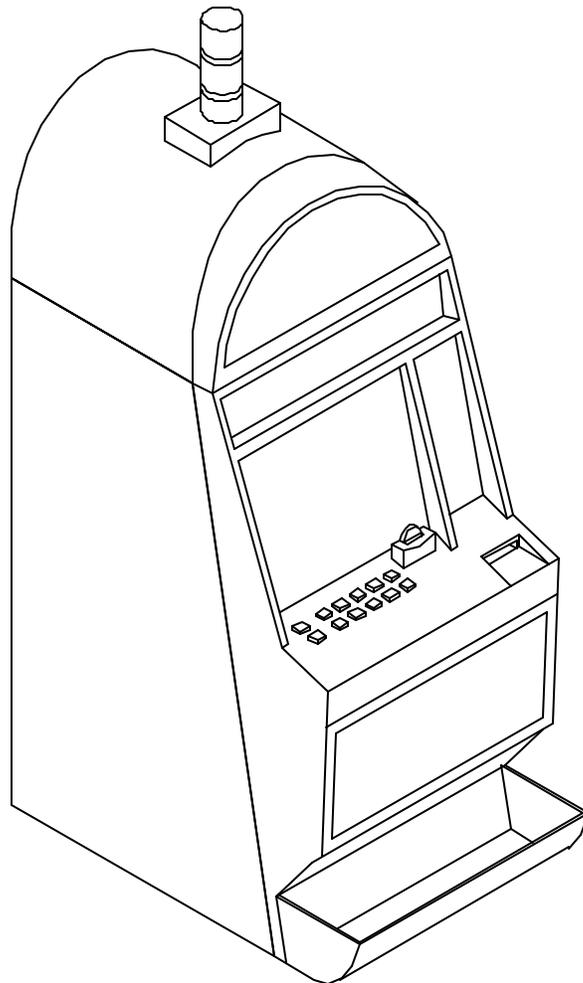


Upright Video Game *Service Manual*



Innovative Gaming Inc.

IGI PART NUMBER: 4900 1100, REVISION B

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DISCLAIMER

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CERTIFICATION

This machine was thoroughly tested and found to meet IGI's production specifications when it was shipped from the manufacturing facility.

WARNINGS

Unauthorized user modifications or application beyond the published specifications may result in electrical shock hazards or improper operation. Innovative Gaming, Inc. will not be responsible for any injuries sustained due to unauthorized equipment modifications.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the Service Manual, the equipment may interfere with radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the rules of the Federal Communications Commission, which are designed to provide reasonable protection against such interference when a device is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to take whatever measures are necessary to correct the interference, and to do so at his or her own expense.

TECHNICAL SUPPORT

8 A.M. TO 5 P.M. Pacific time, Monday through Friday.

RENO	775-823-3141
LAS VEGAS	702-798-6578

After hours and on weekends, leave a message and the on-call technician will automatically be paged.
or FAX us in Reno at **775-823-3030**, Attention: Technical Support Department

WARRANTY

Innovative Gaming, Inc. (IGI) warrants this product is manufactured in accordance with the requirements of the particular governmental authorities with jurisdiction over the address to which delivery of the product was requested. We warrant that the product is free from defects in material and workmanship under normal use and service. Small differences in specifications or descriptions shown in our product literature or manuals that do not affect the performance of the product are not considered to be defects in workmanship or materials, and are not covered by this warranty.

Our obligations under this warranty will be strictly limited to the repair or exchange of any part or parts that may prove defective under normal use and service within ninety (90) days from the date of the first purchaser's receipt of the product.

Our warranty will not apply to any product, or part thereof, which has been or is repaired or altered without IGI's written consent; or if the product is or has been subject to misuse, negligence, or accident; or if the product has not been operated in accordance with our printed instructions or has been operated under conditions more severe than, or otherwise exceeding those set warranties of merchantability and fitness for use and of all other obligations or liabilities on IGI's part.

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RETURNING MERCHANDISE FOR REPAIR

If you purchased your IGI product from a Dealer or Distributor, defective parts must be returned to that Dealer or Distributor.

When shipping parts to your Dealer/Distributor or IGI for repair, you must have an RMA number. To obtain an RMA number, call your Dealer/Distributor or call IGI Parts & Customer Service at **775-823-3133** and have the following information ready:

- ◆ description and manufacturer of part(s),
- ◆ serial number of game,
- ◆ serial number of component, *and*
- ◆ description of problem.

Use the RMA number you are given as your invoice number when you ship parts to your Dealer/Distributor or IGI for repair. This number must be written on the outside of the shipping box. Recipient will refuse shipment of any item that does not have an RMA number.

Innovative Gaming, Inc., 4725 Aircenter Circle, Reno, NV 89502 U.S.A. 775-823-3000

About this Manual

Who should use the Upright Video Game Service Manual?

This manual is written for the technician / operator responsible for maintaining the game. We have included information relevant to the installation and on-going operation of the game.

Safety Considerations

Make sure to read the **SAFETY CONSIDERATIONS** listed in Appendix A.

Using this Manual

Chapter 1: Game Set-up

This **chapter** shows how to set up the Upright Video Game and get it ready to be played.

Chapter 2: Collecting Performance Data

This **chapter** contains instructions on collecting performance data.

Chapter 3: Troubleshooting Guide

This **chapter** provides basic techniques for solving possible problems with the Upright Video Game.

Chapter 4: How to Service

This **chapter** consists of procedures for working with components of the Upright Video Game machine.

Chapter 5: Reference

This **chapter** contains appendixes and indexes for referencing items in this manual.

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Game Set-up

- This first Chapter provides instructions for setting up and starting the Upright Video Game game.
-

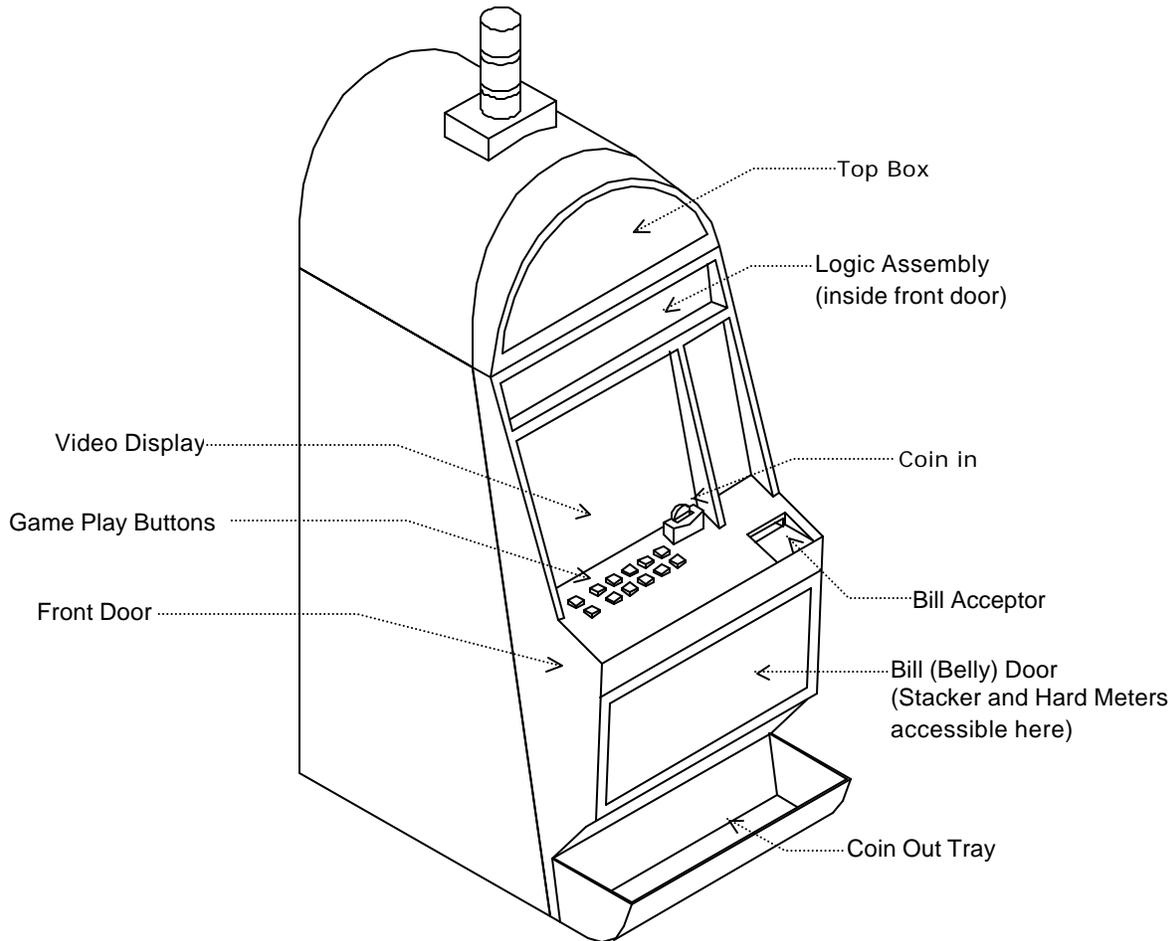
1.1 Open and Check the Game

- Follow these instructions at your receiving area.
1. Use the illustrations on the next few pages to guide in verifying completeness of package contents.
 2. Check all components for shipping damage. If you find damage that may have occurred during shipment, or if your shipment is missing any components, contact the shipping agent and your Dealer/Distributor or Innovative Gaming.
 3. Review **Chapter 5**, Appendix-A. Safety Considerations (starting on page 54) for important safety precautions to take when working with this machinery.

1.1-A. Main Components

◆ Illustrated below is an isometric view of the Upright Video Game gaming machine.

Figure 1-1: Upright Video Game Machine



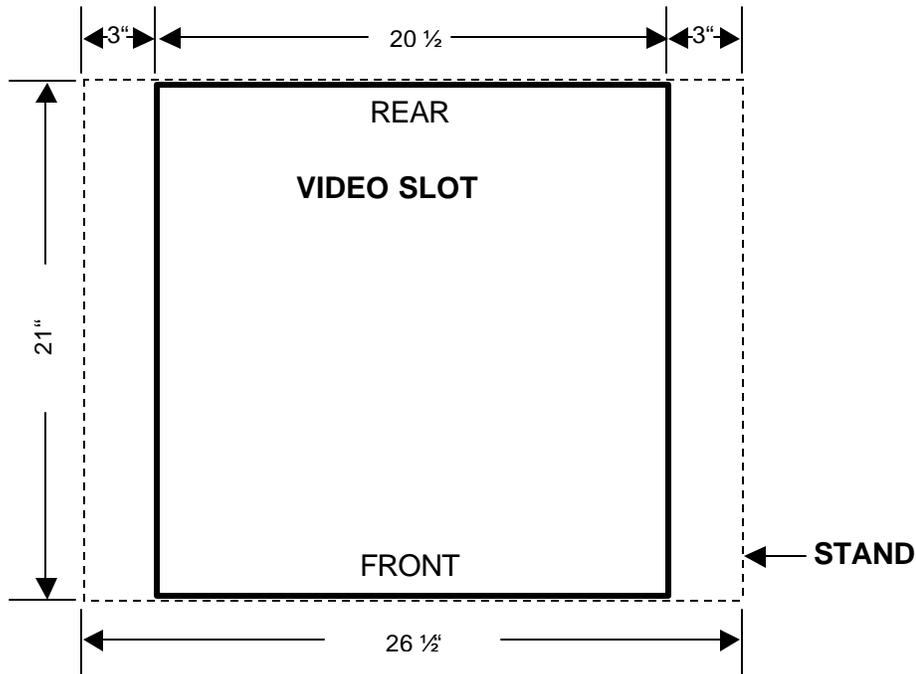
DIMENSIONS OF THE UPRIGHT VIDEO GAME GAMING MACHINE		
DIMENSION	MEASUREMENTS	
Height	54 ³ / ₈ inches* = 138 centimeters*	<i>without candle</i>
	58 ³ / ₈ inches* = 156 centimeters*	<i>with candle</i>
Width	20 ½ inches = 52 centimeters	
Depth	26 inches = 66 centimeters	<i>from bottom</i>

NOTE :

*Remember to add the dimensions of any stands, tables, platforms or other support used to position the game to a comfortable playing level, to the dimensions listed above.

continued on the next page

Figure 1-2: Video Slot Stand Size Recommendations



20 1/2 == Video Slot "Base" Closed
 26 1/2 == Video Slot Door Open

Video Slot Stand Recommendations:

Minimum **Width = 26 1/2**
 Depth = 21"
 Height = Enough for patron to comfortably play the machine.

1.1-B. Parameter Specifications

◆ The general specifications for the IGI Upright Video Game game follow. All specifications are subject to change due to improvements or modifications.

Parameter	Specification
Power Requirements:	USA and Canada —An outlet with one 115VAC (±10%)@ 60 Hz, 5A minimum circuit.
Temperature Ranges:	Operating: 7° to 38°C (45° to 100°F) Storage: 2° to 49°C (35° to 120°F)
Relative Humidity:	Operating: 5% to 80% relative humidity (non-condensing) Storage: 0% to 95% relative humidity (non-condensing)
Weight:	Approx. 104 kg (230 lbs.)

Dimensions: See **chart** on previous page.

1.2 Setting up the Game

● Since the Upright Video Game machine is delivered in one piece, the only thing that needs to be done at set-up is to fasten it onto the stand at its designated spot, install locks, set game options, hook up on-line system (as described in the **Sections** below), and plug it in and turn it ON, insert the CD and play. The gaming establishment where this game is being set up provides stands.

1. At the designated spot in your casino, mount the Upright Video Game gaming machine onto the stand (provided by the casino). Information about the Upright Video Game's mounting plate and location of mounting holes is located in [Appendix-B. Mounting Plate](#), page 57.
2. When finished mounting the Upright Video Game machine onto its stand, it is ready to plug in and turn ON. The power switch is the red rocker switch located inside the front door on the left beneath the monitor. Toggle it ON and wait for it to enter Game Play mode.

☑ NOTE :

*☞ If there's a problem with the video monitor's reception, try degaussing the monitor as instructed in **Section 4.2-C.2 Degauss Monitor**, page 48.*

3. Configuration settings such as bet limits, and game type and percentage are written in the configuration file for each compact disc supplied with the game. The service technician can access the Operator Interface to adjust parameter settings. Please follow the instructions found in **Section 1.2-A. Procedure for Setting Options**.

☑ NOTE

☞ Information about Upright Video Game's buttons and their functions is located in [Appendix-D. Game Play Buttons](#), page 58.

1.2-A. Procedure for Setting Options

- ◆ The Selectable Options can be set on IGI Video Slot Machines using software versions 12A or higher. For the latest information on approved and available game software for your Upright Video Game machine, contact your Innovative Gaming service technician.

☑ NOTE

✎ *The ribbon cable which runs from the rear of the CD ROM Drive MUST be in the Primary IDE position. This is the black connector labeled "Primary IDE (IDE2) and is the rear-most connector of the two connectors that the CD ROM drive ribbon cable may plug into. The cable should not be plugged into the white, front-most connector (Secondary IDE, IDE 1).*

1. Ensure that new software has been installed. This MUST be version 12A or higher. Memory will have to be cleared when updating software versions.
2. Open the Main Door. Ensure that the switch remains in the *open* position.
3. Open the Logic Door. Ensure that the switch remains in the *open* position.
4. Turn OFF power to the game by toggling the lighted red rocker switch OFF.
5. Plug in the keyboard. This plugs into the front, right-hand side of the PC motherboard.
6. Turn ON the **Attendant (Jackpot) Key** switch using the Attendant (Jackpot) Key. Leave this key ON.
7. Power the game back ON.
8. The game will pause from boot sequence. The message "You should hear space music now" will be displayed.
9. Turn OFF the **Attendant (Jackpot) Key** switch and immediately turn the **Attendant (Jackpot) Key** switch back ON (Toggle from ON to OFF then back ON.).
10. The game will continue through its boot sequence and enter the Selectable Options Screen.
11. Use the keyboard **Tab** key to move through the Options Menus.
12. Use the keyboard *up* and *down* arrows to move through the Options Selections.
13. To save changes when finished with selections, use the *Tab* key to select Exit.
14. To cancel without saving changes, use the *Tab* key to select Cancel.
15. Turn OFF the **Attendant (Jackpot) Key** switch.
16. Close the Logic Door.
17. Close the Main Door.
18. The game should now be in Game Play mode with selections changed in the menus.

◆ If in Game Play Mode.

1. Open the Main Door. Ensure that its switch remains in the *open* position.
2. Open the Logic Door. Ensure that its switch remains in the *open* position.
3. Plug in the keyboard (front, right-hand side of the PC motherboard).
4. Turn ON the **Attendant Key** switch using the Attendant (Jackpot) key. Leave this key ON.
5. On the keyboard, hold the **Ctrl & Alt** keys *down* and then press the **Backspace** key.
6. The game will start a boot sequence and enter the Selectable Options screen.
7. Use the **Tab** key to move through the Options Menu.
8. Use the keyboard's *up* and *down* arrow keys to move through the option selections.
9. To save changes when finished with selections, use the *Tab* key to select Exit.
10. To cancel without saving changes, use the *Tab* key to select Cancel.
11. Turn OFF the **Attendant (Jackpot) Key** switch.
12. Close the Logic Door.
13. Close the Main Door.
14. The game should now be in Game Play mode with selections changed in the menus.

◆ Upright Video Game Tournament Play Setup.

1. Set up game options for Tournament Mode following the appropriate instructions above.
2. Turn ON the **Attendant** key.
3. Set the starting credit value. Pressing the **Cashout** button will reset the credits to the default value.
4. To change credit value, press any **Bet** button. The Bet button's value sets credits times 100.
 For Example: Bet X 1 = 100 credits
 Bet X 5 = 500 credits
 Bet X 10 = 1000 credits
 Etc....
5. Next, press the Attendant/Service button to set the time value. Pressing the Cashout button will reset the time to the default value (15 minutes).
6. To change the time, press any Bet button. The Bet button's value sets time in minutes to the value of the Bet button.
 For Example: Bet X 1 = 1 minute
 Bet X 5 = 5 minute
 Bet X 10 = 10 minutes
 Etc....
7. When finished setting the time, press the Attendant/Service button to exit.

continued on the next page

8. Turn OFF the Attendant key. The game is now set for tournament play. Time will begin countdown when the Bet button is pressed, beginning tournament action. The remaining time is displayed in the lower left-hand corner of the monitor display.
9. To reset tournament values for another round of tournament action, repeat steps 2-8.

1.2-A.1 Date/Time Setup

▲ Follow these instructions to configure the date and time settings.

1. Power the game OFF.
2. Plug in the keyboard to the front, right-hand side of the PC motherboard.
3. Power the game ON.
4. While the computer is in the memory check screen, push the **Delete** key to get into the CMOS Setup Menu.
5. The STANDARD CMOS SETUP Option should be highlighted. Press the **Enter** key.
6. The Date & Time are the first 2 options. Use the arrow keys to move between fields, and use the **PgUp** & **PgDn** keys to change the settings.
7. When the correct date and time are set, press the **Esc** key. This will take you to the Main CMOS Setup Menu.
8. Press the F10 key to Exit & Save the Setup.
9. The game will continue through its boot sequence and enter the Game Play Mode.

1.2-B. Lock & Cam Specifications

◆ The following table indicates specifications for locks used in the Upright Video Game machine.

Lock Location	Size	Turn ⁽¹⁾	Quantity per game
Main Door	5/8" ⁽²⁾	Right or Left	1
Drop (Belly) Door	5/8" ⁽²⁾	Left Only	1
Logic Door	5/8" ⁽²⁾	Right or Left	1
Bill Acceptor Door	5/8" ⁽²⁾	Right or Left	1
Top Panel Fluorescent ⁽³⁾	5/8" ⁽²⁾	Right Only	1

(1) Assume turn as lock is being opened (unlocked).

(2) 1 1/8" lock may be substituted using a 1/2" spacer.

(3) Non-Secure area (low security lock).

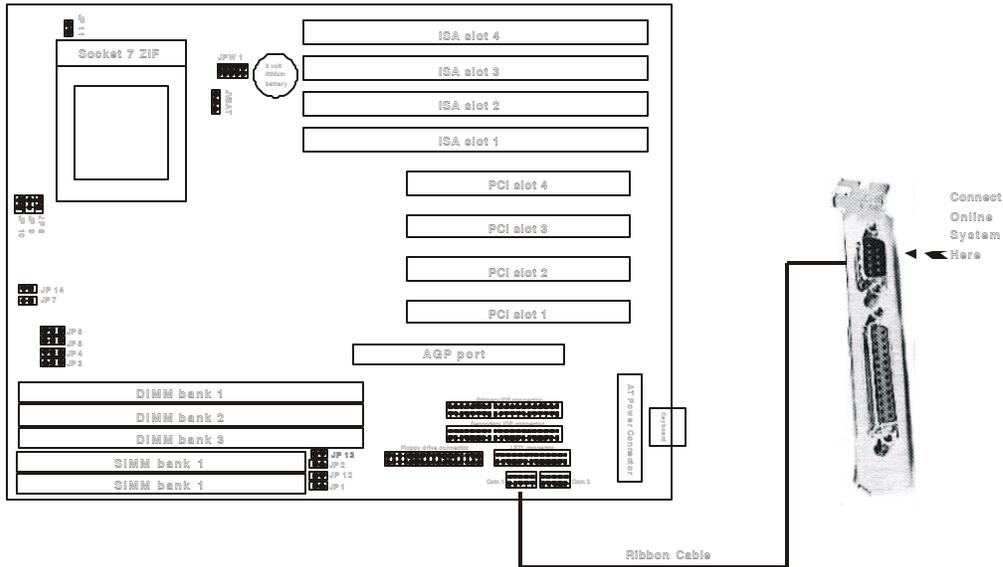
◆ The following table indicates specifications for cams used in the Upright Video Game machine.

Cam Location	Part Number	Illustration	Quantity per game
Main Door (cam)	04400260		1
Main Door (collar)	04400260		1
Drop (Belly) Door	04400080		1
Drop (Belly) Door	04400080		1
Logic Door	04400280		1
Bill Acceptor Door	04400290		1
Top Panel Fluorescent	04400270		1

1.2-C. Connection to On-line System

- ◆ The online system interface consists of a standard 9-pin D connector located in the logic assembly.

Figure 1-3: Online System Interface Hook-up



NOTE:

The ribbon cable which runs from the rear of the CD ROM Drive **MUST** be in the Primary IDE position. This is the black connector labeled Primary IDE (IDE 2) and is the rear most connector of the two connectors that the CD ROM drive ribbon cable may plug into. The cable should not be plugged into the white, front most connector (Secondary IDE, IDE 1).

Video Slot Machine

On-line System	Pigtail	Bracket	Faceplate	Lexan
Acres	N/A	00300641	00300642	N/A
Bally EPI	75993597	00300621	00300622	N/A
Bally SDS	75993597	00300622	00300530	N/A
CDS Large	75993836	00300420	00300450	N/A
CDS Small	75993836	00300422	00300460	N/A
CDS Small Opto	75993836	00300631	00300632	N/A
Dacom	75993839	N/A	N/A	N/A
GSI	75993840	00300670	00900170	N/A
IGT IGS	75993598	?	?	?
IGT Smart	75993598	00300423	N/A	00300424
Mikohn	75993845	00300660	N/A	00300661
No System	N/A	00300421	N/A	N/A



Chapter 2

Normal Operation

■ This Chapter outlines the normal functions of the Upright Video Game game as well as certain procedures performed at the machine while in normal operation.

2.1 Collecting Performance Data

- Performance data is collected from time to time for a variety of reasons, such as compliance with gambling authority regulations, tax record compliance, and evidence for the investigation of player disputes of machine performance.
-

2.1-A. Reading Soft Meters

◆ Audit mode is entered when reading soft meters. The screen displays information about machine events as illustrated below.

◆ **Accessing Audit Mode:**

- ♣ From Game Play mode, insert the attendant key into the **Attendant** keyswitch and turn it to the right (ON position). The screens illustrated on the following pages appear.
- ♣ To advance a *page* of a section, press the **SERVICE** button.
- ♣ To advance to the next section of audit information, press the **CASHOUT** button.

continued on the next page

2.1-A.1 Audit Meters

▲ This is the first section of audit information.

☑ NOTE

- ☞ The “###” column in this illustration indicates the variable number of occurrences of the event described to the left. The screen displays the current number of occurrences.
- ☞ The “mm/dd/yy 24:MM:SS” column displays the date and time of last occurrence in the month/day/year date format and 24 hour time including hours, minutes, and seconds.
- ☞ The meter date/time is the last time that block of meters was written. It may not indicate the exact time that a particular meter was uploaded.
- ☞ **Not all of the meters listed below may appear on screen, and the order of presentation as well as some of the messages may vary.**

Audit meters... Page 1		
Total credits-bet (NV coin-in)	##	mm/dd/yy 24:MMSS
Wn credits paid by machine	##	mm/dd/yy 24:MMSS
Total drop (coins + bills)	##	mm/dd/yy 24:MMSS
Credits paid by attendant	##	mm/dd/yy 24:MMSS
Total value of bills-in	##	mm/dd/yy 24:MMSS
Total games-played	##	mm/dd/yy 24:MMSS
Total coins-out	##	mm/dd/yy 24:MMSS
Total credits-won (NV coin-out)	##	mm/dd/yy 24:MMSS
Credit available	##	mm/dd/yy 24:MMSS
Total coins-in	##	mm/dd/yy 24:MMSS
Total value of bills-out	##	mm/dd/yy 24:MMSS
Total value of eft-in	##	mm/dd/yy 24:MMSS
Total value of eft-out	##	mm/dd/yy 24:MMSS
Credits not wagered (escrow)	##	mm/dd/yy 24:MMSS
Credits not wagered but paid	##	mm/dd/yy 24:MMSS
Total hopper tilt/bad coin-out	##	mm/dd/yy 24:MMSS
Total games-won	##	mm/dd/yy 24:MMSS
Power-up	##	mm/dd/yy 24:MMSS
Doors open since power-up	##	mm/dd/yy 24:MMSS
Games played since power-up	##	mm/dd/yy 24:MMSS
Games won since power-up	##	mm/dd/yy 24:MMSS
Min door opens	##	mm/dd/yy 24:MMSS
Logic door opens	##	mm/dd/yy 24:MMSS
Drop door opens	##	mm/dd/yy 24:MMSS
Bill (belly) door opens	##	mm/dd/yy 24:MMSS
Total doors open since ramclear	##	mm/dd/yy 24:MMSS
Games played since door closure	##	mm/dd/yy 24:MMSS
Credits in since last game	##	mm/dd/yy 24:MMSS
Credits won, not yet wagered	##	mm/dd/yy 24:MMSS
Wn credits handpaid	##	mm/dd/yy 24:MMSS
Total bills accepted	##	mm/dd/yy 24:MMSS
Pending jackpot	##	mm/dd/yy 24:MMSS
Total jackpots paid	##	mm/dd/yy 24:MMSS
Current bet	##	mm/dd/yy 24:MMSS
Last paid	##	mm/dd/yy 24:MMSS
Bill credits pending	##	mm/dd/yy 24:MMSS
Pending handpay amount	##	mm/dd/yy 24:MMSS
Total bills (1) accepted	##	mm/dd/yy 24:MMSS
Value of bills (1) accepted	##	mm/dd/yy 24:MMSS
Total bills (2) accepted	##	mm/dd/yy 24:MMSS
Value of bills (2) accepted	##	mm/dd/yy 24:MMSS

Total bills (5) accepted	##	mm/dd/yy 24:MMSS
Value of bills (5) accepted	##	mm/dd/yy 24:MMSS
Total bills (10) accepted	##	mm/dd/yy 24:MMSS
Value of bills (10) accepted	##	mm/dd/yy 24:MMSS
Total bills (20) accepted	##	mm/dd/yy 24:MMSS
Value of bills (20) accepted	##	mm/dd/yy 24:MMSS
Total bills (50) accepted	##	mm/dd/yy 24:MMSS
Value of bills (5) accepted	##	mm/dd/yy 24:MMSS
Total bills (100) accepted	##	mm/dd/yy 24:MMSS
Value of bills (100) accepted	##	mm/dd/yy 24:MMSS

♣ The table below describes the functions of each meter listed above:

AUDIT METER:	FUNCTION
Total credits-bet (NV coin-in)	Credits bet.
Win credits paid by machine	Accumulates the portion of available credits on the credit meter that have come from winnings (win escrow) when the cash out button is pressed and payout is performed by the hopper.
Total drop (coins + bills)	Counts the number of coins accepted by the coin mechanism that are diverted to the drop box and the credit value of all bills inserted into the game.
Credits paid by attendant	The total amount of credits hand paid by an attendant. Includes both winnings and unplayed credits from money inserted. Does NOT include jackpots.
Total value of bills-in	The dollar value of all bills inserted into the bill acceptor
Total games-played	Increments for each handle pull.
Total coins-out	Counts the number of coins paid out by the hopper.
Total credits-won (NV coin-out)	Credits won.
Credit available	The number of credits available for wagering.
Total coins-in	Counts the number of coins accepted by the coin in mechanism.
Total value of bills-out	The dollar value of bills paid from the note hopper (optional feature)
Total value of eft-in	The value in dollars and cents of money transferred into the machine by the online system.
Total value of eft-out	The value in dollars and cents of money transferred out of the machine by the online system.
Credits not wagered (escrow)	The number of credits that were inserted into the machine by coin or bill that were never wagered. Credits bet are taken from a win escrow first. If the win escrow is empty, then the credits are taken from this meter.
Credits not wagered but paid	The "credits not wagered" meter is added to this meter each time the cash out button is pressed.
Total hopper tilt/bad coin-out	The number of times that the coin out sensor has been activated without the game's permission.
Total games-won	Increments for each game where the player wins more than 0 credits.
Power-up	The number of times that power has been applied to the game. Counts only boot up sequences that arrive at the video slot screen.
Doors open since power-up	Counts the number of times door(s) have been open since power was applied to the game. Resets when power is removed.

continued on the next page

AUDIT METER:	FUNCTION
Games played since power-up	The number of games played since power was applied to the game. Resets when power is removed.
Games won since power-up	Counts the number of games that have resulted in credits won since power was applied to the game resets when power is removed.
Main door opens	The number of times the main door has been opened.
Logic door opens	The number of times the logic door has been opened.
Drop door opens	The number of times the drop door has been opened.
Bill (belly) door opens	The number of times the bill (belly) door has been opened.
Total doors open since ram-clear	The number of times doors have been opened since the meters were last cleared.
Games played since door closure	The number of games played since the door was last opened and closed.
Credits in since last game	Counts the number of credits inserted by bill or coin into the game since the last reel spin.
Credits won, not yet wagered	The amount of credits that are from winnings, not from bills or coins inserted. Adding this meter with Credits not wagered (escrow) will give you the amount of credits on the credit meter.
Win credits handpaid	Accumulated the portion of available credits on the credit meter that have come from winnings (win escrow) when the cashout button is pressed and payout is performed by attendant or accumulates the total number of credits that are paid during an IRS lockup event. DOES NOT include credits wagered.
Total bills accepted	A running count of all bills accepted by the game. Does NOT reset with stacker removal.
Pending jackpot	The total amount of credits from a IRS lockup condition that are waiting to be handpaid. Resets once the handpay has been completed.
Total jackpots paid	The total amount of credits hand paid by an attendant that resulted from an IRS lockup. Does not include amounts that are pending jackpot meter.
Current bet	Lists the number of credits 'at risk' on the current reel spin.
Last paid	The most recent pay out from the machine by either hopper or attendant.
Bill credits pending	Once a bill is inserted and acceptance has begun, this meter stores the amount of credits until it has been transferred to the credit meter.
Pending handpay amount	????Amount of handpay pending payment?????
Total bills (1) accepted	A running count of all \$1 Bills accepted by the game. Does NOT reset with stacker removal.

AUDIT METER:	FUNCTION
Value of bills (1) accepted	The number of credits accepted by the games that were from \$1 bills.
Total bills (2) accepted	A running count of all \$2 Bills accepted by the game. Does NOT reset with stacker removal. (optional feature)
Value of bills (2) accepted	The number of credits accepted by the games that were from \$2 bills.
Total bills (5) accepted	A running count of all \$5 Bills accepted by the game. Does NOT reset with stacker removal.
Value of bills (5) accepted	The number of credits accepted by the games that were from \$5 bills.
Total bills (10) accepted	A running count of all \$10 Bills accepted by the game. Does NOT reset with stacker removal.
Value of bills (10) accepted	The number of credits accepted by the games that were from \$10 bills.
Total bills (20) accepted	A running count of all \$20 Bills accepted by the game. Does NOT reset with stacker removal.
Value of bills (20) accepted	The number of credits accepted by the games that were from \$20 bills.
Total bills (50) accepted	A running count of all \$50 Bills accepted by the game. Does NOT reset with stacker removal.
Value of bills (50) accepted	The number of credits accepted by the games that were from \$50 bills.
Total bills (100) accepted	A running count of all \$100 Bills accepted by the game. Does NOT reset with stacker removal.
Value of bills (100) accepted	The number of credits accepted by the games that were from \$100 bills.

- ♣ Press **CASHOUT** to advance to the next section of audit information.
- ♣ Press the **SERVICE** button to advance to the next page in a section.

2.1-A.2 Audit Events

- ▲ This is the second section of audit information.

☑ NOTE

☞ *The items listed on this screen are in order by date/time of occurrence, starting with the most recent occurrence listed on top. Therefore, the number and order of items listed on this screen will vary.*

Audit Events ... page 1

Door events	mm/dd/yy 24:MMSS
Stacker removals	mm/dd/yy 24:MMSS
Coin tilts	mm/dd/yy 24:MMSS
Hopper tilts	mm/dd/yy 24:MMSS
Bill jams	mm/dd/yy 24:MMSS
BACC removal	mm/dd/yy 24:MMSS
Hand pays	mm/dd/yy 24:MMSS
Attendant keys	mm/dd/yy 24:MMSS

- ♣ Press **CASHOUT** to advance to the next section of audit information.
- ♣ Press the **SERVICE** button to advance to the next page in a section.

☑ NOTE

This log is not cleared in a RAM (memory) clear procedure unless it was corrupt. It will store information on meter clears.

2.1-A.3 Section 3: Audit Play History

▲ This is the third section of audit information.

NOTE

- ✎ The "Total win/Bonus game triggers" line will always display "0" unless a Bonus game is included with the machine.
- ✎ The "Initial Step" line displays the game status **before** spinning the reels.
- ✎ The "Final Step" line (above) displays the game status **after** spinning the reels.
- ✎ "Queen" and "Castle" are among many possible symbols in Upright Video Game games and may not be included in the group of symbols that appear in your particular game.

Audit Play History... page 1
Options: SAS Online System
Version: Mønster Mønney Thu. Nov 16 14:19:17 2000 GLI M&GLI12a

(Current Game) Final Step mm/dd/yy 24:MMSS Sequence: ###
Bet: ## Credit: ## CoinIn: ## CoinOut: ##
pay lines selected with # credits per line
Description of reel window at end of game:

Top row:	Castle	Flame	Knight	Castle	Eyes
Middle Row:	Mønster Knight	Shield	Knight	Knight	Shield
Bottom Row:	Flame	Eyes	Eyes	Eyes	Shield

Total win: 0 Bonus game triggers: 0 Progressive wins: 0

(Current Game) Initial Step mm/dd/yy 24:MMSS Sequence: ###
CashOut: ## Bet: ## Credit: ## CoinIn: ## CoinOut: ##
pay lines selected with # credit per line.

- ♣ Press **CASHOUT** to advance to the next section of audit information.
- ♣ Press the **SERVICE** button to advance to the next page in a section.

2.1-A.4 Section 4: Last Bill Recall

▲ This is the fourth section of audit information.

NOTE

- ✎ The Last Bill Recall screen displays a list of the last 10 bills inserted at game play.
- ✎ The bill information is listed in order by date/time of occurrence, the most recent of which is listed on top of the list.
- ✎ The example below is based on credits set at \$0.05.

Bill Validator	Credits	Bill denomination	Date/time
Bill Validator	200	10	mm/dd/yy HH MM
Bill Validator	100	5	mm/dd/yy HH MM
Bill Validator	400	20	mm/dd/yy HH MM
Bill Validator	1000	50	mm/dd/yy HH MM
Bill Validator	20	1	mm/dd/yy HH MM

- ♣ To exit audit information, turn **Attendant** Keyswitch to the *upright* (OFF) position.

2.1-B. Reading Hard Meters

- ◆ Opening the bill (belly) door of the Upright Video Game gains access to the hard meters (see figure 1-1 for location).
-

2.2 Clearing “Player Wins Jackpot (W2-G Required)”

● Follow these instructions to clear the “Player Wins Jackpot (W2-G Required)” message, which occurs when a win exceeds the IRS limit of \$1200 for slot games. When this message appears, the attendant must provide an IRS W2-G form for the player to report the winnings as taxable income.

1. When the “Player Wins Jackpot” message appears, the machine tilts and an attendant is called over to the game. Both the colored and white lights on the candle will be blinking.
2. Prepare a W2-G for the amount of credits on the “Win” meter.
3. Insert the attendant key and turn it forward.
4. Turn the attendant key back to its normal position to clear the lockup condition and to clear the jackpot credits.
5. Remove the attendant key.

IMPORTANT NOTE!

This procedure is only applicable to an IRS win (over \$1200 on a single spin). It is not to be used for a hopper hand pay.

2.3 Clearing the “Hopper Handpay required” message

● Follow these instructions to clear the “Hopper Handpay” message, which occurs when the player pushes the cashout button and the player’s accumulated credits exceed the hopper pay out limit.

1. When the “Hopper Hand Pay \$\$\$\$CC” message appears, the game tilts and an attendant is called over the game. Both the colored and white lights on the candle will be blinking.
2. Note the amount displayed in the message on the bottom of the screen. This number is in dollars and cents. This is the amount due to the player.
3. Insert the attendant key and turn it forward.
4. Turn the attendant key back to its normal position to clear the lockup condition and to clear the credits.
5. Remove the attendant key.

IMPORTANT NOTE!

The Hopper handpay can not be canceled once initiated.



Chapter 3

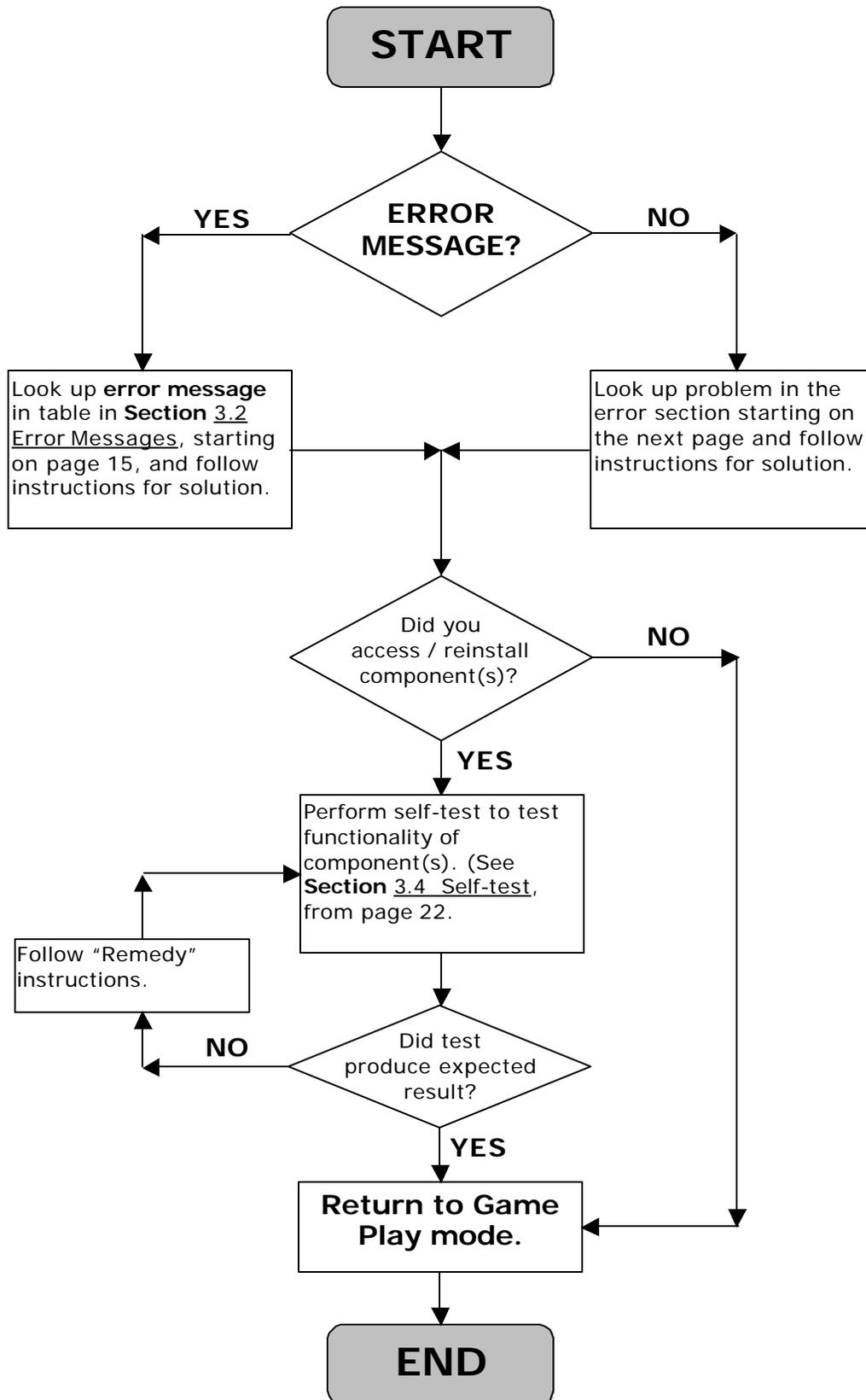
Troubleshooting Guide

■ This **Chapter** covers techniques for diagnosing and fixing possible problem situations at the machine. The first **Section, Troubleshooting Approach**, illustrates the usual approach that is taken to troubleshoot these situations. Following that are sections containing look-up charts that guide you to solving each problem. Other **Sections** in this chapter contain some of the routines referred to in the look-up charts.

3.1 Troubleshooting Approach

- If a problem situation occurs at your Upright Video Game machine, follow these guidelines to resolve the problem.
- ♠ If the first indication of a problem is an appearance of an error message, look that error message up in the tables in **Section 3.2 Error Messages**, starting on page 38. The description/solution column provides descriptions as well as refers the reader to procedures that should clear the error.
- ♠ If no error message appears yet a problem is observed, such as light not working, etc., look up the problem in the chart in the sub-section below. It is organized by component then by problem. Again, the description/solution column provides descriptions and refers to procedures that should fix the problem.
- ♠ If the troubleshooting process involved removing and replacing component parts, the last step to take is running a test on the component in question. To test the component, follow the instructions in **Section 3.4 Self-test**, page 43.

Figure 3-1: Troubleshooting Approach Flowchart



3.2 Error Messages

- The appearance of an error message on the monitor indicates there is a problem in the game that needs to be corrected. Error messages may appear during Game Play mode for the following reasons:
- ♠ There is a security violation. For example, front door, bill (belly) door, or the logic assembly door is not closed.
- ♠ A component is not functioning properly. For example, the hopper or, if applicable, printer is jammed.
- ♠ The game, or some portion thereof, loses power after Game Play mode has started.
- ♠ Communication is lost between certain components.

NOTES

- ✎ Error messages appear on the monitor of the game.
- ✎ Each chart contains a **MESSAGE**, **DESCRIPTION**, and **SOLUTION** column. If the suggested **SOLUTION** does not correct the problem, contact your distributor or your Innovative Gaming Service Technician for further assistance.

3.2-A. Error Messages (Tilts)

- ◆ Error messages, or “tilts”, that appear on the Upright Video Game monitor are usually self explanatory as to what the problem is and cause game play to halt. Occurrences of these messages are stored in machine memory and can be referenced by entering the Audit mode, described in **Section 2.1-A.2 Audit Events** (page 31).
- ◆ In the chart below is a list of error messages you may encounter during the operation of the Upright Video Game machine, along with descriptions of appropriate ways to remedy the situation.

☑ NOTES

- ✎ *The following messages are displayed on the screen if they create a machine lock up condition. Otherwise, the messages appear in the audit log as events. For example, cashout will not lock up the game, but it is stored in the audit event log. Some messages may not be applicable to your model of video slot and should be ignored.*
- ✎ *If the problem is not corrected by the corresponding solution or the error message continues to be displayed, contact your distributor or your Innovative Gaming Service Technician for further assistance.*

MESSAGE	DESCRIPTION / SOLUTION
Attendant key off / on	Informs of the status of the attendant key switch.
Audit error	(Money in – money out doesn't add up to credits). Record all soft meter readings and reset memory following the instructions in Section 3.3 Memory Clear Procedure , from page 42.
Bill (belly) door open	Close and lock the bill (belly) door to return to Game Play mode.
Bill stacker removed	This message occurs when the bill stacker is removed for any reason. To return to Game Play mode, open the bill (belly) door, replace bill stacker, and close and lock door(s).
Bill validator not recognized	(unknown version in bill validator EPROM) Verify that the bill validator is a World Bill Acceptor brand. EPROM may need to be replaced; call your Innovative Gaming Service Technician for assistance.
Bill validator full	Access bill validator by opening the bill (belly) door. Empty out all bills from the stacker. Replace stacker and close and lock all doors
Bill validator jammed	Clear the bill validator jam.
Bill validator lost communication	Check connections to bill validator. To clear this error message, open and close the main door.
Bill validator tilt	A problem with the bill validator other than those specified in the other "Bill validator" messages.
Cashout	Informs that the CASHOUT button was pressed. This event is recorded in the event log.
Coin jam	Clear the jam.

MESSAGE	DESCRIPTION / SOLUTION
Coin out tilt	Coin dispense was interrupted because an interrupting event occurred, such as a door opening. Close the front door and press PAYOUT to resume coin dispense.
Coin validator tilt	(enabled) -- tilt received while validator was active (disabled) -- tilt received while validator was inhibited This message occurs when a coin is stuck in the coin validator or otherwise not correctly registered. This message also occurs when no reference coin is installed. Open the front door, reposition reference (validating) coin or remove stuck/jammed coin.
Coin-in while disabled	(coin-in received when comparator was inhibited). Open the front door, pull the coin out, clear the error message, and close and lock the doors to return to Game Play mode.
Corrupt RAM Log	An error has been detected in RAM.
Drop door open	Close and lock the drop (belly) door to return to Game Play mode.
Dubious RAM Log	An error has been detected in RAM.
Failed player RAM/version check	Indicates that the game program version has been changed or the RAM battery backup is not functioning correctly.
Front door open	Close and lock the front door to return to Game Play mode.
Handpay required	(settable hopper limit exceeded) The amount that the hopper cannot pay has to be hand paid by attendant.
Hopper empty	Access hopper, refill it with coins, and close all doors to return to Game Play mode.
Hopper jammed	Open the front door to access the hopper, and clear the coin causing the jam. When finished, close and lock all doors to return to Game Play mode.
Hopper tilt	(removed) Open the front door to access the hopper. If removed, replace the hopper, or, if loose, secure the hopper to its proper position in the machine. Ensure that the hopper is cleared of potential coin jams. When finished, close and lock all doors to return to Game Play mode.
Invalid Win Amount	If a win amount is generated over the maximum possible win of the machine, this message is generated.
IO Board down	(fatal I ² C bus error in Input/Output board) Contact your Innovative Gaming Service Technician for assistance.
Logic door open	Close and lock the logic door to return to Game Play mode.

continued on the next page

MESSAGE	DESCRIPTION / SOLUTION
Meter RAM cleared	Informs that the meter RAM (soft meters) was cleared.
No online system	(On-line system host not responding). Your software may not have an on-line protocol configured for your version. Contact your Innovative Gaming Service Technician for assistance.
Player wins jackpot (W2-G required)	(jackpot award limit exceeded) Excess winnings have to be transferred to credit meter by attendant. (IRS W2-G required if equal to or greater than 24,000 nickel credits.). See Section 2.2 Clearing "Player Wins Jackpot (W2-G Required)" , page 34, for instructions on clearing this message.
Power down / up	Informs of a recent game powering event, which is recorded in the event log.
Unknown bill validator message	The country code on the bill validator does not match what the game version CD was programmed for. Contact your Innovative Gaming service representative for assistance.

3.2-B. Status Messages after Clearing Tilts

- ◆ The following status messages appear after clearing the corresponding tilt condition and remain on screen until the next game is started.

MESSAGE	DESCRIPTION
Bill (belly) door close	Bill (belly) door was recently closed, thereby clearing the "Bill (belly) door open" message
Drop door close	Drop door was recently closed, thereby clearing the "Drop door open" message
Front door close	Front door was recently closed, thereby clearing the "Front door open" message
Handpay cleared	The "Handpay required" tilt message has been cleared.
Logic door close	Logic door was recently closed, thereby clearing the "Logic door open" message
Player Jackpot cleared	The "Player wins jackpot" tilt message has been cleared.
Power Up	All models report Power Up (ON) in black text on white background in the lower-left corner of the screen until after the first game cycle is completed.

- ◆ Some models may also report the following status condition:

MESSAGE	DESCRIPTION
---------	-------------

MESSAGE	DESCRIPTION
Bill stacker re-attached	The bill stacker was recently re-attached, thereby clearing the "Bill stacker removed" message.

3.3 Memory Clear Procedure

- The Memory clear procedure should only be done as a last resort solution during troubleshooting and if recommended by your IGI Service Technician.
- The Memory clear procedure will clear audit meters; however, it will not clear the Last Bill or the Events information logs, unless there is a "Dubious RAM error".
- Follow these steps to clear the game's memory:

☑ NOTE

This procedure will cause important audit information to be lost. Write down needed information stored in the machine before continuing this procedure.

1. Follow the instructions under **Section 2.1-A. Reading Soft Meters** (page 25) and *write down needed information* from the audit screens.
2. From Game Play mode, insert the Attendant key and turn it clockwise.
 - ◆ Look for the soft meter information to appear on the monitor screen.
3. Open the main door to the machine.
4. Open the logic door,
 - a. As prompted on screen, push the **CASHOUT** button to clear the audit information log. To skip clearing meters, press the **ATTENDANT/SERVICE/CHANGE** button.
 - b. Again as prompted on screen, push **CASHOUT** button to clear the player history information log. To skip clearing play history, press the **ATTENDANT/SERVICE/CHANGE** button.

☑ NOTE

The meters that cannot be cleared with this procedure are the items on the Audit Events and the Audit Bills screens.

5. Close and lock the logic door.
6. Close and lock main door.
7. Turn the Attendant key counterclockwise and remove it.

3.4 Self-tests

● Testing routines are often performed after game components have been serviced and replaced. Test mode is entered to test the functionality of the different parts of the machine.

♣ To access test mode:

1. Power OFF game.
2. Turn the Attendant Keyswitch ON.
3. Power ON the game.

♣ The tests are listed on the screen as follows. (Some items on your particular display may vary from what is listed below depending on game software.):

Attendant key must remain in on position

1. attendant button lights lamps in sequence until pushed again
2. cashout button dispenses ten coins from hopper
3. 'play 1' button initializes bill validator and displays status
4. 'bet 3' button turns on coin validator.
5. 'play 5' button lights candles in sequence until pushed again.

exit test program -> turn attendant key off
any other button or switch just reports a state change.
door open and door close are reported at any time.
You should hear space music now

☑ NOTE

- ☞ The **ATTENDANT** button (mentioned in test 1) may be labeled **SERVICE** or **RESERVE** on some machines.
- ☞ The **CASHOUT** button (mentioned in test 2) may be labeled **PAYOUT** or **PAY** on some machines.

♣ To run each test, press the button indicated on the line instructions.

♣ To exit each test, press the same button again (as indicated on screen). Music signals exit complete.

EXPECTED RESULT

"ijob" stands for "intelligent input-output board. A successful test result will include the message "ijob was successfully initialized". Sometimes this message will flash too quickly to see.

♣ The message "Any other button or switch just records a state change", located on the bottom of the test screen, means that any button or switch that's activated will cause a message to appear on screen describing what was just done. For example, if a door switch is activated, the message "door open" will appear on screen.

♣ As instructed on screen, to exit test program, turn the key OFF (upright position).

REMEDIES

When the Test mode is entered, the machine automatically tests the components not listed in the previous page and leaves a long list of items displayed on screen above "Attendant key" message. If a problem were to occur with these automatic tests, the test menu illustrated on the previous page would not appear. Instead, descriptive error messages and explanations would appear on screen describing what to do. If you have any questions, contact your Innovative Gaming Service technician for assistance.

3.4-A Coin Test Procedure

- ◆ Follow these steps to test the hopper coin dispense.
-
1. Turn ON the *attendant key* switch.
 2. Open the *main door*. Ensure that the switch remains open.
 3. Press the **CASHOUT** button for hopper to dispense 10 coins.
 4. Repeat step 3 to dispense an additional 10 coins.
 5. Turn OFF the *attendant key* switch.
 6. Close the *main door* to return to game play.



Service & Maintenance Guide

■ This **chapter** consists of instructions for servicing and maintenance of machine components.

4.1 Preventive Maintenance Schedule

● The table below illustrates the recommended preventive maintenance schedule for Upright Video Game. Always power OFF the game before performing any maintenance. Appendix-A. Safety Considerations, starting on page 54, provides important guidelines for safely working with the machine and its components.

Perform the below-listed maintenance procedures at the frequency suggested to the right.	every month	every 5 years
Vacuum (or blow out with compressed dry air) the surrounding areas of the power supply and logic assembly.	X	
Install a new nickel-cadmium battery for B/U RAM.		X
Clean and wipe down the inside of the game with a dry cloth.	X	
Clean monitor and monitor glass every month or as needed.	X	

4.2 Servicing Game Components

- This section shows basic techniques on removing, cleaning, and/or replacing components of the Upright Video Game machine.



WARNING!

Remember, always power OFF the Game to prevent electric shock before servicing the machine components.

4.2-A. Light Bulbs on the Button Panel

- ◆ Spilled soft drinks and other beverages can cause light bulbs to stick or adhere to their sockets. When necessary, *replace* the light bulbs.
- ◆ Spilled beverages sometimes damage the light bulb's socket. Check the socket for damage and *replace* it if necessary.

4.2-A.1 Replacing Light Bulbs on Button Panel

- ▲ Follow these instructions to replace light bulbs:

10. Power OFF the game.
11. Snap the light assembly out of the lower side of the button assembly.
12. Remove the bad bulb and replace with a bulb type 73 14VDC .080Amp.
13. Shove the light assembly back into its proper position on the button assembly.
14. Power ON the game. Verify that the game comes up correctly.
15. Close and lock all doors.

4.2-B. Vacuuming the Inside of the Cabinet

- ◆ Dust and smoke particles build up quickly inside gaming machines and provide thermal insulation to the components and the wiring. This thermal insulation in turn causes higher operating temperatures, increasing the risk of component failures and fire.
 - ◆ The power supply assembly of the Upright Video Game machine is a sealed component, so it does not collect dust and smoke particles on the inside. Therefore, we do not recommend attempting to access the inside of the assembly. However, the surrounding areas should be vacuumed* frequently.
-
- ◆ Always power OFF the game before servicing the inside of the cabinet.
 - ◆ At frequent intervals, *vacuum** the fan area of the power supply and the surrounding area to reduce the risk of the following:
 - ♣ operating temperature increases
 - ♣ component failures
 - ♣ fire risk

NOTE

 *Blowing out the power supply area with compressed dry air (available in cans) also works. Using the compressed dry air and a vacuum cleaner is another good way to clean the inside of the cabinet.

4.2-C. Monitor

◆ The following sub-sections are procedures for servicing the monitor of the Upright Video Game machine.

4.2-C.1 Cleaning the Monitor

▲ Periodically, the monitor needs to be cleaned as it accumulates dust, fingerprints, etc.

1. Power OFF the game before servicing a monitor.
2. Open the front door open to expose the monitor.
3. Clean the monitor screen with anti-static glass cleaner.

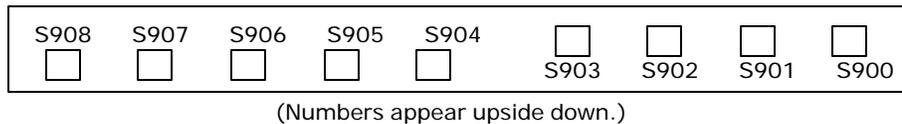
4.2-C.2 Degauss Monitor

▲ Degauss the game’s monitor as described below depending on the type of monitor you have. The button panel is installed under the monitor upside down, so you may not clearly see the button numbers. Refer to the illustration below pertaining to your monitor.

♣ Monitor 1

- a. Push the Option Adjust switches (**S904 or S905**) to get the on screen display.
- b. Push the Option Adjust switches (**S904 or S905**) to page over to the Degauss Icon.
- c. Push the Select switches (**S906 or S907**) to start the Degaussing process.

Figure 4-1: Monitor 1 Button Board

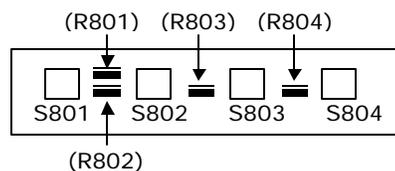


(Numbers appear upside down.)

♣ Monitor 2

- a. Push the Option Adjust switches (**S803 or S804**) to get the on screen display.
- b. Push the Option Adjust switches (**S803 or S804**) to page over to the Option E.
- c. Push the Select switches (**S801 or S802**) to get the COLOR DISPLAY.
- d. Push the Option Adjust switches (**S803 or S804**) to page over to the Degauss Icon.
- e. Push the Select switches (**S801 or S802**) to start the Degaussing process.

Figure 4-2: Monitor 2 Button Board



(Numbers appear upside down.)

4.2-D. Logic Assembly

- ◆ The following sub-sections contain procedures for servicing and maintenance of the logic assembly for the Upright Video Game machine.

4.2-D.1 Logic Assembly Maintenance Tips

▲ Below is a list of tips that should be followed in order to help maintain the logic assembly in good condition under normal circumstances.

- ♣ Always power OFF the game before servicing the logic assembly.
- ♣ Ensure that the logic drawer is firmly in place within the gaming machine to prevent movement and to avoid damage to surrounding harnesses that may short out componentry on the motherboard or other attached boards.
- ♣ Keep cables and harnessing stowed neatly and consistently both inside and outside the logic assembly enclosure to avoid damage during internal PCB removal or replacement, and to avoid damage during service access (opening and closing the front door especially).
- ♣ We recommend that you frequently vacuum (or blow out with compressed dry air) the inside of the logic assembly to minimize the following:
 - ♥ operating temperature increases
 - ♥ component failures
 - ♥ fire risk

☑ NOTE

**Blowing out the power supply area with compressed dry air (available in cans) also works. Using the compressed dry air and a vacuum cleaner is another good way to clean the inside of the logic assembly.*

4.2-E. Coin Comparator*

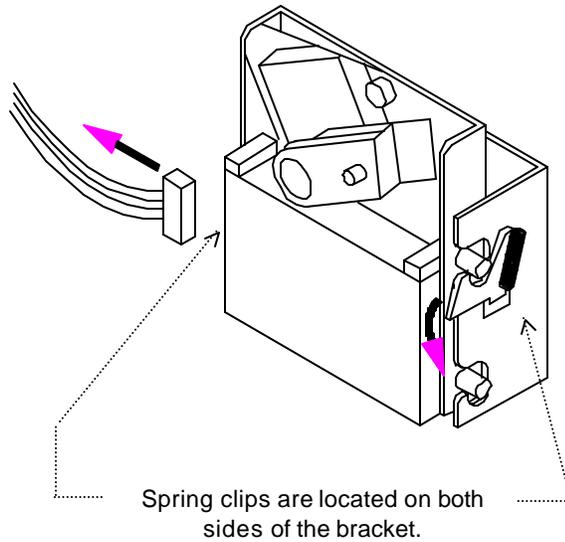
◆ (Also referred to as “coin acceptor” and “coin validator”.) Follow these instructions to remove and install the coin comparator.

☑ NOTE :

✎ **Some games may not include a coin comparator, in which case this information does not apply.*

- ◆ To remove the coin comparator:
 1. Unlock and open the front door of the player.
 2. Power OFF the game.
 - f. Unplug the connector going to the coin comparator.
 - g. Release the two spring clips on either side of the coin comparator bracket.
 - h. Pull the coin comparator forward.
- ◆ To install the coin comparator:
 1. Ensure that the appropriate reference coin is in the reference coin slot.
 2. Push the coin comparator back into place. The two spring clips should hook back on to the bracket.
 3. Plug the coin comparator connector back to the coin comparator.
 4. Power ON the game if you wish to resume game play.
 5. Close and lock the front door.

Figure 4-3: Coin Comparator



4.2-F. Hopper*

- ◆ If a part continues to loosen, loses its adjustment, or fails because of coin jams, you can put blue loctite on the threaded, hardened steel fasteners that hold it in place.

NOTE

 *Some games may not include a hopper, in which case this information does not apply.

- ◆ Always make certain the hopper harness connectors are pressed back together again after a hopper has been removed.
- ◆ Also, ensure that the harnessing is stowed neatly so that it cannot catch on a moving part.

4.2-G. Printer*

- ◆ Follow these instructions for servicing the printer.

NOTE

 *Some games may not include a printer, in which case this information does not apply.

- ◆ Replace ribbon and paper when they run out.
- ◆ Always ensure that that the cover is in place.
- ◆ Clean any spills on the unit with a mild soap and water solution.

4.2-H. EPROM Replacement Procedure

- ◆ On occasion, the EPROM on the IIOB PCB may need replacing out in the field. The following instructions will help guide you through some of the precautions involved in EPROM replacement.

4.2-H.1 Accessing the IIOB PCB

- ▲ Follow these instructions to access the IIOB PCB.

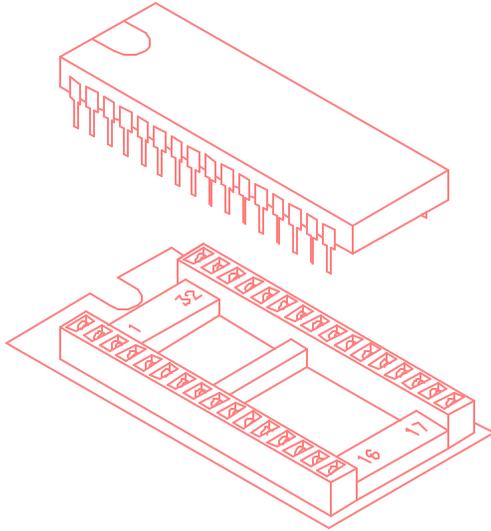
1. Power OFF the game.
2. To access the IIOB PCB, remove the PROM disc card, which is placed generally one or two slots in front of the IIOB PCB.
3. Locate the “U-19” EPROM. This is the only EPROM that may be changed on the IIOB PCB. Follow the instructions under “Replacing the EPROM” below.
4. Before returning to Game Play mode, reverse steps 1-3 above.

4.2-H.2 Replacing the EPROM

▲ Follow these instructions to replace the EPROM on the IIOB PCB.

1. Locate the notch at the “1” end of the EPROM. This “1” indicates where Pin 1 is located.

Figure 4-4: EPROM and Socket



2. Locate the drawing of a notch on the socket and align the notch of the EPROM with it.



CAUTION!

It is very important that the two notches of the EPROM and the socket line up with each other. This is to ensure that Pin 1 of the EPROM and Pin 1 of the socket align properly. If the EPROM is inserted in the reverse method, damage will occur to the EPROM.

3. If necessary, pre-align the pins on the EPROM by bending them inward so they align with the holes of the socket.
4. Place the EPROM over the socket aligning all pins with the holes of the socket. Ensure that all pins are inserted into socket holes.
5. Press down firmly to ensure the EPROM is secure in the socket.
6. Inspect the EPROM to ensure that all pins have been properly inserted into the socket.



NOTE

If any pins did not align properly or got bent in the process, remove the EPROM carefully with the proper removal tool. Be careful not to pry on the socket as it will damage the soldering traces to the PCB.

7. Reverse steps 1-3 under Section 4.2-H.1 Accessing the IIOB PCB on the previous page before returning to Game Play mode.



Chapter 5

Reference

- This **Chapter** contains appendices and indexes for reference.
-

Appendices

- The following list describes the appendices in this **Section**:
- ♠ Appendix-A. Safety Considerations – This appendix outlines important considerations for maintaining both the machine as well as the service technician in safe, working condition.
- ♠ Appendix-B. Mounting Plate – This appendix includes an illustration of the mounting plate on the bottom of the Upright Video Game machine with dimensions indicating the precise locations of mounting holes. This information may be helpful in the set-up process.
- ♠ Appendix-C. Security – This appendix illustrates the various locations of keyholes for cams and locks.
- ♠ Appendix-D. Game Play Buttons – This appendix lists the buttons on the Upright Video Game play panel and their functions both in Game Play and other modes.
- ♠ Appendix-E. Modes – This appendix defines the various modes of Upright Video Game operation.
- ♠ Appendix-F. Abbreviations – This appendix provides an alphabetized listing of common technical abbreviations, many of which are used in this manual, and their full names.
- ♠ Other Information – Between the last appendix and the index may be a good place to insert separate loose documentation such as Release Notes, your personal notes, etc.

Appendix-A. Safety Considerations

◆ Please review all of the following **SAFETY CONSIDERATIONS**.

SAFETY CONSIDERATIONS

GENERAL

This machine and related documentation must be reviewed for familiarization with safety markings and instructions before you operate the machine.

SAFETY SYMBOLS



Dangerous voltage in this area that could cause severe shock or injury



Ground



WARNING!

The "WARNING!" sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a "WARNING!" sign until the indicated conditions are fully understood and met.



CAUTION!

The "CAUTION:" sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in destruction of part or all of the machine. Do not proceed beyond a "CAUTION:" sign until the indicated conditions are fully understood and met.

continued on the next page

SAFETY CONSIDERATIONS

SAFETY INFORMATION



WARNING!

Instructions for adjustments or servicing the machine in this document are for use by trained service personnel only. To avoid dangerous electric shock, do not perform such adjustments or servicing unless qualified to do so.



WARNING!

Always electrically disconnect the power cords from the power source before beginning any work inside the gaming machine.



ELECTROSTATIC DISCHARGE (ESD) DAMAGE PREVENTION:

- Electrostatic discharge can damage, beyond repair, the printed circuit board components in IGI machines; therefore, always touch bare metal on the chassis to discharge any electrostatic charge you may be carrying before you begin servicing the machine.
- Never place components on a metal surface.
- Handle all integrated circuit chips by the body of the chip. Do not touch the legs.
- Do not touch anybody who is working on integrated circuits. It is possible to damage the component or system through the technician even though the technician may be grounded.
- Do not touch edge connectors on printed circuit boards or exposed circuitry.
- Use static-shielding bags or tubes for printed circuit boards and chips during storage, transportation, and handling.
- At your service bench, always ground yourself and your equipment to an earth or building ground. If an ESD pad or workstation is not available or grounding is not possible, touch bare metal on a chassis to discharge electrostatic charges.

continued on the next page

SAFETY CONSIDERATIONS

SERVICING PRECAUTIONS:

- Ensure that the machine is turned OFF before performing any service. The machine should always be turned OFF.
- Ensure that the power cord is properly connected.
- Incomplete insertion of a connector is dangerous.
- Use only specified fuses.
- Use only the specified voltage. A higher input voltage than specified creates a fire hazard and may damage game components.
- Before replacing parts and before plugging in or unplugging the power cord, always turn OFF the **main power switch** inside the cabinet.
- Immediately unplugging and plugging in the power cord is dangerous.
- Never attempt to repair the logic printed circuit boards yourself during warranty periods. When you need a logic board repaired, call your Innovative Gaming Service Technician.

☒ SELECTING A LOCATION:



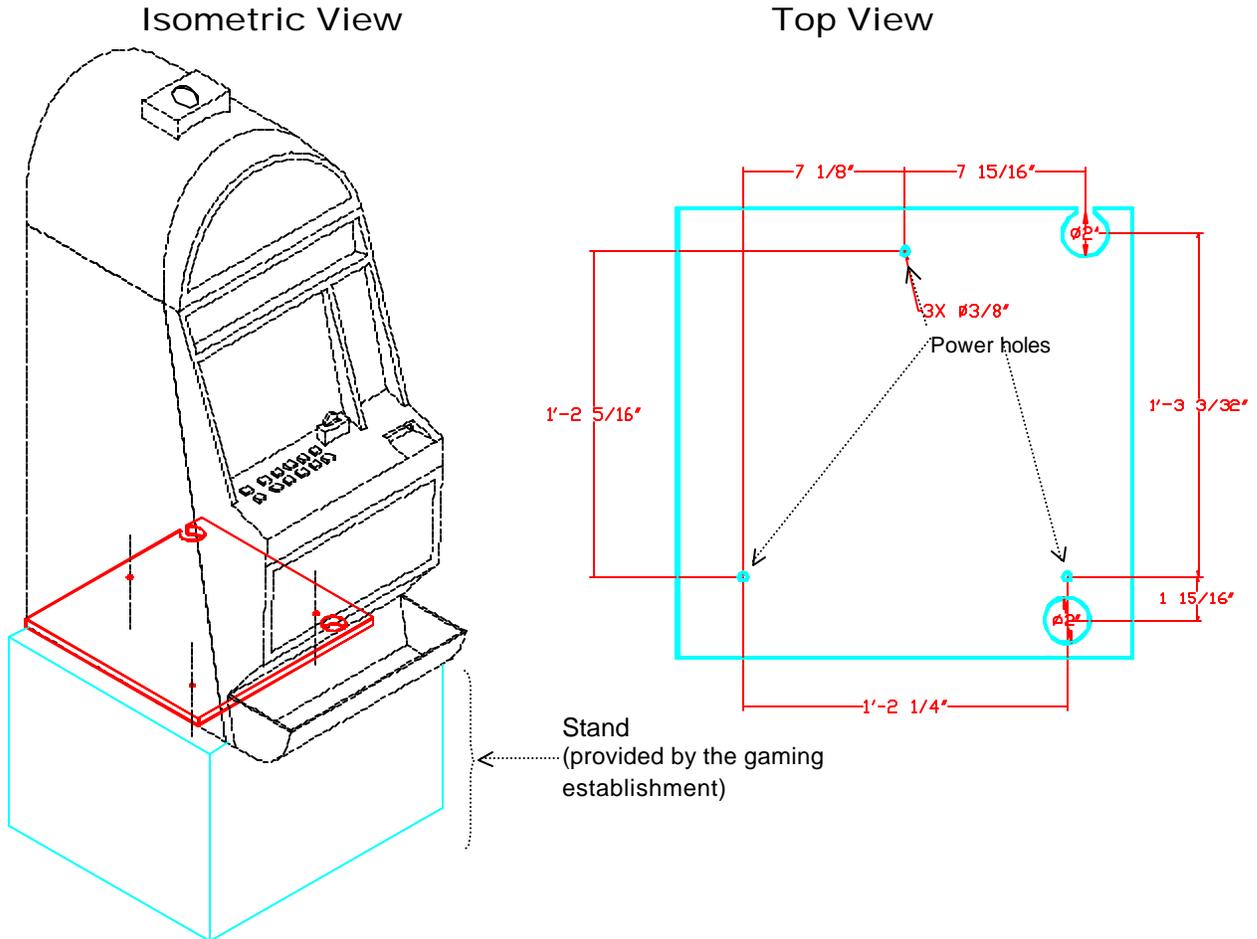
When installing this gaming machine indoors, avoid these areas:

- ☑ Direct sunlight.
- ☑ High moisture areas such as near a shower room or indoor pool, or where there may be water leakage or condensation.
- ☑ High-temperature such as near a room heater or any item that is a direct source of heat.
- ☑ Close to strong electromagnetic fields such as directly over power cables or near power closets.
- ☑ Near fire or flame.
- ☑ Near flammable and/or volatile chemicals or hazardous materials.
- ☑ Heavy-vibration with dirt and dust such as near construction sites or main doors.
- ☑ Near emergency exits, fire-fighting equipment, or areas required to be left open for disaster-relief purposes. Ensure that the game is not positioned in a way that hinders a player's view of "Exit" signs.
- ☑ Inclined floor.

Appendix-B. Mounting Plate

- ◆ Illustrated below is the mounting plate, which is the bottom panel of the Upright Video Game cabinet, in both an Isometric View and a Top View.
- ◆ The Top view shows the distance and dimensions in inches. To convert to centimeters, multiply the dimensions by 2.54.
- ◆ The isometric View shows the plate in relation to the rest of the cabinet and shows where fasteners go to tie the cabinet to the stand. Ensure that the holes for fasteners, drop hole, and, if desired, power hole are drilled to match the placement of these holes on the mounting plate of the cabinet. A receptacle inside the stand below the drop hole should be placed to catch coins that drop through it.

Figure 5-1: Mounting Plate



Appendix-C. Security

- ◆ If you were not provided a CAM and spacer table at time of installation or delivery, please contact IGI service department for a copy.

Appendix-D. Game Play Buttons

- ◆ This table illustrates the functions of the game play buttons, used during game play:

BUTTON	FUNCTION
BET # CREDITS	Sets the number of credits to be bet per line. The numbers on these buttons increment from left to right in sequences such as 1,2,3,5,and 10.
PLAY # LINES	Sets the number of lines to be played. The numbers on these buttons increment from left to right in sequences such as 1,3,5,7, and 9.
CASHOUT	Dispenses coins out through the hopper. In Audit mode, advances to the next section of audit information.
SERVICE	Lights the attendant light during game play. In Test mode, it is referred to as the "attendant" button. In Audit mode, advances to the next page of a screen of audit information.

Appendix-E. Modes

◆ This section is a general overview of the different modes of this gaming machine's operation. All of the game modes and operations therein are usually entered and performed by activating buttons and switches. Detailed descriptions of most of the operations performed under the various modes are described in other sections of this manual.

◆ Test Mode

- ♣ This mode can only be entered when powering ON the machine and is used to test the functionality of the game's components. Information on accessing and running the Game Self tests is found in this manual in **Section 3.4 Self-test** (page 43).

◆ Game Play Mode

- ♣ The only mode that the casino patron will be dealing with is the Game Play mode. All other modes are accessed by authorized technicians.
- ♣ Information on playing the game is located on the glass panels of the Upright Video Game.

◆ Audit Mode

- ♣ The Audit mode is entered to view and collect performance data.
- ♣ Follow the instructions in **Section 2.1-A. Reading Soft Meters** (page 25) to enter the Audit mode and view performance data.

◆ Tournament Mode

- ♣ The Tournament Mode is entered to allow competitive slot play for slot tournaments. This option is entered in the Game Option menu. (See **Section 1.2-A. Procedure for Setting Options.**)

◆ Show Mode

- ♣ The Tournament Mode is entered to allow free play. This option is entered in the Game Option menu. (See **Section 1.2-A. Procedure for Setting Options.**)

◆ Auto Play Mode

- ♣ The Auto Play Mode is entered to allow the machine to play itself. This option is entered in the Game Option menu. (See **Section 1.2-A. Procedure for Setting Options.**)

Appendix-F. Abbreviations

◆ This **appendix** is an alphabetized listing of common technical abbreviations used in this and many other technical manuals.

ANSI	American National Standards Institute
ASCII	American Standard Code for Information Exchange
A	ampere (unit of electric current measurement)
B	byte (unit of computer storage measurement)
c	centi- (10^{-2})
cm	centimeter = 0.01 meters
°C	degrees Celsius (centigrade)
°F	degrees Fahrenheit
DMM	digital multimeter
EEPROM	electrically erasable PROM
ESD	electrostatic discharge
EPROM	erasable PROM
faston	fully insulated quick disconnect connector (a female terminal fits into a corresponding male housing resulting in a fully insulated in-line splice connection)
G	giga- (10^9)
GB	gigabyte = 1,024 megabytes
g	gram (unit of weight measure)
Hz	hertz (unit of frequency measurement)
hsg	housing
in	inch (unit of length measurement)
ip	inch-pounds (USA standard unit of torque measurement)
IC	integrated circuit
IIOB	intelligent input-output board
k	kilo- (10^3)
K	kilobyte = 1,024 bytes; sometimes referred to as Kbyte (KB)
kg	kilogram = 1,000 grams
kW	kilohm = 1,000 ohms
kPa	kilopascal (unit of pressure measurement)
LCD	liquid crystal display (also refers to the 486 single board computer as a unit)

continued on the next page

LED	light-emitting diode
M	mega- (10^6)
MB	megabyte = 1,024 kilobytes
MHz	megahertz = 1,000,000 hertz
m	-meter (unit of length measurement)
μ	micro- (10^{-6})
μs	microsecond = 0.000001 seconds
m	milli- (10^{-3})
mA	milliamperere = 0.001 amperes
ms	millisecond = 0.001 seconds
Ni-Cad	nickel-cadmium (Ni-Cd)
Nm	newton-meters (metric unit of torque measurement)
NA	not applicable
W	ohm (unit of electrical resistance measurement)
lb	pound (unit of weight measurement)
psi	pounds per square inch (unit of force measurement)
PCB	printed circuit board
PROM	programmable read-only memory
RAM	random-access memory
ROM	read-only memory
s	second (unit of time measurement)
SBC	single board computer
V	volt (unit of electrical measurement)
VAC	volts alternating current
W	watt (unit of power measurement)
VDC	volts direct current

Indexes

- This section consists of indexes for quick reference to various places in this manual. The first index is an index of illustrations that appear in this manual. Then the general index follows.
-

Index-A. Illustrations

- ◆ This is a list of illustrations that appear in this manual.
-

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Schematics

■ This last **Chapter** is where the 11" × 17" schematic and PCB detail drawings are included. Here below is an index of drawings included in this manual.

Schematic Index

● The schematics for the Upright Video Game machine are listed in the index below in the order inserted after this page. The information listed under "Description", "Identification Number", and "Number of Sheets" is also found in the "PARTS LIST" label located on the lower right corner of each drawing. The identification number is also found on the right margin of each drawing.

Printed Circuit Board	Identification Number	Number of Sheets
Wiring Diagram	67002080	7