i-Deal™ Linux

Single Deck Shuffler

Participant Edition

Shuffle MASTER

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Introduction

What is an *i-Deal*™ Linux Shuffler?

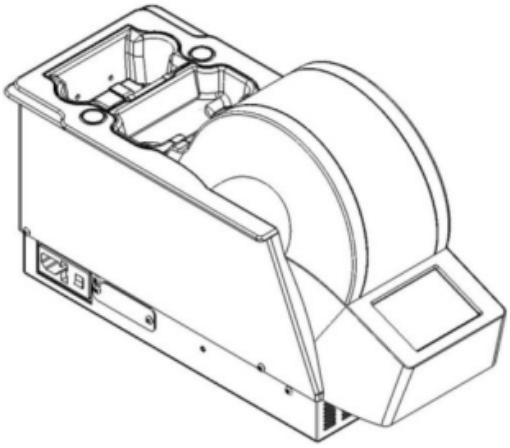
The *i-Deal*™ Linux is a single deck card shuffler that forms and delivers sets of random cards from a non-random deck. Cards are randomly placed into compartments for the players and dealer to form poker hands. Cards which are not part of the random hands (discards) are placed in separate compartments to be unloaded after the player and dealer hands are dealt.

The *i-Deal*™ Linux is primarily used for pit carnival and specialty games such as *Let It Ride*, *Three Card Poker*, and *Pai Gow Poker*. It also features card recognition technology that reads the rank and suit of every card being shuffled.

Features and Benefits

- Shuffles faster (125%) than previous single deck model (18-21 seconds).
- Includes card recognition technology that reads rank and suit of each card.
- Alerts and displays to operator of missing, extra, and unknown cards.
- Includes card re-sort feature and provides a complete card inventory.
- User friendly touchscreen display.
- Eliminates shuffle tracking and deck manipulation.
- Has the ability to reconstruct hands for speedy jackpot verification
- Built-in automatic card weight for smoother card pickoff and discard rack without the need for additional hardware.
- Low-profile design with flush mount load and unload ports.
- Programmable multi-game functionality.

Machine Specifications



i-Deal™ Linux Shuffler

Main Dimensions:

Length:	11.5”	292 mm
Width:	8.0”	203 mm
Height:	18.5”	470 mm
Weight:	28.7 lbs.	13.02 kg.

Power Consumption:

100-120VAC, 200-240VAC

1.0/.75 A; 50/60HZ

Shuffle Time (Approx.):

18-21 seconds

Hardware Installation

The *i-Deal*™ Linux shuffler allows for multiple installation options when installing the shuffler onto a table top. The *i-Deal*™ Linux shuffler can be installed for use with a table extension, a partial cut, or a full cut into the table. When installing the *i-Deal*™ Linux using the half or full cut, a template is provided to accurately cut the table to the shufflers dimensions. The template can be used for either left or right installation of the shuffler.

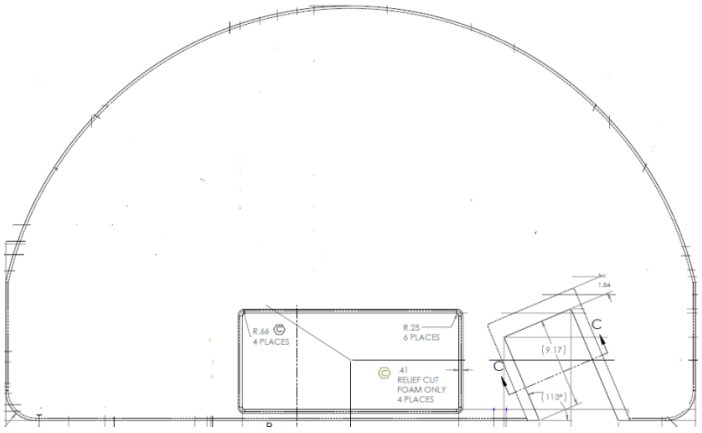
Procedure

Partial/Full Cut Installation

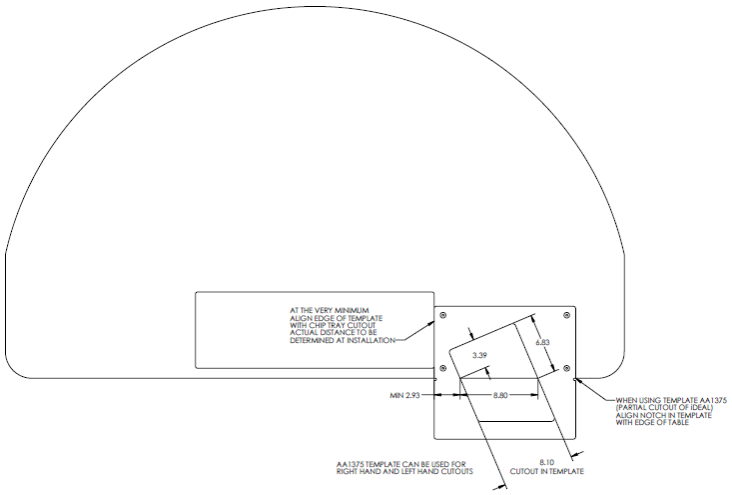
Before beginning, verify that a valid pre-site inspection has been done and that the "Pre-site Questionnaire" has been thoroughly reviewed.

When the shuffler will be installed with a partial or full cut, order part number AA1375 and align the template as shown below:

Full Cut



Partial Cut



1. Determine the mounting position for the Shuffler.
2. If present, remove all table hardware and under-table components in the locations where the holes will be cut.
3. If present, remove or roll back the table layout to clear the area.
4. Place the shuffler Cutout Template (AA1375) in the desired location. Secure it to the table top with 2 screws (P1314) and 2 washers (P1102).
5. With the Router Template Guide (T1157) and 1/2" Router Bit (T1169) mounted in the Router, completely cut away the table surface below the opening of the Template.
6. Remove the Cutout Template (AA1375).
7. After Routing out the partial cut, place Template (AA1377) in the cutout and drill four holes thru the table for AA1389 Kit Alum Angle Support.

Partial Cut

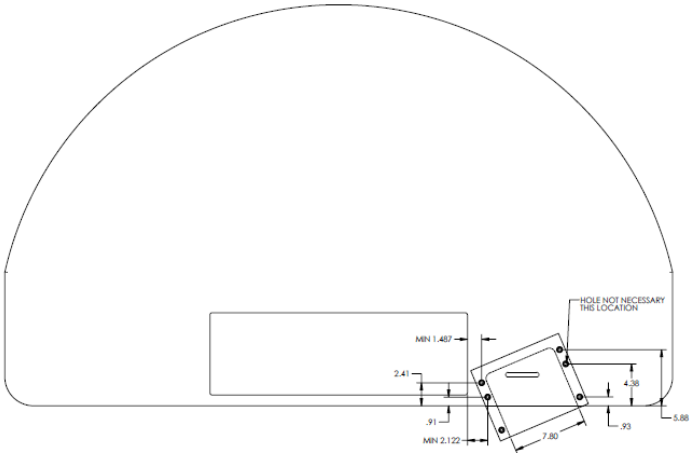


Table Extension Installation

When a table extension kit will be installed with the *i-Deal*™ Linux shuffler, the mounting position must be determined in advance so that the correct kit can be ordered. As shown, the extension can be mounted on the left-hand or right-hand side of the dealer.

When mounting on the dealers' left-hand side, order:

- AA1379 – Kit, Extension, Off Tbl LH
- 248305 – Kit Extension, Aluminum Angle (Allows for movement of both *i-Deal*™ Linux and *i-Deal*™ plus)

When mounting on the dealers' left-hand side, order:

- AA1378 – Kit, Extension, Off Tbl RH
- 248305 – Kit Extension, Aluminum Angle (Allows for placement of both *i-Deal*™ Linux and *i-Deal*™ plus)

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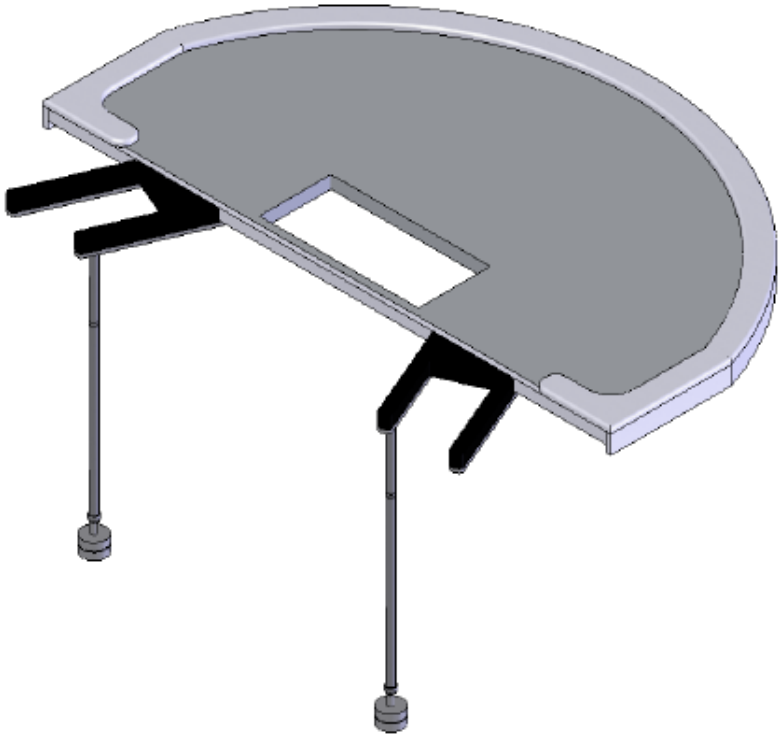
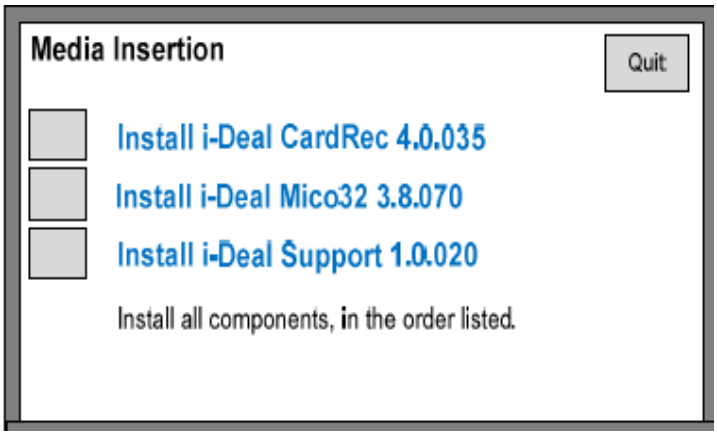


Software Installation

The *i-Deal*™ Linux Shuffler software and deck calibration files are installed through the use of a single USB flash memory drive. The software must be installed in the order shown.

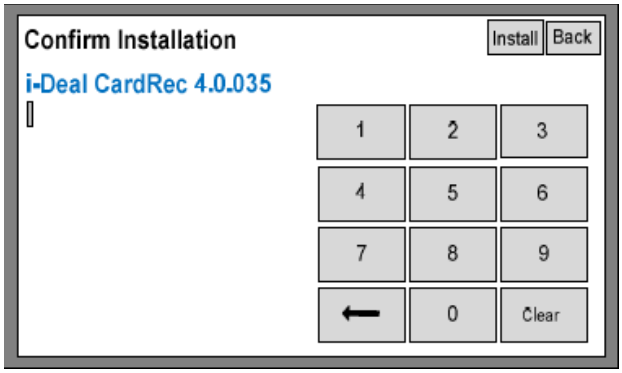


NOTE: Prior to the insertion of the USB Flash Memory Drive into the USB port, verify that the write-protect jumper at position JP1 on the *'Machine Controller PC Board'* does NOT connect both pins. The write-protect jumper can be located with the removal of the *Bottom Cover* on the shuffler.

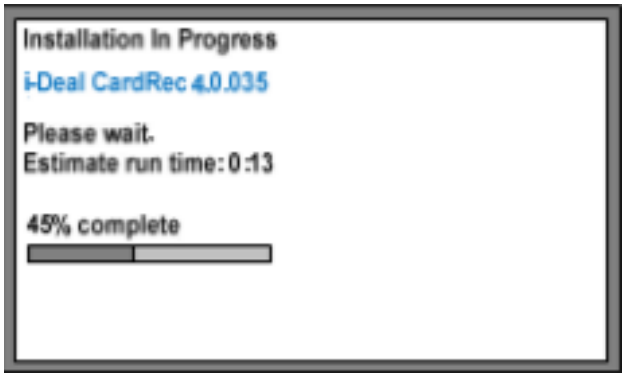
Following power-up and initialization (the display may be blank if this is the initial installation):

1. Insert the software flash drive into the USB port, located next to the power ON/OFF switch. The display will change to the Media Insertion screen.
2. Touch the top ▶ button in the list to "Install i-Deal CardRec 4.0.XXX".

3. Enter Password.
4. Touch Install.



5. The Progress screen will be displayed during software installation. Allow the "Estimate run time" to complete.



6. When installation is successful, touch the Back button.

7. Following a successful installation, repeat Steps 3 through 6 for each of the remaining software types.
8. After installation of all software, turn power OFF and then remove the USB drive.

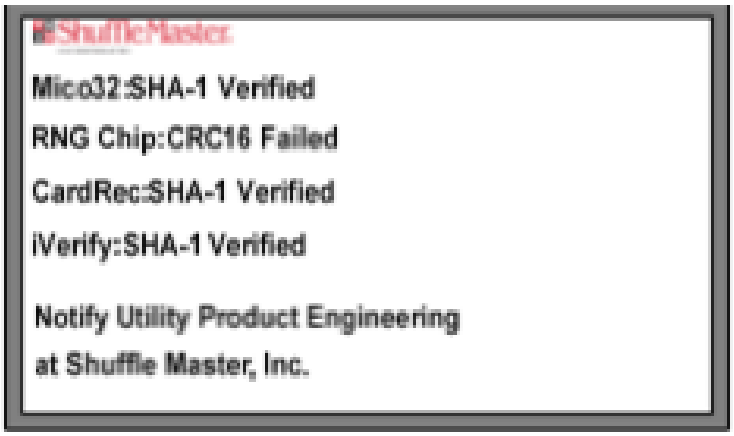
Software Auto Validation

The self-authentication feature is designed to detect any corruption of the program files. File corruption could be caused by a physical failure of the on-board flash or by an error in programming the flash when the program is loaded. The self-authentication checks are performed at every power-up.

Recovery from a Failed Authentication

If any of the programs fail self-authentication, the shuffler is disabled. The shuffler should be power cycled to reveal whether validation will fail again. If validation fails again, the program that has failed authentication should then be reinstalled. If the program fails again on the subsequent power up after re-installation, the device on which it is located should be replaced:

- For Mico32 and iVerify, the device is the SOM Board.
- For CardRec and Support, the device is the Main Controller Board.
- For RNG Chip, the device is the RNG Chip.



Deck Tuning

Based on the learned parameters, each of the 53 cards (52 cards + Joker) in the deck is scanned and camera settings are automatically adjusted and stored. When retuning a deck, the new card image data replaces the image data previously stored for that deck type.

Prior to tuning, **MAKE SURE THE DECK IS IN THE CORRECT ORDER** to properly tune the deck type(s) to be used. Use the *'Playing Card Image Reference Book'* to locate specific deck type(s) and SID number(s) needed to successfully tune a deck to be used in live game play. When tuning, it is ideal and highly recommended to use brand new cards, for the Shuffler to have all covers on and secure, and have all camera assembly areas clean, to prevent possible image distortion due to lighting, or other outside elements.

Following the completion of the tuning process, all tuned images should be reviewed after every tune or retune using the *'Tuned Images'* feature in the *'Camera Diagnostics'* menu of the i-Tools diagnostics USB to review image accuracies or any potential deck type tuning issues.

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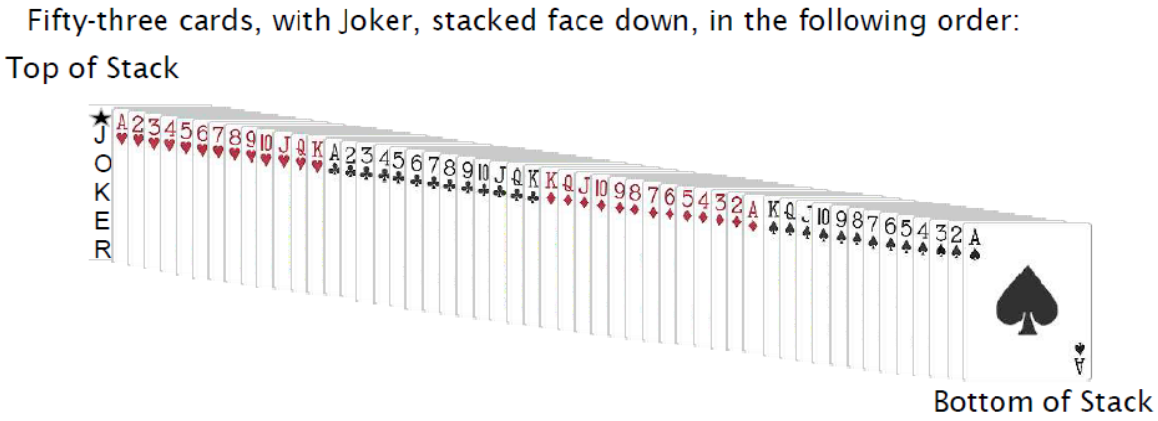
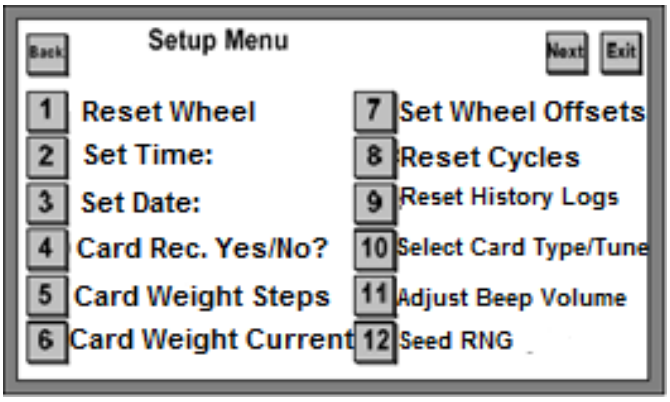


First-Time Deck Selection

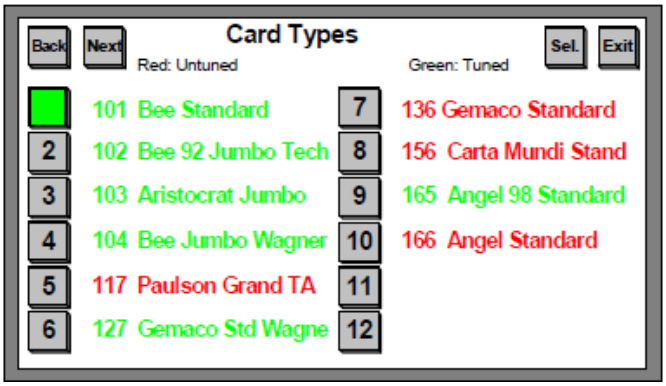
Factory-set deck calibration values are different for every card type (i.e., brand or style). Installation of a deck calibration file into the card recognition system is the first step of the card tuning process. The second step in the process is card tuning. Card images are not used for card recognition but are available to allow the advanced technician to manually calibrate the image parameters, when required. For the *i-Deal*™ Linux shuffler to recognize the ranks and suits, the card type currently in use must be selected as the active deck.

Shuffler Tuning Procedure

1. Power up the Shuffler.
2. Enter the *'Setup Menu'* on the Shuffler by touching the Main Menu button on the bottom right of the screen.
3. Touch Setup.

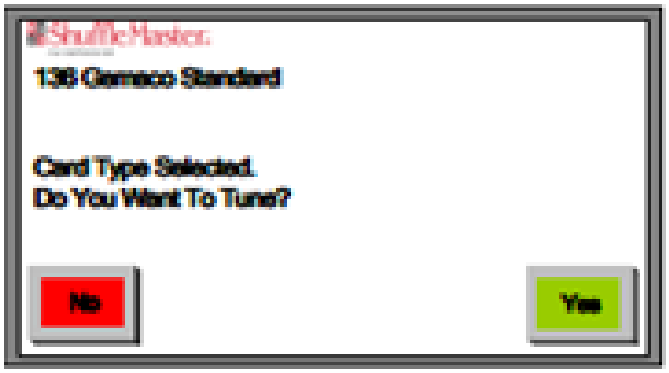


4. Touch the option for 'Select Card Type/Tune'.
5. If necessary, touch Next to page through the card type selections until the correct deck type and SID number is displayed. Touch the deck number button. Touch the Sel. (Select) button.



6. Touch 

when asked “Do You Want To Tune?”.



7. Enter the Password into the displayed keypad. Touch 

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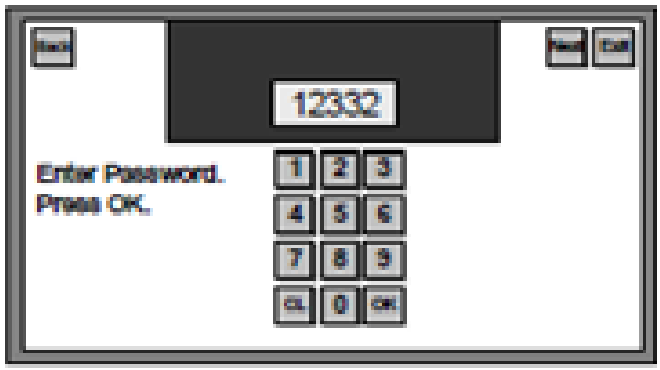

8. Arrange a single deck in order, with the Joker.
9. Insert the cards into the Feeder Assembly, face down. Touch 

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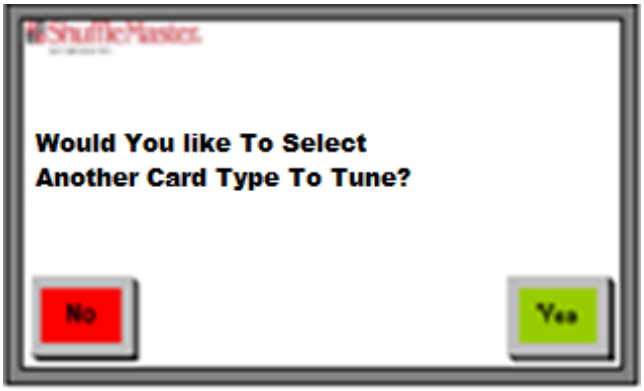
10. The shuffler will list a series of events on the display while the tuning process is performed.
11. When the process is complete, the screen will display:

12. Remove the cards. The screen will display:



13. When tuning only one card type or tuning of multiple decks is completed, touch  . The touch screen will display:

If "Yes", touch  . The shuffler will re-initialize and return to the *'Main Menu'* display.

14. When tuning more than one card type, touch  . The Card Types list will be displayed.

15. Repeat the instructions in #5, #6 and #8 through #11, above.
16. When finished tuning the decks, touch  . The shuffler will re-initialize and return to the Home Screen.

17. The new deck(s) and the shuffler are now ready for game play.

Overview of Operation

- Shufflers 52 -54 cards.
- Single deck carnival games or one deck Blackjack shuffle.
- Shuffles paper, plastic, poker/wide size, and bridge/narrow size cards.
- Utilizes a wheel system to deliver a compartmentalized style of shuffling that forms completed hands based off the game being played.
- Re-call previous hands for review or to verify jackpot using *'Hands'* menu.
- Re-sort a deck of cards for verification using the *'Sort'* feature.
- Verifies a legitimate deck before live game play.
- Graphically identifies up to six (6) Missing, Unknown, or Extra cards on the display screen.

Operational Modes

Normal Operation Mode

1. Power the Shuffler 'ON' (make sure deck has been tuned).
2. Check that the deck type and game are correct.
3. Insert cards into the *'Feeder Assembly'.*
4. Press the GREEN button to unload shuffled cards from the *'Wheel Magazine'* to begin dealing.

Sort

The *'Sort'* feature allows for a previous shuffled deck to be arranged back in the original order of the deck.

1. On the *'Home* Screen', press the Main Menu icon on the bottom right of the display screen.
2. Select *'Sort'* on the *'Main Menu'* screen.
3. Insert cards into the *'Feeder Assembly'* and press Sort.

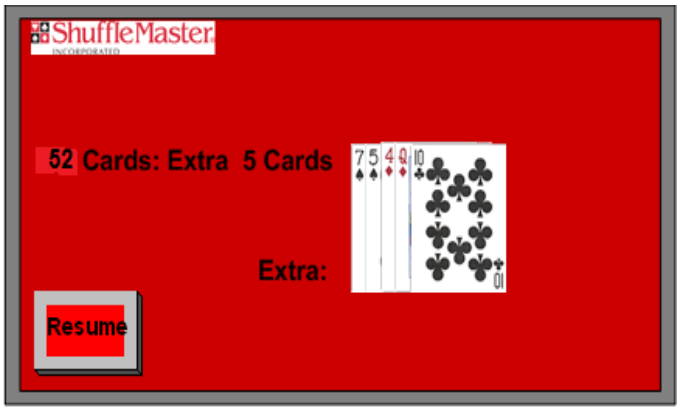
Error Screens

Missing Cards

In the event of a missing or cards, the total card count and the actual number of missing cards will be shown. Up to ten missing cards can be displayed.

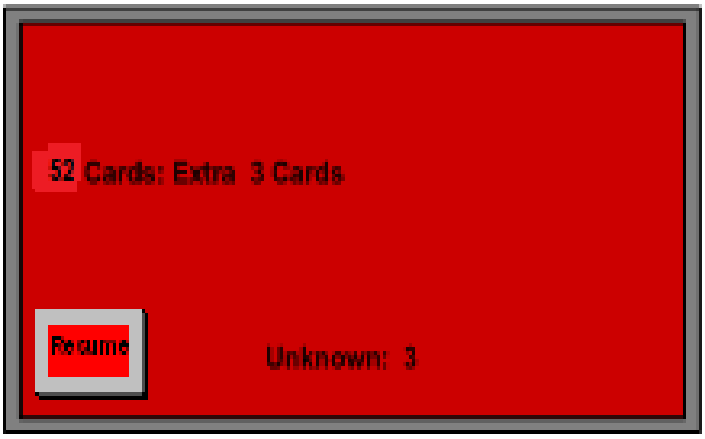
Extra Cards

In the event of extra cards, the total card count and the actual number of extra cards will be shown. Up to six extra cards can be displayed. If there are more than six extra cards, six of those cards move onto the platform. Additional cards remain in the *'Feeder Assembly'* and the deck is shown to be invalid



Unknown Cards

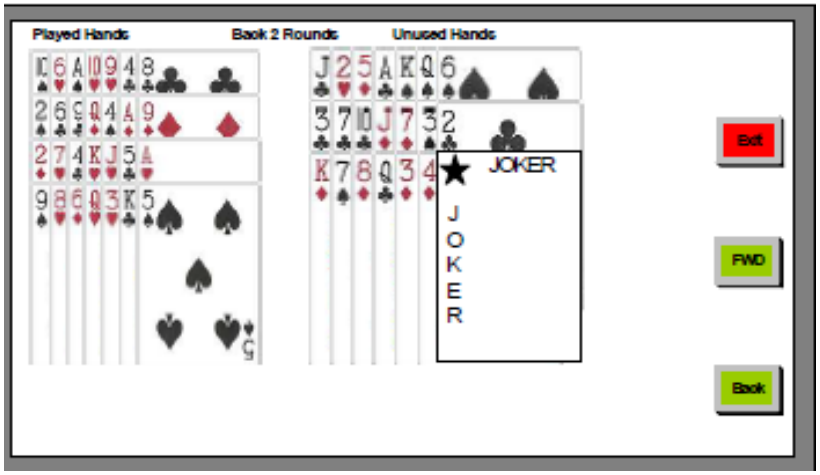
In the event of unrecognized, up to three unknown cards are counted. When five or more cards are unknown, the shuffle is automatically interrupted and the option to abort the current shuffle is displayed.



Hands Menu

The *'Hands'* menu option on the *'Home Screen'* allows the operator to access a graphic presentation of all played and unused hands. The last ten most recent rounds are stored and displayed behind a default and/or a customized password when entered. The customized password cannot be retrieved or displayed once it has been entered and saved, but can be reset at any time.

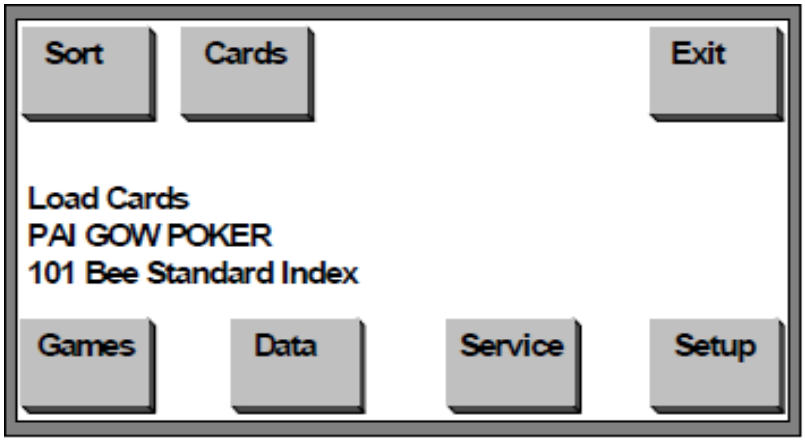
When resetting the customized password, the default password will need to be entered first before proceeding. Should the user want to clear the history displayed in the *'Hands'* menu, a *'Reset Card ID Buffers'* option is available in the *'Setup'* menu. Replacement of the 3volt battery or the *'Machine Controller'* board may be necessary should the custom password not be stored after a power cycle of the shuffler.



Main Menu

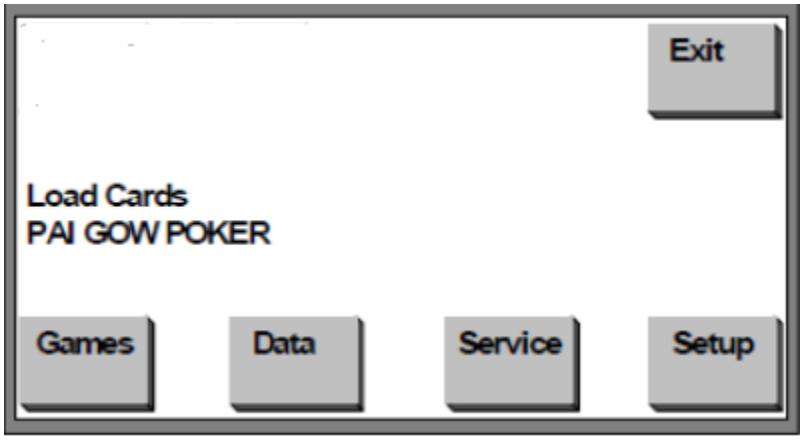
Card Recognition On

The *'Main Menu'* contains features, setup, and service menus commonly accessed by trained service technicians and personnel. When the *'Card Recognition'* is set to *'Yes'*, the available options that can be selected are pictured in the image below. To access the *'Main Menu'* screen, press Main Menu on the bottom right of the *'Home Screen'*.



Card Recognition Off

When *'Card Recognition'* is turned 'OFF', the *'Main Menu'* options will change to reflect the fact that each individual card will no longer be identified, the *'Cards'* and *'Sort'* buttons are removed from the *"Main Menu'*, and the *'Main Menu'* screen no longer displays the name of the deck type in use.

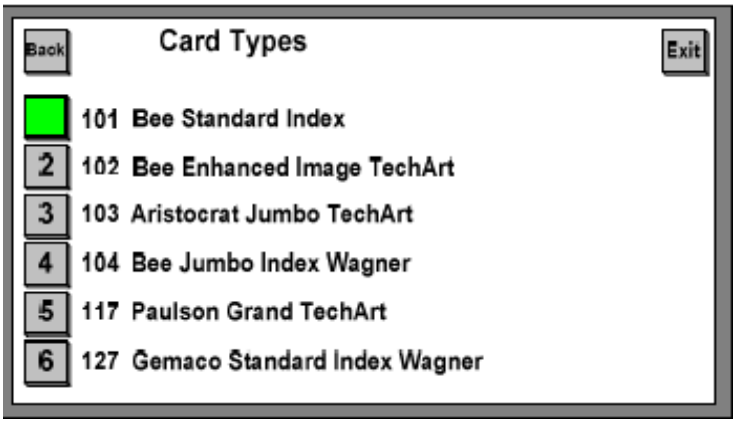


Sort

The *'Sort'* menu allows for a previous shuffled deck to be arranged back into the original order configuration as when the deck was new out of the box. Cards will *'Sort'* in the same order in which the cards were tuned. The *'Sort'* feature will be aborted if six (6) cards are determined to be unknown or unrecognized. When the *'Sort'* feature is activated, the RED and GREEN buttons will rotate Off and On to alert the user that the shuffler is currently "Sorting" and not shuffling.

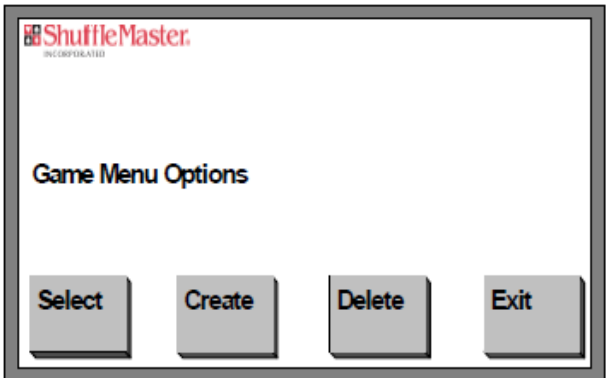
Cards

The *'Cards'* menu displays the current selected card type and allows for the changing of a deck type(s) to accurately recognize the ranks and suits of the cards in currently in play. Only deck types that have been previously added and tuned will appear within this menu. It is recommended that only one card type be made available for selection in the *'Cards'* menu, if only one card type is being used for game play by the casino. Removal of any additional or unwanted cards types from this list can be selected using the *'Untune Cards'* option in the *'Setup Menu'.*



Games Menu

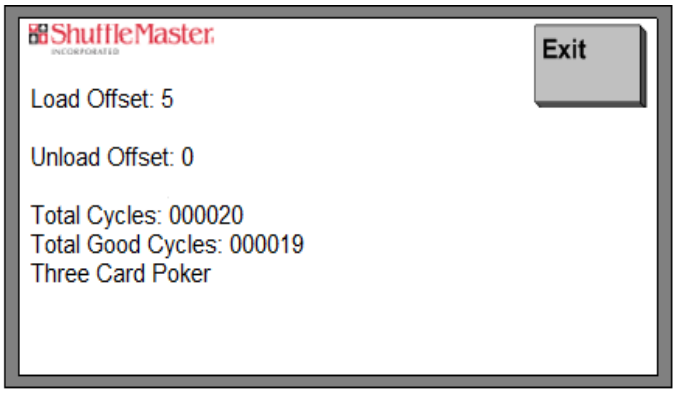
The *'Games Menu'* allows for the user to display all playable games that can be selected or changed as needed. Any games that are installed with the software package are pre-defined and cannot be edited, deleted. The *'Games Menu'* allows for the creation of up to 3 custom games, which can be specified by the user and will be listed in the menu upon creation. Any created game can be removed from the list. The maximum allowed playable games that can be stored is 36 total.



Data

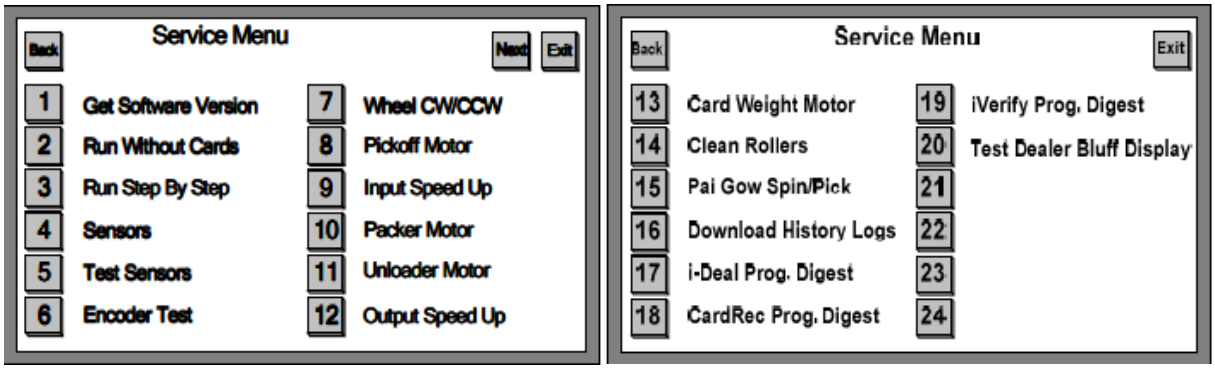
The *'Data Menu'* provides cumulative shuffler information and tallied *'Cycles'* since the most recent previous '*Data'* reset.

- The *'Load Offset'* and *'Unload Offset'* current settings are displayed and can be reviewed. Any changes to the Offsets can be made in the *'Setup Menu'*.
- Monitor variances between *'Total Cycles' and 'Passed Cycles'* (about a 5% or less theoretical variance between).
- The *'Total Cycles'* should be used to determine the proper preventive maintenance level requirements and should also be reset after any preventive maintenance is performed.



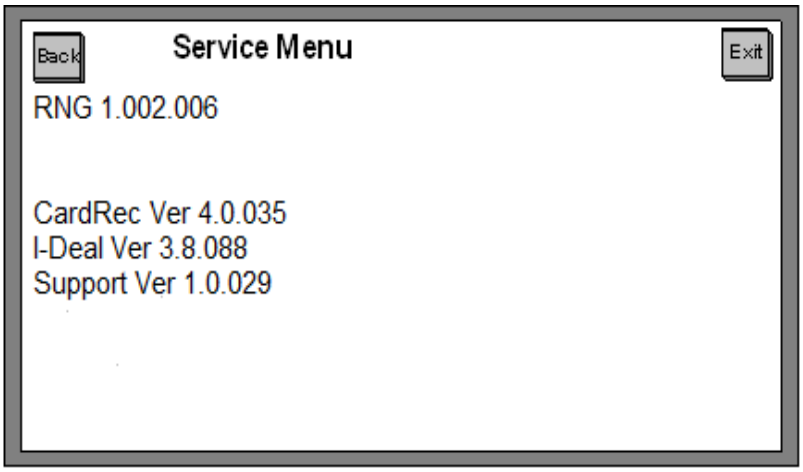
Service Menu

The Service Menu contains functions to perform maintenance test and component functionality, and service diagnostics.



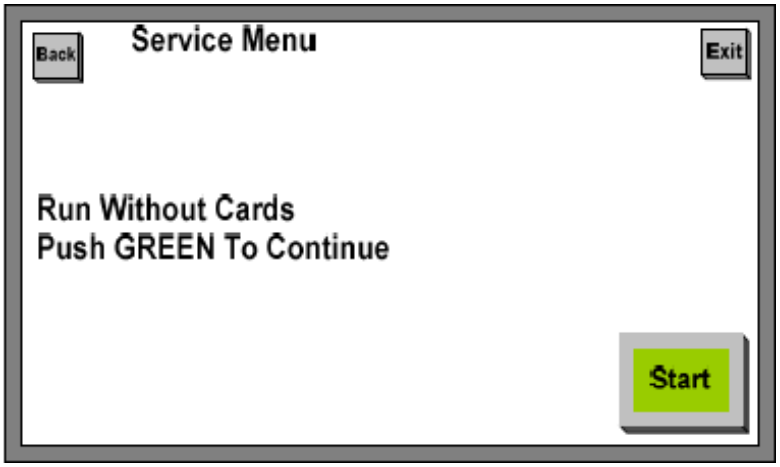
Get Software Version

- Indicates the software version numbers of the installed RNG, Card Recognition, Shuffler, Support, and iVERIFY™ software.



Run Without Cards

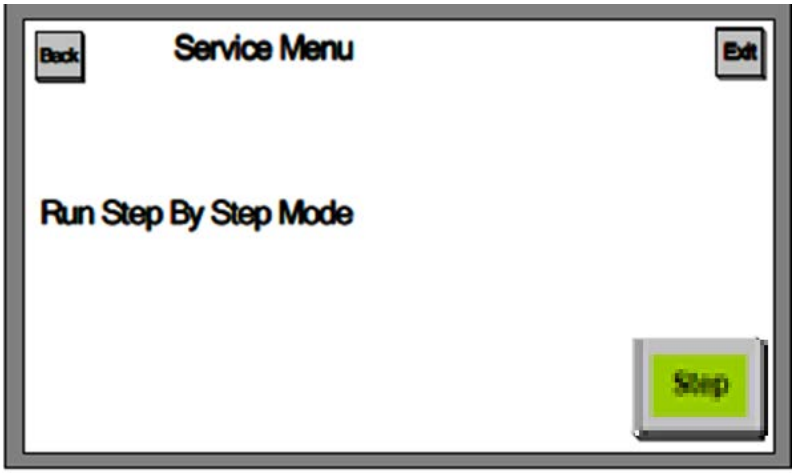
- Allows the user to continuously operate the Shuffler, without the need to load or unload cards for testing and diagnostic purposes.
- Can be used to diagnose synchronization issues or circuit board/motor heat problems.
- Shuffler must be manually stopped to exit mode.



Run Step By Step

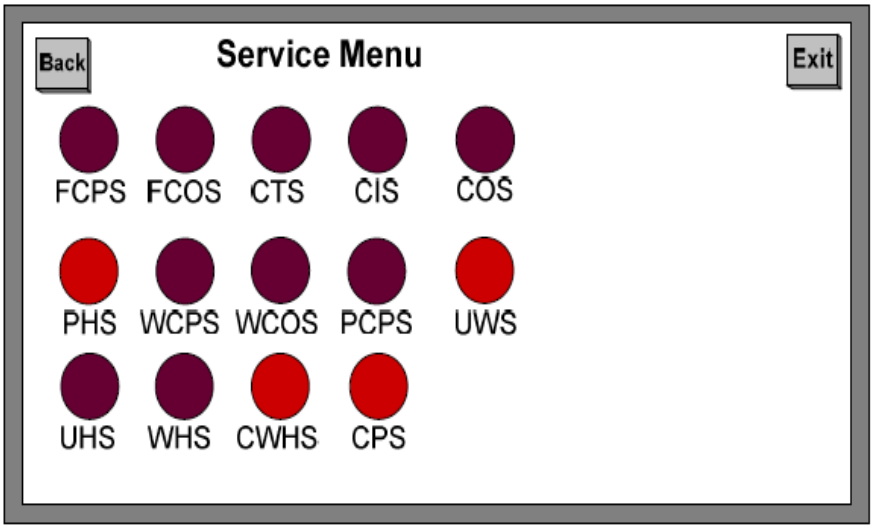
- Allows the user to move a card, one at a time, from the *'Feeder Assembly'* into a random position within the *'Wheel Magazine'*.
- Touch the GREEN start button or 

icon to repeatedly advance a single card through.
- Press and hold the GREEN start button or icon to advance all cards through, like a normal shuffle.
- Can be used to diagnose card travel stalls, jams, and gripping issues.



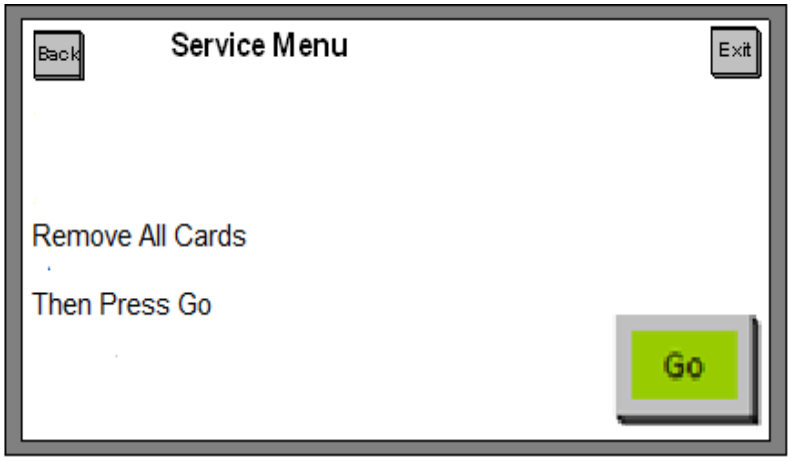
Sensors

- Allows the user to manually test the operation and functionality of a potential faulty or dirty sensor or switch input.
- There are a total of 14 sensors and switches to test (Eight Thru-Beam/Infrared Sensors and Six Hall Effect Switches).
- A Thru-Beam Sensor is a sensor that uses an (invisible) infrared source transmitter to look across the card path to a receiver.
- Testing Thru-Beam/Infrared Sensors:
  - With power on, run or feed a card through the shuffler by hand. Each indicator should change its OFF=●/ON=● state as the sensor reacts to the presence of the card.
- A Hall Effect Switch is a sensor that detects the presence of a magnetic field.
- Testing Hall Effect Switches:
  - With power on, use a properly oriented magnet to operate the switch. The indicators should change its ON=●/OFF=● state as the switch reacts to the magnet.
- Refer to Pages 62-65 for locations and descriptions.



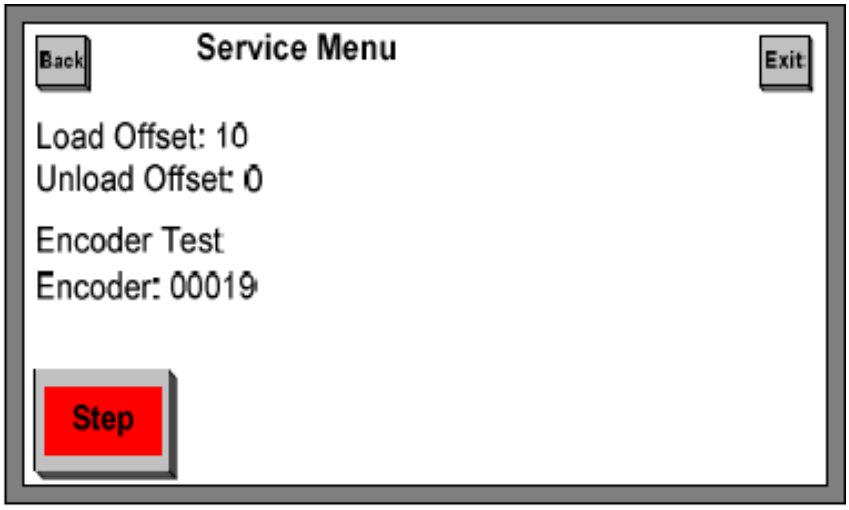
Test Sensors

- Guides the user through a self-test process wherein the software logic monitors the "good" or "bad" status of each sensor and switch individually.
- If a sensor or switch is determined to be "bad" by the software logic, a message to check the corresponding sensor or switch will be displayed.
- Load one card to start *'Test Sensors'* and continue to press the Go button until completion.



Encoder Test

- Allows the user to step the *'Wheel Magazine'* to different positions from the zero (0) home position to approximately 1755, in 13 increments.
- Press the Step button to activate the rotation of the *'Wheel Magazine'* position(s)
- Monitor the '*Encoder'* readouts to verify proper functionality.



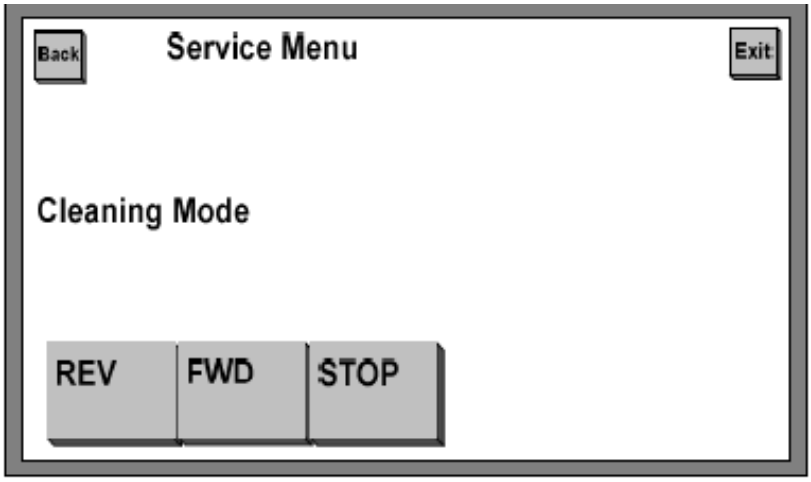
Motor Test

- Allows a user to test the operation of each individual motor in a forward and reverse motion.
- Seven individual motors can be tested for proper functionality.
  - Wheel CW/CCW
    - Allows the user to test and turn the *'Wheel'* clockwise one full revolution from the home position and counter-clockwise one full revolution to the home position.
  - Pickoff Motor
    - Allows the *'Pick-Off Motor'* and *'Rollers'* to be tested.
  - Input Speed-Up Motor
    - Allows the input *'Speed-Up Motor'* and *'Rollers'* to be tested .
  - Packer Motor
    - Allows the *'Packer Motor'* to be tested FWD & REV.
  - Unloader Motor
    - Allows the *'Unloader Motor'* to be tested for operation and accurate stop-positioning.
  - Output Speed-Up Motor
    - Allows the *'Output Speed-Up Motor'* and *'Rollers'* to be tested.
  - Card Weight Motor
    - Allows the input *'Card Weight Motor'* to be tested.

Name	Description	Plug #
BM	Blower Motor	5
CWM	Card Weight Motor	9
POM	Pick-Off Motor	10
SUM	Speed-Up Motor	11
UM	Unloader Motor	12
PM	Packer Motor	14
OM	Output Motor	15
WM	Wheel Motor	16
FM	Fan Motor	37

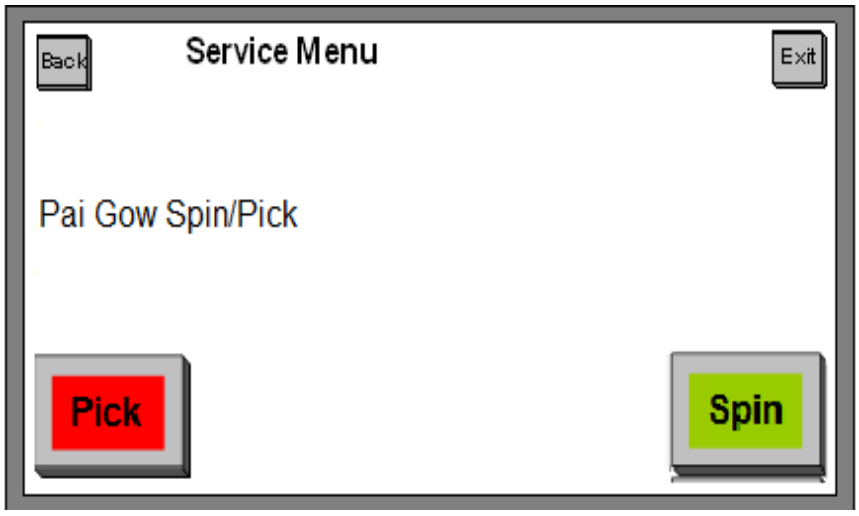
Clean

- Allows the user to run the motors that operate the rollers in a forward and reverse motion for cleaning purposes.
- In the *'Clean'* mode, the roller motors function slower and more torque is added, to prevent the roller motors from stalling.
- Use 99% isopropyl alcohol and a cloth rag or cleaning card, to clean the rollers.
- The top drive rollers must be manually spun and cleaned, as they are not belt driven.



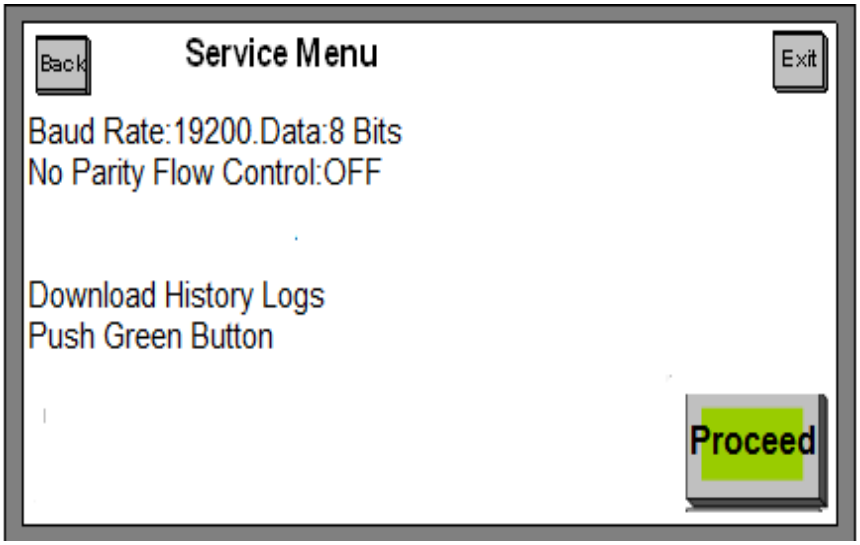
Pai Gow Spin/Pick

- Allows the user to test the Random Number Generator within a first-generation Pai Gow sign and dealer display and observe the LED elements.
- Allows the user to test the Random Number Generator within the display and observation of the display screen when connected with an *i-Verify*™.



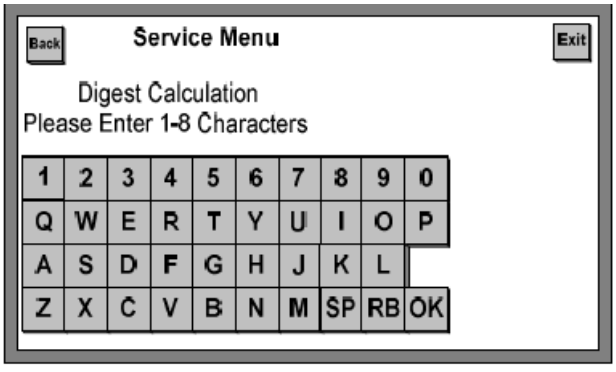
Download History Logs

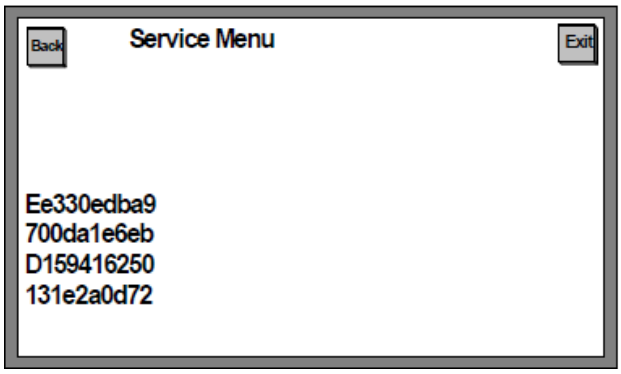
- Even though the *'Download History Log'* function remains as an option within the *'Service Menu'*, the functionality has been updated through the use of the *'Download to USB Drive'* option within the i-Tools Diagnostics functions.
- Support for this function is no longer available.



i-Deal Program Digest

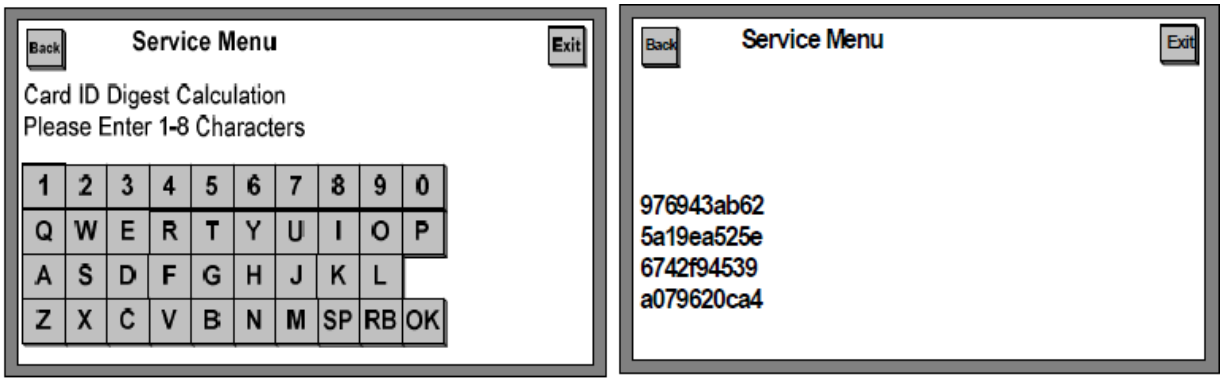
- Provides a means for regulators and gaming authority personnel to verify that the software versions installed are the same version that were submitted for regulatory approval.
- Displays a unique 40 digit string of encrypted numbers and letters commonly referred to as the "SHA-1 signature".





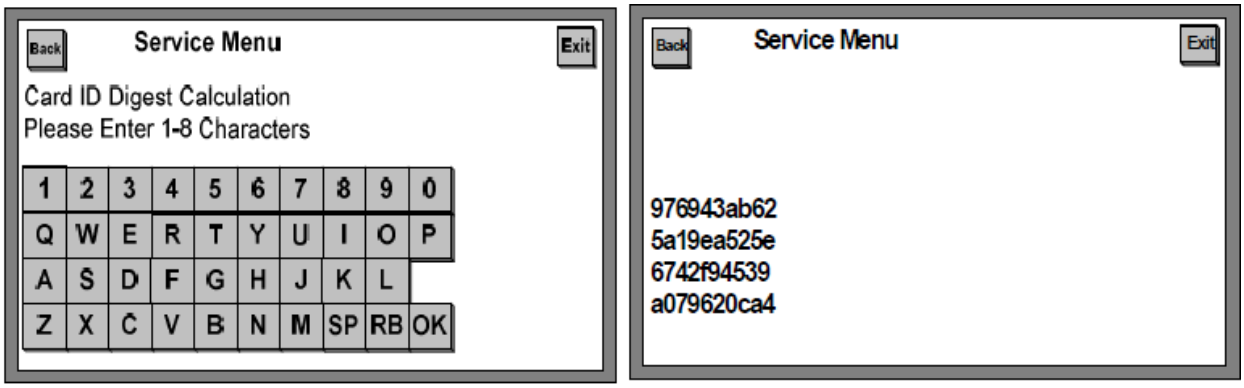
CardRec Program Digest

- Provides a means for regulators and gaming authority personnel to verify that the software versions installed are the same version that were submitted for regulatory approval.
- Displays a unique 40 digit string of encrypted numbers and letters commonly referred to as the "SHA-1 signature".



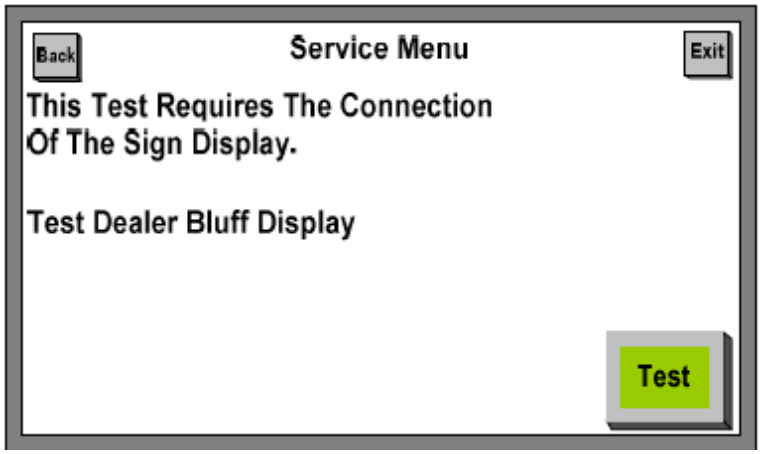
i-Verify Program Digest

- Provides a means for regulators and gaming authority personnel to verify that the software versions installed are the same version that were submitted for regulatory approval.
- Displays a unique 40 digit string of encrypted numbers and letters commonly referred to as the "SHA-1 signature".



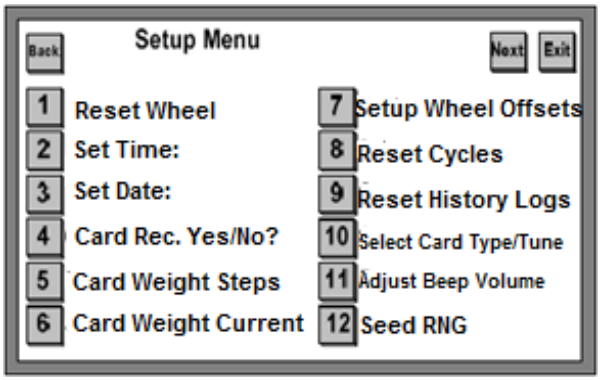
Test Dealer Bluff

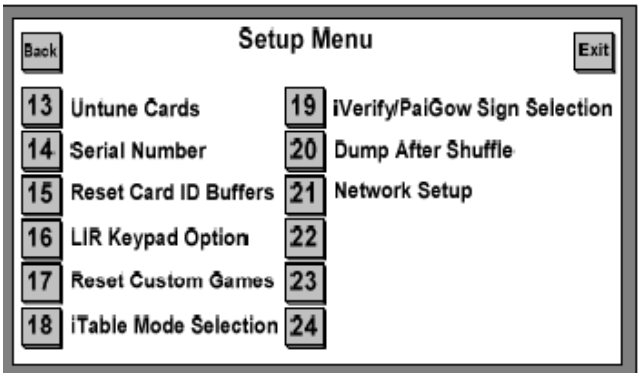
- Allows the user to test for proper operation of the sign and dealer display and allows for the observation of the LED elements within the sign and dealer display.
- When a working sign and dealer display are connected, the dealer's bet level will appear in the sign, in the dealer display, and on the shufflers touch screen.



Setup Menu

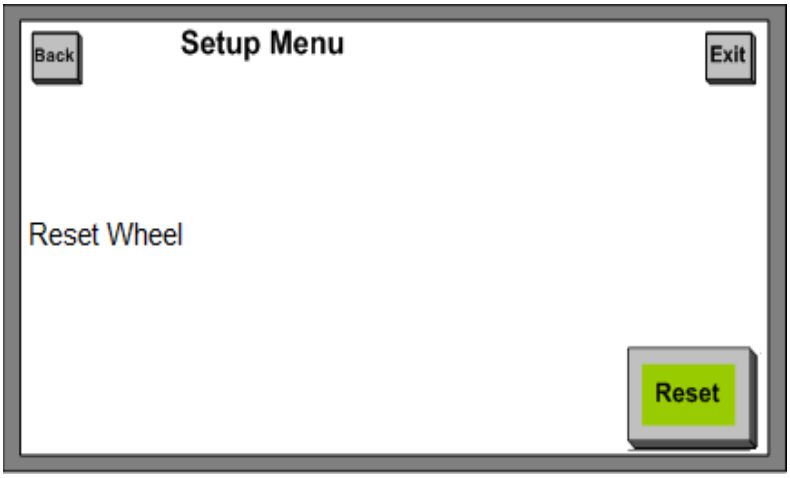
The *'Setup Menu'* contains settings and adjustments for default or custom operation. Enter the general password first to gain access to the *'Setup Menu'*.





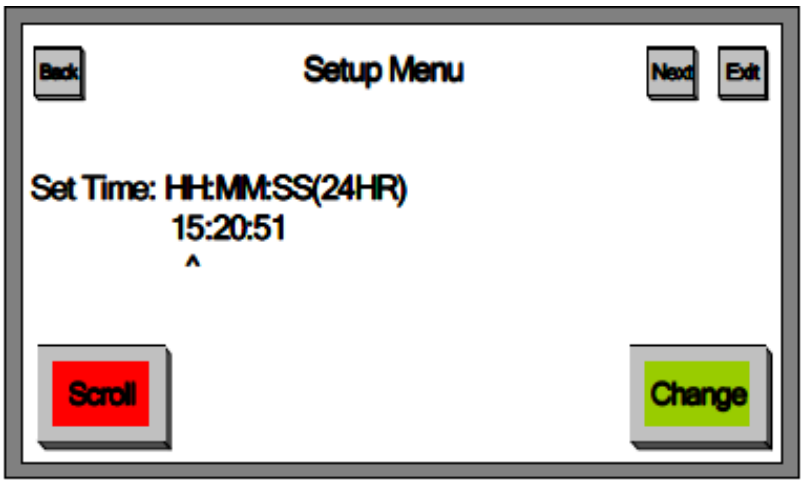
Reset Wheel

- Allows the user to return the *'Wheel Magazine'* to the home position.



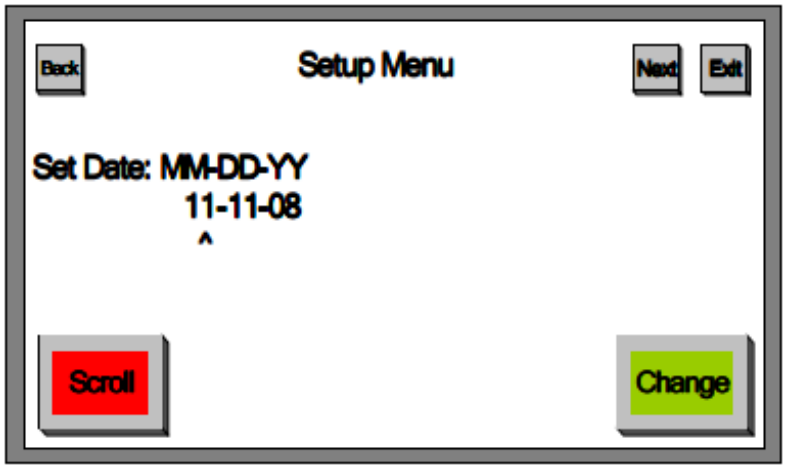
Set Time

- Allows the user to enter in the current *'Time'* of day.
- The *'Time'* setting is generally used for error reporting, and log file stamping.
- The *'Time'* is displayed in a 24-hour format.
- The *'Time'* setting has any bearing on the actual shuffle or operation of the shuffler.
- The *'Time'* is stored and held by the '*Battery'* on the machine *'Controller Board'*.



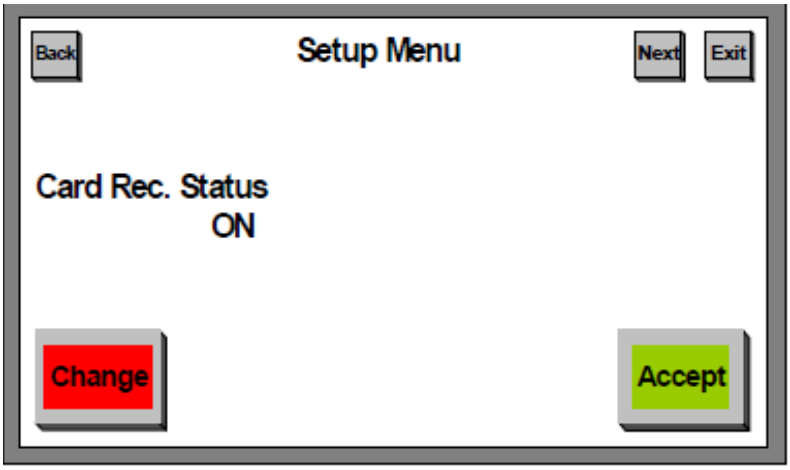
Set Date

- Allows the user to enter the current date or date desired, in a Day-Month-Year format.
- The *'Date'* setting is generally used for error reporting, and log file stamping.
- The *'Date'* setting has any bearing on the actual shuffle or operation of the shuffler.
- The 'Date' is stored and held by the *'Capacitor'* on the machine *'Controller Board'.*



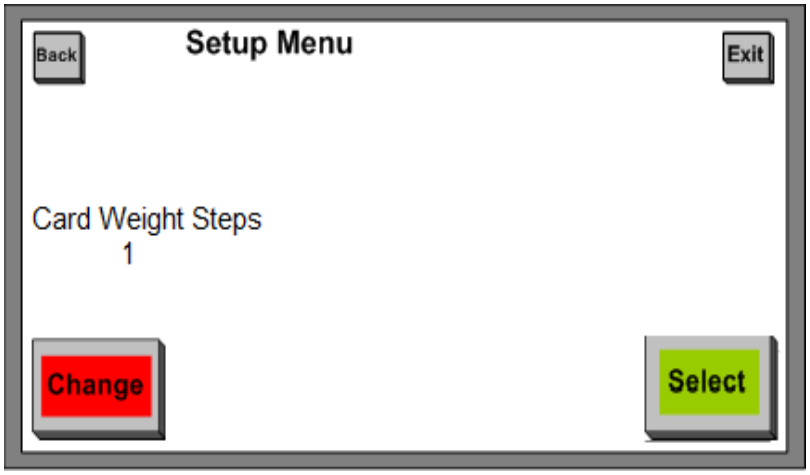
Card Rec. Yes/No?

- Allows the user to turn the card recognition system *'ON'* or *'OFF'.*
- If *'Card Rec.'* is turned *'OFF'*, the Shuffler will only verify card count.



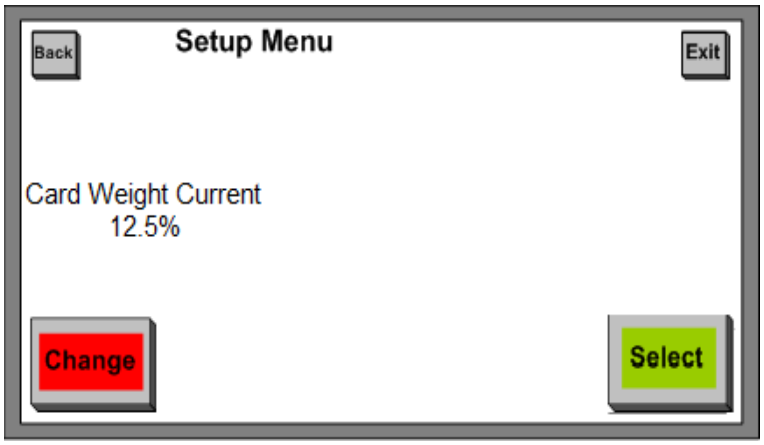
Card Weight Steps

- Allows the user to adjust the distance that the *'Card Weight'* travels in relationship to the amount of *'Card Weight Current'* (torque).
- Distance is adjustable from '1' to '5'.
- The default and normal setting is '1'.
- In most instances, the highest setting should be no higher than '2'.



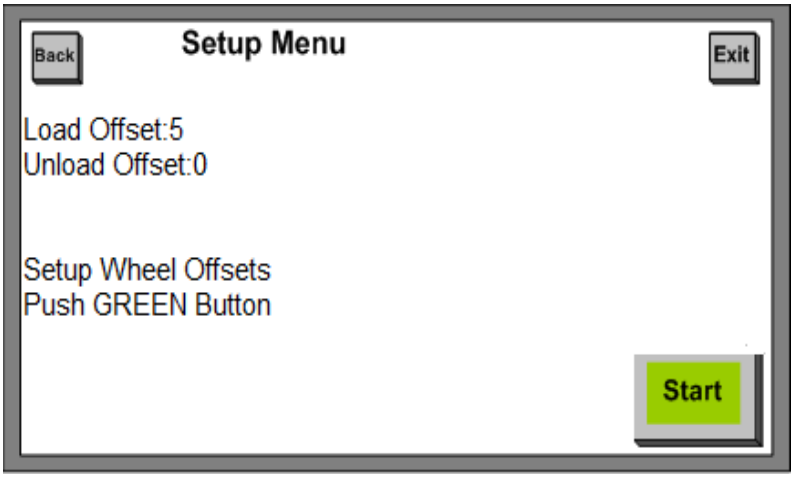
Card Weight Current

- Allows the user to adjust the level of electric current (torque) delivered to the *'Card Weight Motor'*.
- In combination with the *'Card Weight Steps'* adjustment, a higher level of current will increase the amount of downward pressure by the *'Card Weight'* that is delivered to the top of the card deck in the Input Tray.
- The default and normal setting is '12.5%'.
- Torque is adjustable from '12.5%' to '50%' in 12.5% increments.
- In most instances, the highest setting will be no higher than '25%'.



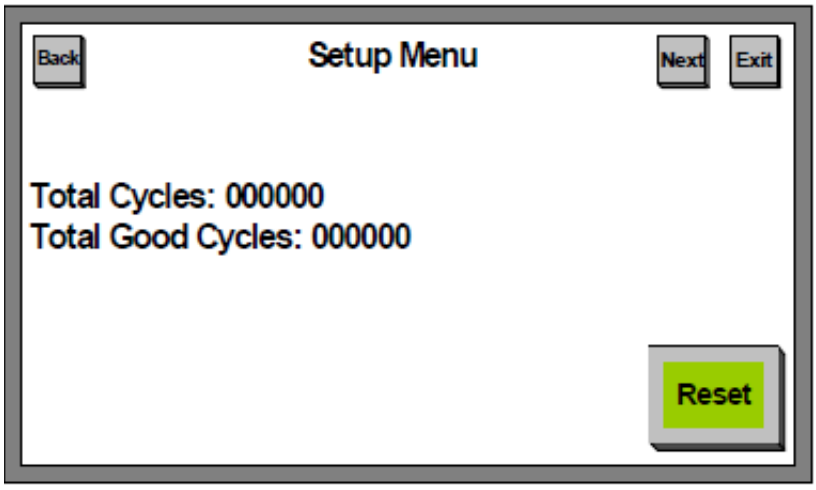
Setup Wheel Offsets

- Allows the user to adjust the *'Wheel Magazine'* positioning to allow cards to load and unload from the *'Wheel Magazine'* smoothly.
- Refer to the 'Settings and Adjustments' section for instructions on how to accurately make this adjustment.



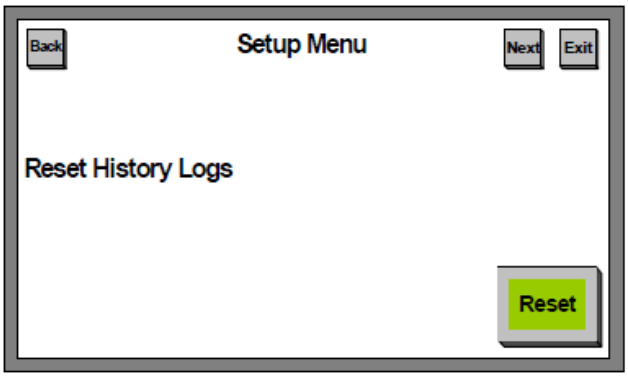
Reset Cycles

- Displays the total number of shuffled cycles and the number of error free ("Good") cycles since the last reset, and it allows for resetting of both counters to zero (0).
- Monitor variances between *'Total Cycles'* and *'Total Good Cycles'*.
- The cycle counts should be reset after any preventive maintenance or service is performed.



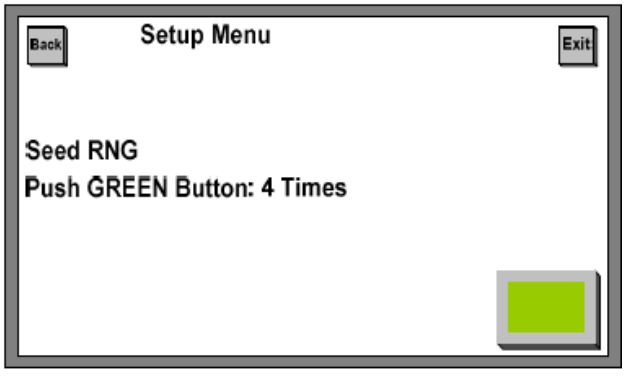
Reset History Logs

- Allows the user to clear all stored *'History Log'* information.
- The *'History Log'* information can be obtained through the usage of the *'View History Logs'* menu option in the *'Setup Menu'* or through the i-TOOLS Diagnostic Utility.



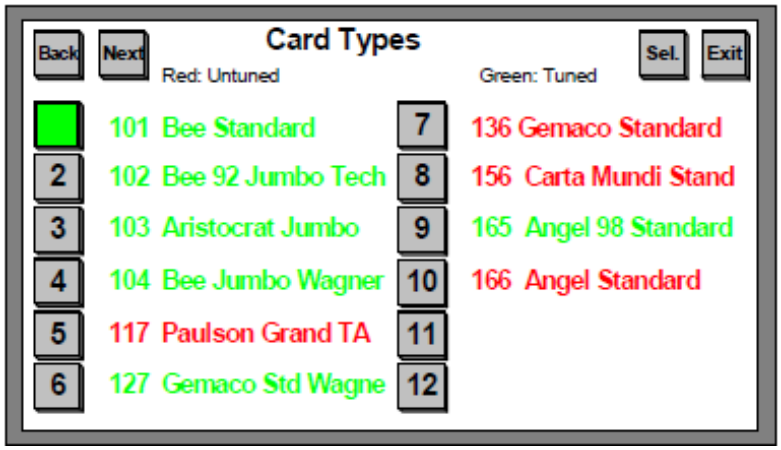
Seed RNG

- Allows the user to manually re-seed the random number generator as required by various gaming control authorities.
- Reseeding forms the basis for generating subsequent random numbers that, in turn, are used to randomly shuffle a deck of cards.
- The 4-byte seed is copied two additional times, the three numbers are stored in separate locations.
- To verify that the seed has not become corrupted, a comparison of the three numbers is conducted each time power to the shuffler is turned 'ON'.
- When the "Seed RNG" message appears during power up, one of the numbers was found to be corrupted; therefore a new seed must be created.
- Repeated messages of "Reseed RNG, Push Green Button 4 Times" on the display, generally means that there may be a faulty 3volt battery on the machine *'Controller Board'*, a faulty machine *'Controller Board'*, or RNG EPROM.



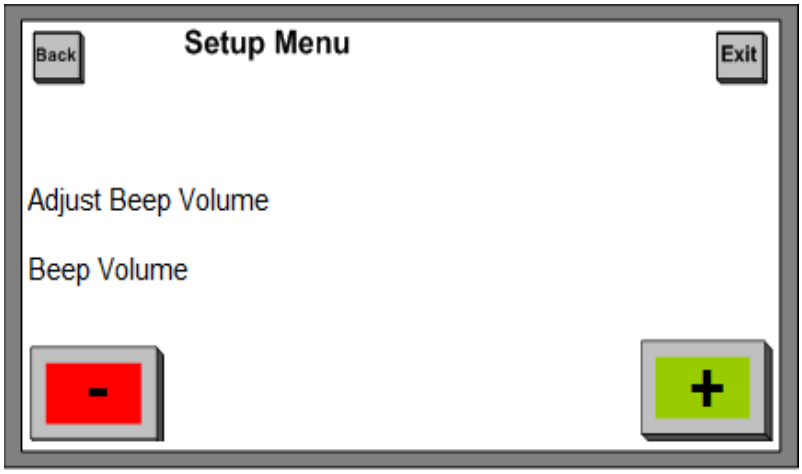
Select Card Type/Tune

- Allows the user to select an installed deck calibration file for the purpose of tuning a card deck.
- Deck descriptions in green text have been previously been tuned.
- Deck descriptions in red text have been installed but have not been tuned.
- The *i-Deal*™ Linux shuffler can store up to 90 deck calibration files in its memory for selection.



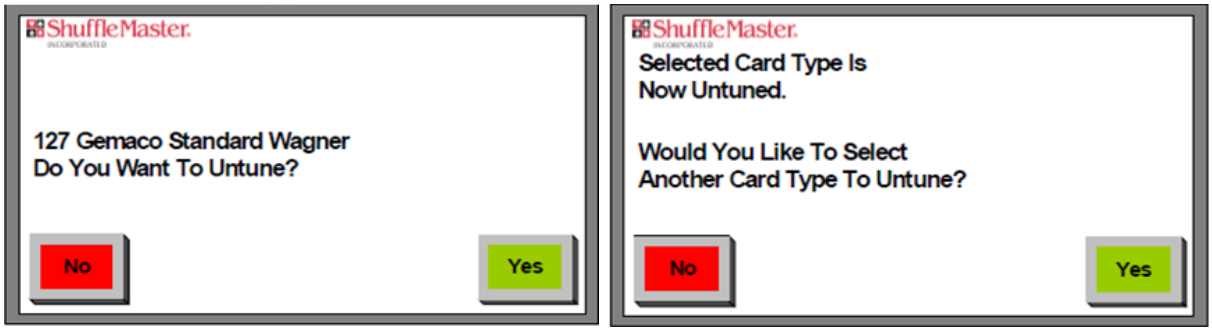
Adjust Beep Volume

- This feature is disabled in the *i-Deal*™ Linux based shuffler.
- Legacy versions of the *i-Deal*™ allowed the volume of the touch sound to be adjusted higher or lower based on user preference.



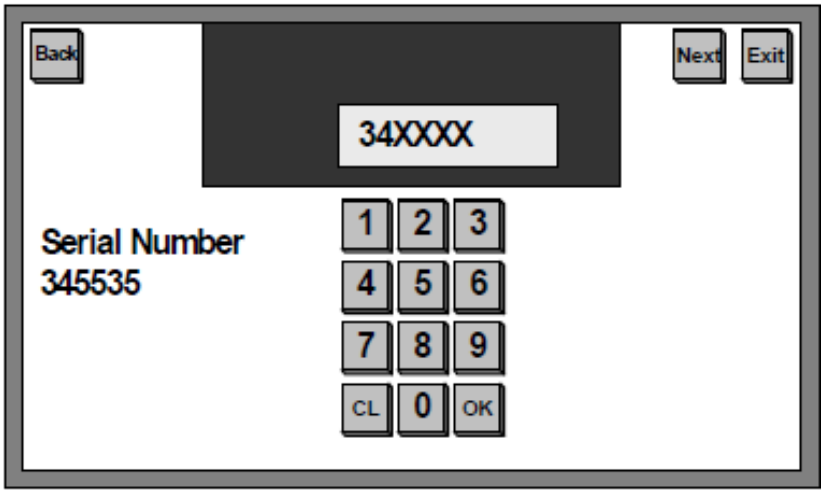
Untune Cards

- Allows the user to make a deck type unavailable for selection through the main selection menu, which displays only previously tuned card deck types.
- A card deck type that has become un-tuned will need to be re-tuned, if the user wants to make that deck type available for selection again.



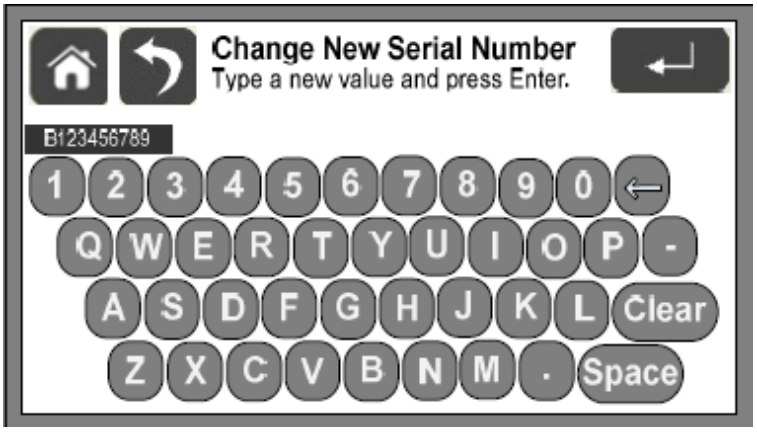
Old Serial Number

- Allows the user to input a numeric *'Serial Number'* of the serialized base plate of the shuffler.
- The *'Serial Number'* must be changed and entered, if the *'Main Controller Board'* has been replaced.
- The location of the *'Serial Number'* can be located next to the carrying handle on the bottom of the Shuffler.



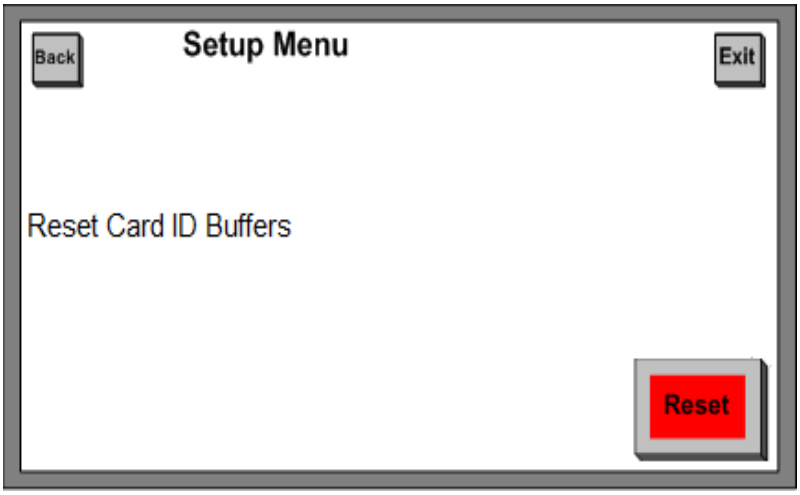
New Serial Number

- Allows the user to input numeric and alphabetic characters for the *'Serial Number'* of the serialized base plate of the shuffler.
- The *'Serial Number'* must be changed and entered, if the machine *'Controller Board'* has been replaced.



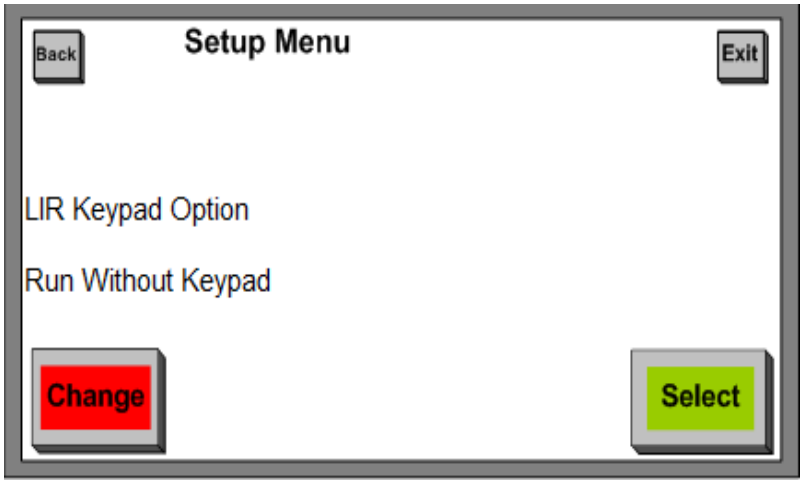
Reset Card ID Buffers

- Allows the user to clear all previous "Hand History" data and images stored in the buffers on the machine *'Controller Board'.*



LIR Keypad Option

- Allows the user to enable the shuffler to communicate with the *Let It Ride® Bonus* game control keypad.
- Do not enable this option even if placing the Shuffler on a *Let It Ride® Bonus* table game with a control keypad.

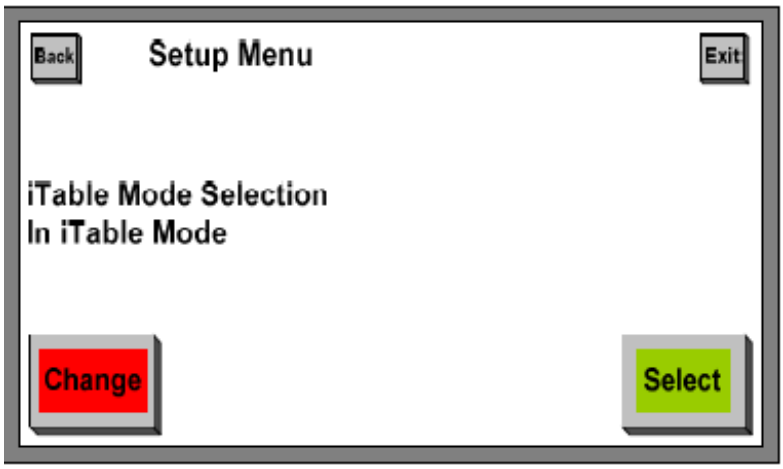


Reset Custom Games

- Allows the user to delete ALL custom-made games created through the Games/Create menu.
- Individual games can be deleted through the *'Delete'* function within the *'Games'* menu.

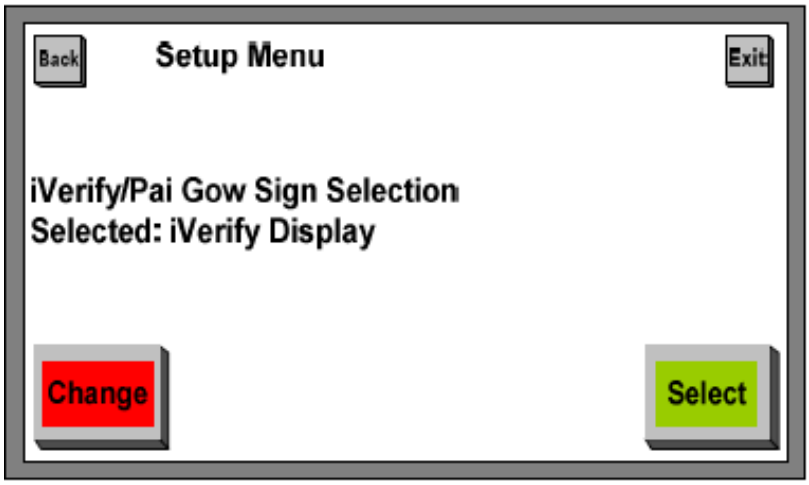
iTable Mode Selection

- Allows the shuffler to send information to and receive from the PC that controls the *i-Table*™ gaming system.
- The user must modify the 'Network Settings' in addition to enabling *'iTable Mode'* to establish communication.



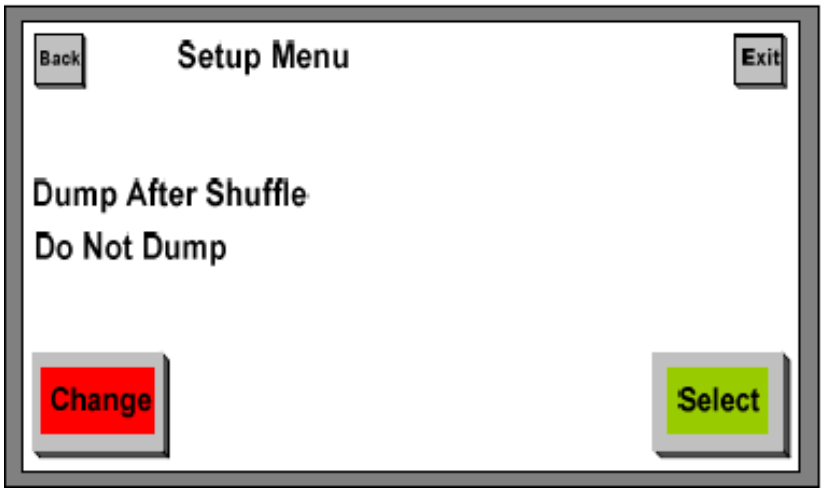
iVerify/Pai Gow Selection

- Allows the user to designate which correct display system is in use for the game *Pai Gow*.
- There are two available means for displaying the *'Pai Gow Spin/Pick'*:
  - The *i-Verify*™ Pai Gow Verification Display.
  - The first-generation Pai Gow Sign and Dealer displays.



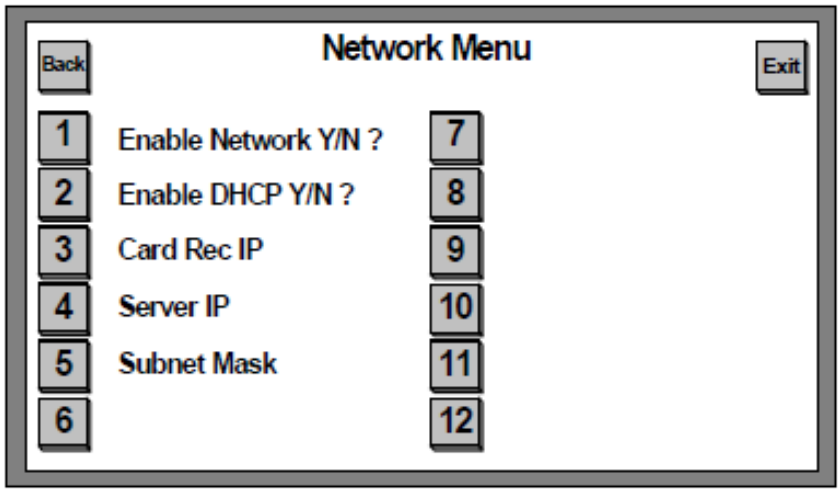
Dump After Shuffle

- Used only in conjunction with the creation of a custom game that was created through the Games/Create menu.
- When the option is selected, the entire deck will be ejected from the shuffler after the shuffle has completed and the GREEN button is pressed.



Network Setup

- Allows the user to turn networking capabilities on or off and to enable or disable dynamic addressing.
- Specific Network settings may need to be made to allow the *i-Deal*™ Linux to communicate with the certain gaming systems, servers, or back of house computers.



Network Options

- Make sure default network options are set within the shuffler, if communication failures occur between laptop/pc and/or gaming systems.
- Default and standard IP address settings for all Shufflers and Shoe's is 169.254.0.1
- If MAC Address is not displayed, then the machine *'Controller Board'* hardware is likely faulty.
- Default Network settings are as followed:
  - Networking = Enabled
  - DHCP = Disabled
  - Static IP Address = 169.254.0.1
  - Server IP Address = 0.0.0.0
  - Subnet Mask = 255.255.0.0

- *i-Table*™ Network settings are as followed:
  - Network = Enabled
  - DHCP = Disabled
  - Card Rec IP = 192.168.200.201
  - Server IP = 0.0.0.0
  - Subnet Mask = 255.255.255.0

Preventive Maintenance

Environmental factors such as food at the table, presence of hand lotion, humidity, paper or plastic cards, card quality, frequency of card changes or table layout fabric may require maintenance to be performed more or less often. All levels should be used as a guide for minimum requirements when conducting preventative maintenance.

Level 1 - 5,500 Cycles

- Remove Top Cover, Input Tray and Output Tray. Blow out or vacuum inside of machine.
- Clean Rollers with 99% isopropyl alcohol.
- Brush or blow off all Sensors.
- Wipe dirt and grime off of Camera LEDs.
- Carefully clean exterior of the Camera Lens.
- Carefully clean surface of the Touch Screen.
- Run casino's cards through the shuffler to test for proper operation and proper card recognition.

Level 2 - 11,000 Cycles

- Perform Level 1 Maintenance.
- Clean Camera Trigger Sensor transmitter and receiver.
- Clean under-side of Camera Background Plate.
-

Level 3 - 66,000 Cycles

- Perform Level 1 and Level 2 Maintenance.
- Test all Roller Shaft Bearings for smooth operation.
- Check GREEN and RED buttons for tightness.

Level 4 - 132,000 Cycles

- Perform Level 1, Level 2 and Level 3 Maintenance.
- Replace all Urethane Rollers.
- 249161Kit, Roller and Bearing, iDeal, Standard Rollers

Components

- Feeder Assembly
- Platform Assembly
- Wheel Magazine
- Encoder
- Unloader
- Main Display
- SOM Board
- Controller Board
- Fuses
- RNG EPROM
- Dip Switches & Jumpers
- Capacitor
- Camera Assembly
- LED Light Bar
- Camera Background Plate
- Sensors and Switches
- Motors
- Communication
- i-Verify™

Feeder Assembly

- The *'Feeder Assembly'* is where cards are accepted to start a shuffle and transports the cards to the *'Camera Assembly'*, *Speed -Up Rollers*, and *'Wheel Magazine'.*
- The *Feeder Tray* is removable for service or cleaning needs (must remove *Platform Tray* first, before removing *Feeder Tray*).
- Contains an adjustable brake roller to allow for the passage of a single card at one time.
- Contains adjustable automatic *'Card Weight'* that lowers on top of deck to help feed cards into the rollers.
- The *'Card Weight'* tension and travel is adjustable through *'Card Weight Current'* and *'Card Weight Steps'* options within the *'Setup Menu'*.
- Contains two sensors that detects cards when cards are present (FCPS) and when cards have cleared the brake roller (FCOS).
- The *'Feeder Card Present Sensor'* optic is adjustable so that the Shuffler can see a flat card, but can't see a card over the *'Card Weight'*.

Platform Assembly

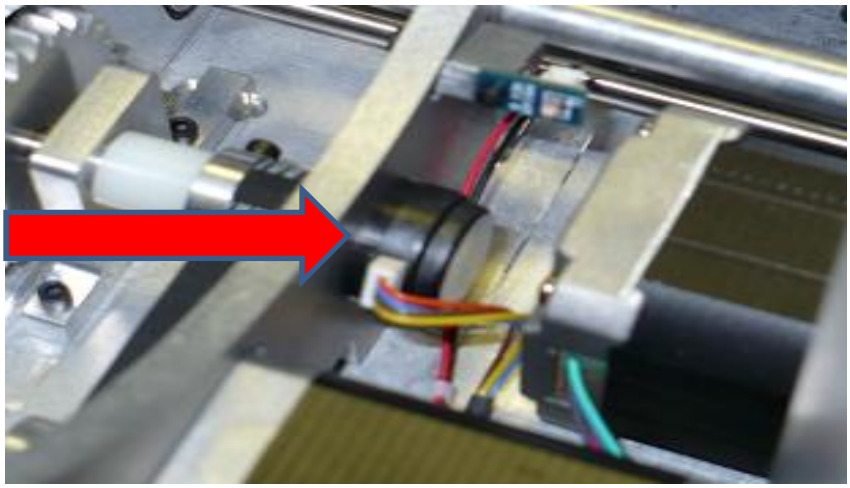
- Delivers and holds shuffled hands emptied from *'Wheel Magazine'* and discards after game play.
- The *Platform Tray* is removable for service or cleaning needs.
- Contains one sensor that detects when cards are placed on platform (PCPS).
- New hands are emptied from the *'Wheel Magazine'* automatically as cards are removed & dealt to players and dealer.
- The dealer must have at least two hands out before the deck can be stubbed (fully unloaded from the *'Wheel Magazine'*).
- When all hands are dealt for the specified game, the shuffler will auto stub the remaining cards from the *'Wheel Magazine'*.

Wheel Magazine

- There are 38 loading position for the insertion of cards.
- A maximum of ten (10) cards per slot maybe inserted.
- Cards are randomly placed and emptied from positions in the *'Wheel Magazine'* based off a virtual *'Wheel Magazine'* inside the RNG during a shuffle.
- The Shuffler will only utilize ¼ of the *'Wheel Magazine'* to shuffle cards.
- The *'Wheel Magazine'* can be removed by pushing back on the white locking tabs on the sides.
- The *'Wheel Magazine'* can be adjusted using the *'Wheel Offsets'* option in *'Setup Menu*'.
- Contains a magnet to indicate the home or "zero" position (WHS) on the *'Wheel Magazine'.*
- The side plates, wheel shafts, and the drive gear may require replacement after five or more years of extended use, which could result in increased card jamming and wear down of the side plates causing the *'Wheel Magazine'* to move side-to-side.

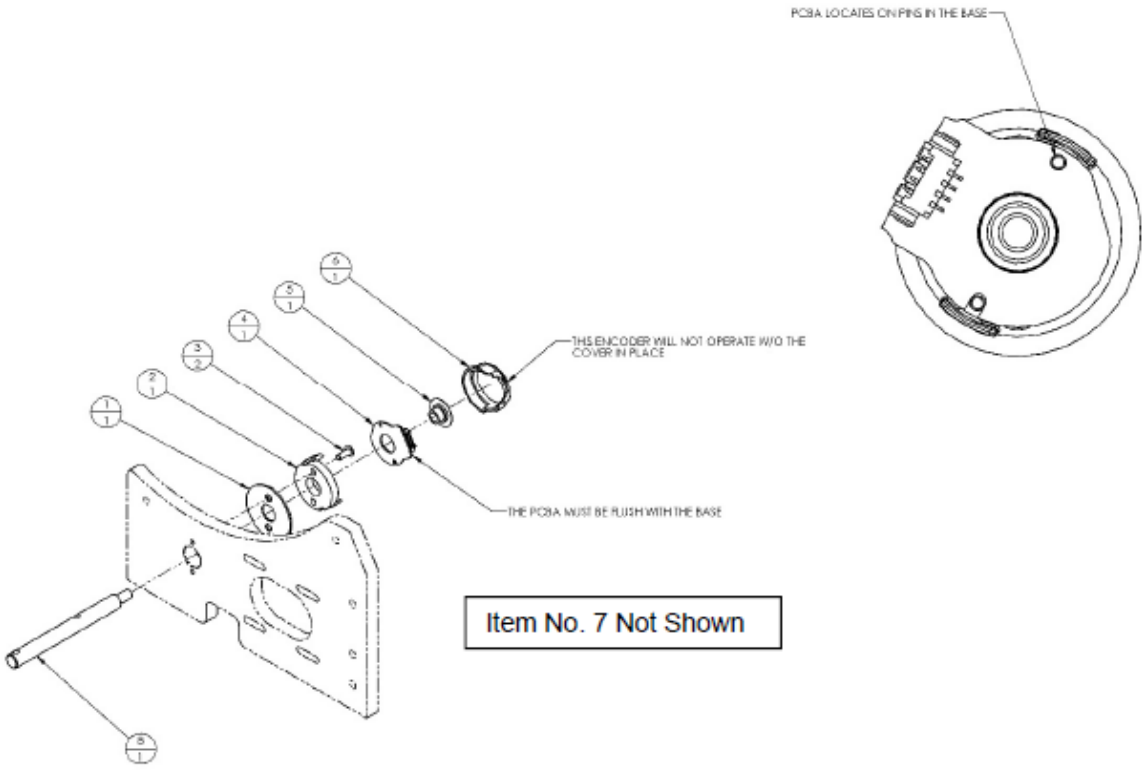
Encoder

- Allows precise stepping and stopping control and verification of the *'Wheel Magazine'*.
- The *'Wheel Magazine'* will re-home if its assigned position is not obtained.
- Replace the hub disk, encoder board, or *'Wheel Magazine'* bearings if an *'Encoder'* failure is discovered.
- Previous model encoders cannot be used to replace with the current *'Encoder'* for the *i-Deal*™ Linux.
- Functionality testing of the *'Encoder'* is available in the *'Service Menu'*.
- Common faults include jamming of cards into the *'Wheel Magazine'* and "check for cards in wheel" message with no cards in the *'Wheel Magazine'* loading positions.
- The EP4 *'Encoder'* (pictured below) for the *i-Deal*™ *Linux* is no longer available. If any component part in the EP4 *'Encoder'* fails, the entire encoder must be replaced.



- The EP4 and E4T parts are not compatible and contain no interchangeable components.
- The part number for the new E4T *'Encoder'* is 258758 – Kit, E4T Encoder.

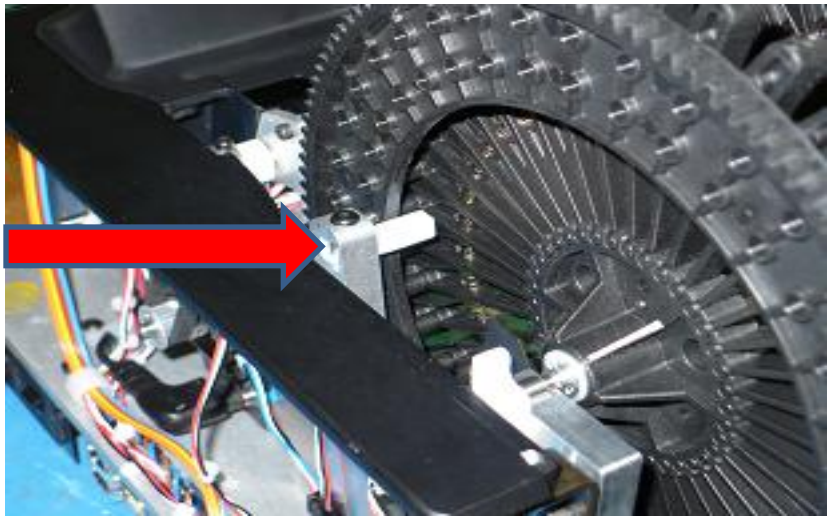
Install all parts in the kit, as shown.

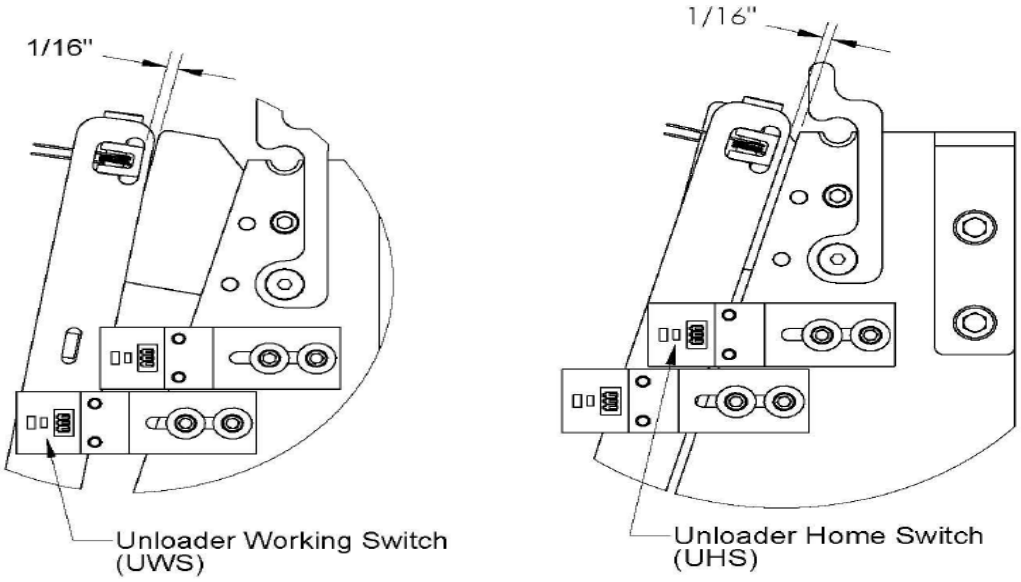


ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	258020	1	Spacer, E4T Encoder
2	258016	1	Base, E4T Encoder
3	P1929	2	BHCS 3-48 X 1/4
4	258017	1	PCB, E4T Encoder
5	258015	1	Hubdisk, E4T Encoder
6	258018	1	Cover, E4T Encoder
7	258758-INST	1	Instructions, E4T Encoder Kit
8	1480399	1	Shaft, Wheel Drive

Unloader

- Unloads cards from the *'Wheel Magazine'* to the *Platform Tray*.
- The *'Unloader Arms'* are triggered when the GREEN button is pressed or automatically when the *'Platform Card Present Sensor'* is clear.
- The *'Unloader Arms'* should be parallel and can be adjusted.
- To remove the *'Wheel Magazine'*, make sure to manually move the *'Unloader'* assembly backwards until *'Unloader'* assembly is position passed the *'Retractor Plates'*.
- The *Unloader Home* and *Working Switches* are adjustable using the *'Unloader Motor'* option in the *'Service Menu'*.
- The *Unloader Home* and *Working Switch* positions should be set with a 1/16th spacing gap.



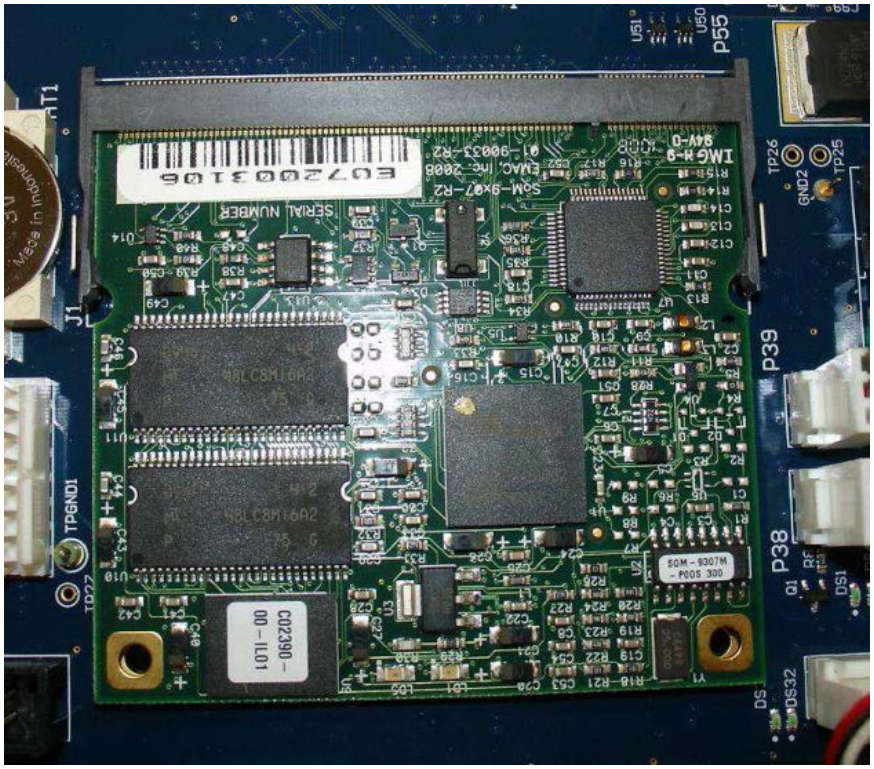


Main Display

- The *'Main Display'* makes it easy to identify errors, review hands, and make changes.
- *The 'Main Display'* is a LCD Touch Screen.
- Calibration of the *'Main Display'* screen can be conducted by activated dipswitch #5 on startup of the Shuffler or through the i-Tools Diagnostics Tool.
- The *'Main Display'* functionality is controlled by *'SOM Board'.*
- The *'Main Display'* screen will remain all white if jumpers 19 & 56 and 38 & 39 are not attached to machine *'Controller Board'.*
- The ribbon cable must be locked in and secured on both ends.
- Verify that the *'Main Display Cover'* isn't pressing too tightly against the screen, if the screen is unresponsive to touch.

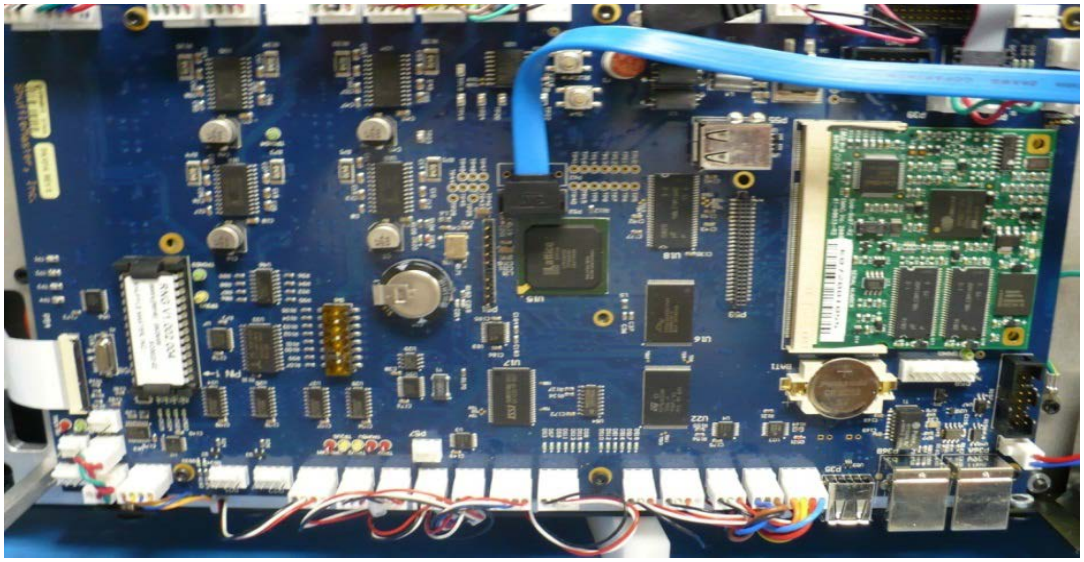
SOM Board

- The *'SOM Board'* is a Linux based computer that is programmed with a version of the Linux operating system to control multiple shuffler applications.
- Stores the *'Mico32'* software package.
- Replaces most functions contained on the *'CPU Board'* of previous model.
- Controls the touchscreen, game selection, card count, and operating system information.
- An identical board is used in all other Linux based shufflers and is interchangeable.
- The software must be reinstalled anytime the board is replaced.
- The software does not have to be reinstalled when swapping boards between the same product families.
- Ensure that the *'SOM Board'* is inserted and positioned squarely in the slot to prevent shuffler and card recognition failure due to misalignment of the contacts.
- Common errors include no boot sequence screen when powered 'ON', and an all-black or white screen and no Shuffler initialization.



Controller Board

- Controls and operates *Sensors*, *Switches*, *Motors*, and *Camera*.
- Receptacle board for *'SOM Board'.*
- Contains a non-removable *'Capacitor'* for *'Time'* and *'Date'* settings.
- Contains a 3 volt battery to retain settings, configurations, and backup RNG.
- Contains removable EPROM chip (Random Number Generator data only).
- The card recognition information is located and stored.
- Has a write protected jumper (JP1) and touchscreen functionality jumpers (19 and 56, 38 and 39).
- Has an USB port for installation of software, i-Tools, and connectivity to the *i-Verify™.*
- Stores the 'Support' and 'DeckLIb' software package.
- The software must be reinstalled whenever the machine *'Controller Board'* is replaced.
- Contains an eight block dip switch pack and a can fuse (2.5 amps).
- Verify that the camera SATA cable is connected to the port closest to the processor chip, if two ports are made available.



Fuses

Main AC

- Main inline fuse next to power socket.
- 2 amp time lag fuse.
- Provides protection from "dirty power", power spikes, and/or power surges.
- Spare fuse contained within the fuse holder.
- If the Shuffler has no power and a green LED on the board next to the power input is not lit, then the likely cause is a blown inline fuse.

24V DC

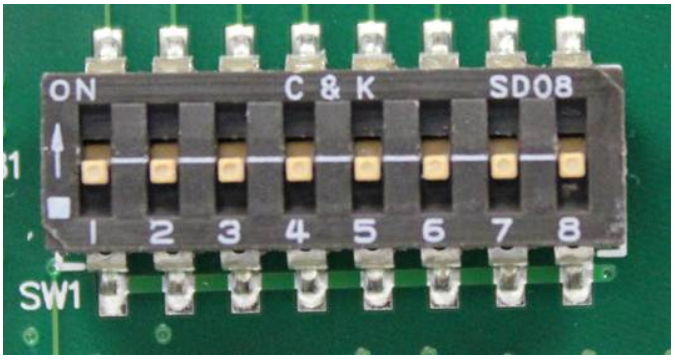
- The can fuse has an amperage rating of 2.5 amps on machine *'Controller Board'.*
- Provides board protection from a shorted component.
- To diagnose a shorted component, disconnect all Molex connections to the board and reconnect one Molex connector at a time until a short presents itself.
- If the Shuffler has no power and a green LED on the board next to the power input is lit, then the likely cause is a blown can fuse.

RNG EPROM

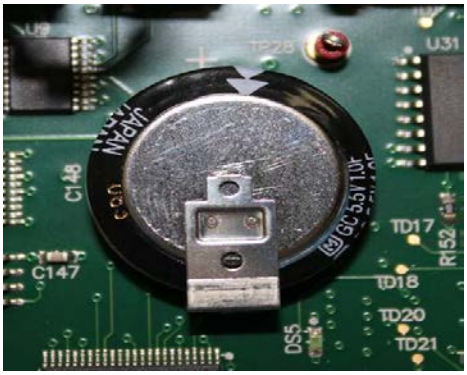
- Random Number Generator only.
- The notch on the chip signifies the pin 1 side.
- Pin 1 insertion is also labeled on the machine *'Controller Board'* on the bottom left of the socket
- Must be inserted correctly, otherwise chip will become inoperable.
- Self-authenticating versions of Mico32 software (Version 3.8.057, or later) and Card Rec (Version 4.0.035, or later) **require** a minimum of the RNG EPROM version to be v1.002.006, or later.
- A "Reseed RNG, press green button four times" error displayed if 3 volt battery is failing, machine *'Controller Board'* is faulty or the *'EPROM'* is faulty or not inserted.

Dip Switches and Jumpers

- Open paths to different options that are imaged into the software.
- The eight pack block of *'Dip Switches'* is located on machine *'Controller Board'.*
- All *'Dip Switches'* are positioned in the OFF position for normal operation.
- Always check the *Dip Switch* chart to be sure which are turned on or off and what they do.
- Current active *'Dip Switches'* are:
  - #3 – Automatic unload of all cards after green button is pressed.
  - #5 – Forces Touch Screen Calibration mode at power up.
  - #6 – RED and GREEN buttons are switched (need to change physical button caps to reflect change).



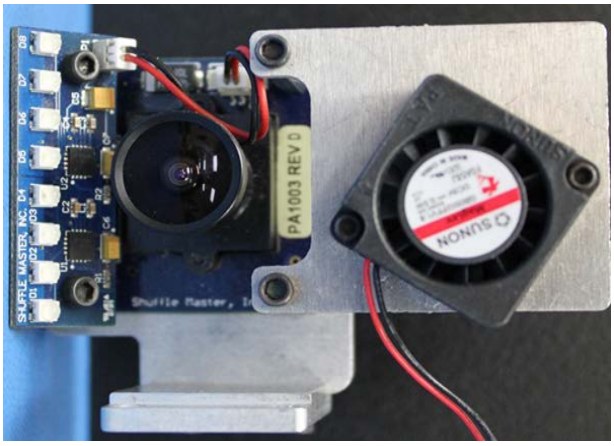
Capacitor



- Charges up when power is ON to provide 5.5 volts to real time clock.
- Soldered into the machine *'Controller Board'* and is not removable.
- If the time and date can't be changed, the entire machine *'Controller Board'* must be replaced.
- Provides power for real *'Time'* clock and *'Date'*.
- Has a rating of 1 Farad.
- The *'Time'* and *'Date'* have no bearing on the shuffle and is only used for error reporting.
- The anticipated life span of the *'Capacitor'* is about ten (10) years.

Camera Assembly

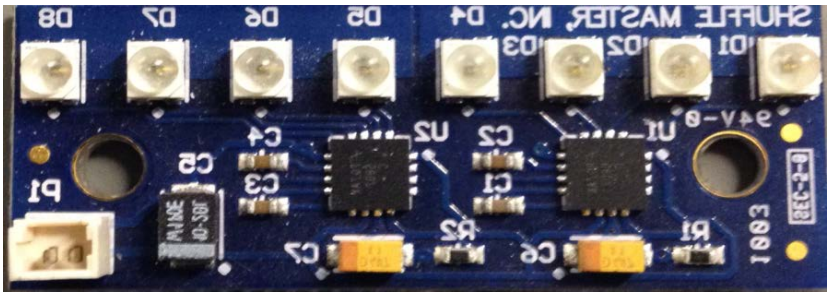
- Activated by *'Camera Trigger Sensor'.*
- The lens must be clean and dust free to prevent misreads or "bad" tuning.
- Do not use isopropyl alcohol to clean camera lens, in most cases a dry microfiber cloth will suffice.
- Does not see color, only sees and captures black and white images.
- Uses a SATA cable for connection and communication to machine *'Controller Board'.*
- The *'Camera Assembly'* needs to be properly focused for accurate reading of cards.
- The *'Camera Assembly'* can only be focused and checked using the *'Live View'* feature within i-TOOLS.
- Gasket sealed to prevent dust underneath camera lens.



- New *Cameras* now come with set screw to secure camera positioning. No yellow torque seal is required.
- The same *'Camera'* as other Linux based products, but is a different camera than "Rabbit" version.

LED Light Bar

- Powered through the *'Camera Assembly'.*
- ALL individual LED lights need to be clean, bright, and all functioning.
- Do not use alcohol to clean *'LED Light Bar'.*
- Dim, faulty, or dirty camera LEDs can cause infrequent or frequent misreads due to captured images no longer matching stored images produced during the tuning process.
- Dirty or burnt out LEDs can cause shadows to appear on the cards during the tuning process, 'Last Card' image, or 'Error Images'.
- LED lighting will dim over time as they become coated with dirt, causing the camera to acquire darker images, replace as needed.



Camera Background Plate

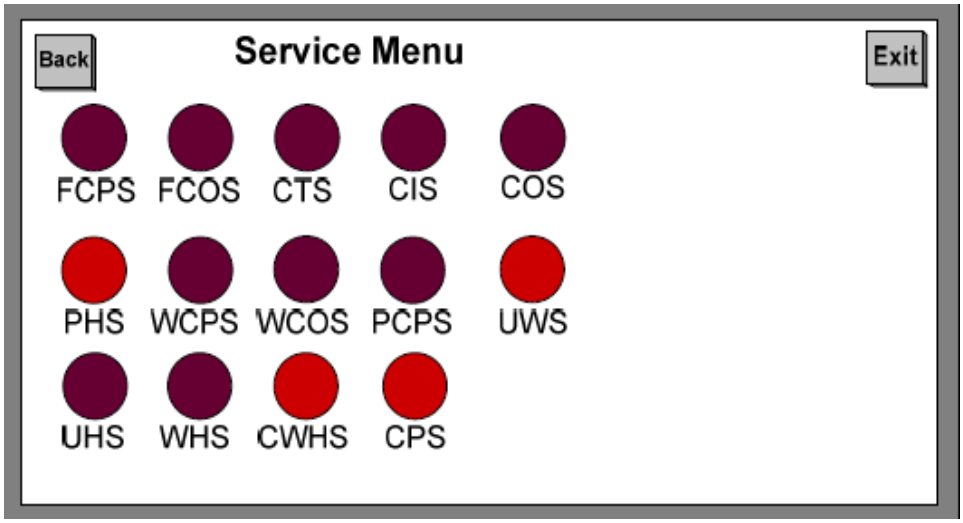
- Provides a dark contrast for the black and white images.
- White plastic "dot" serves as a registration point only during the tuning process to adjust camera settings.
- Underside of background plate must be clean to prevent faulty camera settings or faulty images.
- Common faults include "white spots" or "white streaks" appearing in the dark areas surrounding the card or in black portions of the captured image, and faulty misreads of camera images.

Sensors and Switches

The Main Control circuit board has an LED adjacent to each Molex connector that will also change its state as the sensor is activated or deactivated.

- Infrared/Thru-Beam
  - 8 Infrared sensors
  - Receivers on top
  - Emitters on bottom
  - Self Contained(not affected by light)
    - Feeder Card Present
    - Feeder Card Out
    - Camera Trigger Sensor
    - Card In
    - Card Out
    - Wheel Card Present
    - Wheel Card Out
    - Platform Card Present
- Hall Effects
  - 6 Switches
  - Magnetically operated
  - Magnets are polarized
    - Unloader Home(adjustable)
    - Unloader Working(adjustable)
    - Wheel Home
    - Packer Home
    - Cover Present
    - Card Weight Home

View the Sensor and Switch menu in the *'Service Menu'*. Each sensor or switch can be manually or automatically tested in the 'Service Menu' for proper functionality.



Position	Sensor/Switch		Description
1	FCPS		Feeder Card Present Sensor
2	FCOS		Feeder Card Out Sensor
3	CTS		Camera Trigger Sensor
4	CIS		Card In Sensor
5	COS		Card Out Sensor
6	PHS	**	Packer Home Switch
7	WCPS		Wheel Card Present Sensor
8	WHS		Wheel Home Switch
9	PCPS		Platform Card Present Sensor
10	WCOS		Wheel Card Out Sensor
11	UWS	**	Unloader Working Switch
12	UHS		Unloader Home Switch
13	CWHS	**	Card Weight Home Switch
14	CPS	**	Cover Present Switch

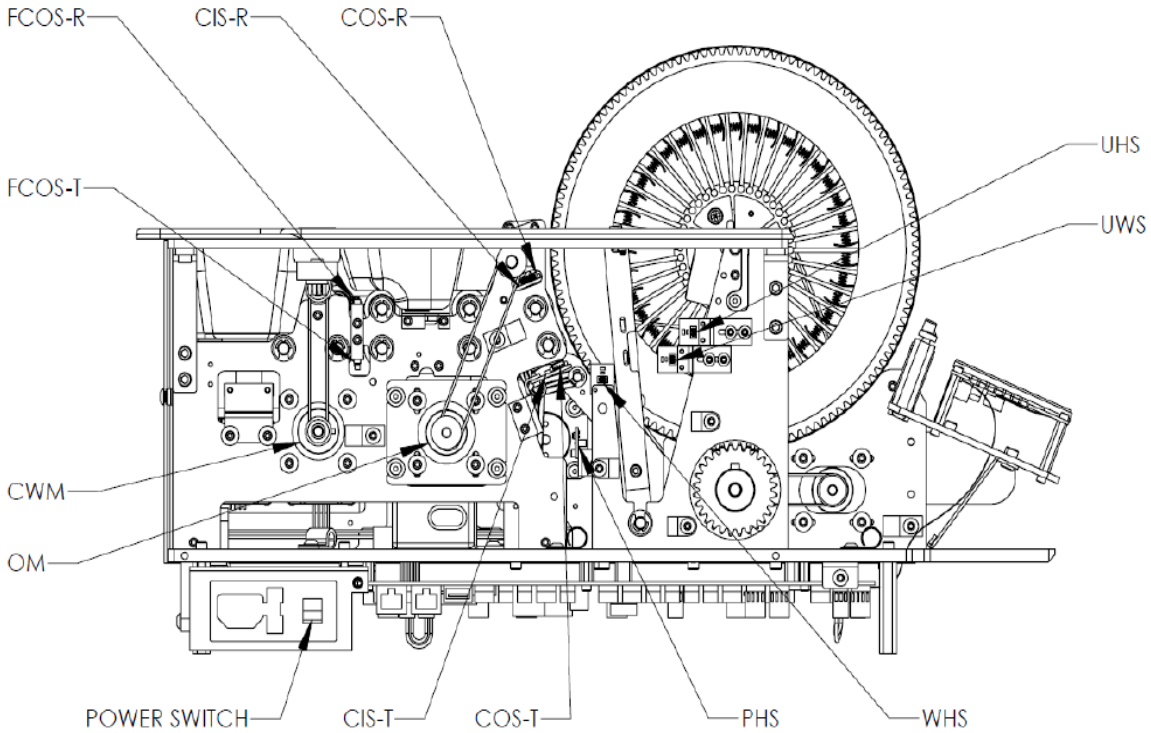
Sensors and Switches Descriptions

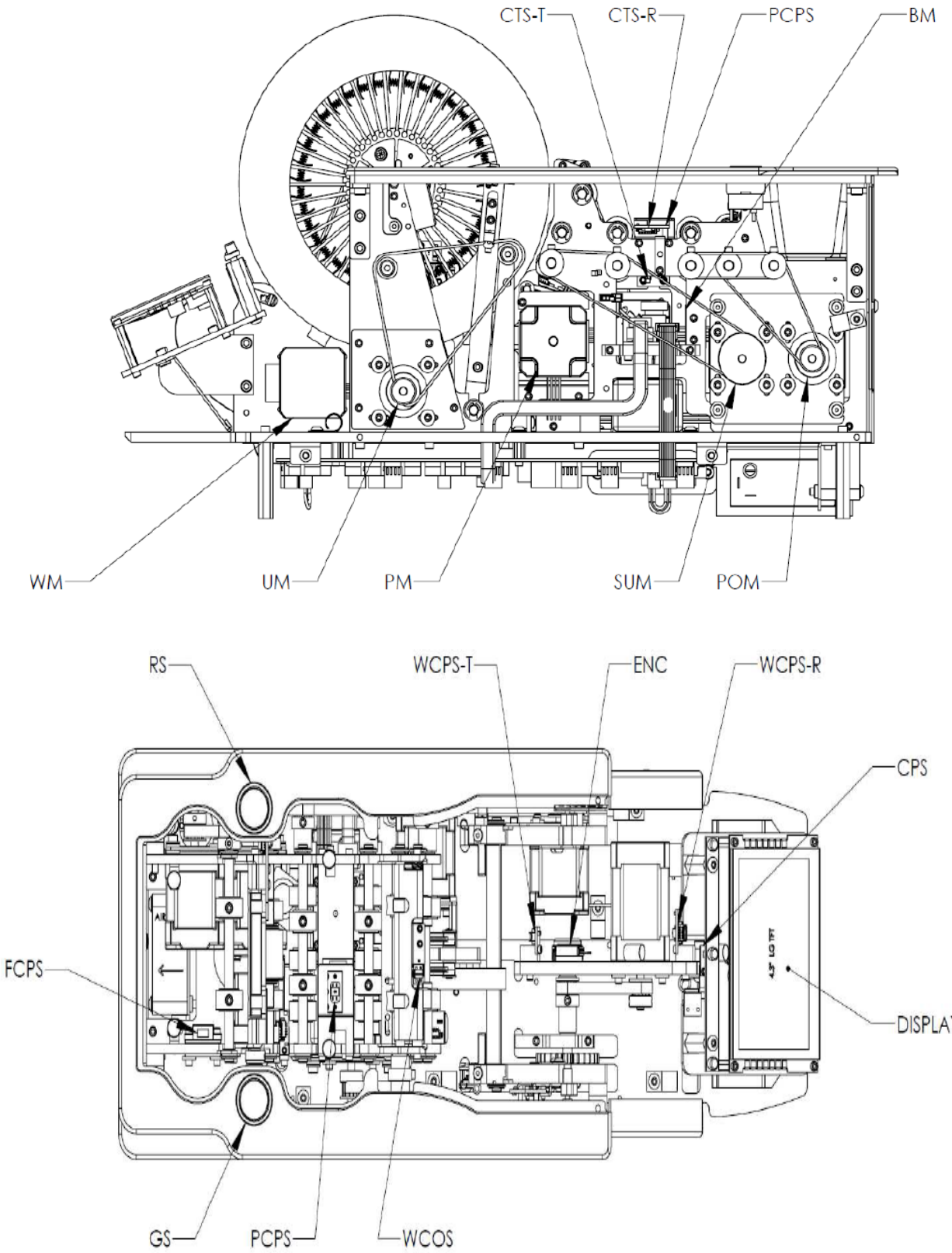
Hall Effect Switch = A sensor that detects the presence of a magnetic field.
Reflective Infrared Sensor = A sensor that emits an (invisible) infrared signal and detects that signal when it is reflected back.
Thru-Beam Sensor = A sensor that uses an (invisible) infrared source transmitter to look across the card path to a receiver.

Feeder Card Present Sensor = (FCPS). A reflective infrared sensor that detects a card(s) on the Feeder Platform.
Platform Card Present Sensor = (PCPS). A reflective infrared sensor that detects a card(s) on the Output Platform.
Feeder Card Out Sensor = (FCOS). A thru-beam sensor that detects cards entering the Brake Roller.
Camera Trigger Switch (Sensor) = (CTS). A thru-beam sensor that activates the camera to snap an image of a card when triggered. Consists of one Transmitter (CTST) and one Receiver (CTSR).
Card In Sensor = (CIS). A thru-beam sensor that detects when a card enters the final Speed Up Roller. Consists of one Transmitter and one Receiver.
Card Out Sensor = (COS). A thru-beam sensor that detects when a card exits the final Speed Up Roller. Consists of one Transmitter and one Receiver.

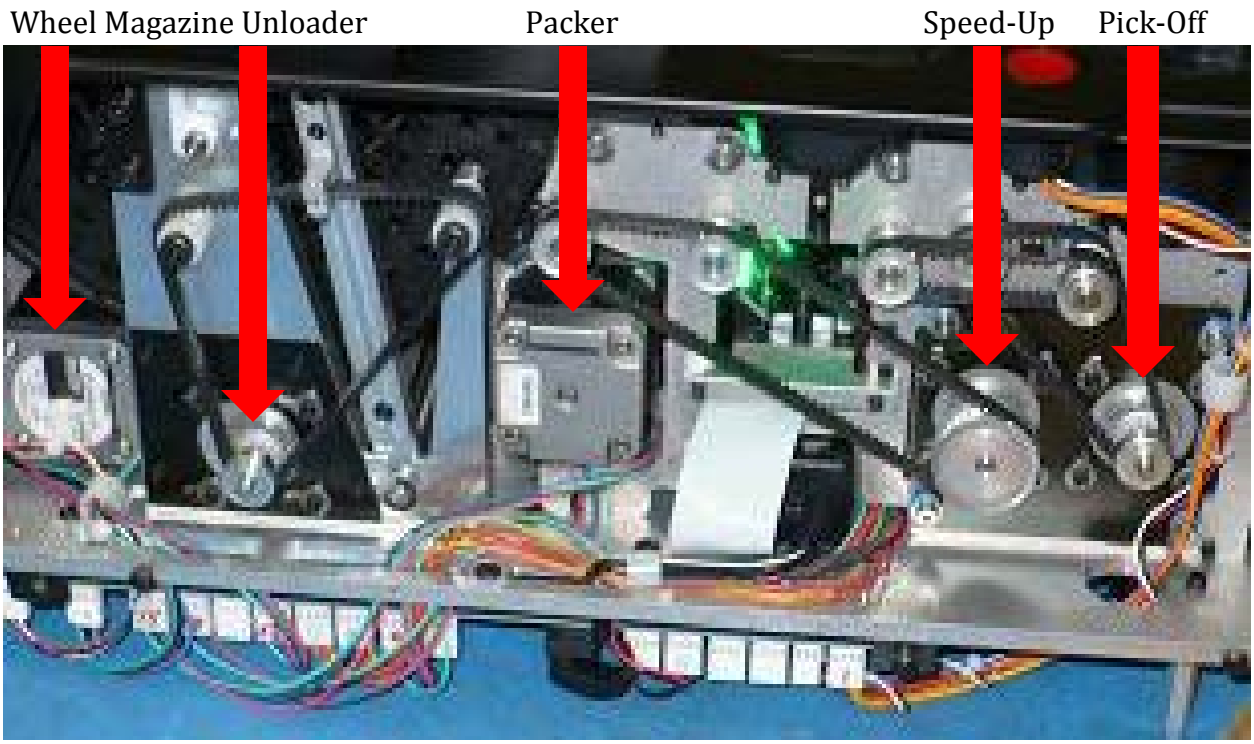
Wheel Card Out Sensor = (WCOS). A thru-beam sensor that detects when cards have been unloaded from the wheel.
Wheel Card Present Sensor = (WCPS). A thru-beam sensor that detects a presence of a card(s) in the wheel. Consists of one Transmitter and one Receiver.
Wheel Home Switch = (WHS). A Hall Effect switch that defines the starting position of the wheel.
Unloader Working Switch = (UWS). A Hall Effect switch that defines the Unloader position farthest from the Output Platform.
Unloader Home Switch = (UHS). A Hall Effect switch that defines the Unloader position nearest the Output Platform.
Packer Home Switch = (PHS). Defines the starting position for the Packer.
Card Weight Home Switch = (CWHS). A Hall Effect switch that defines the starting position for the Card Weight.
Wheel Cover Present Switch = (WCPS). A Hall Effect switch that detects whether the wheel cover is open or closed.
Green Button Switch = (GS). A push button switch that indicates a completion of a shuffle and shuffler initialization.
Red Button Switch = (RS). A push button switch that indicates a shuffler malfunction or initialization error.

Sensors and Switches Locations





Motors



Communication

- THE USB Port is the primary port used for most related applications.
- The i-Tools can be used for card rec related failures and history reporting.
- The RJ 45 modular plugs function as described below.
- Download to PC option is obsolete.
- Link to networks and BOH.
- Connect to laptop to diagnose card rec related failures and view *'Camera Diagnostics'* as a backup to i-Tools only.

i-Verify

- Used primarily on *Pai Gow Poker* and *Asia Poker* games to provide a means to confirm which table position will be first in the start of the dealing process and confirm that the correct selection of the "Low' or "Front" hand was made based on the House Ways rules.
- The original *i-Verify*™ remote display is now forward compatible with later *i-Deal*™ models.
- Powered and communicates through the use of the USB port on the shuffler.
- The "Random Number" is generated through the dsiplay and not the shuffler. The shuffler just allows the "Random Number" to be displayed.
- There are no user serviceable parts for the i-Verify™ remote display.
- Prior to usage, be sure to install the *i-Verify*™, Images, and then House Way Rules software into the shuffler.
- When installing, adding, or upgrading to *i-Verify*™ software Version 1.0.023, or later, all other software types and the RNG chip must have a minimum of Self-authenticating versions of Mico32 software (Version 3.8.057, or later), Card Rec (Version 4.0.035, or later), and a minimum of the RNG EPROM version v1.002.006, or later, to function.
    - To enable the i-Verify™ remote display:
        1. The display must first be connected before power to the shuffler is turned 'ON', or the display will not be recognized.
        2. Set the option in the 'Setup Menu' to 'iVerify Display' for 'Pai Gow/Iverify Selection'.
        3. Verify the selected game supports the use of a verification display.

Settings and Adjustments

- Settings
  - Time
  - Date
  - Serial Number
  - Card Rec ON/OFF
  - Card Weight Steps
  - Card Weight Current
  - Select Card Type/Tune
  - LIR Keypad Option
  - Pai Gow/i-Verify Display
  - iTable Mode
- Adjustments
  - Wheel Load and Unload Offsets
  - Unloader Switches
  - Unloader Arms
  - Brake Roller
  - Feeder Card Present Sensor
  - Belt Tension

Mechanical Setup and Adjustments

In the event of improper loading or unloading of cards into the *'Wheel Magazine',* the corners of the cards become bent or cards jamming while loading or unloading from the *'Wheel Magazine',* it may be necessary to adjust and set the *'Wheel Offsets'*, so that the cards are shuffled and unloaded efficiently. The *'Load Offset'* defines how cards are inserted into the *'Wheel Magazine'* during a shuffle or Sort. The *'Unload Offset'* defines how cards are released from the *'Wheel Magazine'* onto the *'Platform Assembly'*, where cards are then distributed to the players.

Wheel Offset Setup

Follow the steps below to set the *'Wheel Load* and *Unload Offsets'*;
The Wheel Offsets are changed through the Setup Menu.

1. Power up the machine and touch 

.
2. Touch 

.
3. Select 'Setup Wheel Offsets' 

.
4. Enter the General password into the displayed keypad. Touch 

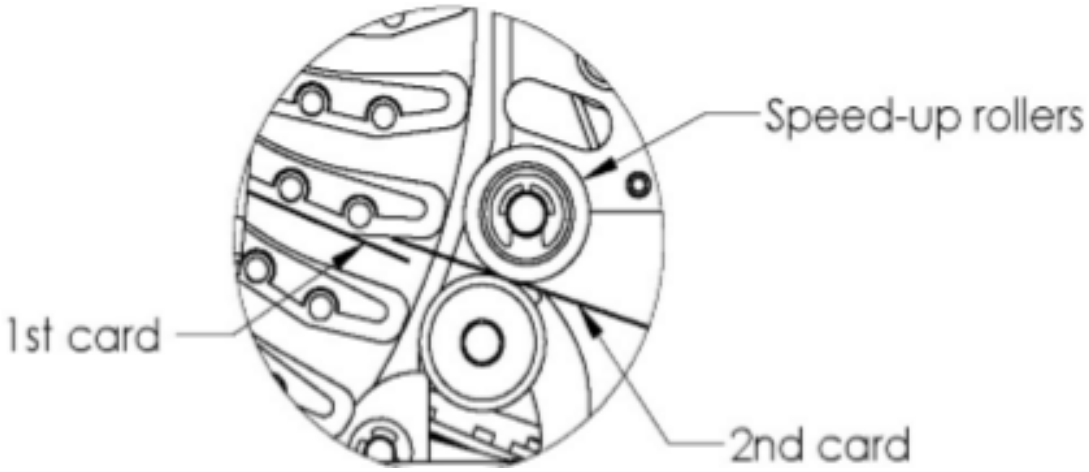
.
5. The next screen will display the current settings.
6. Touch 

.

Wheel Load Offset Procedure

1. Remove the wheel cover. Use a properly oriented magnet to activate the Cover Present Sensor (CPS) Hall-effect switch.
2. At the prompt, place 10 cards into the Input Tray. The first card is moved into the Speed-Up Rollers and stopped before entering the Wheel Magazine.
3. Rotate the Speed-Up Rollers by hand to move the first card toward the wheel. The card should enter the wheel at the midpoint of the angled lead-in. To adjust the wheel, touch  to move clockwise in 5 step increments or touch  to move counter-clockwise in 5 step increments.
4. Touch  on the touch screen and the first card will be loaded into the wheel. Touch  on the touch screen. The second card is moved into the Speed-Up Rollers and stopped before entering the wheel.
5. Rotate the Rollers by hand to move the second card toward the wheel. The card should enter the wheel between the midpoint of the angled lead-in and the first card. To adjust the wheel, touch  to move clockwise in 5 step increments, or touch  button to move counter-clockwise in 5 step increments.
6. Touch  on the touch screen and all remaining cards will be loaded into the same compartment of the wheel. Observe to assure that there are no card collisions and that all cards are loaded fully into the wheel.

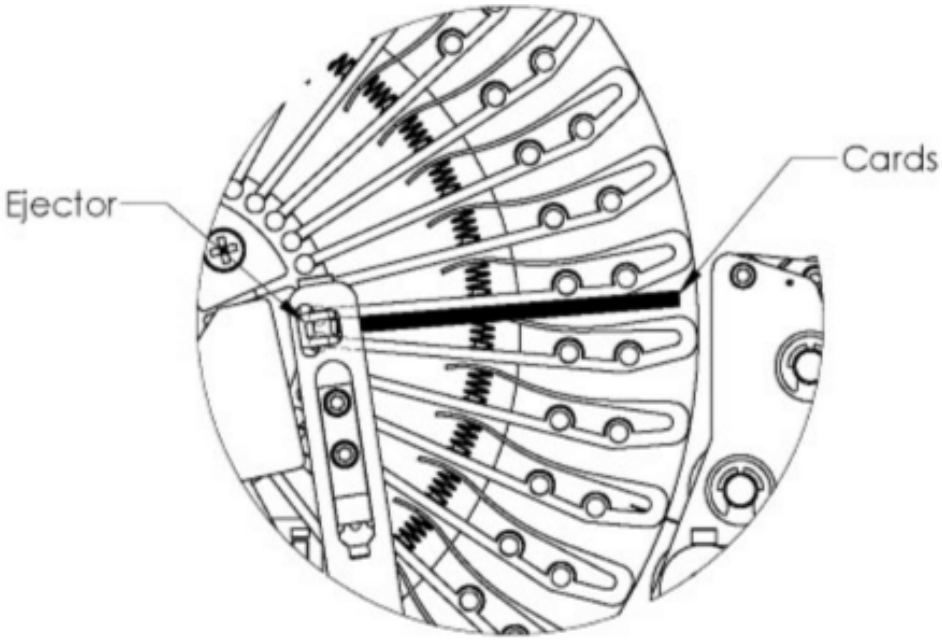
The shuffler automatically advances into Unload Offset Setup mode.



Wheel Unload Offset Procedure

1. Manually move the white unload ejectors toward the cards to check wheel positioning. The ejectors should line up with the stack of cards. To adjust the wheel, touch  to move clockwise in 5 step increments or touch  to move counter-clockwise in 5 step increments.
2. If no further adjustments are needed, touch  to start the Output Roller Motor. Touch  and the cards will be pushed out into the Output Tray. Verify that all cards were pushed evenly and that none were left in the wheel or were damaged.

Setup is now complete. The touch screen display will return to the Setup Menu.



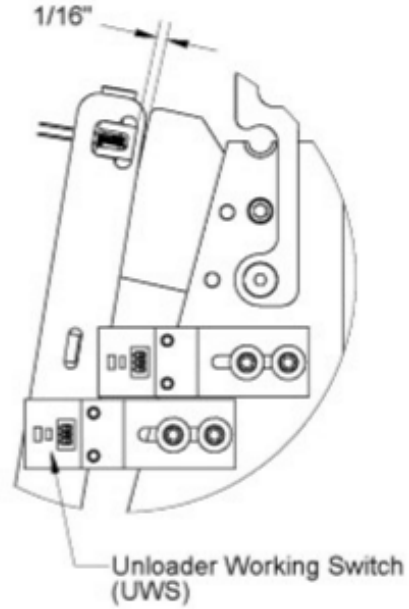
Unloader Switch Adjustment

In the event of the error "Unloading Homing Jam, Press Red Button to Clear" or the "clunking" sound as cards are unloaded from the *'Wheel Magazine'*, it may be necessary to adjust the *'Unloader Working'* and *'Unloader Home'* Switches so that the *'Unloader'* arms stop at with a 1/16th clearance.

Unloader Working Switch

The Unloader Working Switch should be adjusted so that the rear of the white Ejectors rests 1/16" away from the Retractor Plates that are attached to the Left-Hand and Right-Hand Wheel Mounts.

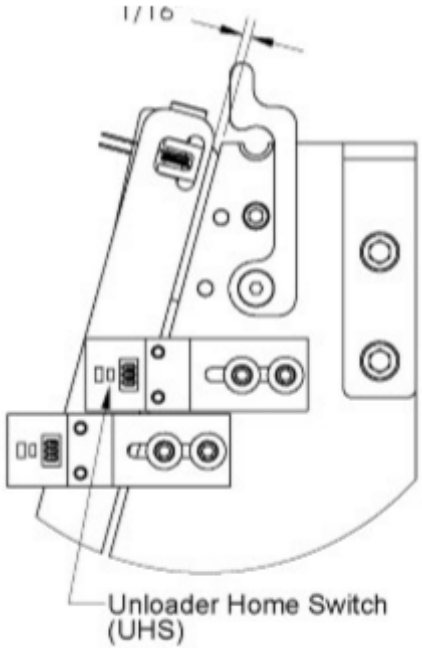
1. Loosen the appropriate switch bracket hold-down screws (2).
2. Move the bracket slightly left or right to obtain the correct spacing.
3. Tighten the hold-down screw.



Unloader Home Switch Procedure

The Unloader Home Switch should be adjusted so that the Ejector Arm rests with an even 1/16" space between itself and the Left-Hand and Right-Hand Wheel Mounts.

1. Loosen the appropriate switch bracket hold-down screws (2).
2. Move the bracket slightly left or right to obtain the correct spacing.
3. Tighten the hold-down screw.



Brake Roller Adjustment

When the Brake Roller Assembly requires frequent adjustment, it is possible that the roller gap is not level and even, or the Brake Roller or Lower Drive Roller may have developed a bulge or a flat spot and is no longer round. When either of these conditions exists, the gap between the rollers may fluctuate between "too small" and "too large".

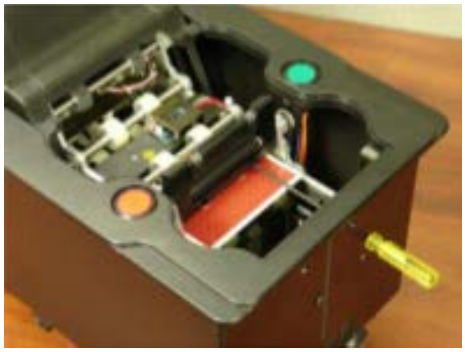
There are two Brake Roller configurations, depending on the type of cards to be shuffled.

- When the casino is using paper cards, the white urethane compound roller should be installed.
- When the casino is using plastic cards, the black aluminum roller is used.

The aluminum roller eliminates the potential for "swelling" of the urethane roller which occurs when substances transferred to the cards from the hands of dealers and players are absorbed into the urethane compound.

Adjusting the Urethane Brake Roller Assembly (Paper Cards)

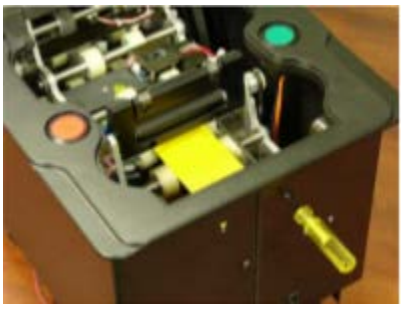
1. Remove the Input and Output trays.
2. Locate the aluminum Brake Roller directly under and in front of the moveable card weight.
3. Loosen the two screws that hold the roller by inserting a 3/32" hex wrench through the access ports in the rear panel.



4. Place two playing cards between the lower drive roller and the upper brake roller.
5. Press down lightly and evenly on the brake roller in order to avoid compressing the paper cards or the urethane compound. Tighten the two screws.
6. Shuffle the cards to test for proper operation.
7. If the cards will not feed smoothly, the setting is too tight. If multiple cards pass through the rollers at the same time, the setting is too loose. Readjust the setting.
8. Shuffle the cards to test for proper operation.

Adjusting the Aluminum Brake Roller Assembly (Plastic Cards)

1. Remove the Input and Output trays.
2. Locate the aluminum Brake Roller directly under and in front of the moveable card weight.
3. Loosen the two screws that hold the roller by inserting a 3/32" hex wrench through the access ports in the rear panel.
4. Place the appropriate Brake Roller Shim (available from Scientific Games) between the lower drive Roller and the upper brake Roller.



- Shim #F1106 - .020" Thickness
- Shim #F1107 - .015" Thickness

5. Press down firmly and evenly on the Roller. Tighten the two screws.
6. Shuffle the cards to test for proper operation.
   If the cards will not feed smoothly, the setting is too tight. If multiple cards pass through the Rollers at the same time, the setting is too loose. Readjust the setting.
7. Shuffle the cards to test for proper operation.

i-Tools Diagnostics

Bally Technologies has created the i-Tools Diagnostic Utility which contains several useful features, such as uninstalling unnecessary card deck files, calibrating touch screen accuracy, observing stored image data or viewing Error image data after the *i-DEAL*™ Linux Shuffler reports a misread card. The images are available directly on the shuffler's touch screen display!

The i-Tools utility is contained within a USB flash drive that is inserted into the USB port on the *i-DEAL*™ Linux Shuffler, located to the right of the two RJ-45 network ports.

To access the i-Tools menu:

With the power turned on to the machine:

1. Insert the memory device into the shuffler's USB port.
2. Touch ☐ on the Media Insertion display.
3. Enter the General password in the displayed keypad.
4. Touch Run.

The i-Tools menu will be displayed.

The About button provides the i-Tools software version number.

Camera Diagnostics

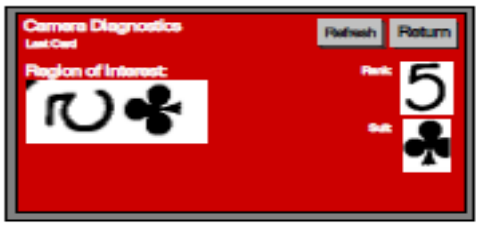
To access the Camera Diagnostics:

1. Touch ▶ CAMERA DIAGNOSTICS.

The Camera Diagnostics menu appears.

2. Touch the desired ▶ button to access each menu selection.

Last Card provides the Rank, Suit and Region of Interest images of the card that most recently passed over the camera.



After inserting another card or completing another shuffle, touch Refresh to view that last card.

Touch Return to return to the Camera Diagnostics menu.

Learned Images provides the stored Tuned image data for the current deck as a result of the tuning process.

Touch Return to return to the Camera Diagnostics menu.

Error Images provides the Rank, Suit and Region of Interest images for the 10 most recent card recognition errors. The images depict what the camera "saw", resulting in the recognition failure.

Touch the ◀Back and Next▶ buttons to page through the available images.

Touch Return to return to the Camera Diagnostics menu.

Clear Error Images (i-Tools Version 1.0.010, and later) will cause all of the currently stored Error Images to be deleted from memory.

Touch "▶ Yes, clear all error images" to delete the images.

On the following display, touch "▶ Done" to confirm that the images have been deleted.

Live View will present a live camera image of the card that is currently within its focus range. This is helpful for camera focus or card positioning determination.

Unfocused Image Shown

Touch Return. A message will appear stating, "Waiting for Card Rec to re-initialize. This takes about 10 seconds." The Camera Diagnostics menu screen will then be displayed.

Board Info

The Board Info display provides information about the main printed circuit Controller Board including the Type, Revision number and the unique individual identification number.

Network Info

The Network Info screen displays current IP and MAC address information. Changes cannot be made here to the information displayed.

History

The History screen displays cumulative statistical information and settings including the number of times the *i-DEAL*™ has been turned on (Power Ups), the total number of shuffling cycles and the number of Invalid Decks that have been identified since the previous resetting of the statistics (Clear).
As they are identified, Missing and/or Extra cards will be tallied in the Card Logs items.

Touch the ◄Back and Next► buttons to page through multiple screens of information.

Save To USB Drive

(i-Tools Version 1.0.009, and later). The 'Save' operation allows the History file to be saved onto the currently inserted i-Tools USB drive, or to a different USB drive. The History data can then be viewed through the normal file system and applications on a standard PC.

Touch ► 'Save To USB Drive' on the i-Tools Menu.
If the History file is not going to be saved, touch ► 'No' to return to the i-Tools main menu.

To save the ► file to the current USB drive:

1. Touch 'Yes, save data'.

To save the file to a different USB drive:

1. Remove the current USB drive and insert the new drive.
2. Then touch ► 'Yes, save data'.

In both cases, the data is saved within a date and time stamped directory folder. The name of the folder appears on the display.

The USB drive can now be removed from the shuffler.

1. Touch Return to return to the i-Tools menu display.

Uninstall Decks

i-Tools has the ability to perform an "intelligent search" that will assist a Technician when it becomes necessary to delete or uninstall one or more deck files.

Search for Decks to Uninstall

1. If you know the exact SID number of the desired deck, touch to type the number into the display. Touch Find.

2. If you do not know the exact SID number, type in a word or partial number of the deck that you want to uninstall. It is not necessary to type the complete name or full number. Touch the Find button.
3. In the next screen, Deck Search will list all deck names that contain the partial string you have typed, "Gem" in this example, with the notation that this is "Page 1 of #".
4. Touch the Page Up and/or Page Down buttons to scroll through the entire list.
5. When the desired deck appears in the list, touch ▶ next to the description.

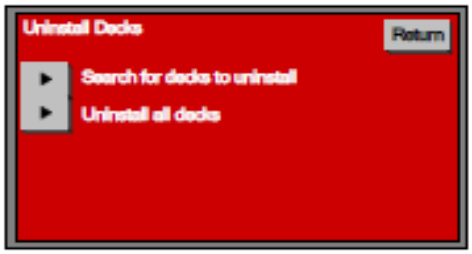
6. In the Installed Deck screen, touch ▶ to uninstall the deck.

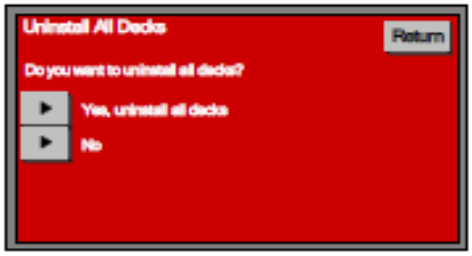
The Deck List screen will reappear and the description of the uninstalled decks will be blank. If additional decks are to be uninstalled, touch the appropriate button next to the deck description to repeat the process.
If no other decks are to be uninstalled, touch Return to page through the displays in reverse order. On the i-Tools menu screen, touch Quit to exit.

Uninstall All Decks

As shown, it is possible to uninstall ALL DECKS currently stored in the Card Recognition system.

After touching ▶ 'Uninstall all decks' the operator will be asked to confirm the choice to uninstall all decks.

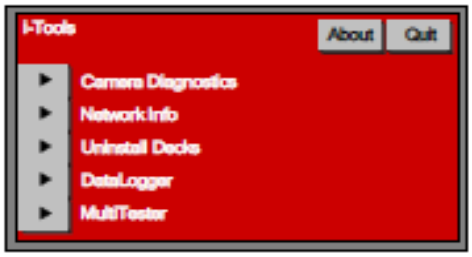




DataLogger

As of the date of publication of this manual version, the functionality of the Data Logger diagnostic tool does not operate. Future development will be required to make Data Logger fully functional.

The default state of the Data Logger is 'OFF'. Data Logger should be activated only when instructed by qualified personnel.



MultiTester

MultiTester is a feature within i-Tools that is operated by Bally Technologies' Manufacturing and Quality Control Engineers that allows a series of tests on the electronic components of Bally Technologies' *i-DEAL*™ Linux shuffler.

MultiTester is not generally considered appropriate for use by field Technicians.

Calibrate Touch Screen

Calibrate Touch Screen provides the ability to easily test and adjust touch screen accuracy without the need to remove covers or reset internal DIP switches within the shuffler. See Page 45 for manual Touch Screen Calibration instructions.

To Test the Touch Screen:

1. Touch ▶ 'Calibrate Touch Screen' on the i-Tools menu display.

2. Touch ▶ 'Touch Screen Test'. The Touch Screen Test window will be displayed.

As instructed, touch the screen at several points with a stylus. The displayed '**X**' should move directly under the point of the stylus.

Touch Return to return to the Calibrate Touch Screen display.

Technical Bulletins

i-DEAL™ Shuffler Series

An upgrade is being made to the Speed Up Rollers on the i-Deal™ single-deck card shuffler in order to prevent card jamming as the cards are moved through the speed up rollers and into the card magazine wheel.

Previously, when shuffling plastic cards, the MD2245 rollers were found to swell over time, causing the Speed Up motor to stall. The new rollers, Part #: AA1423, are smaller in diameter and consist of a different urethane compound. As a result, swelling has been eliminated and this upgrade is to be phased into all i-Deal™ shufflers, whether using PAPER OR PLASTIC CARDS.

IMPORTANT: **The AA1423 rollers are not interchangeable with the MD2245 rollers** and should only be used as Speed Up Rollers in the i-Deal™ shuffler. The new rollers are yellow in color so that they can be distinguished from the MD2245 rollers that remain in use in other assemblies within the i-Deal™ shufflers.

Figure 1 shows the positions of the AA1423 rollers.

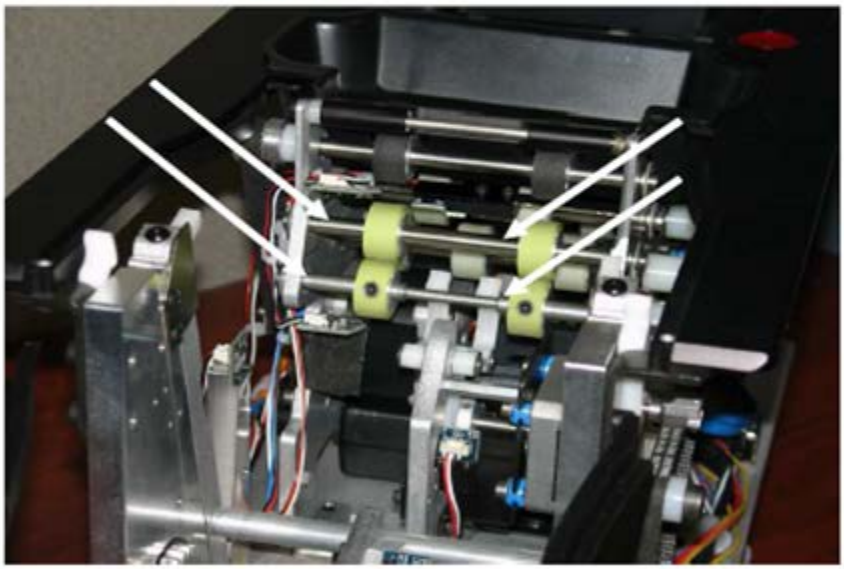


Figure 1

Note: This change is not immediately required for all machines. The exchange should be made during routine preventive maintenance when it becomes necessary to change the forward rollers due to obvious swelling and/or card jamming.

i-DEAL™ Series Shufflers

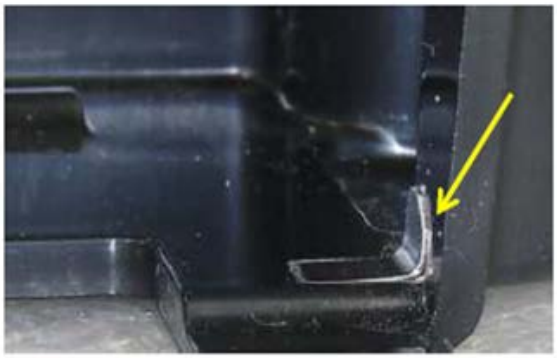
AA1342 Input Tray Assembly Defect Notification

A number of AA1342 Input Tray Assemblies for i-DEAL™ shufflers were found to be defective.

As shown in these photos, the metal wear-prevention inserts were not correctly installed. The raw edges of the insert protrude beyond the inside surface of the Feeder Tray, potentially causing **card jamming** when the edges of the cards "catch" against the insert during pickoff.

Examine the Input Tray Assembly on all i-DEAL™ shufflers in the field.

If this defect is found, order and replace any and all defective Tray Assemblies, as soon as possible.



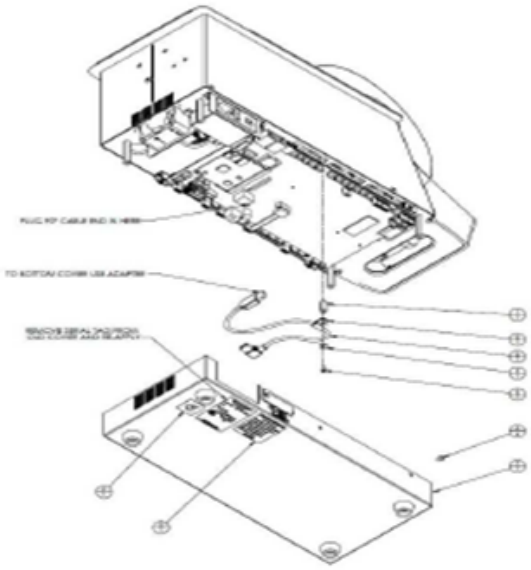
i-Deal® Linux Shuffler Series

Optional USB Port Update; Part Number 250348

i-DEAL Shufflers in the field have incurred repetitive damage to the USB port that is mounted on the Printed Circuit Board. Failure of this port requires replacement of the entire Printed Circuit Board (PCB).

To prevent the expense of replacing the entire PCB, an update kit is available that provides a USB Port Adapter mounted directly to the Bottom Cover. Once installed, future damage to the USB port will require replacement of the Adapter, only.

Part Number: 250348; Kit, USB Port Update, IDEAL



Item No.	QTY.	Part No.	Description
1	1	P2064	Standoff, 4-40 X 3/4, 1/4 Hex, M/F Steel
2	1	P1199	Clamp, Harness, 3/16
3	1	E1599	Cable, USB, Right Angle, 16 IN
4	1	P1388	Washer, Flat, .125 ID, .375 OD, .060 TK
5	1	P1045	SHCS, 4-40 X 3/8
6	4	P1117	BHCS, 8-32 X 1/4
7	1	AA1466	Cover Assembly, Bottom, W/ USB
8	1	Z1234	Label – Warning, Shock, Fuse
9	1	LR1468	Label, CE

Technical Bulletin

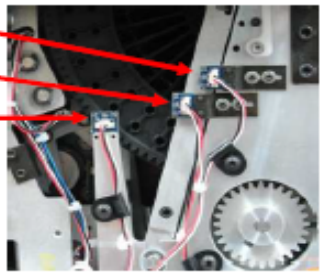
i-DEAL™ Shuffler Series

Hall Effect Switch Shielding Upgrade

** This is a MANDATORY UPDATE for all i-DEAL™ and i-DEAL™ Linux version shufflers currently in service. **

An outside influence has been identified that has the potential to affect proper operation of the Hall Effect switches on the i-DEAL™ series shufflers. Most importantly, those switches are the:

- Unloader Home Switch
- Unloader Working Switch
- Wheel Home Switch



This bulletin provides instructions for the installation of a component to designed to eliminate that effect, Part Number AA1446, Plate Assembly, Mag Stop.

Order a quantity of the Mag Stop Plate Assemblies that will be sufficient to allow this update to be completed on every i-DEAL™ shuffler in your Service area.

Procedure:

1. Turn 'Off' the power to the shuffler.
2. Remove the Left-Hand Cover (AA1240).
3. On the inside surface of the cover, locate and mark the installation position for the Plate Assembly, as shown on Page 2. Use of a bullet-point permanent marker is recommended.

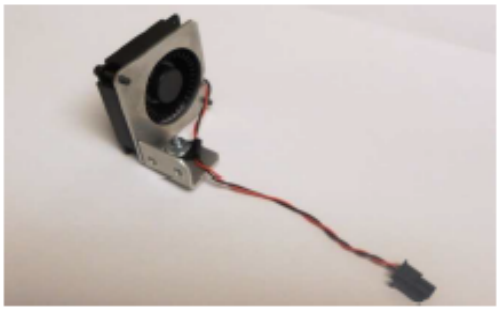
   Measurements are in inch increments.

Field Instructions

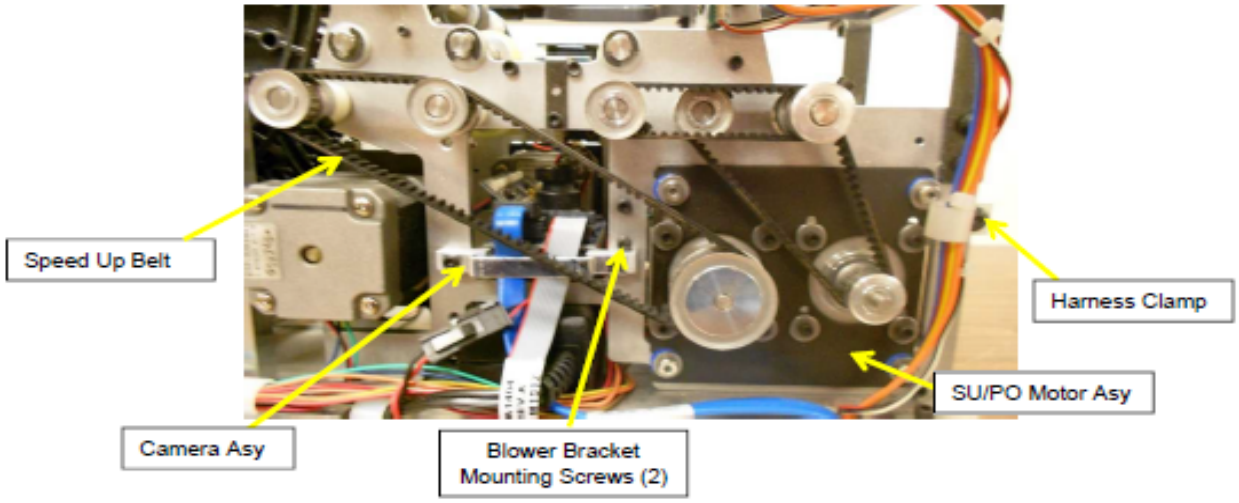
Part No. 258283

i-Deal™ Shuffler Series

i-Deal™ Camera Blower and Speed Up Belt Upgrade

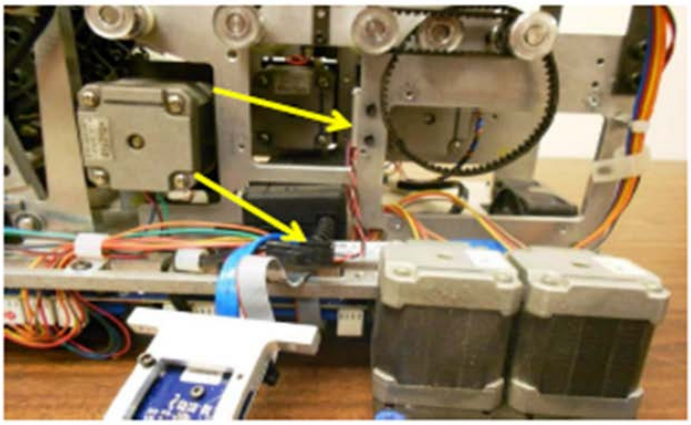


1. Remove and set aside the Left and Right Covers.
2. Remove the Harness Clamp (P1546), Speed Up/Pick Off Motor Asy (AA1062) and Camera/Bracket Asy (AA1392). Set aside.
3. Remove the Blower Bracket, Fan Assembly (AA1308 & AA1317) and Speed Up Belt (P1890). Discard them.

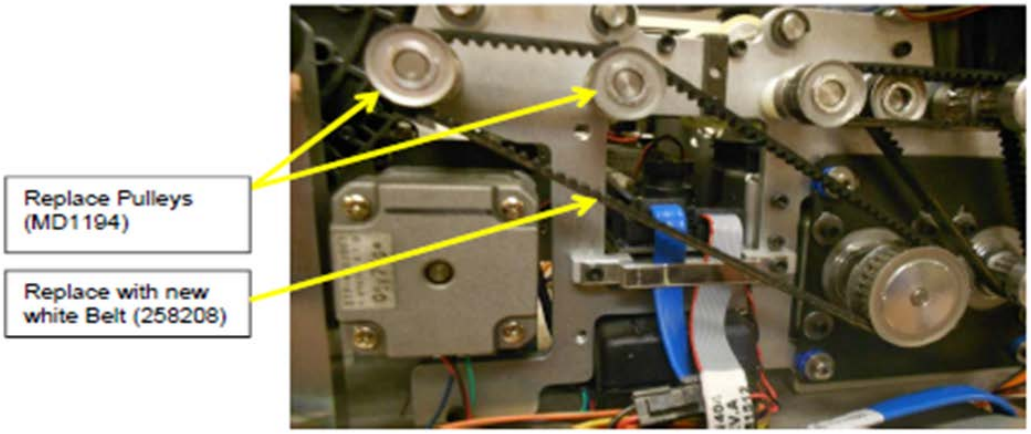


Field Instructions

4. Install the new Bracket/Blower Asy (257982), reusing the old mounting screws. Plug the wire Harness into the same Socket where the old Blower was connected.

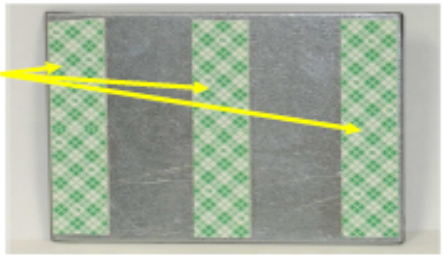


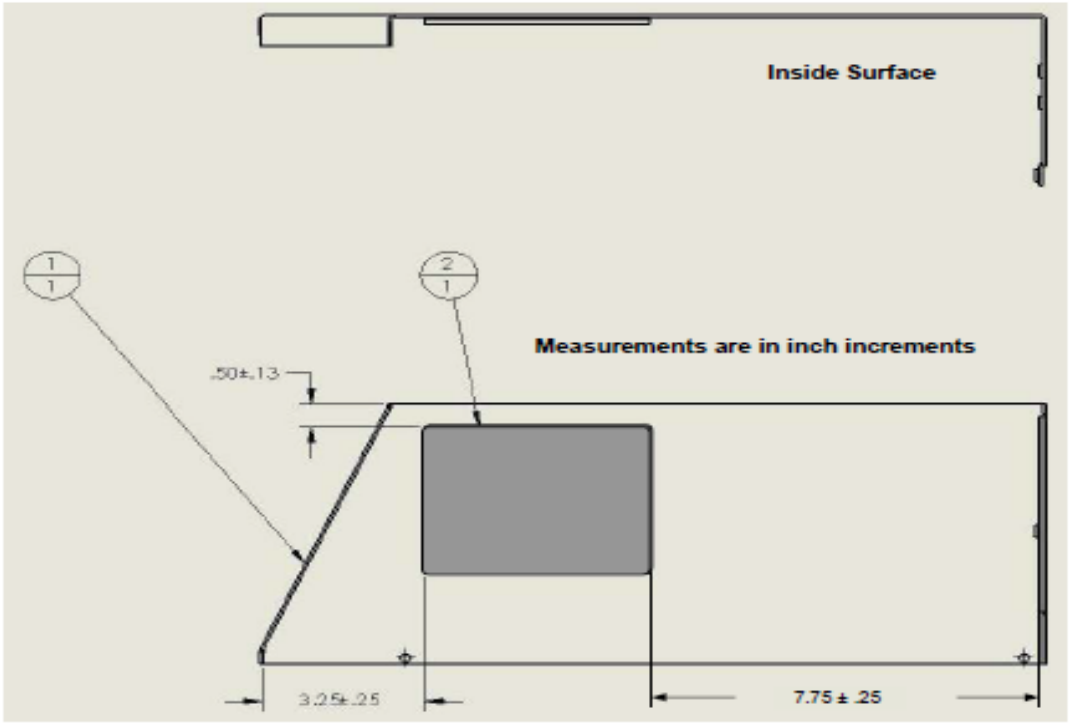
5. Clean the Camera Lens and LEDs.
6. Route the Blower wires below the Camera Bracket.
7. Reattach the Camera/Bracket Assembly (AA1392).
8. Replace the existing Speed Up shaft pulleys with 2 new Pulleys (MD1194).
9. Attach the Speed Up/Pick Off Motor Asy (AA1062), new Speed Up Belt (258208) and the Harness Clamp (P1546). The new Speed Up Belt will be white. (Old belt shown below).



Technical Bulletin

4. Remove the cover paper from the adhesive that is attached to the Plate. Do not remove the adhesive.
5. Position the Plate Assembly with the adhesive strips placed against the inside surface of the Cover.
6. Press the Plate to adhere it to the Cover.
7. Reinstall the Cover.





ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	AA1240	1	COVER, LEFT
2	AA1446	1	PLATE ASSEMBLY, MAG STOP

Tech Tip

Deck Mate, MD2, MD2-CR, MD3 and i-Deal

Procedure to test the 24vdc power supply

The MD2, DM and the first generation i-Deal shufflers have been in operation for several years.

If you are experiencing intermittent problems with any of the above listed shufflers and the shuffler operates with no obvious symptoms, it is possible the cause could be a weak or bad power supply. Symptoms may show after the shuffler warms up or soon after being turned on.

The procedure below is a simple way to check the power supply.

Tool needed: Multi-meter

Checking the 24vdc power supply output with no load.

1. Turn off power to the shuffler.
2. Remove the power supply angled connector attached to the motherboard. (for the i-Deal, remove the bottom cover first.)
3. Connect the meter leads to your meter. Black to COM and Red to Vma.
4. Turn power on your meter and set the range to 200 DCV.
5. Touch and hold the black meter lead to the outer metal ring of the power supply connector.
6. Carefully touch the red meter lead to the inside metal of the connector without touching the leads together to cause a short.
7. Verify the VDC reading on your meter.
8. Anything below 23vdc is considered bad and the power supply needs to be replaced.
   A new or good power supply should read up to around 24.5vdc.

Replacing the power supply may or may not correct any problems but having good power is required for reliable operation of these shufflers.

Overview

The side plates, wheel shafts, and the drive gear in *i-Deal*® and *i-Deal*® Linux shufflers may require replacement after five or more years of extended use. Not replacing the kit may result in cards frequently jamming into the wheel, the wheel moving side-to-side, and obvious wearing down of the side plate and wheel shaft.

Figure 1 Wheel mount parts

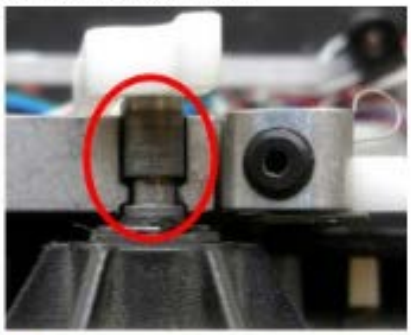
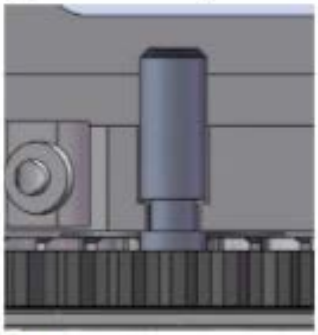


Figure 2 Wheel mount parts



NOTE

This bulletin does NOT pertain to the i-Deal™ plus shuffler.

Affected Parts

Refer to Figure 3 and Table 1 for a diagram and a description of the affected parts.

Figure 3 Wheel mount assembly diagram

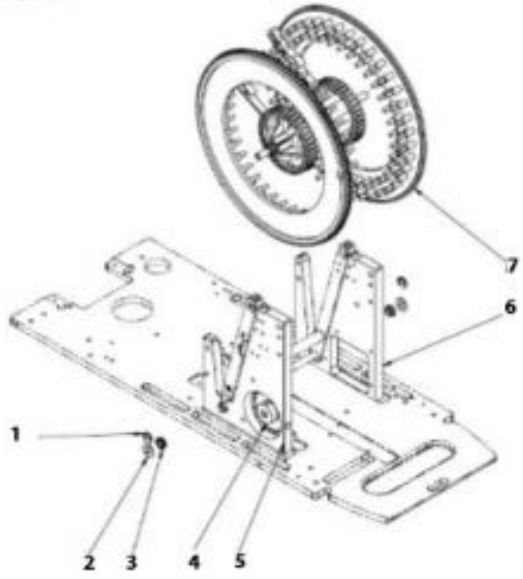


Table 1 Wheel mount assembly parts list

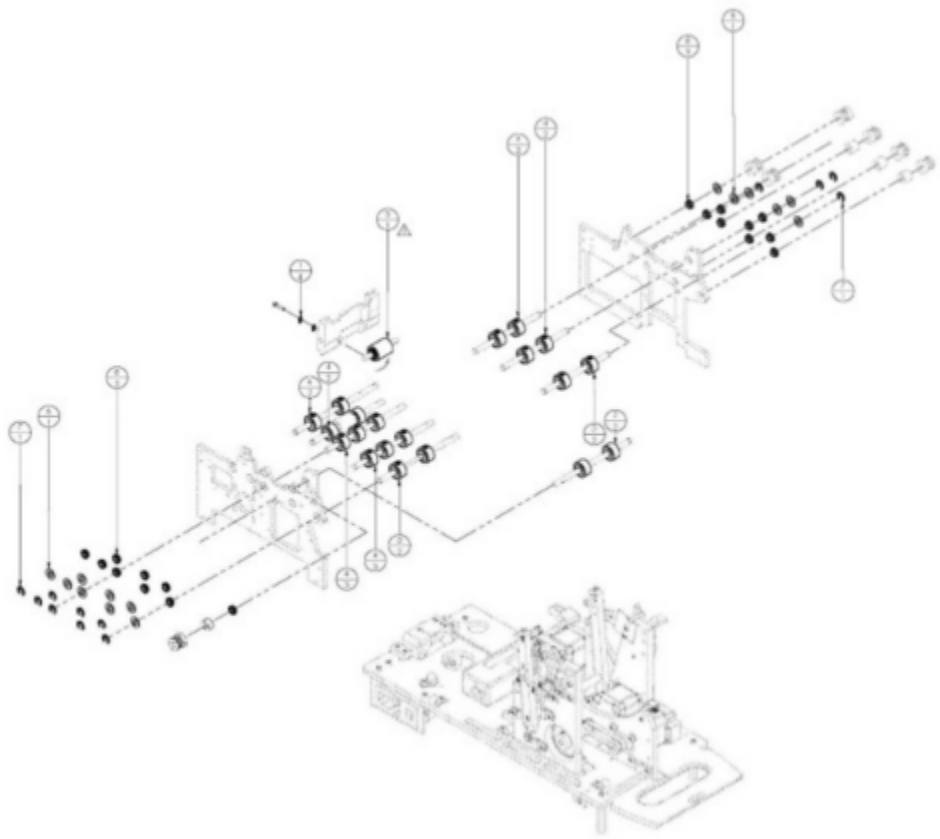
Item Number	Part Number	Description	Quantity
1	P1879	Ring, E 6mm	2
2	P1322	Washer, Nylon .253 ID, .506 OD 32 THK	2
3	P2246	Bearing, FLNG.25 ID, .375 OD SHLD W/ Grease	2
4	AA1125	Gear, 28T	1
5	AA1013	Wheel Mount, LH	1
6	AA1012	Wheel Mount, RH	1
7	AA1305	Wheel Assembly	1

Action (Recommended)

Order replacement i-Deal Wheel Mount kit (part number: 1489151) as needed. Replace all kit parts. Re-calibrate the Wheel Load and Unload offsets.

Roller Kit

Roller and Bearing Kit, *i-DEAL*
Part No. 249161



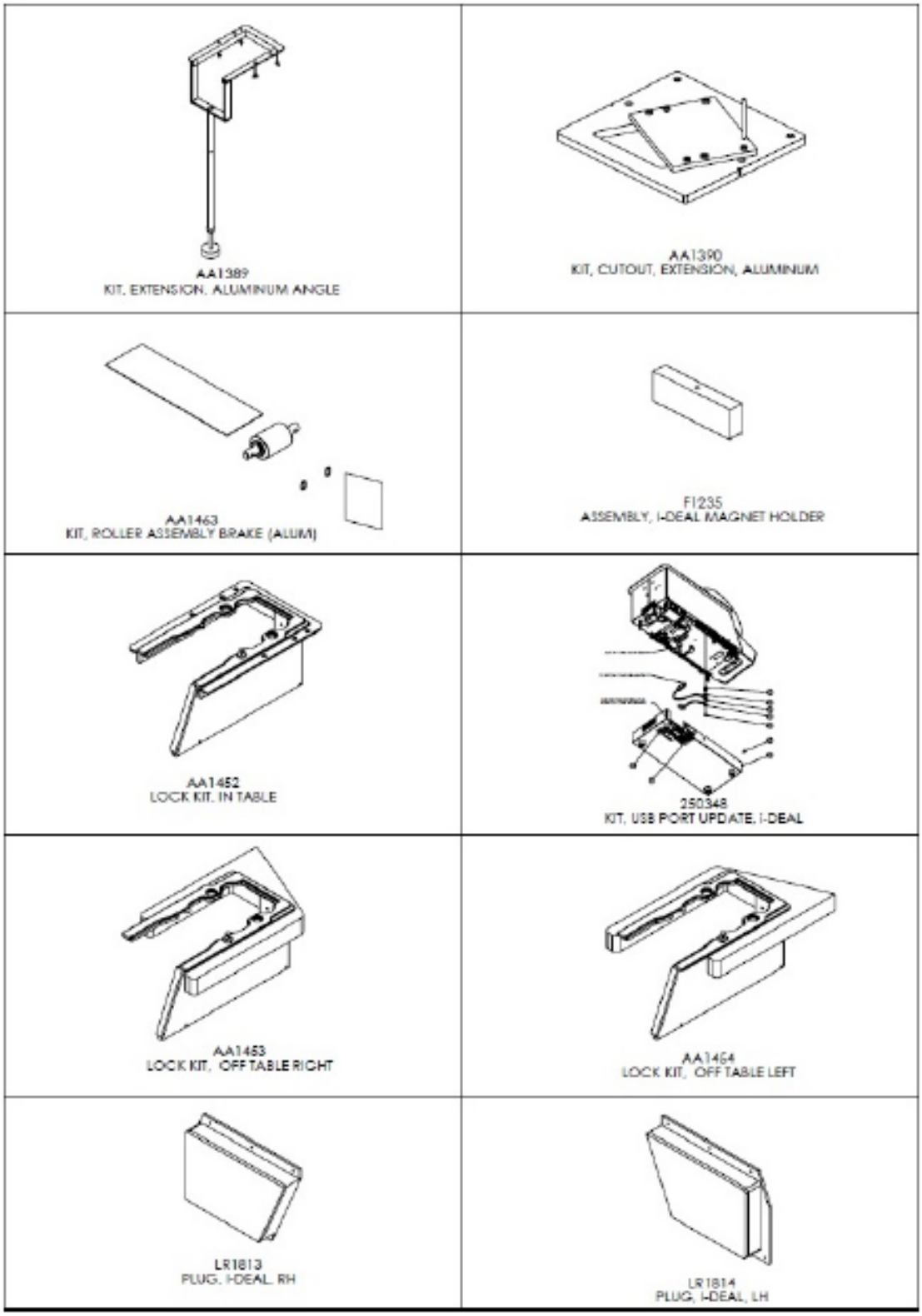
Items No. 9 and No. 10
Not Shown

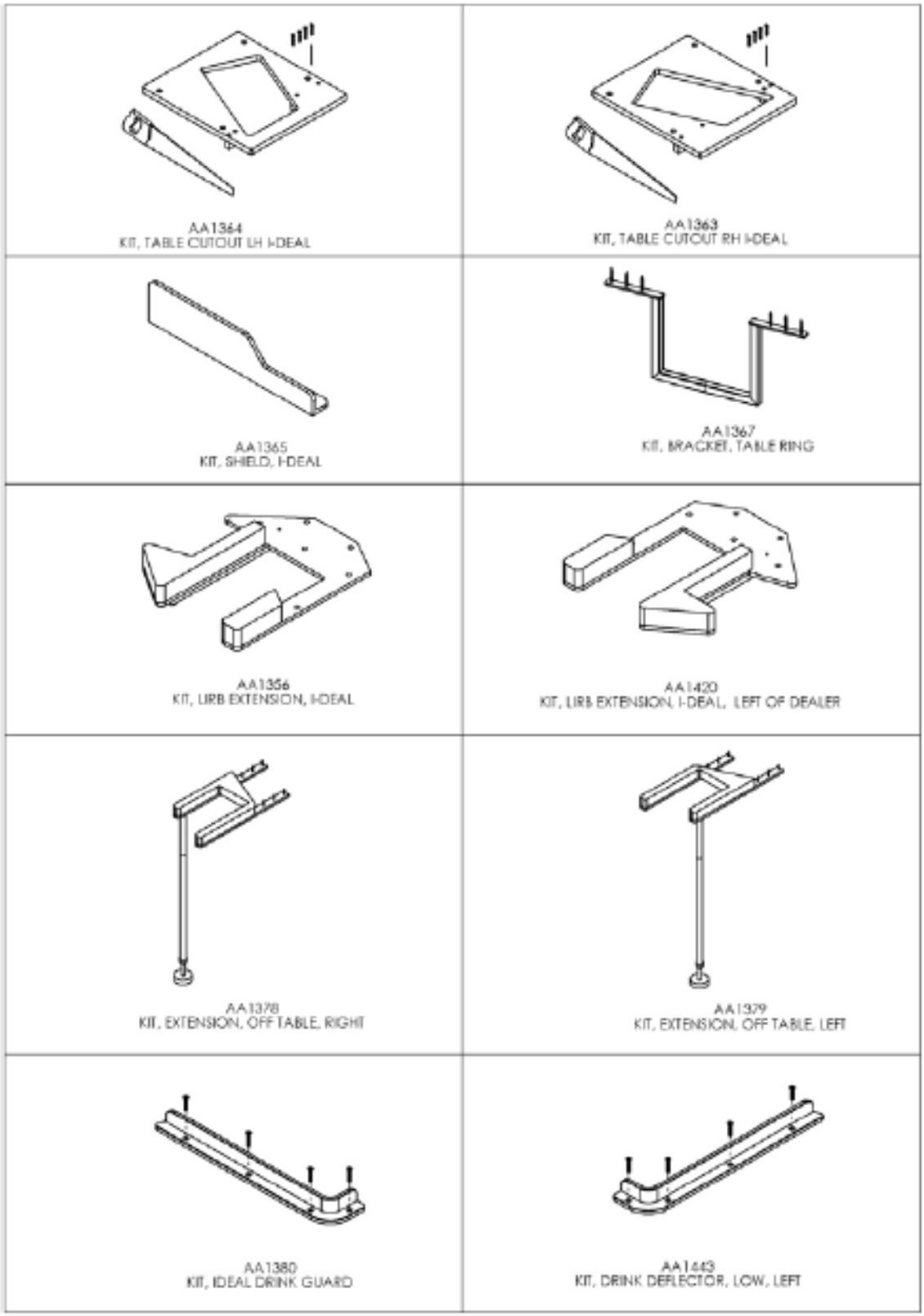
ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	AA1222	4	Washer, Slotted
2	AA1316	2	Roller 3/4 OD, 1/4 ID, 7/16 LG (Black)
3	AA1423	4	Roller 3/4 OD, 1/4 ID, 7/16 LG (Yellow)
4	MD2245	14	Roller 3/4 OD, 1/4 ID, 7/16 LG
5	MD2248	1	Roller 3/4 OD, 7/16 ID, 1 LG
6	P1322	2	Washer, Nylon, .253 ID X .506 ID X .032 THK
7	P1879	2	Ring, E 6mm
8	P2246	18	Bearing, Flng, .253 ID, .375 OD, SHLD W/ Grease
9	P1045	2	SHCS, 4-40 X 1/4
10	P1117	9	BHCS, 8-32 X 1/4

Recommended Spare Parts List

Part Numbers	Description	1 to 5 Machines	6 to 19 Machines	over 20 Machines
MD 2245	Drive Rollers 3/4 od, 1/4ID, 7/16LG	13	52	104
AA 1316	Roller, 3/4OD, 1/4ID, 7/16LG, Blac	2	8	16
MD 2248	Brake Roller Assy	0	0	2
AA 1305	Wheel Assembly	0	0	1
AA 1233	H/E Sw.[all same different harnes	2	5	8
AA 1171	H/E Sw. Card weight home	0	1	2
E 1531	Encoder , E4P Base	0	1	2
E 1532	Encoder, E4P, PCB	0	1	2
AA 1182	CI-CO Emitter	0	1	2
AA 1186	CI-CO Receiver	0	1	2
AA 1172	Reflective Sensor	1	2	4
PA 1050	Platform Card Present Sensor	0	1	2
AA 1169	Camera Triger Emitter	0	1	2
AA1168	Camera Trigger Receiver	0	1	2
E 1369	Feeder Card Present Sensor	0	1	2
AA 1213	Green Start Switch	0	0	1
AA 1214	Red Start Switch	0	0	1
AA 1176	Card Weight Motor	0	1	2
AA 1262	Pickoff Motor	0	1	2
AA 1263	Speed Up Motor	0	1	2
AA 1178	Ejector Motor	0	1	2
AA 1163	Packer Motor	0	1	2
AA 1261	Output Motor	0	1	2
AA 1249	Wheel Motor	0	1	2
AA 1327	Personality Board	0	0	1
MD 2215	CPU Board	0	0	1
MD 2216	I-O Board	1	3	8
GM 1148-03	Rabbit Board	0	1	2
GM 1094	Camera Light Board	0	0	1
AA 1099	Ejector	0	2	4
AA 1170	Ejector Spring	0	2	4
AA 1223	Wheel Clamp	0	1	1
P 1811	Magnet .250X .250	4	8	12
P 1928	Magnet 3/8 X .10 Thick	4	8	12
Additional parts needed for Linux Model				
AA1434	PCB, SOM Programmed	1	2	2
AA1361	Display Assembly, LG 4.3	1	2	2
PA1059	PCBA, Monochrome Camera	1	2	1
PA1060	PCB, i-Deal Control	1	2	2

Optional Spare Parts





AA1364
KIT, TABLE CUTOUT LH I-DEAL

AA1363
KIT, TABLE CUTOUT RH I-DEAL

AA1365
KIT, SHIELD, I-DEAL

AA1367
KIT, BRACKET, TABLE RING

AA1356
KIT, LIRB EXTENSION, I-DEAL

AA1420
KIT, LIRB EXTENSION, I-DEAL, LEFT OF DEALER

AA1378
KIT, EXTENSION, OFF TABLE, RIGHT

AA1379
KIT, EXTENSION, OFF TABLE, LEFT

AA1380
KIT, IDEAL DRINK GUARD

AA1443
KIT, DRINK DEFLECTOR, LOW, LEFT

Troubleshooting

Symptom	Cause	Remedy
Invalid deck message after "successful" tune	Poor images in i-Tools Camera Diagnostics views	Focus camera and retune card deck
Images misaligned in i-Tools Camera Diagnostics views	Debris on calibration plate	Remove and clean underside of calibrate plate. Replace plate.
Multiple missing and unknown cards	Set to wrong c type	Verify card type using Playing Card Reference book or contact SMI
	Tuned with wrong card type	View images in i-Tools Camera Diagnostics and retune if necessary
	Camera is out of focus	Re-focus the camera
Will not feed cards	Dirty pic off rollers	Clean rollers with 90% isopropyl alcohol, or better
	Brake roller gap is too small	Adjust brake roller gap to be loose with one card and tight with two cards
	Faulty Camera Trigger Sensor	Clean, adjust or replace sensor
At power up, white display shows SMI logo, then turns black w/ an 'X', then turns and stays white; no logo	Faulty jumper harness from pin 19 to pin 56	Re-seat or replace jumper harness
	Faulty jumper harness from pin 38 to pin 39	Re-seat or replace jumper harness
	Un-programmed, loose or faulty SOM PC board	Program, reseat or replace SOM

Resources

- *i-Deal*™ *Linux* Service Manual
- *i-Deal*™ *Linux* User Manual

Additional information

Contact Scientific Games at:

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