



# **U.S.A. MAV500/MKVI VIDEO GAMING MACHINE**

## **OPERATOR MANUAL**

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**CAUTION**

All functions of the machine are controlled by complex electronics. Unqualified personnel must not interfere with any mechanisms or controls as this may permanently damage the machine and lead to expensive repairs or component replacement, and will render the warranty void.

**Important Safety Information**

This document contains important information about the use of the equipment and hazards involved in owning and operating the equipment to which it relates. The equipment can be very hazardous if used other than in accordance with this document.

**Inform yourself and your staff**

You must read this document before using the equipment or opening any part of the equipment. Ensure your staff do too.

The equipment itself is marked with important warning labels detailing dangers.

- Check for warning labels whenever opening any part of the equipment.
- Read and comply with all warning labels you see when operating or opening the equipment.
- Under no circumstances remove or alter any warning label.

**Be careful**

If you don't follow the directions in this manual and on warning labels you increase the risk of the following things occurring:

- **serious personal injury**, including electrocution and amputation. Unless you are a trained technician, tampering with the machine can kill you;
- serious damage to the equipment;
- serious damage to other equipment;
- serious damage to the premises housing the equipment.



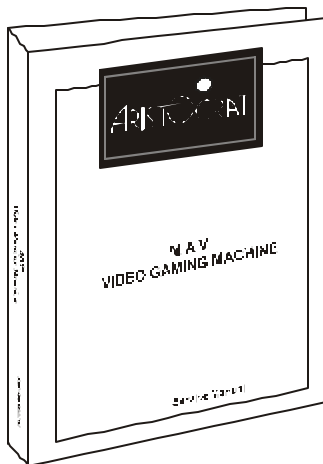
# Aristocrat MAV Manuals



## Operator Manual

Primarily intended for operators of Aristocrat MAV Video Gaming Machines. The Operator Manual:

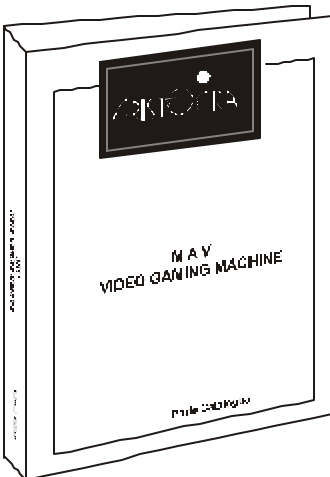
- gives a general overview of the hardware and software
- provides procedures for daily operations and simple maintenance.



## Service Manual

Primarily intended for service technicians. The Service Manual:

- gives a general overview of the hardware and software
- provides instructions for installation and fault finding
- describes in detail each of the major components of the machine.



## Parts Catalogue

Primarily intended for operators and service technicians. It enables operators and service technicians to order machine parts. The Parts Catalogue:

- shows an illustration of each of the components of the machine
- links each illustration with a part number.



# Foreword

## How To Use This Manual

### Purpose of the Manual

This manual provides procedures for the operation of the gaming machine. Machine installation, service, and repair must be carried out by licensed technicians.

### Warnings, Cautions and Notes

#### WARNING

A warning immediately precedes an operating procedure or maintenance practice which, if not correctly followed, could result in personal injury or loss of life.

#### CAUTION

A caution immediately precedes an operating procedure or maintenance practice which, if not strictly observed, could result in damage to or destruction of the equipment, or corruption of the data.

#### Note

A note immediately precedes or follows an operating procedure, maintenance practice or condition which requires highlighting.



## About Aristocrat Technologies, Inc

Aristocrat operations in 1953 in Sydney Australia and is one of the oldest and most successful gaming machine manufacturers. Aristocrat supplies machines to every country and region in the world where gaming machines are legal, including Austria, France, Germany, Holland, Malaysia, China, the Philippines, Africa, Singapore, Russia, South America, and the USA.

Aristocrat employs over 1,600 people worldwide and has the largest gaming research and development facility in the southern hemisphere.

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# Chapter 1

## General Description

### 1.1 Physical Description

The Aristocrat MAV500/MKVI Video Gaming Machine is the latest model of a range of advanced gaming machines that incorporates the following features:

- Advanced, high-performance electronics based on Hitachi SH-4 Microprocessor and the NEC PMX graphics chip,
- Enhanced video graphics including lifelike characters and objects, blended and transparent images, and scene animations,
- Advanced software for the creation of a wider variety of games and simpler machine operations,
- Complete range of machine attachments enabling note and coin acceptors, communication links, progressive systems, and custom options,
- New Main Door latching for greater security and easier open-close operations.
- Improved Event Records that detail errors and non-errors, and assist operators and service technicians in reconciling issues,
- Comprehensive security options,
- Player Marketing Module area accommodates a wide range of global system solutions.
- Modular machine design and construction,
- Multi-voltage power supply assembly,
- Easier servicing and maintenance,
- Enhanced sounds and tunes,
- Variety of attractive cabinet types and colours, and appealing game and score displays.

Figure 1-1 through Figure 1-3 show a range of machine models and component configurations.



The following table briefly identifies the various modules of the gaming machine.

*Table 1-1 Video Gaming Machine Modules*

<b>Machine Module</b>	<b>Description</b>
Cabinet, Door and Top Box.	The physical outer enclosure which provides for the location and mounting of other modules.
Belly Panel Door	This door is located on the main door, below the mid trim, and provides access to the note stacker (where fitted) and main door fluorescent tube. This door is fitted with a lock and a battery-backed security switch.
Video Monitor	High resolution 640 x 400 pixels for improved-quality graphics. The monitor is the main medium for displaying game operation and status to the player.
Main Board	The Main printed circuit board (PCB) provides primary control of the gaming machine. The Main Board is interfaced (via the Backplane) to all the major components of the machine. The board receives signals from, and sends control signals to machine components. The Main Board houses the central processor and other logic components for game generation and video drivers, security items, power control, memory storage, and communications.
Backplane (may also be called the Interface Board).	The Backplane houses an array of connectors which are used to electrically connect (via direct mechanical coupling or through looms and ribbon cables) the various electrical components of the machine to the Main Board.
I/O Driver Board	The I/O Driver Board drives the lamps, receives inputs from the pushbuttons, interfaces with the coin handling system, and provides a battery-backed circuit for security monitoring.
Communication Configuration Board	The Communication Configuration Board (CCB) 'piggy-backs' to the Main Board. The board is used to set up the communications channels of the Main Board (up to three) for external networks, bill acceptor, touchscreen and printer.
Logic Cage	The logic cage consists of a secure, steel cabinet that houses the Main, Communications Configuration, and I/O Driver PCBAs. The section of the Interface Board that interfaces with the Main Board and the I/O Driver Board is also located within the logic cage.
Power Supply Assembly	The power supply assembly converts the AC mains input voltage into low voltage DC power for the various machine modules and circuits. Power is directed via the Interface Board to the machine components. The video monitor and the fluorescent lighting system receive AC power directly from the power supply assembly.
Coin Handling System	The function of the coin handling system is to check the validity of coins inserted, establish a count and pass signals to the Main Board. The coin handling system directs coins to the hopper, cash box, or coin tray. The MAV/6 is compatible with several different coin handling systems.
Hopper (if used)	The hopper acts as a holding unit for coins. When instructed by the main board, the hopper returns coins to the player. For each coin ejected, the hopper sends a signal to the Main Board. When the required number of coins has been dispensed, the Main Board signals the hopper motor to stop.
Bill Acceptor and Soft Drop Analyser (if used)	The function of the bill acceptor is to accept valid note currency and register the appropriate number of credits for gameplay. A note stacker is used to store the notes and to record monetary and statistical information.



Player Communication (if used)	The function of player communication is to allow a player, using an identification card, to 'log on' to a network system when playing a machine. The network system maintains a record of player transactions, and allows messages to be sent to individual players. The player communication module can be attached to the side of the gaming machine or fitted in the top box.
Mechanical Meter Board (if used)	Electromechanical meters are used to record accounting data in a physical format. The signals for the meters are received from the Main Board, via the Backplane.
Ticket Printer (if used)	A ticket printer can provide players with a ticket for redeemable credits. The printer may also keep a second copy of all tickets printed for additional audit information.
Communications Interface (if used)	The function of the communications interface is to enable the machine to be linked to a network and/or subsidiary equipment. The communications interface may be linked to various machine modules, including security, for transmission of changes in device status.
Light Tower (if used)	Multi-level light towers may be used to provide an additional level of customer service and security.
Touchscreen (if fitted)	A touchscreen enables games to be played by touching designated areas of the screen.



Figure 1-1 Typical MAV500/MKVI Video Gaming Machine with Bill Acceptor  
- External View



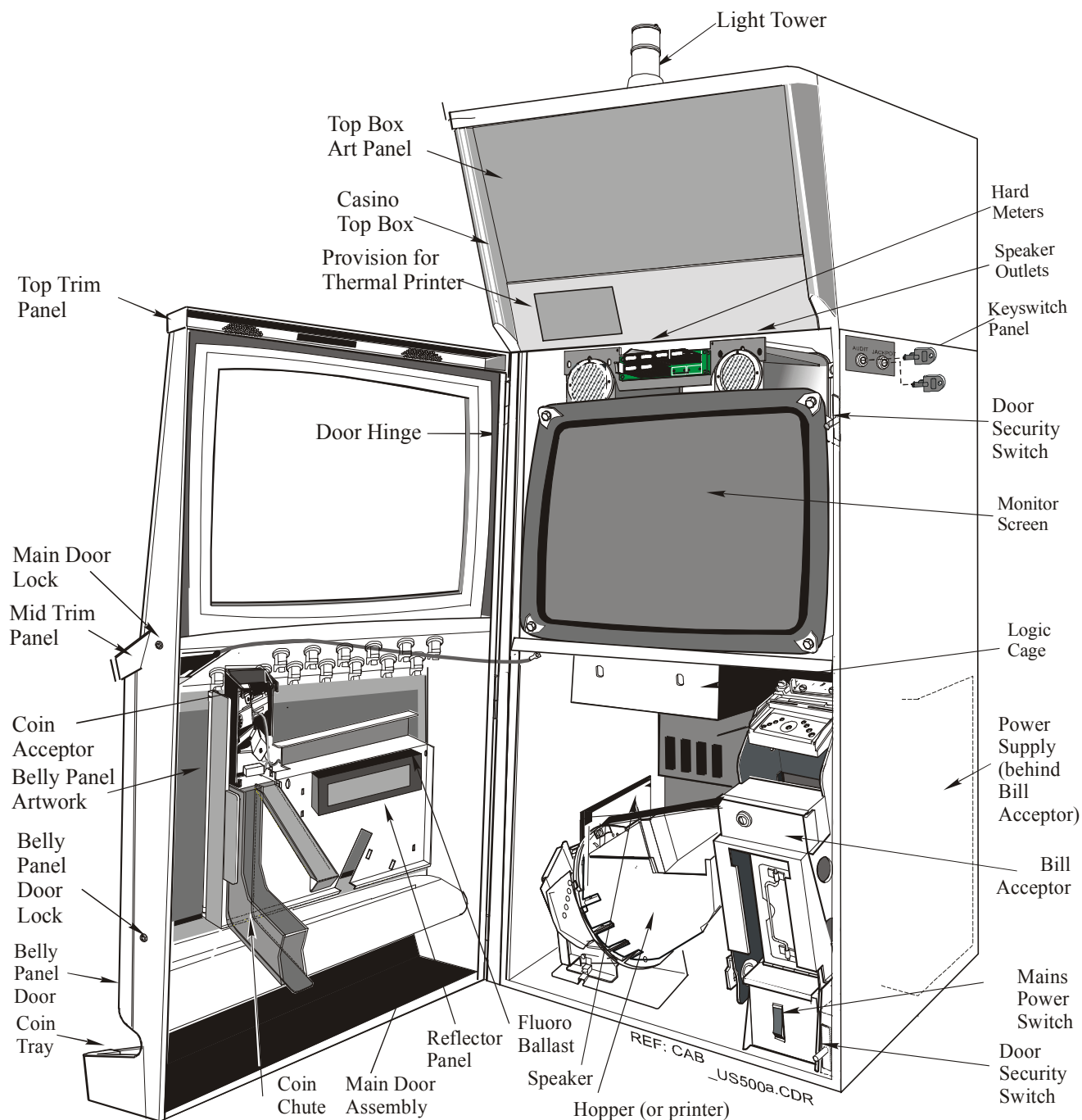


Figure 1-2 Typical MAV500/MKVI Video Gaming Machine with Bill Acceptor  
- Internal View



## Machine Keys

The gaming machine requires keys for the following locks and switches to establish effective security and correct operation. A key may only be removed from its lock or key switch after it has been returned to the locked position. Refer to Figure 1-1 for lock and keyswitch positions.

*Table 1-2 Machine Keys*

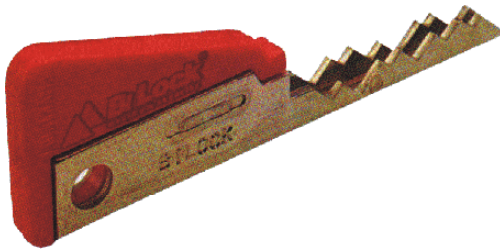
Name	Function
Cabinet Door Lock	Allows the operator to open the cabinet door. Insert the cabinet door key and turn it 180° clockwise, then the door will “pop” open.
Audit Key Switch	Enables entry to the Operator Mode Menu (see Machine Modes). Insert the Audit Key and turn it 180° clockwise.
Cabinet Door Lock	Allows the operator to open the cabinet door. Insert the cabinet door key and turn it clockwise, then lift the latch to release the door.
Jackpot Reset Keyswitch - also called the Cancel Credit Key Switch	Allows the operator to reset the machine after a machine fault has been corrected (see Machine Modes). Insert the Cancel Credit key, turn it 90° clockwise then back again.
Logic Cage Lock (if fitted)	Allows the operator access to the PCB logic cage. Insert the logic cage key and turn it clockwise.
Bill Acceptor Cage Door Lock(s) (optional)	Allows operator access to the bill acceptor stacker lock(s) and to remove the stacker. Turn keys 180° clockwise to open.
Bill Acceptor Stacker Lock	Allows the operator to remove the notes from the stacker. Insert the key and turn it 90° clockwise, open the door and remove the notes.



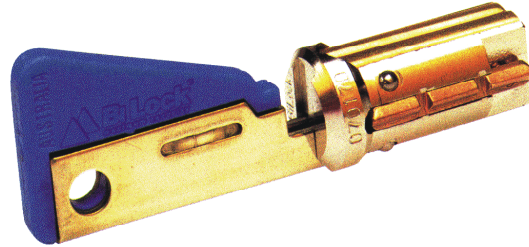
## Bilock Locks

The gaming machines may be fitted with high-security Bilock camlocks and switchlocks with a unique "U" shaped keyway. The locks feature the Quick Change Core facility whereby the keyed core of the lock is fitted separate to the lock barrel. Locks may be rekeyed in a matter of seconds without having to dismantle the lock assembly.

To remove a lock assembly, simply unscrew the large nut on the lock barrel and pull out the lock assembly.



**Bilock Key**



**Quick Change Core**

*Figure 1-3 Bilock "U" Shaped Keyway and Quick Change Core Features*

## 1.2 Basic Operation

The gaming machine functions are controlled by an advanced software and hardware platform that gives operators greater control over machine functions, easier maintenance, and simplified machine setup. New games developed with the software provide higher quality graphics, new sounds, and a wider variety of features.

The machine has two major modes of operation: **Play** mode and **Operator** mode.

The machine is in Play Mode when the cabinet door is closed and locked, the Audit key switch is in the OFF position and there are no fault or lock-up conditions.

The machine is in Operator Mode when the Audit key switch is in the ON position. The operator mode provides a range of operational procedures, data displays, and specific machine functions, all of which are fully controlled by the Operator Mode Menu system and the on-screen guidance. The functions of the operator mode are explained in detail in the chapter Machine Modes.

When the machine is in operator mode, normal game operation is not possible. However, combination test mode provides a simulation of gameplay without using currency.



### 1.2.1 Play Mode

When in Play Mode, the machine:

- operates security and audit features,
- runs self-checking and testing continuously,
- permits gameplay,
- monitors and records gameplay activities continuously,
- displays comments and guidance for players, operators and technicians.

Basic machine operation in Play Mode is shown in Figure 1.4. Depending on the machine configuration, credits may be registered by inserting coins, tokens, or bank notes, or by using a cashless system. With a cashless system, credits are transferred to and from the machine through either a computer link or a smart card. The machine has security features for screening the currency tendered to ensure that only valid currency is accepted.

If the machine accepts the currency, the playbuttons on the mid trim become active and flash. The player may then insert more currency, play a game by pressing one of the flashing playbuttons, or have the machine return the current credit total by pressing the CASHOUT pushbutton.

1. The player determines how many credits to wager by pressing one of the BET pushbuttons, and the BET meter on the display screen shows the credits wagered.

Once the player starts a game by pressing one of the active playbuttons, the machine runs the game sequence and displays the outcome on the screen. If the result is a winning combination, the player may gamble the win (if the gamble feature is available); otherwise, the machine increments the credits won. If the result is not a winning combination, the player may continue gameplay provided there are credits remaining.

The machine is equipped with electronic audit meters which continuously monitor and record credit movement and game activity. Electromechanical meters may also be fitted. The electronic meters are accessed through the Operator Mode. The information in these meters is used for audit calculations and security purposes.

If the machine encounters an abnormal condition, it alerts the operator by automatically entering Machine Lockup. In lockup, gameplay is disabled to prevent any further player interaction and guidance information is displayed in the game message area. The lockup condition can be identified by examining the Current Lockup screen, which is accessed from the Operator Mode Menu.





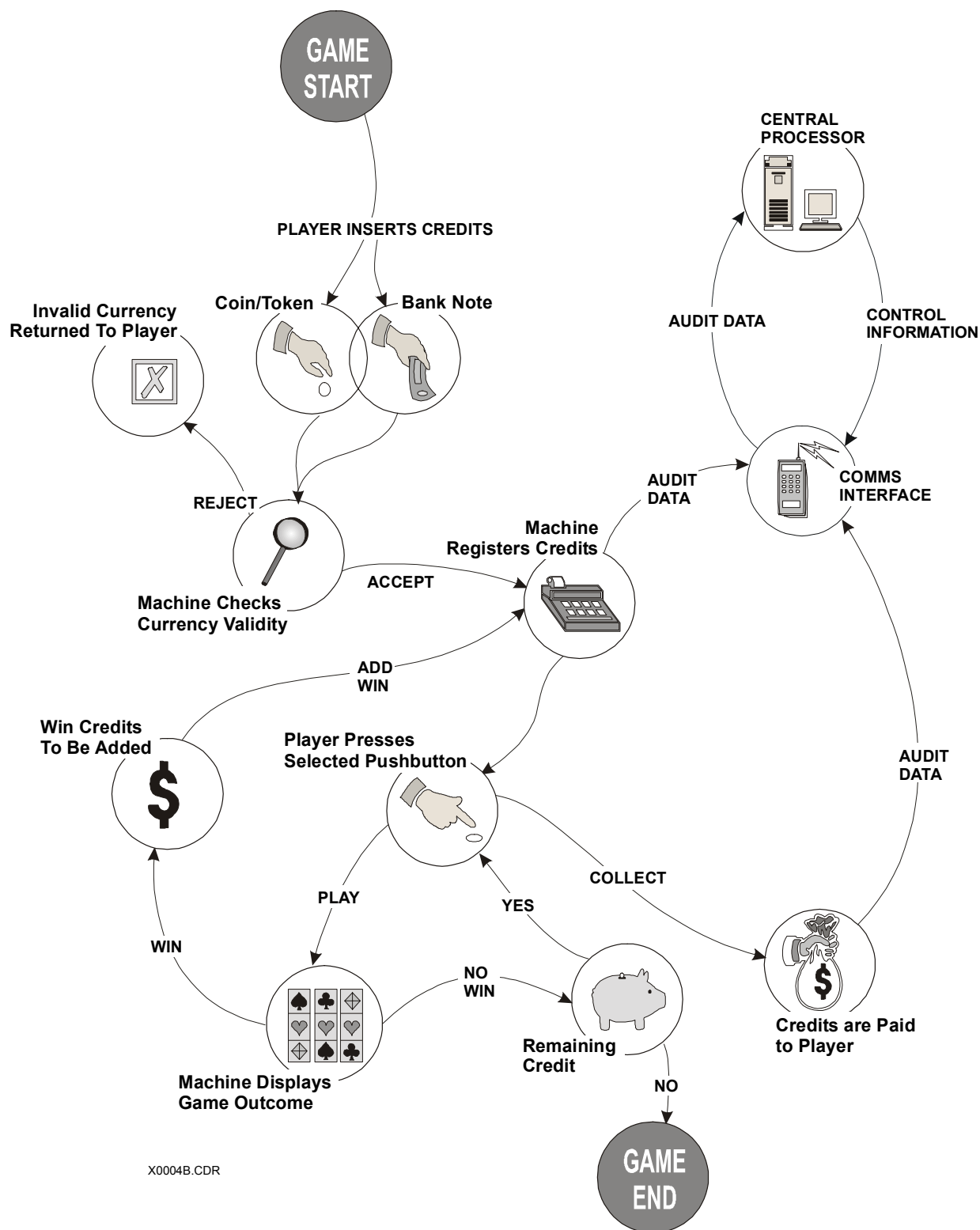
### 1.2.2 Operator Mode

Within Operator Mode (Audit Key ON), the following options are available:

- machine identification
- metering information
- diagnostic information
- operator setup/selection
- miscellaneous
- current lockup mode.

In Operator Mode, the electronic audit meters and the electromechanical meters (if fitted) do not function. Menu selections may be used to review the machine details, select new configurations, and carry out machine tests. Refer to the chapter Machine Modes for detailed information.





X0004B.CDR

Figure 1-4 Basic Game Operation in Play Mode



## 1.3 Specifications

Table 1-3 Physical Characteristics

<b>Dimensions (Typical)</b>	
Height of cabinet with Casino/Round top box	1323 mm
Height of cabinet with chop top box	1091 mm
Height of low boy cabinet	897 mm
Width	500 mm
Depth	611 mm
Recommended minimum clearance between machines	160 mm
<b>Weight (Typical)</b>	
With casino top box and bill acceptor	approx. 102 kg

Table 1-4 Power Requirements

The voltage selector switch on the power supply assembly may be set for a mains voltage of either 110/120 V or 220/230/240 V.

<b>Nominal Mains Input Voltage</b>	<b>120 V</b>	<b>240 V</b>
Minimum	99 V AC	198 V AC
Maximum	132 V AC	264 V AC
Frequency	60 Hz	50 Hz
<b>Mains Input Current</b>		
Gaming Machine Idle	0.7 A	0.4 A
Gaming Machine Maximum	3.6 A	1.8 A
Gaming Machine Maximum plus Convenience Load Maximum	6.6 A	4.8 A
<b>Power Consumption at Nominal Voltage</b>		
Gaming Machine Idle	60 W	96 W
Gaming Machine Maximum plus Convenience Load Maximum	840 W	1152 W
Gaming Machine Typical Power Consumption	430 W	480 W

Table 1-5 Environment

	<b>Operating</b>	<b>Storage</b>
Minimum Temperature	32° F (0° C)	-4° F (-20° C)
Maximum Temperature	122° F (50° C)	176° F (80° C)
Relative Humidity	0 - 80% non-condensing	0 - 95% non-condensing



Table 1-6 Compliances

Compliances	Explanation
UL22 (Pending)	Standard for Safety Amusement and Gaming Conditions
FCC-CFR47-Pt15	Radiated EMI for ITE standard
AS1099 (Pending)	Environmental testing for electro-technology over a specified temperature and humidity range



## Notes



# Chapter 2

## Installation

### 2.1 Pre-Installation Requirements

The following items are required to install a machine (see Figure 2-1, Figure 2-2, and Figure 2-3):

- verification of jurisdictional approval.
- a floor plan (only required for new installations).
- a suitable base on which to mount the machine.
- adequate clearance between the sides of adjacent machines to allow the doors to be opened (a minimum clearance of 6-1/4-inches is recommended).
- access to mains power outlets and connection cables of peripheral devices.
- machine keys (if locks are fitted).

#### Important Note

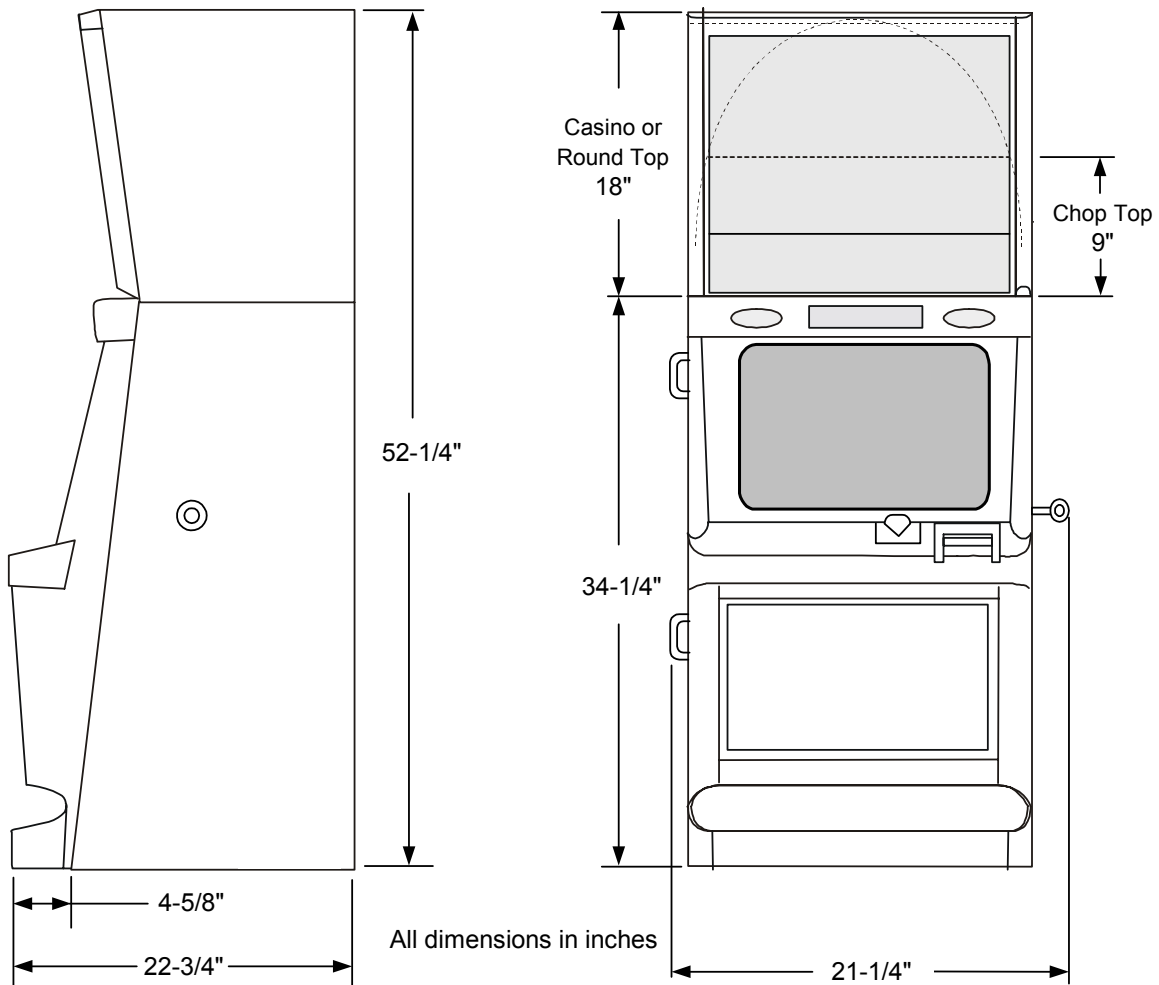
All mains power wiring must be installed by a qualified electrician and comply with the relevant national/jurisdictional standards for mains wiring.

#### WARNING

The gaming machine must be transported and handled with care. Ensure the machine is not dropped or severely bumped.

- Applicable electrical standards require a method of disconnecting gaming machines from primary power. Since the main power switch is within the gaming machine, the machine is to be switched off at the main circuit breaker panel in the event of an electrical fault.



*Figure 2-1 Machine Dimensions*

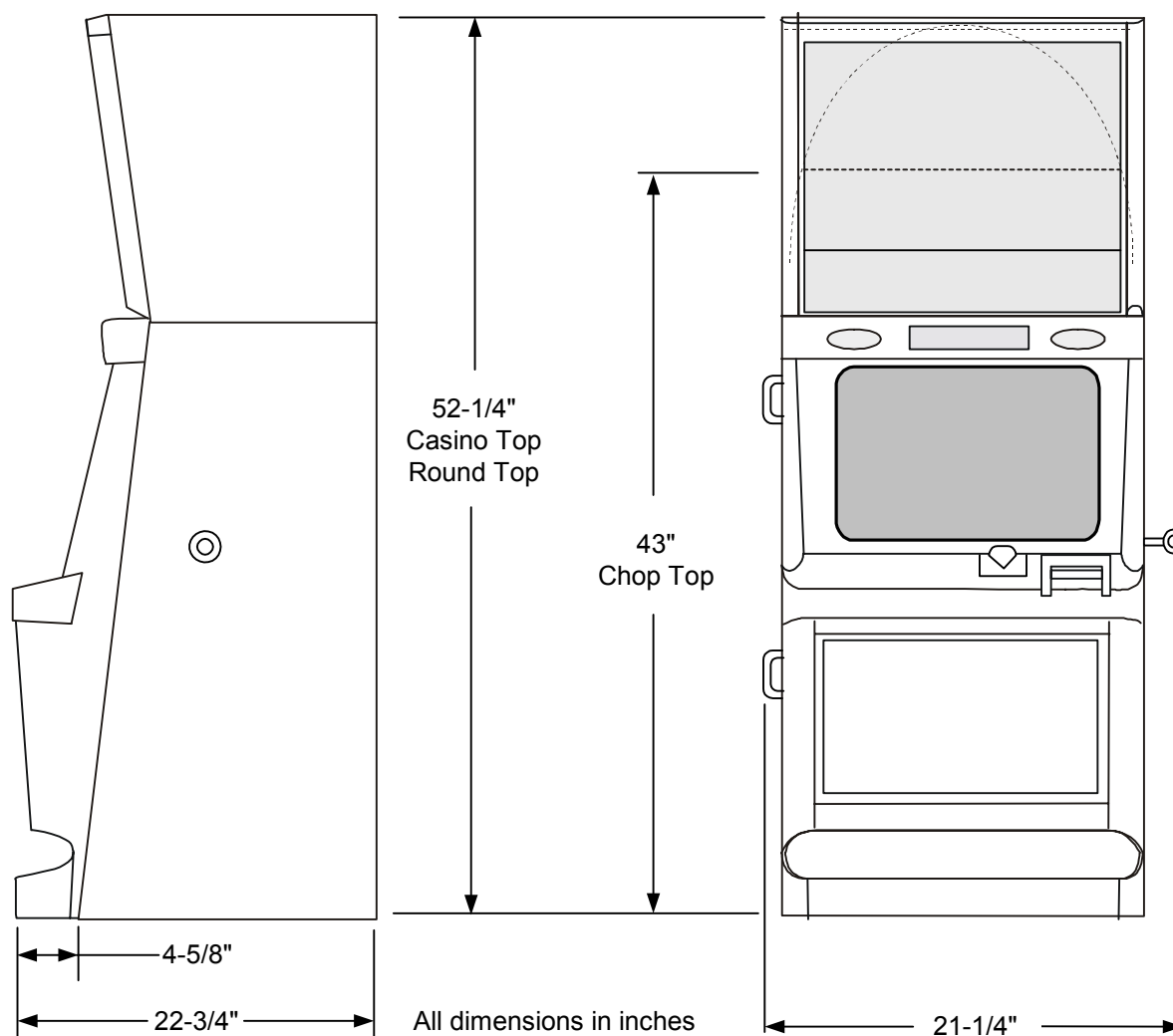


Figure 2-2 Machine Dimensions – Chop Topy





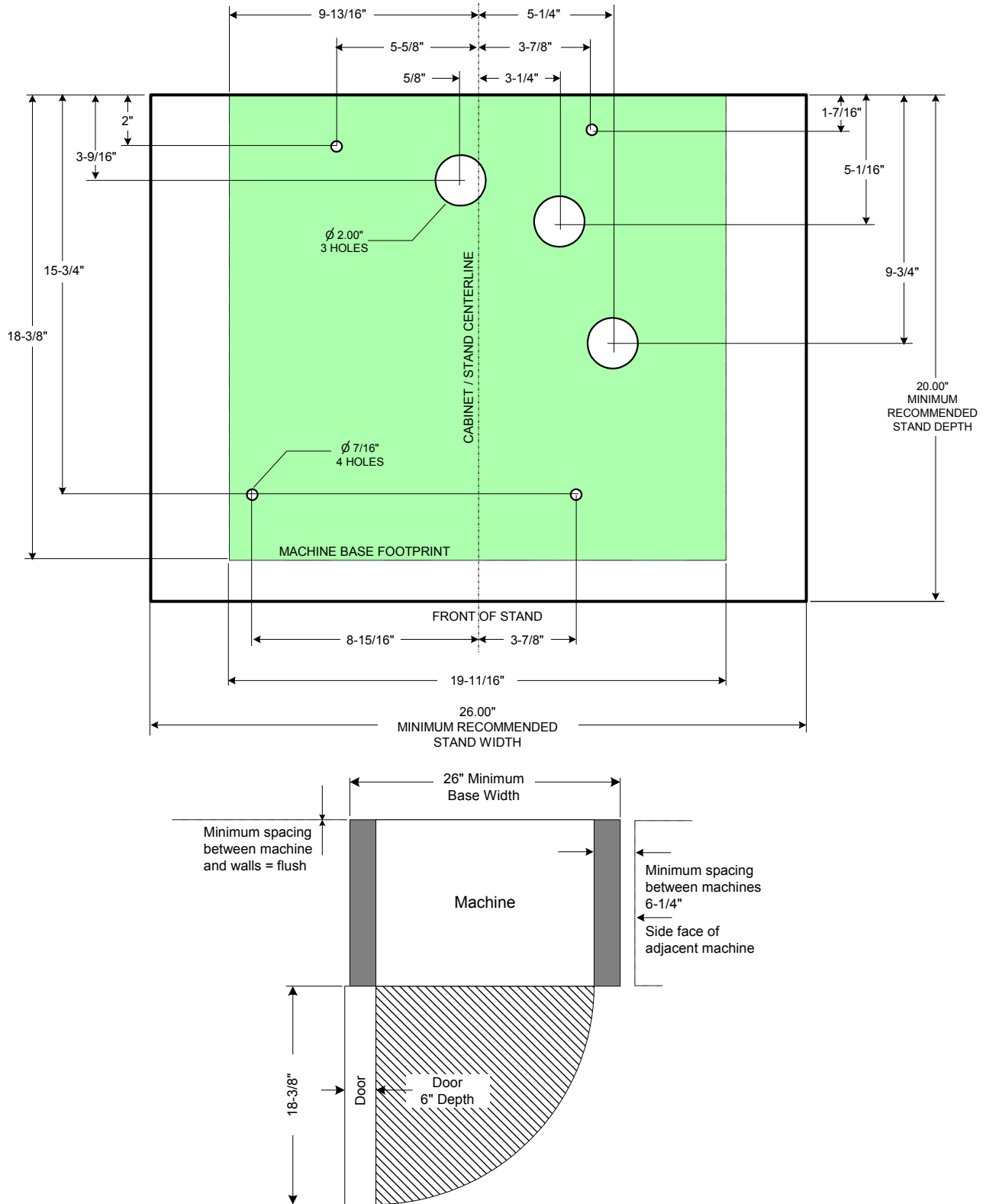


Figure 2-3 Machine Footprint and Clearances



## 2.2 Inspection on Delivery

Inspect all exterior panels of the cabinet for damage that may have occurred during transportation. Report any damage to your supervisor.

## 2.3 Installation Procedure

**Installation and commissioning of machines must be carried out by an appropriately licensed technician and must comply with the regulations of the jurisdictional authority.**

The following procedures are for mounting, connecting, and commissioning the gaming machine into service.

### 2.3.1 Mounting

#### WARNING

The gaming machine is a heavy item. Follow the national standard and code of practice for manual handling.

Mount the machine to the cabinet base as follows:

#### Warning

The gaming machine must not be operated unless it has been properly installed.

1. All holes should be pre-drilled before the machine is placed on the base.
2. Position the machine on the cabinet base, aligning it with the cash box and cable holes (refer to Figure 2-3). Drill holes in the cabinet base to match the four rectangular mounting holes of the machine base. The machine **must** be fixed in four positions, two at the front and two at the back, to meet stability requirements.
3. Secure the machine to the base using either bolts and nuts or the special-purpose fasteners provided.



## 2.3.2 Pre-start Connections, Checks and Power Up

Perform the following machine connections and checks:

1. Check that the printed circuit board assemblies (PCBAs) in the logic cage are firmly seated. The PCBAs are:
  - ◆ Main Board
  - ◆ Backplane Board
  - ◆ Extended USA I/O Driver Board
  - ◆ Communications Configuration Board.

### Note

For accessing PCBAs, refer to the relevant chapter in the Service Manual.

2. The machine power supply is set at the factory for a mains input voltage of 110 V in North America, unless clearly labeled otherwise. Should there be a need to change the mains input voltage setting:

### WARNING

Make sure the machine is disconnected from mains power before adjusting voltage settings.

### WARNING

Selecting the wrong power supply voltage may cause damage to the power supply and/or gaming machine.

Set the voltage selector switch on the power supply for the desired mains input voltage (110 VAC or 240 VAC). The switch is mounted on the metal housing of the power supply assembly, which is located at the back of the cabinet, in the bottom right-hand corner.

3. Make sure that the mains power switch is OFF. Connect the mains power cable to the machine. The power cable may enter the cabinet either via a hole in the base of the cabinet or via a hole in the rear wall of the cabinet. A hole is provided in the base of the cabinet, near the cable entrance, to allow a clamp to be fitted to the mains cable. The purpose of this clamp is to prevent the mains power cable from being accidentally disconnected. This clamp should be fitted if there is a reasonable risk that the mains power cable may be accidentally disconnected.



**WARNING**

Visually check that the insulation of the mains power cable is sound. Check that all machine earth wires (green/yellow stripe or braid) and screws that were moved during installation are correctly attached.

4. If the machine is fitted with a coin comparator (as opposed to a coin validator), then a sample coin (or token) must be placed in the coin comparator sensor assembly (refer to Figure 2-4) which is mounted to the reflector panel on the inside of the main door. To install a sample coin:
  - a. Slide (without lifting) the scanner unit to the right.
  - b. Insert the sample coin into place and carefully release the scanner unit. The coin should automatically seat itself.
  - c. Check that the sample coin is seated firmly between the scanner unit and the ribs of the rail insert.

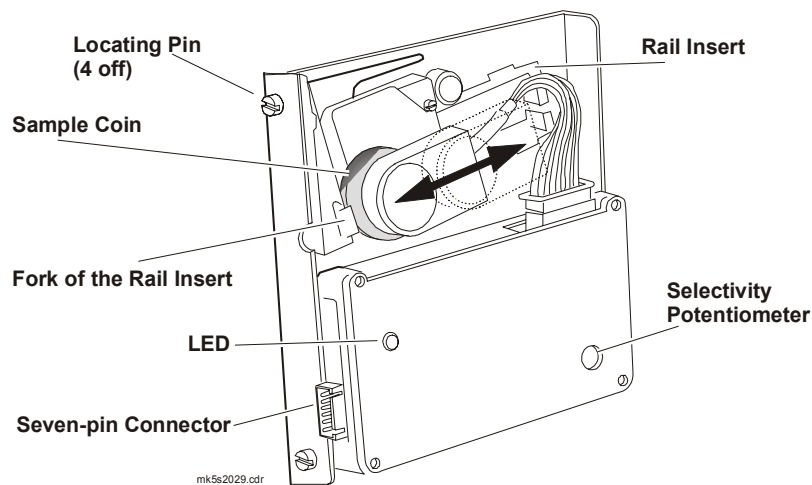


Figure 2-4 Coin Comparator Assembly (MC-62 shown)

5. Switch ON the machine and close the main door (see item 6 below). The monitor and fluorescent lighting system will then be powered up. The machine will perform self-testing procedures for a few moments and any faults detected will be highlighted by a message on the video screen. To fix detected faults, refer to Fault Mode in the Machine Modes chapter.
6. If the monitor exhibits colour aberrations, this may be the result of magnetic interference. Degaussing the monitor and cabinet, as described below, can remove the color aberrations.
  - a. Power down the machine and wait for a one-minute period. This time delay enables the monitor circuits to reset and enable the degaussing operation.
  - b. Power up the machine and close the door. Automatic degaussing will now occur.



- c. Should color aberrations persist, use a degaussing coil to degauss the monitor and cabinet.

### 2.3.3 Commissioning the Machine

Carry out the following procedures to commission the machine:

1. Check that the machine program type and variation match the customer order. Use the Operator Mode menu and the options described in the chapter Machine Modes.
2. If the machine is fitted with a hopper, fill the hopper as described below.

#### Important Note

The procedure for filling the hopper is dependent on house rules.

- a. Obtain the correct number of coins required to fill the hopper.
  - b. Open the cabinet door. If the jurisdiction requires that the hopper be weighed, turn OFF the machine before removing the hopper.
  - c. Place the coins in the hopper, and close and lock the cabinet door.
  - d. Record the number of coins placed in the hopper in the refill register.
3. Where the Operator permits, monitor gameplay operations for any faults:
    - a. For machines that accept bills, coupons, or bank notes, insert a valid bank note (in good condition) and confirm that it is accepted and credited correctly. If the bank note is not accepted on the second attempt, repeat the test on another note. If the second bank note is also rejected, refer to the Fault Finding section in the Bank Note Acceptor chapter of the Service Manual.
    - b. For machines that accept coins, check that coins are accepted, credited, and paid out correctly.

Retrieve bank notes and coins inserted during testing.

4. Machines operating on a network system may now be connected and installed onto the network. For installation procedure refer to the manual for the particular communications network used.
5. For machines fitted with a ticket printer, carry out the general maintenance procedures as detailed in the Printer chapter of the Service Manual or the Care and General Maintenance chapter of the Operator Manual.
6. Request an Operator to record the values of the hard audit meters (if fitted) and the soft audit meters (as required by the applicable jurisdictional authority).
7. Log installation data as specified by the appropriate jurisdictional requirements.

The machine may now be placed in service pending appropriate jurisdictional approval.



## Notes



# Chapter 3

## Machine Modes

### 3.1 Modes of Operation

The gaming machine is operated in two main modes, Play Mode and Operator Mode. Play Mode permits gameplay while the machine is fully operational and the cabinet door is closed. Operator Mode allows the operator to configure the machine, view audit information, carry out machine tests, and reset machine faults. Turning the Audit Key ON switches the machine from Play Mode to Operator Mode.

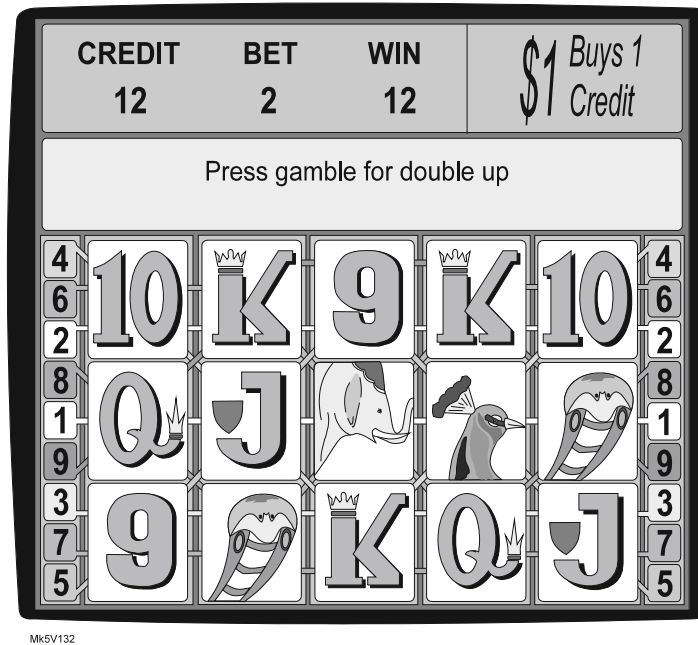
The gaming machine may be configured to play one of several types of games, the most common being spinning reel games and poker games. Although spinning reel games are featured in this chapter, the explanations and information given can be easily adapted to other game types. The options and procedures outlined are similar for all game types.

### 3.2 Play Mode

The machine is in Play Mode when the cabinet door is closed and locked, and there are no active lockup conditions. In Play Mode the machine:

- shows game displays in readiness for player operation,
- carries out gameplay,
- continuously monitors and records play activities,
- continuously runs the self-test processes,
- displays comments and guidance for players, operators, and technicians.





*Typical Format of Game Display*

Figure 3-1 shows the format of a game display. The symbols on the screen will vary depending on the particular game software being used. The CREDIT, BET, and WIN game meters show the number of credits applicable at the current stage of the game. Comments appear in two message lines to guide players and operators as the game progresses. Machine conditions, including security alerts, are also displayed in the message area.

Examples of comments are:

- Game Over
- Main Door Open
- Coin Diverter Fault
- COMBINATION TEST

Lockup fault messages are listed in Section 3.3.6, Current Lockup Items.

In Play Mode the machine operates with full security features. For example, the machine monitors operations and alerts operators should malfunction or tampering occur. Electronic meters and electromechanical meters (if fitted) record details of gameplay and machine operations in Play Mode.





## Options

Besides being able to alter machine controls to suit house preferences, the machine provides menu controls for setting important game and player preferences, including:

- Game percentage,
- Links to house and stand-alone progressives in various levels,
- Hopper coin-collect limit,
- acceptable bill (\$ note) denominations
- Volume settings for sounds and tunes.

See Section 3.3.4, Operator Setup/Selection Mode.

The base credit value (a game credit), machine token amount for coin entry, and game gamble option are set using the DIP switches on the I/O Driver Board.

### Note

Jurisdictional requirements must be followed when configuring machines.

## 3.2.1 Player Operation

When the machine is switched on and the cabinet door is closed and locked, the fluorescent tubes light up and the machine automatically initiates a self-test. If no faults are detected, gameplay may begin.

### Play Pushbuttons

When a player inserts a coin or note, the machine either accepts or rejects the currency. If the machine accepts the currency, it increments the CREDIT meter on the game video display by the number of credits. The mid trim pushbuttons become active and flash. The player may now either insert more currency or press one of the pushbuttons to play the game. The player selects the number of credits to bet and this number is shown on the BET meter on the video display. A beep sound is heard when any of the BET playbuttons is pressed.

The reels then start to spin and after a short interval come to rest. When the spinning reels stop, the line combinations are evaluated. If the result is a winning combination, a win tune is played. The video display shows the number of credits won in the WIN meter.

Some games incorporate a win gamble feature that provides players with the chance to double their WIN amount. This feature is initiated by pressing the GAMBLE pushbutton. The GAMBLE feature may be selected a maximum of five times in succession. If players do not wish to gamble their WIN, they may press the TAKE WIN button to add the WIN to the CREDIT meter.



Due to the limit on the number of coins that can be held in the hopper, as well as other payout considerations, there is a limit to the number of coins that the machine can pay out. This is called the Hopper Limit and is set via the Operator Mode Menu  $\Rightarrow$  Operator Setup/Selections screen.

A player can collect coins up to the Hopper Limit amount by pressing the CASHOUT pushbutton. When the CASHOUT button is pressed, the machine prevents functions such as gameplay and entry of currency until the hopper has dispensed the coins into the coin tray. A hopper sensor counts the coins being dispensed. The CREDIT meter decrements to zero.

When a player presses the CASHOUT pushbutton and the value of the game credits is greater than the Hopper Limit:

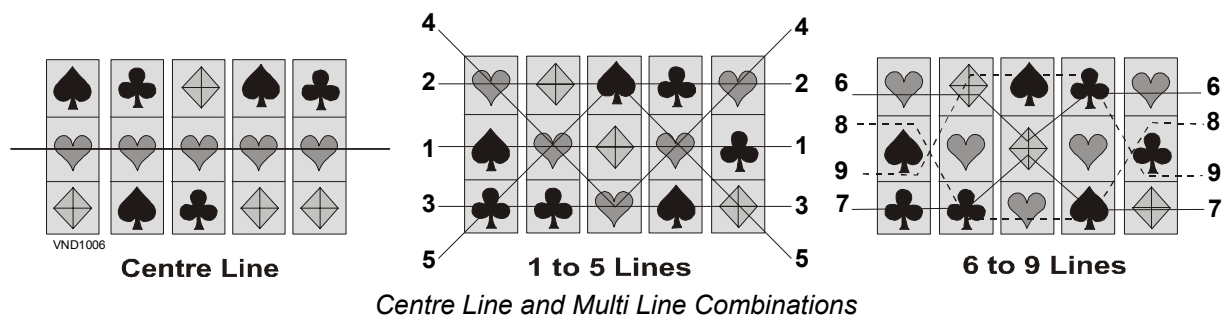
- the message **Call attendant - Cancel Credit \$99.99** is displayed (\$99.99 is the value of credits to be paid out).
- the attendant hand pays the value of the credits and then resets the machine by turning the Jackpot Key ON then OFF.
- the message **Credits paid out \$99.99** is displayed on the screen.
- the CANCEL CREDIT electronic meters and electromechanical meters record the number of credits paid out.
- the game CREDIT on the screen and the CREDIT electronic meters are reset to zero.

## Types of Games

Machines generally have one of three game types: multiplier, multiline, and multiline-multiplier:

**Multiplier-** A multiplier game allows a player to gamble more than one credit per game on a single winning line. Each additional credit gambled generally multiplies the value of the prize by the value of the credits bet.

**Multiline-** A multiline game allows a player to specify multiple lines on which to bet for a winning combination. The win total is calculated by adding each of the win lines.



### 3.2.2 Video Display

The video display unit provides high-resolution graphics. The unit is able to display attractive game illustrations and animations, as well as player messages, operator menus and information displays.

The simulated spinning reels take up most of the screen area. The area at the top of the screen displays CREDIT, BET, and WIN information, as well as the coin denomination accepted. Between these two areas is the message display area.

### 3.2.3 Sounds and Tunes

Sounds and tunes are used, in combination with the graphics and animation, to increase game appeal.

Different sounds are played to signify various machine conditions, such as alarm, reel spin/stop, win, lose, double-up win, jackpot bell, coins entering machine, and coins falling to coin tray. Each game has its own specific sounds and tunes.

The volume of the sound system can be adjusted in the Sound System Setup menu.



### 3.2.4 Light Tower

Multi-level light towers are fitted to provide an additional level of customer service, security and house control. The tower is color coded to identify the machine's denomination.

Typical light tower functions are as follows:

CONDITION	DOOR CLOSED		DOOR OPEN	
	Top Light	Bottom Light	Top Light	Bottom Light
<b>Idle</b>	OFF	OFF	OFF	FAST FLASH
<b>Service</b>	ON	OFF	ON	FAST FLASH
<b>Tilt</b>	SLOW FLASH	OFF	SLOW FLASH	FAST FLASH
<b>Hand Pays</b>	SLOW FLASH	SLOW FLASH	SLOW FLASH	FAST FLASH

The Light Tower indicates one of four possible machine states:

The **IDLE** state: the default state when no other state exists.

The **SERVICE** state: when the 'Service' button has been being pressed and it is lit.

The **TILT** state: the machine will be considered to be in this state when one of the following conditions exists:

- a lockup fault condition (excluding Main Door Open and the Handpays state), such as Logic Door Accesses or Bill Acceptor Error.
- a non-lockup fault condition, such as Bill Stacker Full or Printer Paper Low.

The **HANDPAYS** state exists when one of the following conditions occur:

- a Jackpot lockup,
- a Cancelled Credit lockup, or
- a Progressive Link Jackpot lockup.

#### Note

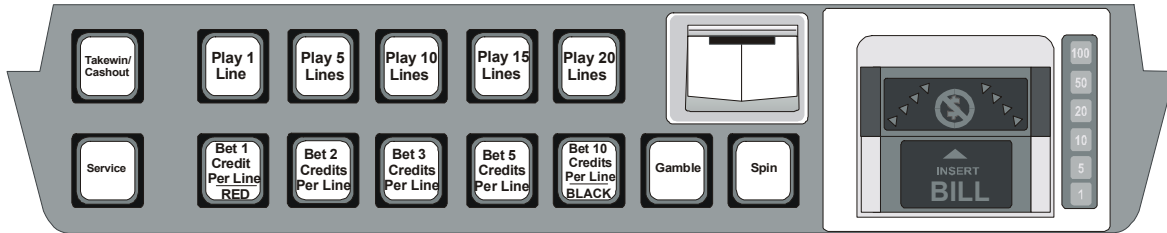
After the Main Door has been closed, the bottom tier light should remain lit (unless it is otherwise flashing) until the start of the next game.



### 3.2.5 Pushbuttons

A typical layout of the pushbuttons is shown below. The pushbuttons are labelled and have the following functions: CASHOUT/TAKEWIN, SERVICE, PLAY 1/5/10/15/20 LINES, BET 1/2/3/5/10 CREDITS, GAMBLE, and RED and BLACK, which refer to features of the gamble option.

Each pushbutton has a lamp behind it that may either be lit, unlit, flashing, or flashing at double speed, depending on the circumstances and the machine mode.



*Typical Pushbutton Layout*

#### Cashout/TakeWin Button

The enabled Cashout button is used to initiate a player credit payout from the machine in the form of a hopper pay, a printer cash ticket, or a cancel credit handpay procedure.

The Cashout button will be disabled if there is no credit on the credit meter, a hopper payout is in progress, or the machine is in the process of playing a game. Otherwise, this button will be lit to indicate it is enabled.

#### Service Button

This button is used by the player to request service. Pressing this button will toggle the button lamp on and off, and will toggle the Service tier of the light tower on and off.

The Service tier of the light tower is also used to signal non-lockup errors. The on-screen error message is cleared by pressing the Service button again. The error is cleared when the fault has been corrected. The following faults are non-lockup faults:

- Bill acceptor disconnected fault
- Bill stacker fault
- Bill stacker full
- 5 Bills rejected
- Printer paper low.



## 3.2.6 Machine Self-Monitoring

### Self-test

When the machine is switched on, it automatically initiates a self-test that continues in the background as long as the machine is in play mode. During the self-test, the machine checks the electronic meter data held in computer memory and also carries out an audit calculation using essential meter counts.

This self-audit calculation is defined by the formula:

$$\begin{aligned} &\text{CASH IN} + \text{HOPPER REFILLS} + \text{TOTAL CREDITS WON} + \text{JACKPOT HANDPAYS} \\ &= \\ &\text{TOTAL CREDITS BET} + \text{CANCEL CREDIT} + \text{COIN OUT} \end{aligned}$$

The memory holds up to three copies of the electronic meter data, METER SET 1, METER SET 2 and METER SET 3. If the data in one meter set does not match that in the other two sets, the data of the two identical sets overwrites the single set.

### Security

When the machine is in Play Mode, it continuously operates the following security features:

**Coin Acceptor.** The coin acceptor scans inserted coins and compares them with a sample coin held in the acceptor. Invalid coins are diverted to the coin tray. Accepted coins are directed past the acceptor's internal photo-optic detector and on to the coin accept chute.

The machine software monitors the speed and direction of travel of the accepted coins. For coins travelling too slowly or travelling in the wrong direction, an error signal is generated and the machine locks up, with the appropriate error message being displayed on the screen.

If the inserted coin is valid and no error conditions are encountered, the appropriate credits are registered in the game CREDIT display and gameplay may take place. The Jurisdictional Meters CASH IN and CREDIT and the electromechanical meter CASH IN (if fitted) are incremented accordingly.

**Hopper.** If the hopper is empty and the player is in credit and presses the CASHOUT/TAKEWIN pushbutton, the machine locks up and displays a HOPPER EMPTY message and the electronic meter HOPPER EMPTY increments. The hopper is refilled in these circumstances according to house rules, after which gameplay may resume.

During a payout, the hopper disc rotates and passes coins onto the coin runner where they are counted by the hopper photo-optic detector. After passing the detector, they are deposited in the coin tray for the player to collect. Also:

- the CREDITS COLLECTED electromechanical meter and the TRUE OUT electronic meter are incremented by the amount paid out.



- the game CREDIT on the screen and the CREDIT electronic meter are decremented by the amount paid out.
- a payout message is displayed on the screen showing the value paid out.

The machine monitors the hopper operation and the coin's passage from the hopper to the coin tray. Unusual conditions and faults are registered by increments in the Diagnostic Meters, video messages and machine lockups. These fault conditions are ILLEGAL COIN OUT, HOPPER EMPTY, HOPPER JAMMED, and HOPPER DISCONNECTED.

**Bill (Bank Note) Acceptor.** The Bill Acceptor consists of an optical scanning unit and a bill stacker contained in a high-security housing. The scanning unit achieves a high percentage of acceptances, and a second-level scanning option can be initiated for high-denomination bills.

During operation, the acceptor registers acceptances and rejections. Bills accepted increment the BILLS INSERTED electronic meter and electromechanical meter (where fitted). Detailed information is recorded in the Bill Acceptor meters, which may be accessed from Operator Mode / Accounting Information Menu. These meters record the value and quantity of each note accepted. A record is also kept of the last five notes accepted.

The machine monitors the bill acceptor operation and unusual conditions and faults are registered by increments in the Diagnostic Meters, and by display messages and machine lockups. The lockups and video messages are BILL ACCEPTOR ERROR and BILL ACCEPTOR OUT OF SERVICE. Should the bill stacker door be opened, the alarm sounds and the message BILL STACKER REMOVED is displayed.

A lockup occurs should the bill acceptor stacker become full. The lockup description and video message is BILL ACCEPTOR FULL.

The belly panel door which provides access to the bill stacker is monitored by a mechanical security switch (see below for further details).

## Door Access

The main door, cash box door, belly panel door, and logic cage door are monitored by mechanical security switches. If a door fitted with a security switch is opened, the following actions occur:

- One of the following messages is displayed on the screen: DOOR OPEN MAIN, DOOR OPEN CASH BOX, DOOR OPEN BILL ACCEPTOR, or SECURITY CAGE OPEN MAIN BOARD.
- The alarm sound is heard.
- One of the following lockups occurs: MAIN DOOR OPEN, CASH BOX DOOR OPEN, BILL ACCEPTOR DOOR OPEN, or LOGIC DOOR OPEN.
- gameplay is suspended.



- One of the following electronic Diagnostic Meters is incremented: MAIN DOOR ACCESSES, CASH BOX ACCESSES, BILL ACCEPTOR ACCESSES, or LOGIC ACCESSES.

The condition is reset by closing the appropriate door.

### 3.2.7 Electronic Meters

The electronic meters (soft meters) record a variety of details relating to machine operation, gameplay and player interaction, as well as a variety of statistical counts, security events and past games. Players have the assurance that there is a record kept of recent win or pay situations.

When the machine is switched on, it automatically initiates a self-test that continues in the background as long as the machine is in play mode. During the self-test, the machine checks the electronic meter data held in memory.

Some jurisdictions require electronic metering data to be stored in triplicate in three separate battery-backed RAM chips. In the case of a meter malfunction, where none of the meters sets match, the machine displays the error message 3-WAY MEMORY ERROR and the machine locks up. This message indicates a serious machine malfunction.

Failure in the self audit calculation also causes a machine lockup with the message SELF AUDIT ERROR being displayed.

#### Resetting Metering and Self Audit Errors

To clear a metering or self audit error, it is necessary to rectify the memory fault and re-establish correct operations with all corrupted meters set to zero. The lockup is removed by turning the Audit Key ON, following the on-screen guidance, and then turning the Audit Key OFF to return to gameplay. After recovering from a memory error, all electronic meters will be reset to zero. The information held in the electronic meters includes Accounting Information Menu items, Diagnostic Information Menu items, and Operator Setup / Selections Menu items as detailed in the Operator Mode.





### 3.3 Operator Mode

Operator Mode addresses the jurisdictional and accounting / management information requirements, allows the machine configuration to be changed, and facilitates machine testing and fault finding. Entry to Operator Mode is achieved by turning the Audit (Operator) key ON. The various options can be selected by following the on-screen guidance and pressing the appropriate pushbutton.

#### Note

The screen displays and options covered in this chapter are typical; however, slight variations may occur between markets.

The Operator Mode structure is shown in Figure 3-5 and the Operator Mode Menu screen is shown below

OPERATOR MODE MENU	
1	Machine Identification
2	Accounting Information
3	Diagnostic Information
4	Test/Diagnostics Information
5	Operator Setup/Selections
6	Miscellaneous
7	Current Lockup
Service – Press to select next item	
Cashout/TakeWin	– Press to select previous item
Play 15 Lines	– Press to choose selected item
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit

#### Note

“Audit key - Turn off to exit” message will not be displayed if a Lockup is present.

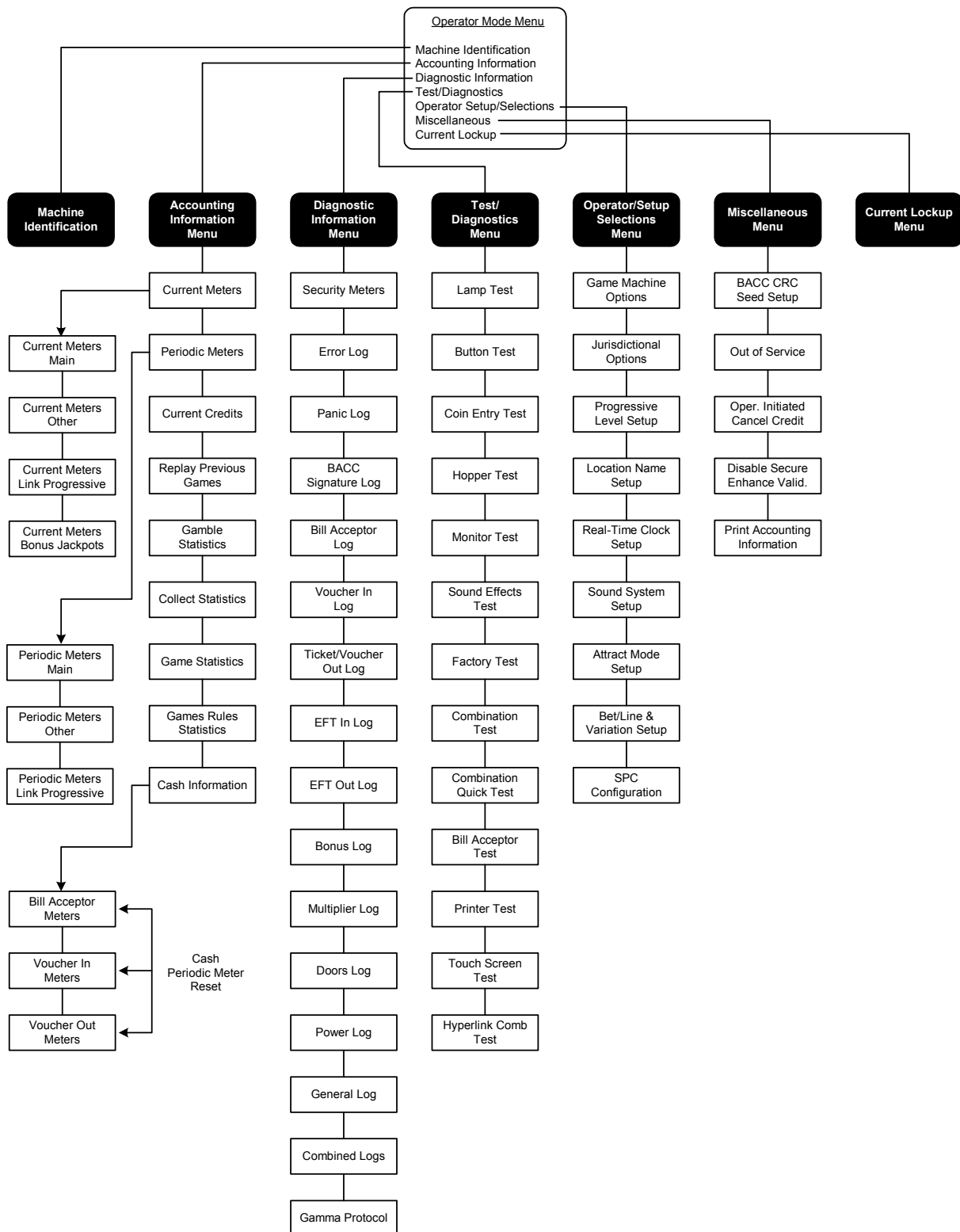
Instructions are given on each screen to guide the operator through the various menus and options available. Any active lockups (tilts) are indicated by a flashing message at the bottom of the screen.



The Set Chip used for the USA Software has the fields given in the table below, but the requirement to actually install occurs only during the initial setup of each machine for the market.

SET CHIP IDENTIFICATION AND CONFIGURATION	
Jurisdictional Options Menus:	?
Money Setup Menu:	Dollar \$1.00 buys 100 credits
Payout Setup Menu:	Hopper menu/OR thermal Printer
Playline Setup Menu:	9 lines max, 10 credits per line max
Miscellaneous Options:	Game Variation 99
Save All Options:	MACHINE OPTIONS ARE CURRENT
Clear All Memory	
Play 7 Lines	– Press to enter Jurisdiction Options menu
TakeWin/Cash	– Press to select previous option
Service	– Press to select next option
Audit key	– Turn off to exit





Operator Mode Menu Displays - Typical Structure



### 3.3.1 Machine Identification

The Machine Identification screen provides essential machine information, such as Game EPROM Id, Credit Value, Percentage Return, and Jackpot Limit.

MACHINE IDENTIFICATION AND CONFIGURATION		
Machine Number (GMID):	11	Setchip Version 6.01.xx
Variation (% and no.):	87.801% 99	Value of 1 Coin: \$1.00
Actual Game Operating %:	0.000%	Value of 1 Credit: \$0.05
Actual Bonus Operating %:	0.000%	
Location Name:	"	
Mikohn Address:	disabled	
Progressive Links Supported:	0	
Comms Protocol Supported:	Gamma	
Hopper or Printer Installed:	Hopper selected	
Handpay Payout Limit:	20 coins \$20.00	
Jackpot Win Limit:	910020 credits \$9100.20	
Maximum Credit Limit:	\$1199.99	
Validation Mode :	No Validation Enabled	
Firmware Identification		
System EPROM Id:	05010309	
Game EPROM Id:	0150002	BACC Id: not activated
Combination Identification		
Number:	US001/1	
Issue:	A – 04/06/01	
Description:	50 Credit Multiplier/20 Line Multiline	
Bet 10 Credits	– Press to return to previous menu	
Audit key	– Turn off to exit	



### 3.3.2 Accounting Information

The Accounting Information displays provide information for gaming regulators, as well as additional financial and statistical details (including periodic performance details, game replay, and game and gamble statistics) for gaming properties. Most of the information can not be altered, although some details may be changed from the Game Machine Options menu which can be accessed from the Operator Setup / Selections menu (see previous page).

The various screen displays may be accessed by following the on-screen guidance and pressing the appropriate pushbuttons.

ACCOUNTING INFORMATION MENU	
2.1	Current Meters
2.2	Periodic Meters
2.3	Current Credits
2.4	Replay of Previous Games
2.5	Gamble Statistics
2.6	Collect Statistics
2.7	Game Statistics
2.8	Game Rules Statistics
2.9	Cash Information
Service	– Press to select next item
Cashout/TakeWin	– Press to select previous item
Play 15 Lines	– Press to choose selected item
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit

#### Current Meters

The Current Meters provide the financial counts of machine activity. Items include turnover, total wins, and amounts inserted in the coin entry and the bill acceptor devices. In depth statistical information is also provided by the Game and Gamble displays.



CURRENT METERS – MAIN			
	METER SET 1	METER SET 2	METER SET 3
Current Credits:	0	0	0
Total Games Played:	0	0	0
Total Credits Bet:	0	0	0
Total Credits Won:	0	0	0
True In (Coins Inserted):	0	0	0
Bills Inserted:	0	0	0
Vouchers Inserted:	0	0	0
Coin Drop (Cashbox):	0	0	0
Gross Drop (Gross In):	0	0	0
True Out (Coins Out):	0	0	0
Split Pay Out (Coins Out):	0	0	0
Cashout Handpays:	0	0	0
Split Voucher Pays:	0	0	0
Jackpot Wins:	0	0	0
Total Handpays:	0	0	0
Service – Press to display next meter screen Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit			

Three copies of the current meters are stored in memory. All three meter sets should be of equal value for each meter. If the values are not equal, a random access memory problem probably exists.

CURRENT METERS – OTHER			
	METER SET 1	METER SET 2	METER SET 3
EFT – Electronic Funds Transfer			
Total Electronic Credits In:	0	0	0
Cashable EFT In:	0	0	0
Player Non-Cashable EFT In:	0	0	0
Machine Non-Cashable EFT In:	0	0	0
Total Electronics Credits Out:	0	0	0
Cashable EFT Out:	0	0	0
Player Non-Cashable EFT Out:	0	0	0
Machine Non-Cashable EFT Out:	0	0	0
Power Up (count):	0	0	0
Games Since Power Up:	0	0	0
Games Since Door Open:	0	0	0
Cashout/TakeWin – Press to display previous meter screen Service – Press to display next meter screen Bet 3 Credits – Press to return to previous menu Audit key – Turn off to exit			



CURRENT METERS – LINK PROGRESSIVES			
	METER SET 1	METER SET 2	METER SET 3
Occurrences of			
JP0:	0	0	0
JP1:	0	0	0
JP2:	0	0	0
JP3:	0	0	0
JP4:	0	0	0
JP5:	0	0	0
Mystery Pay:	0	0	0
Accumulative Value of			
JP0:	\$0.00	\$0.00	\$0.00
JP1:	\$0.00	\$0.00	\$0.00
JP2:	\$0.00	\$0.00	\$0.00
JP3:	\$0.00	\$0.00	\$0.00
JP4:	\$0.00	\$0.00	\$0.00
JP5:	\$0.00	\$0.00	\$0.00
Mystery Pay:	\$0.00	\$0.00	\$0.00
Mystery to Credit:	\$0.00	\$0.00	\$0.00
Link to Credit:	\$0.00	\$0.00	\$0.00
Cashout/TakeWin Service	– Press to display previous meter screen		
Bet 10 Credits	– Press to display next meter screen		
Audit key	– Press to return to previous menu		
	– Turn off to exit		

CURRENT METERS – BONUS JACKPOTS			
	METER SET 1	METER SET 2	METER SET 3
Total Bonuses			
Handpays (Tax Deductible):	0	0	0
Handpays (Non-Tax Ded.):	0	0	0
Handpays (Wager Match):	0	0	0
Credit Meter (Tax Ded.):	0	0	0
Credit Meter (Non-Tax Ded.):	0	0	0
Credit Meter (Wager Match):	0	0	0
Multiplier Wins (MJT)			
MJT Wins (Tax Deductible):	0	0	0
MJT Wins (Non-Tax Ded.):	0	0	0
Last Session Accum. Wins:	0	0	0
Last Session Reason:	"Multiplier Win		"
Cashout/TakeWin	– Press to display previous meter screen		
Bet 3 Credits	– Press to return to previous menu		
Audit key	– Turn off to exit		



The items recorded in the Current Meters screens are explained below.

Meter	Description
Bills Inserted	The total credits of all bills inserted (and accepted) into the machine.
Cashable EFT In	Credits transferred to the machine from a player's account by a host system instead of inserting bills, coins or tickets.
Cashable EFT Out	Credits transferred to the player's account by a host system instead of being paid at the machine in coin or by tickets.
Cashout Handpays	The total of all credits paid out as handpays as a result of Cashouts exceeding the Hopper Payout Limit (or the Printer Payout Limit).
Coin Drop	Total number of all coins that are diverted to the cashbox.
Current Credits	Credits currently available to be bet or collected.
Games Since Door Open	The number of games played since the main door was last opened.
Games Since Power Up	The number of games played since the power was last restored.
Gross Drop	The total credit value of all money (coins and bills) accepted by the machine.
Jackpot Wins	The total of all credits paid out as handpays as a result of wins exceeding the Jackpot Win Limit
Machine Non-Cashable EFT In	Credits transferred to the machine from a host system. These credits stay with the machine and cannot be removed by the player and cannot be converted to cash. Example: A player presents a free coupon to play \$5.00. The coupon is accepted by the casino and entered into the host system, which applies \$5.00 in credits to a specific machine. The player can then play the credits. If the credits are not played, the host system can remove the credits from the machine.
Machine Non-Cashable EFT Out	See description and example above for Machine Non-Cashable EFT In.
Player Non-Cashable EFT In	Similar to the description above for Machine Non-Cashable EFT In, except the credit applied by the host system is assigned to a player instead of a specific machine. The credit can therefore be played on any number of machines.
Player Non-Cashable EFT Out	See description above for Player Non-Cashable EFT In





Meter	Description
Power Up	The number of times the power has been restored.
Total Credits Bet	Accumulated value of all credits bet.
Total Credits Won	Accumulated value of credits won that is paid out : <ul style="list-style-type: none"> <li>- to the credit meter,</li> <li>- as a hopper payout, or</li> <li>- a winning cash ticket.</li> </ul>
Total Games Played	Total number of games played.
Total Handpays	The total credits of all combined handpays including : <ul style="list-style-type: none"> <li>- Cashout Handpays,</li> <li>- Jackpot Handpays,</li> <li>- Win Handpays, and</li> <li>- Progressive Handpays (Links and Mysterys).</li> </ul>
True In	The total number of all coins inserted (and accepted) into machine.
True Out	The total credits of all Cashout/TakeWins paid out by the machine, either by: <ul style="list-style-type: none"> <li>- hopper payout, or</li> <li>- printer ticket (CASH OUT Tickets and CASH WIN Ticket).</li> </ul>



## Periodic Meters

The Periodic Meters screens contain the same information items as the Jurisdictional Meters, but the values held usually relate only to a specified period determined by the venue management. The periodic meters can be reset via the Miscellaneous option from the Operator Mode Menu.

PERIODIC METERS – MAIN			
	Since Wed 20 Mar 2002 13 : 16 : 37		
	METER SET 1	METER SET 2	METER SET 3
Total Games Played:	0	0	0
Total Credits Bet:	0	0	0
Total Credits Won:	0	0	0
True In (Coins Inserted):	0	0	0
Bills Inserted:	0	0	0
Vouchers Inserted:	0	0	0
Coin Drop (Cashbox):	0	0	0
Gross Drop (Gross In):	0	0	0
True Out (Coins Out):	0	0	0
Split Pay Out (Coins Out):	0	0	0
Cashout Handpays:	0	0	0
Split Voucher Pays:	0	0	0
Jackpot Wins:	0	0	0
Total Handpays:	0	0	0
Service	– Press to select next meter screen		
Play 15 Lines	– Press to reset periodic meters		
Bet 10 Credits	– Press to return to previous menu		
Audit key	– Turn off to exit		

PERIODIC METERS – OTHER			
	Since Wed 20 Mar 2002 13 : 16 : 37		
	METER SET 1	METER SET 2	METER SET 3
EFT – Electronic Funds Transfer	0	0	0
Total Electronic Credits In:	0	0	0
Cashable EFT In:	0	0	0
Player Non-Cashable EFT In:	0	0	0
Machine Non-Cashable EFT In:	0	0	0
Total Electronics Credits Out:	0	0	0
Cashable EFT Out:	0	0	0
Player Non-Cashable EFT Out:	0	0	0
Machine Non-Cashable EFT Out	0	0	0
Power Up (count)	5	5	5
Cashout/TakeWin	– Press to display previous meter screen		
Service:	– Press to display next meter screen		
Play 15 Lines	– Press to reset periodic meters		
Bet 10 Credits	– Press to return to previous menu		
Audit key	– Turn off to exit		



PERIODIC METERS – LINK PROGRESSIVES			
		Since Wed 20 Mar 2002 13 : 16 : 37	
Occurrences of	METER SET 1	METER SET 2	METER SET 3
JP0:	0	0	0
JP1:	0	0	0
JP2:	0	0	0
JP3:	0	0	0
JP4:	0	0	0
JP5:	0	0	0
Mystery Pay:	0	0	0
Accumulative Value of			
JP0:	\$0.00	\$0.00	\$0.00
JP1:	\$0.00	\$0.00	\$0.00
JP2:	\$0.00	\$0.00	\$0.00
JP3:	\$0.00	\$0.00	\$0.00
JP4:	\$0.00	\$0.00	\$0.00
JP5:	\$0.00	\$0.00	\$0.00
Mystery Pay:	\$0.00	\$0.00	\$0.00
Mystery to Credit:	\$0.00	\$0.00	\$0.00
Link to Credit	\$0.00	\$0.00	\$0.00
Cashout/TakeWin		– Press to display previous meter screen	
Play 15 Lines		– Press to reset periodic meters	
Bet 10 Credits		– Press to return to previous menu	
Audit key		– Turn off to exit	

## Current Credit Meters

The Current Credit Meters can be reset via the Miscellaneous option from the Operator Mode Menu.

CURRENT CREDIT TYPES			
Total Available Money:	\$1.87	\$1.87	\$1.87
	METER SET 1	METER SET 2	METER SET 3
Total Credits			
Current Credits:	187	187	187
Cashable Credits			
Cashable Credits:	187	187	187
Non-Cashable Credits			
Non-Cashable Player Credits:	0	0	0
Non-Cashable Machine Credits:	0	0	0
Fractional Money			
Fractional Cashable Money:	No fractional credit exists		
Fractional Non-Cashable Player Money:	No fractional credit exists		
Fractional Non-Cashable Machine Money:	No fractional credit exists		
Bet 10 Credits		– Press to return to previous menu	
Audit key		– Turn off to exit	



## Replay Previous Games

This Replay Previous Games screen allows the operator to replay the most recent games played on the machine. The most recent game is game number 1, and thirty of the most recent games are normally available to be replayed. Because these game histories are stored dynamically in memory, the number of games available to be recalled will vary depending on the available memory.

GAME REPLAY				
Previous Game	Credit	Game Summary		Options
		Bet	Win	
Last	Game not available			REPLAY GAME
2 <sup>nd</sup>	Game not available			VIEW GAME METERS
3 <sup>rd</sup>	Game not available			VIEW MONEY IN/OUT
4 <sup>th</sup>	Game not available			VIEW PROGRESSIVE
5 <sup>th</sup>	Game not available			GAME EVENT LOGS
6 <sup>th</sup>	Game not available			CANCEL
7 <sup>th</sup>	Game not available			
8 <sup>th</sup>	Game not available			
9 <sup>th</sup>	Game not available			
10 <sup>th</sup>	Game not available			
Bet 10 Credits		– Press to return to previous menu		
Audit key		– Turn off to exit		



## Gamble Statistics

The Gamble Statistics screen displays the gamble statistic of the machine. For each winning amount within a winning range, the selected gambled or Take win is recorded.

GAMBLE STATISTICS									
Win Amount (Credits)			Gambled		Take Win	Chosen		Won	
			Half	Full		Half	Full		
1	–	4	0	0	0	Red	Red	Red	
5	–	9	0	0	0	0	0	0	
10	–	19	0	0	0	Black	Black	Black	
20	–	29	0	0	0	0	0	0	
30	–	49	0	0	0	Heart	Heart	Heart	
50	–	99	0	0	0	0	0	0	
100	–	199	0	0	0	Diamond	Diamond	Diamond	
200	–	499	0	0	0	0	0	0	
500	–	999	0	0	0	Spade	Spade	Spade	
1000	–	1999	0	0	0	0	0	0	
2000	–	4999	0	0	0	Club	Club	Club	
5000 +			0	0	0	0	0	0	
Service – Press to display next gamble screen Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit									

GAMBLE STATISTICS			
Player Takes Win After		Number of times Take Win selected	
		Last gamble Half	Last gamble Full
1	Gamble	0	0
2	Gambles	0	0
3	Gambles	0	0
4	Gambles	0	0
Cashout/TakeWin – Press to display previous gamble screen Bet 3 Credits – Press to return to previous menu Audit key – Turn off to exit			



The following text provides an explanation for the information in the Gamble Statistics:

Win Amount	Specifies the range of winning amount in credits.
Gambled (if applicable)	The number of times that a player chooses to Double after a winning play.
Take Win	The number of times that a player chooses to take the win after a winning play.
Won	Total number of times that card beat the dealer card.



## COLLECT Statistics

The COLLECT Statistics screen displays, for each range of COLLECT credits, the number of times players COLLECT the total credits.

COLLECT STATISTICS		
Collect Amount (Credits)		Times Collected
0	– 10	0
11	– 20	0
21	– 30	0
31	– 40	0
41	– 50	0
51	– 75	0
76	– 100	0
101	– 200	0
201	– 300	0
301	– 500	0
501	+	0
Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit		

The following text provides an explanation for the information in the COLLECT Statistics:

COLLECT Amount (Credits)	Specifies the range of COLLECT amount in credits, eg., 1 - 10, 11 - 20, 21 - 30, 31 - 40, 41 - 50, 51 - 75, 76 - 100, 101 - 200, 201 - 300, 301 - 500, 501+
Times COLLECTED	The number of times that a player COLLECTED credits in that range.



## Game Statistics

Details of game play are recorded and displayed through the Game Statistics option. The types of bets and lines chosen are analysed, and the number of games played and the money won is displayed for each sub-division.

### GAME STATISTICS MENU

- 2.7.1 Game Type Specific Statistics
- 2.7.2 Game Feature Statistics

Service	– Press to display next item
Cashout/TakeWin	– Press to display previous item
Play 15 Lines	– Press to choose selected item
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit

### GAME TYPE SPECIFIC STATISTICS

Lines	Bet	Games Played	Money Won	Lines	Bet	Games Played	Money Won
1	1	4	\$0.00	7	1	0	\$0.00
1	5	0	\$0.00	7	2	0	\$0.00
1	10	0	\$0.00	7	3	0	\$0.00
1	25	0	\$0.00	7	5	0	\$0.00
1	50	0	\$0.00	7	10	0	\$0.00
3	1	0	\$0.00	9	1	0	\$0.00
3	5	0	\$0.00	9	2	0	\$0.00
3	10	0	\$0.00	9	3	0	\$0.00
3	25	0	\$0.00	9	5	0	\$0.00
3	50	0	\$0.00	9	10	0	\$0.00
5	1	0	\$0.00				
5	5	0	\$0.00				
5	10	0	\$0.00				
5	25	0	\$0.00				
5	50	0	\$0.00				

Service	– Press to display next game screen
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit





## GAME TYPE SPECIFIC STATISTICS

No. of Times Player Changed

Bets and Lines: 0

Lines: 0

Bets: 0

Cashout/TakeWin – Press to display previous game screen

Bet 10 Credits – Press to return to previous game

Audit key – Turn off to exit

## HYPERLINK INFORMATION

Level 1 Occurance: 0

Level 2 Occurance: 0

Level 3 Occurance: 0

Level 4 Occurance: 0

Level 5 Occurance: 0

Total Num of Hyperlink Hit: 0

Bet 10 Credits – Press to return to previous menu

Audit key – Turn off to exit



## Games Rules Statistics

Select this screen to view statistical information regarding player access to the game rules screens.

The information displayed is based on the total time since the last Game Rule meter reset.

GAMES RULES STATISTICS	
Total Game Rule accesses:	7
Total time spent in Game Rules (days hh: mm: ss):	0 00: 02: 26
Average time spent in Game Rules:	20. 8 secs
Accesses > 10 sec for Page 1:	3
Accesses > 10 sec for Page 2:	2
Accesses > 10 sec for Page 3:	3
Service	– Press to scroll forward by one line
Cashout/TakeWin	– Press to scroll backward by one line
Play 15 Lines	– Press to scroll by one page
Play 10 Lines	– Press to reset Game Rule meters
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit

## Cash Information

This menu provides access to all bill acceptor and voucher meters.

CASH INFORMATION MENU	
2.9.1	Bill Acceptor Meters
2.9.2	Voucher In Meters
2.9.3	Voucher Out Meters
Service	– Press to select next item
Cashout/TakeWin	– Press to select previous item
Play 15 Lines	– Press to choose selected item
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit



## Bill Inserted Meters

This screen provides a record of the number of bills of each denomination received, the last five bills accepted, the total value of bills received, the total value of bills in the bill stacker, the number of bills accepted / rejected, and the amount of change money obtained.

To maintain the accuracy of this information, the Bill Inserted Meters must be reset when the stacker is emptied. To reset the meters, select Miscellaneous  $\Rightarrow$  Reset Bills in Stacker.

BILL ACCEPTOR INFORMATION						
Number Received		Total	Periodic	Since Wed 20 Mar 2002	13 : 16 : 37	
\$1	Bills:	0	0			
\$2	Bills:	0	0			
\$5	Bills:	0	0		Total	Periodic
\$10	Bills:	0	0	In Stacker	0	0
\$20	Bills:	0	0	Validated	0	0
\$50	Bills:	0	0	Rejected	0	0
\$100	Bills:	0	0			
TOTAL VALUE:		\$0.00	\$0.00			
LAST FIVE BILLS RECEIVED			Time Now	Wed 20 Mar 2002 13 : 16 : 37		
Last:		Nothing				
Second Last:		Nothing				
Third Last:		Nothing				
Fourth Last:		Nothing				
Fifth Last:		Nothing				
Play 15 Lines		– Press to reset periodic cash meters				
Bet 10 Credits		– Press to return to previous menu				
Audit key		– Turn off to exit				



## Voucher In Meters

The Voucher Acceptance Meters record the number of occurrences of specific voucher accesses and machine faults.

VOUCHER ACCEPTANCE INFORMATION		
Number of	Total	Periodic Voucher Meters Since Wed 20 Mar 2002 13 : 16 : 37
Cashable Vouchers:	0	0
Machine Non-Cashable Vouchers:	0	0
Player Non-Cashable Vouchers:	0	0
Unknown Type Vouchers:	0	0
LAST FIVE VOUCHERS RECEIVED		Time Now: Wed 27 Mar 2002 18 : 57 : 17
Last Voucher In:	Nothing	
Second Voucher In:	Nothing	
Third Voucher In:	Nothing	
Fourth Voucher In:	Nothing	
Fifth Voucher In:	Nothing	
Total of Vouchers Received:	\$0.00	= 0 credits
Vouchers In Stacker:	0	0
Vouchers Validated:	0	0
Vouchers Confiscated:	0	0
Change Credits Obtained:	0	0
Play 15 Lines	– Press to reset periodic voucher meters	
Bet 10 Credits	– Press to return to previous menu	
Audit key	– Turn off to exit	



## Voucher Out Meters

VOUCHER GENERATION INFORMATION				
Total and since Wed 20 Mar 2002 13 : 16 : 37				
Voucher Out Type	Total #	Total Amt	Periodic	Amount
Cashable Vouchers:	0	\$0.00	0	\$0.00
Machine Non-Cashable:	0	\$0.00	0	\$0.00
Player Non-Cashable:	0	\$0.00	0	\$0.00
Total of Vouchers Generated:		\$0.00	= 0 credits	
Cashout Vouchers:	0	\$0.00	0	\$0.00
Cash Win Vouchers:	0	\$0.00	0	\$0.00
Jackpot Vouchers:	0	\$0.00	0	\$0.00
LAST FIVE VOUCHERS PRINTED		Time Now: Wed 20 Mar 2002 16 : 21 : 17		
Last Voucher Out:	Nothing			
Second Voucher Out:	Nothing			
Third Voucher Out:	Nothing			
Fourth Voucher Out:	Nothing			
Fifth Voucher Out:	Nothing			
Play 15 Lines – Press to reset periodic voucher meters Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit				



### 3.3.3 Diagnostic Information Menu

The Diagnostic Information Menu provides access to the Self Test Mode and the Log displays.

DIAGNOSTIC INFORMATION MENU			
3.1	Security Meters	3.9	EFT Out Log
3.2	Error Log	3.10	Bonus Log
3.3	Panic Log	3.11	Multiplier Log
3.4	BACC Signature Log	3.12	Doors Log
3.5	Bill Acceptor Log	3.13	Power Log
3.6	Voucher In Log	3.14	General Log
3.7	Ticket/Voucher Out Log	3.15	Combined Logs
3.8	EFT* In Log	3.16	Gamma Protocol
Service – Press to select next item Cashout/TakeWin – Press to select previous item Play 15 Lines – Press to choose selected item Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit			

\* EFT = Electronic Fund Transfer

### Security Meters

The Security Meters record the number of occurrences of specific security accesses and machine faults.

SECURITY METERS			
Main Door Accesses:	0		
Cash Box Accesses:	0		
Logic Accesses:	0		
Bill Acceptor Accesses:	0		
Top Box Accesses	0		
Mechanical Meters Disc:	0		
Mechanical Meters Faults:	0		
Mechanical Meters Cage Accesses:	0		
Printer Faults:	0		
Printer Disconnected:	0		
Paper Depleted Faults:	0		
Service – Press to display next meter screen Bet 10 Cred – Press to return to previous menu Audit key – Turn off to exit			



SECURITY METERS	
Coin Optic Faults:	0
Coin Acceptor Faults:	0
Coin Diverter Faults:	0
Reversal Attempts:	0
Extra Coin Out:	0
Hopper Empty:	0
Hopper Jammed:	0
Hopper Disconnected:	1
Cash Box Instead Hopper:	\$0.00
Hopper Instead Cash Box:	\$0.00
SRAM Bank 1 Errors:	0
SRAM Bank 2 Errors:	0
SRAM Bank 3 Errors:	0
Cashout/TakeWin	– Press to display previous meter screen
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit

The following events are recorded in the Security Meters:

Meter	Description
Bill Acceptor Door Accesses	Incremented when the belly panel door is opened.
Cash Box Accesses	Incremented when the cash box door is opened.
Coin Acceptor Faults	Incremented if the coin acceptor pulse exceeds 50 ms.
Coin Diverter Faults	Incremented when the software detects that the coin diverter isn't operating correctly.
Coin Optic Faults	Incremented if the coin acceptor detects a coin jam.
Extra Coin Out	Incremented when the machine is not in hopper collect, but a coin passes the hopper optic.
Hopper Disconnected	Incremented when hopper is disconnected (checked once every second).
Hopper Empty	Incremented when in hopper collect two consecutive 4 second attempts to pay out a coin fail.
Hopper Jammed	Incremented when the hopper optic is blocked for more than 350 ms.
Logic Door Accesses	Incremented when the logic security cage is opened.



Meter	Description
Main Door Accesses	Incremented when the main door is opened.
Mechanical Meters Disconnected	Incremented if the meter board is disconnected.
Paper Depleted Faults	Incremented when the printer indicates that the paper roll has been completely depleted.
Printer Disconnected	Incremented when the printer is detected as being disconnected.
Printer Faults	Incremented when the printer indicates that an internal fault occurred.
Reverse Coin Attempts, (may also be referred to as Yoyo attempts)	Incremented when the coin acceptor device detects a coin passed through the coin optics in the reverse direction.
SRAM Bank # Errors	If any of the three SRAM banks indicate errors, a random access memory problem exists.
Top Box Accesses	Number of times that the machine top compartment has been opened.

This screen can be viewed following a replayed game.





## Error Log

This log displays the last 100 game/machine events. Each event is time stamped and the type of error is displayed. This log is very useful when troubleshooting.

ERROR LOG		
Event #	Timestamp	Error Type
0	Wed 20 Mar 2002 14:14:33	
1		
2		
3		
4		
5		
6		
7		
8		
9		
	Service	– Press to scroll forward by one line
	Cashout/TakeWin	– Press to scroll backward by one line
	Play 15 Lines	– Press to change scrolling mode
	Bet 10 Credits	– Press to return to previous menu
	Audit key	– Turn off to exit



## Panic Log

The panic log is an engineering diagnostic tool. This log is not generally used in the field for routine troubleshooting, but intended to display engineering review data.

PANIC LOG		
#	PC	Description
1	00000000	
2	00000000	
3	00000000	
4	00000000	
5	00000000	
6	00000000	
7	00000000	
8	00000000	
9	00000000	
10	00000000	
Service – Press to display panic time and info Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit		

PANIC LOG		
#	Timestamp	Process Info
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Cashout/TakeWin – Press to display panic description Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit		



## Bill Acceptor Logs

Two types of bill acceptor log are available. The first being the signature log that displays events that have occurred during routine bill acceptor firmware diagnostic routines. The signature log displays up to 35 of the last events that have occurred.

The second type of bill acceptor log displays events associated with bill acceptor operation.

Both types of event logs include time and date stamping.

BACC SIGNATURE LOG		
Event #	Timestamp	Event Type
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Service – Press to scroll forward by one line Cashout/TakeWin – Press to scroll backward by one line Play 15 Lines – Press to change scrolling mode Play 10 Lines – Press to display extra info Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit		

Additional detailed information is available on the second BACC log page.

BACC SIGNATURE DETAIL INFORMATION		
Event #	Timestamp	Details
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Bet 10 Credits – Press to return to previous menu Audit key – Turn off to exit		



The bill acceptor log displays us to 100 of the events that have occurred.

BILL ACCEPTOR LOG		
Event #	Timestamp	Event Type
1	Wed 20 Mar 2002 11:12:34	MMC – BACC – Disconnected
2		
3		
4		
5		
6		
7		
8		
9		
10		
Service – Press to scroll forward by one line		
Cashout/TakeWin – Press to scroll backward by one line		
Play 15 Lines – Press to change scrolling mode		
Bet 10 Credits – Press to return to previous menu		
Audit key – Turn off to exit		



## Voucher In Display

This log displays the last 50 cash tickets that have been accepted by the bill acceptor.

VOUCHER IN LOG			
Event #	Timestamp	Voucher Type	Amount
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Service		– Press to scroll forward by one line	
Cashout/TakeWin		– Press to scroll backward by one line	
Play 15 Lines		– Press to change scrolling mode	
Play 10 Lines		– Press to display extra info	
Bet 10 Credits		– Press to return to previous menu	
Audit key		– Turn off to exit	

## Ticket/Voucher Out Log Display

This log displays the last 100 cash tickets that have been generated by the machine ticket printer.

TICKET/VOUCHER OUT LOG			
Event #	Timestamp	Type	Amount
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Service		– Press to scroll forward by one line	
Cashout/TakeWin		– Press to scroll backward by one line	
Play 15 Lines		– Press to change scrolling mode	
Play 10 Lines		– Press to display extra info	
Bet 10 Credits		– Press to return to previous menu	
Audit key		– Turn off to exit	



## EFT Logs

Two logs are available for displaying Electronic Funds Transfer (EFT) transactions between a host casino cash transfer system and the machine.

The EFT IN log displays the last 100 transactions that have occurred from the host casino cash transfer system to the machine.

EFT IN LOG			
Event #	Timestamp	EFT Type	Amount
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Service		– Press to scroll forward by one line	
Cashout/TakeWin		– Press to scroll backward by one line	
Play 15 Lines		– Press to change scrolling mode	
Play 10 Lines		– Press to display extra info	
Bet 10 Credits		– Press to return to previous menu	
Audit key		– Turn off to exit	

The EFT OUT log displays the last 35 transactions that have occurred from the machine to the host casino cash transfer system.

EFT OUT LOG			
Event #	Timestamp	EFT Type	Amount
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Service		– Press to scroll forward by one line	
Cashout/TakeWin		– Press to scroll backward by one line	
Play 15 Lines		– Press to change scrolling mode	
Play 10 Lines		– Press to display extra info	
Bet 10 Credits		– Press to return to previous menu	
Audit key		– Turn off to exit	



## Bonus Log

This log displays the last 35 bonus transactions that have occurred between the machine and a casino host bonusing system.

BONUS LOG			
Event #	Timestamp	Description	Amount
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	Service	– Press to scroll forward by one line	
	Cashout/TakeWin	– Press to scroll backward by one line	
	Play 15 Lines	– Press to change scrolling mode	
	Play 10 Lines	– Press to display extra info	
	Bet 10 Credits	– Press to return to previous menu	
	Audit key	– Turn off to exit	

## Multiplied Jackpot Log

This log displays the last 35 transactions that have occurred between the machine and a casino host jackpot multiplier system.

MULTIPLIED JACKPOT LOG			
Event #	Timestamp	Description	Amount
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	Service	– Press to scroll forward by one line	
	Cashout/TakeWin	– Press to scroll backward by one line	
	Play 15 Lines	– Press to change scrolling mode	
	Play 10 Lines	– Press to display extra info	
	Bet 10 Credits	– Press to return to previous menu	
	Audit key	– Turn off to exit	



## Doors Log

This log displays the last 100 door events that have occurred on the machine.

DOORS LOG			
Event #	Timestamp		Door Type
0	Wed 20 Mar 2002	15:34:18	MMC Bill Acceptor Door Closed
1	Wed 20 Mar 2002	15:33:20	MMC Bill Acceptor Door Opened
2	Wed 20 Mar 2002	14:20:31	MMC Main Door Closed
3	Wed 20 Mar 2002	14:20:10	MMC Main Door Opened
4			
5			
6			
7			
8			
9			
10			
	Service	– Press to scroll forward by one line	
	Cashout/TakeWin	– Press to scroll backward by one line	
	Play 15 Lines	– Press to change scrolling mode	
	Bet 10 Credits	– Press to return to previous menu	
	Audit key	– Turn off to exit	

## Power State Log

This log displays the last 50 machine power up events.

POWER STATE LOG			
Event #	Timestamp		Event Type
0	Wed 20 Mar 2002	14:34:18	MMC - Software Restart
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	Service	– Press to scroll forward by one line	
	Cashout/TakeWin	– Press to scroll backward by one line	
	Play 15 Lines	– Press to change scrolling mode	
	Bet 10 Credits	– Press to return to previous menu	
	Audit key	– Turn off to exit	





## General Log

This log displays the last 1000 general game and machine events that have occurred. The game related event types are preceded by MMC and the game event types by GAM.

GENERAL LOG				
Event #	Timestamp		Event Type	
0	Wed 20 Mar 2002	15:34:18	MMC – Operator Key On	
1	Wed 20 Mar 2002	15:33:20	MMC – Game Stopped	
2	Wed 20 Mar 2002	14:20:31	GAM – Game Stopped	
3	Wed 20 Mar 2002	14:20:10	MMC – Game End	
4	Wed 20 Mar 2002	14:17:44	GAM – Game Start in Recovery Mode	
5	Wed 20 Mar 2002	14:09:45	MMC – Operator Key Off	
6	Wed 20 Mar 2002	14:09:23	MMC – Operator Key On	
7	Wed 20 Mar 2002	13:23:32	MMC – SpinKey Pressed	
8	Wed 20 Mar 2002	10:29:21	MMC – Game RulesKey Pressed	
9	Wed 20 Mar 2002	09:12:23	GAM – Game Stopped	
10	Wed 20 Mar 2002	08:56:01	GAM – Game End	
	Service	– Press to scroll forward by one line		
	Cashout/TakeWin	– Press to scroll backward by one line		
	Play 15 Lines	– Press to change scrolling mode		
	Bet 10 Credits	– Press to return to previous menu		
	Audit key	– Turn off to exit		

## Combined Log

This log displays a time and date stamped history of all other logs.

It is possible for some logs to rollover during a specific period of time. Therefore, no attempt should be made to try to compare specific events in an individual log with those in the combined log.

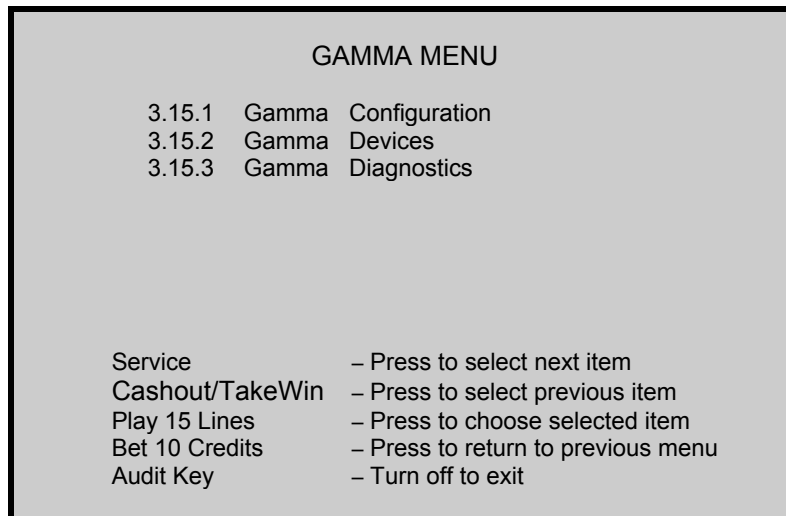
COMBINED LOGS				
Event #	Timestamp		Event	Type
0	Thur 21 Mar 2002	18: 14: 12	MMC	Operator Key OFF
1	Thur 21 Mar 2002	18: 12: 30	ERR	Bill acceptor out of service
2	Thur 21 Mar 2002	18: 12: 11	MMC	BACC – Disconnected
3	Thur 21 Mar 2002	18: 09: 20	MMC	Operator Key On
4	Thur 21 Mar 2002	18: 09: 01	MMC	Main Door Opened
5	Wed 20 Mar 2002	14: 21: 11	MMC	Operator Key On
6	Wed 20 Mar 2002	14: 20: 09	MMC	Game Stopped
7	Wed 20 Mar 2002	14:20: 08	GAM	Game Stopped
8	Wed 20 Mar 2002	14:20: 08	MMC	Game End
9	Wed 20 Mar 2002	14:20: 08	GAM	Win Increment Complete
10	Wed 20 Mar 2002	14:20: 08	MMC	Main Door Closed
	Service	– Press to scroll forward by one line		
	Cashout/TakeWin	– Press to scroll backward by one line		
	Play 15 Lines	– Press to change scrolling mode		
	Bet 10 Credits	– Press to return to previous menu		
	Audit key	– Turn off to exit		
(Note: Entries may expire on some logs before others)				



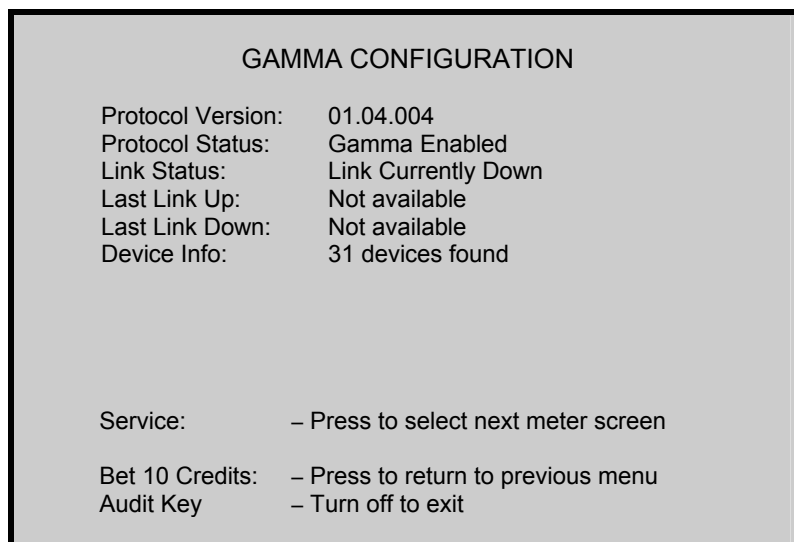
## Gamma Protocol Menu

These menus display information about the Gaming Manufacturers Association (GAMMA) interface (GamPro link protocol) that is used by the machine to communicate with external accounting, player tracking, bonusing, and other types of host casino systems.

The top level GAMMA protocol menu option provides access to additional screens that display GAMMA parameter values, devices and diagnostic information.



The first GAMMA configuration screen displays protocol version information as well as communications link status.



The second GAMMA configuration screen displays machine and host system information.

GAMMA CONFIGURATION		
EGM Identification		
Manuf. Id:	0x00	
Manuf. Name:	"Aristocrat Technologies, Inc"	
H/W Rev:	"Mk6 – USA"	
Firmware Id:	50006	
Firmware Ver:	01	
Firmware Name	"USA B2.0 Base Code"	
Host/MCI Identification		
Manuf. Id:	0x00	
Manuf. Name	"Aristocrat Technologies, Inc."	
H/W Rev:	"SPC-2"	
Firmware Id:	"GamSAS2"	
Firmware Ver:	"01.08.0"	
Firmware Name	"GamSAS2 GamPro-SAS"	
Service:	– Press to select next meter screen	
Cashout/TakeWin:	– Press to select previous meter screen	
Bet 10 Credits	– Press to return to previous menu	
Audit Key	– Turn off to exit	

The third GAMMA configuration screen displays various security parameters.

GAMMA CONFIGURATION		
Security Modes		
Power Up:	Enable Game, Allow Collect	
Large Win:	Handpay Lockup for Current Win	
Logic Seal:	Disable Game, Disable Collect	
Comms Link Failure:	Enable Game, Allow Collect	
Ram Reset:	Enable Game, Allow Collect	
Tax Limit Exceeded:	Handpay Lockup for Current Win	
Service:	– Press to select next meter screen	
Cashout/TakeWin:	– Press to select previous meter screen	
Bet 10 Credits	– Press to return to previous menu	
Audit Key	– Turn off to exit	



The fourth GAMMA configuration screen displays multiplier jackpot win parameters.

GAMMA CONFIGURATION	
Event Queue:	Queue Normal, 0 events lost
Bonus Limit:	\$0.00 – 0 credits
MJT Device	
Lower Limit:	\$0.00 – 0 credits
Upper Limit:	\$0.00 – 0 credits
Max Bet Required:	No
Multiplier:	x1
Duration:	0 seconds
Tax Liability:	Tax deductible
Pay to Credit:	Pay to Credit Meter
Session Win:	\$0.00 – 0 credits
Service:	– Press to display next meter screen
Cashout/TakeWin:	– Press to display previous meter screen
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit

MJT = Multiplier Jackpot Win

The fifth GAMMA configuration screen displays jackpot handpay information.

GAMMA CONFIGURATION	
Handpay Device:	
Total Amount:	\$30.00 – 60 credits
Notification:	Settled
Transaction Time:	381929172 [11 : 26 : 30 03-21-02]
Sequence No.:	2
Handpay Amount:	\$20.00 – 40 credits
Reason:	Game Jackpot Win (Ticket)
Source Id:	0 (0x00)
Source No.:	0 (0x00)
Validation No.:	“80862864”
Request Val No.:	No
Service:	– Press to display next meter screen
Cashout/TakeWin	– Press to display previous meter screen
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit



The sixth GAMMA configuration screen displays various bonus system parameters.

GAMMA CONFIGURATION	
Bonus Transfer Device	
Credits In:	\$0.00 – 0 credits
Cashless Prize	No
Bonus Reason:	“ “
Bonus Source Id.:	0 (0x00)
Bonus Source No.:	0 (0x00)
Pay to Credit:	Pay to Credit Meter
Tax Liability:	Tax Deductible
Cashout/TakeWin:	– Press to display previous meter screen
Bet 10 Credits:	– Press to return to previous menu
Audit Key	– Turn off to exit

The GAMMA devices screen displays the current hardware devices that are compatible with the GamaPro link protocol used in the machine.

GAMMA DEVICES			
C – Class, T – Type, P[ ] – Number of Parameters in Device			
C1T01P[??]	Device List	C4T08P[06]	- EFT Out
C1T02P[02]	EGM Identification	C4T09P[14]	- Coin Acceptor
C1T03P[02]	Host Identification	C4T10P[08]	- Bill Stacker
C2T01P[05]	EGM Configuration	C4T12P[22]	- Vouchers
C2T02P[29]	EGM Control	C5T17P[10]	- Link Progressive 1
C2T03P[04]	EGM Audit	C5T18P[10]	- Link Progressive 2
C2T04P[15]	EGM Game Summary	C5T19P[10]	- Link Progressive 3
C2T05P[17]	EGM Money Summary	C5T20P[10]	- Link Progressive 4
C3T01P[23]	Double Dolphins (Reel)	C5T32P[07]	- Link Mystery 8
C4T01P[24]	Hopper	C6T01P[04]	- Logic Seal
C4T02P[18]	Ticket Printer	C6T02P[03]	- EGM Doors
C4T03P[02]	Hand-Pay	C6T03P[03]	- Software Signature
C4T04P[07]	Cash Box	C7T01P[03]	- Sound Effects
C4T05P[04]	Credit Transfer	C128T01P[04]	- SPC smib*
C4T06P[36]	Bill Acceptor	C128T02PC[11]	- SPC2 smib
C4T07P[04]	EFT In		
	Bet 10 Credits	– Press to return to previous menu	
	Audit Key	– Turn off to exit	

\*



The GAMMA diagnostic screen provides a convenient way to monitor the GamPro communications between the machine and various hardware devices.

A link activity indicator is provided at the upper right corner of the screen to show the link status (rotating “/” = communications in progress).

Various communications parameters are listed on the left side of the screen with associated values. The host and machine commands are displayed on the right side of the screen.

To reset the values for a new starting point, press the indicated deck button.

GAMMA DIAGNOSTICS			
Host Packet Received:		Link Currently Up * / *	
X70 x00 x32 x30			
EGM* Packet Transmitted Poll_Act: x7c xbd x2c xad			
X32 x34 x2b x34 x12 x23 x4c x00 x23 x13 x22 x43			
Bytes Received:	1541634	Host Commands	EGM Commands
Good Packets Received:	310478	SetPar C2T4p3	SetPar C2T4pd
Polls Received:	301799	SetPar C2T4pd	SetPar C2T4p3
Link Down:	0	SetPar C2T4pd	SetPar C2T4p3
Inter-Packet Timeouts:	0	SetPar C2T4p3	SetPar C2T4pd
Inter-Byte Timeouts:	0	SetPar C2T4pd	SetPar C2T4p3
CRC Errors:	1	SetPar C2T4p3	SetPar C2T4pd
Same Sequence Num:	0	SetPar C2T4pd	SetPar C2T4pd
Bad Sequence Num:	0	SetPar C2T4p3	SetPar C2T4p3
Service:		– Press to pause display update	
Cashout/TakeWin		– Press to clear display update	
Bet 10 Credits:		– Press to return to previous menu	
Audit Key		– Turn off to exit	

\*EGM = Electronic Gaming Machine



### 3.3.4 Test/Diagnostics Menu

The Test/Diagnostics Menu provides access to the Test Mode and the diagnostics displays.

#### Note

Entry to this mode is not permitted unless.  
The Main door is open, and a game is not  
currently in progress.

#### TEST/DIAGNOSTICS MODE MENU

4.1	Lamp Test	4.7	Factory Test
4.2	Button Test	4.8	Combination Test
4.3	Coin Entry Test	4.9	Combination Quick Test
4.4	Hopper Test	4.10	Bill Acceptor Test
4.5	Monitor Test	4.11	Printer Test
4.6	Sound Effects Test	4.12	Touch Screen

Service	– Press to select next item
Cashout/TakeWin	– Press to select previous item
Play 15 Lines	– Press to choose selected item
Bet 10 Credits	– Press to return to previous menu
Audit key	– Turn off to exit

#### Lamp Test

Select this screen to test the pushbutton lamps, animation lamps and light tower lamps. The state of individual lamps can be set to either on, off, flashing slow, or flashing fast.

1. Select Lamp Test from the Test/Diagnostics menu.

All pushbutton, animation and light tower lamps should be flashing at a slow rate.

2. To change the lamp status to steady ON, OFF, or FAST Flash, press the appropriate button shown on the screen to set lamp status to (on/off/flash).
3. To test individual lamps, press Service or Cashout/TakeWin to scroll through the list of lamps.
4. Verify correct lamp operation.



TEST MODE – LAMP TEST																	
Light Tower	Lamp #	1	2														
Animation	Lamp #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Player Key	Lamp #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
All																	
Current Function:		ON	OFF	FLASH SLOW	FLASH FAST												
Service		– Press to select next lamp															
Cashout/TakeWin		– Press to select previous lamp															
Play 15 Lines		– Press to select function (on/off/flash)															
Bet 10 Credits		– Press to return to previous menu															
Audit key		– Turn off to exit															





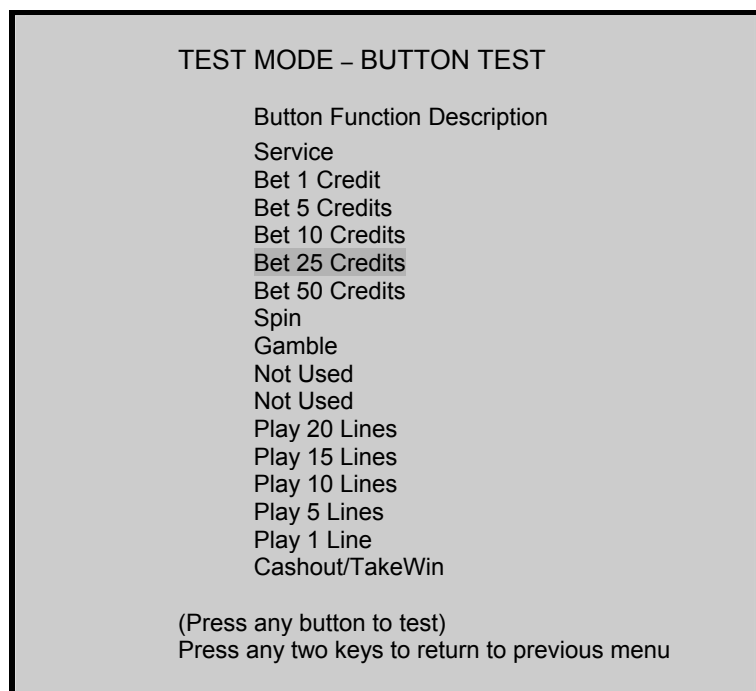
## Button Test

Select this test screen to test the functionality of any game button and the associated lamps.

1. Select Button Test from the Test/Diagnostics menu.
2. Press the desired button.

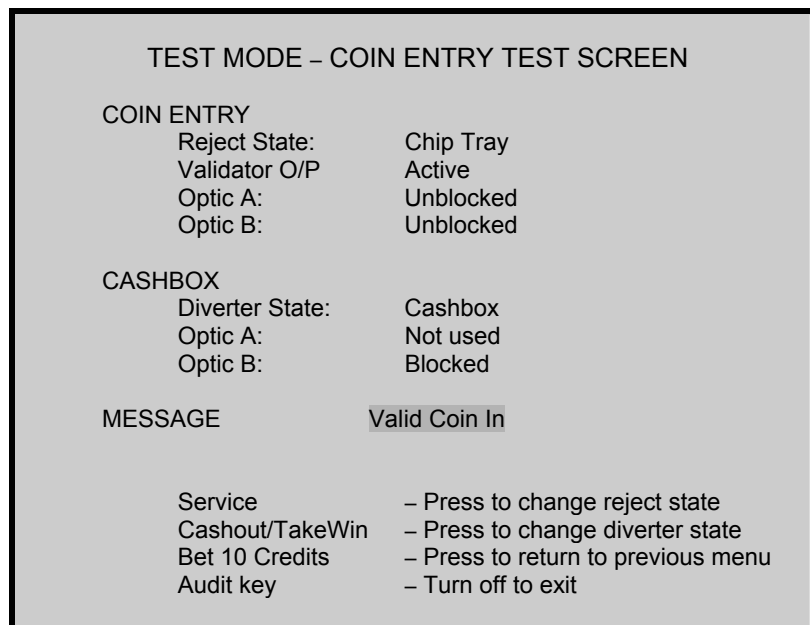
The button lamp should flash to indicate that the button is functioning and the lamp is good. The appropriate button should also be highlighted on the screen.

3. Press any other button(s) as desired.
4. To exit to the previous menu, press any two buttons simultaneously.



## Coin Entry Test

Select this screen to test the coin diverter and coin reject devices.



### Testing Coin Reject Device

1. Note the Reject State of the reject coin device under COIN ENTRY on the screen. Chip Tray = player coin tray below the door. Internal = coin drop chute.
2. Open the machine door and drop a coin into the coin head. The coin should exit to the coin tray or drop chute depending upon the current setting.
3. Change the state of the coin reject device by pressing Service.
4. Verify that a coin exits to the appropriate coin path.

A message is displayed to signify success or failure of the test.

### Testing Coin Diverter

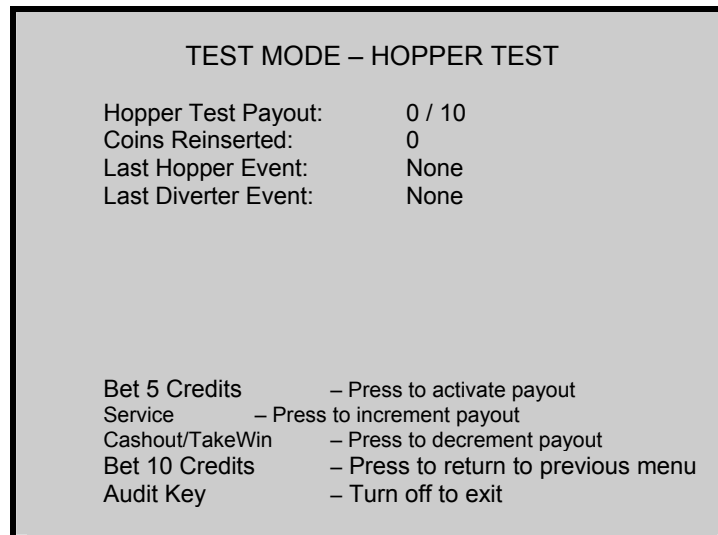
1. Note the Diverter State under CASHBOX on the screen. Cashbox = coin drop chute. Hopper = coin hopper bowl.
2. Open the machine door and drop a coin into the coin head. The coin should exit to the hopper bowl or drop chute depending upon the current setting.
3. Change the state of the diverter by pressing Service.
4. Verify that a coin exits to the appropriate coin path.

A message is displayed to signify success or failure of the test.



## Hopper Test

Select this test to verify that the coin hopper ejects the correct number of coins.



1. Operate the Audit key.
2. Open the main door and select Hopper Test from the Test/Diagnostics menu.
3. Press Service or Cashout/TakeWin to set the desired number of coins to be ejected from the coin hopper.
4. Press the appropriate button as shown on the screen to activate the hopper payout.

### Note

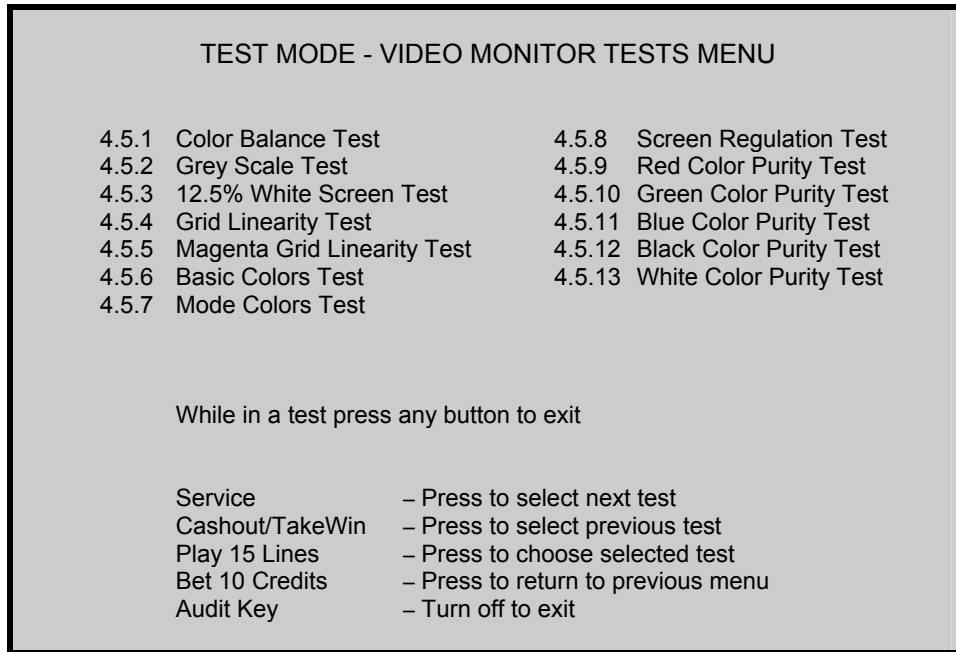
If a fault such as hopper empty occurs, a message is displayed on the screen.

5. Verify that the appropriate number of coins have been ejected from the hopper.
6. Close the main door and insert the coins back into the coin head.

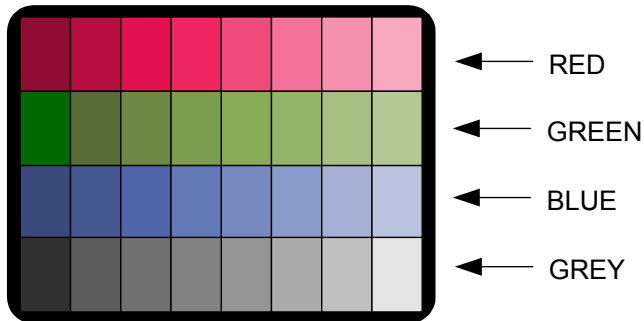


## Monitor Test

Select this screen to check the functionality of the video monitor. Appropriate action should be taken to correct any functions that are considered to be not satisfactory.

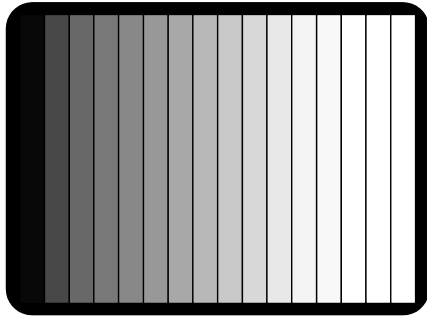


### Color Balance Test



The color balance test screen can be used to determine if the monitor red, green and blue color drive levels are set correctly. When the monitor is adjusted properly, no red, green, or blue tint should be evident in the grey band.

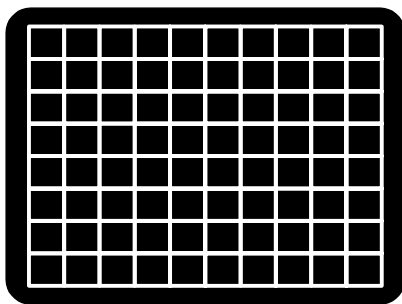


**Grey Scale Test**

The grey scale test should be used to verify or set the monitor contrast level. When the contrast level is set properly, the left bar on the screen should be dense black and the right bar should be pure white.

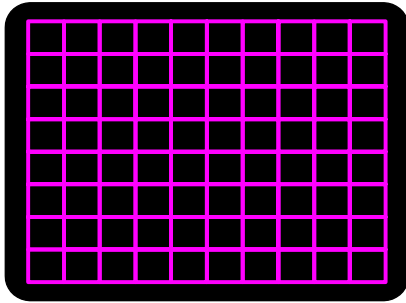
**12.5% White Screen Test**

This screen can be used to verify that the monitor brightness control is set properly.

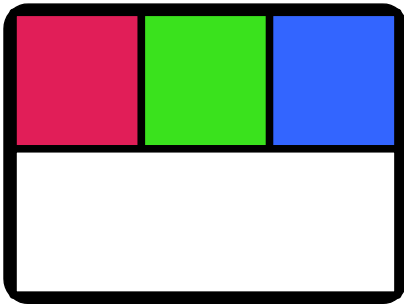
**Grid Linearity Test**

The grid linearity test is used to verify proper monitor pincushion and convergence alignment. The grids lines should all be pure white. Any evidence of other colors in the gridlines indicates improper monitor convergence alignment. The gridlines should be straight. Any bowing or other curvature indicates improper monitor pincushion adjustment.

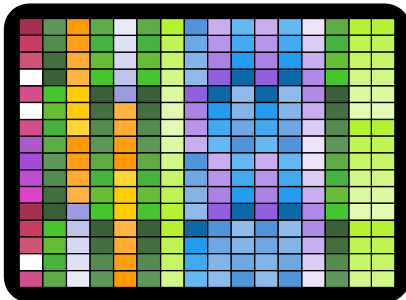


**Magenta Grid Linearity Test**

The magenta grid linearity test is very similar to the grid linearity test except that the monitor green color gun is turned off resulting in magenta grid lines instead of white lines. By eliminating the green color, it is easier to view any misalignment of the red and blue color guns.

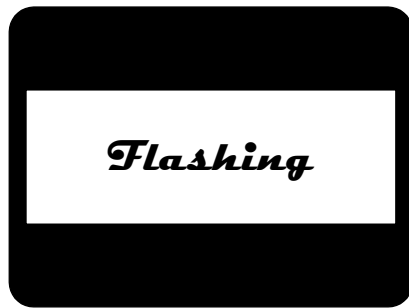
**Basic Colors Test**

The basic colors test can be used to set or verify the monitor background controls.

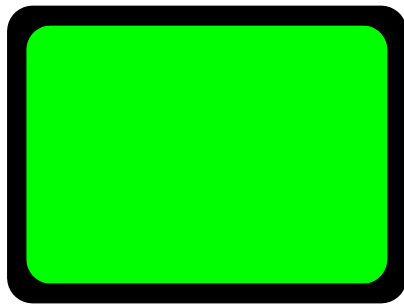
**Mode Colors Test**

This test can be used to check the monitor color matrix.



**Screen Regulation Test**

The screen regulation test is used to check monitor high voltage power supply regulation. The flashing white rectangle on the screen should have straight edges and should not change in size if the regulation is sufficient.

**Color Purity Tests**


The green, blue, black, and white color purity tests are used to verify that the monitor CRT yoke is adjusted correctly. Each color screen should be of equal color density across the entire screen.



## Sound Effects Test

This screen allows the operator to change the volume setting of the machine and to listen to all the sound effects used by the machine.

**TEST MODE – SOUND SYSTEM TESTS**



Service	– Press to increase volume
Cashout/TakeWin	– Press to decrease volume
Play 15 Lines	– Press to play machine tunes
Play 10 Lines	– Press to play machine instruments
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit

## Factory Test

This screen allows the operator to change the factory test of the machine and to observe the effects used by the machine.

**TEST MODE – FACTORY TEST**

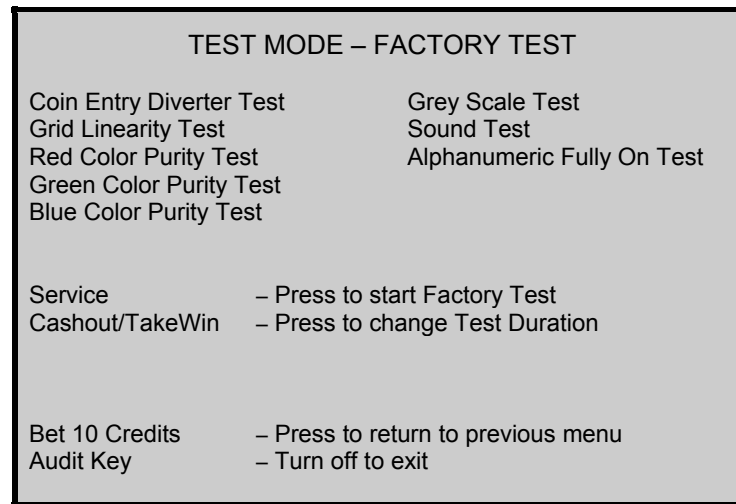
Test Start Time:	Wed 20 Mar 2002 15: 52: 23
Current Time:	Wed 20 Mar 2002 15: 54: 37
Cycle Count:	1
Test Description:	Coin Entry Diverter Test
Remaining Test Hours:	12

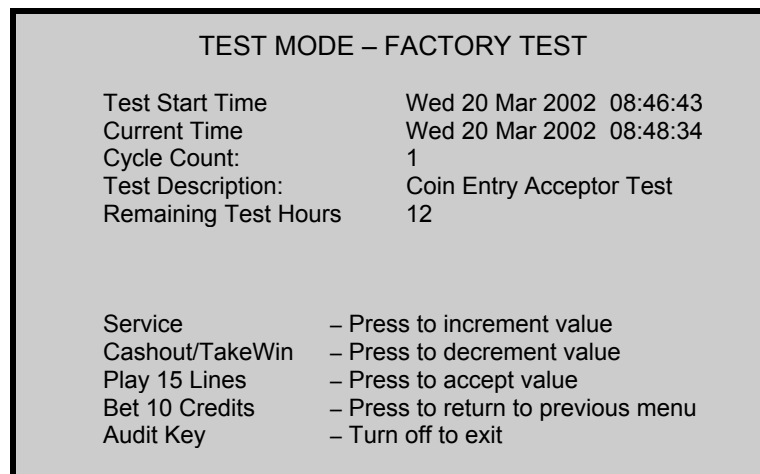
Service	– Press to start Factory Test
Cashout/TakeWin	– Press to change Test Duration
Play 15 Lines	– Press to list Factory Tests
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit





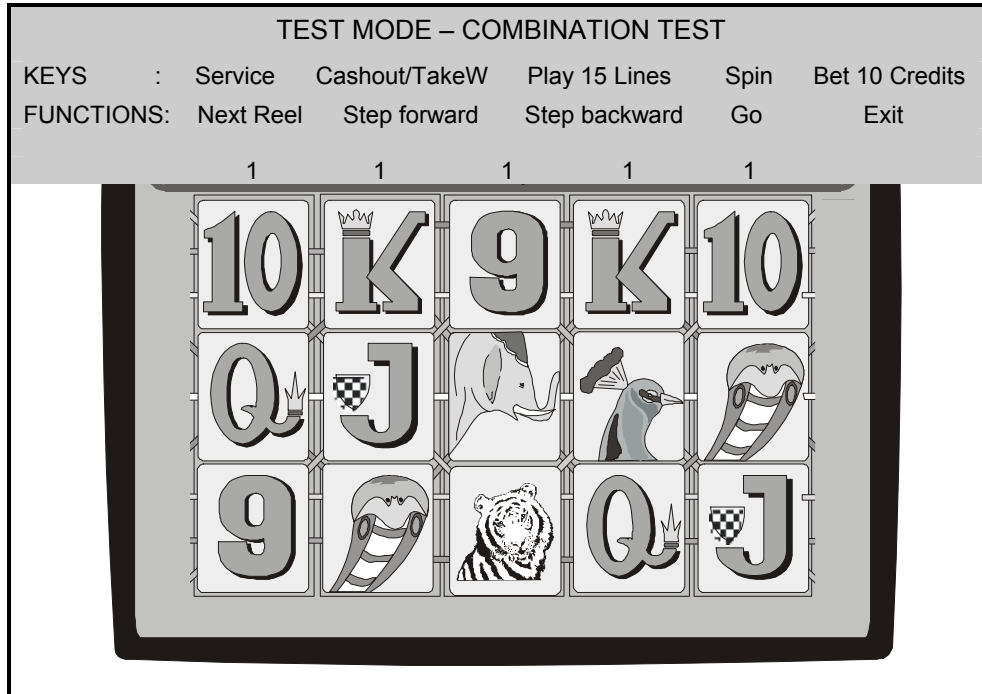


The Factory Test option automatically conducts several tests simultaneously. Tests conducted include coin validator, coin diverter, door switch, video monitor tests, and sound system tests. Failed tests are displayed on the screen. The Factory Test continues until stopped by the operator or until an error occurs, in which case the type of failure is displayed on the screen.



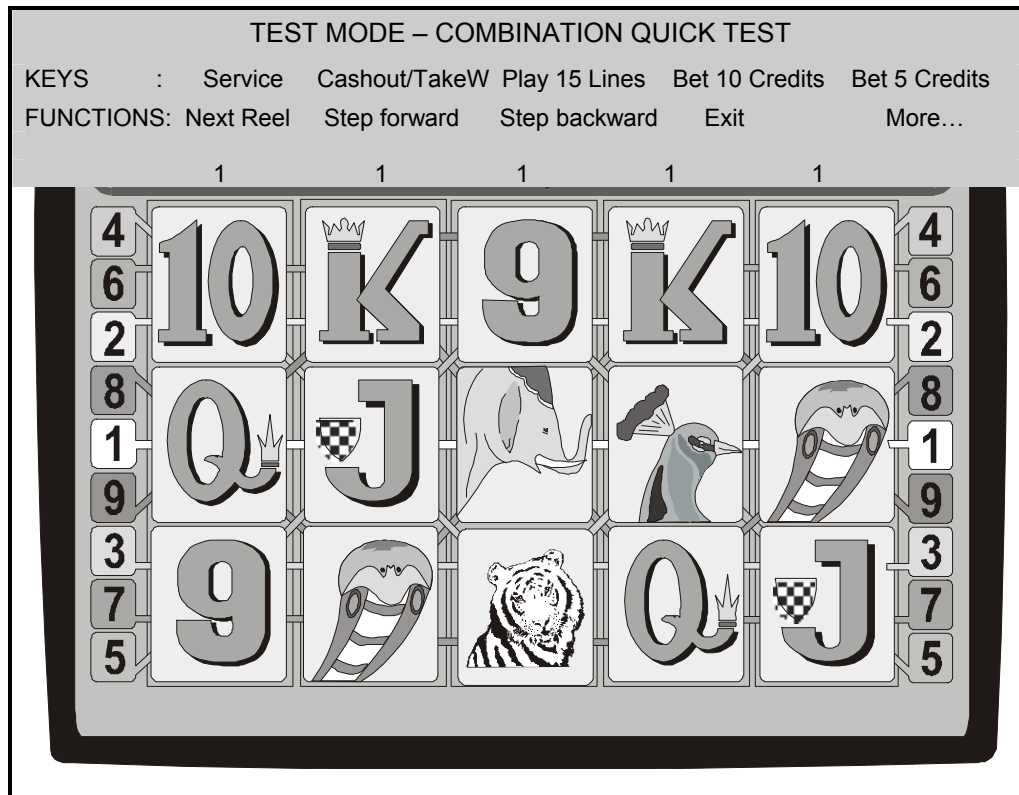
## Combination Test

The combination quick test allows the operator to select a combination of cards to be dealt. This test is used to check the graphics and sound output associated with a specific winning combination.



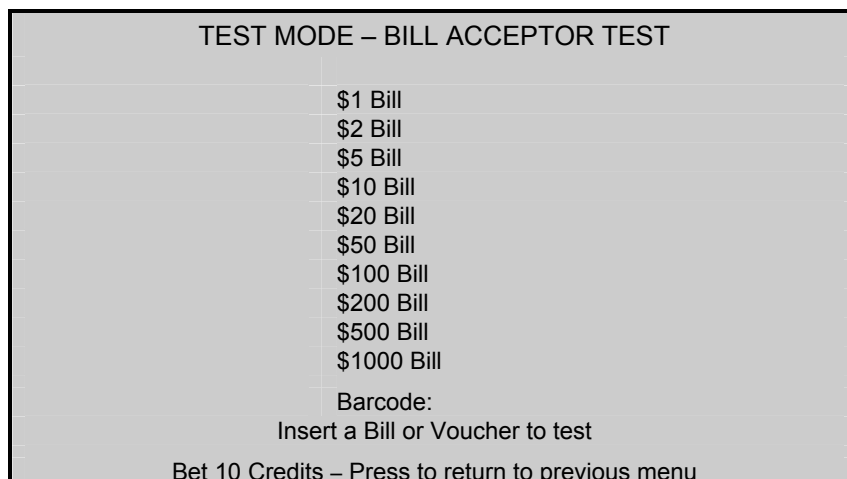
## Combination Quick Test

The combination quick test allows the operator to select a combination of cards to be dealt. This test is used to check the graphics and sound output associated with any winning combination.



## Bill Acceptor Test

When a bill is inserted into the bill validator, the proper denomination light.



## Printer Test

This test allows you to test various aspects of the printer. If a printer is not fitted or enabled then the message “Printer not enabled or available” will be displayed.

This test may not be performed unless the printer device is selected in Device Driver options.

### TEST MODE - PRINTER TEST

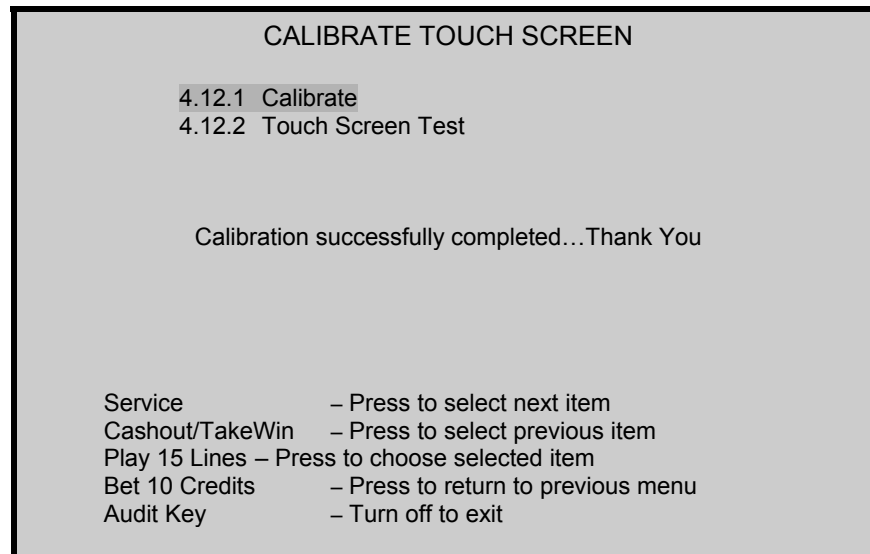
Printer Status : CONNECTED  
Paper Out status : OK  
Paper Low status : OK

Service – Press to print a test ticket  
Cashout/TakeWin – Press to formfeed a ticket  
Bet 10 Credits – Press to return to previous menu  
Audit Key – Turn off to exit



## Calibrate Touch Screen Display

Select this screen if you wish to calibrate the monitor touch screen function or to test the monitor touch screen sensitivity.



### 1. Select Calibrate.

You will be prompted to touch various areas of the screen.

When the calibration is successful, the message "Calibration successfully completed...Thank You" is displayed.

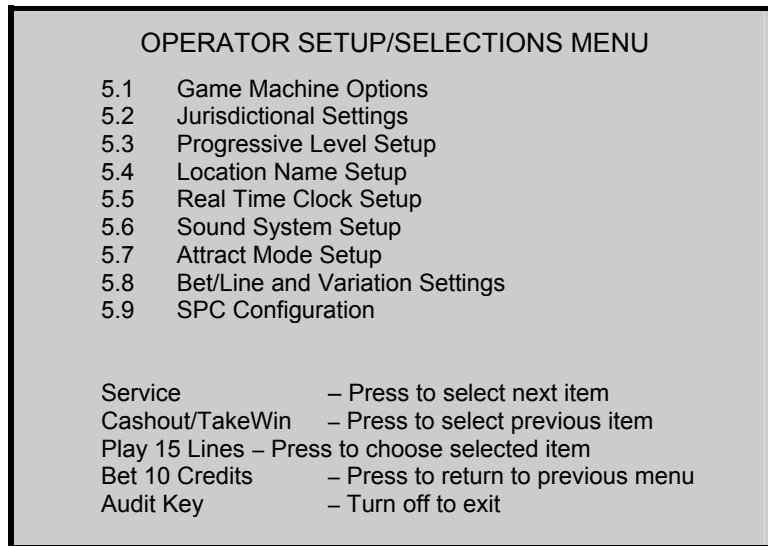
### 2. Select Touch Screen Test.

You will be prompted to draw something on the screen by touching the screen with your finger and moving it about the screen.



### 3.3.5 Operator Setup/Selections

The Operator Setup/Selections menu gives the operator access to configurable options of the gaming machine.



SPC = Serial Protocol Converter (board)

### Machine Options

The Machine Options Setup screen allows the operator to control and change some aspects of machine operation. Options are selected and changed by following the on-screen guidance and pressing the appropriate pushbuttons. The machine options are stored in the first EEPROM on the Main Board.

#### Note

Approval from the jurisdictional authority is required before the items in the Machine Options screen can be changed.

#### Note

The logic door must be open in order to save machine option changes to EEPROM.



GAME MACHINE OPTIONS			
(The LOGIC DOOR must be opened to save any changes)			
MACHINE ID	000123	BUTTON PANEL	14 Buttons
PROGRESSIVE ADDRESS	Disabled	LANGUAGE	N/A
COMMS PROTOCOL	Gamma		
SPLIT PAY TYPE	DISABLED		
HOPPER	ENABLED		
HOPPER LIMIT (coins)	20		
PRINTER	DISABLED		
JACKPOT LOCKUP LIMIT (cr)	910020	EFT/BONUS OPTIONS	
JACKPOT BELL LIMIT (cr)	24000	BILL/VOUCHER OPTIONS	
JACKPOT BELL TRIGGER:	Trigger at Limit or Feature	DEVICE DRIVER OPTIONS	
Save Machine Options			
Play 5 Lines	– Press to select another digit		
Play 10 Lines	– Press to increment a digit		
Cashout/TakeWin	– Press to select previous option		
Service	– Press to select next option		
Bet 10 Credits	– Press to return to previous menu		
Audit Key	– Turn off to exit		

GAME MACHINE OPTIONS			
(The LOGIC DOOR must be opened to save any changes)			
MACHINE ID	000123	BUTTON PANEL	14 Buttons
PROGRESSIVE ADDRESS	Disabled	LANGUAGE	N/A
COMMS PROTOCOL	Gamma		
SPLIT PAY TYPE	Hopper/Printer pays split at Hopper Limit		
PAY TYPE TO SPLIT	Split Cashout Pays Only		
SPLIT LIMIT (coins)	10		
HOPPER	ENABLED		
HOPPER LIMIT (coins)	20		
PRINTER	Thermal Printer		
PRINTER LIMIT (COINS)	99999999	EFT/BONUS OPTIONS	
JACKPOT LOCKUP LIMIT (cr)	910020	BILL/VOUCHER OPTIONS	
JACKPOT BELL LIMIT (cr)	24000	DEVICE DRIVER OPTIONS	
JACKPOT BELL TRIGGER:	Trigger at Limit or Feature		
Save Machine Options			
Play 5 Lines	– Press to select another digit		
Play 10 Lines	– Press to increment a digit		
Cashout/TakeWin	– Press to select previous option		
Service	– Press to select next option		
Bet 10 Credits	– Press to return to previous menu		
Audit Key	– Turn off to exit		



***Explanation of Terms***

**MACHINE ID:** a number between 0 and 999999. The MACHINE ID field may be used in some circumstances to configure the SPC-1 or SPC-2 polling address. It may also be used for the 'Machine #' as printed on tickets, depending on the configuration setup. In both instances, please consult software configuration documents for correct usage on the MACHINE ID field.

**PROGRESSIVE ADDRESS:** a number between 1 and 32 or DISABLED.

**COMMS PROTOCOL:** None or GAMMA

**SPLIT PAY TYPE:**

None	Split pay function is disabled
Hopper/Printer pays at hopper limit	This option does <b>not</b> require a PAY TYPE TO SPLIT option. When this option is selected, the hopper will automatically dispense coin in the amount of the hopper limit and a cash ticket for the remainder when cashout is pressed or a single win threshold or jackpot is won.
Hopper pay below limit. Printer pay above limit	This option <b>requires</b> a PAY TYPE TO SPLIT option to be selected.  Depending upon which PAY TYPE TO SPLIT option is selected, the hopper will payout coin for any amounts below the hopper threshold and a cash ticket for the amount above the hopper limit.

**PAY TYPE TO SPLIT:**

Split Cashout Pays Only	When the hopper pay below limit/printer pay above limit split pay type is selected, the split pay function will be enabled only when the cashout button is pressed.
Split Cashwin Pays Only	When the hopper pay below limit/printer pay above limit split pay type is selected, the split pay function will be enabled only when a single win threshold or jackpot is paid.
Split Both Cashwin and Cashout Pays	When the hopper pay below limit/printer pay above limit split pay type is selected, the split pay function will be enabled when the cashout button is pressed or when a single win threshold or jackpot is paid.





**JACKPOT BELL LIMIT:** the Jackpot Bell Limit is the minimum win for one game that will cause the jackpot bell to be activated.

**ENABLE BILL ACCEPTOR:** enables/disables the bill acceptor.

To save the changes made to the machine options, press the save button. Changes to all the machine options will be saved in this way. The Logic Door must be open at the time otherwise the changes will not be saved.

To exit from the machine options screen without saving any of the changes made, press the return to previous menu button.

EFT/BONUS OPTIONS	
BONUS TRANSFER MODE	Disabled
BONUS TRANSFER LIMIT	\$ 0.00
BONUS MJT MODE	Disabled
EFT TRANSFER IN MODE	Disabled
EFT TRANSFER OUT MODE	Disabled
EFT TRANSFER LIMIT	\$ 0.00
Service	– Press to select next option
Cashout/TakeWin	– Press to select previous option
Bet 3 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit

## NOTES

- Bonus Awards can not be enabled from this screen. Enable GamPro and check Jurisdictional Settings.
- Play 3 Lines – Press to select another digit  
Play 5 Lines – Press to increment a digit
- Multiplier Wins can not be enabled  
enable GamPro and check Jurisdictional Settings.
- Cashless EFT In can not be enabled  
enable GamPro and check Jurisdictional Settings.
- Cashless EFT Out can not be enabled  
enable GamPro and check Jurisdictional Settings.
- EFT Transfer Limit  
Must be less than or equal to Jurisdictional Max EFT Limit  
Play 3 Lines – Press to select another digit  
Play 5 Lines – Press to increment another digit



The Bill/Vouchers Options screen is used to enable various bill and ticket options.

BILL/VOUCHER OPTIONS			
5 INV. BILL REJECT	Disabled	ACCEPT \$1 BILLS	YES
MAX BACC LIMIT	\$ 100.00	ACCEPT \$2 BILLS	NO
ACCEPT VOUCHERS	No	ACCEPT \$5 BILLS	YES
VOUCHER LIMIT	\$ 0: Ocr	ACCEPT \$10 BILLS	YES
		ACCEPT \$20 BILLS	YES
		ACCEPT \$50 BILLS	YES
HANDPAY VALIDATION	No Validation	ACCEPT \$100 BILLS	YES
Play 10 Lines – Press to enable/disable 5 invalid bills reject			
Service	– Press to select next option		
Cashout/TakeWin	– Press to select previous option		
Bet 3 Credits	– Press to return to previous menu		
Audit Key	– Turn off to exit		

### ***Explanation of Terms***

**5 INV. BILL REJECT:** If enabled, if a bill is rejected five times, the tower light will flash and a bill validator event is generated.

**MAX BACC LIMIT:** The maximum currency amount that the bill validator will accept. Example: If set to \$100, a single \$100 bill will be accepted or any combination of lower denomination bills totalling \$100 or less will be accepted.

**ACCEPT VOUCHERS:** This option must be set to YES for the machine to communicate with a ticking/voucher system.

**VOUCHER LIMIT:** The maximum ticket/voucher amount that the bill validator will accept. Example: If set to \$100, a single \$100 ticket will be accepted or any combination of lower value tickets totalling \$100 or less will be accepted.

**ACCEPT \$XX BILLS:** Allows you to accept or reject individual bill denominations.



The device driver options screen is used to select various machine hardware device drivers.

DEVICE DRIVER OPTIONS	
BILL ACCEPTOR	V2.2 16bit
TOUCH SCREEN	MicroTouch
COIN ENTRY	CC-62 / Condor
PRINTER	Ithaca
ALPHANUMERIC DISPLAY	None
HOPPER	Aristocrat / Paytrack
Play 10 Lines – Press to change driver	
Service	– Press to select next option
Cashout/TakeWin	– Press to select previous option
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit

### ***Explanation of Terms***

**BILL ACCEPTOR:** Set for the appropriate bill acceptor. (None, V2.2 16-bit, V2.2 32-bit, VFM4, ID003 (JCM), or BDS (Mars))

**TOUCH SCREEN:** Set for the appropriate touch screen. (Microtouch, ELO, or None)

**COIN ENTRY:** Set for the appropriate coin acceptor. (CC-62/Condor, Aristocrat, or None)

**PRINTER:** Set for the appropriate printer. (None, Ithaca, Seiko, or Westrex)

**ALPHANUMERIC DISPLAY:** Set to None in USA.

**HOPPER:** Set for the appropriate hopper. (None or Aristocrat/Paytrack)



## Jurisdictional Settings

This screen displays various parameters for the machine that have been set either from the setchip during original machine initiation or from other setup screens.

JURISDICTIONAL MACHINE SETTINGS		
Value of 1 Coin:	\$1.00	Mystery: Enabled
Value of 1 Credit:	\$0.05	
Gamble:	RED / BLACK WITH SUIT	
Bill Acceptor Protocol:	VFM4 ID003(JCM) BDS(Mars) V2.X/32 V2.X/16	
BACC Denomination:	Dollar [USA]	
Max Bet Coin Reject:	Disabled	
Max Credit Limit:	\$ 1199.99	
Tax Limit	\$ 1200.00	
Max Bet Limit:	\$ 999999.99	
Max Lines:	20	
Max Credits Per Line:	50(credits)	
Play Bet Button:	Continuous Mode	
Game Percentage Variation:	87.801% 99 (95.000% maximum)	
Hyperlink:	Disabled	
Printer/Hopper Setting:	Hopper and/or any one Printer Selectable	
Cancel residual credit type:	Soft lockup	
Jurisdiction:	Minnesota	
Set Chip Version:	6.01.00	
Split Pay Type:	Allow Selection of both types of Split Pays	
Pay Type to Split	Allow CashWin, Cashout, or Both to be Split	
Max EFT Limit:	\$ 0.00	
EFT Transfer Mode:	EFT In/Out allowed	
Bonus Transfer Mode:	No Bonusing allowed	
Validation Default	System	Voucher Redemption: Allowed
Validation Modes Available	None, Game, Syst, Sec Enh, Sec Enh D/A, Enh	

## Progressive Level Setup

This screen allows the operator to set each winning hand to correspond to a link progressive jackpot. The operator selects the desired Winning Hand to be modified. Then the level may be changed by pressing the appropriate button to increase or decrease the level. A non-existent level (blank) implies that there is no link progressive level associated with that hand, and hence the normal credit win value will be won. Otherwise a number between 0 and 5 will appear and this indicates the level of the link that will be won.



PROGRESSIVE LEVEL SETUP	
PROGRESSIVE ADDRESS	disabled
PROTOCOL SELECTED	Type #25 Ser.
LINK ID	1
Hyperlink Type	Level
GRAND	---
MAJOR	---
MINOR	---
MINI	---
Mystery Pay	JP7
Save Options	
Play 5 Lines	- Press to decrement value
Play 10 Lines	- Press to increment value
Cashout/TakeWin	- Press to select previous option
Service	- Press to select next option
Bet 10 Credits	- Press to return to previous menu
Audit Key	- Turn off to exit

### Location Name Setup

This screen allows the operator to enter the name of the venue. This name is displayed in the Machine Identification Screen and is printed on cash tickets and metering tickets.

LOCATION SETUP	
Location Name	: " "
Location Address 1:	" "
Location Address 2:	" "
Save Location Info	
Play 5 Lines	- Press to select next character
Play 10 Lines	- Press to increment the selected character
Play 15 Lines	- Press to decrement the selected character
Cashout/TakeWin	- Press to select the previous item
Service	- Press to select the next item
Bet 10 Credits	- Press to return to previous menu
Audit Key	- Turn off to exit



## Real Time Clock Setup

This screen allows the real time clock to be set.

**REAL TIME CLOCK SETUP**

HOUR : 15  
 MINUTE : 28  
 SECOND : 50

DAY : 20  
 MONTH : MARCH  
 YEAR : 2002

**SAVE REAL TIME CLOCK SETUP**

Service	– Press to choose next item
Cashout/TakeWin	– Press to choose previous item
Play 15 Lines	– Press to select option
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit

## Sound System Setup

This screen allows the operator to change the volume setting of the machine and to hear all the sound effects used by the machine.

**SOUND SYSTEM SETUP**

Service	– Press to increase volume
Cashout/TakeWin	– Press to decrease volume
Play 15 Lines	– Press to play machine tunes
Play 10 Lines	– Press to play machine instruments
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit



## Attract Mode Setup

The contents of the Attract Mode screen display is shown on the Game Screen during game play.

ATTRACT MODE SETUP		
Attract Mode Duration	MINUTES	: 00
	SECONDS	: 30
Attract Mode Interval	MINUTES	: 05
	SECONDS	: 00
Attract Mode	ENABLED	: YES
Service	– Press to choose next item	
Cashout/TakeWin:	– Press to choose previous item	
Play 15 Lines	– Press to select option	
Bet 10 Credits	– Press to return to previous menu	
Audit Key	– Turn off to exit	

## Bet/Line Variation Settings

BET, LINE AND VARIATION SETTINGS					
Current Bet/Line and Variation Percentage Settings					
Max Bet Limit:	\$ 999999.99				
Current Play Lines:	20				
Current Max Credits per Line:	50 (credits)				
Current % Variation:	87.801% 99 (95.000% maximum)				
Variation Percentages Available					
Variation:	99	01	02	03	04
Percentage:	87.957%	90.009%	92.182%	94.892%	97.279%
Hyperlink Var.:	Hyperlink is not available in this game				
Available Play Lines and Max Credits per Line					
Play 1 Line (Max Bet Per Line):	N/A				
Play 3 Lines (Max Bet Per Line):	N/A				
Play 5 Lines (Max Bet Per Line):	N/A				
Play 9 Lines (Max Bet Per Line):	(5) (10) (20)				
Play 10 Lines (Max Bet Per Line):	N/A				
Play 20 Lines (Max Bet Per Line):	(5) (10) (25) (50)				
Play 243 Lines (Max Bet Per Line):	N/A				
Bet 10 Credits	– Press to return to previous menu				
Audit Key	– Turn off to exit				



SPC CONFIGURATION SCREEN	
SPC Identification	
H/W Rev.:	" "
Firmware Id:	" "
Firmware Ver:	" "
Firmware Name:	" "
SPC ID NUMBER	0
HANDPAY MODE	Basic Handpay Reporting
SINGLE/DUAL PORT	Port 0
EFT	Port 0
PROGRESSIVES	Port 0
SYSTEM BONUSING	Port 0
VALIDATION	Port 0
GENERAL CONTROL	Port 0
Save Options	
Press 5 Lines	- Press to select another digit
Press 10 Lines	- Press to increment a digit
Bet 10 Credits	- Press to return to previous menu
Audit Key	- Turn off to exit

### SPC Configuration Screen.

This screen allows the operator to control certain aspects of the SPC-2 interface firmware. These options do not affect the operation of the Gaming Machine and have no affect when an SPC-1 is connected. These options only affect the connected SPC-2 interface board.

[Please consult the configuration documentation for a more detailed description of the usage and affects of these options in conjunction with the SPC-2 interface board and firmware.]

The following options are available:

**SPC ID NUMBER:** This option allows the operator to configure an Id number for the SPC-2 firmware. This is generally used to indirectly set the SAS Poll address, and replaces the use of the Game Machine ID for purposes of setting a SAS Poll address.

**HANDPAY MODE:** This affects the way in which handpay exceptions and data are reported to the SAS Host by the SPC-2 interface board.

**VALIDATION MODE:** This affects the validation mode in which the SPC-2 operates, and the options available are indirectly limited by the configuration of the Gaming Software, including whether a printer is selected, and whether Game or System Validation has been selected on the Game Machine Options Menu screen.

**SINGLE/DUAL PORT:** When supported by the SPC-2, this option allows the operator to configure the SPC-2 for single or dual port operation. When Dual Port operation is selected, the following five options can be set to specify which



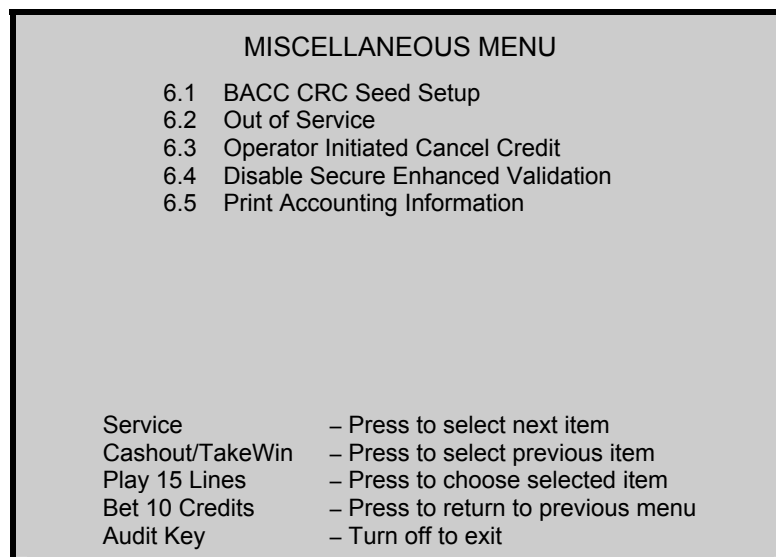


functionality should be available on which port. These options are very system-specific and it is vital that they be matched to the particular casino system installation being connected. Note that earlier versions of SPC-2 firmware did not support the dual port functionality, in which case this option has no affect.

In all cases, additional detailed configuration documentation should be consulted when modifying these options.

### 3.3.6 Miscellaneous Menu

The Miscellaneous Menu provides a range of operational features relating to the Bank Bill Acceptor, Periodic Meters, demonstrations, accounting print outs, and removing the gaming machine from service.



#### BACC CRC Seed Setup

This security procedure enables a CRC check to be carried out on a GPC/32 bill validator by an authorized attendant.

This screen also provides for changing the GPC/32 bill Validator CRC seed value.

Refer to the GPC documentation for details of setting the seed value.



BILL ACCEPTOR CRC SEED SETUP	
Enter a new CRC Seed Value here:	0x00000000
Current Seed CRC seed value:	0xffffffff
Service	– Press to select another digit
Cashout/TakeWin	– Press to increment another digit
Play 15 Lines	– Press to save new seed value
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit

### Out of Service Option

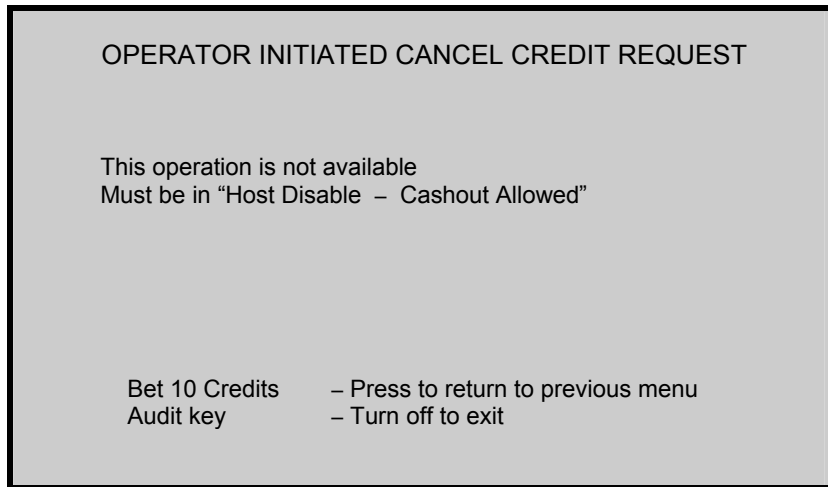
This operational option enables a floor attendant to place an EGM into, or remove a machine from, the Out of Service mode as required.

Audit key	– Turn off to START Out of Service Mode
Bet 3 Credits	– Press to return to previous menu without entering Out of Service Mode
Audit key	– Turn on again to EXIT Out of Service Mode and then Turn Reset Key to reset lockups detected in Out of Service Mode



### Operator Initiated Cancel Credit

This operational option enables a floor attendant to place a machine into, or remove a machine from, the Out of Service mode as required.



### 3.3.7 Current Lockup Menu Items

The gaming machine has an extensive system of self-monitoring and should any abnormal conditions be detected, the machine will automatically enter a lockup condition. In lockup, the game is disabled to prevent any further player interaction and the game message area displays guidance information.

Lockup conditions are handled by the Operator Mode Menu item Current Lockup. The menu is displayed and the conditions requiring attention are highlighted by the characters \*\*\*. Each lockup condition has an associated help screen outlining the procedure for fixing the fault.

The Current Active Lockup Menu is shown below, followed by a summary of the associated help screens.



## CURRENT ACTIVE LOCKUPS

***	Cash Out Handpay	Illegal Coin Out	Bonus Handpay
***	Main Door Open	Self Audit Error	Bill Acceptor Error
***	Cashbox Door Open	3 Way Memory Error	Bill Jam
***	Logic Door Open	Game EPROMs Changed	Bill Acceptor Full
***	Bill Acceptor Door Open	Meters Disconnected	Bill Acc. Stacker
	Coin Reversal	Meters Faulty	Bill Reversal
	Coin Acceptor Fault	Game Machine Options	Bill not Credited
	Coin Optic Fault	Jurisdiction Options	Signature Error
	Coin Diverter Fault	EEPROM CRC Mismatch	Touch Screen Error
	Printer Disconnected	Battery #1 Low	Out of Service
	Printer Jam/Failure	Battery #2 Low	Progressive Disconnected
	Paper Depleted	Jackpot Win	Mikohn comm. Error
	Hopper Empty	Win Handpay	Host Disable
	Hopper Jammed	Mystery Handpay	
	Hopper Disconnected	Link Jackpot	

The characters \*\*\* indicates active lockups

Service	– Press to select next lockup
Cashout/TakeWin	– Press to select previous lockup
Play 15 Lines	– Press to see selected lockup help
Bet 10 Credits	– Press to return to previous menu
Audit Key	– Turn off to exit



## Notes



# Chapter 4

## Day-to-Day Operations

### 4.1 Opening and Closing Cabinet Door

To open the cabinet door:

1. Insert the cabinet door key, and turn it 180° clockwise. The door will “pop” open.

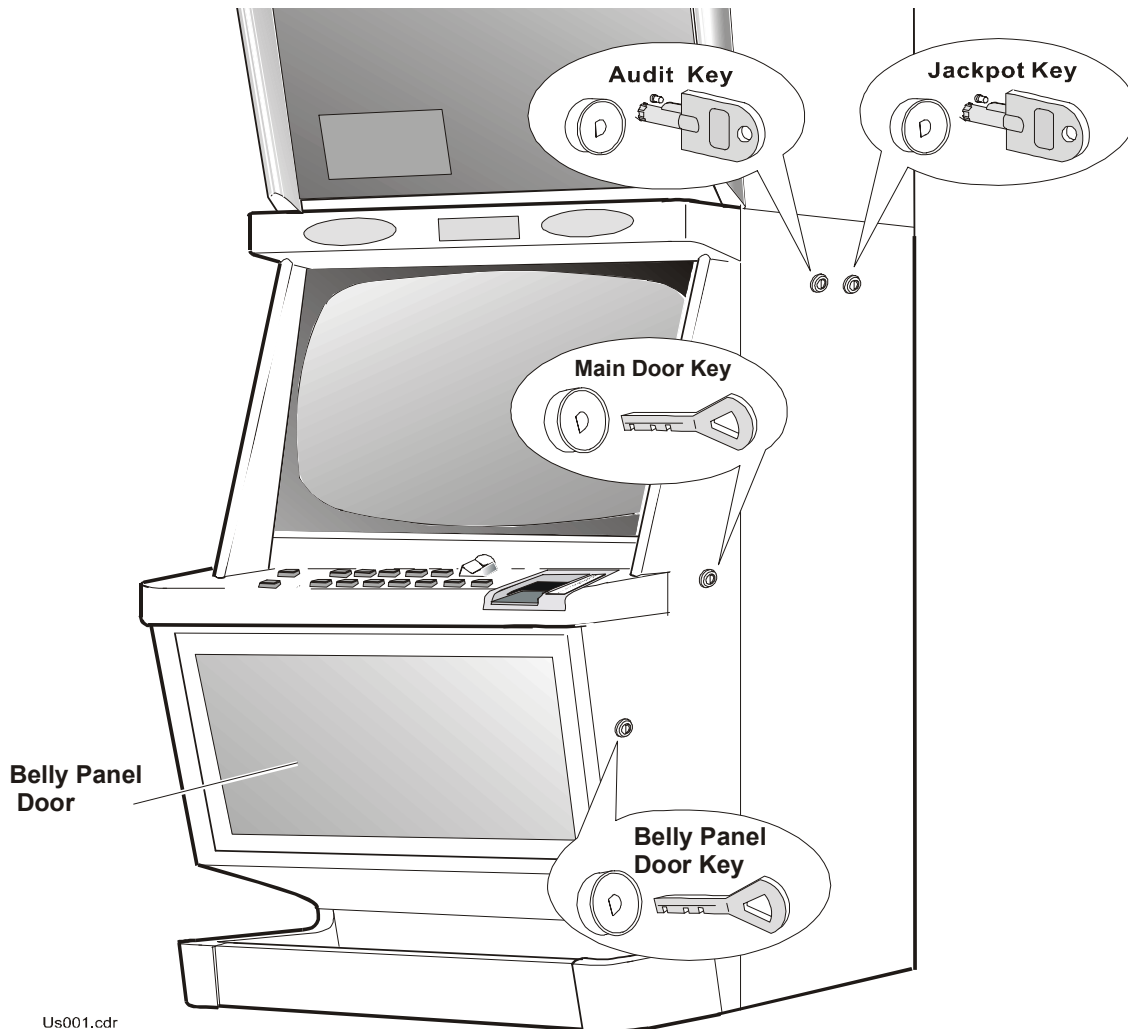


Figure 4-1 Cabinet Key Locations



To close the cabinet door:

1. Turn the key in the lock and remove.
2. Push the cabinet door closed.

## 4.2 Switching Machine On or Off

### WARNING

Dangerous voltages are present inside the machine when mains power is on. Always turn off mains power before touching any internal parts with bare hands or with metal objects held in the hands.

To switch the machine ON or OFF:

1. Open the cabinet door.
2. Switch the main power switch ON or OFF.
3. Lock and close the cabinet door.
4. Remove the key.

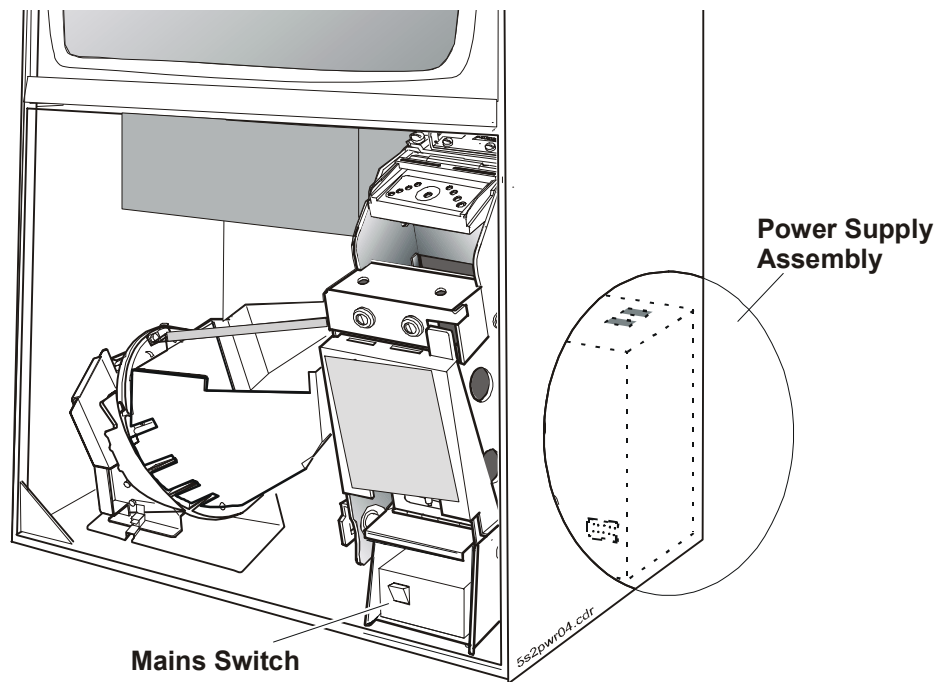


Figure 4-2 Switching Machine On or Off



## 4.3 Refilling Hopper

When the hopper needs refilling, the machine will lock up and display a **Hopper Empty** message.

To perform a hopper refill:

1. Obtain the correct number of coins required to fill the hopper.
2. Open the cabinet door (the machine will display a **Door Open - Main** message).
3. Place the coins into the hopper.
4. Close and lock the cabinet door; the machine will remain in fault mode.
5. Insert the Jackpot Reset (Cancel Credit) key and turn it 90° clockwise, then back again and remove. This will clear the lockup Hopper Empty.
6. Record the refill amount in the refill register.

If coins were owing to the player before the hopper refill, the machine will now dispense the coins into the coin tray.





## 4.4 Clearing Coin and Bill Jams

### 4.4.1 Coin Comparator

When a coin jams in the coin comparator, coins stack up at the coin entry slot. To clear the coin jam, take the following action (see Figure 4-3):

1. Open the cabinet door, and switch OFF the machine.
2. Remove the comparator:
  - a. Remove the loom from the comparator. Do not pull on the wires.
  - b. Push the comparator upwards to the full extent of the top locating groove. This action causes the unit to come free of the bottom locating groove.
  - c. Remove the unit from the reflector panel.
3. Remove any jammed coins.
4. Replace the comparator:
  - a. Position the unit at an angle and slide it top first into the top locating groove on the mounting bracket.
  - b. Push the bottom of the unit inwards, and slide it down until it locks into position in the bottom locating groove.
  - c. Reconnect the loom to the comparator.
5. Switch ON the machine, and lock and close the cabinet door.

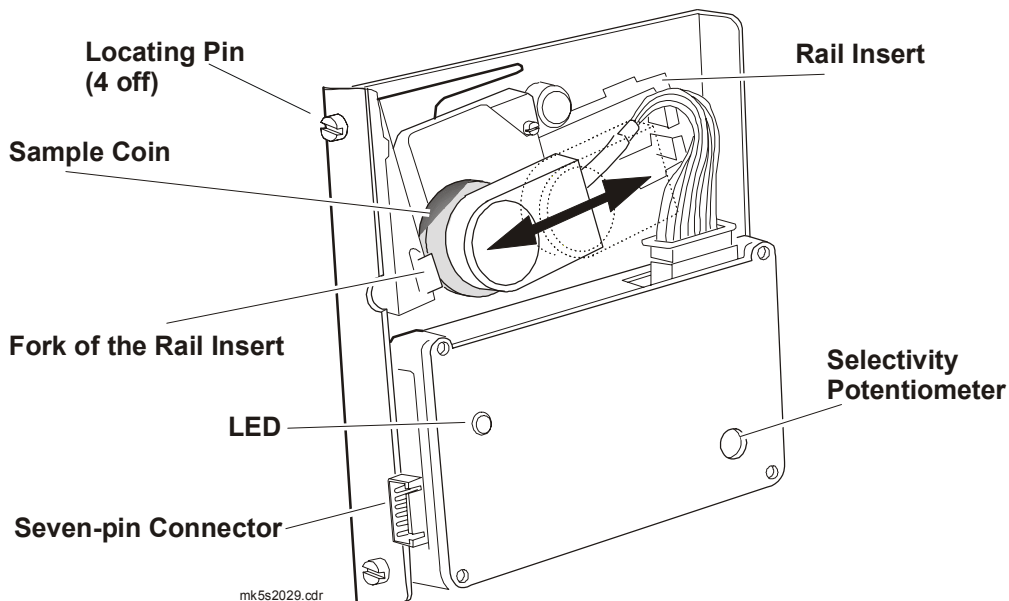


Figure 4-3 Coin Comparator Sensor Assembly (MC-62 shown)



## 4.4.2 Coin Chute Assembly

When a coin jams in the coin-in chuting, the machine locks up and provides the following alerts:

- The machine displays the message COIN ACCEPTOR FAULT or COIN OPTIC FAULT.
- The machine sounds an alarm.

To clear the coin jam, take the following action:

1. Open the cabinet door, and switch OFF the machine.

### CAUTION

Take care not to damage the coin chuting.

2. Clear any jammed coins from the coin chuting. (for additional information, refer to the chapter Coin Chute Assembly in the Service Manual).
3. Ensure that the chute is clear by dropping a coin through the chute while the cabinet door is still open.
4. Switch ON the machine, and close and lock the cabinet door.
5. To reset the machine, insert the Jackpot Key into the Jackpot key switch and turn it 90° clockwise, then back again and remove.
6. Carry out the coin chute test as outlined in the chapter Machine Modes.

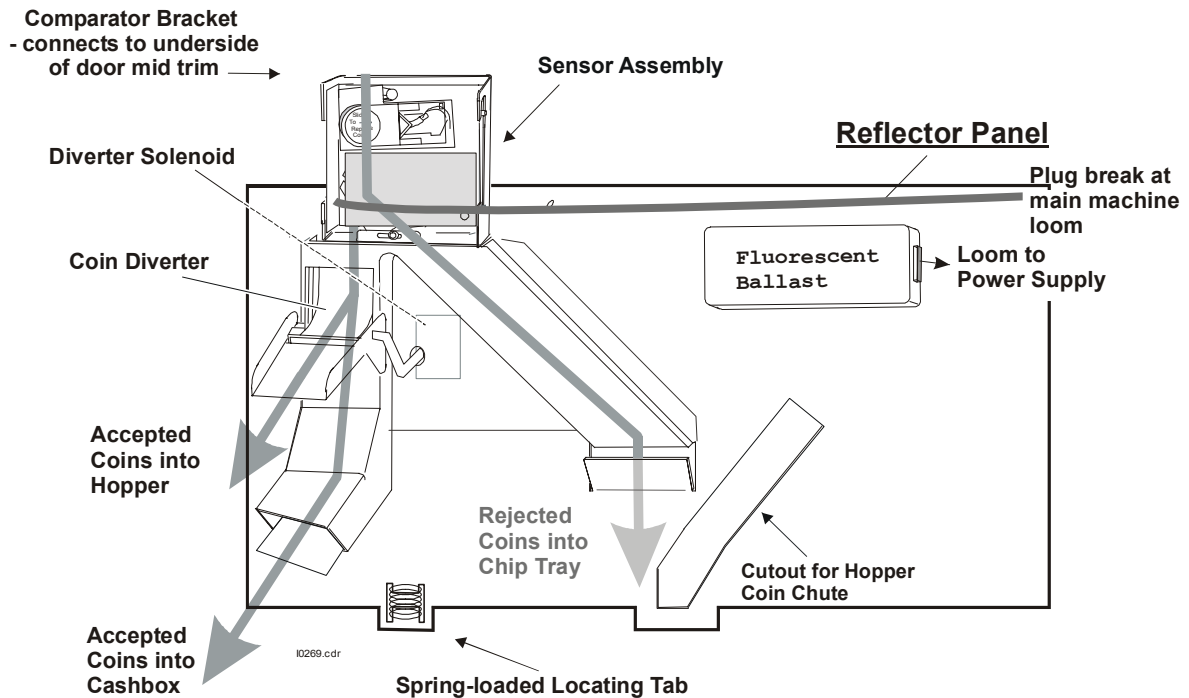


Figure 4-4 Coin Comparator and Coin Chuting



### 4.4.3 Hopper Photo-optic Detector and Coin Chute

#### CAUTION

Avoid handling the second coin wiper spring. If bent, it may cause an incorrect coin payout, and the machine to lock up with the message **ILLEGAL COIN OUT**.

If a coin passes or jams in the hopper photo-optic detector when the player has not pressed the **CASH OUT** button for a payout, the machine locks up and provides an alert by displaying the message **ILLEGAL COIN OUT** or **HOPPER JAMMED**.

Take the following action:

1. Open the cabinet door, and switch OFF the machine.
2. Clear any jammed coins from the hopper photo-optic detector.
3. Check that the hopper coin chute is aligned with the slot in the reflector panel.
4. Switch ON the machine, and lock and close the cabinet door. The machine will automatically reset after the door is closed.

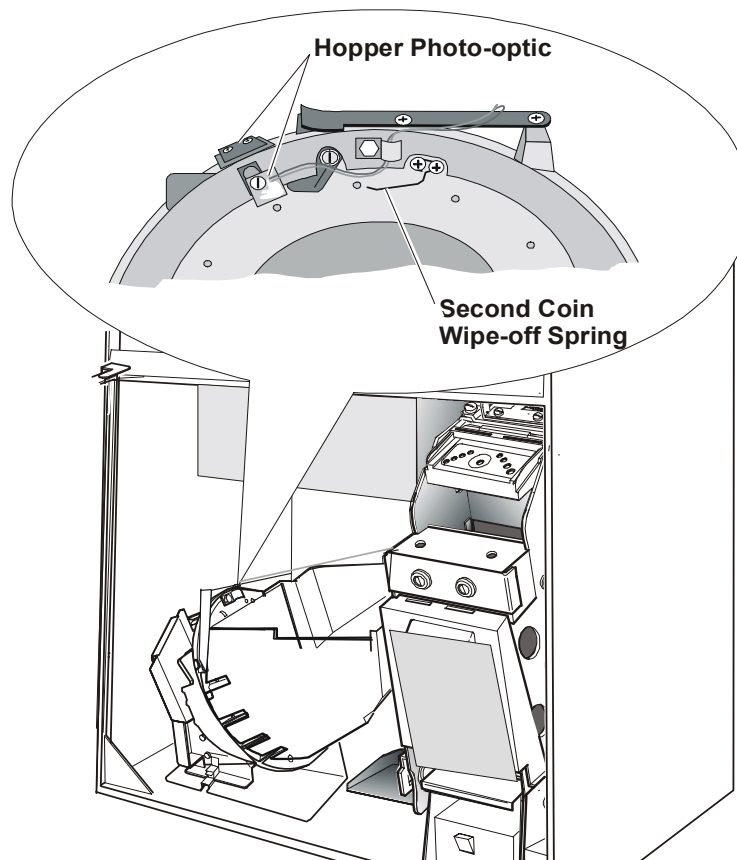


Figure 4-5 Clearing Hopper Photo-optic Detector



#### 4.4.4 Bill Acceptor

If a bill jams in the bill acceptor, it will automatically try to reverse the bill out of the bill acceptor. If the automatic clearance fails, the machine will lock up and display a fault mode message.

##### CAUTION

The Bill Acceptor is controlled by complex electronics. Unqualified personnel must not interfere with the unit.

The scanning and transport channel of the bill acceptor passes currency directly to the stacker. Should a bill become lodged within the scanning channel, the following steps will enable the jam to be cleared:

##### CAUTION

Ensure the power is turned off before any maintenance procedures are carried out on the bill acceptor, stacker and dual cage doors.

To clear a jam in the bill acceptor (refer to Figure 4-6 and Figure 4-7):

1. Open the cabinet door and switch OFF the machine.
2. Unlatch the dual cage assembly from the cabinet (1).
3. Gently swing the assembly out of the cabinet until it is against the stop. This will give limited access to the bill channel.
4. Unclip the upper guide from the lower guide and remove the jammed bill.
5. If you need to remove the bill acceptor:
  - a. Disconnect the loom from the bill acceptor to the host machine (2).
  - b. Pull the retaining clip out to release the bill-acceptor locating pin (3, 4).
  - c. Lift the bill acceptor up and away from the back of the housing.
6. Unclip the upper guide channel from the lower guide channel and remove the jammed bill.

Replacing the bill acceptor and dual cage housing is a reversal of the removal procedure.





Figure 4-6 Dual Cage Housing and Bill Acceptor Access

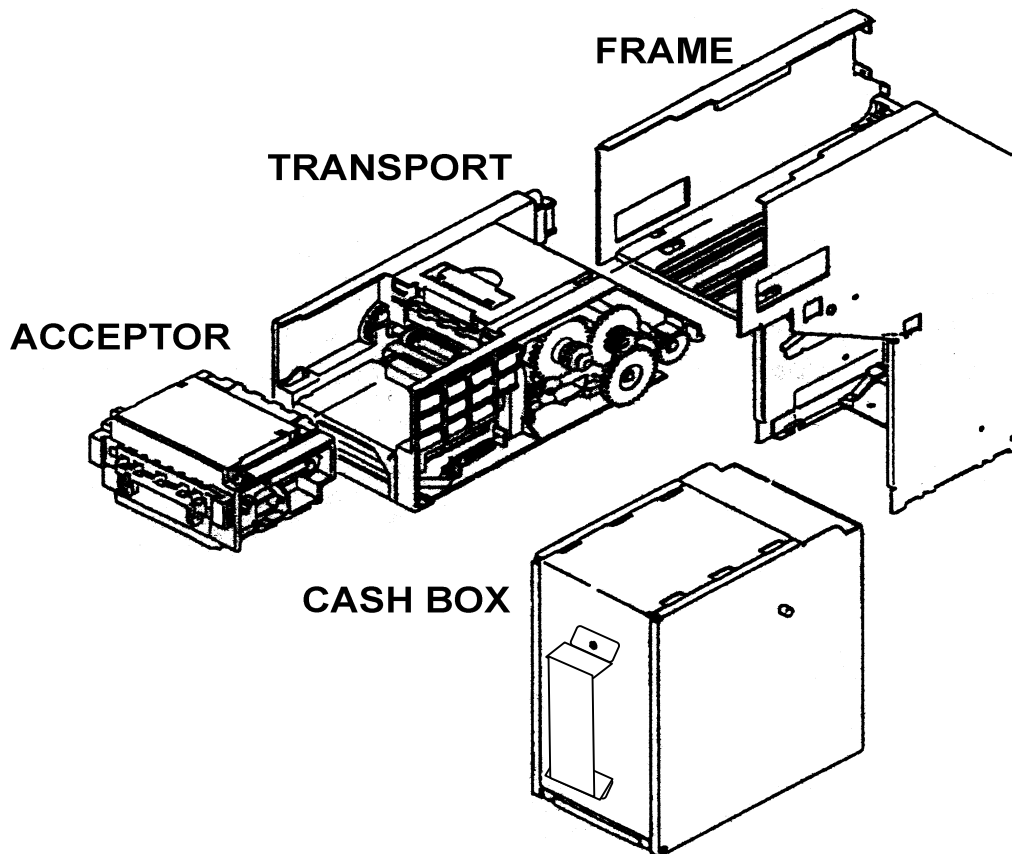


Figure 4-7 Bill Acceptor

## 4.5 Cancelling Credit

When a player has credit that is below the preset Hopper Payout Limit and the player presses the Cash Out button, the machine dispenses the credit amount into the chip tray.

However, when a player's credit exceeds the preset Hopper Payout Limit and the player presses the Cash Out button, the machine locks up. When this occurs, the machine provides an alert in the following way:

- The machine displays the message CANCEL CREDIT.
- The machine plays a distinctive tune.

Take the following action:

1. In the payout book, record the CREDIT amount displayed on the screen.
2. Pay the player or direct the player to collect the credit amount from the cashier.
3. Reset the machine by inserting the Jackpot Key and turning it 90° clockwise, then back again. This cancels the credit.



## 4.6 Resolving Disputed Win Claims

### Note

Verifying a player's claim may require the attendance of venue management.

When a player claims a win that the machine has not credited, take the following action:

1. Note and study the symbols on the machine display.
2. Check that the player has correctly placed a bet.
3. Check the game outcome against the pay table.
4. Check the current game display against the last game played information in the Operator Mode Menu ⇒ Metering Information Menu ⇒ Replay Previous Games (refer to the chapter Machine Modes).

If the dispute cannot be resolved immediately, record all symbols and information on the current and last game, including credits and lines bet, for future resolution.





## 4.7 Clearance of Coins and Bills

### 4.7.1 Cash Box Clearance

The cash box is accessed via the security door in the cabinet base. The door may be fitted with a mechanical security switch to detect accesses. The procedure for clearing the cash box is controlled by house management.

### 4.7.2 Bill Acceptor Stacker Clearance

The procedure for clearing the bill acceptor stacker must be strictly controlled by house management. To remove the stacker:

1. Open the belly panel door. The alarm sounds, the machine locks up, and the message DOOR OPEN BILL ACCEPTOR is displayed.
2. Unlock if necessary and open the stacker cage door.
3. Grasp the stacker handle and withdraw the stacker from the machine.
4. Once removed, the bill stacker itself must be unlocked before the bills inside can be withdrawn. Each stacker may be numbered to assist accounting and control operations.

To replace the bill stacker, reverse the above procedure.

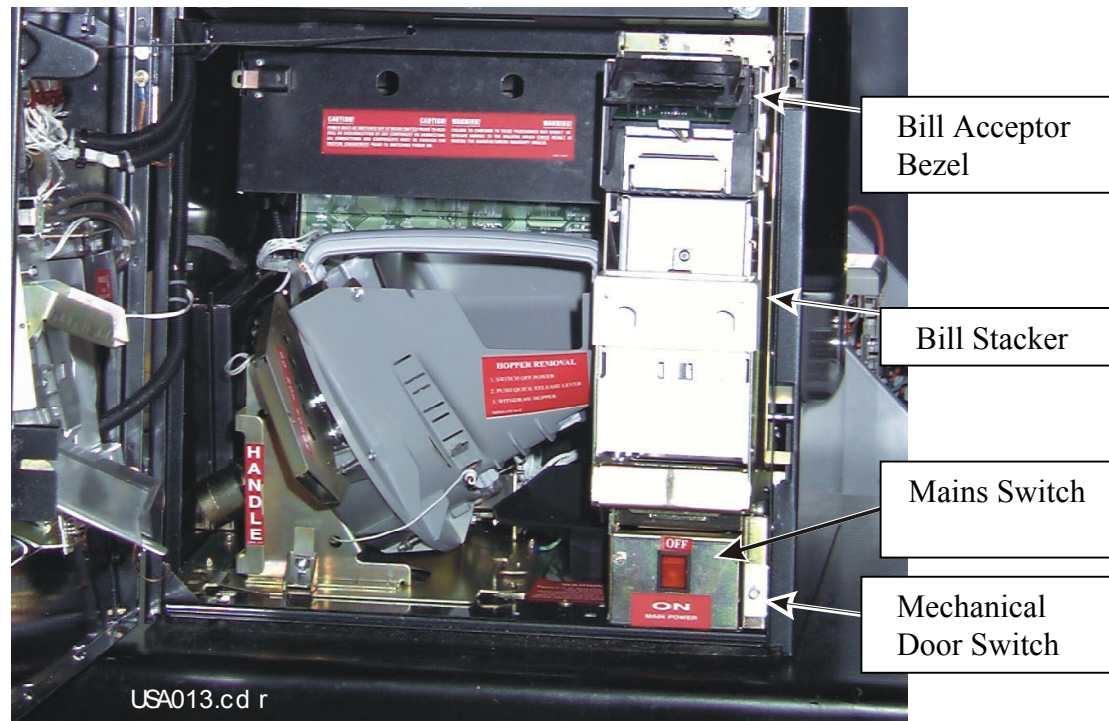


Figure 4-8 Removing Bill Stacker





## 4.8 Performance and Audit Calculations

### NOTE

Cash flow calculation formulas can vary between jurisdictions as well as through the allocation of individual electronic meters.

Accounting and security-type calculations are facilitated by the Operator Mode Menu  $\Rightarrow$  Metering Information displays. Machine auditing is carried out by analysing the meter information in conjunction with hopper fill amounts, cash box and bill stacker clearances, and the hand-pay payout registers.

### Performance Calculations

The TRUE WIN PERCENTAGE can be calculated as follows:

$$\text{TRUE WIN \%} = \frac{(\text{TOTAL CREDITS BET} - (\text{TOTAL CREDITS WON} + \text{JACKPOT WINS})) \times 100}{\text{TOTAL CREDITS BET}}$$

The actual number of credits won by the house is given by:

$$\text{HOUSE CREDITS} = \text{TOTAL CREDITS BET} - (\text{TOTAL CREDITS WON} + \text{JACKPOT WINS})$$

The Periodic Meters can be used to provide performance information that relates to a specific period of time.

### Audit Calculations

The cash flow cycle is described by the following calculation:

$$\begin{aligned} &\text{CASH IN} + \text{HOPPER REFILLS} + \text{TOTAL CREDITS WON} + \text{JACKPOT HANDPAYS} \\ &= \\ &\text{TOTAL CREDITS BET} + \text{CANCEL CREDIT} + \text{COIN OUT} \end{aligned}$$



# Chapter 5

## Care and General Maintenance

### CAUTION

All functions of the gaming machine are controlled by complex electronics. Unqualified personnel must never interfere with any mechanisms or controls inside the machine as this may permanently damage the machine and could lead to expensive repairs or costly component replacement, and will render the warranty void.

### 5.1 Cabinet

### CAUTION

On gold-plated surfaces, do not use abrasive cleaning products or strong solvents. To clean, use a soft chamois and water, or a proprietary cleaning fluid that contains mild solvents and silicone.

To clean the exterior of the cabinet and the top box, use a non-abrasive household cleaning solution or spray. Ensure that all exterior parts are thoroughly dry, particularly the coin tray.

### Note

Call the Aristocrat service organisation to carry out all adjustments and repairs.



## 5.2 Fluorescent Tubes

### WARNING

High voltages are present when the machine is switched ON. These voltages are potentially lethal.

### 5.2.1 Top Box Tube

The top box tube is 15 W to IEC 81 standard.

To replace the top box tube (refer to Fig 5-1):

1. Open the cabinet door, and switch OFF the machine.
2. Remove the top box door by lifting it up to disengage the locating tabs.
3. Rotate the tube 90°, and gently remove it from the sockets.
4. To insert the new tube, push the tube into the sockets.
5. Lock the tube into place by rotating it 90° in either direction.
6. Replace the top box door.
7. Switch ON the machine, and lock and close the cabinet door.

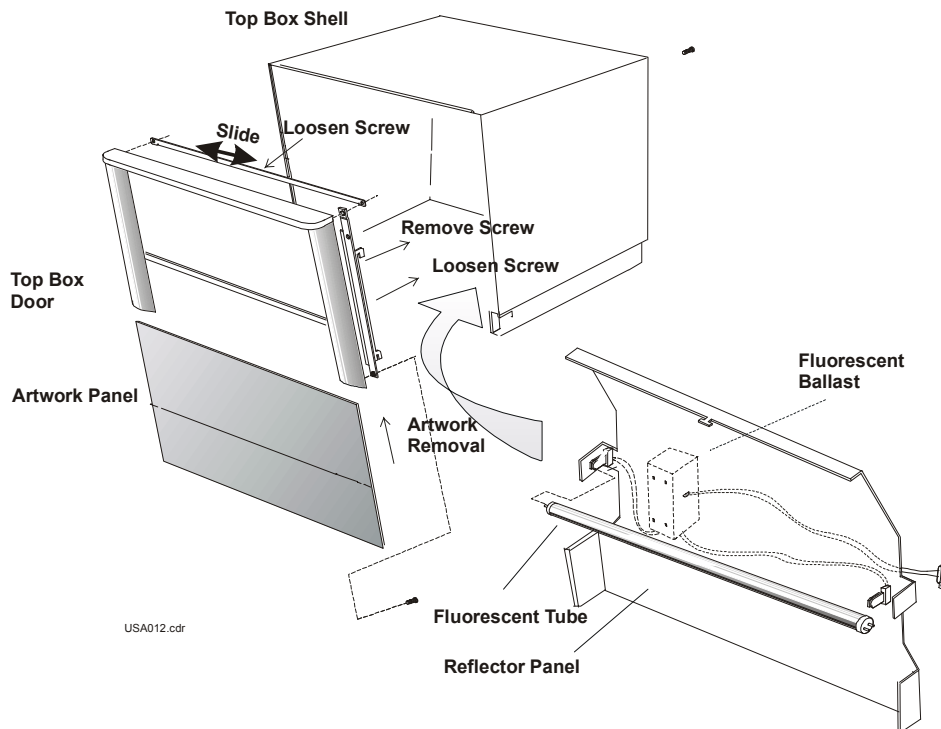


Figure 5-1 Replacing Top Box Tube



## 5.2.2 Cabinet Door Fluorescent Tubes

The cabinet door fluorescent tubes are mounted to the reflector panel on the inside of the door.

To replace a cabinet door fluorescent tube (refer to Fig 5-2):

1. Open the cabinet door, and switch OFF the machine.

### Warning

When the lighting system is working, the fluorescent tube becomes very hot.

2. Open the belly panel door.
3. Rotate the tube and carefully remove from its sockets. Insert the replacement fluorescent tube.
4. Lock and close the belly panel door.
5. Switch ON the machine, check the lighting system, and lock and close the main door.

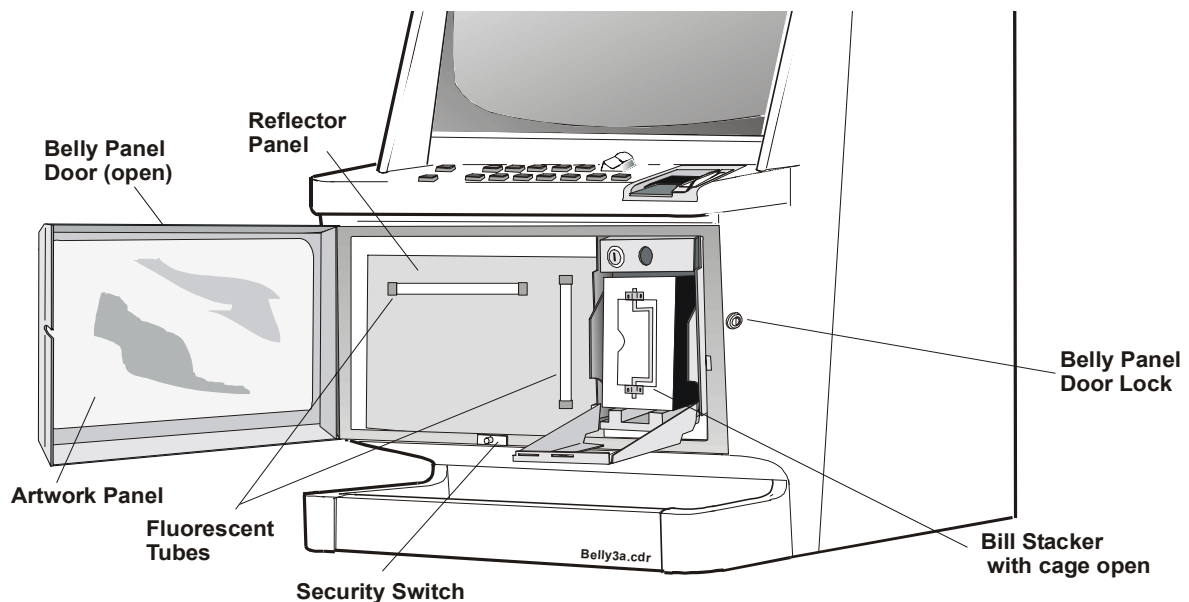


Figure 5-2 Cabinet Door Fluorescent Tube



## 5.3 Playbuttons

### 5.3.1 Playbutton Lamps

#### Warning

Lamp and logic looms operate on different voltages - incorrect wiring may damage the machine or cause improper operation.

The playbutton lamps are wedge base, 24 V DC, 2 W.

To replace a playbutton lamp:

1. Open the cabinet door, and switch OFF the machine.
2. Grasp the microswitch and lamp holder unit between the thumb and forefinger, and pull out rearwards from the body.
3. Pull out the faulty lamp.
4. Push in the replacement lamp.
5. Replace the microswitch and lamp holder unit by inserting it with a rocking action into the playbutton body.
6. Push up the microswitch and lamp holder unit until it snaps into place.
7. Switch ON the machine, and lock and close the cabinet door.

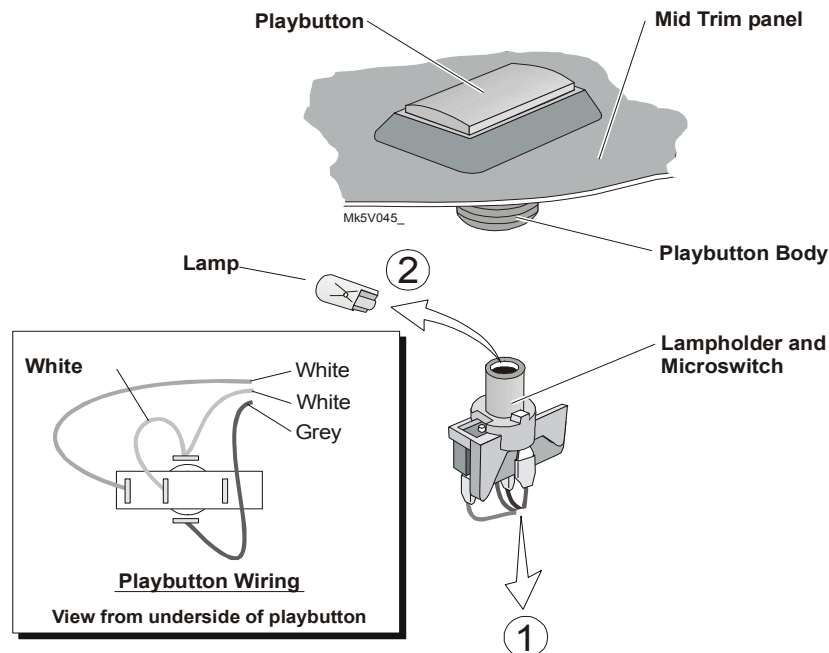


Figure 5-3 Playbutton Lamps



## 5.4 Hopper

### 5.4.1 Removing and Replacing

#### CAUTION

Always use the handles to lift the hopper. Never lift the hopper by the motor and the end of the bowl, as this action may bend the motor spindle. Avoid handling the second coin wipe-off spring. If this spring is damaged, it may cause an incorrect coin payout and the machine to lock up.

To remove the hopper from the cabinet (refer to Figure 5-4):

1. Open the cabinet door, and switch OFF the machine.
2. Depress the spring-loaded release pin.
3. Rotate the hopper 90° by sliding the left-hand side outwards.
4. Slide the hopper straight out of the machine.
5. Lift the hopper by grabbing the handle with one hand and placing the other hand under the base of the bowl.

To replace the hopper in the cabinet:

1. Lift the hopper by its handles.
2. Slide the hopper into the guides on the base of the cabinet until the hook on the right-hand side is in place.
3. Push on the hopper handle to pivot the hopper 90° until the spring-loaded pin is engaged in the retaining hole.
4. Switch ON the machine, and lock and close the cabinet door.



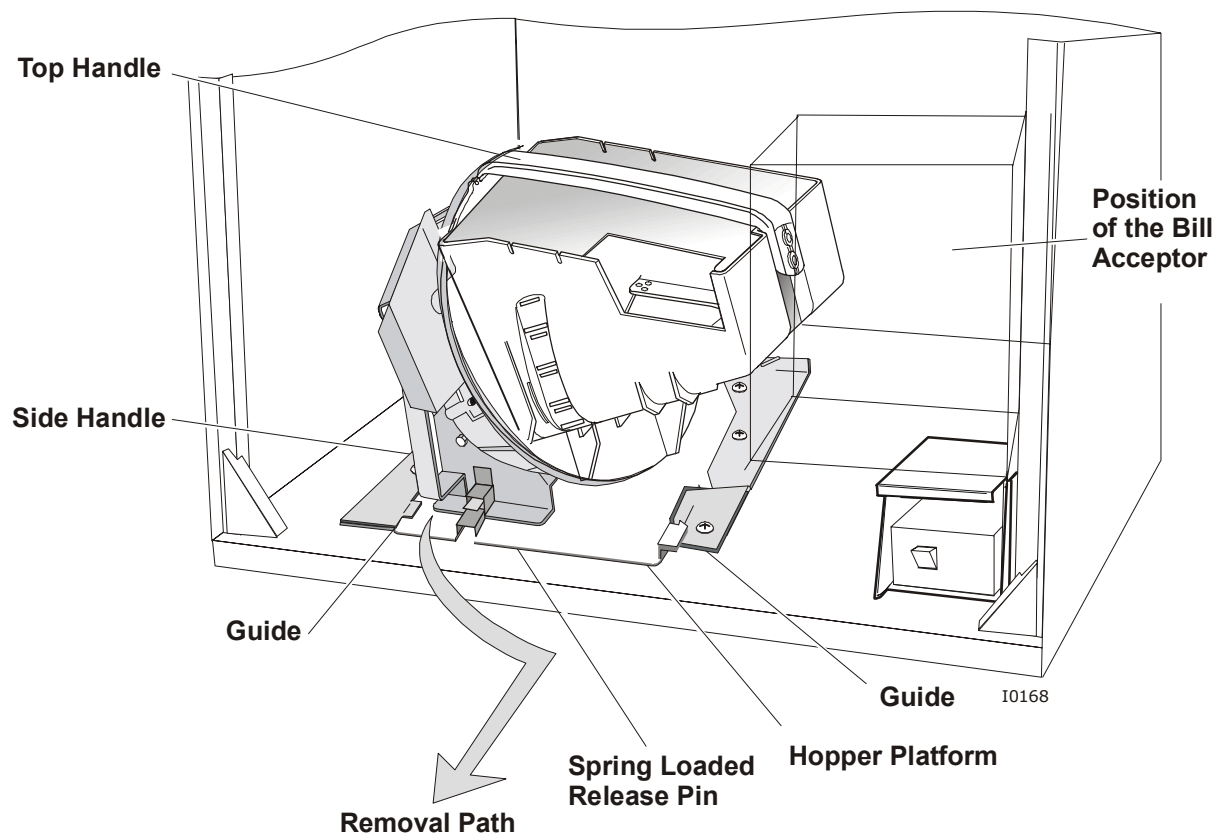


Figure 5-4 Hopper Removal

## 5.4.2 Cleaning

### CAUTION

Avoid handling the second coin wiper spring. If bent, it may cause an incorrect coin payout and the machine to lock up with the message ILLEGAL COIN OUT displayed.

Remove any dust and dirt from the hopper photo-optic with a soft paint brush or blow it away using a straw (refer to Fig 5-5).



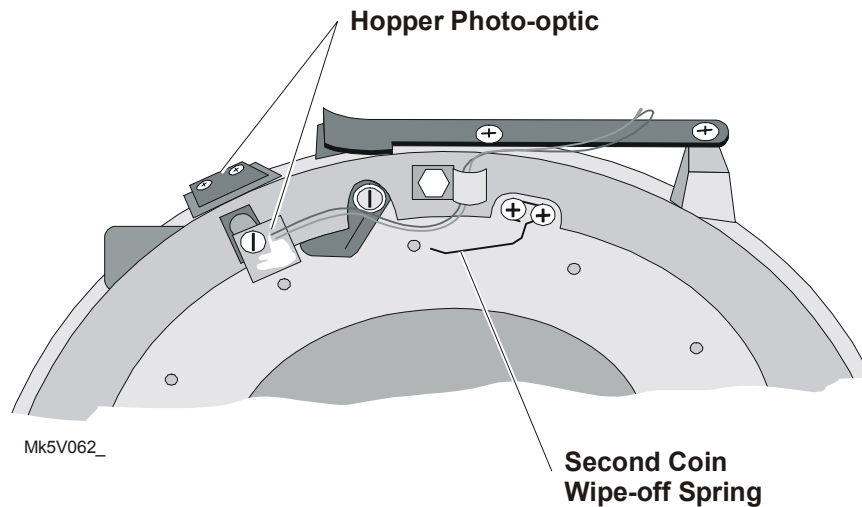


Figure 5-5 Hopper Photo-optic

## 5.5 Coin Comparator

### 5.5.1 Removing and Replacing

Refer to Clearing Coin and Bill Jams in the chapter Day-to-Day Operations.

## 5.6 Bill Acceptor Unit

The bill acceptor requires a small amount of regular attention to maintain operations. A service technician will be required if machine malfunction occurs.

### 5.6.1 Removing and Replacing

Refer to Clearing Coin and Bill Jams in the chapter Day-to-Day Operations.

### 5.6.2 Maintenance

The bill acceptor and stacker require only a minimal amount of care which can be provided while the units are in the operating position.

Occasional wiping of the plastic bezel surface, with a soft cloth dampened with a 90% solution of isopropyl alcohol is all that is required to remove surface deposits and smudges.





**CAUTION**

Caution must be exercised not to flood the bezel area with liquids due to the electronics in the bezel unit and because liquids must not seep down into the bill acceptor unit below the bezel area.

Do not use a solvent other than isopropyl alcohol as permanent damage to the bezel assembly and other items may result.

Over a period of time, dirt from the surface of inserted bills will accumulate on the pressure rollers, drive belt surfaces and bill acceptor optics. These areas should be cleaned to ensure reliable operation.

The procedure to clean rollers, belt surfaces, and validation optics is as follows (if necessary, see Removal and Replacement Procedures in the Service Manual):

1. Disconnect the loom from the side of the bill acceptor assembly.
2. Remove the bill acceptor from the dual cage housing.
3. Swing down the upper guide assembly to give complete access to the bill channel, as shown in Figure 4-7.
4. Using a soft lint cloth dampened with 90% isopropyl alcohol, wipe the bill channel surfaces on both the upper and lower guides to remove any surface dirt. Pay particular attention to the optics area and the magnetic head when removing deposits from the surfaces.
5. On the upper guide assembly, clean the surface of the pressure rollers. The belt surface may be cleaned by rotating one of the drive rollers while holding the cleaning cloth against the surface of the belt. Again, care should be taken to prevent excess liquid from reaching the bill acceptor internals.



## Notes



# Chapter 6

## Machine Conditions and Messages

### 6.1 Machine Alerts

The gaming machine functions with a variety of operational alerts that provide for security, customer service and maintenance events.

The machine responds to events by showing messages in the game display, by causing a machine lockup and by sounding an alarm.

#### Note

Machine alerts and messages can vary between jurisdictions and machine models.

Some machine functions and operational controls are configured during machine setup. See Operator Setup / Selections Mode in the chapter Machine Modes.

#### 6.1.1 Operational Messages

The video display unit shows messages, operator menus and information displays to assist in identifying and resolving machine conditions. The on-screen messages provide operators and players with guidance and information while the machine is in Play Mode.

Examples of screen messages are:

- **Game over**
- **Door Open - Main**
- **Coin Diverter Fault**
- **COMBINATION TEST.**

The message may simply be an indication of normal game or operational processes requiring no remedial action. However, if the message indicates a lockup condition, follow the procedure below.



## 6.1.2 Machine Lockup

The gaming machine has an extensive system of self-monitoring and should any abnormal conditions be detected, the machine will automatically lockup, i.e. activate fault mode.

In fault mode, the game message area displays guidance information and the game is disabled to prevent any further player interaction. Fault mode conditions are dealt with via the Operator Mode ⇒ Current Lockup Menu.

Entry to the Current Lockup screen is achieved by turning the Audit (Operator) key switch ON and selecting Current Lockup from the Operator Mode Menu.

The Current Lockup screen is displayed and the conditions requiring attention are highlighted by the symbol \*\*\* (See Table 6-1). Each lockup condition has an associated help screen that provides information on the cause of the lockup and the procedure for resetting it. A summary of the lockup help comments is given in Table 6-2.

*Table 6-1 Current Lockup Screen Display*

CURRENT ACTIVE LOCKUPS		
Cash Out Handpay	Illegal Coin Out	Link Jackpot
Main Door Open	Self Audit Error	Bonus Handpay
Cashbox Door Open	3 Way Memory Error	Bill Acceptor Error
*** Logic Door Open	Game EPROMs Changed	Bill Jam
*** Bill Acceptor Door Open	Meters Disconnected	Bill Acceptor Full
Coin Reversal	Meters Faulty	Bill Acc. Stacker
Coin Acceptor Fault	Game Machine Options	Bill Reversal
Coin Optic Fault	Jurisdiction Options	Bill not Credited
Coin Diverter Fault	EEPROM CRC Mismatch	Signature Error
Printer Disconnected	Battery #1 Low	Touch Screen Error
Printer Jam/Failure	Battery #2 Low	Out of Service
Paper Depleted	Jackpot Win	Mikohn Disconnected
Hopper Empty	Win Handpay	Mikohn comm. Error
Hopper Jammed	Mystery Handpay	Host Disable
Hopper Disconnected	Mystery Ticket	
The characters *** indicates active lockups		
Service	- Press to select next lockup	
Cashout/TakeWin	- Press to select previous lockup	
Play 7 Lines	- Press to see selected lockup help	
Bet 3 Credits	- Press to return to previous menu	
Audit Key	- Turn off to exit	



Table 6-2 Lockup Help Displays

CURRENT ACTIVE LOCKUP HELP SCREENS	
Lockup	HELP Screen Explanation and Advice
Cash Out Handpay	To reset: Complete any relevant book work, and turn Reset Keyswitch on and off.
Main Door Open	To reset this fault, close the Main Door.
Cashbox Door Open	To reset this fault, close the Cashbox Door.
Logic Door Open	To reset this fault, close the Logic Door.
Bill Acceptor Door Open	To reset this fault, close the Bill Acceptor Door.
Coin Reversal	To reset this fault, open main door, then close main door.
Coin Acceptor Fault	To reset this fault, open main door, service the Comparitor Unit, then close main door.
Coin Optic Fault	To reset this fault, open main door, service the Comparitor Unit, then close main door.
Coin Diverter Fault	To reset this fault, open main door, check the Coin Diverter Mechanism and Solenoid, then close main door.
Printer Disconnected	Open the main door, check looming and reconnect the Printer, close the main door.
Printer Jam/Failure	Open the main door, power down the EGM (essential to clear fault), check looming and reconnect the Printer. Power up the EGM, then close the main door.
Paper Depleted	Open the main door, remove the printer, and insert new paper stock. Replace the printer and close the main door.
Hopper Empty	Open main door. If hopper is empty, complete "Hopper Refill Procedure". If hopper disc is jammed, free the mechanism, then close main door.
Hopper Jammed	Open main door – check the hopper coin out sensor, then close the main door.
Hopper Disconnected	Open main door, check the looming, reconnect the hopper, then close the main door.
Illegal Coin Out	To reset this fault, open main door, then close main door.
Self Audit Error	To reset this fault - Follow the instructions at the main menu.
Three Way Memory Error	To reset this fault - Follow the instructions at the main menu.
Game EPROMs Changed	To reset this fault - Follow the instructions at the main menu.
Meters Disconnected	To reset this fault, open the main door, check looming and reconnect the mechanical meters, then close the main door.
Meters Faulty	To reset this fault, open the main door, check looming and reconnect the mechanical meters, then close the main door.
Game Machine Options	To reset this fault – Enter the Machine Options menu. Set options as required, then save options. Return to Operator Mode and reset static ram.
Jurisdiction Options	To reset this fault – Remove Game EPROMs and install Setchip EPROMs. Setup options as required, save options, and re-install Game chips.
EEPROM CRC Mismatch	To reset this fault – If the table displays a jurisdictional CRC error for Calculated vs. EEPROM, remove Game Chips and install Memory Clear/Game Setup Chips, setup options as required and save options, then re-install Game chips. For all other errors, follow the instructions at the main menu.
Battery #1 Low	To reset this fault – Open the Main Door. Power the machine off and remove the Main Board. Replace the battery on the Main Board. Return the Main Board and power on the machine. Close Main Door.
Battery #2 Low	To reset this fault – Open the Main Door. Power the machine off and remove the Main Board. Replace the battery on the Main Board. Return the Main Board and power on the machine. Close Main Door.
Jackpot Win	To reset: Complete any relevant book work, and turn Reset Keyswitch on and off.
Win Handpay	To reset: Complete any relevant book work, and turn Reset Keyswitch on and off.
Mystery Handpay	To reset: Complete any relevant book work. Turn the Reset Keyswitch on and off. Wait for the Mystery Mikohn equipment to reset.



Lockup	HELP Screen Explanation and Advice
Mystery Ticket	To reset: Complete any relevant book work. Turn the Reset Keyswitch on and off. Wait for the Mystery Mikohn equipment to reset.
Link Jackpot	To reset: Complete any relevant book work. Close security doors and exit operator menu. Turn the Reset Keyswitch on and off. Wait for the Mikohn equipment to reset.
Bonus Handpay	To reset: Complete any relevant book work, and turn Reset Keyswitch on and off.
Bill Acceptor Error	To reset; open main door, disconnect and then reconnect power to Bill Acceptor. Close main door..
Bill Jam	To reset; open main door, open bill acceptor's channel hatch, clear any jammed bills, close hatch, then close main door.
Bill Acceptor Full	To reset this fault, open Bill Acceptor Door, remove Bill Stacker and check. If Bill Stacker is full, empty it. Reset "Bills in Stacker Meter" by pressing CASHOUT button, or selecting "Reset Bills/Vouchers In Stacker" from Miscellaneous Menu. Replace Bill Stacker, and close Bill Acceptor Door.
Bill Acc. Stacker	To reset this fault, open Bill Acceptor Door, replace Bill Stacker, then close Bill Acceptor Door.
Bill Reversal	To reset this fault, open main door, then close main door.
Bill not Credited	Machine was powered down while accepting a bill. Bills in the stacker should be reconciled with the meters in the Bill Acceptor Information screen. To reset this fault, open main door, then close main door, or disable the Bill Acceptor machine option.
Signature Error	BACC Signature Mismatch. To reset this fault (V2.X – CRC32 check, upload), go to the Miscellaneous Menu, select Bill Acceptor CRC Check and follow instructions. BACC Signature Mismatch. To reset this fault (V2.X – CRC16 check, no upload), open and close logic door to reset fault.
Touch Screen Error	To reset this fault, power down the machine. Reconnect the touch screen. Power up the machine.
Out of Service	To exit, turn the Operator Mode Key on. After exiting from Out of Service mode, the Out of Service lockup can be cleared by turning the Reset Key on and off.
Mikohn Disconnected	Open the main door, check loom and reconnect the Mikohn, or close the main door, or disable the "Mikohn Game Address" from the Machine Options Menu.
Mikohn Comm. Error	Caused due to 5 re-transmission failures. Open the main door, then close the main door
Host Disable	The fault can only be reset by the Host. Enable game from the Host.

### 6.1.3 Door Access and Alarm Sound

The main door, cash box door, logic cage door, and belly panel door are monitored by battery-backed mechanical security switches. When one of these doors is opened, the following actions occur:

- one of the following messages will appear on the screen: MAIN DOOR OPEN, CASH BOX DOOR OPEN, BILL ACCEPTOR DOOR OPEN, LOGIC DOOR OPEN.
- the alarm sound is heard.
- one of the following lockups occurs: MAIN DOOR OPEN, CASH BOX DOOR OPEN, BILL ACCEPTOR DOOR OPEN, LOGIC DOOR OPEN.
- gameplay is suspended.



- one of the following electronic Diagnostic Meters is incremented: MAIN DOOR ACCESSES, CASH BOX ACCESSES, BILL ACCEPTOR ACCESSES, LOGIC ACCESSES.

The condition is reset by closing the appropriate door.

### Alarm Sound Level

The volume of machine game and operational sounds can be adjusted via Operator Mode⇒Operator Setup / Selections Menu⇒Sound System Setup.

## 6.2 Message Displays and Conditions

The table below shows typical machine condition messages together with the respective lockup status and the appropriate procedures for correcting or removing the lockup. Should the condition persist, call the local Aristocrat service organisation.

*Table 6-3 Typical Lockup Messages, Fault Conditions and Corrective Actions*

TYPE	MESSAGE	ERROR CONDITION	RESET PROCEDURE
<b>METERS and MEMORY</b>	MEMORY ERROR	3 Way Metering (SRAM) is corrupted.	Enter the Operator Mode and follow the instructions on screen.
	MEMORY ERROR - GAME EPROMS CHANGED	The Game EPROMs are not identical to those previously installed.	Enter the Operator Mode and follow the instructions on screen.
	MEMORY ERROR - MACHINE OPTIONS	The machine options (stored in EEPROM) have been corrupted.	Enter the Operator Mode and check the information saved in the Machine Options screen. Follow the instructions on screen to reset the machine.
	MEMORY ERROR - SELF AUDIT ERROR	This error occurs when an error is detected in the meters that account for all money in and out of the machine.	Enter the Operator Mode and follow the instructions on screen.
	MECHANICAL METERS DISCONNECTED	The mechanical meters have been disconnected or are faulty.	Reconnect mechanical meters. Check looming and sockets.
<b>DOOR SECURITY</b>	DOOR OPEN - MAIN	Main door is detected as being open	Close Main door.
	DOOR OPEN - LOGIC CAGE	Logic door is detected as being open	Close Logic door. If door is already closed, then open and close the door.
	DOOR OPEN - CASH BOX	Cashbox door is detected as being open	Close Cashbox door.



TYPE	MESSAGE	ERROR CONDITION	RESET PROCEDURE
	DOOR OPEN - BILL ACCEPTOR	Belly Panel Door is detected as being open	Close Bill Acceptor door.
COIN HANDLING	COIN ACCEPTOR FAULT	Signalling failure between coin acceptor and main processor.	Open Main door, check the coin acceptor, and close Main door.
	COIN OPTIC FAULT	A coin is covering a sensor in the coin acceptor, or the unit is faulty.	Open Main door, check coin chute and coin acceptor for jammed coins, close Main door.
	REVERSE COIN IN (Yo-Yo)	Coin stringing fault. Occurs when a coin has passed too slowly or upwards through the Coin Acceptor.	Open Main door, check coin acceptor, close Main door.
HOPPER	HOPPER DISCONNECTED	Hopper is detected as being disconnected.	Open Main door, check hopper is correctly connected, close Main door.
	HOPPER EMPTY	Hopper empty. Refill the hopper.	Open main door, refill hopper, close main door.
	HOPPER JAM	A coin has become jammed in the hopper optic or mechanical mechanism. Open the main door and remove any such coins.	Open Main door, clear the jam, close main door.
	CALL ATTENDANT - ILLEGAL COIN PAID	A coin was detected passing the coin-out optic when it shouldn't have been.	Open Main door, check hopper is correctly connected, close Main door.
BILL ACCEPTOR	CALL ATTENDANT -- BILL ACCEPTOR ERROR	The BACC has detected an internal fault.	Open the Main door, service or replace the Bill Acceptor, and close the Main door.
	BILL ACCEPTOR FAULT	The BACC has detected a fault. A bill may be blocking the bill entry slot or stacker entry, or stacker may be jammed. [NON-LOCKUP FAULT]	Open the Main door, remove any jammed bills from the Bill Acceptor, close the Main door.
	BILL ACCEPTOR DISCONNECTED	Bill Acceptor disconnect or broken. [NON-LOCKUP FAULT]	Check or reconnect the Bill Acceptor wiring harness.





TYPE	MESSAGE	ERROR CONDITION	RESET PROCEDURE
	BILL STACKER FULL	Bill stacker has jammed due to being too full. [NON-LOCKUP FAULT]	Open the Belly Panel Door, empty stacker (and reset BACC meters by entering Operator Mode and completing the Bill Stacker Reset procedure), replace stacker, and close the door.
	5 BILLS REJECTED	5 Consecutive bills rejected. [NON-LOCKUP FAULT]	Open and close the Main door, or insert a valid bill.
	CALL ATTENDANT -- STACKER REMOVED	Bill stacker removed.	Open Belly Panel Door, replace stacker, and close the door.
PRINTER	PRINTER FAULT	Printer has detected an internal fault	Open main door, service printer, and close the main door.
	PRINTER DISCONNECTED	Printer cable is disconnected or the printer is not responding.	Open main door, check printer wire harness is connected correctly, close the main door.
	PRINTER PAPER DEPLETED	Paper roll has been depleted.	Open main door, replace paper roll, close the main door.
	PRINTER PAPER LOW	Paper Low. [NON-LOCKUP FAULT]	Open main door, replace paper roll or adjust Paper Low sensor, close the main door.
OTHER	BATTERY LOW	SRAM battery backup is low.	Open main door, replace battery on Main Board, close the main door. Note: this will result in a metering error.
	MIKOHN DISCONNECTED	The Mikohn equipment is not communicating with the gaming machine.	Open main door, check Mikohn wire harness, or disable the Mikohn from the Machine Options setup, close main door.
HANDPAYS	CALL ATTENDANT OR PLAY ON - CASHOUT HANDPAY \$123.45	Cashout request above hopper limit.	Complete book entries (where applicable). Turn Reset key ON then OFF.
	CALL ATTENDANT - YOU HAVE WON A JACKPOT \$123.45	Non-progressive win above jackpot limit	Complete book entries (where applicable). Turn Reset key ON then OFF.



TYPE	MESSAGE	ERROR CONDITION	RESET PROCEDURE
	CALL ATTENDANT - YOU HAVE WON A CASH WIN \$123.45	Non-Jackpot win above the Maximum credit limit, and cannot be paid by hopper.	Complete book entries (where applicable). Turn Reset key ON then OFF.
	CALL ATTENDANT - YOU HAVE WON A LINK JACKPOT - LEVEL X - \$123.45	Progressive win (Link or Mystery).	Complete book entries (where applicable). Turn Reset key ON then OFF.



## Notes



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# Glossary

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<b>ADH</b>	Aristocrat Disc Hopper.
<b>Any pays</b>	Symbols are read anywhere on the payline, and not necessarily left to right or right to left.
<b>ARM250</b>	Advanced RISC Machine - a type of integrated microcontroller
<b>Audit key switch</b>	To display the electronic audit meters on the monitor, insert the audit key and turn it 90° clockwise.
<b>Audit meters</b>	See electronic and electro-mechanical meters.
<b>Base</b>	A specially designed box unit on which the cabinet stands. The cash box is usually located securely within the base.
<b>Book pay</b>	After the player presses the COLLECT button, the credits are manually paid out to a player and recorded in the payout book.
<b>Button panel</b>	The series of buttons across the front of the cabinet which the player uses to control game play.
<b>Cabinet</b>	The major cabinet or casing in which the workings of the machine are housed.
<b>Cancel credit</b>	When a player attempts to COLLECT a credit amount greater than the amount that the Hopper can pay out, the machine locks up. When this occurs, the Cancel Credit procedure allows for the player to be paid manually and the credit on the machine cancelled to zero.
<b>Cash box</b>	The high security compartment used to hold any coins not held in the hopper.
<b>Clearance</b>	The value of coins removed from the cash box, usually daily.
<b>Coin comparator</b>	Device that compares a coin inserted by a player with a sample coin of the correct denomination to determine if the inserted coin is valid and acceptable for play.
<b>Coin detectors</b>	See photo-optic detectors.
<b>Coin jam</b>	When coins jam in the coin chute assembly chute.
<b>Coin selector</b>	See coin comparator.



<b>Coin tray</b>	The tray at the bottom of the cabinet into which payout or reject coins are deposited for collection.
<b>Coin validator</b>	See coin comparator.
<b>CASH OUT</b>	To convert the amount shown on the CREDIT meter to cash, the player presses the CASH OUT button which activates the hopper to pay the coins into the coin tray.
<b>Console</b>	See base.
<b>CPU</b>	Central processing unit.(same as microprocessor)
<b>Credit</b>	Coins inserted into the machine register as credits. One coin may equal more than one credit. Prizes are shown as credits until such time as the player chooses to collect them.
<b>Electromechanical meters</b>	The electromechanical meters or counters. These meters are non-resettable and are cumulative for the life of the machine.
<b>Electronic meters</b>	The electronic audit meters that provide audit information.
<b>EPROM</b>	Erasable programmable read only memory.
<b>ESD</b>	Electrostatic discharge.
<b>Hard meters</b>	See electromechanical meters.
<b>Hopper</b>	The electronically controlled unit which stores coins and which pays out the exact number of coins in a credit collect situation.
<b>House</b>	The venue running the games.
<b>IC</b>	Integrated circuit
<b>Illegal coin</b>	A coin which is incorrectly paid out by the hopper.
<b>Installation</b>	A casino or other place which has a number of gaming machines.
<b>I/O</b>	Input/output.
<b>Jackpot key switch</b>	To reset the machine after a cashier payout or after a machine fault has been corrected, insert the J key, turn it 180° clockwise and back again.
<b>LED</b>	Light emitting diode.
<b>Left to right pay</b>	Symbols are read from left to right for prize determination.
<b>Links</b>	Several machines are <i>linked</i> together by an external progressive controller. Each machine contributes to a common progressively incremented jackpot and is displayed separately for the player to see.



<b>Lockup</b>	A lockup renders the machine unplayable and is triggered either by a malfunction, when a jackpot has been won (if the program permits), or when the player has pressed the CASH OUT pushbutton when there is more than the cancel credit amount in credit.
<b>Manual pay</b>	A book payment made for any amount in excess of the cancel credit limit of the machine.
<b>MAV</b>	Gaming machine model name (MAV models were previously known as MVP).
<b>Max bet</b>	A button which automatically bets the maximum amount possible on a game.
<b>Meters</b>	Electronic (soft) meters and electro-mechanical meters located within the machine that record and display important audit information for the operator.
<b>Microprocessor</b>	The computer component which controls and processes game play instructions.
<b>Multiline</b>	A game in which a player bets on additional lines to multiply the chance of a prize.
<b>Multiplier</b>	A game in which a player bets additional coins on any one game to multiply the value of the prize.
<b>Payline(s)</b>	The line or lines which indicate where the symbols must line up for a player to win.
<b>Payout book</b>	Book used to record hopper refill amount, jackpot amount and cancel credit amount.
<b>PCBA</b>	Printed circuit board assembly.
<b>Play button</b>	One of the illuminated buttons on the button panel, used in game play.
<b>Progressive jackpot</b>	This is an additional jackpot to the game's normal jackpot. This jackpot increments by a fixed percentage of the machine's turnover and is displayed separately for the player to see.
<b>PROM</b>	Programmable Read Only Memory.
<b>Refill</b>	Money you add to a hopper by opening the door and inserting coins, usually when the machine has run out of coins.
<b>Reserve</b>	A button on the machine which allows a player to indicate to others that the machine is reserved. This reserve message remains lit for 3 minutes.



<b>RISC</b>	Reduced Instruction Set Computer.
<b>Scattered pays</b>	Symbols can be above, below or on the payline to qualify for a prize.
<b>Short time out</b>	The machine locks up when a coin jams across the hopper photo-optic detector for more than the permitted interval.
<b>Soft meters</b>	See electronic meters.
<b>SPI</b>	Serial Peripheral Interface
<b>SRAM</b>	Static Random Access Memory.
<b>Symbols</b>	The various designs on the reel strips. Common symbols include Jacks, Kings, Aces, Cherries, and Gold Bars.
<b>Top box</b>	The box unit on top of the cabinet which carries the game graphics, rules and score card.
<b>Yoyo</b>	A coin travelling in reverse to its normal direction. For example: a coin is dangled through and withdrawn from the coin entry slot of the machine in an attempt to cheat the machine of a coin during game play.