# American Changer

1400 NW 65<sup>TH</sup> Place ♦ Ft. Lauderdale, FL 33309

## "AC7700/7800" – BILL TO BILL SERIES CHANGER

### OPERATIONS MANUAL

**Parts & Service: (954)917-5963**

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**Sales: (800)741-9840**

**To order parts only, visit our website:** www.americanchanger.com

**Service Questions? E-mail**: service@americanchanger.com

**Revised April 2015**

Model Number: _____

Serial Number: _____

Tested By: _____

Date: _____

## Specifications

| | |
|---|---|
| Operating voltage | 120VAC +10% to -15% |
| Power consumption | Controller: 10W     Puloon dispenser: 120W max |
| | Validator: 50W max |
| Operating temperature | 32 - 120 degrees Fahrenheit |
| Interface to dispenser | 24VDC, RS232 |
| Interface to validators | 24VDC, MDB |
| Dispenser bill capacity | 80/cassette minimum to 700/cassette maximum |
| Hopper capacity | 100 minimum to 1600 maximum |

## Warranty Information

**A Return Material Authorization number (RMA #) must be obtained before returning a unit for repair.  A copy of invoices must accompany any and all warranty work.**

*It is the end users' responsibility to follow cleaning and maintenance procedures as outlined in the validator manual.*
*Any unit returned for repair requiring only a cleaning will be charged a flat rate plus shipping and handling.*

### Validators

*Validators are warranted for two years from date of purchase.*

### Hopper(s) and/or Dispenser(s) and Logic Board

*These items are warranted for one year from date of purchase.*

**COVERED**
- Manufacturers' defects in workmanship or materials

**NOT COVERED**
- Damage caused by shipping or physical abuse
- Misapplication
- Vandalism
- End users' attempt, on their own, to repair components
- Cleaning and maintenance
- Power surges and lightning strikes

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# SECTION A
# SETUP & INSTALLATION

## Setup

Inspect for any connectors or components that may have been dislodged during shipping. The lock and keys for your changer will be inside the manila envelope along with this manual and other pertinent information. To install the lock, insert the cylinder into the hole in the middle of the T-handle and push until it stops. Turn the key until you hear it "snap." Turn the key counterclockwise ¼ turn and remove the keys.

**NOTE: The only way to get a duplicate set of keys made is to save the tag that comes between the keys. This ID # starts with "AC or ACC ####."**

## Assembling the Changer

**Safety Note: The changer comes almost completely assembled, in a box strapped to a pallet. Care must be taken in unpacking and maneuvering the machine into place. It is not a one-man job.**

**TEST:**
Before permanently installing the changer, do a functional test to verify that there is no shipping damage
to your new changer.

Plug the power cord into a ***dedicated, grounded 120VAC outlet***. **The machine is preset to accept $5, $10 and $20 bills and pay out in $1 bills (unless otherwise specified at the time of purchase).**

Fill the dispenser with a minimum of 80 bills to a maximum of 700 bills. On the Flex board,
turn the switch on the bottom right corner "ON." *The rocker switch has an "I" and "O" printed on it.*
*When the "I" is pressed down, the changer is "ON."*

**MOUNTING A BILL-TO-BILL SERIES CHANGER**

**Front-Load models, which are the model numbers ending in "2", can be mounted either on a base *(sold separately)*, or to a wall. Rear-Load models, which are the model numbers ending in "5", can only be mounted into a wall. The following section describes the steps necessary to mount your Bill-to-Bill Series Changer.**

***IF YOU ARE UNSURE IN ANY WAY IN PROCEEDING WITH THE FOLLOWING STEPS, PLEASE HIRE A LOCAL PROFESSIONAL ELECTRICIAN TO MOUNT YOUR CHANGER FOR YOU!***

1. **Disconnect any and all AC power going into the AC7700/AC7800 Series changer.**
2. **Remove the bill dispenser and coin hopper** *(if installed)* **from the cabinet – the coin hopper slides out, while the bill dispenser requires the removal of 6 screws on its underside.**
3. **Verify with the building code if it is allowable to plug the changer into a 3-prong grounded wall outlet. If not, there must be 120VAC run through a conduit to the changer. If this is not required, proceed to step #5.** *NOTE: Do not use an extension cord unless allowed by the building electrical code!*
4. **Let an electrician run the conduit, install the new breaker, run the wire, and help decide how the wiring will enter the changer (from the back or the bottom). This will affect the mounting location. After the conduit has been installed, proceed with the mounting.**
5. **If using a base,** make sure the base is securely attached to the floor using all f*our* mounting holes provided in its bottom. Inside the changer, pull the slide all the way forward, and locate the four holes in the bottom of the cabinet (see figure below). Carefully place the cabinet on top of the base, and line up the holes. Secure the cabinet to the base by tightening the four ¼" screws provided with the base unit down through the cabinet into the base. Proceed directly to step #11.
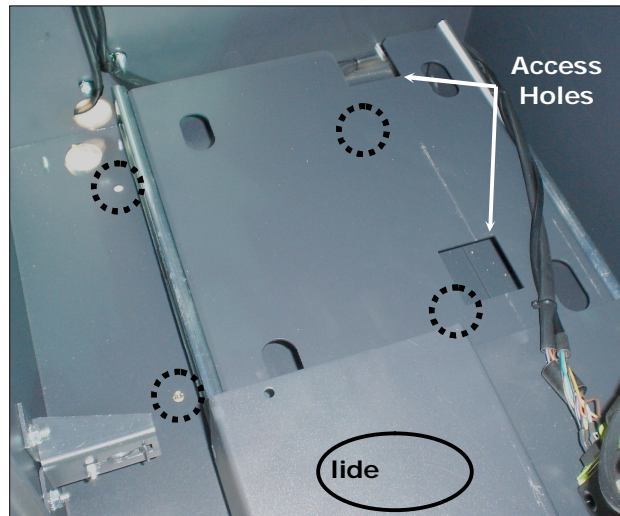


*If mounting to a wall:* Locate the four punch-outs on the back wall of the changer. Using a screwdriver and hammer, knock the punch-outs out by hitting them from the inside of the changer. Continue with step #6.

*If mounting into a wall:* You may either use the four mounting holes provided in the bottom of the cabinet, or drill your own in the bottom and/or sides. If creating new holes, measure and mark them carefully, and then drill them completely before proceeding. Continue with step #6.

6. Find an appropriate wall to bolt the changer into. The wall should be constructed of concrete, or at least have wooden studs. You may also be required to use a support brace under the changer. Consult a professional with any questions you may have.

7. For a studded wall, select the mounting points for the changer by using a stud finder. *NOTE: When choosing a height to mount the changer, keep in mind that a handicapped person in a wheelchair should still be able to insert a bill into the bill validator. (We recommend no higher than 4 feet above the ground.)*

8. Have someone hold the changer in place, in or against the wall, while someone else marks the holes. *CAUTION: THE CHANGER WEIGHS WELL OVER 100 POUNDS; DO NOT EXERT YOURSELF SO THAT YOU CAUSE AN INJURY.* **NOTE: Securing the Changer using less than <u>all four</u> holes or welded angle iron may be dangerous. The changer must be bolted securely to the wall. Mounting it in any other way may result in the changer being torn out or falling off of the wall, resulting in personal injury along with electrical shock.**

9. Put the changer down, and drill the holes. **<u>*CAUTION: ENSURE THAT THERE ARE NO ELECTRICAL WIRES, TELEPHONE LINES, GAS, OR WATER LINES BEHIND THE WALL WHICH DISRUPTING MAY CAUSE PERSONAL INJURY OR LOSS OF LIFE!*</u>**

10. Hold the changer back in its final mounting place. Thread and tighten the bolts.

11. Verify that the machine is securely mounted, and then reinstall the bill dispenser and coin hopper *(if installed)*.

**Figure 2 – AC8001-FLXPBD Flex Programmer Board**
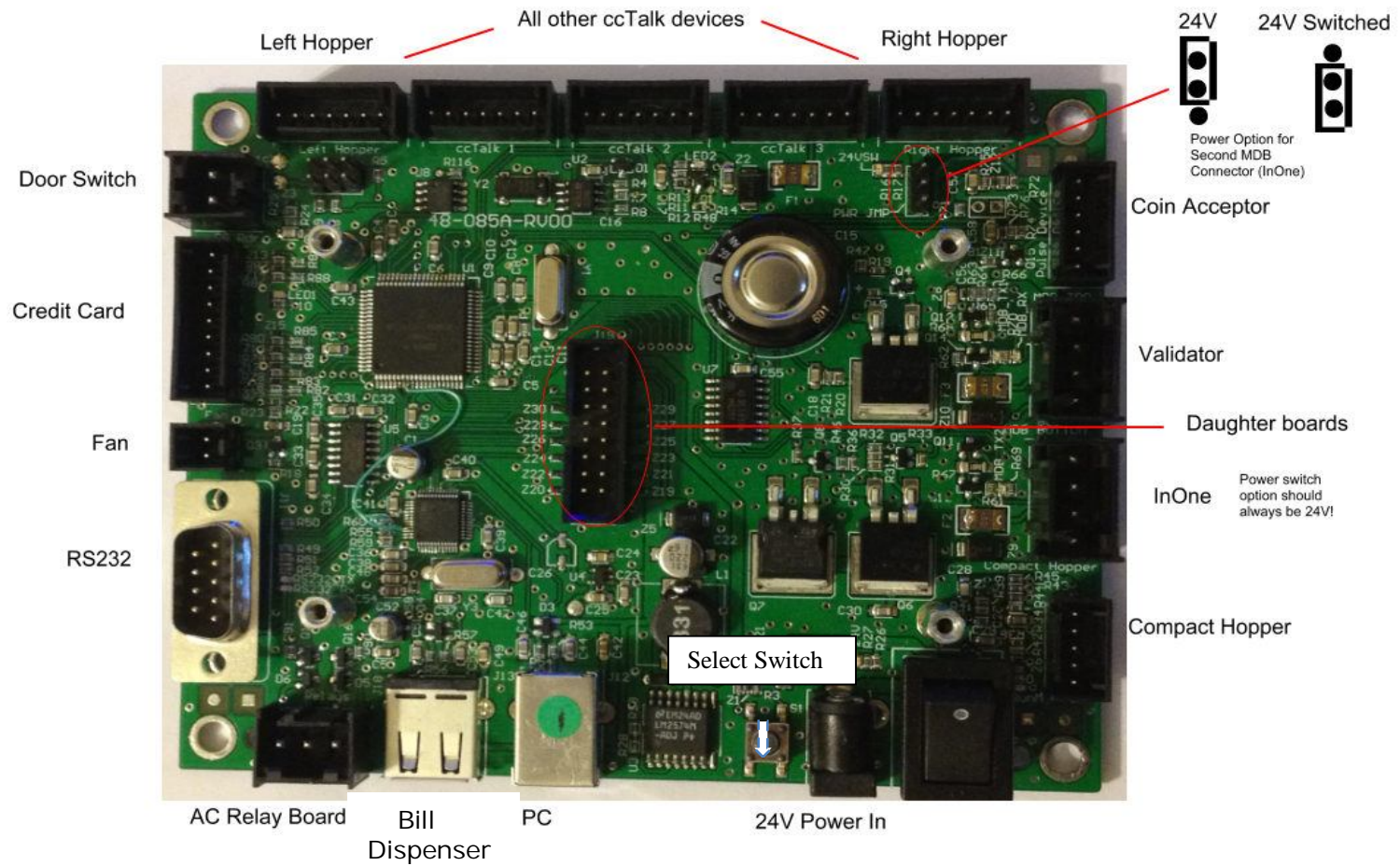
**Figure 3 – AC8001-FLEXBD Main Logic Board**

# Programming the AC7700/7800 series Bill to Bill Changer

The configuration menu can be accessed only with the handheld programmer.
In order to use the Handheld programmer follow these steps:
1. Turn the machine off
2. Remove the external display from the mount by removing the four wing nuts.
3. Pull the external display out and turn the machine on.
4. Press the **Select Switch** on the Flex board (figure 3), you will be prompted to enter an access code, enter "1234" to get in the programming mode.
5. Navigate to menu 23 and input the quantity of bills loaded in the upper cassette. If using sensors this should be set to "000". If the machine only has one cassette this will be the one to be set. When finished press "Exit" to save the changes.
6. Navigate to menu 24 and input the quantity of bills loaded in the lower cassette. If using sensors this should be set to "000". When finished press "Exit" to save the changes.
7. Navigate to menu 25 and input the value of the bills loaded in the upper cassette. For $1 bills enter "001" for $5 bills enter "005" etc. When finished press "Exit" to save the changes.
8. Navigate to menu 26 and input the value of the bills loaded in the lower cassette. For $1 bills enter "001" for $5 bills enter "005" etc. When finished press "Exit" to save the changes.
9. Turn the machine off and disconnect the hand-held device and reconnect the external display.

Pressing the select switch again will get the user out of the menu mode.

Use the keypad to enter the menu number or press the **Back/Next** button to step through the menus.
All the menus work the same:
**No/Yes**: Selects status
**Back/Next**: Selects the item
**Exit**: Exit the setup menu

## 01- Print Help Menu
Prints the menu index

## 02- System Information
Prints the payout information and configuration settings. The following information is also included on the System Info Printout.

| | | |
|---|---|---|
| Software Revision | | |
| Coin Acceptor Status | Validator Status | Hopper #3 Status |
| Credit Card Status | Zip Code Option Status | Hopper #4 Status |
| Printer Status | Hopper #1 Status | Bill Disp. Status |
| Temperature | Hopper #2 Status | IP Address |

## 03-- Button Price
Select the value for selection 1 thru 4. **Not used in this model. Do not set.**
For machines without a keypad these will all be set to $****.**

## 04- Button Payout
Setup payout count for the 4 selection buttons. **Not used in this model. Do not set.**
For machines without a keypad these will all be set to *****

## 05- Enable Bills
Selects which bills to accept and reject. This will only display bills the validator can accept.

## 06- Payout Table
Only bills enabled in menu 05 will be available in this menu. Enter the number of items to be paid for each bill type. **Use this option to set how many of each bill type are paid out for the different denomination of bills inserted. Use the photos below for reference.**
Press the button under the "Select" option to enter the payout table menu. Here you will enter the quantity of bills to be dispensed from each cassette for each denomination of bill being accepted. To set the quantity of bills to be dispensed from each cassette for a $10 bill do the following. Press the next button until $10 is shown on the display. Press the button under "Hop1" until "CasU" is displayed. Using the numbered buttons enter the quantity of bills to be dispensed from the upper cassette. Press the button under "CasU" until "CasL" is displayed and enter the quantity of bills to be dispensed from the lower cassette using the numbered buttons. Press the button under "Exit" to save the changes.

**07- Enable Hoppers**
Enable hoppers 1,2,3 and 4. If using a hopper only hopper 1 will be enabled.

**08- Hopper Coin Values**
**Use only for different value coins in each hopper. Not used for this model.**
Hopper 1= Left hopper          Set value of coin to be dispensed from $000.00 to $999.99
Hopper 2= Middle hopper     Set value of coin to be dispensed from $000.00 to $999.99
Hopper 3= Right hopper        Set value of coin to be dispensed from $000.00 to $999.99
Hopper 4= Future use
If the same coins are to be dispensed from both hoppers press the "*" on the keypad for all hopper selections.

**09- Enable Coin Acceptor**
Enable/disable the coin acceptor
This will also set which coins are accepted and rejected. This only shows the coins the acceptor is programmed to accept.

**10- Change Payout**
Set the payout for coins accepted

**11- Promo Token Payout**
Enter the # of items paid for each token type by using the keypad.

**12- Dump Hoppers**
Dumps the coins from all hoppers.

**13- Audit Information**
Prints a summary of all the sales. There are separate counters for credit cards and items/change dispensed from hoppers 1 and 2.
**Reset:** Prints 2 copies of all the audit values and resets all the "**Resettable Counters**" to 0.
Every time **Reset** button is pushed the audit sequence number increases by one.
**Print: Pushing** the **Print** button prints all the audit values without resetting.
All the values are max 99,999 except for the **Total Cash** value which is $100,000.00.

**14- Vend Item Name**
Choose from Items, Tickets or Tokens

**15- Date Setup**
Enter the date in this format  YY-MM-DD

**16- Time Setup**
Enter the time in this format: HH:MM. 24 hour format.

**17- Machine Number**
Use the keypad to enter the machine number.

## 18- Marquee Timer
Setup the time to turn on/off the marquee. **Not used for this model.**

## 19- Zip-code Enable
Enable or disable the zip-code verification feature

## 20- Access Code
Reset the access code for entering the program function.

## 21- Key Beep Enable
Enable/disable beep when keys are pressed.

## 22- Location Name
Set the name of the location to be printed on the credit card receipt.

## 23- Bills Loaded Cassette High
Set the quantity of the bills loaded in the top cassette. If using sensors this should be set to 000.

## 24- Bills Loaded Cassette Middle
Set the quantity of the bills loaded in the bottom cassette. If using sensors this should be set to 000.

## 25- Bill Value Cassette High
Set the value of the bill to be dispensed from the upper cassette. For $1 bills enter "001" for $5 bills enter "005" for $10 bills enter "010" etc.

## 26- Bill Value Cassette Middle
Set the value of the bill to be dispensed from the lower cassette. For $1 bills enter "001" for $5 bills enter "005" for $10 bills enter "010" etc.

## 27-Printer Options
This gives the owner the option of printing a receipt for a credit card transaction. The selections are "ALWAYS" "PROMPT" and "NEVER". The default setting is "ALWAYS."
This also gives the option for printing a receipt for a cash transaction. The selections are "ALWAYS" "PROMPT" and "NEVER" the default setting is "NEVER".
Set up long or short receipt and full or partial paper cut.

## 28- Validator Enable
Enable or disable the bill validator. For machines with a coin acceptor only this will be set to disable.

## 29- InOne Test Mode
Troubleshooting for the InOne credit card system. Call American Changer Service before enabling this feature.

## Functional Description of the AC7700/7800 Changer

After the Changer has been installed and the computer programming complete, the machine is ready to operate. Exiting the "Program" mode will bring up the main Pricing screen. The display will show the payouts for each denomination accepted.

Insert bills for immediate coin payout. This ends the cash transaction section.

## Functional Operation of the Hopper Out-of-Service Conditions

There are 4 instances that will shut down a hopper:

1.  Low Coin – This is the most common occurrence.  This shutdown occurs when the coins in the hopper fall below the gold plates, which conduct low voltage between them.  The hopper will dispense coins from the other hoppers when the Changer reads the signal. Once the first hopper is read to have "low coins," a 1 will appear on the displayshowing that hopper one is down. The machine will now dispense all coins from the other 2 hoppers.  If the second hopper runs out of coins, a 2 will also appear on the display. The machine will now dispense coins from the remaining hopper. If all three hoppers are low the display will show "temporarily out of service".

2.  Security Failure – There are 2 cases that will cause a security failure.
    a.  The hopper is missing.  The hopper is not slid into the hopper plate connector.
    b.  There is a foreign object or coin lodged in the coin counting window.  Remove the side of the hopper with 5 screws and look in the area where the coins exit the hopper.  Check the slot for foreign matter and remove it from the slot.

3.  Jammed or Timeout Failure – This failure occurs when the hopper is told to dispense coins and, after 45 seconds, no coin has been dispensed.  This failure is present when the hopper coin belt is jammed or the hopper has run out of coins.  If the coin belt is jammed, repair or replace unit.

4.  Over-Pay Failure – This is the error that occurs when the hopper pays out more coins than told to dispense.  A very dirty exit sensor most often causes this error.
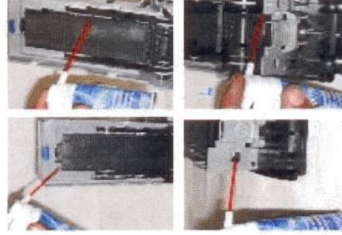
# AMERICAN CHANGER MAINTENANCE KIT

This kit includes the following items:

#1 - 5 Validator Cleaning Cards
#2 - 4 Scotch-Brite LOW-COIN Cleaning Pads
#3 - Validator Optic Cleaning Pen
#4 - 2.75oz Can Compressed Air
#5 - 4oz Can of hopper Lubricant

## Using the Maintenance Kit:

*The following maintenance should be preformed monthly to extend the life of your components:*

*Cleaning & lubing the hopper.*
**NOTICE: THE HOPPER IN THE FOLLOWING STEPS IS SHOWN SEPARATED FOR EXPLANATION REASONS ONLY!!! It is not necessary to separate the hopper to perform these steps!**
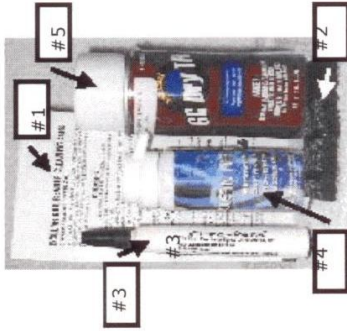
**Step 1.**

**Do not separate the hopper to perform this step!**
Using the dry Scotch-Bright pad clean Plates until they shine.

**Step 2.**

**Do not separate the hopper to perform this step!**
*Place the changer in the dump mode:*

1. Turn off power, **remove the hopper extension.**
2. Hold in "Dump Button".
3. Turn on power.
4. Count 1-2-3
5. Release "Dump Button"
Hopper should now be running. If not Repeat. **Spray lubricant on the RED belt ONLY!** Spray for 4-5 seconds.
**DO NOT SPRAY SILICON ON THE TWO HOPPER LOGIC BOARDS!**

## *Cleaning the Validator(s).*

**Step 3.**

Insert the soap & water-cleaning card as shown. (Card can be used until dry.)

**Step 4.**

**Step 5.**

Cycle the power on and off quickly until the stacker for the bill acceptor coasts into the out position. Using the can of air, blow out all of the following places.
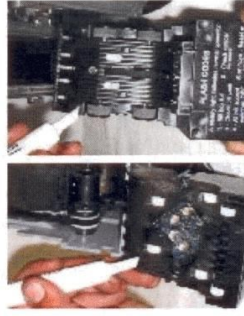
Remove the lower unit as shown.
Use the Citrus-Pen to clean the optics on the lower housing of the validator.

**This completes all maintenance procedures.**

# Remote Loading Software to the Flex Board

**1  What you need**

Computer with a USB port running Windows
USB flash drive (Make sure that the flash drive has no files in it.)

**2  Transferring the file into the USB flash drive**

2.1 The software is in a zip format and will be sent as an attachment to an email.
2.2 Save the zipped file and then unzip it.
2.3 **Do not change the name or the file extension!!!**
2.4 Copy the program file to the empty flash drive.

**3  Loading the file from the USB flash drive to the controller board**

*Note: All system settings will be erased once software is updated!!!*

*We recommend to make a print out of the settings before doing a software update.*

3.1  Turn power off to the controller board.
3.2  Plug in the USB flash drive into the correct USB port labeled as J18 on the board.
3.3  Turn power on.
3.4  The display will show the software name to be loaded.
3.5  Follow the steps on the display.

2. Below are some of the display messages:

1. **Update: xxxx-xx-xxx**   **xxxx-xx-xxx** denotes the software name. After 5 seconds and if the

   **Yes**   YES button has not been pressed, the system will go to the regular running software.

2. **File Error!**   Wrong file is loaded into the flash drive. Load the correct file. Try

   **Verify File on Drive**   again.

3. **System Settings will**   This reminder will stay on for a few seconds as a double check.

   **be Erased if Updated**

4. **Begin updating?**   Press **Start** to load the software. Press **Exit** to cancel.

   **Start**                    **Exit**

5. **Computing CRC!**   System is checking for any errors.
   **Please wait...**

6. **CRC Error!**   **V:XXX**   There is a problem loading the software. The Red LED (LED1) on

   **Update Required!**   the Flex board will blink two consecutive times a second if CRC is bad. Turn power off. Remove USB flash drive. Check that the correct file is loaded into the flash drive. Try again.

7. **CRC OK, Initializing**   System is getting ready to update.
   **Please Wait... V:XXX**

8. **Do Not Remove Drive**   Software is being updated.
   **Updating Software!**

9. **Update Ok! Remove**   Software is successfully updated! Turn power off. Remove drive.
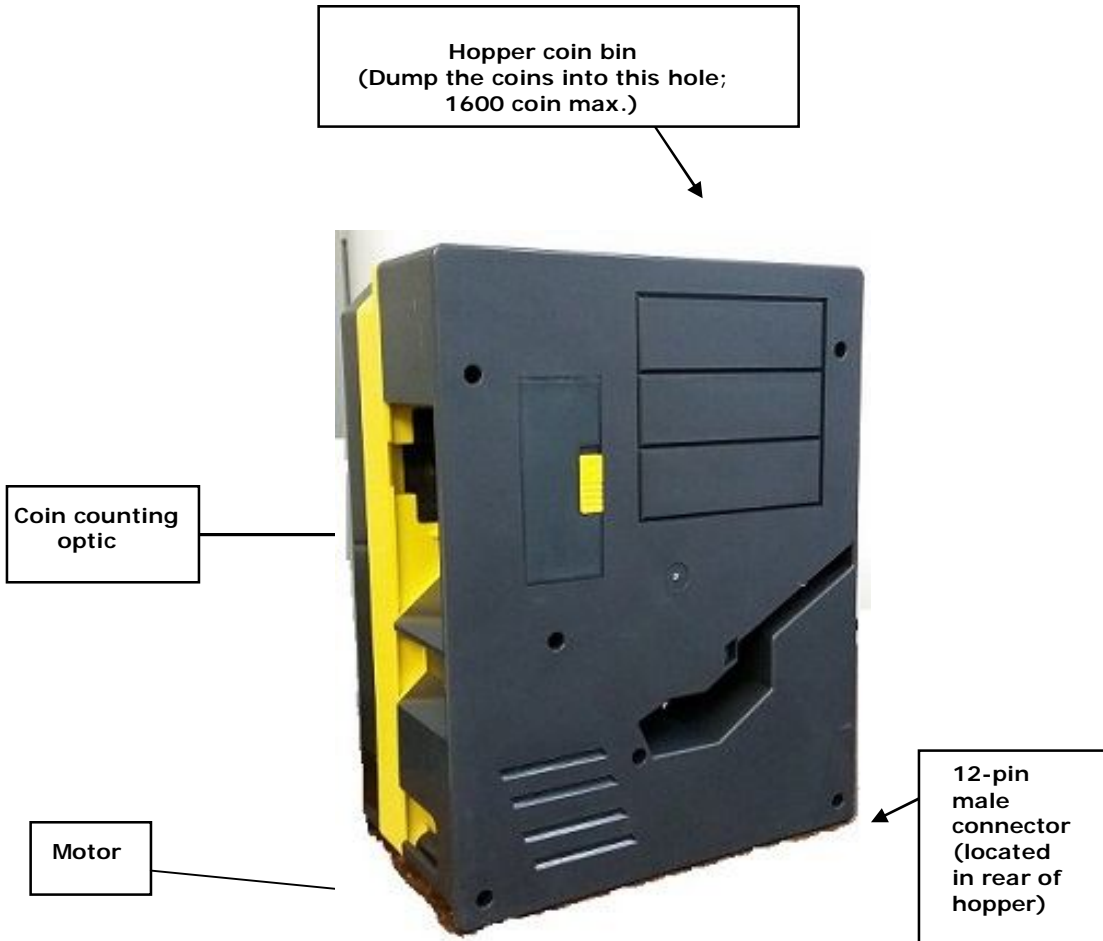
   **Drive & Cycle Power**   Turn power on.

## Hopper Coin/Token Sizes & General Information

The hopper will automatically adjust to dispense coins/tokens in size from 20-30 mm in diameter and 1.25-3.5 mm in thickness. There is an option available to dispense smaller coins.

**A nickel is approximately 21 mm, a quarter is approximately 25mm, and a dollar coin is approximately 28mm in diameter.**

**Hopper coin bin**
**(Dump the coins into this hole;**
**1600 coin max.)**

**Coin counting optic**

**12-pin male connector (located in rear of hopper)**

**Motor**

**Figure 1 – Hopper**