SKINS GAME

Operations Manual Includes

Setup ● Service ● System ● Wiring ● Troubleshooting
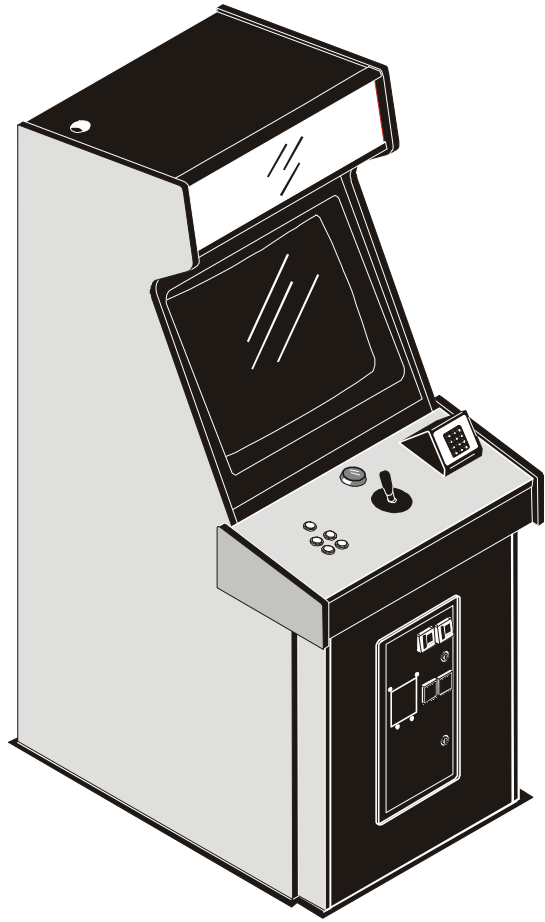
VIDEO GAME
CONVERSION KIT

CONTENTS OF CONVERSION KIT

20-9620	KEY T-20 TR-TX LONG ARM
4006-01005-08	MS 6-32x1/2 P-PH (2)
4006-01209-04	MS 6-32x1/4 P-PH W/SPRG SEMS (4)
4108-01219-10Y	SMS #8x5/8 PIN HD-AB SPCL YEL (10)
4108-01193-10B	SMS #8x5/8 TRX (10)
4408-01128-00	NUT 8-32 KEPS (14)
4700-00012-00	FW .172 x .375 x .047 (8)
5556-13956-00	FERRITE BEAD 2 PIECE 1-1/4 SQ. (2)
H-21672	GROUNDWIRE
H-23480	JOYSTICK ADAPTER HARNESS

RM-28-01 1" BUBBLE PACK 24"

A-22389 JOYSTICK ASSY, BASE GOLF
A-23458 KEYPAD POD ASSEMBLY
04-12875 PLATE- JOYSTICK MOUNTING
01-15029 BRACKET, HARD DRIVE

20-10209-2	P/BUTTON LONG SHAFT WHITE (2)
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31-3475	P/BUTTON ROUND ILLUMINATED

31-3456.3-2	BACKLIT MARQUEE
31-3457	DECAL, INSTRUCT BEZEL BOTTOM
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31-3602	DECAL, EXTREME MODE OVERLAY

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03-9663 ATTRACTION SHIELD

A-23502 ELECTRONICS ASSEMBLY

A-23453 HARD DRIVE DISK ASSEMBLY
16-10811 FLYER- SAFE HANDLING

16-8587-825	LABEL- FBI WARNING
16-9922.1	LABEL- EPILEPSY WARNING
16-10139	LABEL- WARNING FCC/CAN
16-11075	LABEL- PATENT MIDWAY GAMES WEST
16-10650	REGISTRATION CARD
16-34042-101	MANUAL- UNIV. KIT
16-10996	TEMPLATE- CNTL PNL

03-9664 COVER, CONTROL PANEL

RM-28-01 1" BUBBLE PACK 24"

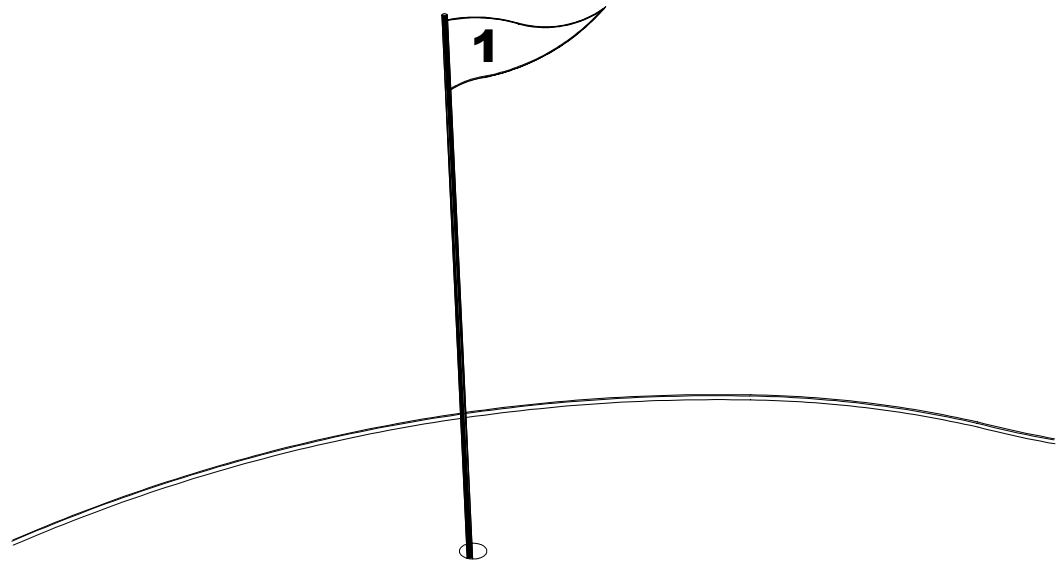16-10812 LABEL, FRAGILE (3)

16-10055 LABEL SET BAR CODE

N0204

SKINS GAME

CONVERSION KIT

CHAPTER

1

SAFETY & SETUP

	NOTICE: This manual is subject to change without notice. Midway Games West Inc. reserves the right to make improvements in equipment function, design, or components as progress in engineering or manufacturing methods may warrant.
	Fill out and mail in the Game Information Card. Include the game serial number from the label on the rear of the cabinet. For your records, write the game serial number in the manual. SERIAL NUMBER _____

SAFETY INSTRUCTIONS

The following safety instructions apply to operators and service personnel. Read these instructions before preparing the game for play. Other safety instructions appear throughout this manual.

DEFINITIONS OF SAFETY TERMS

DANGER indicates an imminent hazard. If you fail to avoid this hazard, it WILL cause death or serious injury.

WARNING indicates a potential hazard. If you fail to avoid this hazard, it COULD cause death or serious injury.

CAUTION indicates a potential hazard. If you fail to avoid this hazard, it MAY cause minor or moderate injury. CAUTION also alerts you about unsafe practices.

NOTICE indicates information of special importance.

	CAUTION: HANDLE DRIVES CAREFULLY The hard disk drive must be packed in an anti-static bag. When shipping the drive for repair or replacement, pack it in an approved container (P/N 08-8068). Do not stack or drop hard disk drives.
	WARNING: DISCONNECT POWER Always turn AC power off and unplug the game before attempting service or adjustments unless otherwise instructed. Installing or repairing PC boards with power ON can damage components and void the warranty.
	WARNING: GROUND GAMES. Avoid electrical shocks! Do not plug in a game until you have inspected and properly grounded it. Only plug this game into a grounded, three-wire outlet. Do not use a "cheater" plug, or cut off the ground pin on the line cord.
	CAUTION: ATTACH CONNECTORS PROPERLY. Ensure proper mating. Do not force connectors that do not slip on easily. Reversed connectors may damage game and void warranty. Connector keys allow a connector to fit only one set of pins on a board.
	WARNING: HAZARD TO EPILEPTICS. A very small portion of the population has a condition that may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition. If you or a family member experiences symptoms linked to an epileptic condition (e.g., seizures or loss of awareness), consult a physician at once before playing video games. We recommend that parents observe their children while they play video games. If you or your child experience the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, DISCONTINUE USE IMMEDIATELY and consult a physician.

Welcome to Skins Game!

It's a beautiful day on the digital fairway. Midway Games West Inc. keeps the greens perpetually immaculate. In Skins Game, you and up to three other players are invited to practice your putting, perfect your drive, or simply haul off and lob a bucket of balls into the water hazards. Don't worry. We'll refill the bucket.

Ultra-realistic Skins Game is just like a round of golf, minus the strenuous exercise. Your Midway caddy warns you about sand traps and water hazards and offers the best route for your shots. She selects what she thinks is the best club, but you may choose yourself from a full bag of putters, drivers, wedges, and irons—all custom crafted for optimal performance. As you enjoy your game, birds chirp peacefully in the distance and the sun shines with nary a cloud to speak of. Heatstroke is never a problem.

Adjust your stance and shot direction all you like, but your virtual player begins each stroke oriented in the best stance and direction to hit the pin. While the three-dimensional terrain forces your ball to follow Newtonian physics, your shot "snaps" to the pin unless you choose to aim elsewhere. And a peek at the wind gauge may convince you to do so! The wind *will* send your ball off course if you're not careful.

Of course in Extreme Mode, say bye-bye to Mr. Newton as you change the ball's path or spin in mid-flight.

Players who don't dawdle at the tee earn QuickShot bonuses, rewards for hitting the ball within 15 seconds. Collecting 10 QuickShot bonuses gives you an extra Power Shot. And Power Shots mean added distance with your clubs. However, you must carefully time the joystick release, or your Power Shot becomes a nasty hook or slice. Normally, players earn one Power Shot for each three holes.

As your game improves (or not), a hard drive records your scores. With the keypad, you can enter a PIN that identifies you and calls up your statistics–in case there was any doubt about your birdie on the fourth hole at Eagle Ridge.

PRODUCT SPECIFICATIONS

Equipment Requirements

Video Display Monitor	*Audio System*	*Wiring*
Standard Resolution RGB	2 Channel Audio	JAMMA harness

Game Characteristics

Player Variables	*Operator Variables*	*Diagnostics*
1 to 4 players per game	Coinage, Play Mode,	Automatic Power-Up Test
Choice of Character	Difficulty, Volume,	Manual Multi-Level Menu System
Character Profile Memory	Audits, Statistics	

> **NOTICE**   Skins Game conversion requires use of a low resolution monitor. You must also have a standard JAMMA wiring harness.

KIT COMPONENTS

Unpack materials from carton and inspect for obvious signs of damage. Use this checklist to ensure the kit is complete. Some of these parts may already be installed. You must supply the remainder of the materials required for this conversion.

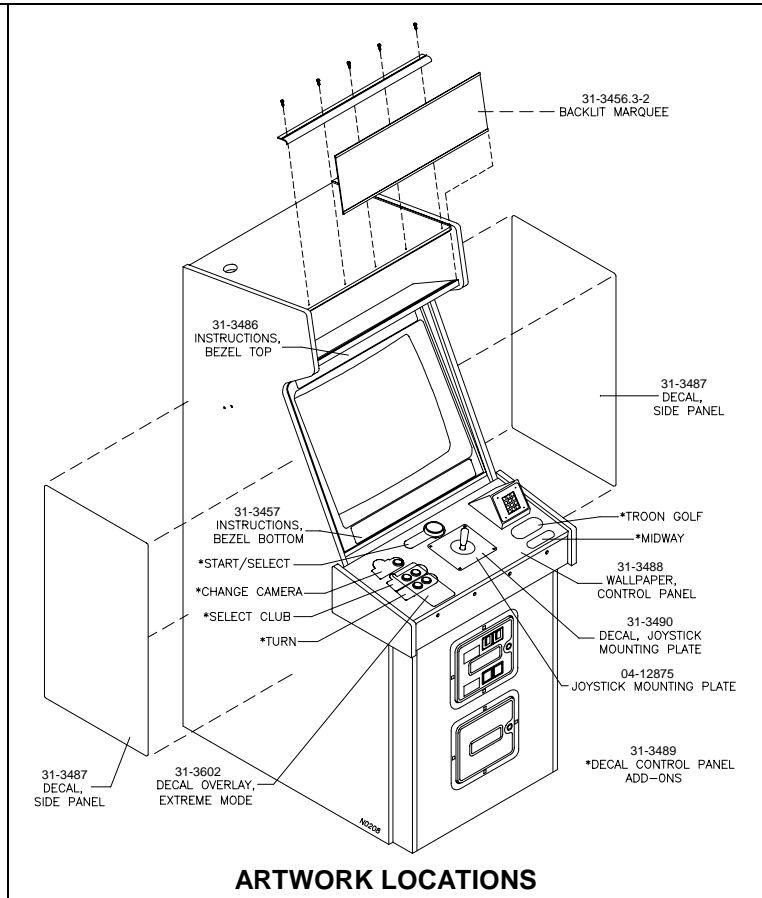| Item	Part No.	Qty	Item	Part No.	Qty
Artwork			**Controls**		
Side panel decal	31-3487	2	Joystick assembly	A-23389	1
Marquee Artwork	31-3456.3-2	1	Joystick mounting plate	04-12875	1
Joystick decal	31-3490	1	Joystick adapter harness	H-23480	1
Button decals	31-3489	1	Keypad pod assembly	A-23458	1
Wallpaper decal	31-3488	1	Keypad harness	H-23445.2	1
Bezel instructions bottom decal	31-3457	1	Blue pushbutton	20-10209-3	2
Bezel instructions top decal	31-3486	1	White pushbutton	20-10209-2	2
Extreme Mode Decal	31-3602	1	Yellow pushbutton	20-10209-5	1
Hardware and Tools			Illuminated red start pushbutton	31-3475	1
Screw 6-32 x 1/4 p-ph w/ spring	4006-01209-04	4	**Printed materials**		
Screw 6-32 x 1/2 p-ph	4006-01005-08	2	Epilepsy warning	16-9922.1	1
nut 8-32 keps	4408-01128-00	14	Control panel template	16-10996	1
Washers	4700-00012-00	8	Registration card	16-10650	1
Screw #8 x 16 pin yellow	4108-01219-10Y	10	Cardboard bezel	08-8067	1
Screw #8 x 5/8 torx	4108-01193-10B	10	**Electronics**		
Torx wrench	20-9620	1	Electronics assembly	A-23502	1
Screw 8-32 x 1 ¼	4308-01123-20B	4	Ferrite bead	5556-13956-00	2
Overlays			Hard drive assembly	A-23453	1
Control panel cover	03-9664	1	Hard drive bracket	01-15029	1
Marquee clear shield	03-9663	1	Ground wire	H-21672	2

Recommended tools and supplies

Utility knife, screwdrivers, liquid soap, nut drivers or socket wrench, wood filler material, black electrical tape, hole saw or equivalent, squeegee, soldering iron and solder, pliers or wire cutters, 180 grit sandpaper or electric sander, black semi-gloss paint, electric drill and wood drill bit set.

CONVERTING A TYPICAL VIDEO GAME CABINET

PREPARE EXISTING CABINET

1. Verify operation of existing game before changing cabinet. Pay special attention to parts you will reuse during conversion (e.g., power supply, monitor, coin mechs). Repair or replace damaged parts before installing kit.

2. Switch off AC power. Disconnect AC line cord. Clear work area and cover or protect non-wood items (marquee, monitor, coin door, brackets, line cord, etc.).
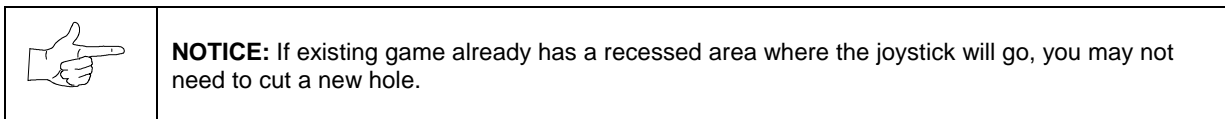
3. **ARTWORK** Note location of decals or artwork and remove. Clean off glue residue. Fill gouges or unused holes with suitable filler material like quick-hardening wood putty. Sand wood smooth and remove dust.

4. Evenly cover entire cabinet with black paint and allow to dry before continuing.

5. Lightly moisten cabinet with soapy water. Remove decal backing and apply from top to bottom. When in place, smooth decal outwards, squeezing out air bubbles. Pop persistent air bubbles with a knife and smooth down. Allow 12 hours for adhesive to set.

6. **MARQUEE** Remove existing marquee from cabinet. Check lamp and replace if cracked or if ends are darkened, even if it still works. Install kit marquee. Using previous shield as a guide, trim new attraction shield to size and deburr edges. Install new marquee attraction shield.

31-3456.3-2
BACKLIT MARQUEE

31-3486
INSTRUCTIONS,
BEZEL TOP

31-3487
DECAL,
SIDE PANEL

31-3457
INSTRUCTIONS,
BEZEL BOTTOM

*START/SELECT

*CHANGE CAMERA

*SELECT CLUB

*TURN

*TROON GOLF

*MIDWAY

31-3488
WALLPAPER,
CONTROL PANEL

31-3490
DECAL, JOYSTICK
MOUNTING PLATE

04-12875
JOYSTICK MOUNTING PLATE

31-3489
*DECAL CONTROL PANEL
ADD-ONS

31-3487
DECAL,
SIDE PANEL

31-3602
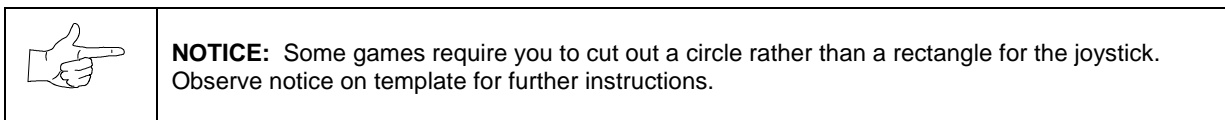DECAL OVERLAY,
EXTREME MODE

ARTWORK LOCATIONS

7. Remove viewing glass and set in safe place. Clean CRT glass. Apply instructions decals to top and bottom of bezel. Place Epilepsy Warning label on front of monitor bezel. Ensure decals and labels do not obstruct viewing area. Clean bezel and viewing glass before installing in cabinet.

8. **CABINET** Remove and save screws at top and sides of rear door. Unlock rear door. Lift door off cabinet and set aside. Use a vacuum cleaner to remove dirt or debris inside cabinet.

9. **CONTROL PANEL** Locate and unlock control panel latches or fasteners. Free panel from operating position. Label each harness wire before disconnecting from controls. Once wires are disconnected, remove control panel from cabinet and set aside. Save mounting brackets and hardware for later reinstallation.

10. Some cabinets have speakers or other components on the control panel. Note polarity and function of wires before disconnecting. Incorrectly phased speakers cause weak low frequencies or a thin, hollow sound quality.

INSTALL PLAYER CONTROLS

1. **TEMPLATE** If control panel template is creased, flatten with a stack of books, newspapers, magazines, etc.

2. Remove buttons, joysticks, or other controls from control panel. Remove covering and artwork, hinges or mounting brackets.

3. Fill holes with suitable material (i.e., wood putty, glue, etc.). Let dry. Sand or file flat both sides of surface. Should you choose to replace the control panel board, it must match the original panel in size and thickness, and include all fastening and grounding hardware.

4. Tape template on top of panel. Orient template to center controls. Cut and deburr holes. Remove template.

> **NOTICE:** If existing game already has a recessed area where the joystick will go, you may not need to cut a new hole.

5. **DECAL** Remove backing and apply control panel decal to panel. Work down from top. After decal is in place, smooth it outwards, squeezing out air bubbles. Pop persistent air bubbles and smooth decal.

6. Let adhesive set. Trim decal edges and cut joystick, button, and keypad holes to fit control panel.

7. **BUTTON DECALS** Position control decals next to appropriate holes in the following order:

    a. Camera   b. Select Club   c. Turn   d. Extreme Mode rectangular overlay

    e. Start/Select   f. Troon logo   g. Midway logo

8. **OVERLAY** Place plastic overlay on top of panel decals. Deburr overlay edges. Tape control panel template on top of overlay in same position as holes beneath overlay. Cut and deburr holes. Remove template. Fasten overlay with included hardware.

> **NOTICE:** Some games require you to cut out a circle rather than a rectangle for the joystick. Observe notice on template for further instructions.

9. **BUTTONS** Disassemble each switch from its pushbutton. Bend large prong away from switch enough to slide switch off housing. Unscrew nut from housing.

10. Insert pushbutton housing through a button hole from top of control panel. Screw nut finger tight on switch housing from underside of panel. Snap switch back on housing. Repeat for each button.
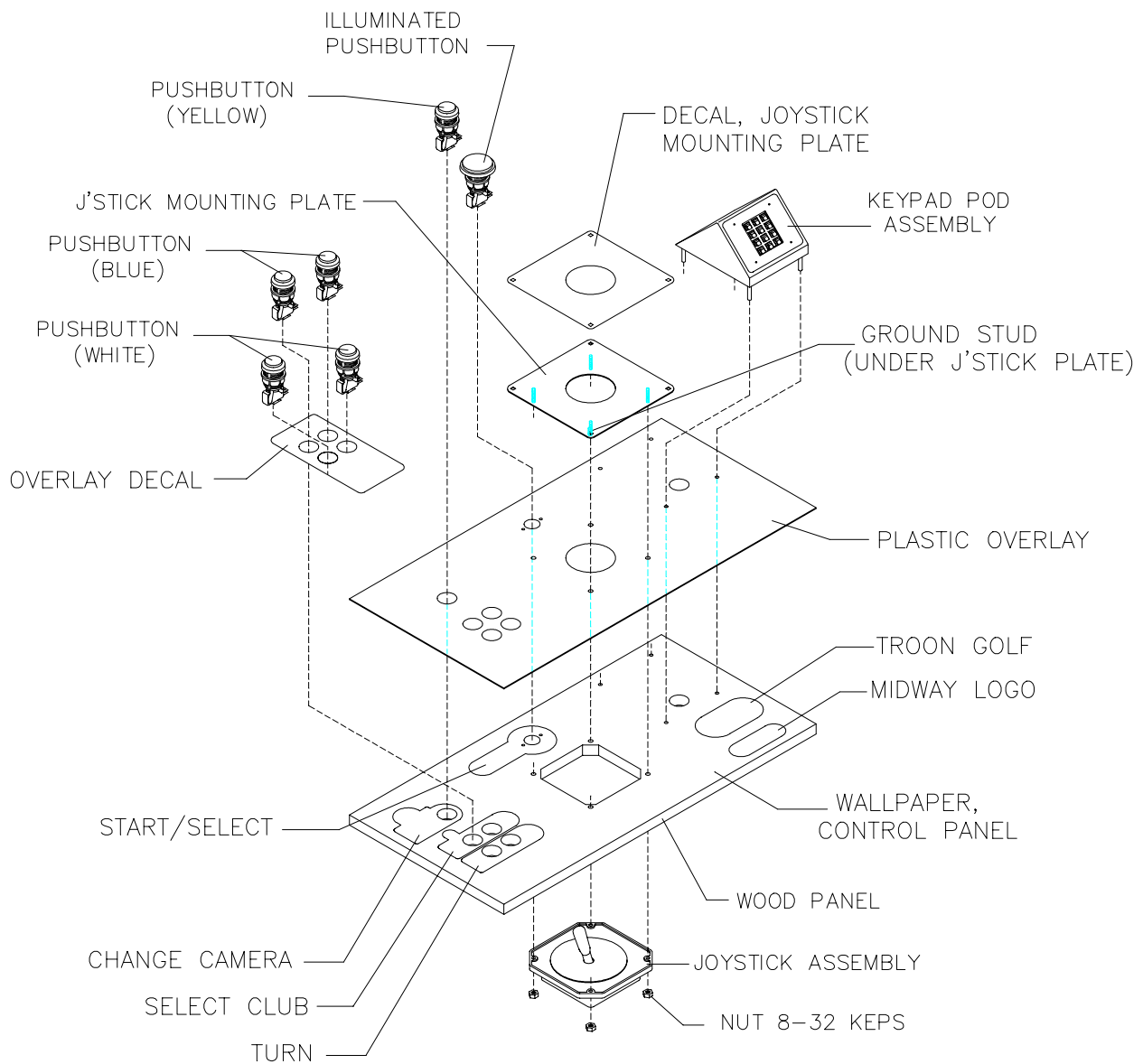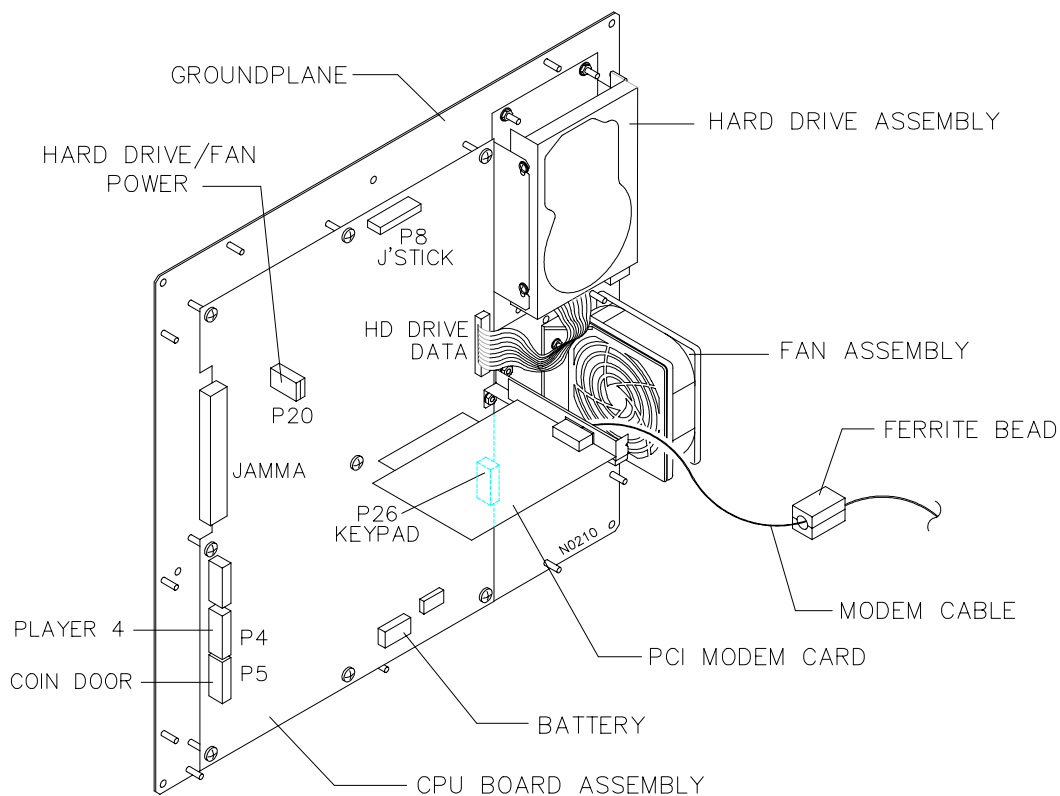
PUSHBUTTON, JOYSTICK, AND KEYPAD LOCATIONS

11. Rotate pushbuttons so switch terminals are oriented toward JAMMA harness. Tighten nuts firmly.

12. **JOYSTICK** Align joystick mounting holes with control panel holes and insert carriage bolts. Install a flat washer and a nut on each carriage bolt and tighten securely.

13. Lay joystick mounting plate on top of joystick. Fasten with included hardware.

14. **KEYPAD** Insert keypad studs through holes in control panel. Install and tighten flat washers and nuts.

15. Remove backing from joystick mounting plate decal and place on plate. Smooth decal.

16. Close and lock control panel using existing fasteners.

INSTALL GAME ELECTRONICS

⚠️ **WARNING: DISCONNECT POWER.** To avoid electrical shock, turn off power switch and disconnect AC line cord before removing or replacing any component. After servicing components, be sure all ground wires are secure before restoring power.

1. **REMOVE OLD ELECTRONICS** Label, then carefully disconnect cables on each printed electronics board assembly in cabinet. Note orientation of JAMMA edge connector on CPU Board Assembly. Remove boards and store in anti-static bags. Leave JAMMA harness in cabinet so you can reuse it.

2. **PREPARE ELECTRONICS** Place Skins Game kit electronics assembly on flat, static-free work surface. Remove electronics cover and set aside. Inspect electronics for any damage and ensure all connectors are properly seated.

3. **LOCATE ELECTRONICS** Place new groundplane (with electronics assembly, but without hard drive or groundplane cover) in cabinet in location of previous assembly. JAMMA edge connector header should face same direction as previous connector header. Mark mounting holes and set electronics aside.

4. **MOUNT ELECTRONICS** Drill pilot holes where necessary and use hex-head screws to attach electronics to cabinet wall.

ELECTRONICS ASSEMBLY

WIRE CABINET

⚠	**CAUTION: ATTACH CONNECTORS PROPERLY.** Be sure that printed circuit board (PCB) connectors mate properly. If connectors do not slip on easily, do not force them. A reversed connector may damage video game machine and void warranty. Connector keys only allow a connector to fit one set of pins on a board.
⚠	**CAUTION: OBSERVE GROUNDING.** Be aware of ground wires in game. Ground wires are usually green or green with a yellow stripe. Reuse any existing ground wires, and use ground wires included in this kit.

1. **JAMMA HARNESS** When wiring JAMMA harness to the controls and the CPU Board Assembly, refer to Cabinet Wiring Diagram in Wiring Chapter.

2. Attach component end of JAMMA harness to mate on CPU Board Assembly.

3. Attach free end of joystick adapter harness to its mate connector (P8) on the CPU Board Assembly.

4. Attach keypad harness to its mate connector (P26) on the CPU Board Assembly. Attach the other end of the harness to the pigtail on the keypad assembly Do not force connectors. They are keyed to fit only one way.

5. Attach Player 4 (P4) and coin door connectors to CPU Board Assembly.

6. Double check your connections to ensure they are all firm and secure. Do not force connectors.

7. **JOYSTICK HARNESS** Attach free connector of joystick harness to its mate connector on the joystick adapter harness H-23480. Connect one end of green/yellow wire to joystick mounting plate and other end to safety ground.

8. **BUTTONS** Mate each of the five small buttons and start button to corresponding JAMMA wires.

9. Connect one end of an H-21672 ground braid to control panel and other end to safety ground on power supply.

10. Ensure each button is connected to ground through JAMMA harness black ground.

👉	**NOTICE:** Hard disk drives are sensitive to static. When not in use, store drives in anti-static bags. Do not drop or stack drives.

11. **HARD DISK DRIVE** Mount hard drive onto hard disk drive bracket. Note that end of bracket where holes are spaced closer together is where ribbon cable connects.

12. Mount bracket onto studs on electronics assembly with included KEPS nuts.

13. Connect data ribbon cable and power cable to Hard Disk Drive.

14. Replace groundplane cover. Secure to groundplane using all but one of the enclosed nuts.

15. Attach one end of second ground braid H-21672 to remaining groundplane post and fasten nut. Secure other end of braid to safety ground on power supply.

16. Replace and lock rear door.

POWER UP AND TEST GAME

1. Plug line cord into AC power source and turn on power switch. LEDs in electronics cage should illuminate. Using the 20-volt DC setting on a digital voltmeter, measure DC voltages at the power connector pins. Adjust the +5V source if it is necessary. Voltage tolerances are ±.4 on +5V, ±½ V on +12Vhe game begins self diagnostics. If no errors are found, Attract Mode begins. If problems occur, check wiring and refer to Troubleshooting Chapter.

2. Unlock and open coin door. Press and hold TEST button to access Menu System. Use tests to verify operation of monitor, hard drive, speakers, and all pushbuttons and joystick and keypad.

3. Exit the Select Test Menu to begin normal game operation. Open the coin door and press the SERVICE CREDITS button to allow game play. Choose a player position and press the START button to begin. Listen to the audio while playing the game. Note unexpected irregularities in sound (out of phase, no low frequencies, etc.). Check the wiring harness for internal shorts. Refer to Wiring for jumper locations and recommended settings, or Troubleshooting.

4. Close and lock coin door. Allow the system to operate for several hours before attempting any game changes.

5. Play several games to test operation of player panel buttons. Do they function? Do they operate consistently? Does each control perform its designated operation? Game play and earnings depend on proper performance of the VIEW, START and movement buttons. If any button does not operate properly, check connections against the wiring diagram. Replace intermittent or otherwise faulty controls.

⚠	**CAUTION: SEEK FCC APPROVAL.** Installation of this kit does not guarantee compliance with FCC requirements. You are solely responsible, and Midway has no responsibility for FCC compliance of installed kits. Don't install an FCC compliance label on the product until the FCC acknowledges compliance.

SKINS GAME

CHAPTER

2
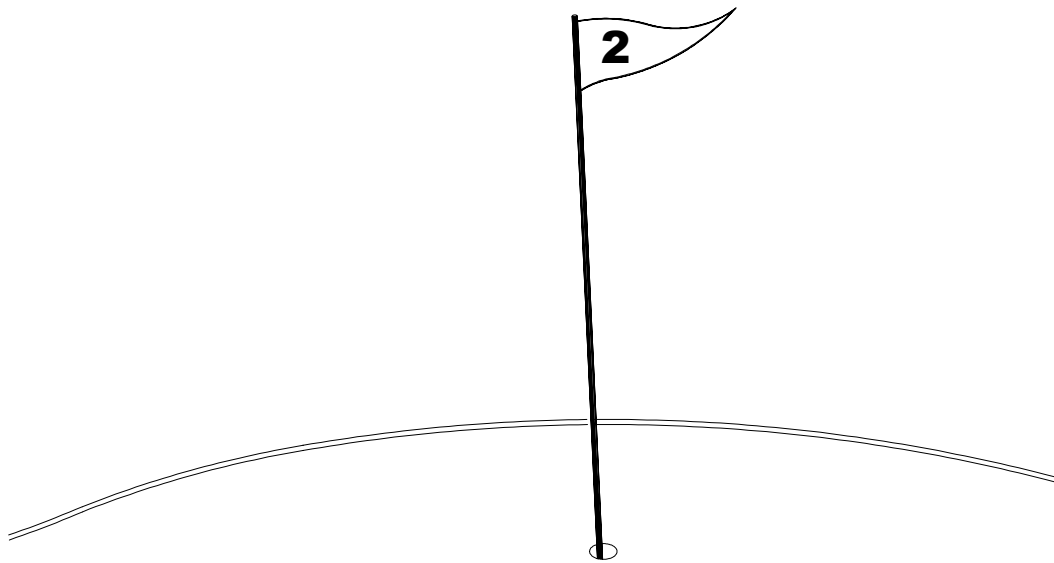
SERVICE

NOTICE: Instructions in this chapter apply to a typical converted Midway upright cabinet.

SERVICE

⚠️ **CAUTION:** Before attempting any of the following procedures on your Skins Game Video Game Machine, turn AC Power off. Failure to do so can cause personal injury, may damage the components, and may void your warrantee.

Control Panel

To remove controls, unlock and open control panel. Remove washers, nuts, and other fastening software before removing components. Disconnect and label wiring for easier reassembly. Remove plastic overlay if necessary.

ILLUMINATED PUSHBUTTON
PUSHBUTTON (YELLOW)
KEYPAD POD ASSEMBLY
J'STICK MOUNTING PLATE
PUSHBUTTON (BLUE)
PUSHBUTTON (WHITE)
PLASTIC OVERLAY
WOOD PANEL
JOYSTICK ASSEMBLY
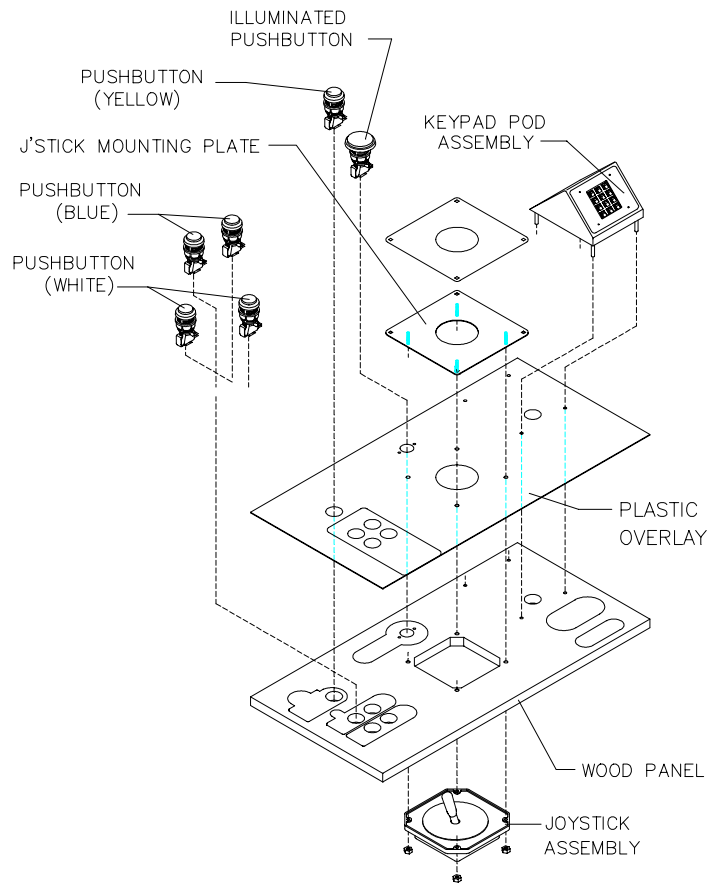
Joystick Assembly

Open control panel. Label and disconnect joystick wiring harness. Loosen and remove four nuts holding joystick to control panel. Lift joystick assembly out of control panel.

To remove potentiometer, pull bottom of spring clip out to unlatch and pull clip up to remove. Pull potentiometer away from assembly gently to release.

Replace pot by seating snugly in its housing, flush against plastic base. If seated properly, pot cannot be rotated by hand more than a degree or two.

"X" AXIS BRACKET REF.
SCREW 6–32x3/8
POTENTIOMETER CAPTIVATING BRKT.
"Y" AXIS BRACKET REF.
"Y" AXIS POTENTIOMETER REF.
SPRING CLIP
"X" AXIS POTENTIOMETER REF.
+5V (RED BLK)
GND (BLK)
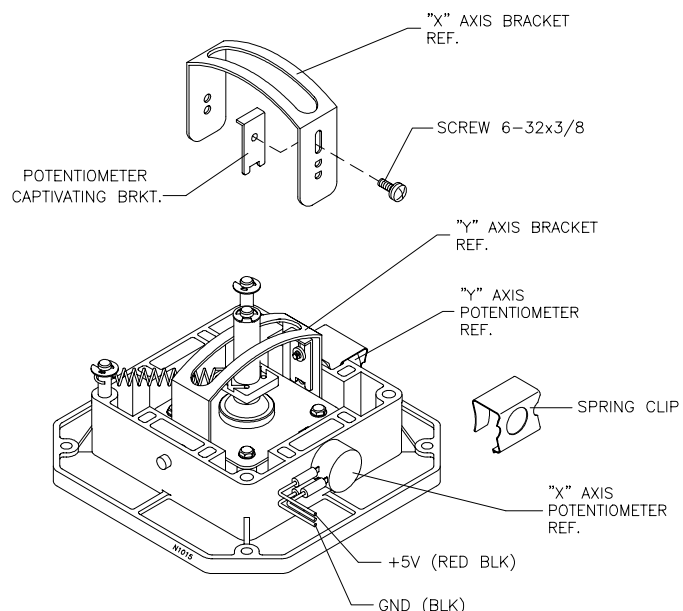
Push Buttons

Open control panel. Label and disconnect wires. Separate switch from its pushbutton. Bend large prong away from switch just enough to slide switch off housing.

To remove light inside START button, pull light bulb up and out of socket. Unscrew switch mounting nut and pull entire pushbutton out from front of panel.
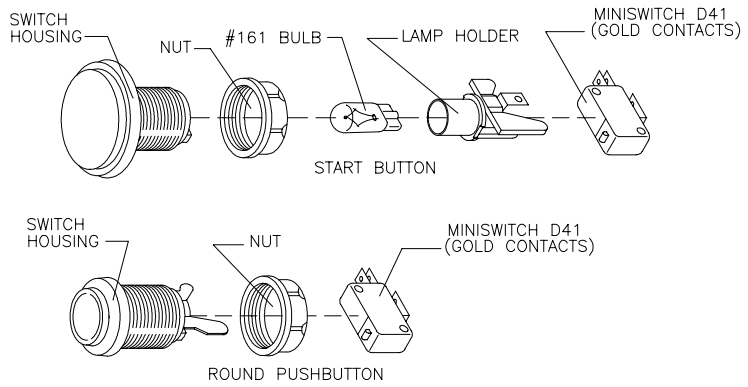
Fan Assembly

Remove rear door. Remove hex nuts on groundplane cover. Remove cover and set in safe place. Disconnect wiring harness and remove mounting hex nuts and washers. Remove fan from cabinet.

Hard Disk Drive

Remove groundplane cover and set in safe place. Disconnect wires from hard drive and remove bracket mounting screws. Loosen screws in sides of drive and gently remove hard drive from bracket. Store and transport hard drive in anti-static bag.

CPU Board Assembly

Remove groundplane cover and set in safe place. Disconnect wires from harness. Remove mounting screws.
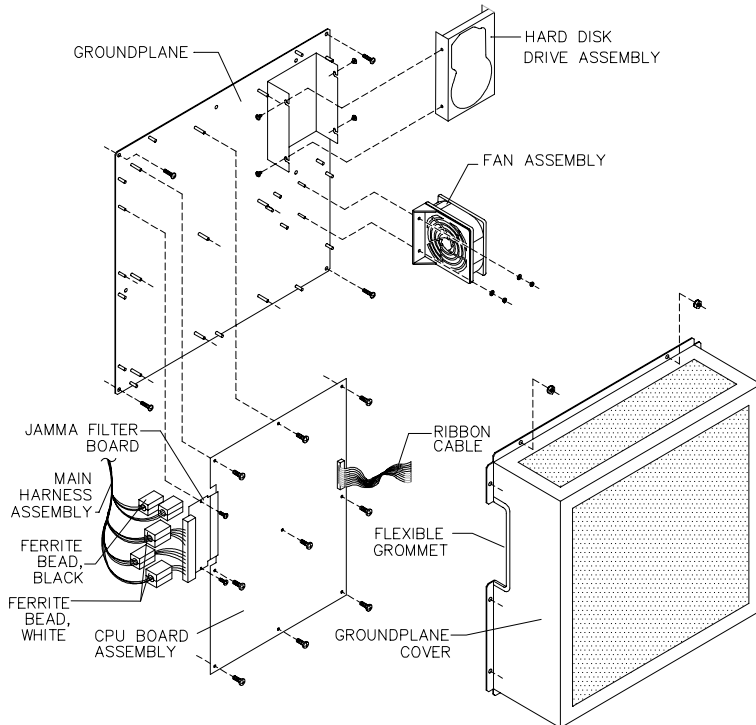
Battery

Lithium battery sits on top of timekeeper IC. Carefully pry off battery and replace with identical type.

Modem Card

Remove groundplane cover. Remove modem cable from modem card. Remove modem mounting screw. Carefully remove modem card from PCI slot without excessive rocking motion.
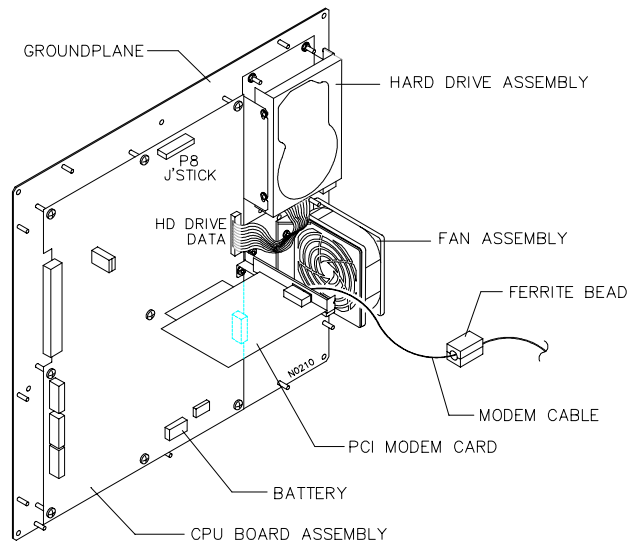
Skins Game Conversion Kit
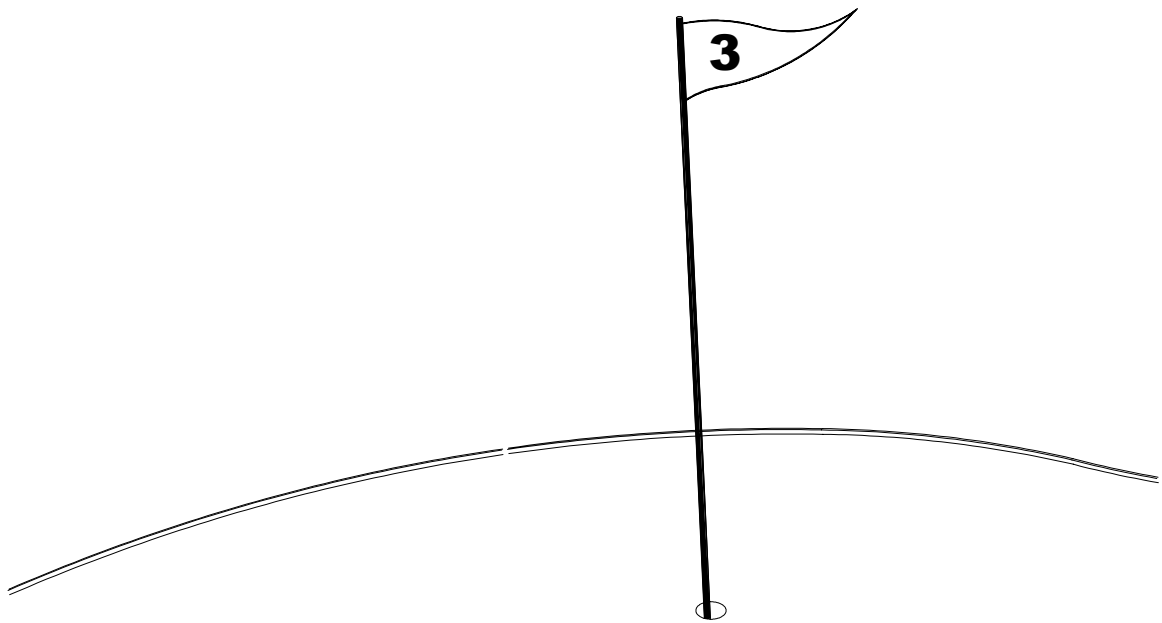
NOTES:

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Midway Games West Inc.

SKINS GAME

CHAPTER

3

SYSTEM SOFTWARE

GAME OPERATION

PLAYER CONTROLS

Change Camera
Choose between a behind-the-player view or a bird's-eye view.

Start/Select and "Power Shot"
After currency is accepted this button starts a 1-, 2-, 3-, or 4-player game. During play, this button can increase a club's maximum distance, provided the joystick is released at precisely the right moment. Players earn one Power Shot per three holes, but can earn more after 10 QuickShots.

Keypad Pod Assembly
Lets players enter their PINs as well as allow operators to navigate the system menus.

Select Club
Cycles through your selection of clubs.

During Extreme Mode, buttons add top- or back-spin.

down   **up**
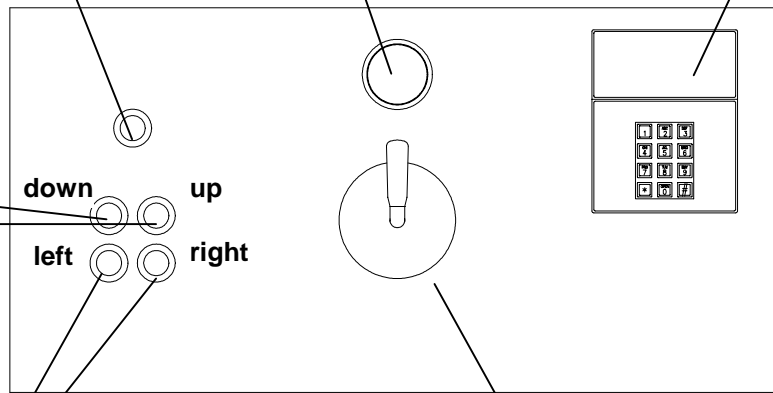
left   **right**

Aim (Get Left/Get Right)
Left button swivels player counter-clockwise around ball (from an overhead view), changing lateral aim to the right. Right button changes lateral aim to the left. In Extreme Mode, buttons move an in-flight ball left or right.

Joystick Assembly
Pulling back on the joystick winds your club backwards. Pulling to the left aims the swing a bit to the right; pulling to the right aims the swing a bit to the left.
The joystick assembly is designed to withstand numerous sudden snaps back to neutral position.

OPERATOR CONTROLS

Ceases game play or Attract Mode and opens Menu System

Increases volume.   Decreases volume.

Increments number of credits up one.

| TEST | VOL. | VOL. | SERVICE |
| MODE | UP | DOWN | CREDIT |
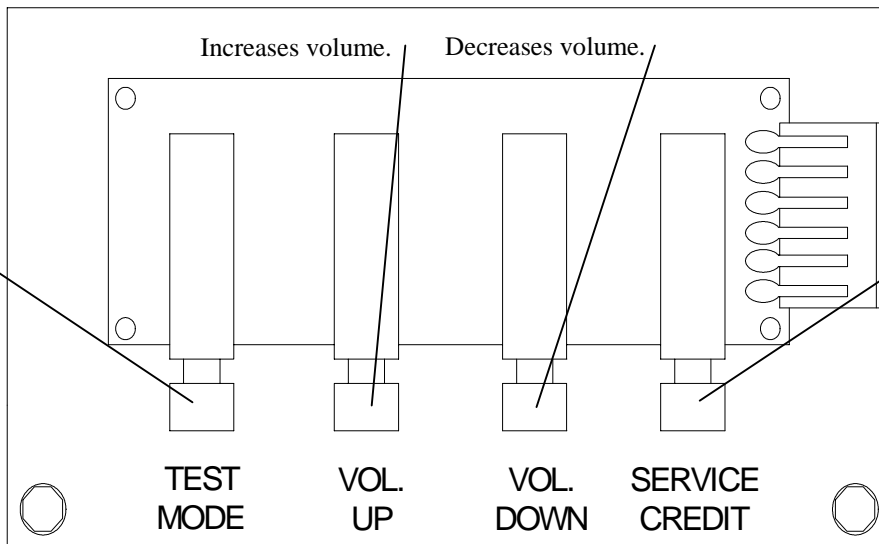
TYPICAL TEST SWITCH BRACKET PUSHBUTTON LOCATIONS

Menu System

Follow instructions at the bottom of each menu screen to access more menus and change settings. The current date and time are shown.

ATLANTIS TESTS

Day Date Year Time

ADJUST VOLUME

STATISTICS

GAME OPTIONS
COIN OPTIONS
TOURNAMENT OPTIONS

SET DATE/TIME

TESTS

EXIT TO GAME

To select test, use +/-/LEFT/RIGHT
To run test, Press START or TEST

EPROM: X.XX Sept 7 1999 XX:XX:XX
GUTS: X.XX Aug 30 1999 XX:XX:XX
Game: Sep 2 1999 XX:XX:XX
Serial #: XXXXXXX

ADJUST VOLUME

Raise or lower the volume during the game and during Attract Mode. Set the game volume first, then decide if Attract Mode will be as loud as the game (100%), or less. Attract Mode cannot be louder than game volume. You can also adjust volume with the control switches.

Game
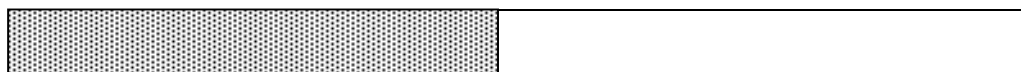
Attract (75% of Game)
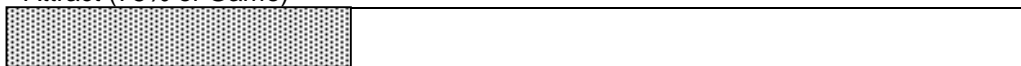
To ADJUST volume, use +/-/LEFT/RIGHT
To SELECT which volume, Press START or TEST
To RESTORE old settings, press and hold START or TEST
To SAVE settings and exit, Press VIEW or CREDIT

View game play and coin statistics.

Coin 1 (Left)   : 0
Coin 2 (Right)   : 0
Coin 3   : 0
Coin 4   : 0
Bill Value   : 0
Service Credits   : 0
Idle Mins   : 0
1 Player Mins   : 0
2 Player Mins   : 0
3 Player Mins   : 0
4 Player Mins   : 0
New Games   : 0
Cont Games   : 0
Total Games   : 0
1-Player Games   : 0
2-Player Games   : 0
3-Player Games   : 0
4-Player Games   : 0
Error Count   : 0
    Total Coins: : 0
    Avg TIME/COIN   : 0
    Percentage Play   : 0

To clear these counters,

Hold START or TEST and press VIEW or CREDIT
For more stats, press VIEW or CREDIT

STATISTICS

HISTOGRAMS

New Game Times (in seconds)

Course Selected

Golfer Selected

Holes/game total

Holes/game 1 player

Holes/game 2 player

Holes/game 3 player

Holes/game 4 player

Players per game

Game Type

QuickShot percent

Power Shot percent

Power Shot usage

Navigated shot percent

CLEAR ALL HISTOGRAMS

To select Histogram, Use +/-/LEFT/RIGHT
To show Histogram, Press START or TEST
To return to menu, Press VIEW or CREDIT

GAME OPTIONS

Reset High Scores After Reboot (One Time Effect)
    No

Conservative Mode
    Off

To change settings, use +/-/LEFT/RIGHT
To RESTORE old settings, Press START or TEST
To SAVE settings and exit, Press VIEW or CREDIT

COIN OPTIONS

PRICING OPTIONS

Free Play:
    No (or Yes)

Start game cost
    1 Coin (1-12 Coins)

Continue Game Cost
    1 Coin (1-12 Coins)

Bonus for quantity buy-in
    None

To change settings, use +/-/LEFT/RIGHT
To RESTORE old settings, Press START or TEST
To SAVE settings and exit, Press VIEW or CREDIT

COIN OPTIONS

MECH SETUP

Activate mech to test. Current Status

Mech 1 Mech 2 Mech 3 Mech 4 x4 Bill   Service

Each Mech 1 Pulse Worth:
    1 Coin (up to 60 coins)
Each Mech 2 Pulse Worth:
    1 Coin (up to 60 coins)
Each Mech 3 Pulse Worth:
    1 Coin (up to 60 coins)
Each Mech 4 Pulse Worth:
    1 Coin (up to 60 coins)
Each Bill Pulse Worth:
    1 Coin (up to 60 coins)
Stats and Counters Count:
    Coins (or pulses)

To change settings, use +/-/LEFT/RIGHT
To RESTORE old settings, Press START or TEST
To SAVE settings and exit, Press VIEW or CREDIT

TOURNAMENT OPTIONS

Dialup System Setup

Dialup Diagnostics

Dialup Statistics.

SET DATE/TIME

Date: Day Month Date, YEAR

Time: 10:14:41

Time Zone: (Not defined)

Time Zone Uses Daylight Savings Time: No

To RESTORE old setting, Press START or TEST
To set digit, use +/-/LEFT/RIGHT or keypad
To SAVE setting and exit, Press VIEW or CREDIT

TESTS

CONTROLS TEST

COIN MECHS					**MISC**	
1	**2**	**3**	**4**		**TILT**	**VOL +**
SVC		**BILL**			**TEST**	**VOL −**

```
              ┌────────────●────────┐
              │                      │
         3A3  │                      │
         103  │                      │          Keypd
START    130  │                      │
VIEW    Ctl Y  OB2    1E1    2E9                1 2 3
CLUB +              Ctl X                       4 5 6
CLUB −                                          7 8 9
AIM LEFT                                        * 0 #
AIM RIGHT           LAMP ON
```
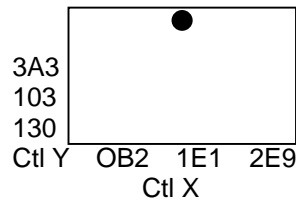
GRN=ok   RED= Sw ON.   YEL=Sw maybe.
To activate LAMP, press START
To reset pot limits, Press and hold START
To activate coin counter, Press TILT Switch.
To return to menu, Press and hold VIEW or CREDIT

TESTS
MONITOR TESTS
COLOR BARS

Shows horizontal bars of red, green, blue, and white.

To cycle format, press START or TEST to return
To return to menu, press VIEW or CREDIT

TESTS
MONITOR TESTS
CONVERGENCE

Shows grid with dots in the center of each box. You can change the color of the boxes and dots.

To change color, press START or TEST to return
To return to menu, press VIEW or CREDIT

TESTS
MONITOR TESTS
PURITY

Fills the screen with red, green, blue, bright white, and white for brightness, 50% grey, grey, ones and black.

To change color, Press START or TEST
To toggle text on/off, use +/-/LEFT/RIGHT
To Return to menu, Press VIEW or CREDIT

TESTS	
SOUND TESTS	
HARDWARE TEST	

*** Testing Audio Hardware ***

Hardware Reset	PASSED
I/O port test	PASSED
DSP IDMA Test	PASSED
Diag version	0.01
SDRC Revision	3
D/RAM 0 Test	PASSED
D/RAM 1 Test	PASSED
Bong Test:	PASSED
Software Reset	PASSED
DSP OS Version:	0.02

To return to menu, press VIEW or CREDIT

TESTS	
SOUND TESTS	
SPEAKER TEST	

A voice alternates speaking the word "left" into the left speaker and "right" into the right speaker to test your stereo capability.

To return to menu, Press VIEW or CREDIT

TESTS
DISK TESTS
DRIVE READ TEST

Hard Drive Connected: Yes

Hard Drive Manufacturer_

Logical Sectors available: XXXXXXXX

    LBA   MB/SEC

____ ___ avg

        ___ min

        ___ max

Tests completed: 0

<div align="center">To return to menu, Press VIEW or CREDIT</div>

TESTS
DISK TESTS
FILESYSTEM CHECK

Total Files Used: XXXX

Passes Completed :   X

Checking File: XXX.X

<div align="center">To Return to menu, Press VIEW or CREDIT</div>

TESTS
MEMORY TESTS
VIDEO MEMORY TESTS

Bank 0:

Testing Bank 0 . . .
This test takes about 75 seconds. Please wait.

TESTS
MEMORY TESTS
ROM TEST

Boot EPROM PASSED

Expansion EPROM (U17) test master is NOT installed

To return to menu, Press VIEW or CREDIT

TESTS
UART TESTS

UART 0 (IOASIC) TEST
UART 1 (XMODEM)TEST
UART 1 (XMODEM) RCV ONLY
UART 2 (RS485) TEST
UART 2 (RS485) RCV ONLY
UART 3 PCI MODEM DIAL
UART 3 PCI MODEM ANSWER

To select test, Use +/-/LEFT/RIGHT

To run test, Press START or TEST

To return to menu, Press VIEW or CREDIT

TESTS
PRINTER PORT TEST

Printing Line:

Waiting for printer

To return to menu, Press VIEW or CREDIT

DIP SWITCHES TEST

U49

1 OFF - Run Game

2 OFF - Normal

3 OFF - Normal

4 OFF - Normal

5 OFF - Normal

6 OFF - Normal

7 OFF - Not Used

8 OFF - Not Used

U50

1 OFF - Not Used

2 OFF - Not Used

3 OFF - Not Used

4 OFF - Not Used

5 OFF - Not Used

6 OFF - Not Used

7 OFF - Not Used

8 OFF - Not Used

To return to menu, Press VIEW or CREDIT

EXIT TO GAME

STANDARD PRICING TABLE

NAME	START	CONTINUE	CREDITS/COIN	COIN 1	COIN 2	COIN 3	COIN4	BILL
ANTILLES	2	2	1/25¢, 4/1G	.25¢	1G			
AUSTRALIA 1	2	2	1/3X20¢, 2/$1.00	.20¢	$1.00			
AUSTRALIA 2	2	2	1/5X20¢, 1/$1.00	.20¢	$1.00			
AUSTRIA 1	2	2	1/5Sch, 2/10Sch	5 Sch	10 Sch			
AUSTRIA 2	2	2	1/2X5Sch, 3/2X10Sch	5 Sch	10 Sch			
BELGIUM 1	2	2	1/20BF	20BF	20BF			
BELGIUM 2	2	2	3/20BF	20BF	20BF			
BELGIUM 3	2	2	2/20BF	20BF	20BF			
BELGIUM ECA	2	2	1/20BF	50BF	20BF	5BF		
CANADA 1	2	2	1 / 2 x 25¢, 3 / $1	25¢	25¢			
CANADA 2	2	2	1 / 2 x 25¢, 3 / $1	25¢	$1.00			
CANADA 3	2	2	3 / $1.00, 6 / $2.00	$1.00	$2.00			
CANADA ECA	2	2	1 / 2 x 25¢, 3 / $1	25¢		$1.00	$2.00	
DENMARK	2	2	3/5DKr, 7/10DKr	5DKr	10DKr			
FINLAND	2	2	1/1Fmk	1Fmk	5Fmk			
FRANCE 1	2	2	2/5Fr, 5/10Fr	5Fr	10Fr			
FRANCE 2	2	1	2/5Fr, 4/10Fr	5Fr	10Fr			
FRANCE 3	2	1	1/5Fr, 3/10Fr	5Fr	10Fr			
FRANCE 4	2	1	1/5Fr, 2/10Fr	5Fr	10Fr			
FRANCE 5	2	1	2/5Fr, 5/10Fr, 11/2 X 10Fr	5Fr	10Fr			
FRANCE 6	2	1	2/5Fr, 4/10Fr, 9/2 X 10Fr	5Fr	10Fr			
FRANCE 7	2	1	1/5Fr, 3/10Fr, 7/2 X 10Fr	5Fr	10Fr			
FRANCE 8	2	1	1/5Fr, 2/10Fr, 5/2 X 10Fr	5Fr	10Fr			
FRANCE 9	2	1	1/3 X 1Fr, 2/5Fr	1Fr	5Fr			
FRANCE 10	2	1	1/2 X 1Fr, 3/5Fr	1Fr	5Fr			
FRANCE 11	2	1	1/3 X 1Fr, 2/5Fr, 5/2 X 5Fr	1Fr	5Fr			
FRANCE 12	2	1	1/2 X 1Fr, 3/5Fr, 7/2 X 5Fr	1Fr	5Fr			
FRANCE ECA 1	1	1	2/5Fr, 5/10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 2	1	1	2/5Fr, 4/10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 3	1	1	1/5Fr, 3/10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 4	1	1	1/5Fr, 2/10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 5	1	1	2/5Fr, 5/10Fr, 11/2 X 10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 6	1	1	2/5Fr, 4/10Fr, 9/2 X 10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 7	1	1	1/5Fr, 3/10Fr, 7/2 X 10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 8	1	1	1/5Fr, 2/10Fr, 5/2 X 10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 9	1	1	1/3 X 1Fr, 2/5Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 10	1	1	1/2 X 1Fr, 3/5Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 11	1	1	1/3 X 1Fr, 2/5Fr, 5/10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 12	1	1	1/2 X 1Fr, 3/5Fr, 7/10Fr	1Fr	5Fr	10Fr	20Fr	
FRANCE ECA 13	1	1	1/10Fr, 2/20Fr, 4/30Fr	1Fr	5Fr	10Fr	20Fr	
FREE PLAY	--	--	--	None	None	None	None	None
GERMANY 1	2	2	1/1DM, 6/5DM	1DM	5DM			
GERMANY 2	2	1	1/1DM, 7/5DM	1DM	5DM			
GERMANY 3	2	1	1/1DM, 8/5DM	1DM	5DM			
GERMANY 4	2	1	1/1DM, 5/5DM	1DM	5DM			
GERMANY 5	2	1	1/1DM, 6/5DM	1DM	5DM			
GERMANY ECA 1	2	2	1/1DM, 2/2DM, 6/5DM	1DM	2DM	5DM		
GERMANY ECA 2	2	1	1/1DM, 2/2DM, 6/5DM	1DM	2DM	5DM		
GERMANY ECA 3	1	1	1/1DM, 2/2DM, 6/5DM	1DM	2DM	5DM		
HUNGARY	2	2	1/2X10Ft, 3/2X20Ft	10Ft	20Ft			
ITALY	2	2	1/500LIt	500LIt	500LIt			
JAPAN 1	2	2	1/100Yen	100	100			
JAPAN 2	2	2	2/100Yen	100	100			
JAPAN 3	1	1	1/100Yen	100	100			
JAPAN 4	1	1	2/100Yen	100	100			
JAPAN 5	1	1	4/100Yen	100	100			
JAPAN 6	1	1	1/2X100Yen	100	100			
NETHERLANDS	2	2	1/1HFI, 3/2.5HFI	1HFI	2.5HFI			
NEW ZEALAND 1	1	1	1/$1	$1	$2			
NEW ZEALAND 2	1	1	2/$1	$1	$2			
NORWAY	2	2	3/5NKr, 6/10NKr	5NKr	10NKr			
SPAIN 1	2	2	1/100Pta, 6/500Pta	100Pta	500Pta			
SPAIN 2	2	2	1/100Pta, 5/500Pta	100Pta	500Pta			
SWEDEN	2	2	1/3X1SKr, 2/5SKr	1SKr	5SKr			
SWITZERLAND 1	2	2	1/1SFr, 6/5SFr	1SFr	5SFr			
SWITZERLAND 2	2	2	1/1SFr, 7/5SFr	1SFr	5SFr			
SWITZERLAND 3	2	2	1/1SFr, 8/5SFr	1SFr	5SFr			

(Table continues on next page)

STANDARD PRICING TABLE, *continued*

NAME	START	CONTINUE	CREDITS/COIN	COIN 1	COIN 2	COIN 3	COIN4	BILL
UK ECA 1	1	1	1/50p, 3/£1.00	£1.00	50p	20p	10p	£2.00
UK ECA 2	1	1	1/50p, 2/£1.00	£1.00	50p	20p	10p	£2.00
UK ECA 3	1	1	1/30p, 2/50p, 5/£1.00	£1.00	50p	20p	10p	£2.00
UK 4	1	1	1/50p, 3/£1.00	£1.00	50p			
UK 5	1	1	1/50p, 2/£1.00	£1.00	50p			
UK ECA 6	1	1	1/30p, 2/50p, 4/£1.00	£1.00	50p	20p	10p	£2.00
UK ECA 7	1	1	3/£1.00	£1.00	50p	20p	10p	£2.00
UK ECA 8	1	1	1/50p, 2/£1.00, 4/£2.00	£1.00	50p	20p	10p	£2.00
USA1	2	2	1/25¢	25¢	25¢			$1.00
USA2	2	1	1/25¢	25¢	25¢			$1.00
USA3	1	1	1/25¢	25¢	25¢			$1.00
USA4	1	1	1/50¢, 3/$1.00	25¢	25¢			$1.00
USA5	2	1	1/50¢, 4/$1.00	25¢	25¢			$1.00
USA6	1	1	1/50¢	25¢	25¢			$1.00
USA7	1	1	1/50¢, 3/$1.00	25¢	25¢			$1.00
USA8	2	2	1/50¢, 4/$1.00	25¢	25¢			$1.00
USA9	3	2	1/25¢, 4/$1.00	25¢	25¢			$1.00
USA10	3	3	1/25¢, 4/$1.00	25¢	25¢			$1.00
USA11	4	2	1/25¢, 4/$1.00	25¢	25¢			$1.00
USA12	4	3	1/25¢, 4/$1.00	25¢	25¢			$1.00
USA13	4	4	1/25¢, 4/$1.00	25¢	25¢			$1.00
USA ECA	3	3	1/25¢, 4/$1.00	$1.00	25¢	10¢	05¢	$1.00

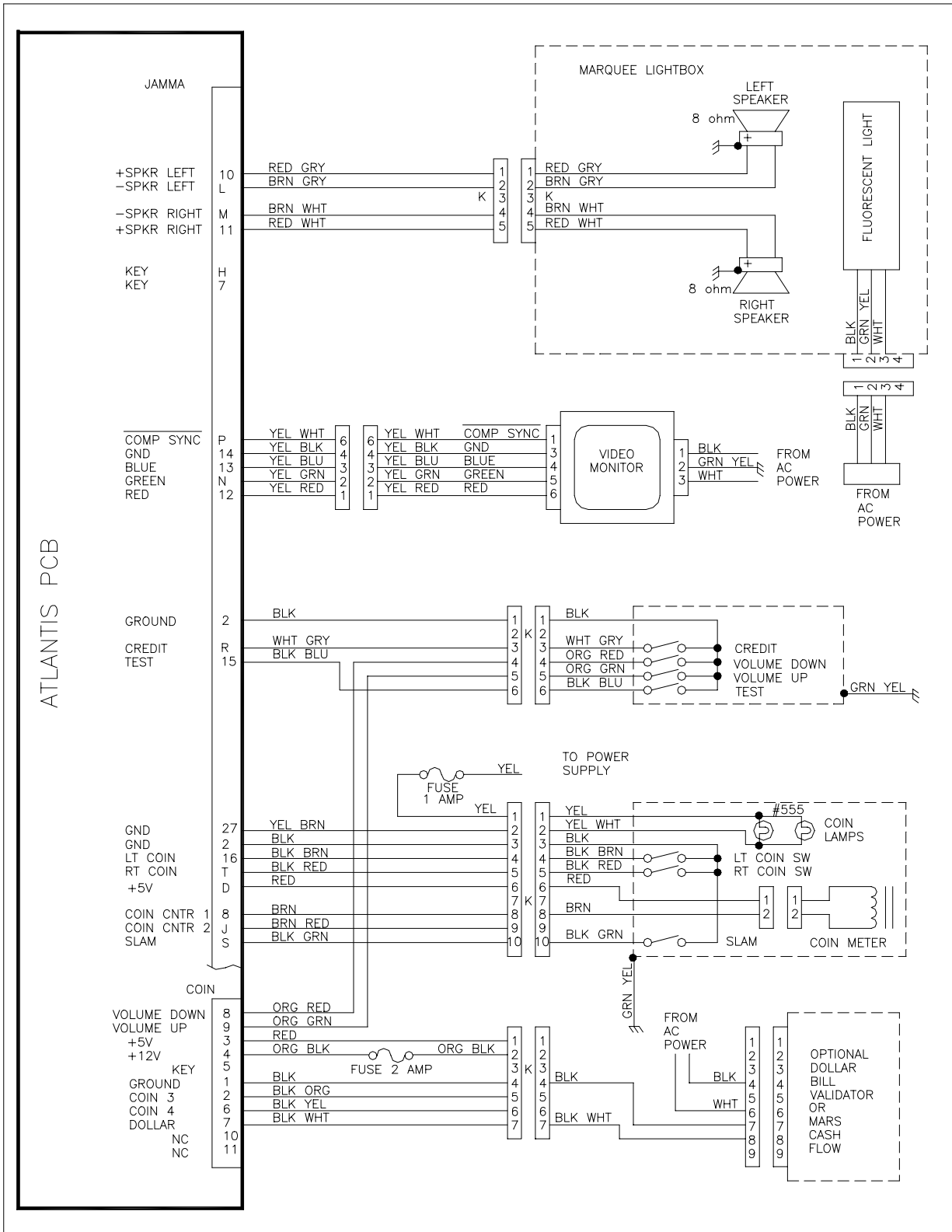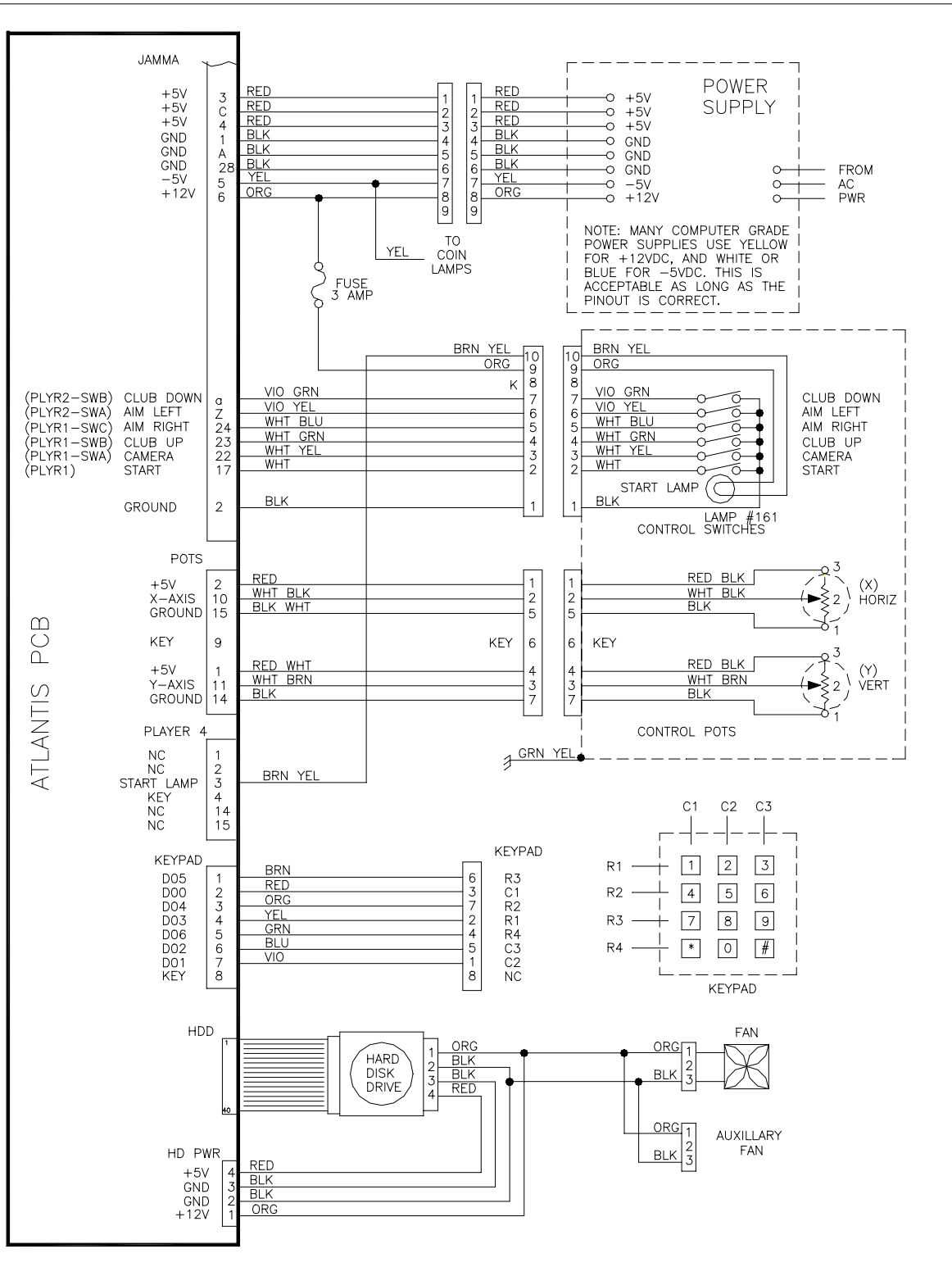# SKINS GAME

CHAPTER

4

WIRING

NOTICE: This manual is subject to change without notice. Midway Games West Inc. reserves the right to make improvements in equipment function, design, or components as progress in engineering or manufacturing methods may warrant.

CABINET WIRING DIAGRAM

JAMMA

MARQUEE LIGHTBOX

LEFT SPEAKER
8 ohm

FLUORESCENT LIGHT

+SPKR LEFT 10 L — RED GRY — RED GRY
−SPKR LEFT — BRN GRY — BRN GRY
K
−SPKR RIGHT M — BRN WHT — BRN WHT
+SPKR RIGHT 11 — RED WHT — RED WHT

KEY H
KEY 7

8 ohm
RIGHT SPEAKER

BLK GRN YEL WHT
1 2 3 4

BLK GRN WHT
1 2 3 4

COMP SYNC P 14 — YEL WHT — YEL WHT — COMP SYNC — GND
GND 13 — YEL BLK — YEL BLK — GND
BLUE N — YEL BLU — YEL BLU — BLUE
GREEN 12 — YEL GRN — YEL GRN — GREEN
RED — YEL RED — YEL RED — RED

VIDEO MONITOR

BLK GRN YEL WHT
FROM AC POWER

FROM AC POWER

ATLANTIS PCB

GROUND 2 — BLK — BLK
K
CREDIT R — WHT GRY — WHT GRY — CREDIT
TEST 15 — BLK BLU — ORG RED — VOLUME DOWN
ORG GRN — VOLUME UP
BLK BLU — TEST

GRN YEL

TO POWER SUPPLY

YEL
FUSE 1 AMP
YEL

#555
COIN LAMPS

GND 27 — YEL BRN — YEL — YEL WHT
GND 2 — BLK — BLK
LT COIN 16 — BLK BRN — BLK BRN — LT COIN SW
RT COIN T — BLK RED — BLK RED — RT COIN SW
+5V D — RED — RED
K
COIN CNTR 1 8 — BRN — BRN
COIN CNTR 2 J — BRN RED
SLAM S — BLK GRN — BLK GRN — SLAM

COIN METER

GRN YEL

FROM AC POWER

COIN

VOLUME DOWN 8 — ORG RED
VOLUME UP 9 — ORG GRN
+5V 3 — RED
+12V 4 — ORG BLK — ORG BLK
KEY 5
FUSE 2 AMP
K
GROUND 1 — BLK — BLK
COIN 3 2 — BLK ORG
COIN 4 6 — BLK YEL — WHT
DOLLAR 7 — BLK WHT — BLK WHT
NC 10
NC 11

OPTIONAL DOLLAR BILL VALIDATOR OR MARS CASH FLOW

CABINET WIRING DIAGRAM

JAMMA

+5V	3	RED
+5V	C	RED
+5V	41	RED
GND	A	BLK
GND	28	BLK
GND	56	BLK
−5V		YEL
+12V		ORG

FUSE 3 AMP

YEL

TO COIN LAMPS

POWER SUPPLY

1	RED — +5V
2	RED — +5V
3	RED — +5V
4	BLK — GND
5	BLK — GND
6	BLK — GND
7	YEL — −5V
8	ORG — +12V
9	

FROM AC PWR

NOTE: MANY COMPUTER GRADE POWER SUPPLIES USE YELLOW FOR +12VDC, AND WHITE OR BLUE FOR −5VDC. THIS IS ACCEPTABLE AS LONG AS THE PINOUT IS CORRECT.

(PLYR2−SWB) CLUB DOWN	a	VIO GRN
(PLYR2−SWA) AIM LEFT	Z	VIO YEL
(PLYR1−SWC) AIM RIGHT	24	WHT BLU
(PLYR1−SWB) CLUB UP	23	WHT GRN
(PLYR1−SWA) CAMERA	22	WHT YEL
(PLYR1) START	17	WHT
GROUND	2	BLK

BRN YEL
ORG
K

10
9
8
7 — VIO GRN — CLUB DOWN
6 — VIO YEL — AIM LEFT
5 — WHT BLU — AIM RIGHT
4 — WHT GRN — CLUB UP
3 — WHT YEL — CAMERA
2 — WHT — START
1 — BLK

START LAMP
LAMP #161
CONTROL SWITCHES

POTS

+5V	2	RED
X−AXIS	10	WHT BLK
GROUND	15	BLK WHT
KEY	9	
+5V	1	RED WHT
Y−AXIS	11	WHT BRN
GROUND	14	BLK

1	
2	
5	
KEY 6	
4	
3	
7	

1 — RED BLK — (X) HORIZ
2 — WHT BLK
5 — BLK
6 — KEY
4 — RED BLK — (Y) VERT
3 — WHT BRN
7 — BLK

CONTROL POTS

GRN YEL

PLAYER 4

NC	1	
NC	2	
START LAMP	3	BRN YEL
KEY	4	
NC	14	
NC	15	

KEYPAD

D05	1	BRN
D00	2	RED
D04	3	ORG
D03	4	YEL
D06	5	GRN
D02	6	BLU
D01	7	VIO
KEY	8	

6	R3	
3	C1	
7	R2	
2	R1	
4	R4	
5	C3	
1	C2	
8	NC	

KEYPAD

	C1	C2	C3
R1	1	2	3
R2	4	5	6
R3	7	8	9
R4	*	0	#

HDD

HARD DISK DRIVE

1 — ORG
2 — BLK
3 — BLK
4 — RED

FAN
1 — ORG
2 —
3 — BLK

AUXILLARY FAN
1 — ORG
2 —
3 — BLK

HD PWR

+5V	4	RED
GND	3	BLK
GND	2	BLK
+12V	1	ORG

ATLANTIS PCB

POWER WIRING DIAGRAM

LED INFORMATION

On power-up, the seven segment LED display (LED2) counts from 0 to 6 twice, and then up to "f" (hexidecimal) as it initializes the board and loads the game software. When the first title screen appears, the LEDs darkens, and are not used during normal game play.

The red LEDs marked "CPU Power" and "Power" should be lit whenever AC power is on.

The red LEDs "RST0," "RST1," and "RST2" behave as follows:

RST2	RST1	RST0	Meaning
ON	ON	ON	Normal after AC power is on
ON	ON	OFF	SnapHat watchdog reset occurred
ON	OFF	ON	Expansion connector reset (This is not normal.)
ON	OFF	OFF	Onboard reset button pressed
OFF	ON	ON	Software issued a reset

JUMPER INFORMATION

Jumpers located around the CPU Board Assembly perform as follows:

Jumper	1-2	2-3	Meaning
J1		X	Normal 27C040 (512K x 8) boot EPROM
J1	X		27C080 (1024K x 8)
J2	X		Not installed (development use only)
J3		X	27C040 (512K x 8)
J3	X		Normal 27C080 (1024K x 8) expansion (update) EPROM
J4	X		Not installed (not used)
J5	X		Not installed (RS485 termination)
J6		X	Normal

DIP SWITCH INFORMATION

There are two banks of DIP switches on the CPU Board Assembly: U49 and U50. The following table describes the significance of the first two of the eight switches on the U50 DIP switch bank. The remaining six switches on U50 should be off. All eight switches on U49 should be off.

Switch 1	Switch 2	Meaning
OFF	OFF	Normal boot and run game or boot and run tournament update
OFF	ON	Boot EPROM based self test
ON	OFF	Boot on-disk based self test
ON	ON	Boot and run factory tests (labview) then run EPROM self test

LOCATION OF LEDS, JUMPERS, DIP SWITCHES ON CPU BOARD ASSEMBLY

U57

HEAT SINK

J6

CONNECTOR FOR JAMMA HARNESS

EPROM U4

J1

HEAT SINK U42

SOUND LED7
LED8 I/O
POWER LED9

LED3 CPU POWER

HEAT SINK U19

U57
PIC
CHIP

LED6 RST1
RST2 LED5
LED4 RST0

J2

U49

ON

OFF

U50

MODEM P13

HEAT SINK U46

HEAT SINK

U51

F1 FUSE

J3

EXPANSION EPROM U17
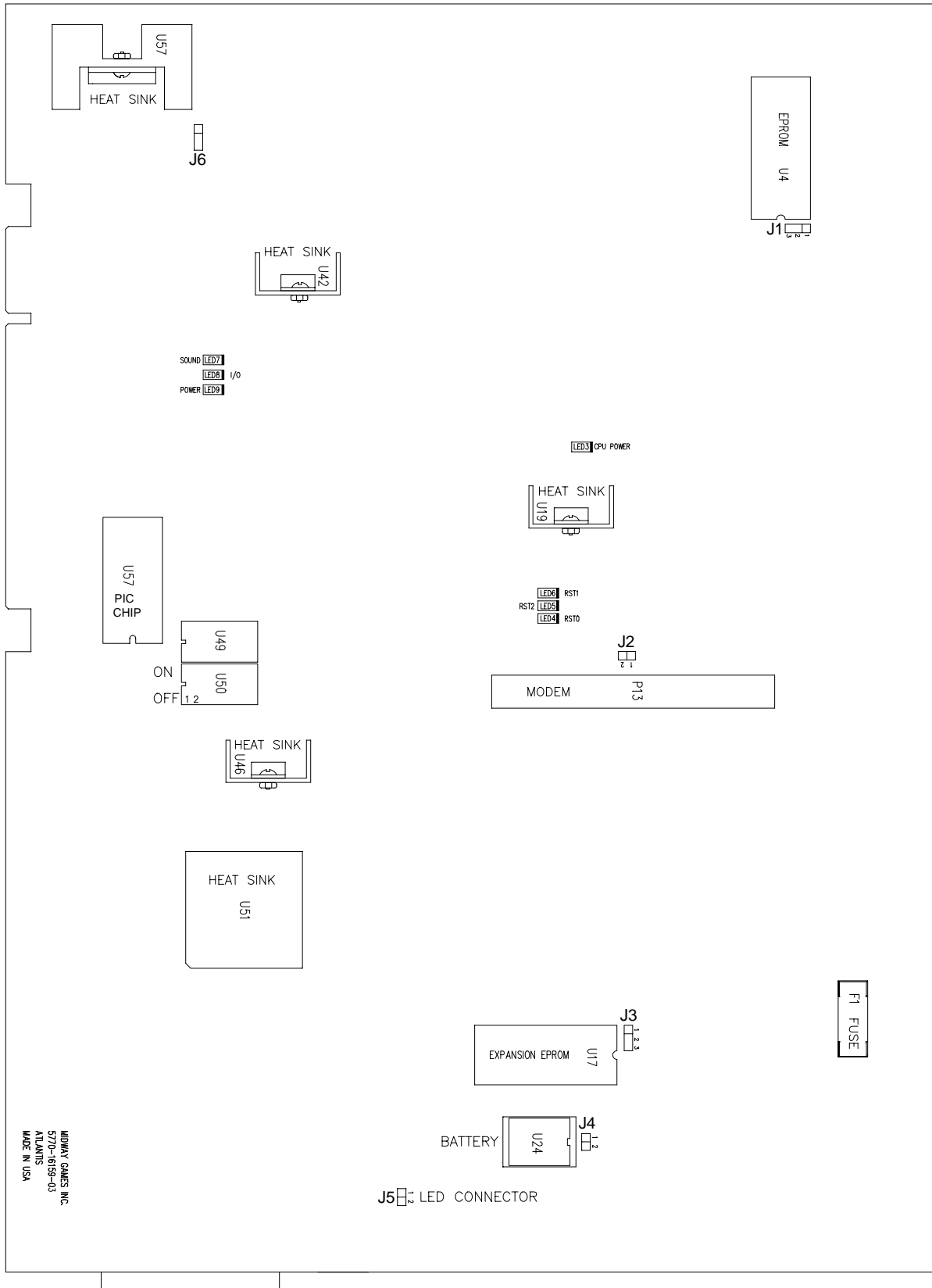
MIDWAY GAMES INC.
5770-16159-03
ATLANTIS
MADE IN USA

BATTERY U24

J4

J5 LED CONNECTOR

SKINS GAME

TROUBLESHOOTING

⚠	**CAUTION:** Turn AC power off before attempting any of the following procedures, unless otherwise specified. Failure to do so may damage equipment, cause personal injury, or void warranty.

Machine Does Not Start

Symptom	Problem	Suggested Solution
• Machine appears non-functional. • Audio non-functional • Fan non-functional • No video display	Lack of electricity	Check that power switch is on and line cord is plugged into grounded AC outlet.
	Poor AC connection	1. Test line cord, power plug and IEC receptacle for breaks or damage. Verify continuity of each wire. 2. Fully seat IEC connector into cabinet receptacle. 3. Verify wiring harness connectors are fully seated in the corresponding power supply receptacles. 4. Verify AC wire connections at power supply terminals.
	Broken fuse	Replace broken fuse with identical type.
	Faulty AC line filter	1. Check line filter with ohmmeter to verify operation. 2. Replace line filter if bad.
• Machine appears non-functional. • Fan functional	Wrong voltage	Using voltage meter, correctly adjust +5V output on power supply using adjustment knob.
• Machine appears non-functional. • Fluorescent light functional	Poor DC connection	1. Fully seat DC cable connectors in power supply. 2. Check power supply DC fuse. Replace broken fuse with one with identical current and voltage rating.
	Short circuit on CPU board assembly	3. Place CPU Board Assembly in known working machine to verify operation. 4. Replace faulty assembly with identical one.
• Machine appears non-functional. • Currency acceptor price indicator is illuminated. • Power supply fan functional	Poor connection across CPU Board Assembly	1. Inspect CPU Board Assembly under low light levels. When board gets DC power, its LEDs glow, although voltages or signals may be incorrect. 2. Turn AC power off. Ensure JAMMA connectors are fully seated onto mating CPU Board connector. 3. Turn AC power on. Using 20-volt DC setting on a digital voltmeter, measure DC voltages at the hard drive power connector pins. Adjust +5V source if necessary. Refer to Cabinet Wiring Diagram for wiring information and voltage limits 4. Using 2-volt AC setting on a digital voltmeter, measure same DC voltages as above. Any reading here indicates that supply voltages are unstable and may contain ripple or noise.
• Power-Up Self-Test runs. • Attract Mode does not begin. • Audio non-functional	Faulty hard disk drive	1. Turn AC power on. Press TEST MODE pushbutton to access Menu System. From DISK TESTS Menu, choose DRIVE READ TEST. This indicates whether hard disk drive mechanism is functional. 2. Turn AC power off. Unlock and open rear door. Inspect board assemblies. Check that hard disk drive ribbon cable connector is fully seated in the mating connector on the CPU Board Assembly. Verify that all drive mounting screws are installed.

		3. Check that hard disk drive is correct part. A label with assembly number and software version appears on each drive.
	Wrong component	Verify that ROM instruction set and CPU Board set are correct. Components are marked with manufacturer name, assembly number and hardware version.
	Wrong voltage	1. Turn AC power on. Using 20-volt DC setting on a digital voltmeter, measure DC voltages present at power connector pins. Verify +5V source if it is adjustable. Refer to cabinet Wiring Diagram.
		2. Using the 2-volt AC setting on a digital voltmeter, measure the same DC voltages as above. Any reading indicates that the supply voltages are unstable and may contain ripple or noise.

Audio Problems

Symptom	Problem	Suggested Solution
• Video functional • Game functional • Audio non-functional	Poor connection	1. Press TEST MODE pushbutton to enter Menu System. Choose ADJUST VOLUME. Ensure Attract Mode and game volume levels are not at zero. Adjust levels if necessary to produce sound.
		2. Inspect wiring harnesses and verify connections as indicated by the Cabinet Wiring Diagram.
		3. Using 20-volt DC setting on a digital voltmeter, measure DC voltages present at power connector pins. Verify +5V, -5V and +12V sources. Refer to Cabinet Wiring Diagram.
		4. Using 2-volt AC setting on a digital voltmeter, measure same DC voltages as above. Any reading here indicates that the supply voltages are unstable and may contain ripple or noise.
	Bad IC	Place CPU Board in known good machine. Repair or replace if audio is non-functional.
• Audio distorted, muffled, missing frequencies • Low hum present	Faulty speakers	1. Press TEST MODE to enter Menu System.
		2. From the Self-Test Menu, choose SOUND TESTS to verify some audio circuit functions.
		3. Turn AC power OFF. Remove grill and that each speaker is full range (100 Hz to 10 KHz response) and rated for at least 10 watts.
	Bad wiring	1. Turn AC power off. Remove grille. Ensure no loose parts are caught in speaker cones, terminals, mounting screws, or stuck to magnets.
		2. Ensure wiring is not reversed on a speaker. Weak, low frequencies and thin or hollow sound quality suggests incorrectly phased speakers.
		3. Verify wiring against Cabinet Wiring Diagram. Ensure there is a separate wire (not a common return) for each speaker. Ensure cabinet ground wires are connected.

		4. Using 2-volt AC setting on a digital voltmeter, measure voltages at the speaker terminals. Any reading here indicates that supply voltages are unstable and may contain ripple or noise.
		5. Place speaker in working game to verify operation.
• Audio monaural	Poor connection	Verify wiring against Cabinet Wiring Diagram. Check for shorted wires.

Controls Problems

Symptom	Problem	Suggested Solution
• Joystick non-functional or functions erratically	Joystick is out of calibration	From Self-Test Menu, choose CONTROLS TEST. Follow screen instructions to recalibrate joystick.
	Faulty wiring	1. Ensure wiring connectors are firmly seated in control panel and no wires are broken or pinched. 2. Repair or replace damaged cables. Reposition wires as necessary to avoid cinching.
	Poorly seated potentiometer	1. Inspect joystick assembly. A potentiometer may not be seated snugly. 2. Remove a spring clip to reveal potentiometer. 3. Try rotating potentiometer. If snug, it will not turn. If it turns, push it inward while turning until you correctly realign it and it seats tightly. 4. Replace clip and inspect other potentiometer.
	Bad potentiometer	5. Turn AC power on. Check voltage at each potentiometer. Put voltmeter leads on center tap and ground. Leave joystick in default position. Meter should read about +1.5V. 6. Use analog or bar graph digital voltmeter for this test: Put voltmeter leads on wiper and ground. Move joystick through its range. Check for smooth, linear transition between .5V and 1.5V. If meter jumps at any point, potentiometer is bad. 7. Replace a potentiometer that fails either test.
	Bad inline power fuse	1. Check voltages to CPU Board Assembly. 2. If +5VDC is absent, replace inline fuse on power cable. Use identical type fuse and retest voltages.
	Faulty Pot Amp chip	1. Test CPU Board Assembly in working machine. 2. If joystick is still bad, repair or replace.
• Joystick slips, seems loose. Poor response.	Nylon spacer worn by rotating bracket	1. Remove joystick assembly, turn upside down, and check whether there is too much play in brackets when stick moves. 2. Invert nylon spacer 180 degrees and replace. 3. If already inverted, replace with new spacer.

	Loose potentiometer captivating bracket	Ensure pot captivating bracket is flush to flat of pot shaft and retaining screw is secure.
• Joystick non-functional	Faulty fuse	Replace broken fuse with identical type.
• Button non-functional or functions erratically	Poor connection	Check connection and tighten.
	Faulty button	1. Place button in known working machine. 2. Replace faulty button with identical type.
• Startup button bulb non-functional	Faulty bulb	1. Remove bulb and inspect filament. 2. Replace faulty bulb with identical type.
• Keypad non-functional or functions erratically	Poor connection	1. Check that connections are tight. 2. Compare to Wiring Diagram to ensure accurate connections.
	Faulty keypad	1. Place keypad in known good machine. 2. Replace faulty keypad with identical type.

Coin Mechanism Problems

Symptom	Problem	Suggested Solution
• Currency or tokens are accepted • Number of credits per coin or bill is incorrect.	Improper software settings	1. Press TEST MODE pushbutton. 2. Access CONTROLS TEST. Confirm operation of each coin or bill mechanism. 3. Access COIN OPTIONS. Verify that each mechanism's pricing and setup options are set correctly.
	Faulty wiring	1. Check that cabinet wiring is correct. 2. Check that coin meter and coin switches connect properly to control input wires from JAMMA connector and CPU Board wiring. 3. Ensure coin meter and coin switches connect properly to control input wires.
• Currency or tokens are accepted. • Startup fails. • Audio and video functional	Improper settings at Menu System	1. Press TEST MODE pushbutton. 2. Access COIN OPTIONS. Confirm pricing and setup of each mechanism.

Bill Validator Problems

Symptom	Problem	Suggested Solution
• Bill validator does not function after field installation. • Coin mechanisms functional	Improper software settings	1. Press TEST MODE to enter Menu System. Choose COIN OPTIONS. Confirm pricing and setup. 2. If necessary, adjust pricing and setup. 3. Check validator switch settings against manufacturer's instruction sheet.

Miscellaneous

Symptom	Problem	Suggested Solution
• Game functional • Cabinet becomes warm after several hours of use.	Obstructed fan	1. Check air flow at bottom and rear of cabinet. 2. Clear obstructions. 3. Move cabinet away from sources of heat. 4. Turn AC power off. Remove dust from vent holes with high-power vacuum cleaner.
	Faulty wiring	Repair or replace fan wiring and connectors.
	Faulty fan	Check operation of all fans. Replace if faulty.
• Error messages appear on screen.	Faulty hardware	Check assembly cited in message. Call authorized distributor for help with unresolved screen messages.
• Modem non-functional	Bad connection	Check that modem is well seated in PCI slot.
	Cable disconnected	Ensure cable is well seated in jack and modem.
	Bad phone line	1. Plug cable into another wall jack. 2. Test jack with fax machine or telephone.
	Server down	Reattempt connection tomorrow.
	Bad modem card	Replace faulty card with identical type
• Clock is wrong	Software set wrong	Use Set DATE/TIME in Menu System to reset clock.
	Drained battery	Replace lithium battery with identical type.

NOTICE

The "libc" and "libm" libraries (the "Libraries") are used with the "banner," "bootbr," "run_game," "swts," "host_hddnl," "targ_hddnl" and "os.elf" applications (the "Applications"). The Libraries and their use are licensed without charge and are covered by the GNU Library General Public License. See the source and related files for the Libraries, which are found on the hard drive in /usr/src. Each Application, as linked with one or both of the Libraries (as the case may be), is referred to as a "Work."

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WARNINGS & NOTICES

WARNING
Use of non-Midway Games West Inc. parts or circuit modifications may cause serious injury or equipment damage. Use only Midway authorized parts.

- Use only authorized components and parts. Failure to do so will void warranty and may result in incorrect and/or unsafe operation.
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WARNING
Prevent shock hazard and assure proper game operation. Plug this game only into a properly grounded outlet. Do not use a cheater plug to defeat the power cord's grounding pin. Do not cut off the ground pin.

WARNING
A very small portion of the population has a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition.

If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g. seizures or loss of awareness), immediately consult your physician before using any video games.

We recommend that parents observe their children while they play video games. If you or your child experience the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, *discontinue use immediately* and consult your physician.

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