## OPERATORS MANUAL THE VAULT



## PLEASENOTE:

Read this manual BEFORE operating the machine.
Keep this manual for your reference.
Go to www.LAlgames.com click on Support to register your games and receive future updates.


LAI Games

Correspondence regarding this machine should be addressed to your closest LAI Games office, or LAI Games Distributor.
For contact details, refer to the back page of this manual.

## © LAI Games

Copyright Notice:
Authorization is hereby provided to you to copy this manual in its entirety provided such copies are used for non-commercial purposes and solely for use with
LAI Games products. This authorization is specifically conditioned to include all legends, copyright, proprietary and other notices which appear herein are unaltered on any and all copies you make.

LAI Games
sales@laigames.com www.laigames.com

## LAI Games Note

## Dear Customer,

Keep up to date with new software updates or Service Bulletins for this game.

Check our website at WWW.Iaigames.COM and click on Support, where you will find links to all the Bulletins and Software updates to keep your game in top working order.

Thanks,

Table of Contents
SAFETY PRECAUTIONS ..... 7
SAFETY LABELS ..... 8
FUSE ..... 9
BACK DOOR ..... 10
INSIDE CABINET ..... 11
INTRODUCTION ..... 12
DESCRIPTION ..... 12
PACKAGING ..... 12
CONTENTS ..... 12
SPECIFICATIONS ..... 12
DIMENSIONS ..... 12
ELECTRIC SUPPLY ..... 12
CONTENTS DETAILED ..... 13
ASSEMBLY ..... 15
GAMEPLAY AND MODES ..... 17
HOW TO PLAY ..... 17
THREAT LEVEL ..... 17
ATTRACT MODE ..... 17
PLAY MODE ..... 17
OPERATION ..... 18
GAME SETTINGS ..... 18
GAME SETTINGS DETAILED ..... 19
AUDITS ..... 21
INPUT AND OUTPUT TESTS ..... 23
OUTPUT TESTS ..... 23
INPUT TESTS ..... 23
RUN TESTS ..... 23
HISTORY ..... 24
MAJOR WIN HISTORY ..... 24
GAME HISTORY ..... 24
CALIBRATION ..... 24
CHANGE STICKER RANGE ..... 25
RESET TO DEFAULT ..... 25
ERRORS ..... 26
SECTION A: SERVICE INSTRUCTIONS ..... 28
LOCATING AND ACCESSING PARTS ..... 28
CABINET FRONT ..... 28
CABINET REAR ..... 29
OPERATOR PANEL - SERVICE CONTROLS ..... 29
PARTS DESCRIPTION ..... 30
HEADER DISPLAY ..... 30
SPEAKERS ..... 30
COUNTERS ..... 30
BUTTONS ..... 30
VOLUME KNOB ..... 30
COIN MECHANISM/BILL ACCEPTOR/CARD SYSTEM ..... 30
TICKET MECHS ..... 30
REEL MECHS ..... 30
POWER INLET/MAINS SWITCH ..... 30
POWER SUPPLIES ..... 31
LAMPS ..... 31
MAINTENANCE ..... 31
EXTERIOR ..... 31
INTERIOR ..... 31
SECTION B: TECHNICAL DETAILS ..... 32
POWER SUPPLY ..... 32
COIN OPTIONS REFERENCE GUIDE ..... 33
UNIVERSAL CARD LINK CONNECTION ..... 33
TICKET MECHANISMS ..... 34
WIRING DIAGRAMS ..... 34
MECHANICAL ILLUSTRATIONS ..... 49
FINAL ASSEMBLY ..... 49
MAIN CABINET ASSEMBLY ..... 50
HEADER ASSEMBLY ..... 51
CABINET FRONT ASSEMBLY ..... 52
REEL MECHS ASSEMBLY ..... 53
PCB PANEL ASSEMBLY ..... 54
CONTROL PANEL ASSEMBLY ..... 54
DB BOX ASSEMBLY ..... 55
OPERATOR PANEL ASSEMBLY ..... 55
CASH BOX ASSEMBLY ..... 56
SPEAKER ASSEMBLY ..... 56
LIFE LIGHT BOX ASSEMBLY ..... 57
POWER SUPPLY ASSEMBLY ..... 57
KICK PLATE ASSEMBLY ..... 58
RELAY 12VDC ASSEMBLY ..... 58
COIN DBA PLATE ASSEMBLY ..... 59
BACK DOOR ASSEMBLY ..... 59
COIN DOOR ASSEMBLY ..... 60
TICKET DOOR ASSEMBLY ..... 61

## SAFETY PRECAUTIONS

The following safety precautions and advisories are used throughout this manual and are defined as follows.

* WARNING! *

Disregarding this text could result in serious injury.

## * CAUTION! *

Disregarding this text could result in damage to the machine.

* NOTE! *

An advisory text to hint or help understand.

BE SURE TO READ THE FOLLOWING

* WARNING! *

Always turn OFF Mains AC power and unplug the game before opening or replacing any parts.
Always grasp the plug, not the line cord, when unplugging the game from an electrical outlet.
Always connect the Game Cabinet to a grounded electrical outlet with a securely connected ground line.
Do Not install the Game Cabinet outdoors or in areas of high humidity, direct water contact, dust, high heat or extreme cold.
Do Not install the Game Cabinet in areas that would present an obstacle in case of an emergency, i.e. near fire equipment or emergency exits.

## * CAUTION! *

Always use a Digital Multimeter, logic tester or oscilloscope for testing integrated circuit (IC) logic PC boards. The use of a continuity tester is not permitted.
Do Not connect or disconnect any of the integrated circuit (IC) logic PC boards while the power is ON.
Do Not use any fuse that does not meet the specified rating.
Do Not subject the game cabinet to extreme temperature variations. Reliability of electrical components deteriorates rapidly over $60^{\circ} \mathrm{C}$.

## SAFETY LABELS



FUSE


BACK DOOR

$=\frac{1}{2}$

## INSIDE CABINET



## INTRODUCTION

Congratulations on your purchase of The Vault by LAI Games. We hope you take the time to read this manual and learn about the many features and user-friendly adjustments that can be made to fine-tune the game for maximum earning potential.

## DESCRIPTION

The Vault 2 is a skill based, safe cracking themed game. Players must try and break into the safe by stopping each spinning reel in the blue section. If they can stop all five reels in the blue, they unlock the safe and win the major prize. If they lock in the first three reels correctly, they can choose to take the minor prize and end the game, or continue on to try and unlock the safe for the major prize. The security threat level will rise every time the player stops the reel on the red section, eventually reaching max and locking the player out of The Vault, causing them to lose the game.

## PACKAGING

## CONTENTS

- The Vault cabinet
- Operator Manual
- Header
- Kickstand
- 8 pieces M6 x 20 mm
- 4 mm Allen key
- $2 \times$ coin door keys
- IEC Power Cord
- Parts \& Accessories


## SPECIFICATIONS

## DIMENSIONS

- Weight: 180kg (396.83lb) (excluding packaging)
- Weight: 200kg (440.93lb) (including packaging)
- Height.
- Width:
- Length:

1140 mm (97.87") (including header)

642 mm (25.28")

- Power:

Maximum 350W

## ELECTRIC SUPPLY

The game can operate on a universal mains input voltage between $88-264 \mathrm{VAC} 50 / 60 \mathrm{~Hz}$ single phase. The supply must be a three wire grounded supply.
Adjustment screws are available for fine-tuning the output voltage.

## LOCATION REQUIREMENTS

- Ambient temperature:
- Ambient humidity:
- Ambient U.V. radiation:
- Vibrations level:


## Low

Very low
Low

CONTENTS DETAILED

|  |  |
| :---: | :---: |
| Main Cabinet | Header |
|  |  |
| Kickstand | Back Door |
|  |  |
| M6 x 20mmbolts and washers, 8 Pieces | Allen key 4mm |



## ASSEMBLY

KICKSTAND INSTALLATION
Place the kickstand on the floor in front of the cabinet.
Attach it using 4 of the $\mathrm{M} 6 \times 20 \mathrm{~mm}$ bolts supplied, as shown in the image to the right.


## HEADER INSTALLATION <br> STEP 1

Position the header at the top front of the cabinet, and join the connector.
Hook the header onto the tabs, via the slots on the back of the header.


## STEP 2

Open upper back door.


## STEP 3

Securely fasten the header to the cabinet using $4 \times \mathrm{M} 6$ bolts as indicated.


## STEP 4

Close upper back door.


## GAMEPLAY AND MODES <br> HOW TO PLAY

- Pay to play
- Press stop to play the game
- Press stop to stop the first reel mech in the blue section of the reel
- Stop on blue and move to the next reel
- Stop on red and increase the threat level
- Repeat until minor prize reel is reached
- Take the minor prize and end the game
- OR
- Forfeit the minor prize and continue playing
- IF continue, keep stopping the reel on blue
- Reach the final reel
- Stop on blue and win the major prize
- OR
- Stop on red and lose the game


## THREAT LEVEL

Every time the player stops the reel on red, the security threat level rises. The threat level can rise three times before the alarm is triggered and the player is locked out of The Vault, losing the game. As the player gets closer to the major prize reel, the threat level starts to rise on its own whether or not the player makes a mistake. By the time the player reaches the final reel, the threat level has risen to the point where the player gets only one chance at winning the Major Prize.

## ATTRACT MODE

## PLAY MODE

The Vault has two play modes. The standard Coin Play mode, where a coin or coins are inserted, or Free Play mode, where no coins are necessary.

## COIN PLAY

Coin Play mode is entered from Attract mode, by inserting coins in any of the two coin slots on the front of the machine cabinet, then following the instructions in the "How to Play" section.

## FREE PLAY

Free play can be set in one of three ways:

- Entering the operator menu by pressing the red TEST button, then entering the game settings. From here, enter free play settings and turn free play mode on.
- For a single free game, just press the green SERVICE button once.
- Push and hold the green SERVICE button for 5 seconds. This is a temporary free mode, and the game will return to normal when reset.


## OPERATION

## GAME SETTINGS

| No | Name | Range | Default |
| :---: | :---: | :---: | :---: |
| 1 | Coin 1 Number of Coins | 1-20 | 1 |
| 2 | Coin 1 Games per Credit | 1-10 | 1 |
| 3 | Coin 1 Bonus Credits | Off, On | Off |
| 3-1 | Coin 1, Level 1, Number of Coins | Off, 1-99 | Off |
| 3-2 | Coin 1, Level 1, Number of Bonus Credits | Off, 1-99 | Off |
| 3-3 | Coin 1, Level 2, Number of Coins | Off, 1-99 | Off |
| 3-4 | Coin 1, Level 2, Number of Bonus Credits | Off, 1-99 | Off |
| 3-5 | Coin 1, Level 3, Number of Coins | Off, 1-99 | Off |
| 3-6 | Coin 1, Level 3, Number of Bonus Credits | Off, 1-99 | Off |
| 4 | Coin 2 Number of Coins | 1-20 | 1 |
| 5 | Coin 2 Games per Credit | 1-10 | 1 |
| 6 | Coin 2 Bonus Credits | Off, On | Off |
| 6-1 | Coin 2, Level 1, Number of Coins | Off, 1-99 | Off |
| 6-2 | Coin 2, Level 1, Number of Bonus Credits | Off, 1-99 | Off |
| 6-3 | Coin 2, Level 2, Number of Coins | Off, 1-99 | Off |
| 6-4 | Coin 2, Level 2, Number of Bonus Credits | Off, 1-99 | Off |
| 6-5 | Coin 2, Level 3, Number of Coins | Off, 1-99 | Off |
| 6-6 | Coin 2, Level 3, Number of Bonus Credits | Off, 1-99 | Off |
| 7 | Common Coin | On/Off | Off |
| 8 | Attract Sound | Off, $1 \mathrm{~m}, 2 \mathrm{~m}, 5 \mathrm{~m}, 10 \mathrm{~m}$, 20m, 30m | 1 minute |
| 9 | Error Message | Display \& Audio, Audio Only, Display Only, Off | Display \& Audio |
| 10 | Free mode | On/Off | Off |


| 11 | Vend Prizes in Free Play | On/Off | Off |
| :--- | :--- | :--- | :--- |
| 12 | Prize Type | Tic/ Coupon | Tickets |
| 13 | Number of Mercy Prizes | Off, 5, 10, 15, 20 | 5 |
| 14 | Mercy Payout Time | Before/After | Before |
| 15 | Minor Prizes | Off - 100 | 30 |
| 16 | All Reels Running in Game play | Off / On | On |
| 17 | Reel Timeout | $30-60$ seconds | Off |
| 18 | Call Attendant on Jackpot | Off, On | 100 |
| 19 | Current Jackpot Payout | $1-9999$ | 50 |
| 20 | Difficulty | Coins, Card | Coins |
| 21 | Payment Type |  |  |

## GAME SETTINGS DETAILED

- 1 = Coin 1 Number of Coins (Default 1) (Adjustable 1-20)

Sets the number of coins that need to be inserted in exchange for each game credit.

- $\mathbf{2}=$ Coin 1 Games Per Credit (Default 1) (Adjustable 1 - 10)

Sets the number of games granted for each credit.

- 3 = Coin 1 Bonus Credits (Default Off) (Adjustable On or Off)

Turn on the first level of bonus credits. Turning this setting on, will activate settings P03-1 to P03-2.

- 3-1 = Coin 1, Level 1, Number of Coins (Default Off) (Adjustable Off, 1-99)

This sets the number of coins that need to be inserted into coin mechanism 1 to reach the bonus credit level 1 . This setting is only active if P03 is active.

- 3-2 = Coin 1, Level 1, Number of Bonus Credits (Default Off) (Adjustable Off, 1-99) This sets the number of bonus credits that are given when credit level 1 is reached. This is the number of bonus credits given, on top of what has been paid for. This setting is only active if PO 03 is active.
- 3-3 = Coin 1, Level 2, Number of Coins (Default Off) (Adjustable Off, 1-99)

This sets the number of coins that need to be inserted into coin mechanism 1 to reach the bonus credit level 2 . This setting is only active if P03-1 and P03-2are active.

- 3-4 = Coin 1, Level 2, Number of Bonus Credits (Default Off) (Adjustable Off, 1-99) This sets the number of bonus credits that are given when credit level 2 is reached. This is the number of bonus credits given, on top of what has been paid for. This setting is only active if P03-1 and PO3-2 are active.
- 3-5 = Coin 1, Level 3, Number of Coins (Default Off) (Adjustable Off, 1-99) This sets the number of coins that need to be inserted into coin mechanism 1 to reach the bonus credit level 3 . This setting is only active if P03-3 and P03-4 are active.
- 3-6 = Coin 1, Level 3, Number of Bonus Credits (Default Off) (Adjustable Off, 1-99) This sets the number of bonus credits that are given when credit level 3 is reached. This is the number of bonus credits given, on top of what has been paid for. This setting is only active if $\mathrm{P} 03-3$ and $\mathrm{P} 03-4$ are active.
- 4 - P06-6

These settings represent the same settings as P01-P03-6, but for coin mech 2.

- $\mathbf{7}$ = Common Coin (Default Off) (Adjustable On or Off)

This is the setting for common coin. If the setting is ON , coin 1 and coin 2 contribute to the same coin pool. If the setting is off, they are counted separately.

- $\mathbf{8}=$ Attract Sound (Default Off) (Adjustable Off, 1 minute, $2 \mathrm{~m}, 5 \mathrm{~m}, 10 \mathrm{~m}, 20 \mathrm{~m}, 30 \mathrm{~m}$ ) This setting controls the delay between the attract mode audio loop repeating.
- 9 = Error Message (Default Display \& Audio) (Adjustable Display \& Audio, Audio, Display, Off) This setting controls how the game alerts you of errors. By default, the game will display a visual warning on the credit display and play a voice over. Alerts can be set to voice over only, display only, or off completely.
- $\mathbf{1 0}=$ Free Mode (Default Off) (Adjustable On or Off)

Defines if the machine is running in free play mode or not.

- 11 = Vend Prizes in Free Mode (Default On) (Adjustable On or Off) Defines if the game will vend prizes when running in free play mode.
- 12 = Prize Type (Default Tic) (Adjustable Tic/Coupon)

Setting the prize type to coupons will still pay out tickets. For every two coupons won, one ticket will be paid out.

- 13 = Number of Mercy Prizes (Default Off) (Adjustable Off, 1 -20)

Sets the number of prizes paid out for a mercy prize.

- 14 = Mercy Payout Time (Default Before) (Adjustable Before, After)

Sets when the mercy prize pays out. Either before a game begins, or after a game has ended.

- 15 = Minor Prize (Default 30) (Adjustable Off, 1-100)

Set if the minor prize is enabled, and how many prizes the game will pay out on a minor win.

- $\mathbf{1 6}$ = All Reels Running in Gameplay (Default On) (Adjustable On or Off) If set to on, all reels will run simultaneously during gameplay. If set to off, only the active reel will spin.
- 17= Reel Timeout (Default 30) (Adjustable 30, 60 seconds)

Set the number of seconds the game will wait for player input before timing out.

- 18 = Call Attendant on Jackpot (Default Off) (Adjustable On or Off)

Sets if the game will prompt the player to call an attendant if the jackpot is won. Setting this is on will stop the game paying out a prize on a jackpot win.

- 19 = Current Jackpot Payout (Default *) (Adjustable 1-9999)

Change the value of the current jackpot payout.
*The value of P22 will represent whatever the current jackpot payout is, displayed on the header.

- $\mathbf{2 0}$ =Difficulty (Default 50) (Adjustable 1-50)

The average number of games played for every major prize won.

- 21 = Payment Type (Default On) (Adjustable On or Off)

Sets the payment method. This will change the terminology on the credit display.

## AUDITS

1. Total Coins Mech 1

The total number of coin mech 1 pulses
2. Total Coins Mech 2

The total number of coin mech 2 pulses
3. Total Service Credits

The total number of service credits used
4. Total Games Played

The total number of games played
5. Total Mercy Tickets

The total number of mercy tickets paid out
6. Total Minor Tickets

The total number of tickets paid out for the minor prize
7. Total Major Tickets

The total number of tickets paid out for the major prize
8. Average Tickets Per Game

The average amount of tickets paid out per game
9. Total Major Wins

The total number of major prize wins
10. Total Minor Wins

The total number of minor prize wins
11. Total Choose Cont.

The total number of players who have opted to continue after winning the minor prize
12. Total Losses

The total number of players who lost the game
13. Skill Wins

The total number of major prizes won by players before the specified difficulty is met
14. Balance Win

The number of major skill wins that have been balanced out
15. Losses at Reel 1

The total number of players who lost at reel mech 1

## 16. Losses at Reel 2

The total number of players who lost at reel mech 2
17. Losses at Reel 3

The total number of players who lost at reel mech 3
18. Losses at Reel 4

The total number of players who lost at reel mech 4
19. Losses at Reel 5

The total number of players who lost at reel mech 5
20. Losses by Game Timeout

The total number of players who lost due to the game timing out
21. Miss at Reel 1

The total number of players who stopped on red on reel mech 1
22. Miss at Reel 2

The total number of players who stopped on red on reel mech 2
23. Miss at Reel 3

The total number of players who stopped on red on reel mech 3
24. Miss at Reel 4

The total number of players who stopped on red on reel mech 4
25. Miss at Reel 5

The total number of players who stopped on red on reel mech 5
26. Bucket 1

Manufacturer's audit
27. Bucket2

Manufacturer's audit
28. Bucket3

Manufacturer's audit
29. Checksum

Manufacturer's audit

## INPUT AND OUTPUT TESTS OUTPUT TESTS

1. Run All Lights

This test will count from 0 to 9999 on the 7 segment display, and flash all cabinet lighting.
2. Button Lights

Turn all the button lamps on and off.
3. RGB Blue

Turn all reel lights on and off.
4. RGB Green

Turn the green RGB light on and off.
5. RGB Red

Turn the red RGB light on and off
6. 7 Segments

This test will display 1111 on the 7 segment display.

## INPUT TESTS

Each input test will indicate whether the input is currently active or inactive.

1. Up/Take Button
2. Down/Continue Button
3. Utility Button
4. Stop Button
5. Coin 1
6. Coin 2
7. Ticket Notch 1
8. Ticket Notch 2

## RUN TESTS

Each component listed in the run test can be set to running or stopped.

1. Ticket Mechs
2. Ticket Motor 1
3. Ticket Motor 2
4. Reel Mechs
5. Reel mech motor 1
6. Reel mech motor 2
7. Reel mech motor 3
8. Reel mech motor 4
9. Reel mech motor 5

## HISTORY

## MAJOR WIN HISTORY

The Major Win History menu stores information on the last five major wins. The entries are stored in the below format.
When viewing a major win history entry, the reel mech will automatically move to display the position that the game ended on.

## MAJOR WIN HIST 2

SKILL

- Major Win Hist (1-5)

The entry number, ranging from the most recent game (1) to the $5^{\text {th }}$ most recent game (5).

- Win Type: Skill / Normal

Indicates if the win was a skill win or a normal win.

## GAME HISTORY

The Game History menu stores information on the last five game plays. The entries are stored in the below format.

## GAME HISTORY 1

LOSE R_5

- Game History (1-5)

The entry number, ranging from the most recent game (1) to the $5^{\text {th }}$ most recent game (5).

- End State: LOSE / MIN / MJR / SKIL / ERR

The game result; lose, minor or major win, major skill win or an error ending the game.

- Reel Mech Number: R_1-5

The reel mech number that the game ended on.

## CALIBRATION

The calibration function can be used to ensure that the game has recorded the win and lose positions of each reel mech correctly.
The Vault will always come calibrated.

## *NOTE*

Recalibrating a reel mech needs a lot of attention to detail and is time consuming.
Recalibrating a reel mech is not recommended unless it is absolutely necessary.

Each reel (REEL 1 to REEL 5) has a red section (lose) and a blue section (win).
Each section covers a range of stepper positions. BEG: \#\# indicates the starting stepper position, and END: \#\# indicates the last stepper position that the section covers.

Below is example of how reels 1 and 5 could be calibrated.

| Reel <br> number | Win Area | Begin <br> Position | Sticker End <br> Position |
| :---: | :---: | :---: | :---: |
| REEL 1 | Blue | 50 | 90 |
| REEL 5 | Blue | 10 | 20 |

To view the start beginning and end position of a sticker on a reel, follow the steps below:

| CALIBRATION REEL 1 | Press <br> Right $\rightarrow$ | REEL 1 <br> Win Area (Blue) | Press <br> Right $\rightarrow$ | Win Area (Blue) BEG: 50 END:90 |
| :---: | :---: | :---: | :---: | :---: |

## CHANGE STICKER RANGE

To change the range of a sticker on a reel, follow the instructions above until the LCD displays the information shown below.

```
Win Area (Blue)
BEG:50 END: }9
```

To change the BEG position, hold the right button for 3 seconds, and LCD will display

## Win Area (Blue) <br> BEG: 50

To change the END position, hold the right button for 3 seconds a second time, and the LCD display will change to $\rightarrow$

| Win Area (Blue) |
| ---: |
| END: 90 |

Press the up or down buttons to increment or decrement the BEG or END values.

## RESET TO DEFAULT

Hold the utility button for five seconds when the LCD displays the below information to reset all calibration data to default. The game will need to be recalibrated after a reset.

## *NOTE*

Resetting calibration data back to default is not recommended unless the game is experience operational issues, or LAI Support has advised the action.

ERRORS

| Error Code | Name | Cause | Solution |
| :---: | :---: | :---: | :---: |
| Err1 | Ticket error | The game has run out of tickets. | Refill the ticket mechs. When the tickets have been reloaded, the game will automatically vend any owing tickets and clear the error. |
| Err2 | Coin 1 error | The coin sensor has been pressed for a long period of time. | Release the coin sensor to clear the error. |
| Err3 | Coin 2 error | The coin sensor has been pressed for a long period of time. | Release the coin sensor to clear the error. |
| Err4 | Stop button error | The stop button has been pressed for a long period of time. | Release the stop button to clear the error. |
| Err5 | Utility button error | The utility button has been pressed for a long period of time. | Release the utility button to clear the error. |
| Err6 | Up/take win button error | The up or take win button has been pressed for a long period of time. | Release the up and take win button to clear the error. |
| Err7 | Down/continue button error | The down or continue button has been pressed for a long period of time. | Release the down and continue button to clear the error. |
| Err8 | Left button error | The left button has been pressed for a long period of time. | Release the left button to clear the error. |
| Err9 | Right button error | The right button has been pressed for a long period of time. | Release the right button to clear the error. |
| Err10 | ERROR EEPROM PSET <br> EEPROM game settings error | The firmware has failed to load data on the game settings. Default settings are now being used. | Check that the i2c eeprom chip is firmly seated on the PCB. Exit and re-enter the operator menu, or hold down the right / test button for 3 seconds while in the Error menu. |
| Err11 | ERROR EEP AUDIT R <br> EEPROM resettable audits error | The firmware has failed to load data on the resettable audits |  |
| Err12 | ERROR EEP AUDIT UR <br> EEPROM un-resettable audits error | The firmware has failed to load data on the un-resettable audits | Hold down the right / test button for 3 seconds while in the Error menu. |
| Err13 | EEPROM new jersey error *for new jersey firmware only | The firmware has failed to load New Jersey specific settings. |  |


| Err14 | Reel mech calibration data error | The current calibration data stored in the eeprom is invalid. | Recalibrate the reel mech. Please note that recalibrating a reel mech needs a lot of attention to detail and is time consuming. Recalibrating a reel mech is not recommended unless it is absolutely necessary. |
| :---: | :---: | :---: | :---: |
| Err15 | PCB communication error | The master PCB is failing to communicate with the slave PCB | Make sure the serial cable is securely connected and both PCBs are operating correctly |
| Err16 | Reel mech 1 error / home sensor error | The reel mech 1 sensor is undetected. | Make sure the reel mech sensor is unobstructed, the cable connecting it to the PCB is connected correctly and in good condition. Make sure FB2O1 is functioning correctly and then reset the machine. |
| Err17 | Reel mech 2 error / home sensor error | The reel mech 2 sensor is undetected. |  |
| Err18 | Reel mech 3 error / home sensor error | The reel mech 3 sensor is undetected. |  |
| Err19 | Reel mech 4 error / home sensor error | The reel mech 4 sensor is undetected. |  |
| Err20 | Reel mech 5 error / home sensor error | The reel mech 5 sensor is undetected. |  |

## SECTION A: SERVICE INSTRUCTIONS

*NOTE*
Be sure to read the following carefully before servicing the machine.

## LOCATING AND ACCESSING PARTS

The following pictures identify the location of the main serviceable items.

## CABINET FRONT




## OPERATOR PANEL - SERVICE CONTROLS



## PARTS DESCRIPTION

## HEADER DISPLAY

The header is illuminated by RGB LED lighting, under control of the FB190 RGB Controller. The current jackpot is displayed on the FB62 7-segment display.

## SPEAKERS

Two speakers are wired directly to the left and right channels of the FB106 sound PCB.

## COUNTERS

Counters will increment for each con inserted and each ticket paid out. Counters are under firmware control and are not directly connected to the mechanisms.

## BUTTONS

Press the green SERVICE/BACK button to issue a service credit from attract mode.
Press the red TEST/ENTER button to enter the operator menu from attract mode. When in the operator menu, use all four buttons to navigate through the menu.

## VOLUME KNOB

Use to adjust the speaker's sound level.

## COIN MECHANISM/BILL ACCEPTOR/CARD SYSTEM

Credits can be inserted via a coin mech, bill acceptor and/or card system connection. All interfaces are located inside the front coin door.

## TICKET MECHS

Tickets won are paid out equally from two ticket mechs. If one mech is empty or jammed, then all tickets are paid out on the remaining mech. A ticket error will only occur when both ticket mechs are empty or jammed.

## REEL MECHS

Five Reel mechanisms are independently driven during attract and game modes by the FB201 and FB66.

## POWER INLET/MAINS SWITCH

The power inlet is a standard IEC inlet socket with a mains power switch, located at the rear of the machine. There is a main power fuse internal in this IEC socket. The fuse should be a M205, 250VAC, 3A.

## *WARNING*

ALWAYS turn OFF mains power and unplug the game before replacing any fuses, and ALWAYS use the correct rated fuse.

## POWER SUPPLIES

The Vault has two power supplies -12 VDC SP-320-12 and 24VDC SP-320-24. Both are located at the rear bottom of the cabinet and are accessible via the rear service panel of the machine. Power supplies are universal input models which can handle AC input from $100-240 \mathrm{VAC}$ at $50 / 60 \mathrm{~Hz}$. An adjustment screw is available for fine-tuning the output voltage. 12VDC is used for the whole game. 12 VDC and 24VDC are both used for the reel mechanisms via the FB201 PCB.

## LAMPS

## *WARNING*

Always turn OFF mains power and unplug the game, before replacing any lamps. Always replace the lamps with the same or equivalent size, wattage and voltage.

All button lamps are 12VDC T10 LED or equivalent. All remaining lighting is RGB LED strip controlled by the FB190 RGB Controller.

## MAINTENANCE

## EXTERIOR

- Regularly dust and clean the external cabinet areas as required, using a soft water-damp cloth and mild soap.
- Check for blown bulbs and replace as required. Check all LED strips are functioning and repair as required.
- Check the monitor image is clear.
- Wipe the monitor clean with a soft damp cloth.


## INTERIOR

- Regularly dust and vacuum the interior of the cabinet, taking care to remove any objects that may have fallen.
- Check and tighten all fixing hardware and fasteners as required.
*WARNING*
Always turn OFF mains power and unplug the game before cleaning the interior of the machine.


## SECTION B: TECHNICAL DETAILS



It is advised that anybody using SECTION B for repairing or modifying any of the components of the game should be a qualified technician, having at least a basic knowledge of digital components, integrated circuits and electricity.

## POWER SUPPLY

The universal AC input power supplies generates 12VDC and 24VDC for the entire machine. The green LED indicates powered operation.
The power supply output voltage should be 12VDC. It can be adjusted when necessary by turning the blue adjustment trimpot with a small Philips screwdriver.


## COIN OPTIONS REFERENCE GUIDE

By default, the coin door contains a micro switch connected to the COIN2 input for crediting the machine.
A 9 way Molex connector has been installed on the coin door which can be optionally used to make adaptors for most electronic coin systems and comparators.
The following picture illustrates the connector pinout.


Shell part number:
Pins:

PIN1 = GND
PIN2 = COIN1 input
PIN3 $=12 \mathrm{VDC}$
PIN7 = GND
PIN8 = COIN2 input
PIN9 = 12VDC

Contact your nearest LAI Games distributor for harnessing to suit different coin comparators and bill acceptors.

## UNIVERSAL CARD LINK CONNECTION

A 9 pin Universal Card Link connector exists on the operator panel inside the coin door.


Mating shell part number: Molex 9-pin housing: 03-09-2092
Pins part number: Wire Gauge and Terminals: 02-09-2103 (14-20 gauge wire) or 02-09-2118 (18-22 gauge wire)

Pin 1. +12 v - Supply to Card System.
Pin 2. Coin 1-input to the game PCB.
Pin 3. Coin 2-input to the game PCB.
Pin 4. Coin meter 1- is connected to the coin meter 1 output from the game PCB and can be used by card systems for monitoring purposes.
Pin 5. Coin meter 2- is connected to the coin meter 2 outputs from the game PCB and can be used by card systems for monitoring purposes.
Pin 6. Ticket Meter- is connected to the Ticket 1 Meter output from the game PCB and can be used by card systems for monitoring purposes.
Pin 7. Empty
Pin 8. Empty
Pin 9. Ground- is connected to the common Ground connection, the same ground as the Game PCB.

## TICKET MECHANISMS

$2 x$ ticket mechs can be fitted inside the ticket doors. Connections are available through a standard 4 way Molex receptacle. Deltronic DL-1275 mechs are installed by default.


Shell part number: Molex 03-09-1042
Pins: Molex 02-09-1119 (loose)
Molex 02-09-1117 (chain)

## WIRING DIAGRAMS

(Next Page)


Page | 35


Page | 36



Page | 38


Page | 39


Page | 40


Page | 41




Page | 43

OPTIONAL DBA ENABLE


## NOTE:-

 PIN $1=$ BLACK PIN $2=$ YELLOWPIN $3=$
PIN4
PIN $4=$
PIN $5=$
PIN $6=$ BLACK
PIN 6 $=$ B
PIN $=$
PIN $8=$
PIN $9=\operatorname{COIN} 1$
PIN $10=$ COIN 2


FOR OPTIONAL COIN SELECTOR


CONNECTOR 6 WAY MINI JST

$$
4
$$

## COIN ENABLE

OPTIONAL



Page | 47


Page | 48

## MECHANICAL ILLUSTRATIONS

FINAL ASSEMBLY

| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| ITEM | TITLE | PART NUMBER | QTY |
| 1 | The Vault - Main Cabinet | SC1-ASSY-02-R1 | 1 |
| 2 | The Vault - Front Cabinet | SC1-ASSY-03-R1 | 1 |
| 3 | The Vault - Control Panel | SC1-ASSY-05-R1 | 1 |
| 4 | The Vault - Reel Mech Box | SC1-ASSY-06-R0 | 1 |
| 5 | The Vault - Cash Box | SC1-ASSY-07-R0 | 1 |
| 6 | Ticket Holder | SC1-FM-022-R0 | 2 |
| 7 | The Vault - Kick Plate | SC1-ASSY-11-R0 | 1 |
| 8 | The Vault - PCB Panel | SC1-ASSY-12-R0 | 1 |
| 9 | The Vault - Power Suply | SC1-ASSY-13-R0 | 1 |
| 10 | The Vault - Back Door | SC1-ASSY-14-R0 | 2 |
| 11 | The Vault - Header | SC1-ASSY-04-R1 | 1 |

## MAIN CABINET ASSEMBLY

| Parts List |  |  |  |
| :---: | :---: | :---: | :---: |
| ITEM | TITLE | PART NUMBER | QTY |
| 1 | Main Cabinet SA | SC1-SA-001-R1 | 1 |
| 2 | Rubber Feet $16 \mathrm{~mm} \times 60$ ( Rubber Mounting) | HM3022 | 4 |
| 3 | Roda Castor 2 " Double ( Castor Wheel) SWIVEL with BRAKE YELMI LPK-5OHHAB | HM0088 | 4 |
| 4 | Acrily Side Panel 1 | SC1-FP-01-R0 | 2 |
| 5 | Acrilyc Side Panel 2 | SC1-FP-02-R0 | 2 |
| 6 | Acrilyc Side Panel 3 | SC1-FP-03-R0 | 6 |
| 7 | Bracket LED Side Cabinet 1 | SC1-FM-033-R0 | 2 |
| 8 | Extention LED Side Cabinet 1 | SC1-FM-054-R0 | 2 |
| 9 | Bracket LED Side Cabinet 2 | SC1-FM-034-R0 | 2 |
| 10 | Extention LED Side Cabinet 2 | SC1-FM-055-R0 | 2 |
| 11 | Bracket LED Side Cabinet 3 | SC1-FM-035-R0 | 6 |
| 12 | Perforeted Side Speaker | SC1-FM-043-R0 | 2 |
| 13 | The Vault - Speaker | SC1-ASSY-09-R0 | 2 |
| 14 | The Vault - DB Box | SC1-ASSY-10-R0 | 1 |
| 15 | Front Glass | SC1-FG-01-R0 | 1 |
| 16 | Clamp Safety Glass | SC1-FM-037-R1 | 2 |
| 17 | Kunci Lock Eangle (Lock and Key) | HM0004 | 2 |
| 18 | Back door cam | SC1-FM-041-R0 | 2 |
| 19 | Bracket Front LED Base | SC1-FM-015-R0 | 1 |
| 20 | Bracket Side LED Base R | SC1-FM-016-R-R0 | 1 |
| 21 | Bracket Side LED Base L | SC1-FM-016-L-R0 | 1 |
| 22 | Plate Grounded | SC1-FM-050-R0 | 2 |
| 23 | Serial Number Plate | SC1-FM-065-R0 | 1 |



Page | 50

HEADER ASSEMBLY

| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| ITEM | TITLE | PART NUMBER | QTY |
| 1 | Plastic Header | SC1-FP-05-R0 | 1 |
| 2 | Plate Header | SC1-FM-048-R0 | 1 |
| 3 | Acrilyc 7Segmen Header | SC1-FP-07-R0 | 1 |
| 4 | Spacer 7Segmen Header | SC1-FP-08-R0 | 4 |
| 5 | PCB FB62 4 Digit 7 Segment 5" Display | BA1607 | 1 |
| 6 | Acrilyc Font WIN | SC1-FP-11-R0 | 1 |
| 7 | Acrilyc Prize Indicator | SC1-FP-12-R0 | 1 |
| 8 | Box LED WIN | SC1-FM-042-R0 | 1 |
| 9 | Box LED Ticket | SC1-FM-044-R0 | 1 |
| 10 | Partition Round LED Header | SC1-FM-062-R0 | 4 |
| 11 | Plate Base Header SA | SC1-SA-051-R0 | 1 |



## CABINET FRONT ASSEMBLY

| ппе | ${ }^{\text {True }}$ | Patr wnere |  |
| :---: | :---: | :---: | :---: |
|  | Forot cabine 5 | Scat. ${ }^{\text {a }}$ |  |
| 2 | evalt -Coin oor | ${ }_{\text {Sctass }}$ |  |
|  | Trevevit Tretet 0 Or |  |  |
| ${ }_{5}^{5}$ | Pne Pate counded ( | ${ }^{\text {catiluposero }}$ |  |
| 6 | Cam Conto Pranel |  |  |
| 7 | Pasaicieprifed |  |  |
| 8 | Bracete tep Paparee S $s$ A |  | 4 |

## REEL MECHS ASSEMBLY



## DETAIL A



DETAIL B



PCB PANEL ASSEMBLY

| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| ITEM | TITLE | PART NUMBER | QTY |
| 1 | PCB Board | SC1-FW-01-R1 | 1 |
| 2 | Bracket PCB Board Left | SC1-FM-021-L-R0 | 1 |
| 3 | Bracket PCB Board Right | SC1-FM-021-R-R0 | 1 |
| 4 | Sound Amplifier Board | FB106 | 1 |
| 5 | 48 I/O Board | FB162B | 1 |
| 6 | Extended Mode Controller Rev A | BA0045 / FB66 | 1 |
| 7 | Ninefold Reel Mech Driver Board Revisi 2.0 | FB201 | 1 |
| 8 | Multiplexer | FB204 | 1 |
| 9 | RGB Controller Rev 1.4 | FB190 | 1 |
| 10 | LM2596S DC-DC Adjustable step-Down <br> power suply module | LM2596S DC | 1 |

CONTROL PANEL ASSEMBLY


Page | 54

DB BOX ASSEMBLY

| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| ITEM | TITLE | PART NUMBER | QTY |
| 1 | DB box front | SC1-FM-018-R0 | 1 |
| 2 | DB box housing | SC1-FM-019-R0 | 1 |
| 3 | IEC type EMI Filter with Fuse and Switch UL <br> model : Delta 06AB25 | EA0649 | 1 |
| 4 | Binding Post (for New DB Box) | EA1356 | 1 |



OPERATOR PANEL ASSEMBLY

| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| ITEM | TITLE | PART NUMBER | QTY |
| 1 | Bracket Service SA | SC1-SA-010-R0 | 1 |
| 2 | Switch Button Triangle CW-408 Blue | EA0588 | 2 |
| 3 | Switch Button Triangle CW-408 Green | EA0590 | 1 |
| 4 | Switch Button Triangle CW-408 Red | EA0589 | 1 |
| 5 | Coin Counter 12v Rear Mounting (Bracket) | EA 1252 | 4 |
| 6 | Switch Small Round White Button P/N : HS-02 M5 | EA0521 | 1 |
| 7 | Potentiometer Carbon Duel Gang 50K ohm | EE0689 | 1 |

## CASH BOX ASSEMBLY



Page | 56

## LIFE LIGHT BOX ASSEMBLY



POWER SUPPLY ASSEMBLY


## KICK PLATE ASSEMBLY



Page | 58


## COIN DOOR ASSEMBLY

| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| ITEM | TTLE | PART NUMBER | QTY |
| 1 | Coin Door SA | SC1-SA-005-R0 | 1 |
| 2 | The Vault - Coin DBA Plate | SC1-ASSY-15-R0 | 1 |
| 3 | Hinge Coin Door | SC1-FM-029-R0 | 1 |
| 4 | Key Lock Eangle | HM0004 | 1 |
| 5 | Plate Grounded | SC1-FM-050-R0 | 1 |
| 6 | Cam Lock | SC1-FM-040-R0 | 1 |
| 7 | Triple Lock Coin Door 1 | SC1-FM-030-R0 | 1 |
| 8 | Triple Lock Coin Door 2 | SC1-FM-031-R1 | 1 |
| 9 | The Vault - Relay 12 VDC | SC1-ASSY-18-R0 | 1 |



## TICKET DOOR ASSEMBLY



| Parts List |  |  |  |
| :---: | :--- | :--- | :---: |
| TEM | TITLE | PART NUMBER | QTY |
| 1 | Ticket Door SA | SC1-SA-023-R0 | 1 |
| 2 | Hinge Ticket Door | SC1-FM-028-R0 | 1 |
| 3 | Triple Lock Coin Door 2 | SC1-FM-031-R1 | 2 |
| 4 | Ticket Dispenser DL-1275 <br> ELECTRONIC LABS INC | EA 1103 | 2 |
| 5 | Key Lock Eangle | HM0004 | 1 |
| 6 | Plate Grounded | SC1-FM-050-R0 | 1 |
| 7 | Cam Lock | SC1-FM-040-R0 | 1 |

## Disclaimer

## OPERATOR WILL TAKE NOTE

By accepting delivery of and placing this hardware and licensed software into operation, the Operator represents and warrants that it will only operate the hardware and licensed software provided by LAI Games in compliance with the regulatory requirements of the country, state, and/or municipality in which the hardware and licensed software are used and/or operated. LAI Games has provided this hardware and licensed the software only for legitimate and legal use, and any use of the hardware and licensed software in a manner that violates any laws of the country, state, and/or municipality in which the hardware and licensed software are used and/or operated is wholly unauthorized and shall be at Operator's sole and complete risk.

Operator assumes any and all risk and liability for any civil or criminal legal claims or causes of action arising from the unauthorized use and/or operation of the provided hardware and licensed software, such improper and unauthorized use specifically including, but not limited to:
(a) Operating or allowing the operation of the hardware and licensed software in a manner that violates the laws and regulations of the country, state, and/or municipality in which the hardware and licensed software are used or operated;
(b) Assembling or causing the assembly of the hardware in a manner not authorized by or disclosed in this manual;
(c) Any tampering with, changes to, or modifications of the licensed software that occur after the software leaves LAI Games' factory that is not made by authorized LAI Games personnel and that is directly or indirectly caused by Operator; and
(d) Any tampering with the computer chip/electronic programmable read only memory (EPROM) by or on behalf of Operator that directly or indirectly causes the tamperindicating holographic seal on the computer chip/EPROM to be broken or damaged in any way.

LAI Games shall have no liability related to such improper and unauthorized use and/or operation of the hardware and licensed software, and Operator shall indemnify, defend, and hold LAI Games harmless for any claim or cause of action brought against LAI Games arising from Operator's or Operator's representative's improper and unauthorized use and/or operation of the hardware and licensed software.

Any improper and unauthorized use shall completely and totally void any and all warranties, both express and implied, of the hardware and licensed software provided by LAI Games.

## WARRANTY

LAI Games warrants its manufactured products for a period of 3 months inclusive of parts and labor from the date of sale.

LAI Games exclusive obligation is to repair any item with any defects as a result of faulty workmanship or materials, providing the defective item or items of equipment are returned to the LAI Games distributor from which the machine was purchased.

LAI Games shall have no obligation to make repairs necessitated by negligence or interference to any component by any unauthorized personal. This will automatically void any existing warranty.

IF MAKING A WARRANTY CLAIM:
(a) A Copy of the sales invoice must accompany the claim.
(b) To and from Transport and freight costs are not covered by the warranty.
(c) Warranty is not transferable with the sale of a machine from one owner to another.



## INTERNATIONAL SALES \& SERVICE

Sales/Enquiries:
Tech. Support:
Website:

## sales@laigames.com

 productsupport@laigames.com www.laigames.com

