MIDWAY

FEBRUARY 2000
16-30042-101

SKINS GAME

Operations Manual Includes

Setup ● Service ● System
Wiring ● Parts ● Troubleshooting

Midway Games West Inc.
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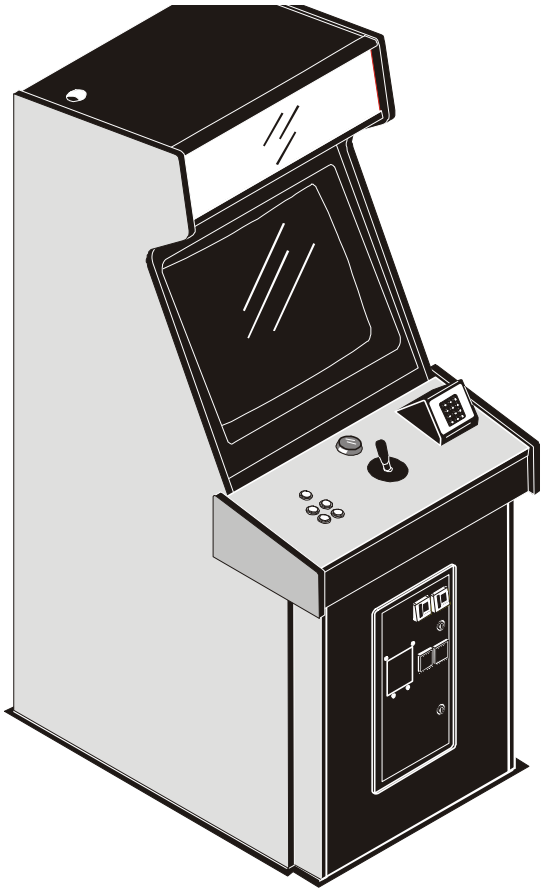

UPRIGHT DEDICATED VIDEO GAME 25” CABINET

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CE

DECLARATION OF CONFORMITY

MIDWAY AMUSEMENT GAMES, LLC

3401 N. CALIFORNIA AVE.
CHICAGO, IL 60618
U.S.A.

WE, HEREBY DECLARE UNDER SOLE RESPONSIBILITY THAT

THE MODEL: ***SKINS GAME 27" 30242, 30342, 30442, 30742, 30942, 31042, 31142, 31242, 31342, 31442, 31842, 31942, 32042, 32142, 32242, 32342, 37242, 36242, 36342, 36442, 36542, 36642***

TO WHICH THIS DECLARATION RELATES IS IN CONFORMITY WITH THE FOLLOWING EUROPEAN PRODUCT SAFETY DIRECTIVES:

ELECTROMAGNETIC COMPATIBILITY DIRECTIVE
(89/336/EEC AND AMENDMENTS 91/C162/08, 92/31/EEC,93/68/EEC)

ELECTRICAL EQUIPMENT DESIGNED FOR USE WITHIN CERTAIN VOLTAGE LIMITS DIRECTIVE
(73/336/EEC AND AMENDMENTS 88/C168/02, 92/C210/01, 93/68/EEC,94/C199/03, 95/C214/02)

AS IS VERIFIED BY COMPLIANCE WITH THE FOLLOWING STANDARDS:

EN55014: 1993	**EN61000-4-2: 1995**
IEC 801-3: 1984 (EN61000-4-3)	**EN61000-4-4: 1995**
EN61000-4-5: 1995	**EN335-1: 1995**
IEC 335-2-82 (DRAFT)	

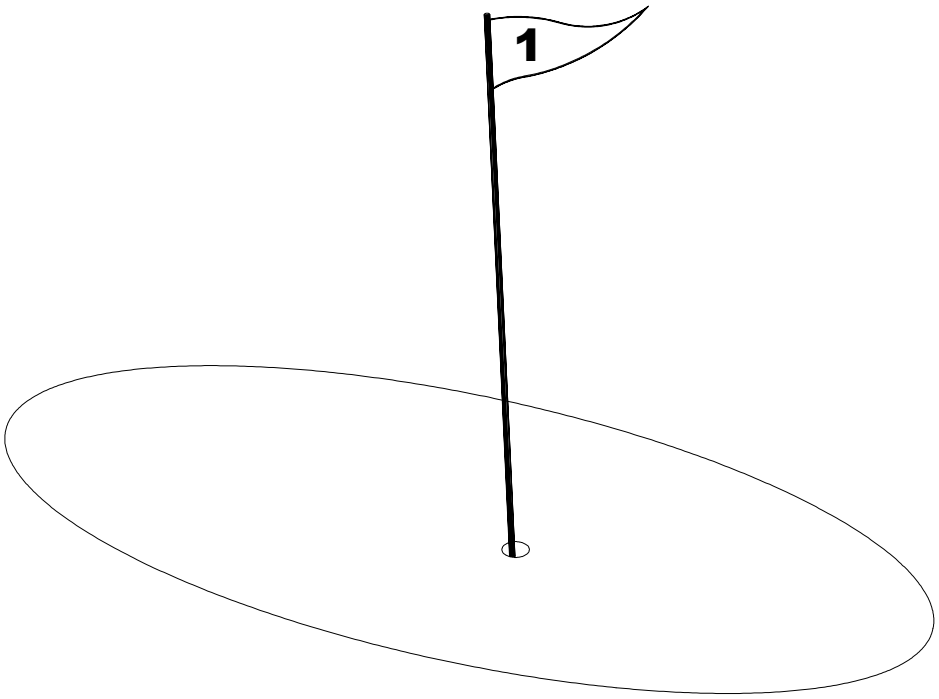
Date issued: **JANUARY 18, 2000**

DAN GALARDE

CORPORATE V.P. OF QUALITY

SKINS GAME

CHAPTER



SAFETY AND 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 serial number from the label on the rear of the cabinet. For your records, write the 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.

	WARNING: TRANSPORTING GAMES This game contains glass and fragile electronic devices. Use appropriate care when transporting this game. Avoid rough handling when moving the cabinet. Do not move this game with AC power ON.
	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.
	WARNING: AVOID ELECTRICAL SHOCKS. This video game system does not utilize an isolation transformer. Internal cabinet AC is not isolated from the external AC line.
	WARNING: HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.
	CAUTION: CHECK POWER SELECTOR, LAMP. Set the 115/230VAC selector on the power supply for the correct line voltage. Check the selector setting before switching on the game. Verify that the fluorescent lamp assembly is correct for the local line voltage.
	CAUTION: USE PROPER FUSE. Avoid electrical shock! Replacement fuses must be of the same type as those they replace. Fuse voltage and current ratings must match ratings on the original fuse.

	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 your game and void the warranty. Connector keys only allow a connector to fit one set of pins on a board.
	CAUTION: USE CARE WHEN SHIPPING HARD DISKS. 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. Moving cabinet while AC power is on can also damage hard drive.
	WARNING: HAZARD TO EPILEPTICS. 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.

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

Operating Requirements

Location	*Electrical Power*	*Temperature*	*Humidity*
Domestic	120VAC @ 60Hz 3.0 Amps	37°F to 100°F	Not to exceed 95% relative
Foreign	230VAC @ 50Hz 2.0 Amps	(3°C to 38°C)	
Japan	100VAC @ 50/60Hz 3.0 Amps		

Cabinet Statistics

Shipping Dimensions	*Shipping Weight*	*Design Type*
Height 73" (185 cm) Width 28" (71 cm) Depth 42" (106 cm)	400 lbs. (148.2 kg.)	Single Dedicated Video Game with Linking capability

Equipment Characteristics

Video Display Monitor	*Audio System*	*Currency Acceptors*
Standard Resolution (15.7 KHz) RGB 25” (64 cm) CRT	2 Channel Audio 2 Full Range Speakers	Standard Coin Door 2 Coin Mechanisms, DBV ready 1 Coin Counter

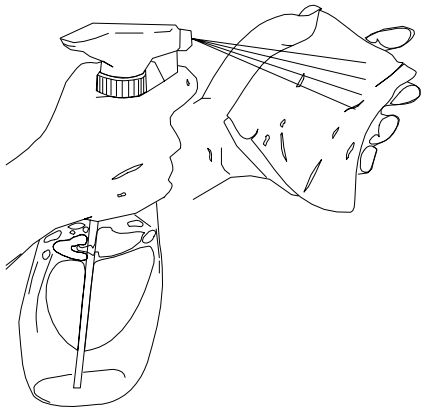
Game Characteristics

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

PRODUCT CONFIGURATION

- **Stand Alone Units**
  Each game is ready to play right out of the box. Operators may use the screens in the Menu System to determine some player variables in advance or leave the choices up to the players.

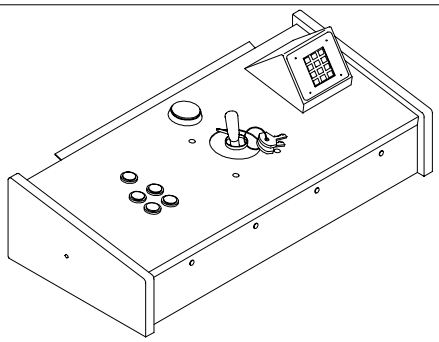
MAINTENANCE



- **Viewing Glass**
  It is not necessary to switch off AC power to clean glass. Apply a mild glass cleaner to a clean cloth or sponge. Use this to wipe viewing glass. *Do not apply cleaner directly on glass**!*** Liquid could drip onto switch or control circuits and cause erratic game operation.
- **Player Controls**
  Use plastic-safe non-abrasive cleaners. Apply cleaner to a clean cloth or sponge. Use this to wipe player controls. *Do not apply cleaner directly on controls!*
- **Cabinet**
  Use plastic-safe non-abrasive cleaners to avoid damage. Apply cleaner to a clean cloth or sponge. Use this to wipe seat or cabinet. *Do not apply cleaner directly on artwork or cabinet!*

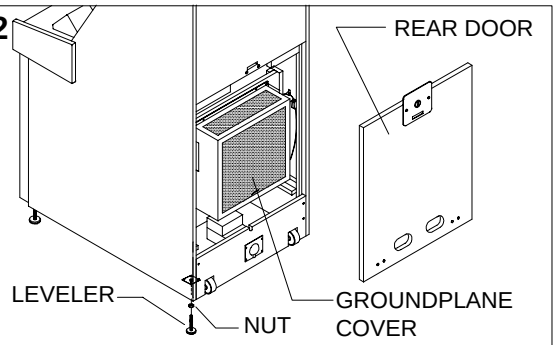
HARDWARE SETUP

1



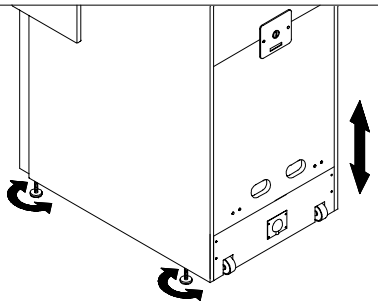
Remove items from shipping container. Inspect cabinet exterior for damage.
Remove coin door key from joystick. Unlock and open coin door. Locate rear door and coin vault keys on key hook behind coin door. Locate electrical cords and spare parts in cash tub in coin vault.

2



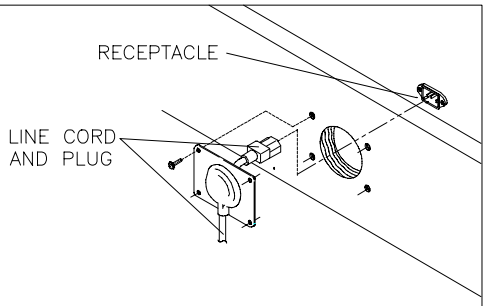
Unlock, remove and set aside rear door. Remove groundplane cover. Ensure major assemblies and cable connectors are mounted securely and fan airflow is unobstructed. Do not force connectors. Tilt cabinet to locate four threaded holes on bottom. Install leveler and nut into each hole, but do not tighten yet.

3



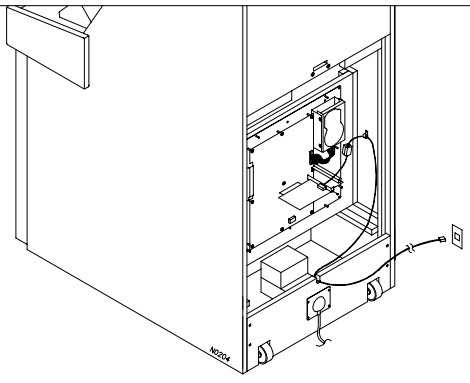
Stand cabinet upright and make certain it is in a stable position. Move game to its intended location and level the cabinet. Game is intended for use only in a fixed position. Ensure that final adjustment raises game so swivel caster wheels do not touch the floor. Distribute weight equally on each corner and tighten leveler nuts.

4



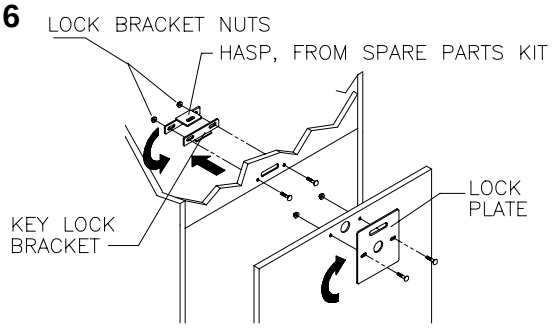
Remove and save four screws from line cord cover plate at cabinet rear. Remove cover plate. Match holes on IEC plug with prongs in receptacle and push firmly to seat line cord. Hold cord flat against cabinet and reinstall cover plate (indentation points down so cord exits toward bottom of cabinet).

5



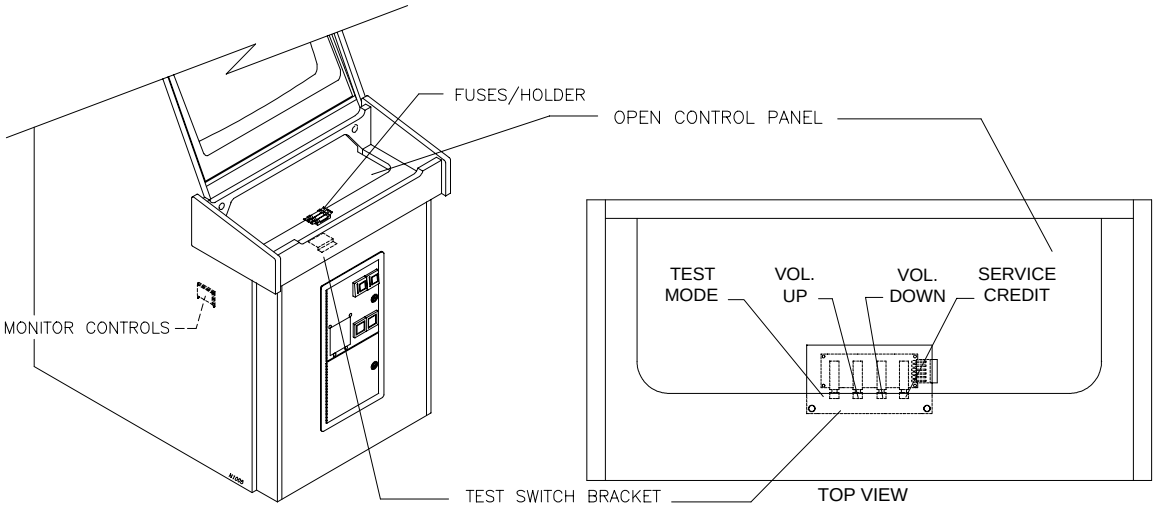
Uncoil telephone cable inside cabinet. Run cable through notch in cabinet rear and plug into working telephone jack. Replace groundplane cover, taking care not to pinch wires or cables. Replace and lock rear door.

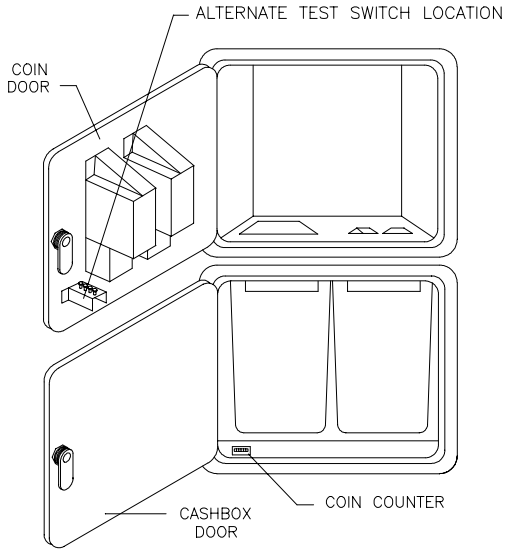
6



To install your own padlock to further secure rear door, remove lock bracket nuts from inside cabinet, above rear door opening. Reverse hasp so it protrudes from hole in back of cabinet. Reinstall nuts. Remove nuts from rear door and flip metal plate so hole extends above top of door. Reinstall nuts and door.

SOFTWARE SETUP



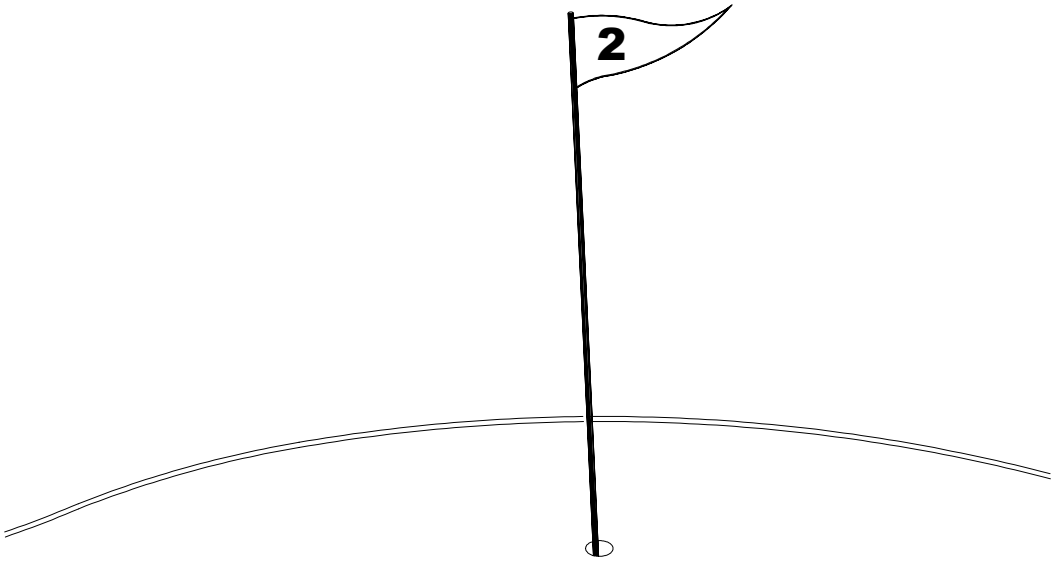


Note: If battery-backed up RAM is reinitialized (as when power is turned on for the very first time) you will see a Calibrate Pot screen with an explanation of how to calibrate.

1. Unlock and open cash door. Press TEST MODE pushbutton on operator control switch panel to enter Menu System. See System Chapter in this manual for more information on system software.
2. When Main Menu appears, follow on-screen instructions to select ADJUST VOLUME. Set game and Attract Mode volume to desired levels.
3. Return to Main Menu and choose TESTS. Then select CONTROLS TEST. Follow on-screen instructions to verify that controls are operational. If no errors are found, controls should function well.
4. Return to Main Menu and select SET DATE/TIME. Follow on-screen instructions to verify correct time for your city.
5. Return to Main Menu screen, then choose EXIT TO GAME. Skins Game automatically enters Attract Mode.
6. Insert currency or tokens and play a game. Change the volume with the pushbuttons behind cash door and make any other desired adjustments.
7. Close and lock cash door

SKINS GAME

CHAPTER



SERVICE

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SERVICE

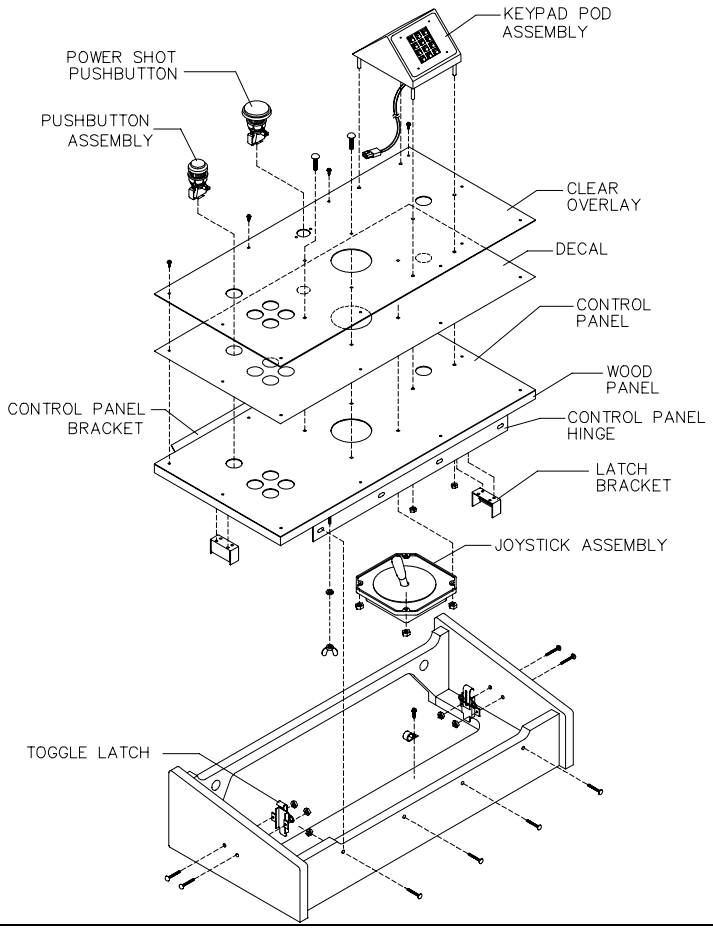
CAUTION: Before attempting any of the following procedures on your Skins Game Video Game Machine, turn AC Power off. Failure to do so can cause personal injury, may damage the components, and may void your warranty.

Control Panel

To open control panel, open coin door and reach upward, feeling for left and right latches (see illustration). Latches hold control panel top to control panel box. Unlock latches and swivel top of hinged control panel toward you by pulling upward gently on keypad pod assembly.

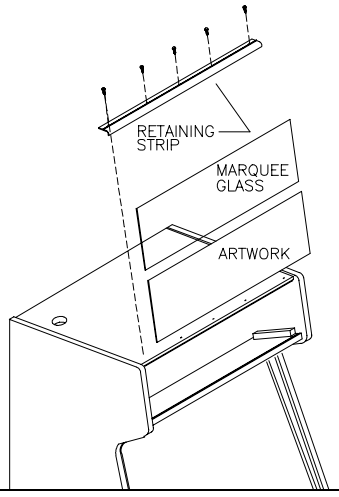
To remove control panel assembly, open control panel. Mark, and disconnect wiring harnesses from player controls. Use a wrench to remove four ¼-20 hex-head bolts, flat washers, and lock washers that secure control panel to cabinet. Close control panel cover. Slide control panel housing away from cabinet.

To reinstall, align gasketed control panel bracket with bottom of viewing glass. Tighten mounting bolts firmly, but do not overtighten.



Marquee

Remove five hex-head wood screws that hold marquee-retaining strip to cabinet top. Hold glass in place to avoid breakage. Remove retaining strip and set aside. Lift marquee glass out of top grooves and set in safe place. Do not overtighten screws during reinstallation.



WARNING: Marquee glass can fall from cabinet and break when retaining strip is removed. Hold glass in place until you can safely remove it.

WARNING: A dropped fluorescent tube is likely to break, implode, and shatter glass eight feet or more from the point of destruction. Use extreme care when handling.

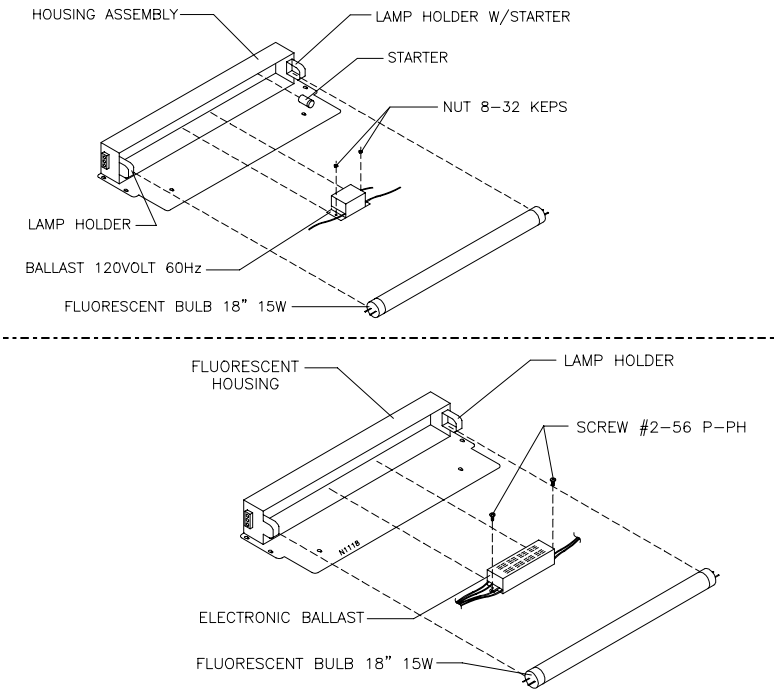
Fluorescent Lamp

Remove marquee housing, retaining strip, glass, and artwork. Grasp bulb, and rotate a quarter turn. Pull tube from sockets.

To replace, carefully fit new bulb into socket and rotate a quarter turn. Clean bulb to remove fingerprints and dust.

Fluorescent Light Assembly

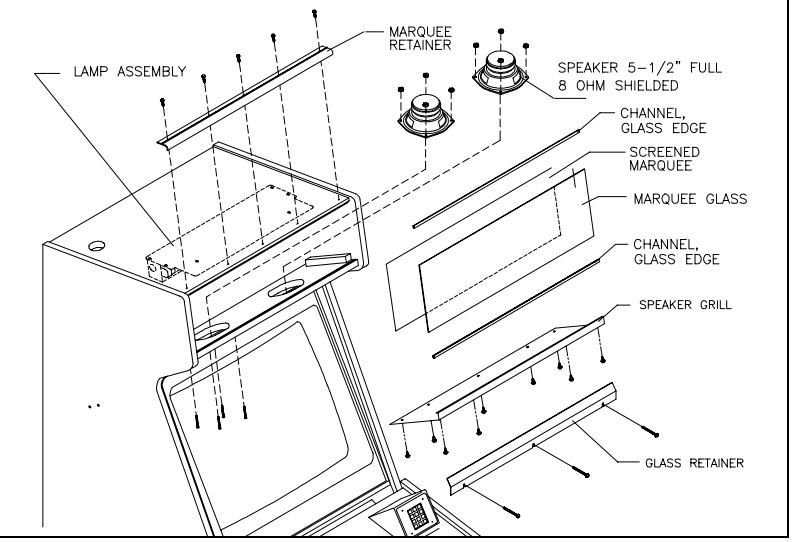
Remove marquee housing, retaining strip, glass, and artwork. Disconnect power cable from fluorescent light assembly. Loosen screws fastening assembly to cabinet, but do not remove them. Slide assembly slightly forward to disengage keyhole slots. Lift assembly out of cabinet.



NOTE: Fluorescent light assemblies with electronic ballasts have no starter.

Speakers

Remove marquee, glass, and artwork. Label and disconnect wires. Remove nuts on screws. Lift speakers up above speaker grill and out of marquee. Carefully reseat seals upon completing any task in speaker enclosure. Refer to Cabinet Wiring Diagram for correct speaker polarity.



NOTE: Ensure replacement speakers are magnetically shielded. This prevents video monitor color impurity.

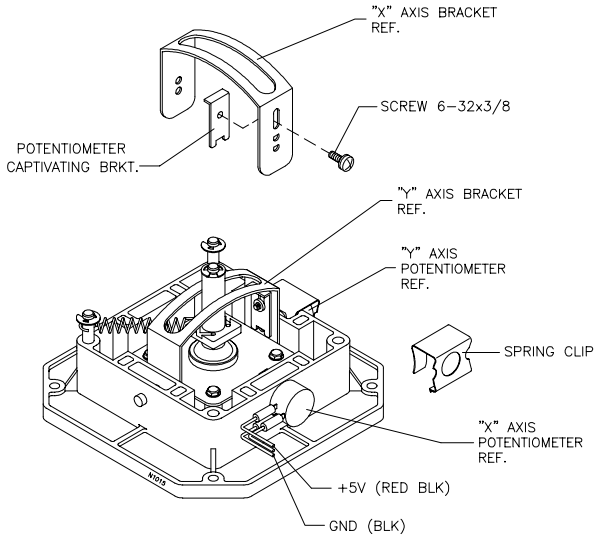
CAUTION: USE PROPER FUSE. Avoid electrical shock! Replacement fuses must be of the same type as those they replace. Fuse voltage and current ratings must match ratings on the original fuse.

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.

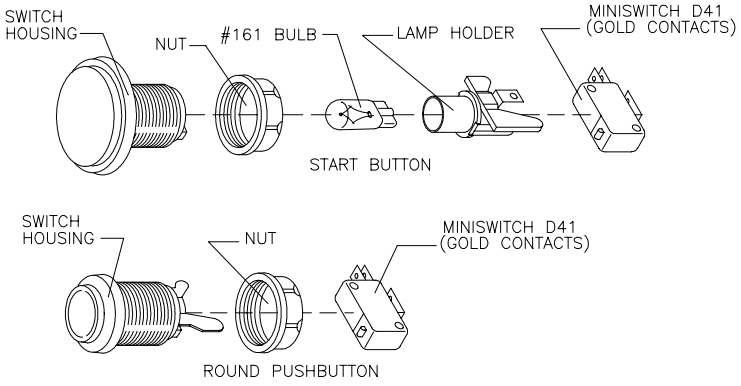
When replacing potentiometer, seat it snugly in its housing, flush against plastic base. If you have seated it properly, you should be unable to rotate the potentiometer more than a degree or two by hand.



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.

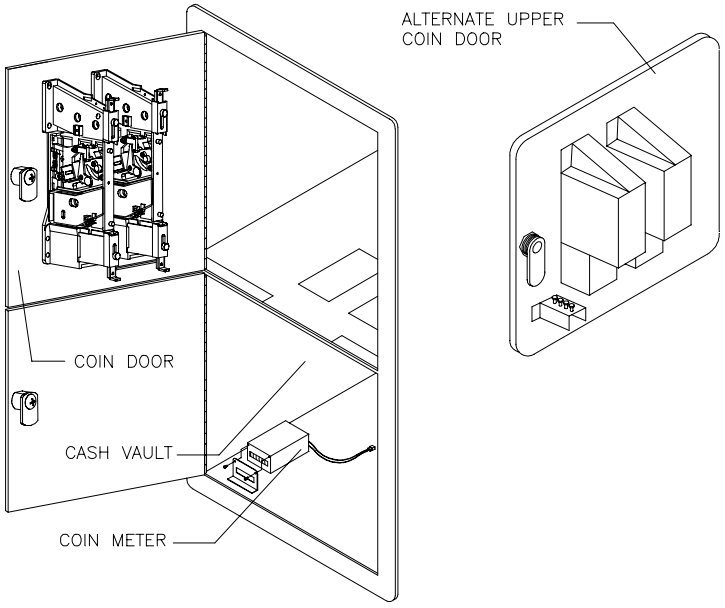


Coin Meter

Open cash vault door. Label and disconnect meter wiring. Unscrew two front mounting screws. Record meter count before testing or replacing.

Coin Mechanism

Unlock coin door and swing open. Unlatch and remove each coin mechanism separately to clean or replace with different type. Ensure mechanism seats fully in holder upon reinstallation. Close and lock release latch, then close door. Turn AC power ON and change mechanism setup. Then test known good and bad coins to verify operation.

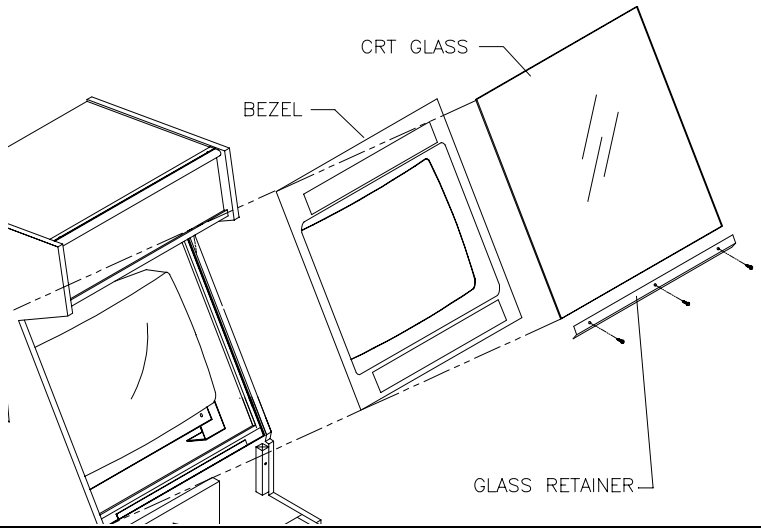


Viewing Glass

Pull control panel upward to expose glass retainer strip. Hold viewing glass in place and remove retainer screws. Slide glass upward a bit and swing bottom outward until free from cabinet. Slowly slide glass down until free from cabinet. Set in safe place.

Monitor Bezel

Remove viewing glass. Grasp monitor bezel at bottom and lift down out of groove. Remove bezel from cabinet. To replace, slide top of bezel into cabinet groove first. Swing bottom into position.



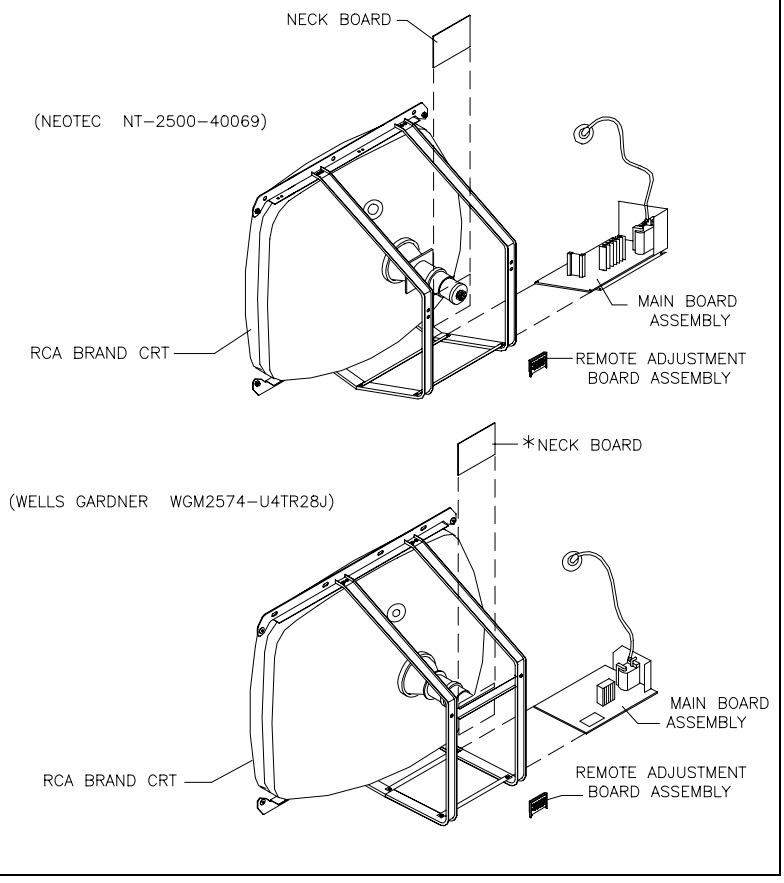
CAUTION: CRTs and their power supplies can retain energy long after power is off– especially when a defective circuit prevents a normal discharge. Connect well-insulated ground strap to metal chassis. Slide free end of strap under CRT anode cap until you make contact. Wait two minutes for charge recovery, then discharge anode again.

CAUTION: Monitor does not require isolation from AC line voltage during normal operation. However, when operating outside cabinet or servicing monitor on a test bench, isolate monitor from line voltage with isolation transformer.

Monitor

Remove viewing glass and monitor bezel. Disconnect monitor from wiring harness and ground wires. Remove four ¼-20 flange nuts securing monitor mounting flanges to mounting panel. Pull monitor carefully from cabinet and set aside.

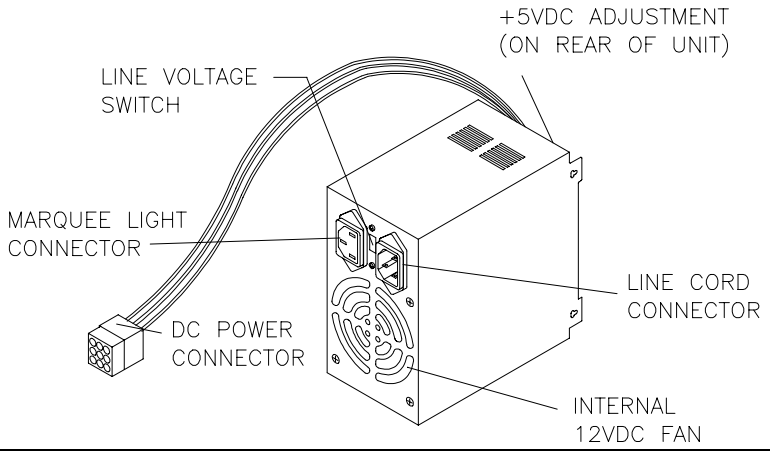
WARNING: Video monitor is heavy, with most weight toward front of assembly. Be sure to firmly support monitor as you remove it from cabinet.



Power Supply

Remove rear door. Unplug IEC AC connector from rear of power supply. Unplug DC connector from front of power supply. Remove two front and two rear screws from power supply. Lift power supply off power chassis. Note AC input voltage setting.

To reinstall power supply, set AC voltage switch to correct value. Set supply on power chassis and align mounting holes. Install four screws and two power connectors.



Fan Assembly

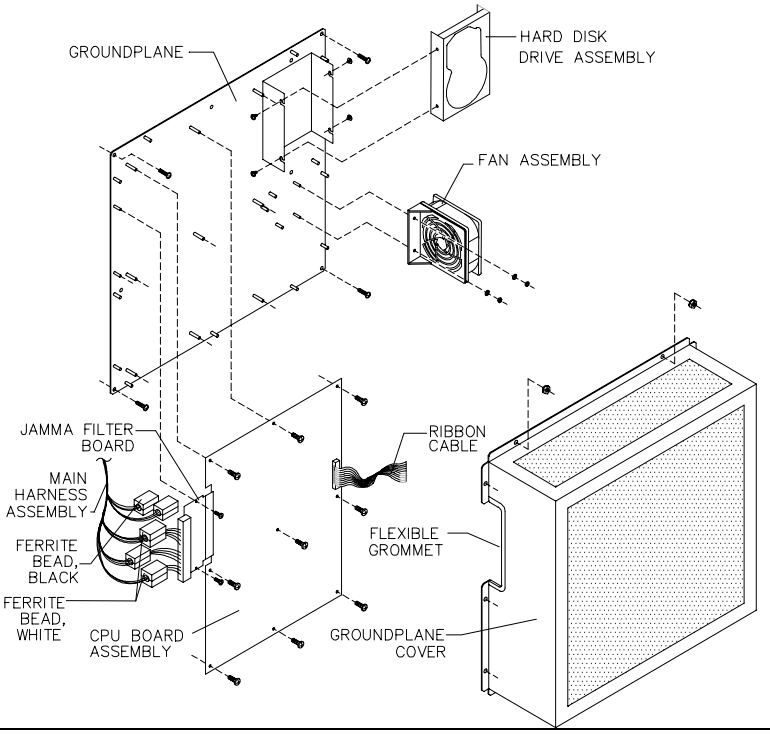
Remove rear door. Remove hex nuts on groundplane cover. Remove cover and set in safe place. Disconnect wiring harness and remove mounting hex nuts and washers. Remove fan from cabinet.

Hard Disk Drive

Remove groundplane cover and set in safe place. Disconnect wires from hard drive and remove bracket mounting screws. 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.



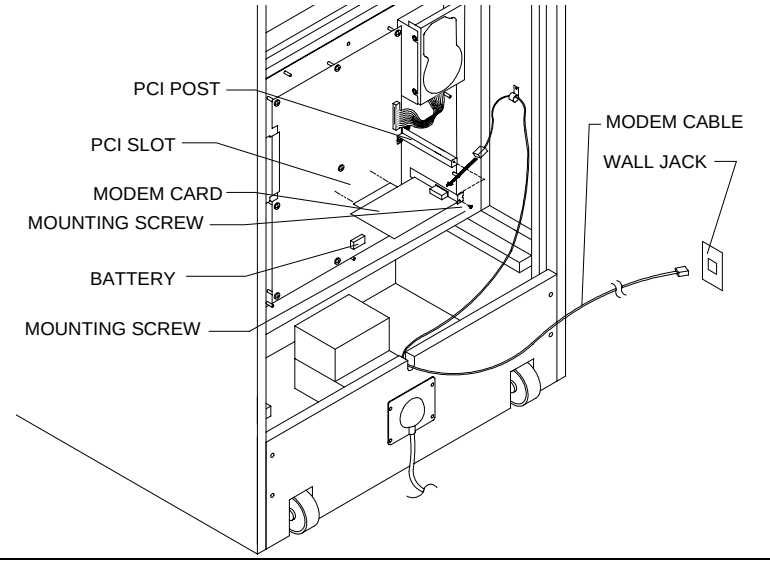
Battery

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.

Ensure tight connection when replacing modem cable into modem card.



ALTERNATE CASH MECHANISM INSTALLATIONS

The Mars 2451 Bill Validator is factory installed, but you can replace it with any of the following options.

Mars VFM2-L2 Bill Validator

1. Before installing MARS dollar bill validator, take off cover by removing two screws holding it.
2. Set DIP switches as follows:

Switch #1	On	(Accepts $1.00)
Switch #2	On	(Pulse pattern 50 ms On/300 ms Off)
Switch #3	Off	(Rejects $5.00)
Switch #4	On	(Not Used)
Switch #5	Off	(Number of pulses/dollar–1)
Switch #6	Off	(Number of pulses/dollar–1)
Switch #7	Off	(Number of pulses/dollar–1)
Switch #8	Off	(Bill orientation–accepts in both directions)

3. Replace cover and secure into place with screws.
4. Locate 18-pin connector/jumper (part no. 5797-13606-00), supplied in cashbox. Plug connector into bottom of dollar bill validator through opening in cover.
5. Turn AC power OFF and open coin door.
6. **09-96026-33 Coin Door**
   Remove four (4) nuts holding top plate to coin door. Save nuts.
   Remove top plate
   Place finished dollar bill validator face down on coin door on four (4) pem studs.
   Place cable clamp on lower pem stud. Orient cable clamp “down.”
   Replace and tighten four (4) nuts previously removed.
7. Plug male 9-pin connector from dollar bill acceptor into female 9-pin connector in VGM (located next to coin door).
1. Set DIP Switches 1 and 6 to ON.
9. Close coin door. Turn AC power ON. Insert several dollar bills to confirm they are accepted and proper credits given.
10. Open coin door and ensure validator aligns with bill chute and bills do not remain in validator.

Tekbilt NV110-GA1 Bill Validator

1. Before installing TEKBILT dollar bill validator, set DIP switches (located on top of validator) as follows:

MODE	**DIP SWITCH NUMBERS**			
	1	2	3	4
1 credit per acceptance	Off	Off	Off	----
Slow pulse 50msL/300msH	----	----	----	On

2. TEKBILT requires separate adapter plate (adapter supplied with VGM). Mount adapter plate of dollar bill validator using four 6-32 nuts.
3. Turn AC power OFF to VGM and open coin door.
4. **09-96026-33 Coin Door**
   A. Remove four (4) nuts holding top plate to coin door. Save nuts.
   B. Remove top plate.
   C. Place finished dollar bill validator face down on coin door on four pem studs.
   D. Place cable clamp on lower pem stud. Orient cable clamp “down.”
   E. Replace and tighten four (4) nuts previously removed.

continued

5. Plug male 9-pin connector from dollar bill acceptor into female 9-pin connector in VGM (located next to coin door).
6. Set DIP Switches 1 and 6 to ON.
7. Close coin door. Turn AC power ON. Insert several dollar bills to confirm they are accepted and give proper credits. There should be one pulse per dollar on center coin chute.
   Note: If credits do not correctly register, swap red and white wires on validator side.
8. Open coin door and ensure that validator aligns with bill chute and bills do not remain in validator.

Dixie-Narco Up-Stacker

You can install a DBV with a vertical dollar bill stacker into your VGM. The following information instructs you as to which stacker you can use and how to install it.

You must perform installation with AC power OFF and power switch in OFF position.

1. Install only the following vendor and model numbers:
   A. Dixie-Narco USA-15 (12-pin connector)
      Model: 88X5003
      Software: 57X300-20
   B. Williams Part Number 09-47000
      Dixie-Narco (9-pin connector)
      Model: 88X5014 (DBA1US)
      Software: 57X300-20
2. DIP Switch Settings

Williams 09-47000		Dixie-Narco USA-15	
Switch #1:	Open	Switch #1:	Open
Switch #2:	Closed	Switch #2:	Open
Switch #3:	Open	Switch #3:	Open
Switch #4:	Open	Switch #4:	Open

3. Installation (to coin door):
   A. Remove four (4) nuts holding bottom plate to coin door. Save nuts.
   B. Remove bottom plate.
   C. Remove (2) nuts holding upper plate on. Save nuts.
   D. Remove one spacer, each from the two top pem studs.
   E. Attach these spacers to the bottom pem studs.
   F. Place item 3 face down on coin door on the four (4) pem studs.
   G. Place ground (green) wire, coming from the upstacker, on pem stud.
   H. Secure item 3 with the four (4) nuts (removed previously in step A) on pem studs.
4. Cable Connection:

A. Dixie-Narco Stacker w/9-pin Connector (Williams P/M 09-47000)

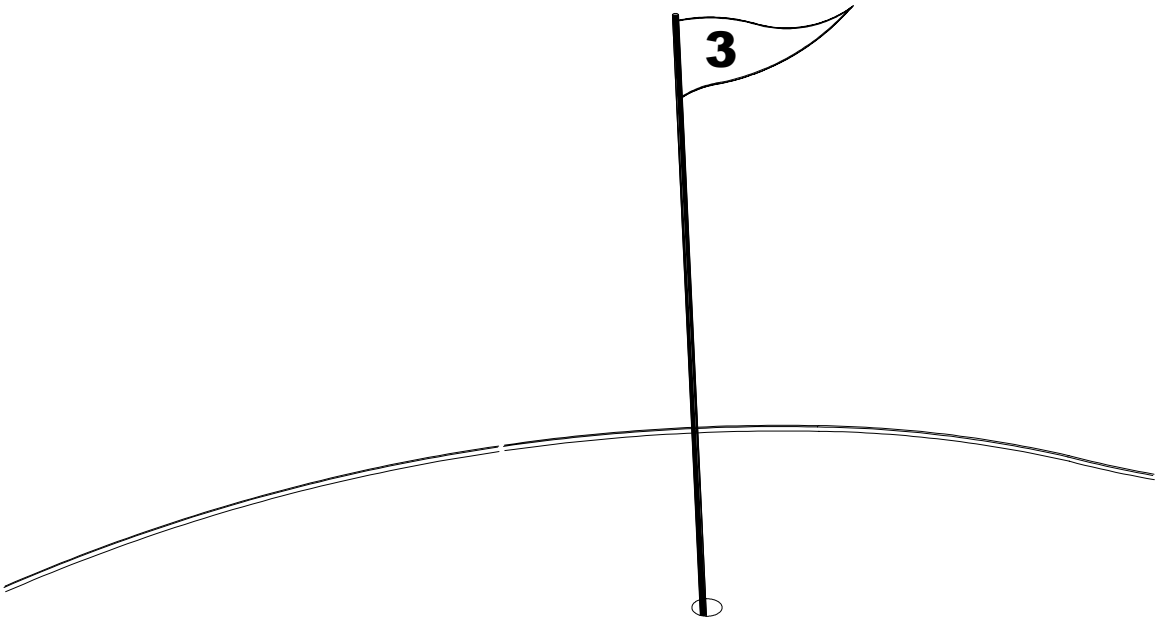
   Plug 9-pin connector from stacker into 9-pin female connector inside cabinet.

B. Dixie-Narco Stacker w/12-pin Connector

   1. Take jumper cable H-17019 (9-pin to 12-pin) supplied with VGM and mate 9-pin connector with 9-pin plug in cabinet, located by coin door opening.
   2. Take 12-pin from jumper cable and mate with 12-pin connector on stacker cable.
   3. Dress cable from stacker away from cash box area.

SKINS GAME

CHAPTER



SYSTEM SOFTWARE

	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.

GAME OPERATION

PLAYER CONTROLS

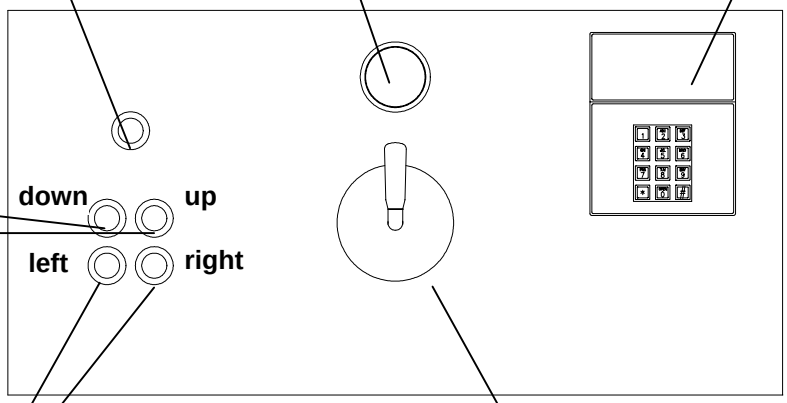
Start/Select and "Power Shot"
After currency is accepted this button starts a 1-, 2-, 3-, or 4-player game. During play, this button can increase a club's maximum distance, provided the joystick is released at precisely the right moment. Players earn one Power Shot per three holes, but can earn more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

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

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.



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.

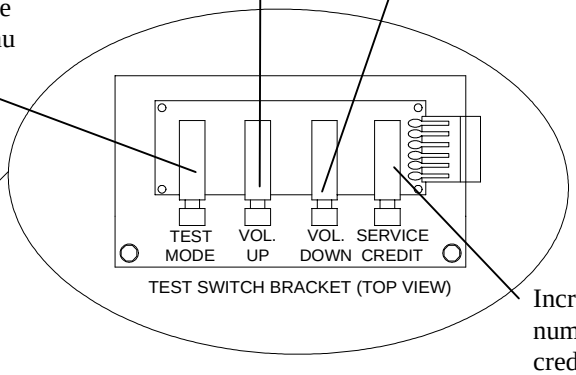
Joystick Assembly
Pulling back on the joystick winds your club backwards. Pulling to the left aims the swing a bit to the right; pulling to the right aims the swing a bit to the left.
The joystick assembly is designed to withstand numerous sudden snaps back to neutral position.

OPERATOR CONTROLS

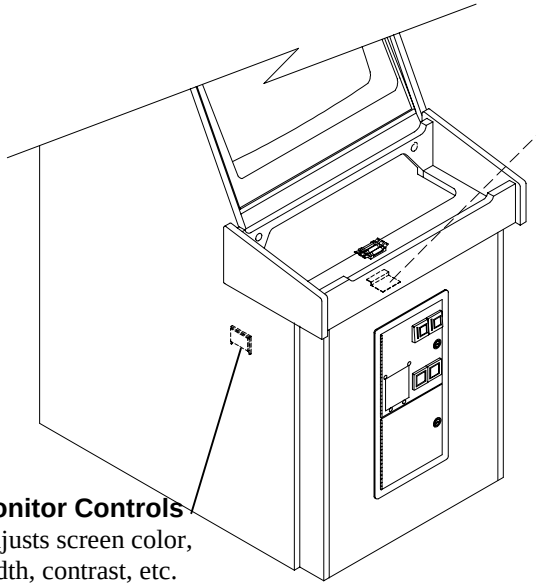
Ceases game play or Attract Mode and opens Menu System

Increases volume.

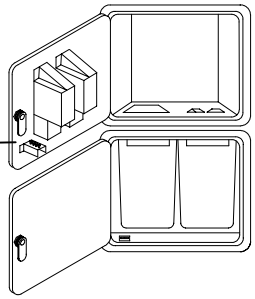
Decreases volume.



Increments number of credits up one.



Alternate Test Switch Bracket location.



Monitor Controls
Adjusts screen color, width, contrast, etc.

OPERATOR CONTROL 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

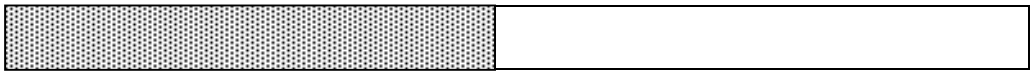
To select test, use +/-/LEFT/RIGHT
To run test, Press START or TEST

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

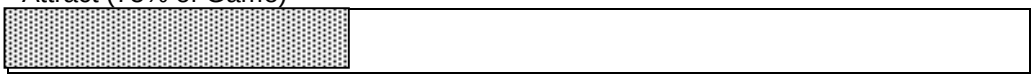
ADJUST VOLUME

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

STATISTICS

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

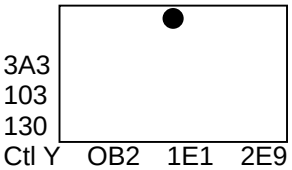
1 2 3 4

SVC BILL

MISC

TILT VOL +

TEST VOL –



START

VIEW

CLUB +

CLUB –

AIM LEFT

AIM RIGHT

Keypd

1 2 3
4 5 6
7 8 9
* 0 #

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

To return to menu, Press VIEW or CREDIT

TESTS

DISK TESTS

FILESYSTEM CHECK

Total Files Used: XXXX

Passes Completed : X

Checking File: XXX.X

To Return to menu, Press VIEW or CREDIT

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

TESTS

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	1/500Llt	500Llt	500Llt			
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	1/1HFl, 3/2.5HFl	1HFl	2.5HFl			
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			

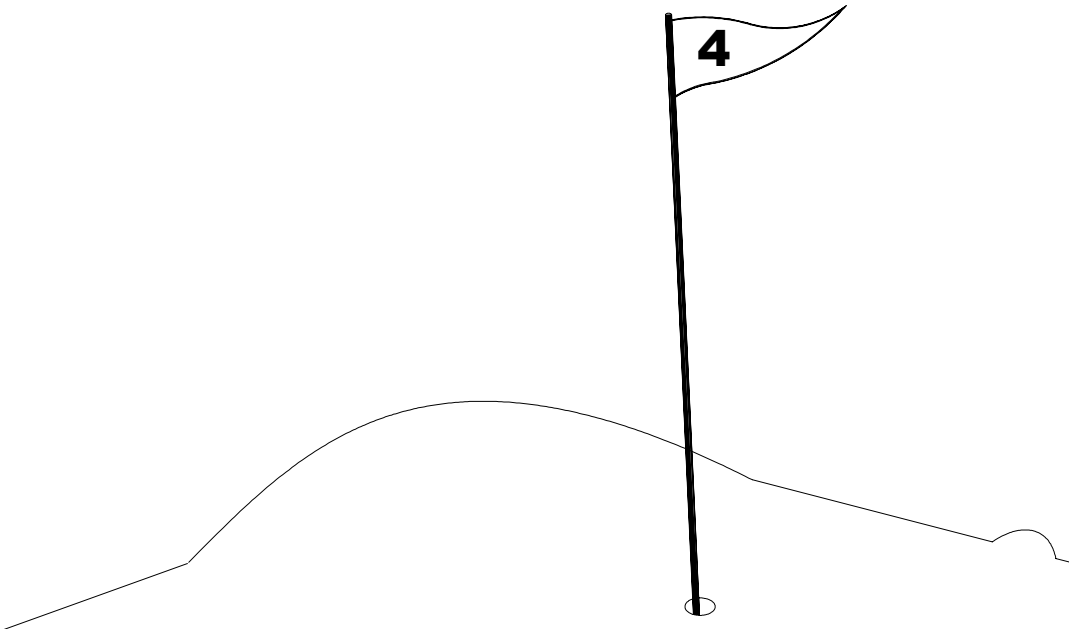
(Table continues on next page)

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

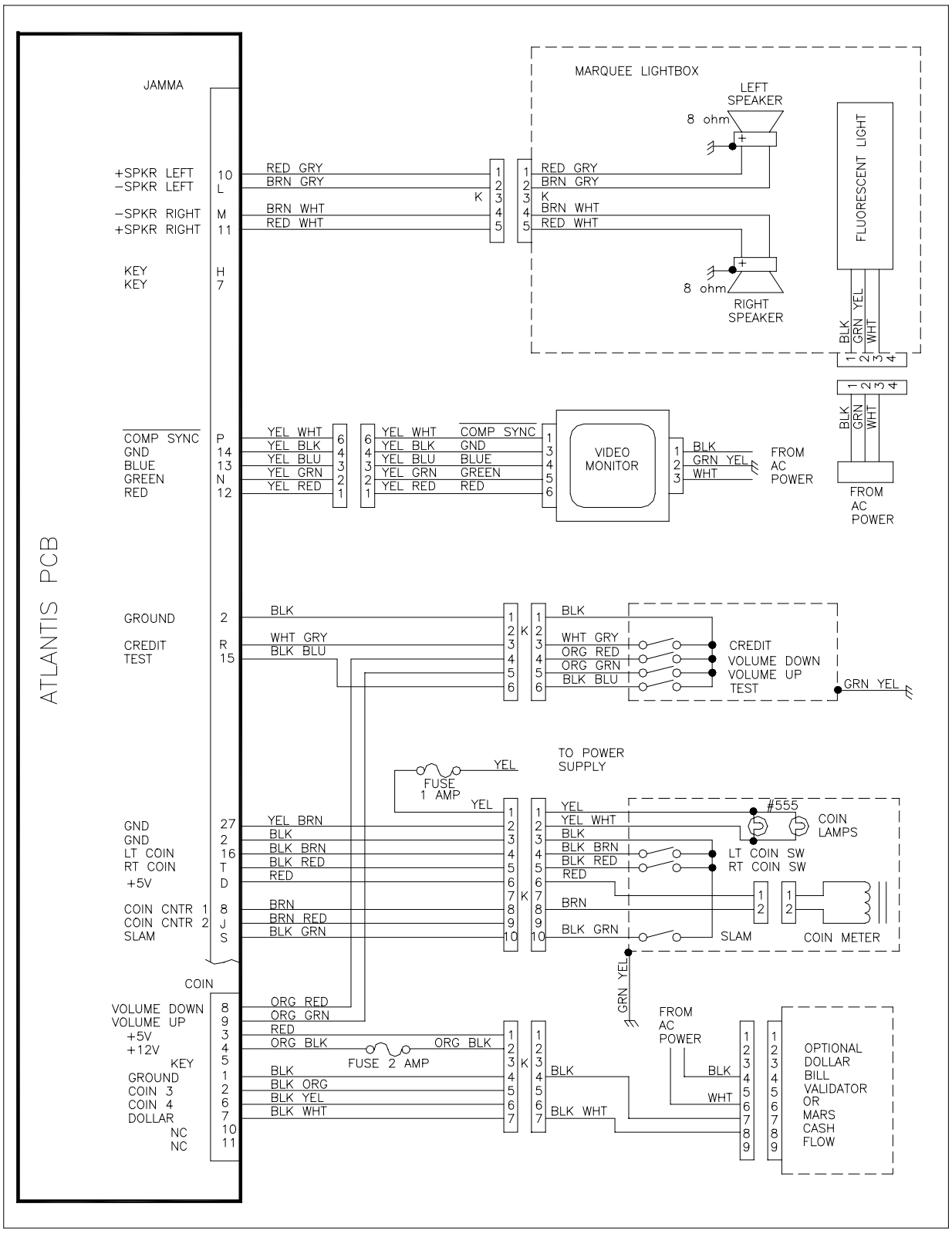
CHAPTER



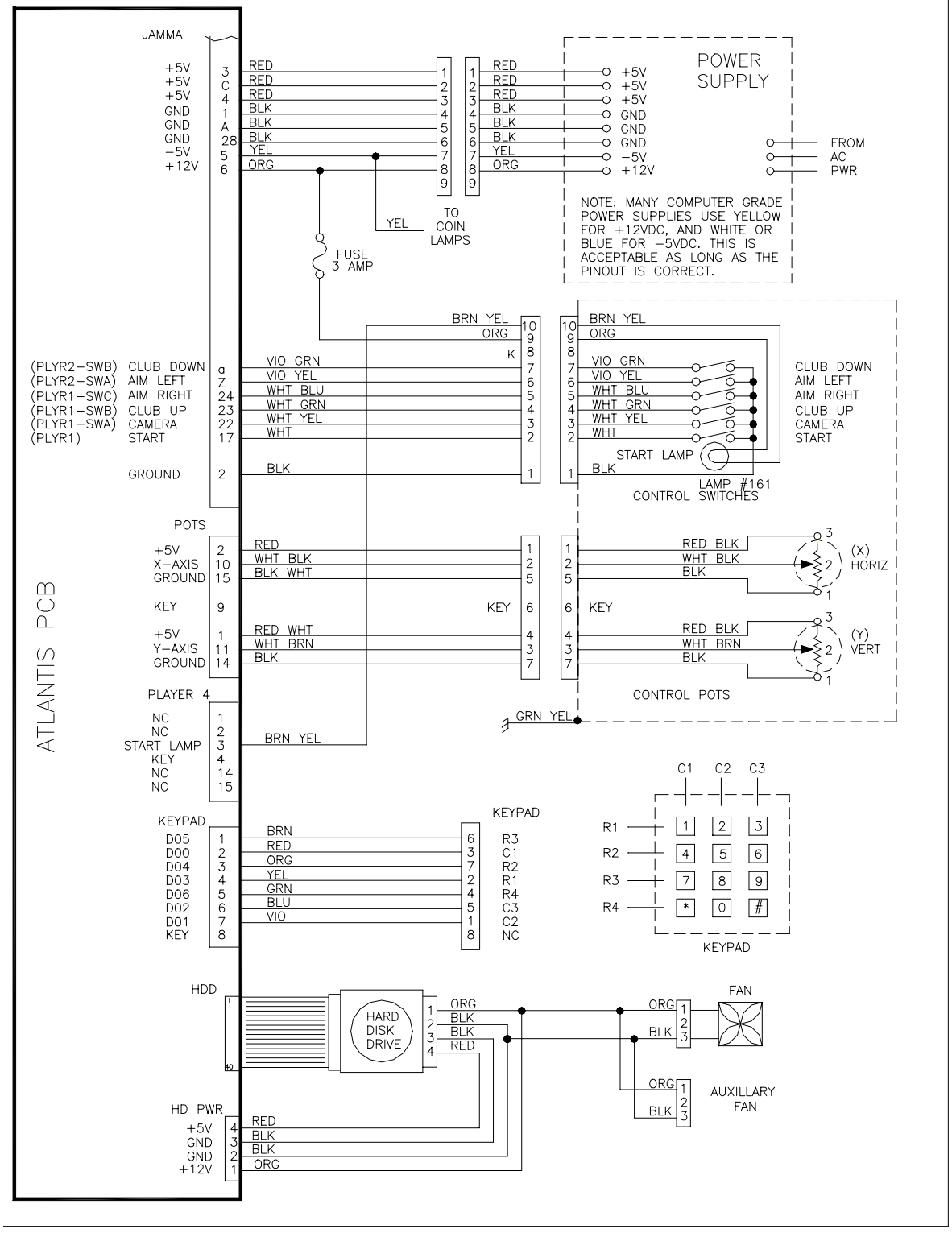
WIRING

	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.

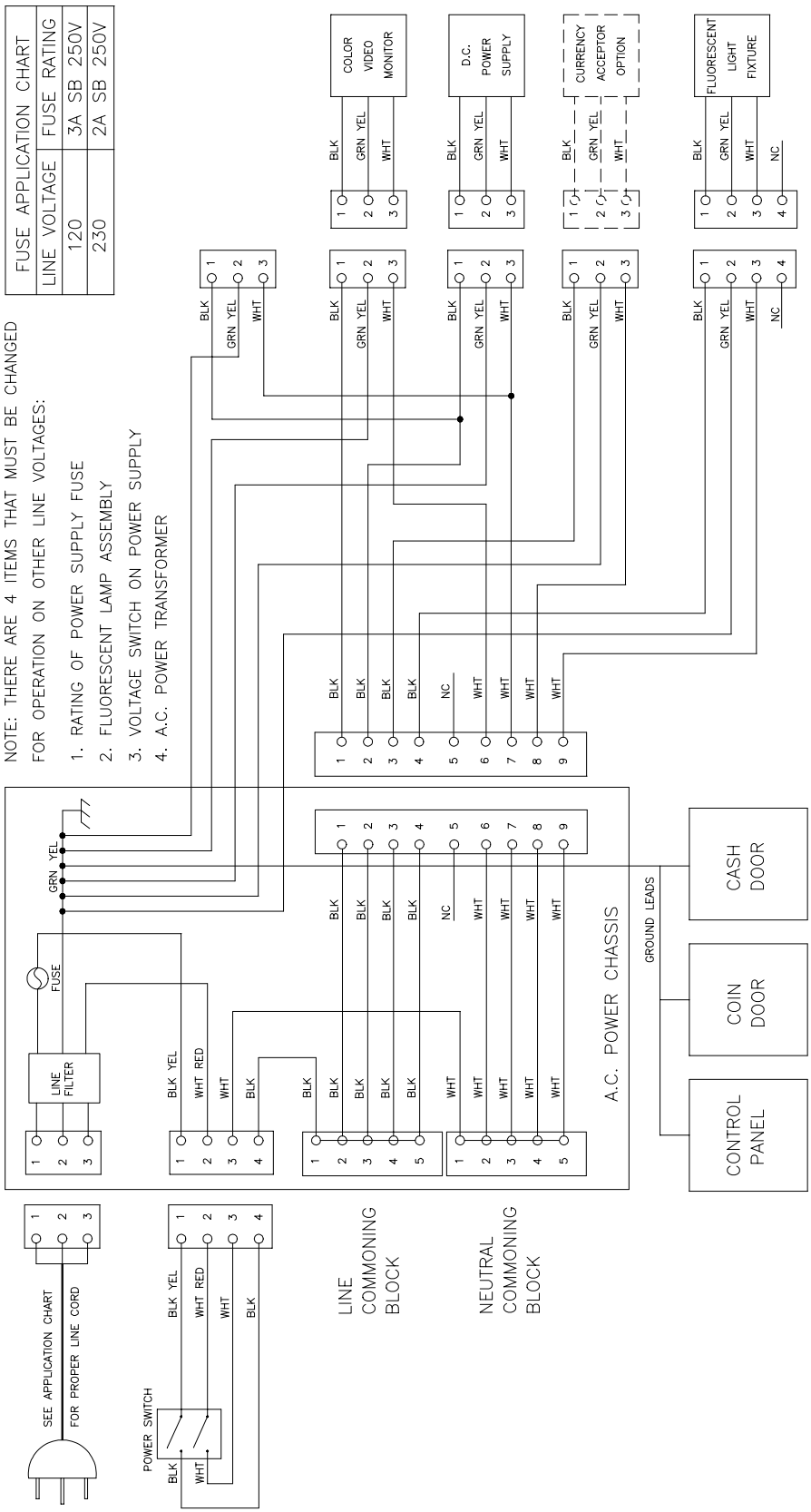
CABINET WIRING DIAGRAM



CABINET WIRING DIAGRAM



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:

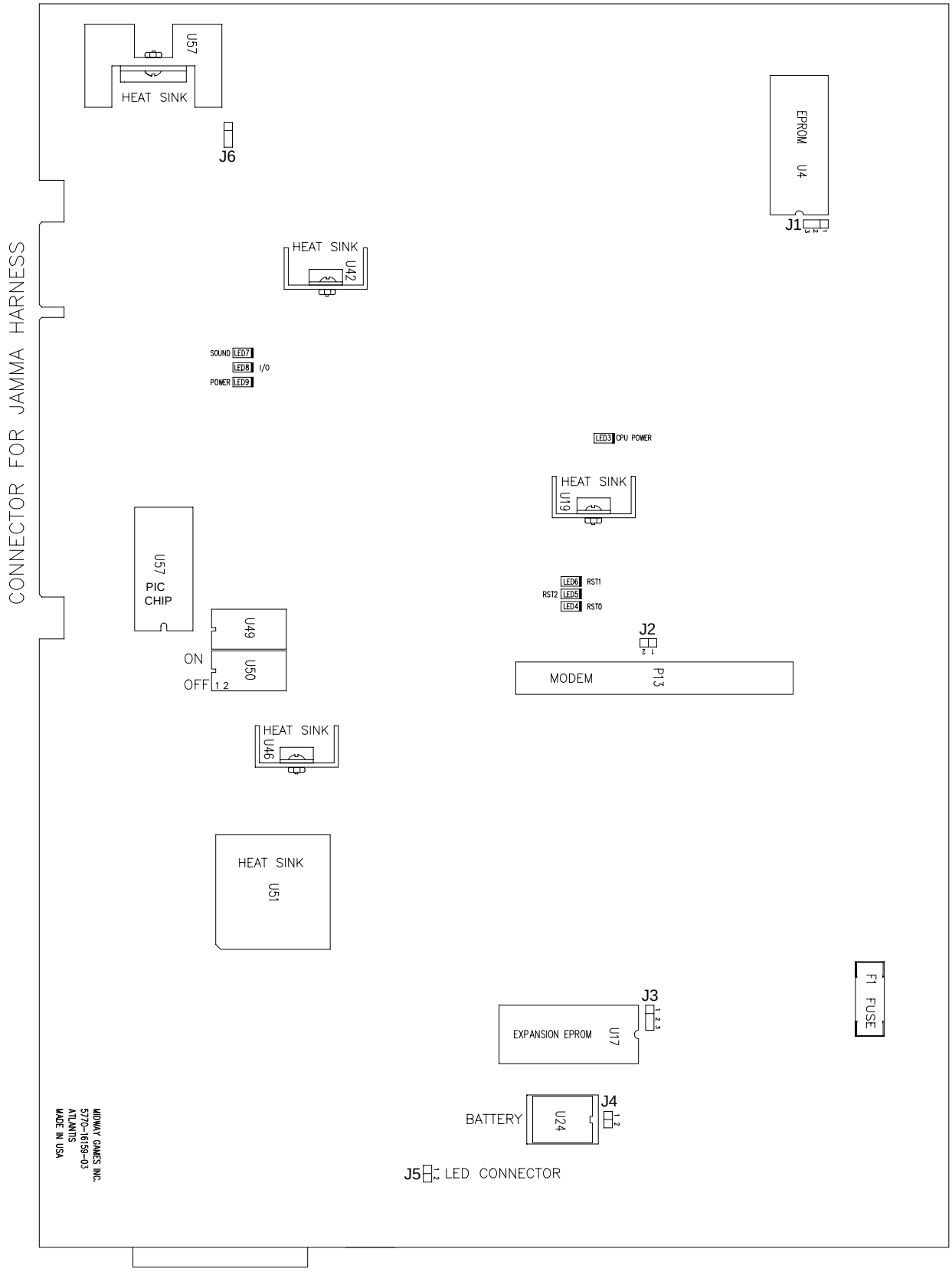
Jumper	1-2	2-3	Meaning
J1		X	Normal 27C040 (512K x 8) boot EPROM
J1	X		27C080 (1024K x 8)
J2	X		Not installed (development use only)
J3		X	27C040 (512K x 8)
J3	X		Normal 27C080 (1024K x 8) expansion (update) EPROM
J4	X		Not installed (not used)
J5	X		Not installed (RS485 termination)
J6		X	Normal

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.

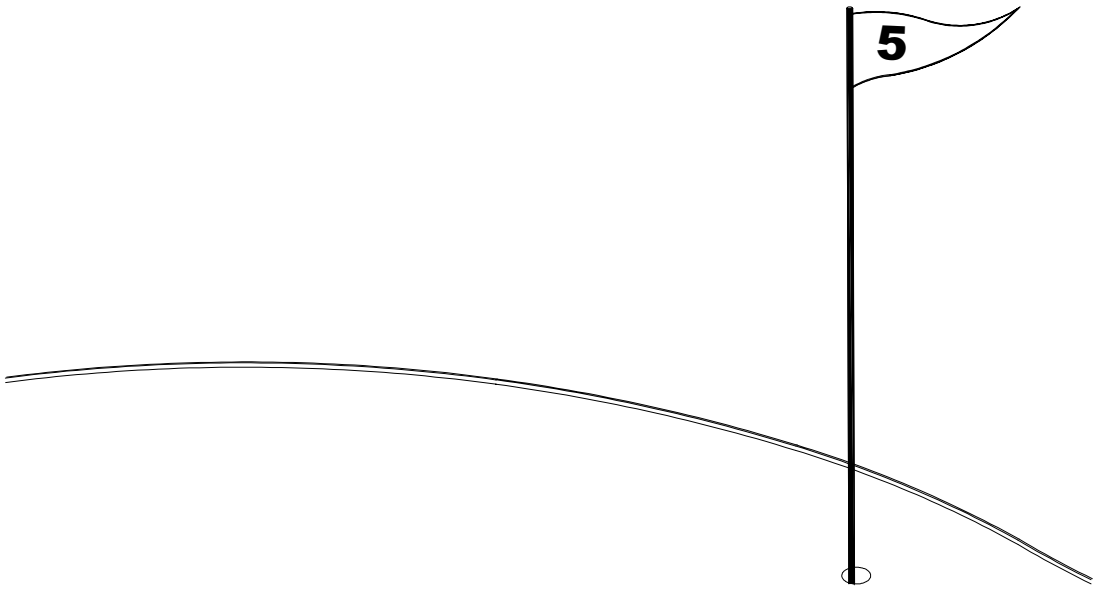
Switch 1	Switch 2	Meaning
OFF	OFF	Normal boot and run game or boot and run tournament update
OFF	ON	Boot EPROM based self test
ON	OFF	Boot on-disk based self test
ON	ON	Boot and run factory tests (labview) then run EPROM self test

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



SKINS GAME

CHAPTER 5



PARTS

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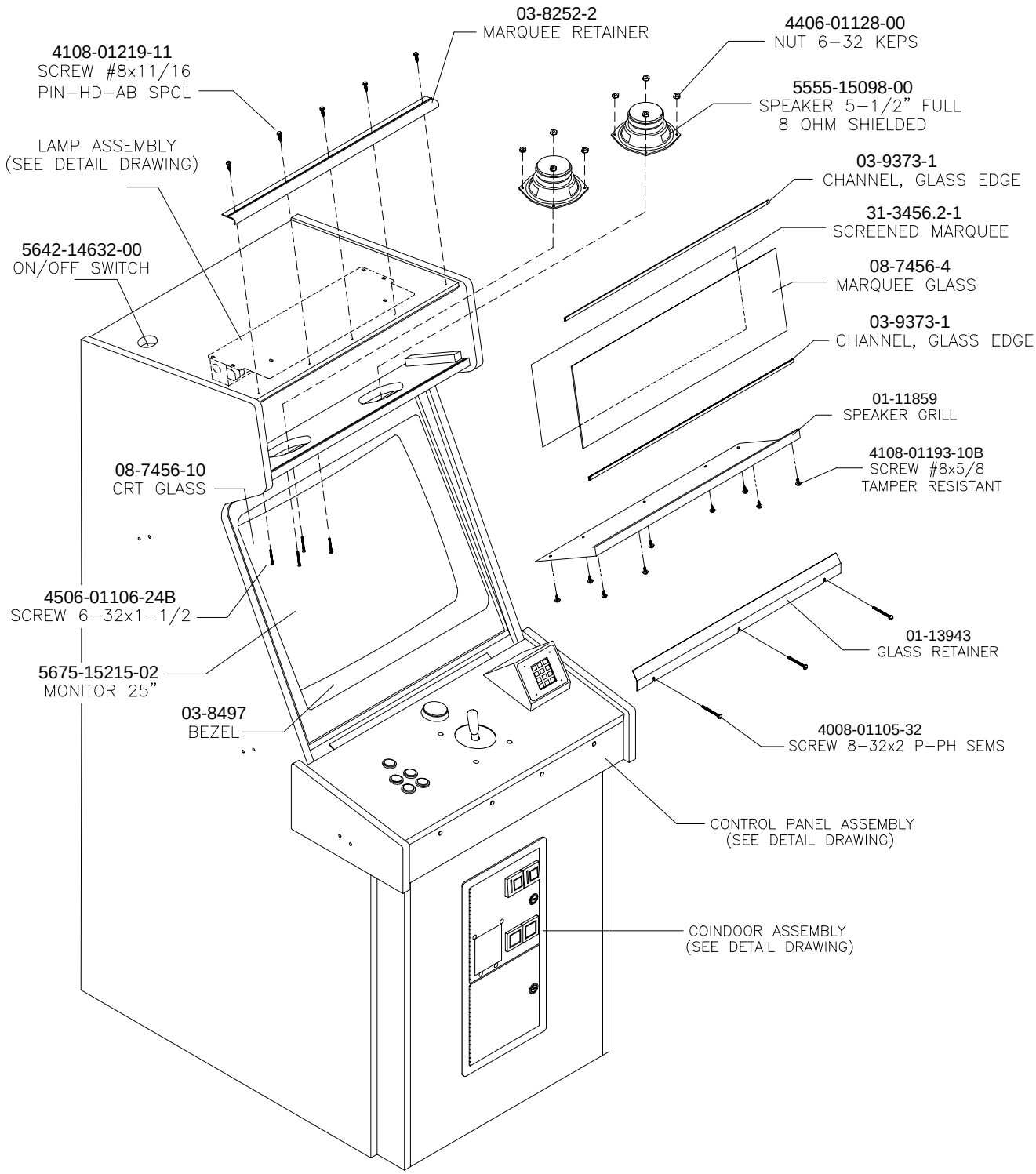
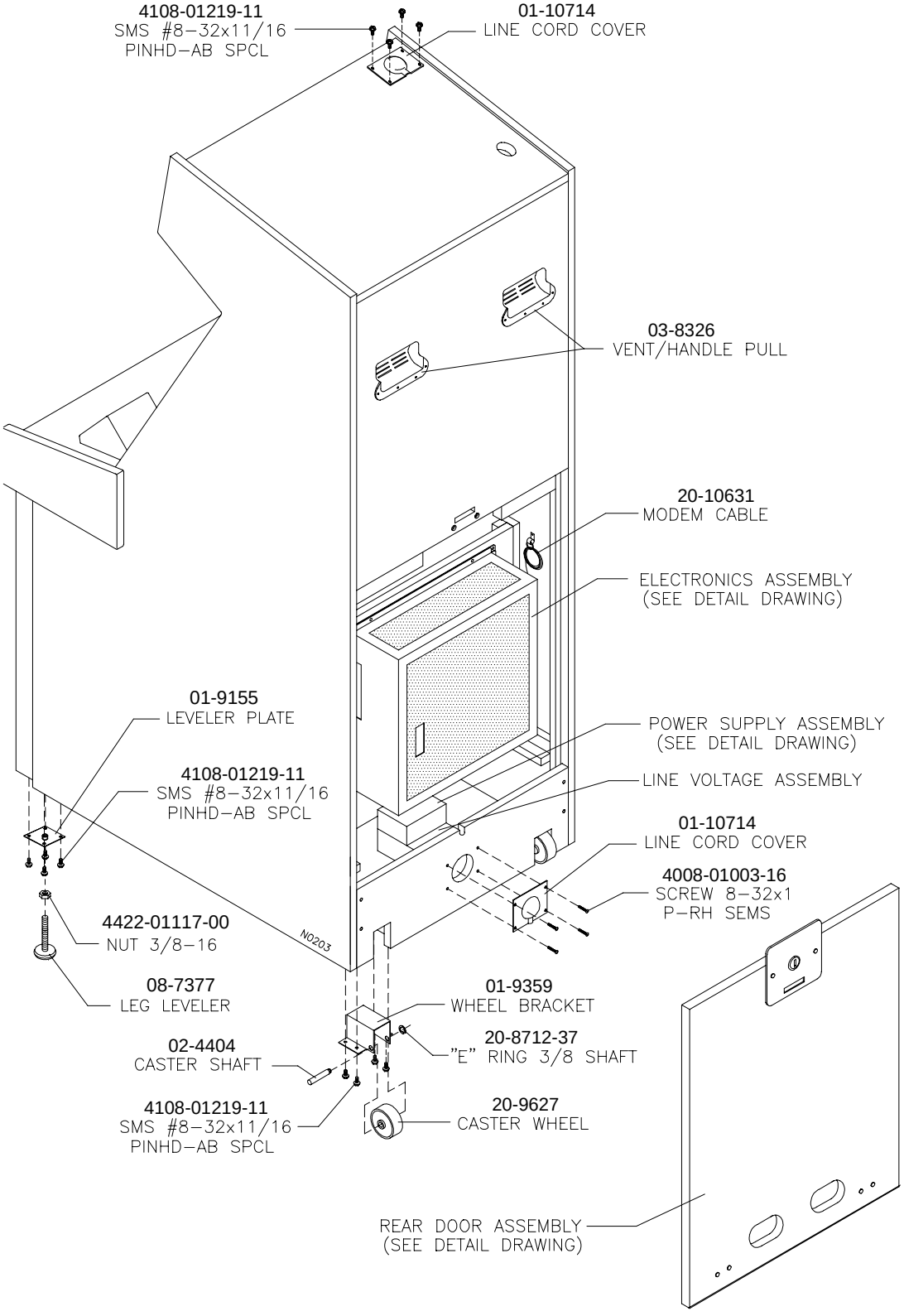
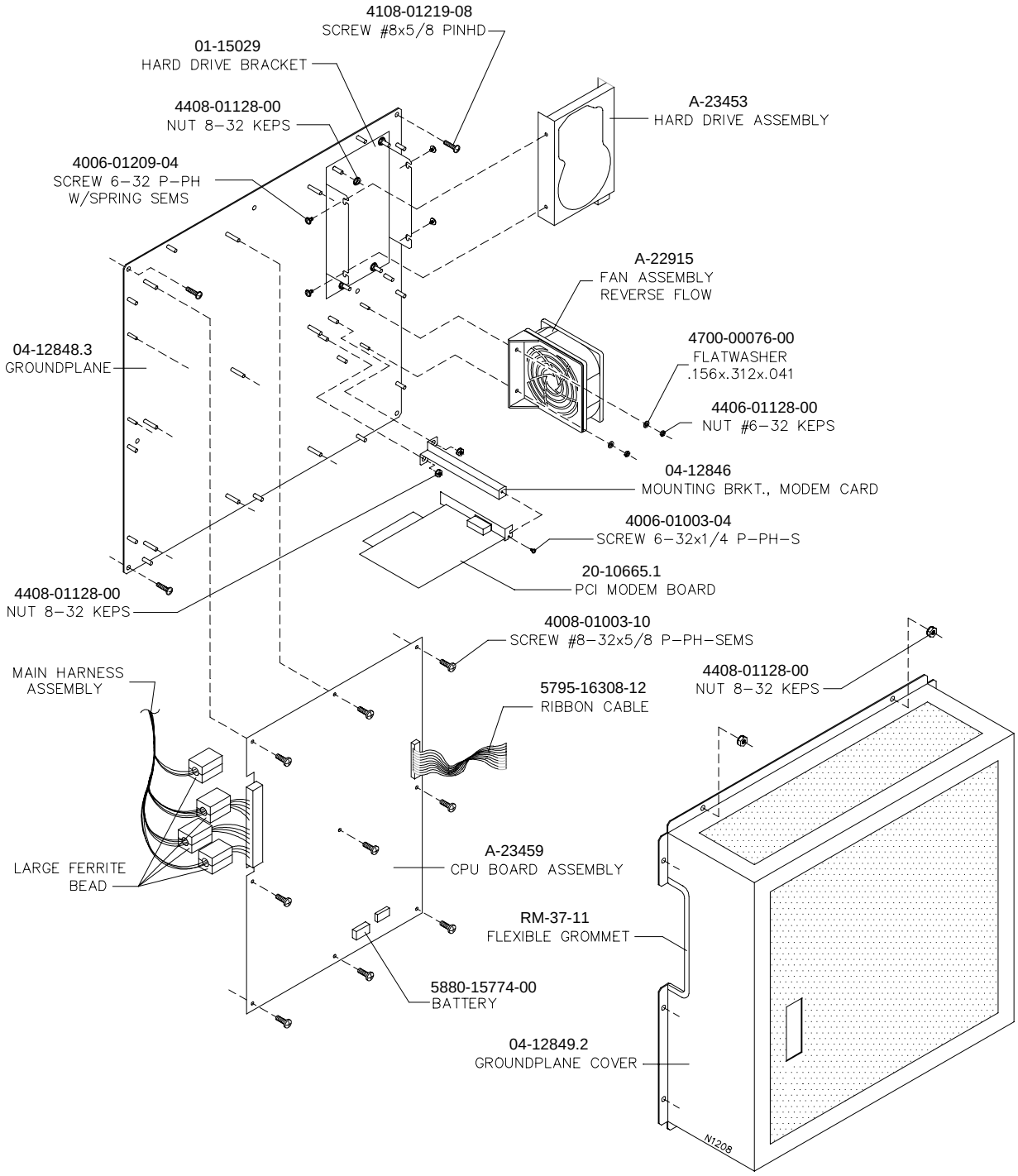
MAIN CABINET ASSEMBLY (FRONT VIEW)



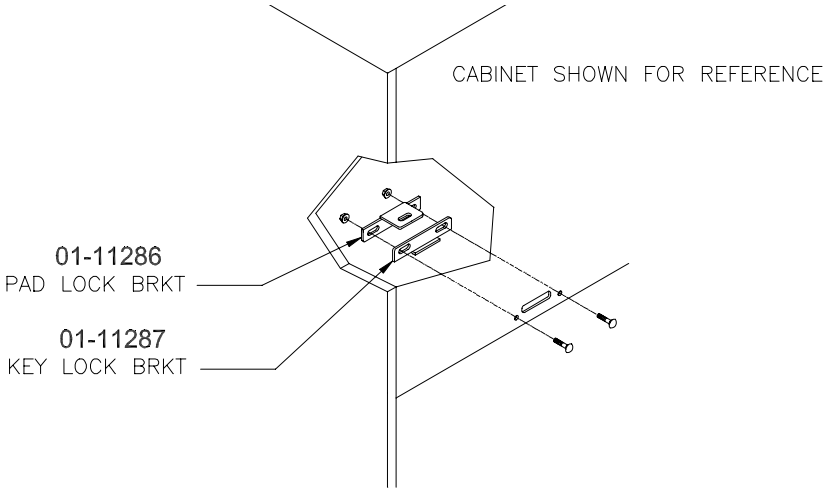
MAIN CABINET ASSEMBLY (REAR VIEW)

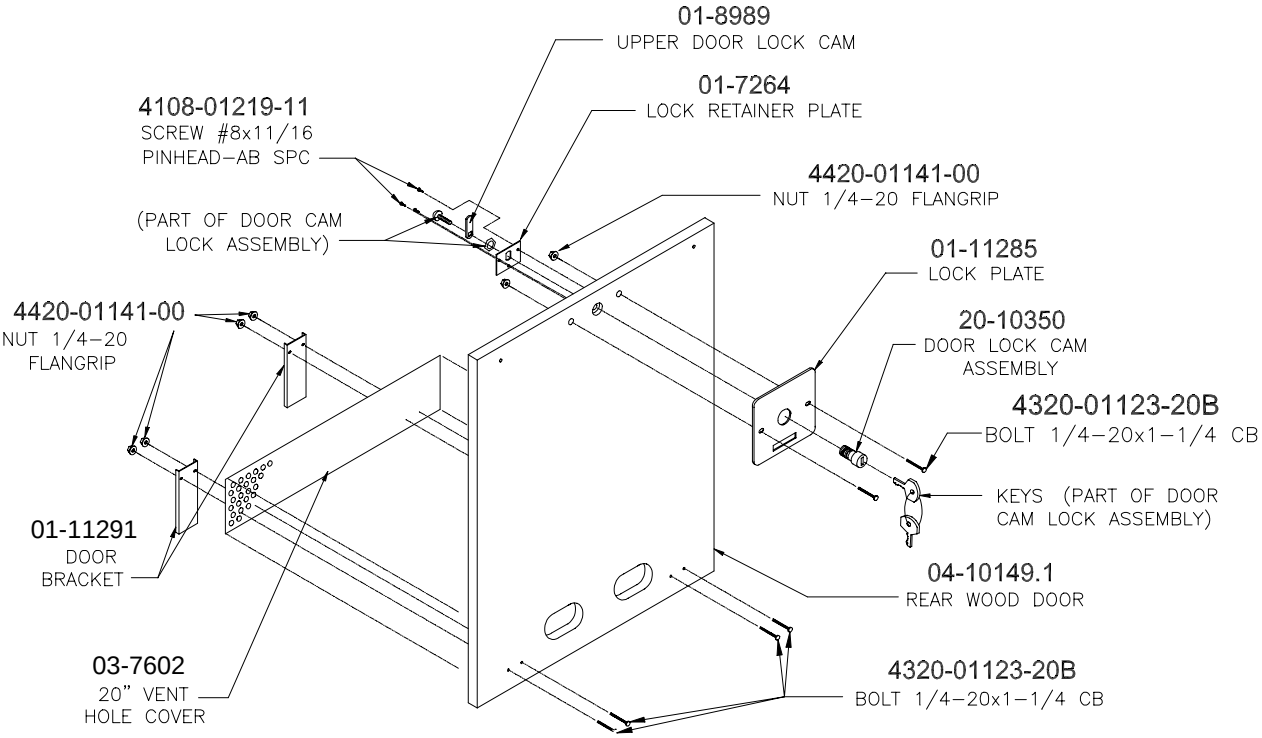


ELECTRONICS ASSEMBLY (A-23452)

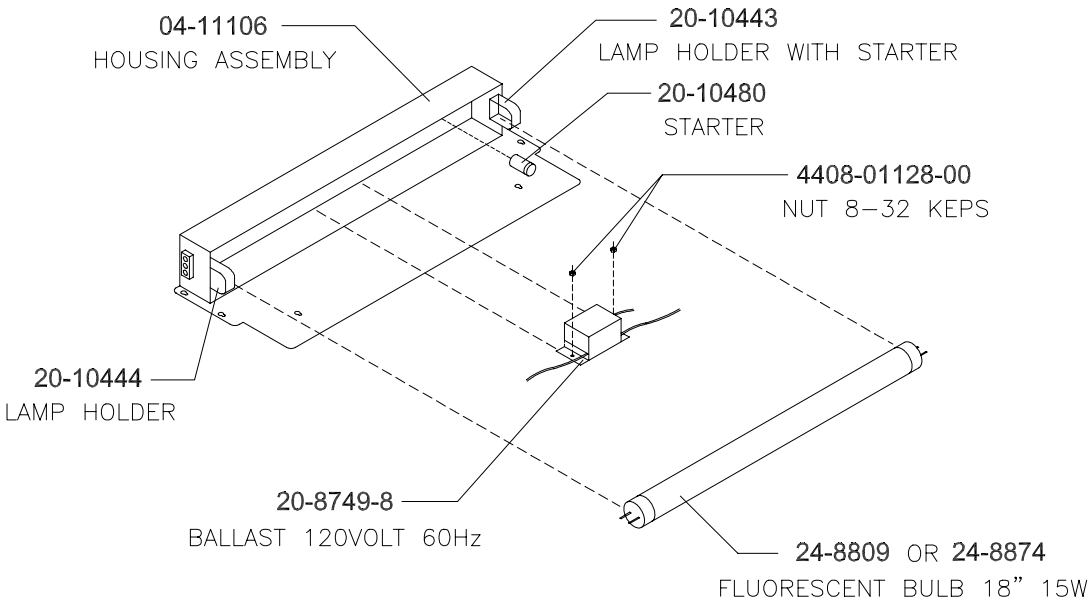


REAR DOOR ASSEMBLY (A-20281)

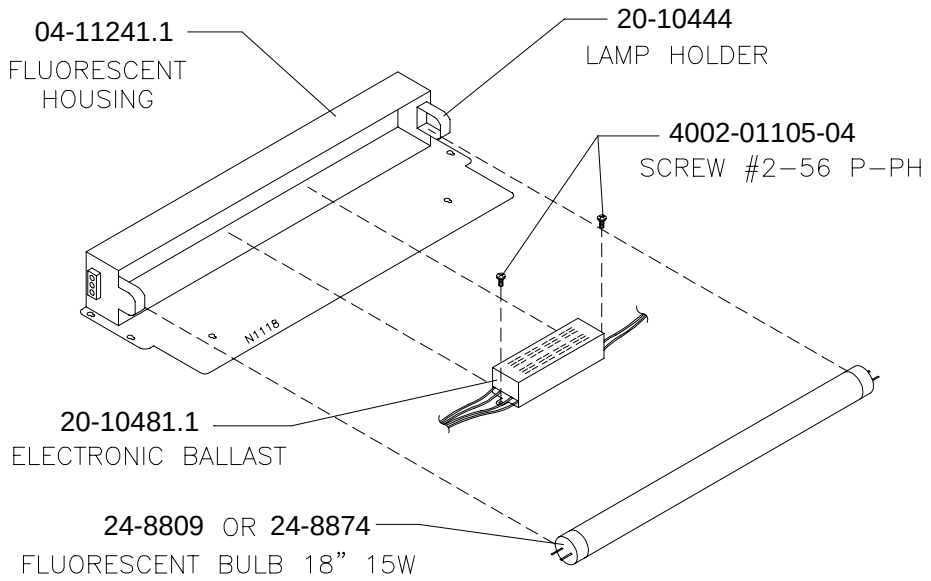




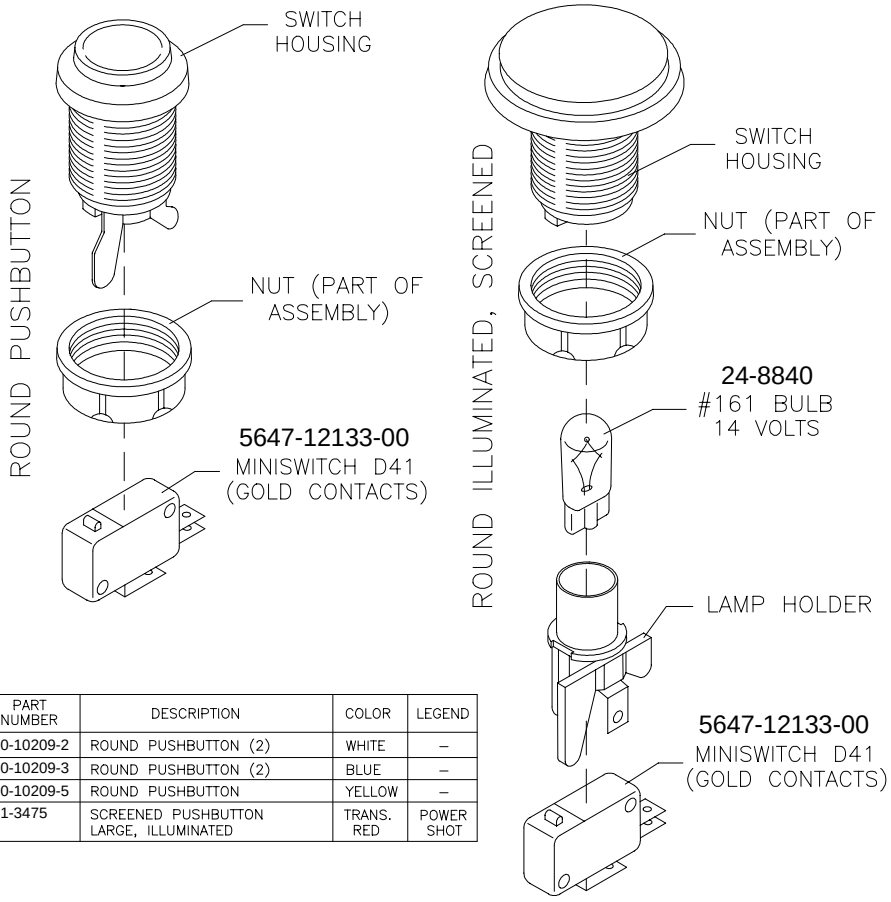
FLUORESCENT LIGHT ASSEMBLY (U.S./CANADA) (A-22365)



FLUORESCENT LIGHT ASSEMBLY (A-22506)

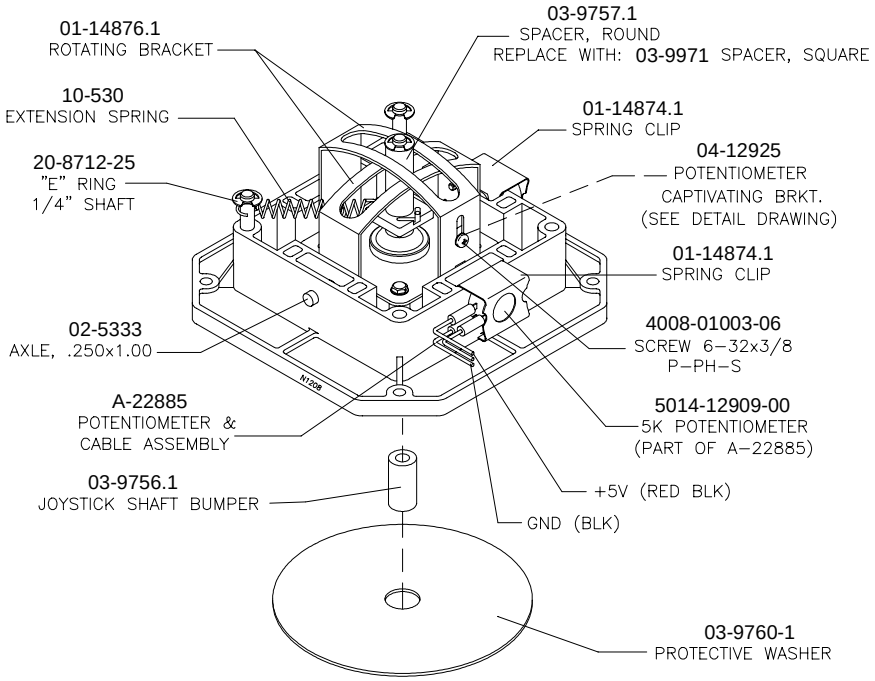


PUSHBUTTON ASSEMBLIES

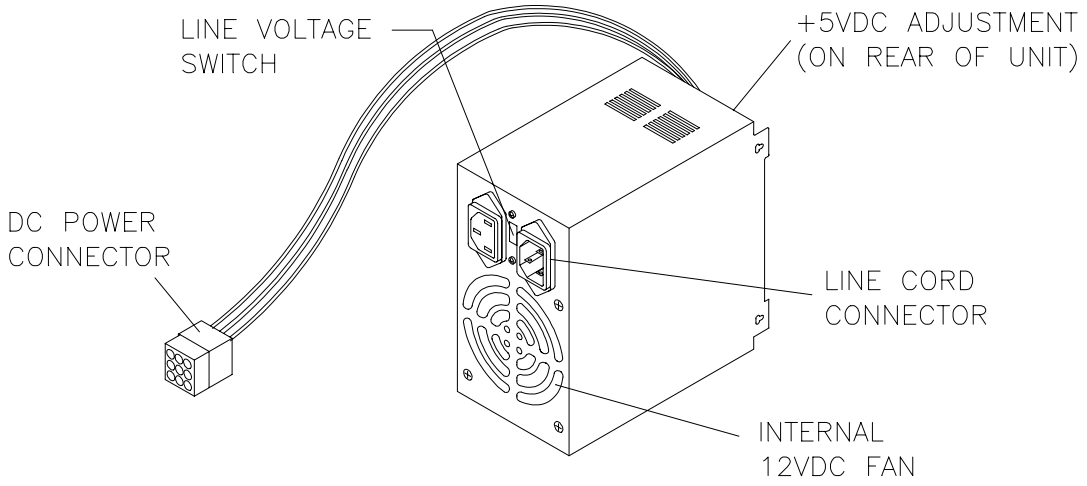


PART NUMBER	DESCRIPTION	COLOR	LEGEND
20-10209-2	ROUND PUSHBUTTON (2)	WHITE	–
20-10209-3	ROUND PUSHBUTTON (2)	BLUE	–
20-10209-5	ROUND PUSHBUTTON	YELLOW	–
31-3475	SCREENED PUSHBUTTON LARGE, ILLUMINATED	TRANS. RED	POWER SHOT

JOYSTICK ASSEMBLY (BOTTOM VIEW) (A-22389)



POWER SUPPLY (20-10167)

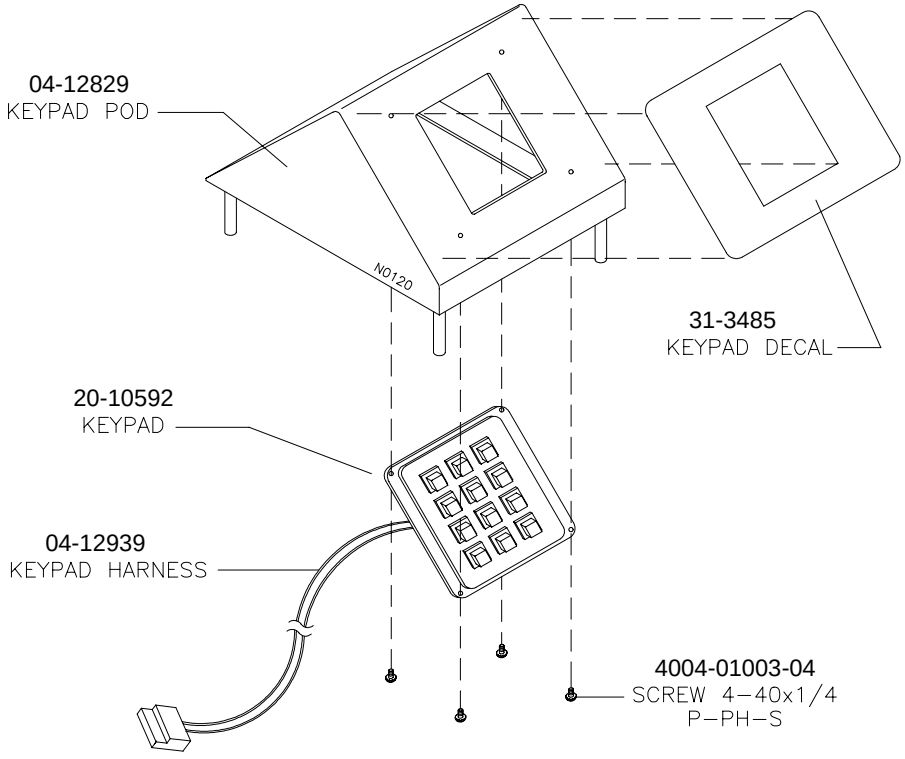


DC main power connector

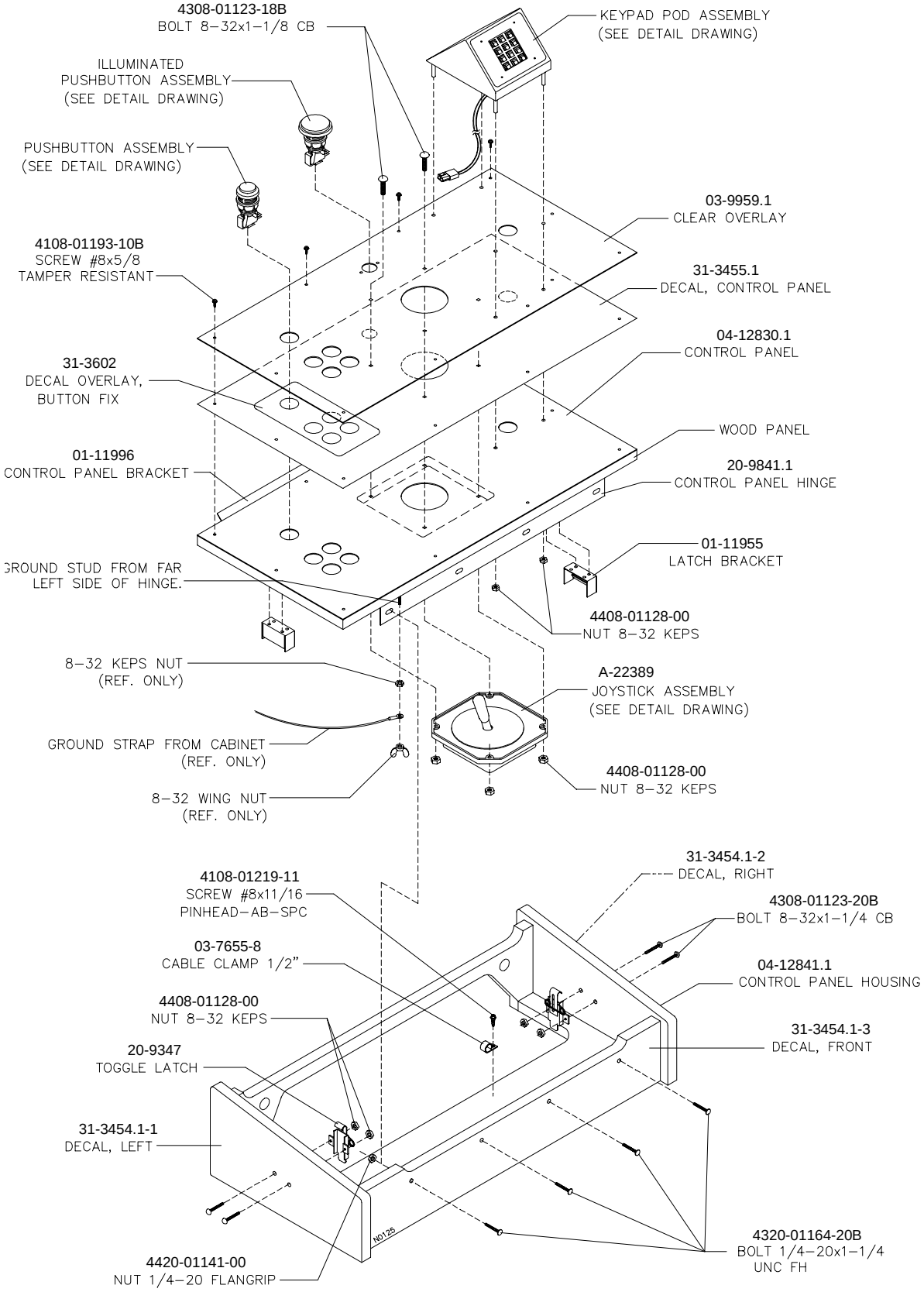
Connector Pin #	Pin Function	Designation Wire Color
1, 2, 3	+5V DC	Red
4, 5, 6	Ground	Black
7	-5V DC	Yellow*
8	+12V DC	Orange*
9	-12V DC	Blue*

*Note: Many computer grade power supplies use yellow for +12V, blue for –5V, and white for –12V. This is acceptable as long as the pinout is correct.

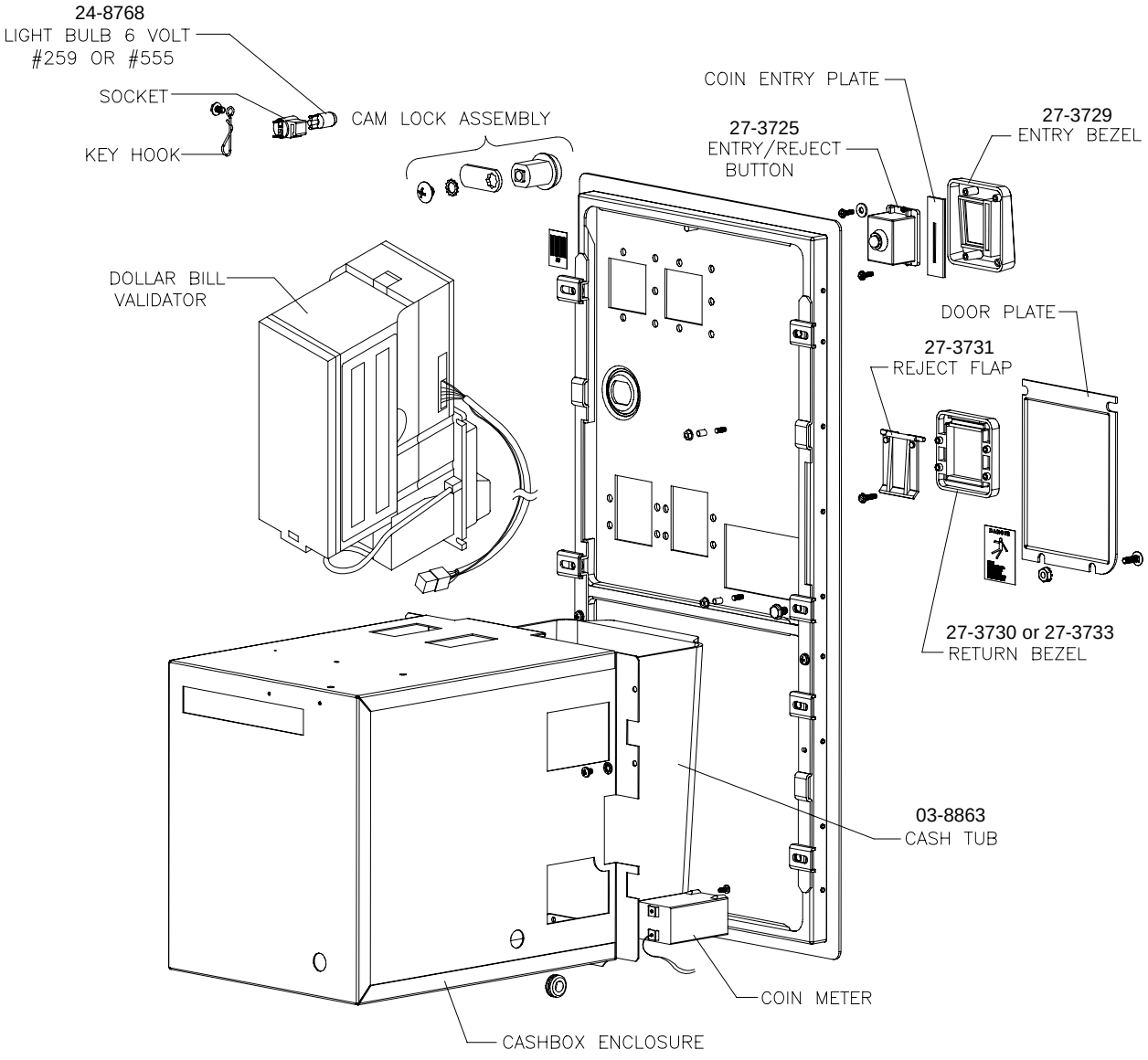
KEYPAD POD ASSEMBLY (A-23458)



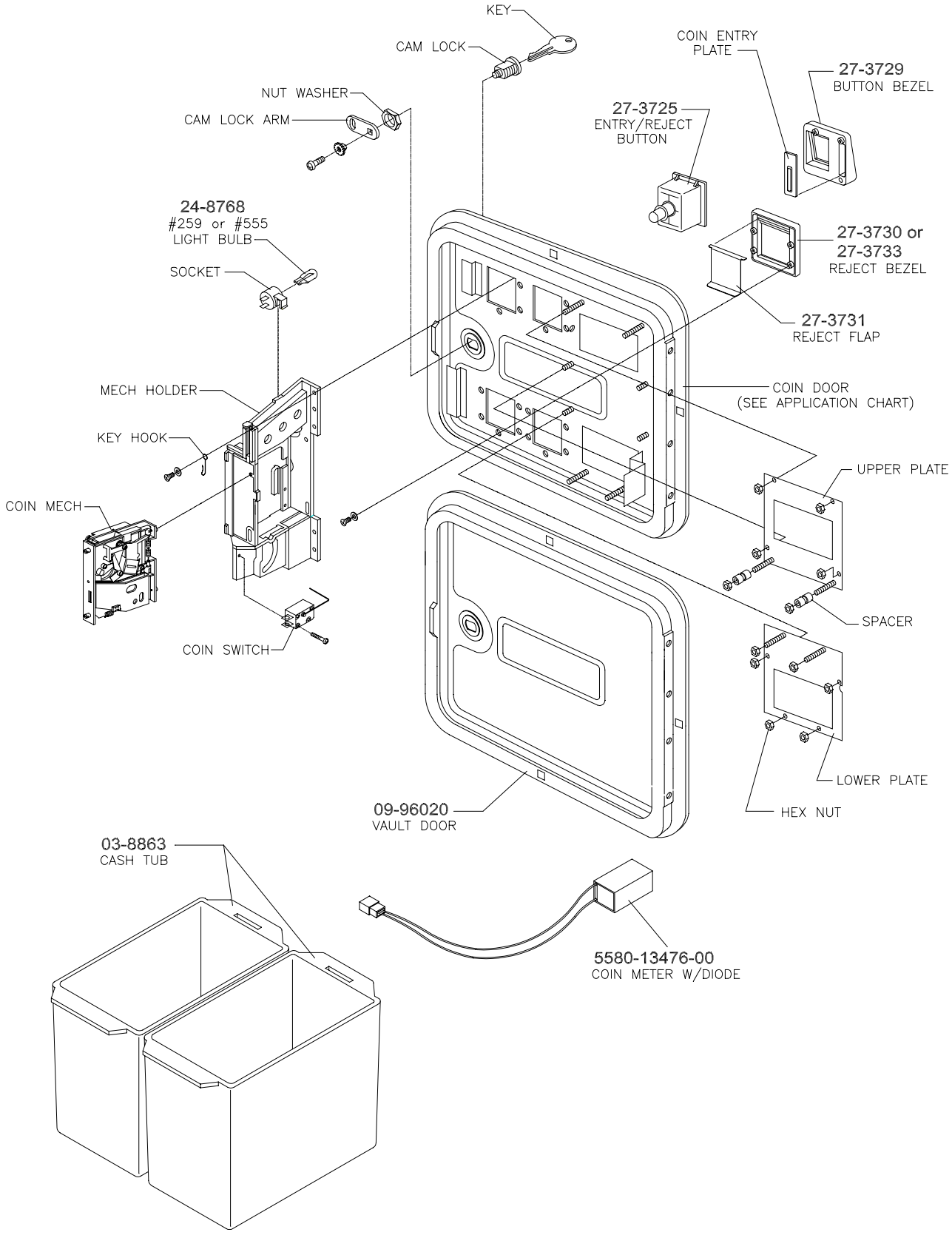
CONTROL PANEL HOUSING ASSEMBLY (A-23454)



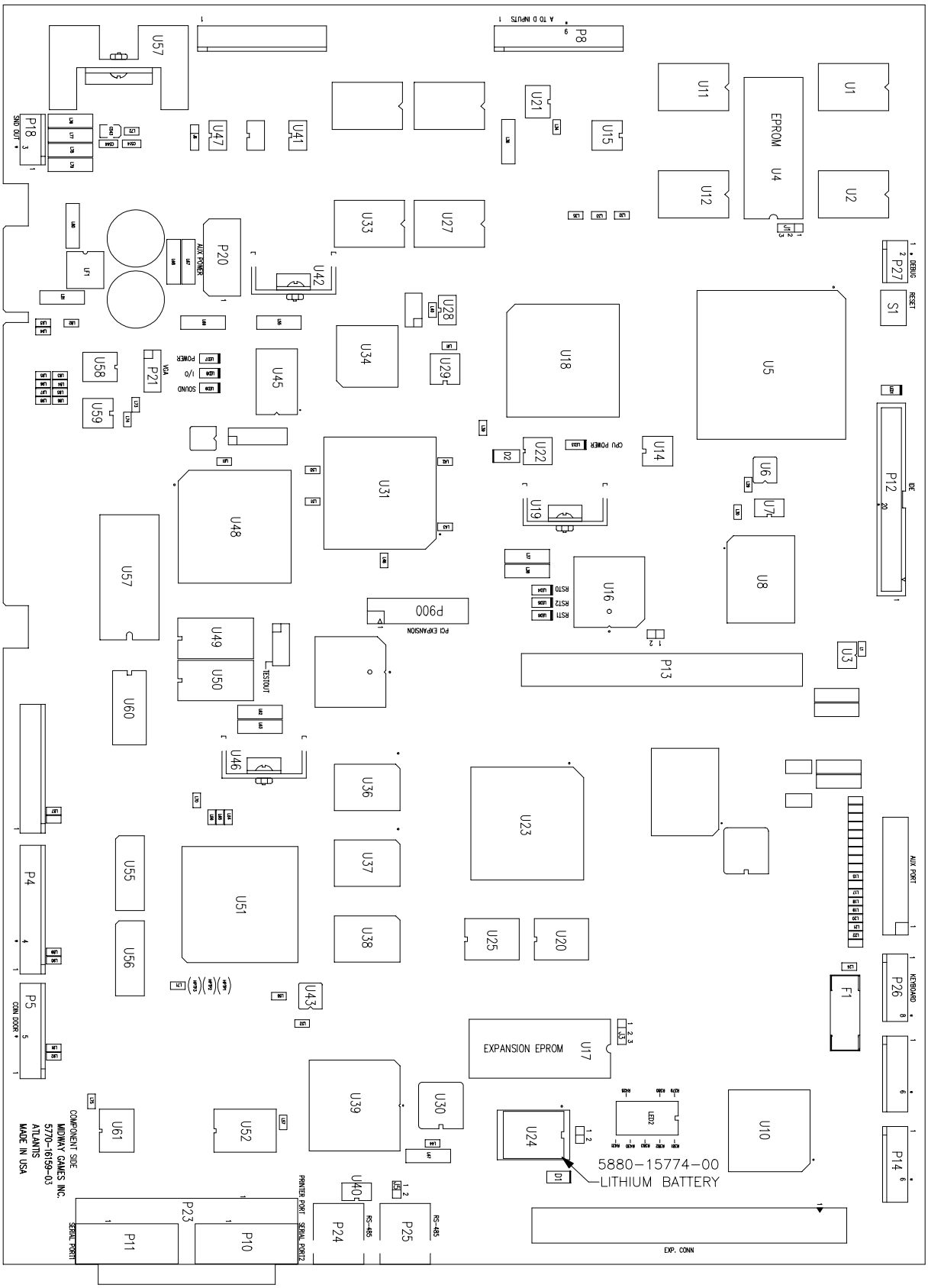
DOLLAR BILL VALIDATOR DOOR ASSEMBLY I



DOLLAR BILL VALIDATOR DOOR ASSEMBLY II

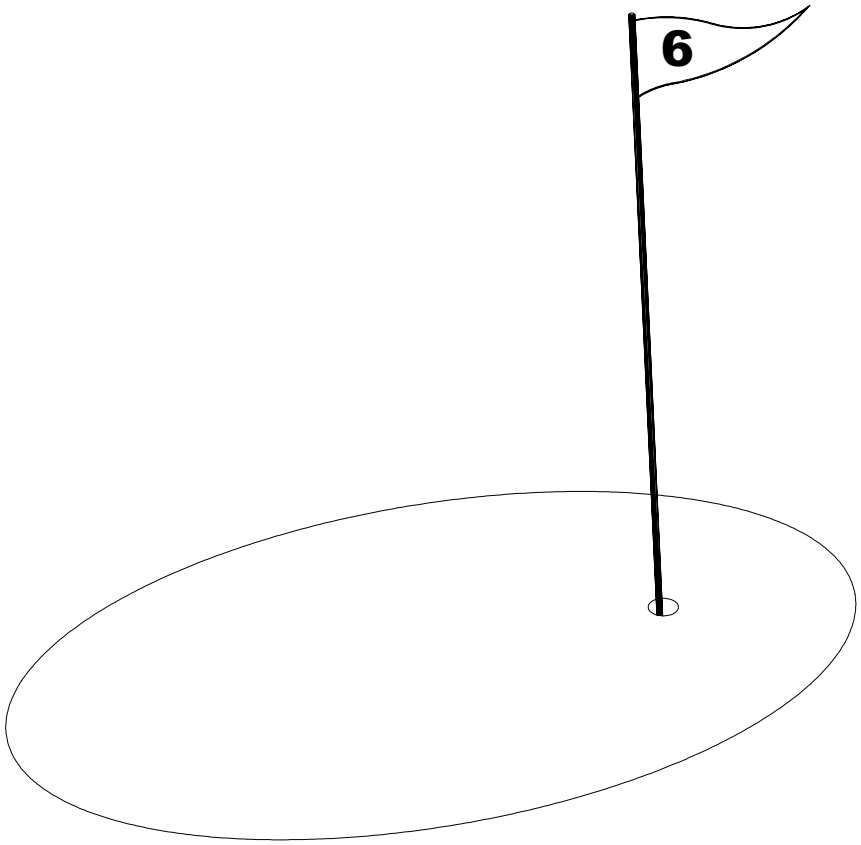


CPU BOARD ASSEMBLY (A-23459)



SKINS GAME

CHAPTER



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.	Lack of electricity	Check that power switch is on and line cord is plugged into grounded AC outlet.
• Audio non-functional • Fan non-functional • No video display	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 on AC assembly 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	Power supply misadjusted	Using voltage meter, correctly adjust +5V output on power supply using adjustment knob.
• Machine appears non-functional. • Fluorescent light functional • Currency acceptor price indicator is illuminated. • Power supply fan 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.
	Faulty 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 3. 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. 4. Place CPU Board Assembly in known working machine to verify operation. Replace if faulty.
• 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 button 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. Ensure hard disk drive ribbon cable connector is fully seated in mating connector on CPU Board Assembly. Ensure all drive mounting screws are installed. 3. Ensure hard drive is correct part. Drives have a label with assembly number and software version.
	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.
	DIP switches set wrong	Check DIP switch setting.

CAUTION: Do not operate monitor without Remote Adjustment Board.

Video Problems

Symptom	Problem	Suggested Solution
• Monitor appears non-functional. • Audio functional • Controls functional	Lack of electricity to monitor	1. Unlock and remove rear door. Verify AC power is connected to video monitor. Inspect neck of CRT under low light level conditions. A glow near the CRT base indicates voltage in the filament circuits, not that other voltages or signals are proper. 2. Turn AC power off. Verify that video signal and Remote Adjustment Board connectors fully seat on the Video Monitor Board. Check other monitor connectors in the same way. 3. Examine AC line fuse on Video Monitor Board. Replace faulty fuse with one of identical voltage and current rating. 4. Ensure no loose parts or wires are caught on chassis or mounting brackets. 5. Verify monitor works by placing in known working game. Replace faulty monitor with identical type.
• Monitor does not lock onto signal or provide stable picture. • Picture wavers or rolls, has dark bars, uneven or missing colors, etc	Poor connection	1. Check connectors and cables for wiring continuity from CPU Board Assembly to the Video Monitor. 2. Ensure all cabinet ground wires are connected, especially at the Video Monitor Chassis.
	Wrong monitor	Verify this is the correct monitor. Using monitors with different resolution results in what appears to be horizontal tearing or complete loss of sync.
	Magnetic interference	Move cabinet away from equipment, appliances, other Video Game Machines, etc. Some normally operating devices emit very strong electrical or magnetic fields.
	Faulty monitor	Verify monitor works by placing in known working game. Replace faulty monitor with identical type.

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. 3. Check +12 fuse to lamp.
• 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 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.
	Faulty wiring	1. Ensure no loose parts or wires are caught in hinges, latches, or switch contacts. 2. Check that external coin door indicators (pricing, flashing arrows, etc.) are illuminated. 3. Check connectors and cables for wiring continuity from CPU Board Assembly to coin mechanisms. 4. Replace faulty wiring with identical type.
	Faulty coin mechanism	1. Check mounting of each mechanism. 2. Close and lock release latches. 3. Test good and bad coins to see if mechanism accepts and rejects correctly. 4. Check continuity in switch connections (common to normally open or common to normally closed). Replace switches with bent levers, broken actuators, etc. 5. Place each coin mechanism in working game to verify operation. 6. Replace faulty coin mechanisms with identical type.

• Currency or tokens are not accepted • Game does not start. • Audio and video functional	Bad currency	1. Inspect cash box for counterfeit currency. 2. Remove any items that block path from mechanism to cash vault.
	Faulty coin mechanism	1. Unlock and open coin door. Check each mechanism for proper mounting. 2. Remove mechanism. 3. Clear currency path. 4. Reinstall mechanism and latch it.
	Tilted coin mechanism or game	1. Verify that mechanism is level after doors close. 2. Repair or replace coin door if bent or damaged. 3. If necessary, adjust cabinet leg levelers to keep mechanisms vertical.
• Coin indicators do not light	Burned-out bulb	1. Burned-out bulbs may appear white or darkened. Check continuity with DVM. 2. Replace burned-out bulb with same type.
	Faulty fuse	1. Check fuse continuity with DVM. 2. Replace blown fuse with identical type 3. If fuse is not blown, check wiring.

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.
	Faulty wiring	1. Check if external coin door indicators (pricing, flashing arrows, etc.) are illuminated. 2. Ensure no loose parts or wires are caught in hinges, latches, or switch contacts. 3. Verify that harness connectors are attached and fully seated. 4. Check for validator cable continuity. 5. Replace faulty wiring with identical type.
	Faulty bill validator	1. Verify that bill validator operates properly by placing it in working game. 2. Replace faulty validator.

Marquee Lamp Problems

• Marquee lamp is non-functional or functions intermittently • Startup is normal. • Game play is normal.	Bulb seated poorly	Verify fluorescent bulb pins make good connection with socket contacts.
	Faulty bulb	1. Remove fluorescent bulb from sockets. 2. If you find cracks or darkened ends, replace. 3. Check continuity of both bulb filaments. 4. Verify bulb operates by placing in known working game. Clean bulb. 5. Replace faulty bulb with identical type.
	Faulty wiring	1. Measure fluorescent bulb AC voltages. Check wiring and connector continuity from AC power chassis to lamp assembly. 2. Replace faulty wiring with identical type
	Other faulty lamp parts	1. Ensure ballast is rated for local AC line voltage and frequency. 2. Check continuity of starter and ballast. 3. Place starter and/or ballast in working game to verify operation. 4. Examine DC fuse on electronics shelf. 5. Replace faulty parts with identical ones.

Miscellaneous Problems

• Game functional • Cabinet becomes warm after several hours of use.	Poor air flow.	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. 5. 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. Substitute parts or modifications may void EMC directive or FCC type acceptance.
- This game is protected by federal copyright, trademark and patent laws. Unauthorized modifications may be illegal under federal law. This also applies to Midway Games West Inc. and Skins Game logos, designs, publications and assemblies. Moreover, facsimiles of Midway Games West Inc. equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with Midway Games West Inc. components.

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.

NOTICE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generated, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC COMPLIANCE LABEL

When Midway ships a game, it is in compliance with FCC regulations. The FCC label on your cabinet is proof. If this label is missing or damaged, legal repercussions to the owner or distributor of the game may result. If your game does not have an FCC label, contact Midway immediately.

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