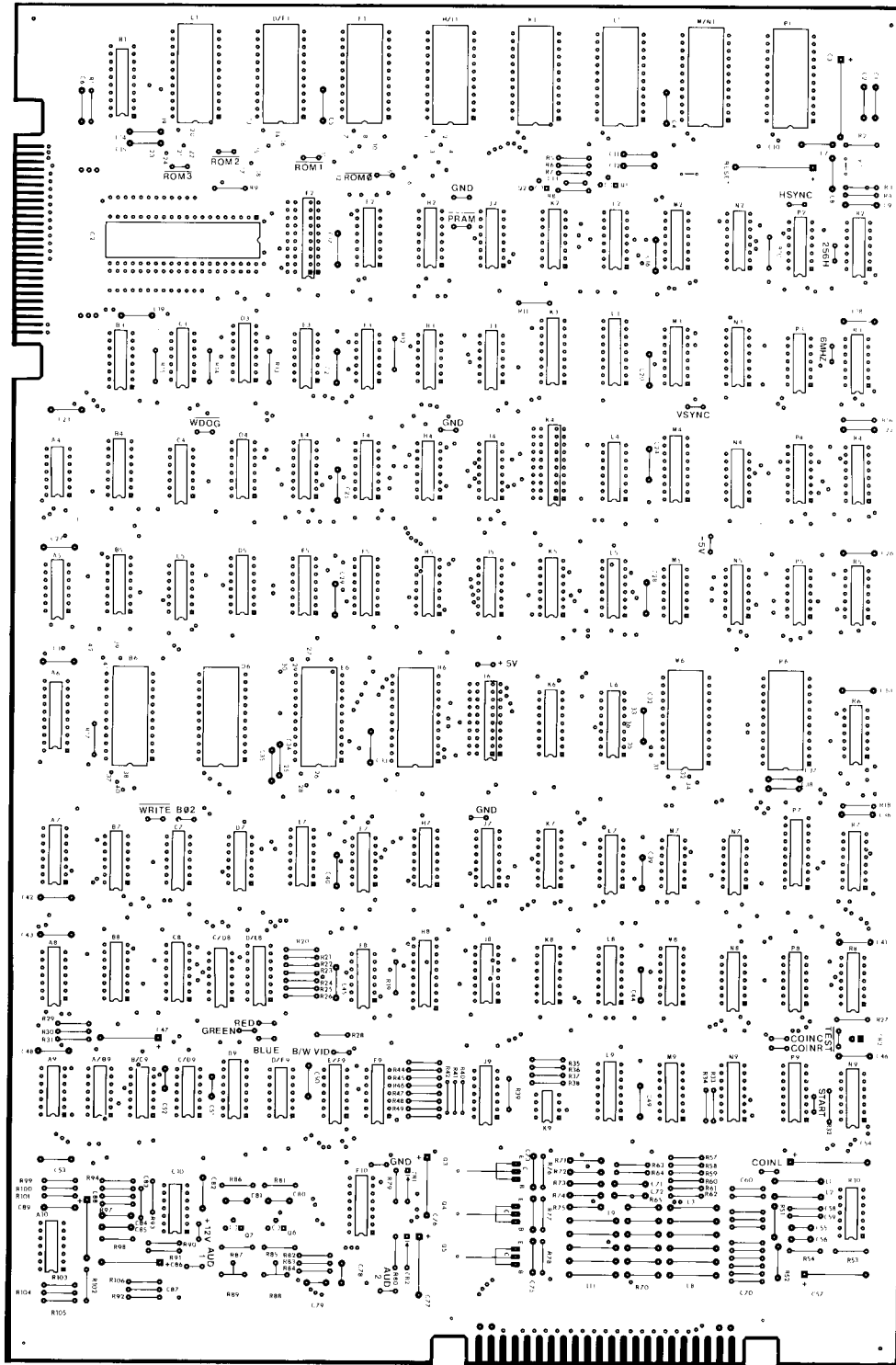


Figure 23 Game PCB Assembly
A035675-01 and -02 A

Figure 23 Game PCB Assembly Parts List

| <i>Part No.</i> | <i>Description (Reference Designations and Locations in Bold)</i> |
|-----------------|---|
| 10-5225 | 2.2M Ohm, $\pm 5\%$, 1/4W Resistor (R44, 50) |
| 19-315254 | 250K Ohm Vertical PCB-Mounting Cermet Trimptot (R88, 89) |
| 21-101103 | .01 uf, $\pm 10\%$, Radial-Lead Epoxy-Dipped 100V Mylar Capacitor (C80, 81) |
| 21-101104 | .1 uf, $\pm 10\%$, Radial-Lead Epoxy-Dipped 100V Mylar Capacitor (C78, 79) |
| 24-250105 | 1 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C47, 88) |
| 24-250106 | 10 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C86) |
| 24-250107 | 100 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C3, 10, 54) |
| 24-250225 | 2.2 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C57) |
| 24-250475 | 4.7 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C76, 77) |
| 27-250102 | .001 uf Ceramic-Disc 25V Radial-Lead Capacitor (C13) |
| 27-250103 | .01 uf Ceramic-Disc 25V Radial-Lead Capacitor (C51, 52, 55, 56) |
| 27-250224 | .22 uf Ceramic-Disc 25V Radial-Lead Capacitor (C83-85) |
| 29-088 | .1 uf Ceramic-Disc 25V Radial-Lead Capacitor (C1, 2, 4-9, 11, 12, 14-46, 48-50, 53, 58-75, 82, 87, 89) |
| 31-1N914 | 75V 1N914 Switching Diode (CR1, 2) |
| 33-2N3644 | Type 2N3644 PNP 25V Transistor (Q1, 6, 7) |
| 34-2N3643 | Type 2N3643 NPN Switching Transistor (Q2) |
| 34-2N6044 | Type 2N6044 NPN Darlington Transistor (Q3-5) |
| 37-LM324 | Type LM324 Integrated Circuit (C10) |
| 37-4066 | Type 4066 Integrated Circuit (A10) |
| 37-556 | Type 556 Timer Integrated Circuit (C9) |
| 37-74LS00 | Type 74LS00 Integrated Circuit (F3, F8) |
| 37-74LS02 | Type 74LS02 Integrated Circuit (H3, N8, A4) |
| 37-74LS04 | Type 74LS04 Integrated Circuit (R2, A5, N7) |
| 37-74LS08 | Type 74LS08 Integrated Circuit (F7, P8, J9) |
| 37-74LS10 | Type 74LS10 Integrated Circuit (C7, M7, D/E9) |
| 37-74LS14 | Type 74LS14 Integrated Circuit (E3, R10) |
| 37-74LS20 | Type 74LS20 Integrated Circuit (C5, P5, L7) |
| 37-74LS27 | Type 74LS27 Integrated Circuit (A8) |
| 37-74LS32 | Type 74LS32 Integrated Circuit (J3, B7, D7) |
| 37-74LS42 | Type 74LS42 Integrated Circuit (H2, J2, J7, K7) |
| 37-74LS74 | Type 74LS74 Integrated Circuit (P2, P3, R3, R5, R8, R9) |
| 37-74LS86 | Type 74LS86 Integrated Circuit (M5, N5, R6, C/D8, A9) |
| 37-74LS92 | Type 74LS92 Integrated Circuit (A/B9, B/C9) |
| 37-74LS95 | Type 74LS95 Integrated Circuit (N4) |
| 37-74LS109 | Type 74LS109 Integrated Circuit (B3, B5, C8, D9) |
| 37-74LS153 | Type 74LS153 Integrated Circuit (A7, R7, L9) |
| 37-74LS157 | Type 74LS157 Integrated Circuit (K2, L2, B4, K5, L5) |
| 37-74LS163A | Type 74LS163A Integrated Circuit (M2, N2, P4, R4, H4, J4, H5, J5) |
| 37-74LS164 | Type 74LS164 Integrated Circuit (E/F9, F/H9) |
| 37-74LS174 | Type 74LS174 Integrated Circuit (F4, L4, B8, D/E8, L8, M8, F10) |
| 37-74LS175 | Type 74LS175 Integrated Circuit (M3, J8) |
| 37-74LS191 | Type 74LS191 Integrated Circuit (D4, E4, D5, E5) |
| 37-74LS244 † | Type 74LS244 Integrated Circuit (B1) |
| 37-74LS245 ‡ | Type 74LS245 Integrated Circuit (E2, K4, J6) |
| 37-74LS251 | Type 74LS251 Integrated Circuit (N9, P9) |
| 37-74LS273 § | Type 74LS273 Integrated Circuit (A6, P7, H8) |
| 37-74LS367 | Type 74LS367 Integrated Circuit (F2, K8) |
| 37-74166 | Type 74166 Integrated Circuit (F5) |
| 37-7425 | Type 7425 Integrated Circuit (C4) |
| 37-7437 | Type 7437 Integrated Circuit (C3) |
| 37-7496 | Type 7496 Integrated Circuit (D3) |
| 37-9316 | Type 9316 Integrated Circuit (H7) |

† This item may be substituted by part no. 37-74LS241, a type 74LS241 Integrated Circuit **(B1)**

‡ This item may be substituted by part no. 37-8304B, a type 8304B Integrated Circuit **(E2, K4, J6)**

§ This item may be substituted by part no. 37-74LS374, a type 74LS374 Integrated Circuit **(A6, P7, H8)**

Figure 23 Game PCB Assembly Parts List

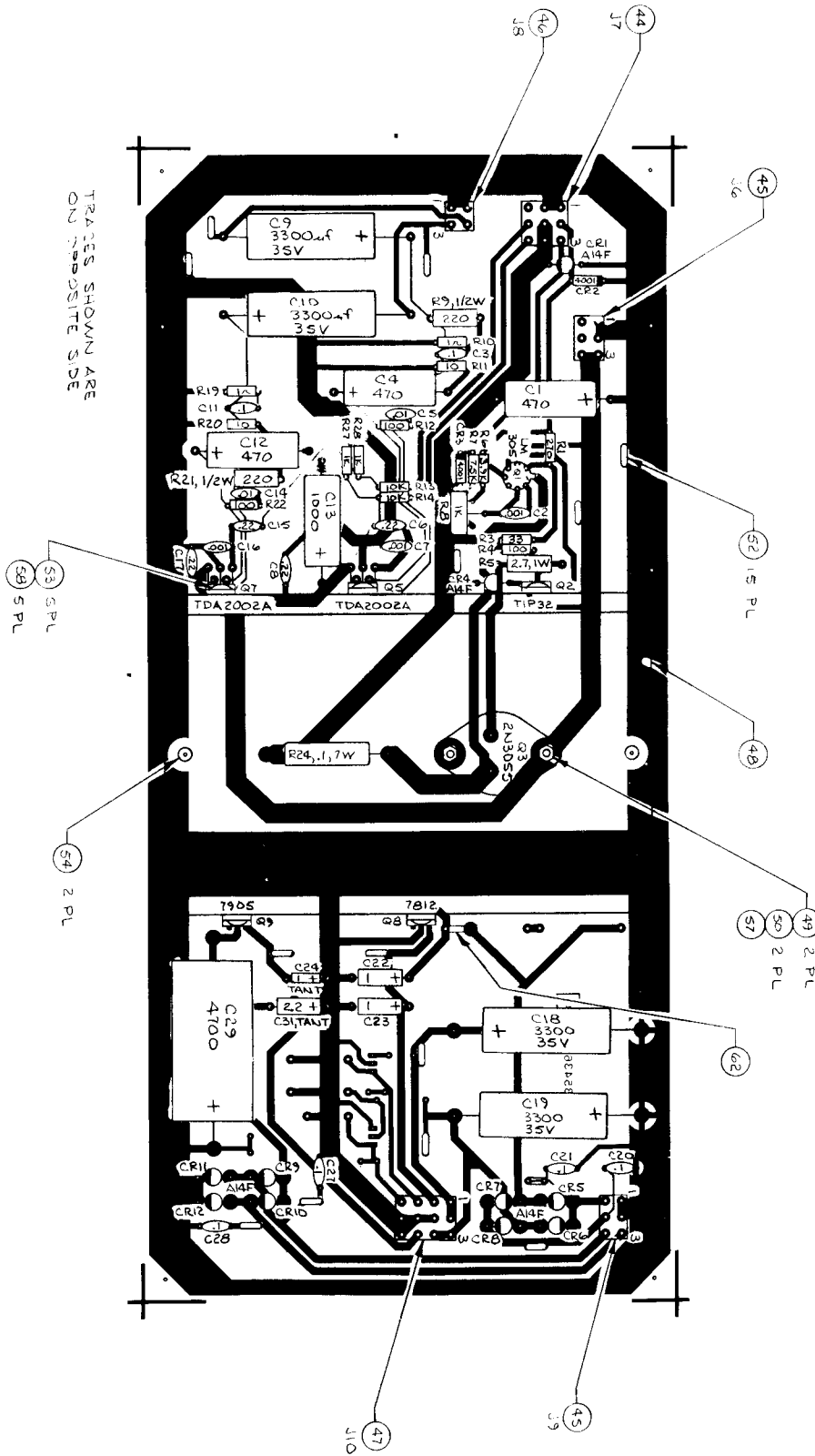
| <i>Part No.</i> | <i>Description (Reference Designations and Locations in Bold)</i> |
|-----------------|--|
| 37-MV5053 | Type MV5053 Light-Emitting Diode (CR3) |
| 41-3003 | 100 uH, ± 5%, Hot-Molded Plastic Fixed R.F. Choke (L1-L13) |
| 62-001 | SPST Pushbutton Switch (SW1) |
| 66-114P1T | 4-Station Single-Throw, Dual-Inline-Package Bit Switch (SW3) |
| 66-118P1T | 8-Station Single-Throw, Dual-Inline-Package Bit Switch (SW2) |
| 79-42C40 | 40-Contact Medium-Insertion-Force Integrated Circuit Socket (C2) |
| 81-4302 | Nylon Snap-In Fastener |
| 90-102 | 12.096 MHz, ± .005%, Crystal (Y1) |
| 90-6001 | Microprocessor (C2) |
| 90-7019 | Random-Access Memory (K3, L3, K6, L6) |
| 009114-01 | Programmable Read-Only Memory—Sync (N3) |
| 020670-01 | Test Point |
| 035778-01 | Programmable Read-Only Memory—Alphanumerics (M4) |
| 035785-01 | Programmable Read-Only Memory—Grey Levels and Color Video (E7) |
| 110000-101 | 100 Ohm, ± 5%, ¼ W Resistor (R63, 64) |
| 110000-102 | 1K Ohm, ± 5%, ¼ W Resistor (R9-13, 16-19, 21, 23, 24, 32, 40, 76-78) |
| 110000-103 | 10K Ohm, ± 5%, ¼ W Resistor (R1, 8, 29-31, 33-38, 57-62, 85, 87, 90, 91, 94-96, 99-102) |
| 110000-104 | 100K Ohm, ± 5%, ¼ W Resistor (R105) |
| 110000-105 | 1M Ohm, ± 5%, ¼ W Resistor (R6, 43, 49, 81, 86) |
| 110000-122 | 1.2K Ohm, ± 5%, ¼ W Resistor (R22) |
| 110000-151 | 150 Ohm, ± 5%, ¼ W Resistor (R27) |
| 110000-153 | 15K Ohm, ± 5%, ¼ W Resistor (R5, 93) |
| 110000-182 | 1.8K Ohm, ± 5%, ¼ W Resistor (R25, 26) |
| 110000-222 | 2.2K Ohm, ± 5%, ¼ W Resistor (R41, 54) |
| 110000-223 | 22K Ohm, ± 5%, ¼ W Resistor (R103, 106) |
| 110000-224 | 220K Ohm, ± 5%, ¼ W Resistor (R45, 48) |
| 110000-271 | 270 Ohm, ± 5%, ¼ W Resistor (R14, 15) |
| 110000-273 | 27K Ohm, ± 5%, ¼ W Resistor (R92) |
| 110000-331 | 330 Ohm, ± 5%, ¼ W Resistor (R2, 4, 53) |
| 110000-332 | 3.3K Ohm, ± 5%, ¼ W Resistor (R82) |
| 110000-333 | 33K Ohm, ± 5%, ¼ W Resistor (R97) |
| 110000-334 | 330K Ohm, ± 5%, ¼ W Resistor (R84) |
| 110000-392 | 3.9K Ohm, ± 5%, ¼ W Resistor (R42) |
| 110000-471 | 470 Ohm, ± 5%, ¼ W Resistor (R3, 28, 51, 52, 65-75) |
| 110000-473 | 47K Ohm, ± 5%, ¼ W Resistor (R104) |
| 110000-474 | 470K Ohm, ± 5%, ¼ W Resistor (R46, 47) |
| 110000-563 | 56K Ohm, ± 5%, ¼ W Resistor (R7) |
| 110000-681 | 680 Ohm, ± 5%, ¼ W Resistor (R83) |
| 110000-683 | 68K Ohm, ± 5%, ¼ W Resistor (R79, 80) |
| 110000-821 | 820 Ohm, ± 5%, ¼ W Resistor (R20) |
| 110000-822 | 8.2K Ohm, ± 5%, ¼ W Resistor (R39) |
| 110000-823 | 82K Ohm, ± 5%, ¼ W Resistor (R98) |

*For remaining memory components and their
part numbers, see list below.*

Figure 23 Game PCB Assembly, continued Parts List

Memory Components and Their Equivalents (Locations Shown in Bold)

| If PROM is bad, self-test will display the following: | -01 P.C. Boards (PROMs) | -02 P.C. Boards (ROMs) | If ROM is bad, self-test will display the following: |
|---|--|------------------------|---|
| G | 035767-01 C1 | 035763-01 C1 | G H (If self-test portion of this chip is bad, bottom area of screen shows garbage and test pattern will scroll sideways.) |
| H (If self-test portion of this chip is bad, bottom area of screen shows garbage and test pattern will scroll sideways.) | 035771-01 J/K1 | | |
| E | 035768-01 D/E1 | 035764-01 D/E1 | E F |
| F | 035772-01 L1 | | |
| C | 035769-01 F1 | 035765-01 F1 | C D |
| D | 035773-01 M1 | | |
| A | 035770-01 H1 | 035766-01 H1 | A B |
| B | 035774-01 N/P1 | | |
| Incomplete test pattern of people, cola stands, trees, bushes, hay bales, Atari copyright notice, etc. (for the correct test pattern see Figure 6). | 035776-01 E6 035777-01 H6 | 035775-01 E6 | Incomplete test pattern of people, cola stands, trees, bushes, hay bales, Atari copyright notice, etc. (for the correct test pattern see Figure 6). |
| Incomplete red player car (in center of screen). For correct test pattern see Figure 6. | 035781-01 M6 035782-01 P6 | 035779-01 M6 | Incomplete red player car (in center of screen). For correct test pattern see Figure 6. |
| Incomplete computer car (labeled number "0"). For correct test pattern see Figure 6. | 035783-01 B6 035784-01 D6 | 035780-01 B6 | Incomplete computer car (labeled number "0"). For correct test pattern see Figure 6. |

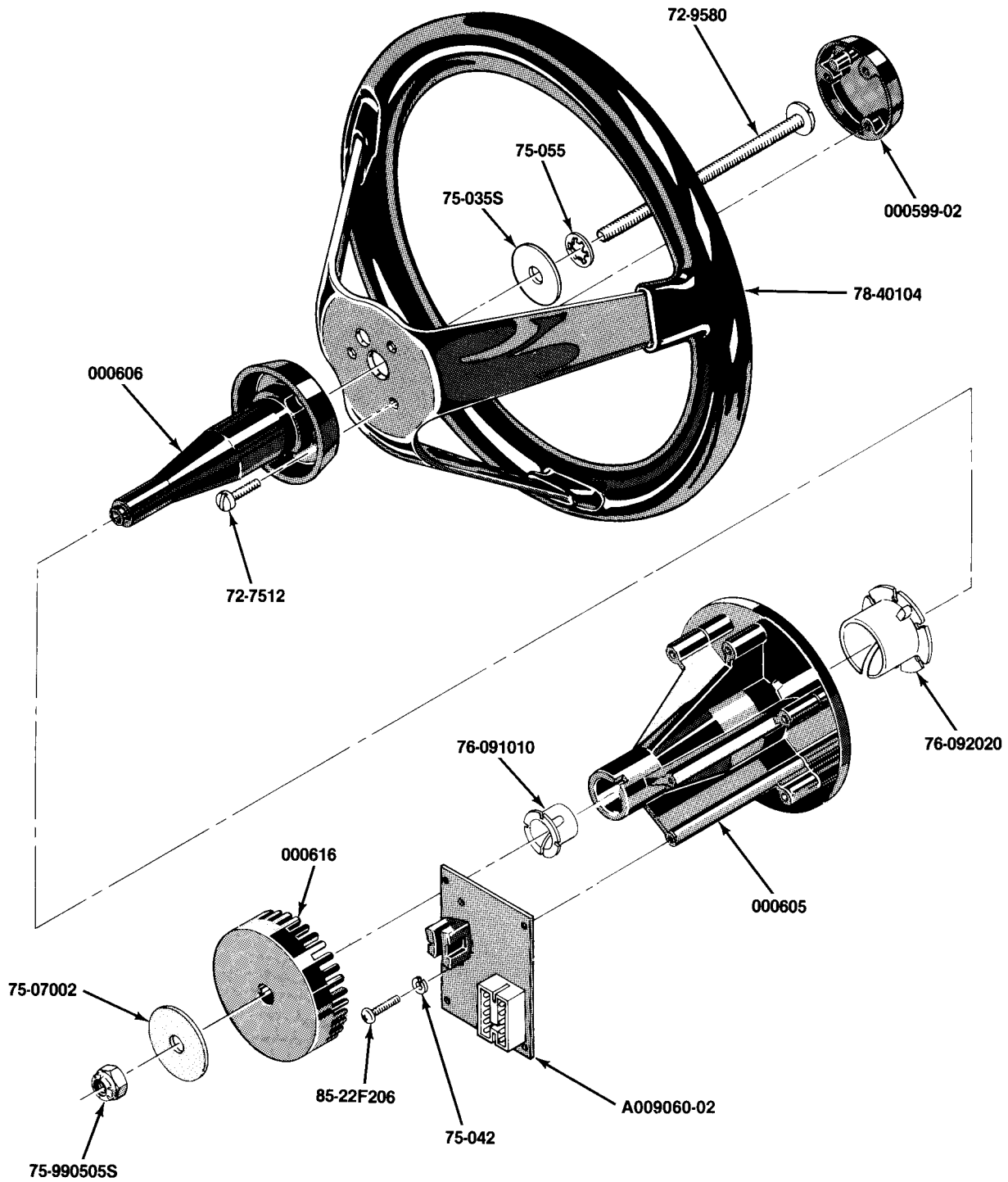


**Figure 24 Regulator/Audio II PCB Assembly
A035435-03 A**



Figure 24 Regulator/Audio II PCB Assembly Parts List

| Part No. | Description (Reference Designations and Locations in Bold) |
|-------------|---|
| 12-52P7 | 2.7 Ohm, \pm 5%, 1W Resistor (R5) |
| 19-100P1015 | .1 Ohm, \pm 3%, 7W Wirewound Resistor (R24) |
| 19-315102 | 1K Ohm Vertical PCB-Mounting Cermet Trimpot (R8) |
| 24-250108 | 1000 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C13) |
| 24-250477 | 470 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C1, 4, 12) |
| 24-250478 | 4700 uf Aluminum Electrolytic Fixed Axial-Lead 25V Capacitor (C29) |
| 24-350338 | 3300 uf Aluminum Electrolytic Fixed Axial-Lead 35V Capacitor (C9, 10, 18, 19) |
| 24-500105 | 1 uf Aluminum Electrolytic Fixed Axial-Lead 50V Capacitor (C22, 23) |
| 27-250102 | .001 uf Ceramic-Disc 25V Radial-Lead Capacitor (C2, 7, 16) |
| 27-250103 | .01 uf Ceramic-Disc 25V Radial-Lead Capacitor (C5, 6, 14, 15) |
| 27-250104 | .1 uf Ceramic-Disc 25V Radial-Lead Capacitor (C3, 11, 20, 21, 27, 28) |
| 27-250224 | .22 uf Ceramic-Disc 25V Radial-Lead Capacitor (C8, 17) |
| 29-006 | 1 uf Tantalum 35V Capacitor (C24) |
| 31-A14F | 50V 2.5A Miniature Axial-Lead High-Current Rectifier (CR1, 4-12) |
| 31-1N4001 | 50V Silicon Rectifier 1N4001 Diode (CR2, 3) |
| 33-TIP32 | PNP Power Transistor, Type TIP32 (Q2) |
| 34-2N3055 | NPN Silicon Transistor, Type 2N3055 (Q3) |
| 34-2N3904 | NPN Silicon Transistor, Type 2N3904 (Q4, 6) |
| 37-LM305 | 5V Linear Voltage Regulator (Q1) |
| 37-TDA2002A | Type TDA2002A 8W Linear Audio Amplifier Integrated Circuit (Q5, 7) |
| 37-7812 | + 12V Voltage Regulator, Type 7812 (Q8) |
| 37-7905 | - 5V Voltage Regulator, Type 7905 (Q9) |
| 52-004 | Teflon-Insulated Solder-Plated Solid Copper PCB-Mounting Jumper Wire with .3" Centers |
| 72-1608C | #6-32 \times 1/2" Cross-Recessed Pan-Head Corrosion-Resistant Steel Machine Screw |
| 75-F60405 | #6-32 \times 1/4" Binder-Head Nylon Screw |
| 75-99516 | #6-32 Nut/Washer Assembly |
| 78-16008 | Thermally Conductive Compound (Q3) |
| 78-16014 | Thermally Conductive Compound (Q2, 5, 7-9) |
| 79-58306 | 6-Position Connector Receptacle (J6, J9) |
| 79-58308 | 9-Position Connector Receptacle (J7) |
| 79-58346 | 12-Position Connector Receptacle (J10) |
| 79-58354 | 4-Position Connector Receptacle (J8) |
| 020670-01 | Test Point |
| 034531-01 | Heat Sink |
| 110000-010 | 1 Ohm, \pm 5%, 1/4 W Resistor (R10, 19) |
| 110000-100 | 10 Ohm, \pm 5%, 1/4 W Resistor (R11, 20) |
| 110000-101 | 100 Ohm, \pm 5%, 1/4 W Resistor (R4, 12, 22) |
| 110000-102 | 1K Ohm, \pm 5%, 1/4 W Resistor (R27, 28) |
| 110000-103 | 10K Ohm, \pm 5%, 1/4 W Resistor (R13, 14) |
| 110000-271 | 270 Ohm, \pm 5%, 1/4 W Resistor (R1) |
| 110000-330 | 33 Ohm, \pm 5%, 1/4 W Resistor (R3) |
| 110000-392 | 3.9K Ohm, \pm 5%, 1/4 W Resistor (R6) |
| 110000-752 | 7.5K Ohm, \pm 5%, 1/4 W Resistor (R7) |
| 110001-221 | 220 Ohm, \pm 5%, 1/2 W Resistor (R9, 21) |
| 122000-225 | 2.2 uf Tantalum 35V Capacitor (C31) |

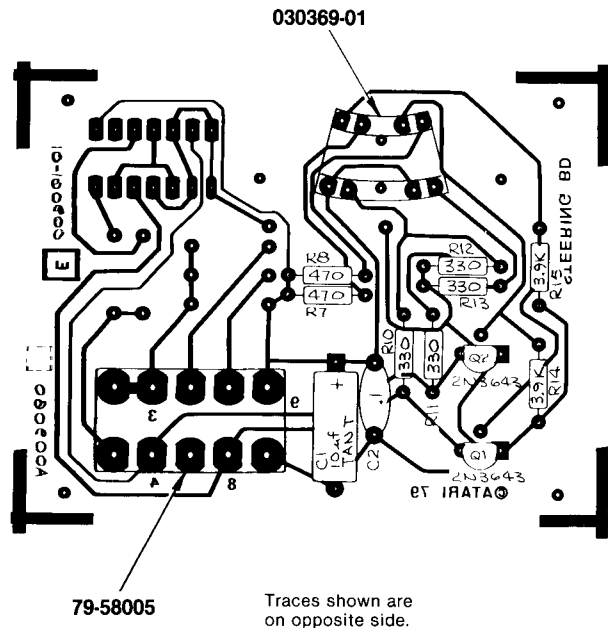


**Figure 25 Steering Wheel Assembly
A000598-08 U**

Figure 25 Steering Wheel Assembly Parts List

| Part No. | Description (Reference Designations and Locations in Bold) |
|------------|---|
| A009060-02 | Steering Printed-Circuit Board Assembly, consisting of the following eight items: |
| 10-5331 | 330 Ohm, ± 5%, 1/4W Carbon Composition Resistor (R10-13) |
| 10-5392 | 3.9K Ohm, ± 5%, 1/4W Carbon Composition Resistor (R14, 15) |
| 10-5471 | 470 Ohm, ± 5%, 1/4W Carbon Composition Resistor (R7, 8) |
| 27-250104 | .1uf 25V Radial-Lead Ceramic-Disc Capacitor (C2) |
| 29-046 | 10uf 20V Axial-Lead Tantalum Capacitor (C1) |
| 34-2N3643 | Type 2N3643 NPN Silicon Transistor (Q1, 2) |
| 79-58005 | 10-Position Header Connector |
| 030369-01 | Radial Optical Coupler |
| 72-7512 | #1/4-20 × 3/4" Fillister-Head Slotted Machine Screw |
| 72-9580 | #1/4-20 × 5" Truss-Head Slotted Machine Screw |
| 75-042 | #2 Corrosion-Resistant Steel Split Lock Washer |
| 75-055 | #1/4 Internal-Tooth Steel Lock Washer |
| 75-07002 | Steel Flat Washer, .281" inside diameter × 1.25" outside diameter × .059" thick |
| 75-990505S | #1/4-20 Self-Locking Prevailing-Torque Shallow-Pattern Steel Hex Nut |
| 76-091010 | 5/8" Inside Diameter Dual-Shouldered Keyed Nylon Journal Bearing |
| 76-092020 | 1 1/4" Inside Diameter Dual-Shouldered Keyed Nylon Journal Bearing |
| 78-40104 | 10" Steering Wheel |
| 85-22F206 | #2-56 × 3/8" Pan-Head Phillips Type F Self-Tapping Machine Thread Screw |
| 000599-02 | Atari-Logo Cover |
| 000605 | Housing |
| 000606 | Shaft |
| 000616 | Hub Light |

Detail of Steering PCB Assembly, A009060-02, Rev. C:



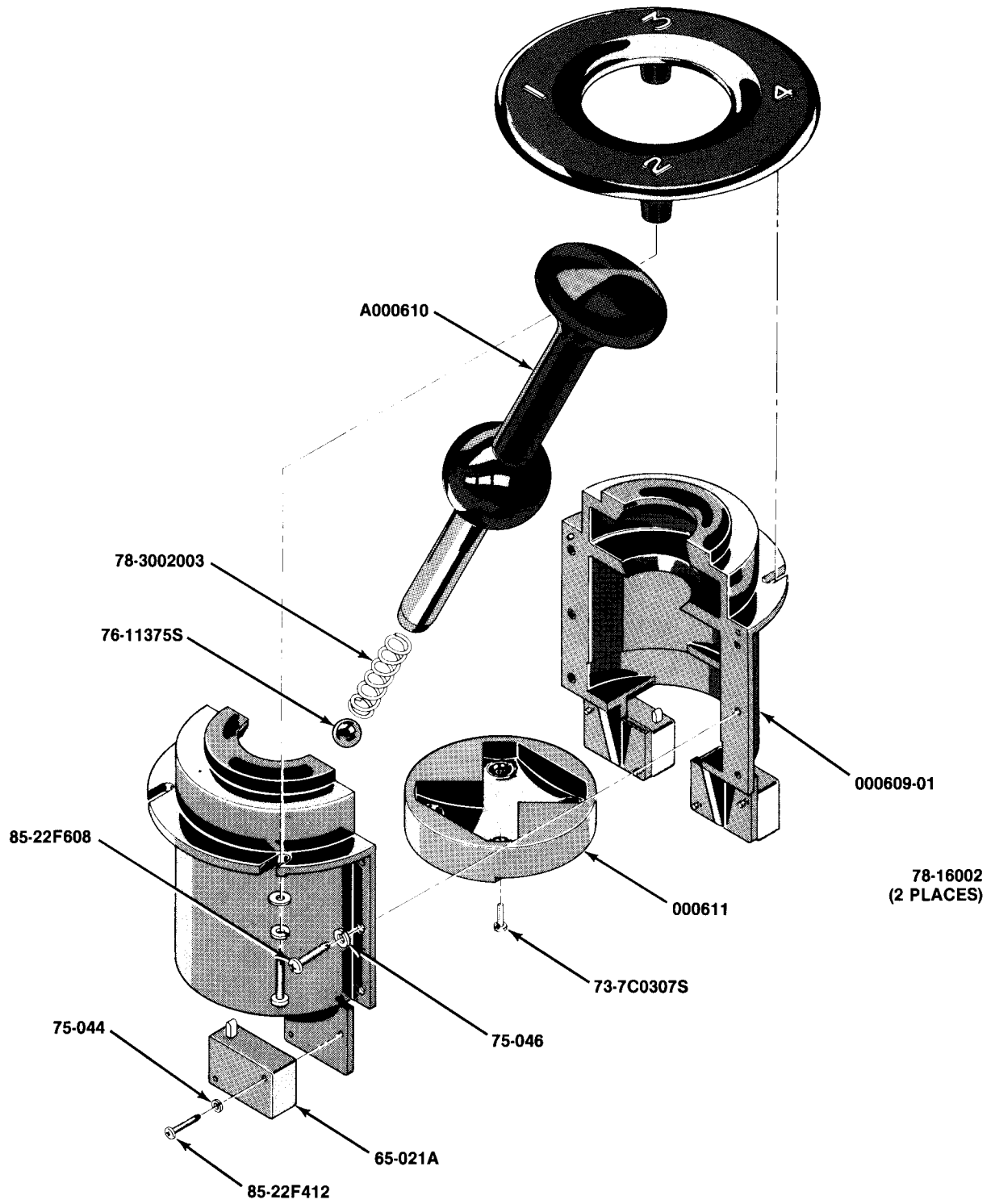
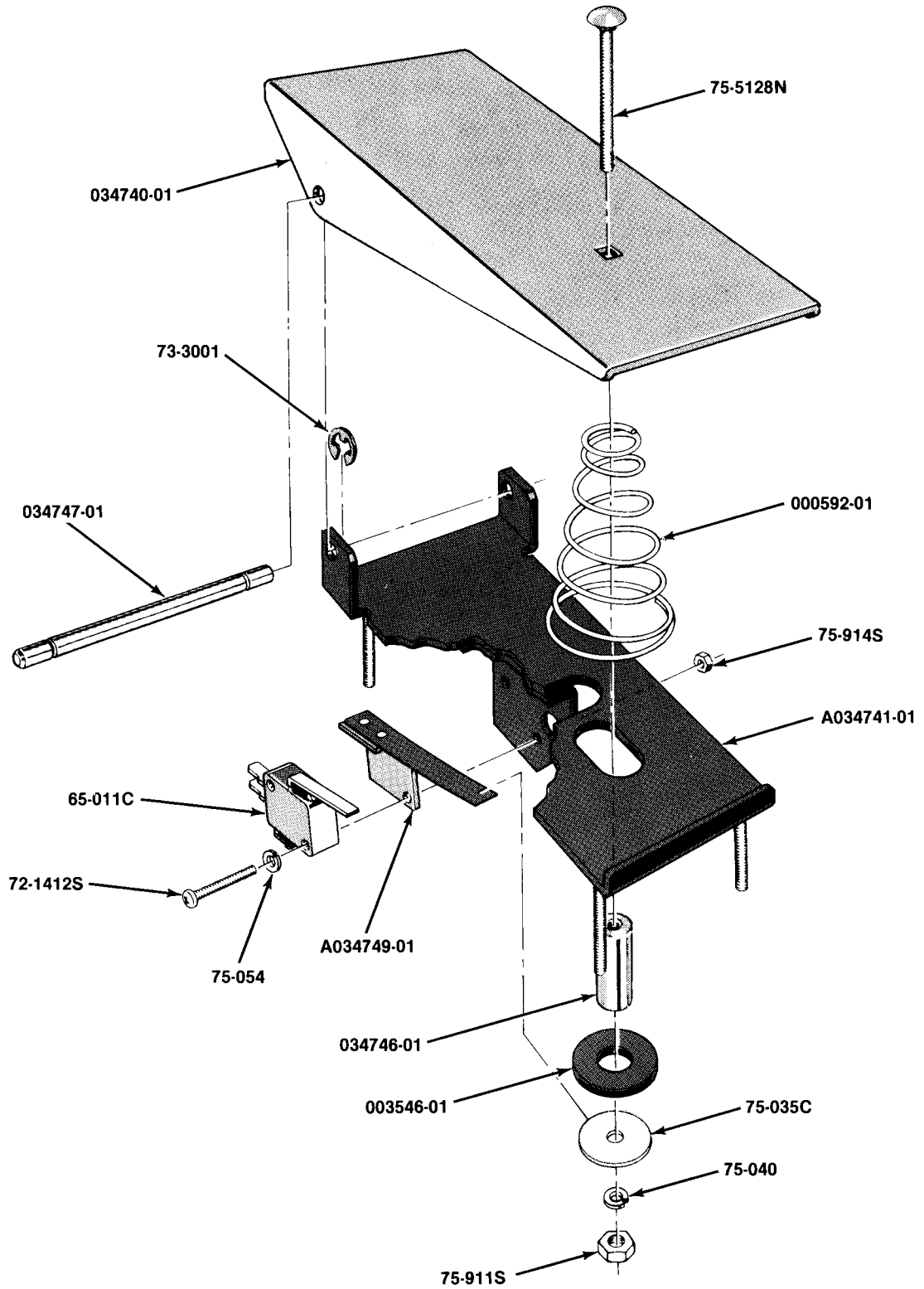


Figure 26 Gear Shifter Assembly ("H" Pattern)
A000608-03 S

Figure 26 Gear Shifter Assembly Parts List

| <i>Part No.</i> | <i>Description</i> |
|-----------------|---|
| A000610 | Shifter Handle |
| 65-021A | Single-Pole Single-Throw Low-Force Miniature Switch |
| 73-7C0307S | Steel Flat Flange-Head Solid-Shank Rivet, 3/32"-Diameter Shank × 3/16"-Diameter Head × 7/16"-Long Shank |
| 75-044 | #4 Internal-Tooth Steel Split Lock Washer |
| 75-046 | #6 Internal-Tooth Steel Split Lock Washer |
| 76-11375S | 3/8" Diameter Bearing-Grade Steel Ball |
| 78-16002 | Dow Corning Silicone Compound #5 |
| 78-3002003 | Spring |
| 85-22F412 | #4-40 × 3/4" Pan-Head Phillips Self-Threading Type F Steel Machine Screw |
| 85-22F608 | #6-32 × 1/2" Pan-Head Phillips Self-Threading Type F Steel Machine Screw |
| 000609-01 | Gear Shifter Housing (<i>two of these required per gear shifter</i>) |
| 000611 | Shift Detent |

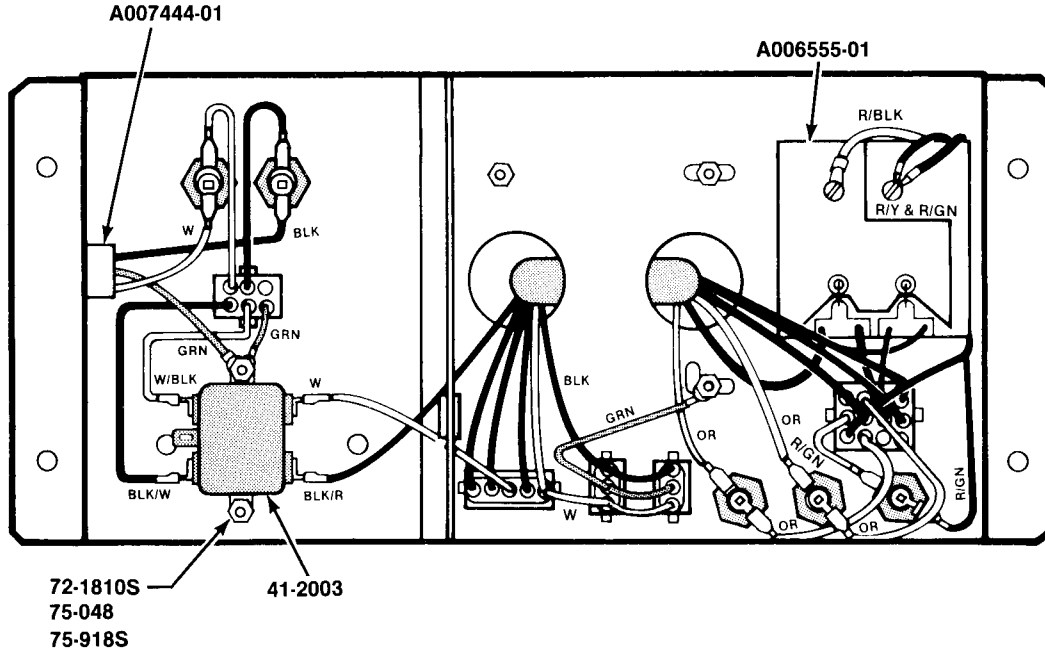
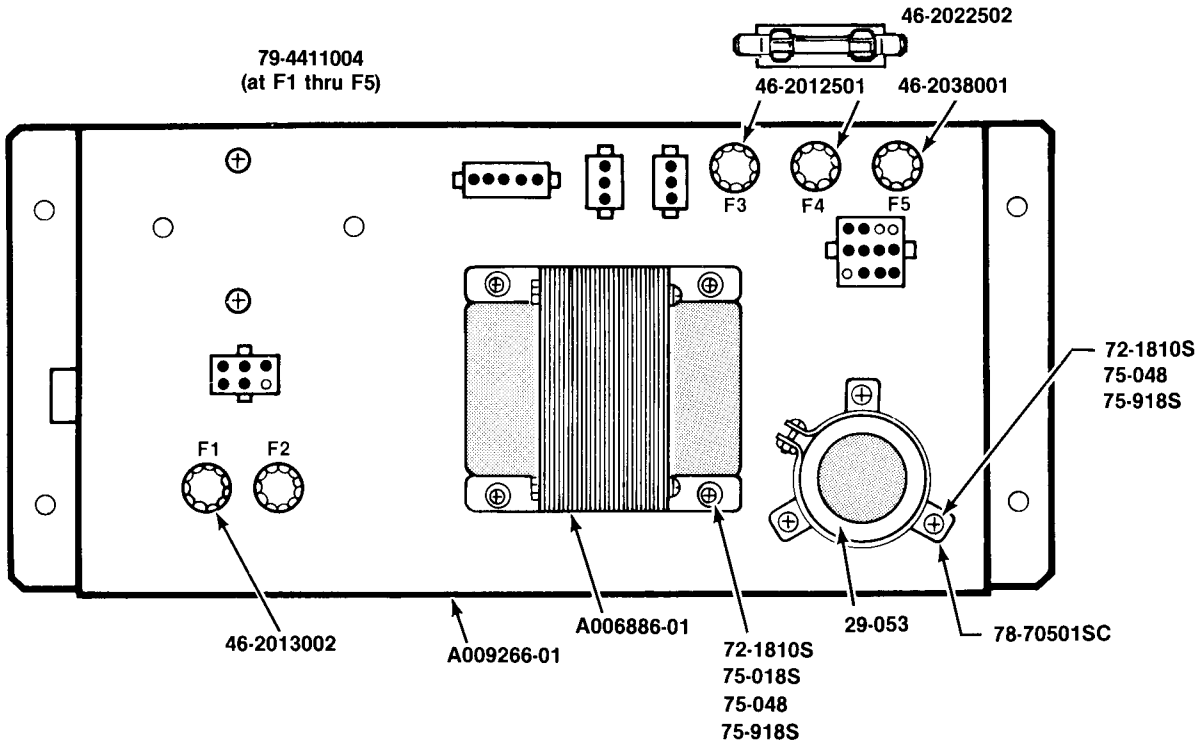
Note: The "H"-pattern shift bezel (with the four numbers stamped on it) is not part of the gear shifter. It is shown instead in Figure 22, Control Panel Assembly.



**Figure 27 Foot Pedal Control
A034748-01 A**

Figure 27 Foot Pedal Control Parts List

| <i>Part No.</i> | <i>Description</i> |
|-----------------|---|
| A034741-01 | Foot Pedal Base with Bolts |
| A034749-01 | "L" Bracket with Actuator Blade |
| 65-011C | Single-Pole Double-Throw Low-Force Miniature Switch |
| 72-1412S | #4-40 × ¾" Cross-Recessed Pan-Head Cadmium-Plated Steel Machine Screw |
| 73-3001 | Carbon Spring Steel External Retaining Ring, for ¼" shaft diameter |
| 75-035C | #¼ Plain Flat Wide-Pattern Corrosion-Resistant Steel Washer |
| 75-040 | #10 Stainless-Steel Split Lock Washer |
| 75-054 | #4 Zinc-Plated Steel Internal-Tooth Lock Washer |
| 75-5128N | #10-24 × 1¾" Round-Head Square-Neck Nickel-Plated Steel Carriage Bolt |
| 75-911S | #10-24 Standard Hex-Pattern Cadmium-Plated Steel Machine Nut |
| 75-914S | #4-40 Standard Hex-Pattern Cadmium-Plated Steel Machine Nut |
| 78-1709 | Dow Corning Molykote G-n Paste Lubricant |
| 000592-01 | Spring |
| 003546-01 | Rubber Stop |
| 034740-01 | Foot Pedal |
| 034746-01 | Metal Spacer |
| 034747-01 | Pivot Pin |

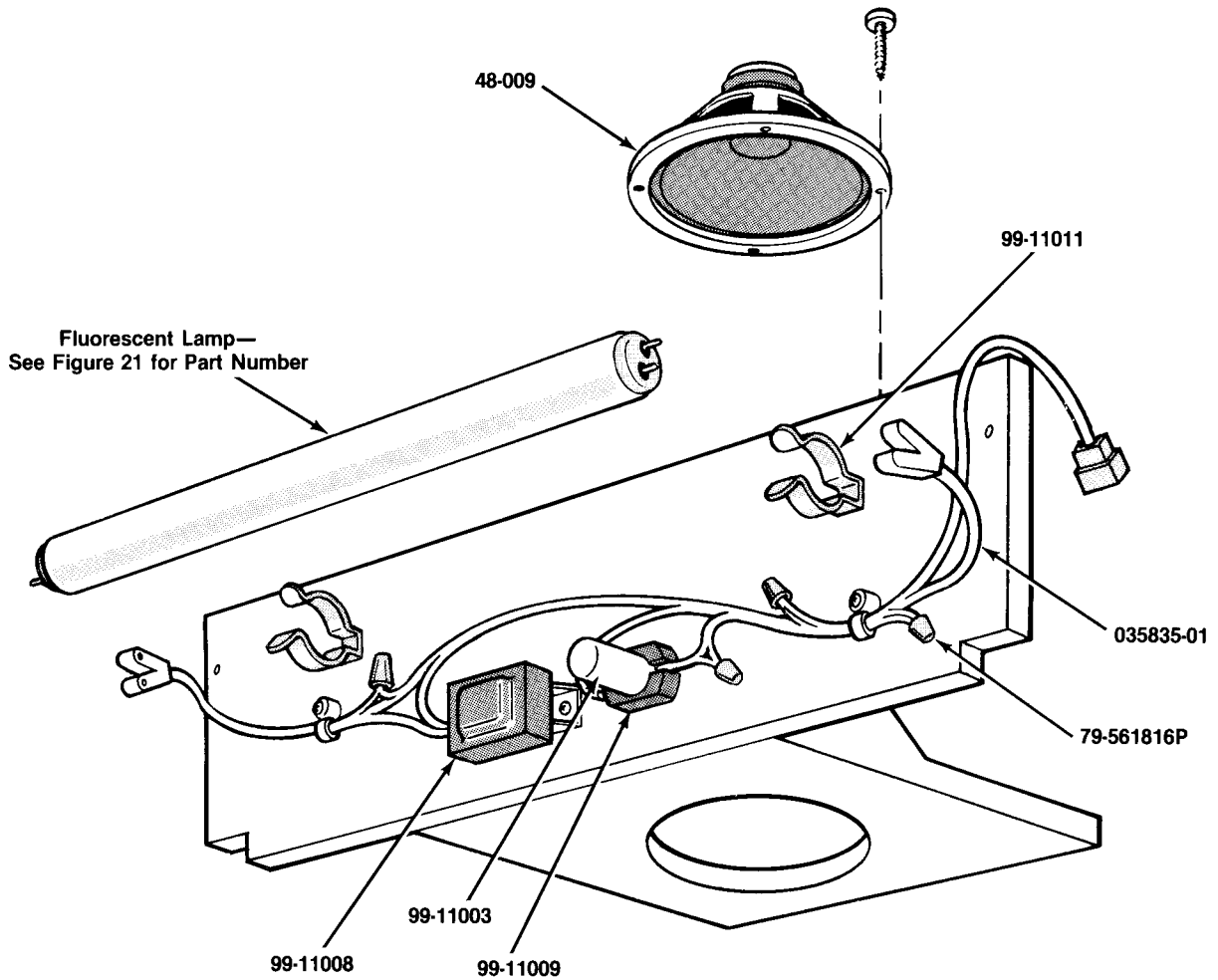


**Figure 28 Type B Power Supply Assembly
A007197-01 K**

Figure 28 Type B Power Supply Assembly
A007197-01 K
Parts List

| <i>Part No.</i> | <i>Description (Reference Designations in Bold)</i> |
|-----------------|---|
| A006555-01 | Rectifier P.C. Board Assembly |
| A006858-01 | Voltage Selection Plug (95V—Black) |
| A006858-02 | Voltage Selection Plug (110V—Orange) |
| A006858-03 | Voltage Selection Plug (205V—Green) |
| A006858-04 | Voltage Selection Plug (220V—Red) |
| A006886-01 | Type B Transformer Termination Assembly |
| A007192-01 | Power Switch Termination |
| A007444-01 | Power-In Harness |
| A009266-01 | Power Supply Base Assembly |
| 29-053 | 26,000 uf 15V Electrolytic Capacitor |
| 41-2003 | 5-Amp Power Line Filter |
| 46-2012501 | 2½-Amp, 125-Volt Slow-Acting Type 3AG Fuse (F3, F4) |
| 46-2013002 | 3-Amp, 250-Volt Slow-Acting Type 3AG Fuse (F1*, F2*) |
| 46-2022502 | 2½-Amp, 250-Volt Slow-Acting Type 3AG Fuse (F6*) |
| 46-2038001 | 8-Amp, 125-Volt Normal-Acting Type 3AG Fuse (F5) |
| 72-1810S | #8-32 × 5/8" Cross-Recessed Pan-Head Cadmium-Plated Steel Machine Screw |
| 75-018S | #8 Flat SAE-Standard Zinc-Plated Steel Washer |
| 75-048 | #8 Zinc-Plated Steel Split Lock Washer |
| 75-918S | #8 Standard Cadmium-Plated Steel Machine Hex Nut |
| 78-70501SC | 2" Diameter Capacitor Mounting Bracket |
| 79-4411004 | Panel-Mounted Non-Indicating 3AG Cartridge-Type Fuse Post |

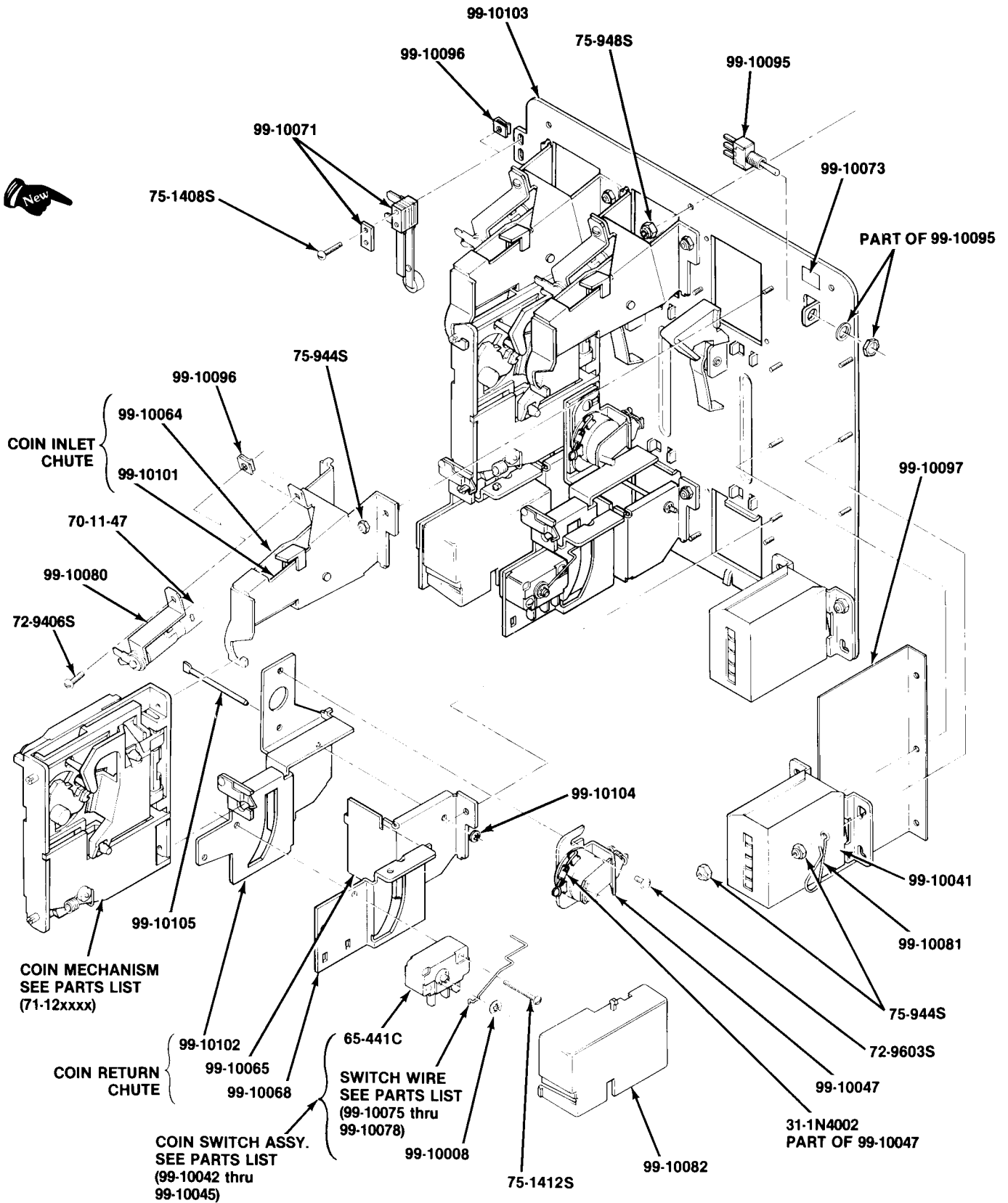
**NOTE: Fuses F1, F2, and F6 are not part of this power supply assembly and must be purchased separately. They have been listed here for your convenience.*



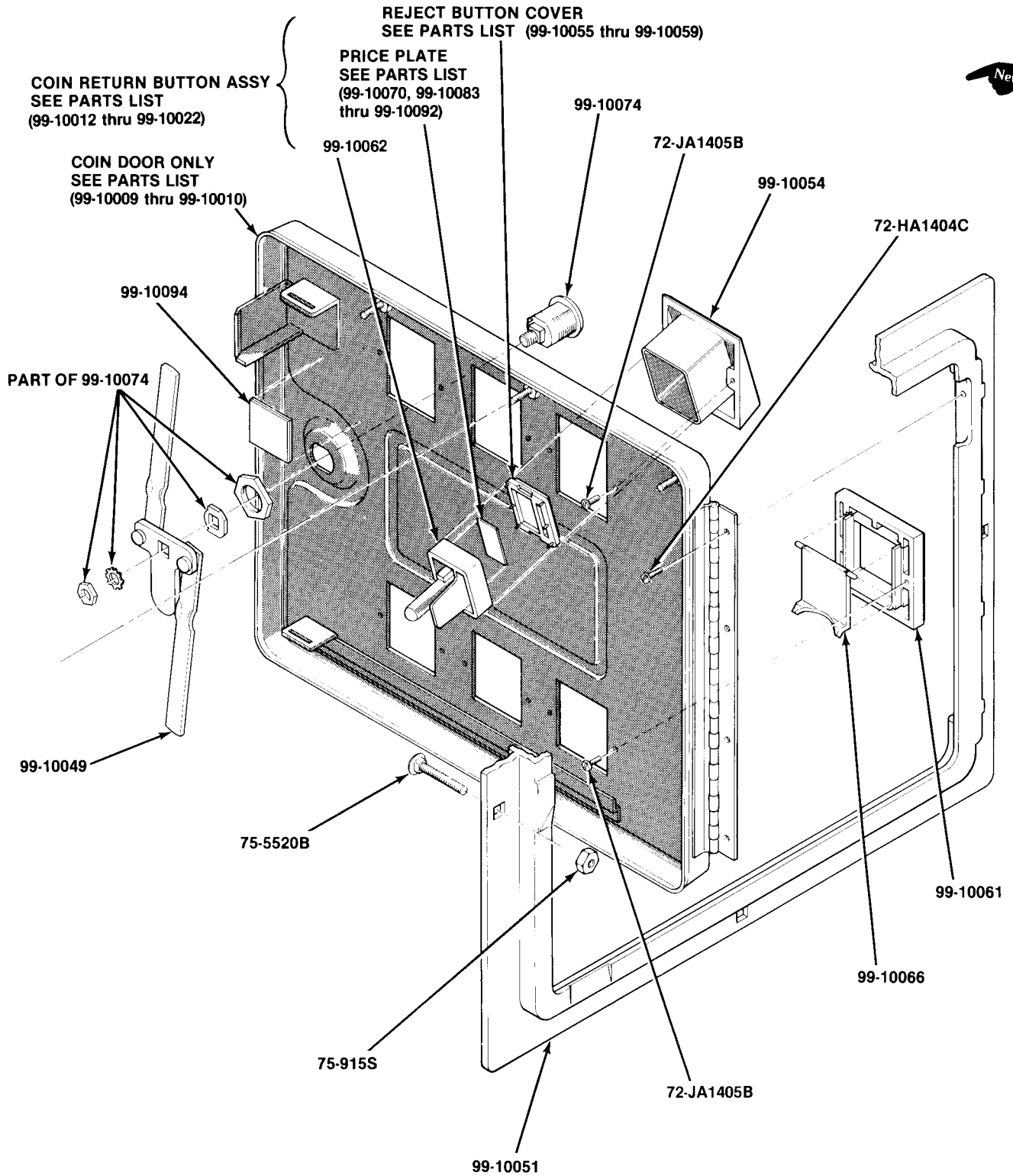
**Figure 29 Fluorescent Light and Speaker
A035658-01 A**

Parts List

| <i>Part No.</i> | <i>Description</i> |
|-----------------|---------------------------------------|
| 48-009 | 8" 8-Ohm 8-Watt High-Fidelity Speaker |
| 79-561816P | Wire Nut for 16- to 18-Guage Wires |
| 99-11003 | Fluorescent Lamp Starter |
| 99-11008 | Ballast Transformer |
| 99-11009 | Starter Socket |
| 99-11011 | 1½" Clamp |
| 035835-01 | Y-Lead Connector |



**Figure 30 New Coin Door
 71-10XXXX**



**Figure 30 New Coin Door
71-10XXXX**



Figure 30 New Coin Door, continued Parts List

| <i>Part No.</i> | <i>Description</i> |
|-----------------|---|
| 31-1N4002 | 100V Silicon Rectifier 1N4002 Diode |
| 65-441C | General-usage low-force miniature switch |
| 70-11-47 | Miniature bayonet-base incandescent lamp, type #47 |
| 71-1201ADU | U.S. \$1.00 coin mechanism |
| 71-1201FCH | Swiss 1 Fr coin mechanism |
| 71-1201MG | German 1 DM coin mechanism |
| 71-1202MG | German 2 DM coin mechanism |
| 71-1205FB | Belgian 5 Fr coin mechanism |
| 71-1205MG | German 5 DM coin mechanism |
| 71-1210PE | U.K. 10 P coin mechanism |
| 71-1220CA | Australian 20¢ coin mechanism |
| 71-1225CU | U.S. 25¢ coin mechanism |
| 71-12100LI | Italian 100 Lire coin mechanism |
| 71-12100YJ | Japanese Y100 coin mechanism |
| 72-HA1404C | #4x1/4" Slotted pan-head thread-rolling tri-fluted "Taptite" cadmium-plated screw |
| 72-JA1405B | #4x5/16" Slotted pan-head thread-rolling tri-fluted "Plastite" black screw |
| 72-9406S | #4-40x3/8" Slotted truss-head steel machine screw |
| 72-9603S | #6-32x3/16" Slotted truss-head steel machine screw |
| 75-915S | #1/4-20 Standard pattern cadmium-plated steel hex nut |
| 75-918S | #8-32 Standard pattern cadmium-plated steel hex nut |
| 75-944S | #4-40 Polymer self-locking steel hex nut |
| 75-948S | #8-32 Polymer self-locking steel hex nut |
| 75-1408S | #4-40x1/2" Slotted pan-head steel machine screw |
| 75-1412S | #4-40x3/4" Slotted pan-head steel machine screw |
| 75-5520B | #1/4-20x1 1/4" Round-head square-neck steel bolt with black finish |
| 99-10008 | Switch wire retainer |
| 99-10009 | 2-Mech coin door only |
| 99-10010 | 3-Mech coin door only |
| 99-10011 | Inner panel |
| 99-10012 | U.S. 25¢ coin return button assembly |
| 99-10013 | U.S. \$1.00 coin return button assembly |
| 99-10014 | German 1 DM coin return button assembly |
| 99-10015 | German 2 DM coin return button assembly |
| 99-10016 | German 5 DM coin return button assembly |
| 99-10017 | Belgian 5 Fr coin return button assembly |
| 99-10018 | Swiss 1 Fr coin return button assembly |
| 99-10019 | Japanese Y100 coin return button assembly |
| 99-10020 | U.K. 10 P coin return button assembly |
| 99-10021 | Australian 20¢ coin return button assembly |
| 99-10022 | Italian 100 Lire coin return button assembly |
| 99-10040 | Coin inlet chute assembly |
| 99-10041 | Coin counter assembly |
| 99-10042 | Coin switch assembly for U.S. 25¢ and Belgian 5 Fr coins (silver wire) |
| 99-10043 | Coin switch assembly for German 1 DM, Swiss 1 Fr, and Japanese Y100 coins (black wire) |
| 99-10044 | Coin switch assembly for U.S. \$1.00, German 2 DM, and Italian 100 Lire coins (gold wire) |

Figure 30 New Coin Door, continued Parts List

| <i>Part No.</i> | <i>Description (Reference Designations and Locations in Bold)</i> |
|-----------------|--|
| 99-10045 | Coin switch assembly for German 5 DM, U.K. 10 P, and Australian 20¢ coins (green wire) |
| 99-10047 | Lockout coil assembly |
| 99-10048 | Coin door harness assembly |
| 99-10049 | Locking arm assembly |
| 99-10051 | Coin door frame |
| 99-10054 | Coin button housing |
| 99-10055 | Coin return button cover for Japanese Y100 coin |
| 99-10056 | Coin return button cover for German 1 DM and Swiss 1 Fr coins |
| 99-10057 | Coin return button cover for U.S. 25¢ and Belgian 5 Fr coins |
| 99-10058 | Coin return button cover for U.S. \$1.00, German 2 DM, and Italian 100 Lire coins |
| 99-10059 | Coin return button cover for German 5 DM, U.K. 10 P, and Australian 20¢ coins |
| 99-10061 | Coin return bezel |
| 99-10062 | Coin return button |
| 99-10063 | Right half of coin inlet chute |
| 99-10064 | Left half of coin inlet chute |
| 99-10065 | Coin return box |
| 99-10066 | Coin return cover |
| 99-10070 | U.S. 25¢ price plate |
| 99-10071 | Slam switch assembly |
| 99-10073 | Test switch decal |
| 99-10074 | Lock assembly |
| 99-10075 | Black switch wire—for German 1DM, Swiss 1Fr and Japanese Y100 coins |
| 99-10076 | Silver switch wire—for U.S. 25¢ and Belgian 5Fr coins |
| 99-10077 | Gold switch wire—for U.S. \$1.00, German 2DM and Italian 100 Lire coins |
| 99-10078 | Green switch wire—for German 5DM, U.K. 10P and Australian 20¢ coins |
| 99-10080 | Miniature bayonet-base lamp socket |
| 99-10081 | Wire key holder |
| 99-10082 | Switch cover |
| 99-10083 | U.S. \$1.00 price plate |
| 99-10084 | German 1 DM price plate |
| 99-10085 | German 2 DM price plate |
| 99-10086 | German 5 DM price plate |
| 99-10087 | Belgian 5 Fr price plate |
| 99-10088 | Swiss 1 Fr price plate |
| 99-10089 | Japanese Y100 price plate |
| 99-10090 | U.K. 10 P price plate |
| 99-10091 | Australian 20¢ price plate |
| 99-10092 | Italian 100 Lire price plate |
| 99-10094 | Fish paper insulation |
| 99-10095 | Toggle switch |
| 99-10096 | “U”-type fastener |
| 99-10097 | Fish paper insulation |
| 99-10101 | Coin inlet chute sub-assembly |
| 99-10102 | Switch and lockout coil bracket sub-assembly |
| 99-10103 | Inner panel with levers sub-assembly |
| 99-10104 | Anti-penny-flip bar retainer |
| 99-10105 | Anti-penny-flip bar |