

Hamilton Manufacturing Corporation

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HVX & HVX7 Validator Update EPROM Installation Instructions

Introduction

Included with these instructions is a 28 pin EPROM for updating an HVX or HVX7 Validator to accept the new \$5 and \$10 dollar bills introduced into circulation in May 2000. These instructions will detail the disassembly of the Validator, replacement of the EPROM, and re-assembly. **Before attempting the installation, please read through all the instructions carefully to see if you feel comfortable performing the steps required.** If you are not comfortable working on electrical equipment where serious shock hazards exist, you should contact a qualified technician to perform the installation for you. Attached is a list of Hamilton Mfg. Corp. (Hamilton) factory trained service representatives fully qualified to perform this update. Although the update EPROM is supplied to you from Hamilton at no charge, you should expect to pay a bench charge for having it installed.

Note: Once updated, the Validator will only accept the new bills if inserted with the black seal first.

Tools Required

- #2 phillips screwdriver
- small flat blade screwdriver
- small needle-nose pliers

Preliminary Testing

1. Before beginning this update, confirm that the Validator is functioning properly and is accepting the old currency well. If not, you should have the Validator serviced by a qualified technician.
2. If the Validator is working properly, be certain all electrical power to the changer or AutoCashier has been turned off before commencing disassembly and reassembly. Failure to do so may cause injury or death. Then remove the Validator and proceed with disassembly.

Disassembly

Stand the Validator upright on a solid work surface to perform the following steps.

1. There are two types of top covers used on the HVX Validator. Identify the type your Validator has from Figure 1, A or B.
2. Remove the 6-32 x 1/8 screw(s) from the top of the Validator as shown in Figure 1. If your Validator is type A, the top cover can be removed separately at this time. **Note: Some Validators may have a seal on the top cover that reads "If Seal is Broken Warranty is Voided". Disregard this message and remove or cut the seal to allow removal of the cover.**
3. Set the Validator on its side with the display and DIPswitch facing up. Then remove the two 6-32 x 1/8 flathead screws as shown in Figure 1.

WARNING! Shock Hazard! DO NOT connect power or operate the Validator with the covers removed.

4. Carefully lift off the side/rear cover. Slide the 9-pin connector out of the cutout in the cover and set the cover aside. Remove the small cardboard insulator from around the display and DIPswitch and set it aside also.
5. Stand the Validator upright again. Refer to Figure 2 for the next four steps.
6. Pull up slightly on the large cardboard insulator and remove it. Set it aside to be re-installed later.
7. Remove the two connectors at P2 and P3. It may be necessary to use a small flat blade screwdriver to pry the connectors loose before they can be pulled off.
8. Note that the bottom left corner of the main circuit board has a notch in it that is engaged with the Validator frame. Lift up on the right side of the circuit board and swing it toward you. Then disengage the bottom left corner from the frame.
9. Remove the sensor cable at connector P1 and separate the circuit board from the Validator.

EPROM Removal

1. Refer to Figure 3 and locate the EPROM at U1 on the circuit board.
2. Using a small flat blade screwdriver carefully pry the old EPROM out of its socket. Note that the socket pins may be attached to a thin piece of plastic. When prying out the EPROM be sure and place the screwdriver between the bottom of the EPROM and the top of the plastic. Do not try to pry up from underneath this plastic film.

EPROM Installation

Note: When installing the new EPROM it is very important that it be inserted with the notched end in the correct location, and that all 28 pins are properly seated. Also, if you have both HVX and HVX7 model Validators, be sure you are installing the correct EPROM by matching the model number with the label on the EPROM.

1. The pins on the new EPROM may be bent out at an angle as shown in Figure 4. Do not try to install the EPROM without first bending the pins inward, or the pins may be damaged. Lay the EPROM on its side on a hard flat surface as shown, and carefully roll it toward the pins to bend the lower pins into line. Then turn it over and bend the pins on the other side in the same manner.
2. Locate the small notch at one end of the EPROM in Figure 5, A. Make sure it is lined up with the notch of the socket outline at U1 on the circuit board, as shown in Figure 5, B. Also make sure that all the pins are started into the socket. Then press the EPROM firmly into the socket.
3. Inspect all 28 pins to be sure they are seated properly. Note that a pin can become bent under the EPROM and may appear as though it is correctly installed in the socket. If all the pins were not properly seated in the socket, remove the EPROM, straighten the pins with needle-nose pliers, and try again. Remember that the notched end must be as shown in Figure 5.

***WARNING! Shock Hazard!* DO NOT connect power or operate the Validator with the covers removed.**

Re-assembly

1. Install the sensor cable connector at P1. Note that this connector can be easily mis-plugged, so be sure all the pins are covered by the connector shell.
2. Engage the notch in the lower left corner of the circuit board with the Validator frame. Then swing the right side of the circuit board toward the Validator frame and drop it down into place. Be sure to tuck the sensor cable down between the transformer and the front cover so that no wires become pinched.
3. Install the cables at connectors P2 and P3.
4. Place the large cardboard insulator over the display circuit board and insert the tabs at the bottom between the main circuit board and the Validator frame.
- ☆ **WARNING! This insulator must be re-installed correctly or a serious electrical SHOCK HAZARD could result.**
5. Lay the Validator over on its side with the display and DIPswitch facing up.
6. Place the small cardboard insulator over the DIPswitch and display.
7. Lower the side/rear cover over the Validator and slide the grooves of the 9-pin connector shell into the cutout on the rear cover.
8. Snap the side/rear cover into place as it interlocks with the other side/front cover.
9. Install the two 6-32 x 1/8 flathead screws removed earlier, as shown in Figure 1.
10. Stand the Validator upright. If you have Validator type A, replace the top cover.
11. Install the remaining 6-32 x 1/8 screws as shown in Figure 1.
12. On the side of the Validator, next to the model/serial # label, affix the new label provided with the EPROM. This will identify Validators that have the update installed. This completes the re-assembly of the Validator. Now proceed to final checkout.

Final Checkout

1. **Once again, be certain all electrical power to the changer or AutoCashier has been turned off. Failure to do so may cause injury or death.** Then re-install the Validator in its mounting bracket.
2. Be sure the 9-pin harness connector at the rear of the Validator is securely seated.
3. After installing this new EPROM the Validator automatically calibrates the Sidescan Sensors the first time power is applied. **For highest security, it is important that the Validator opening be shaded from the sunlight the first time power is applied after changing the EPROM.**
4. Before you apply power, position yourself so that you can observe the display on the side of the Validator.
5. Apply power and you should observe a decimal point or other character flashing on the display within five seconds. If you don't see anything on the display, or the display is not flashing, remove power

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immediately and proceed to troubleshooting.

6. If you do see a flashing decimal point on the display, the Validator is ready to accept currency. Try inserting a few bills to be sure the Validator is working properly.
7. This completes the update process. Your Validator should now be capable of accepting both the old and new currency.

Troubleshooting

Follow this troubleshooting chart if your Validator did not power up correctly during final checkout.

SYMPTOM	POSSIBLE CAUSES
Display is blank	• 9-pin harness is not connected • Power is not on • Connector P3 not installed • EPROM is installed incorrectly. Backwards or pin bent.
Display has random segments lit.	• EPROM is installed incorrectly. Backwards or pin bent.
Display flashes ½ of 1	• Validator is inhibited. Changer is Out-of-Service • Connector P2 not installed
Display flashes 3.4	• Security Sidescan Sensors out of alignment. Acceptance is not affected. For improved security return for service.
Display flashes 5.4	• Connector P1 not installed or mis-plugged
Display shows a “J”	• Connector P1 is mis-plugged
Does not accept new bills	• Will only accept new bills if inserted black seal first

For any other symptom or error code, consult your Validator Operation Manual. For additional assistance contact an Authorized Service Representative from the list attached, or the Hamilton Service Department at (800) 837-5561.

Assumption of Risk

Hamilton Manufacturing Corp. warrants the Validator Update to be free from defects in material and workmanship under normal use and service and if properly installed and operated. Hamilton's obligation under the warranty is limited to replacing any defective part at its expense within one (1) year from the date of the purchase of the Validator Update. If you elect not to use a Hamilton service representative to install the Validator Update, you acknowledge and agree that Hamilton shall have no liability whatsoever relative to the installation of said equipment and you will assume all risk and liability in connection therewith and will hold Hamilton harmless therefrom.

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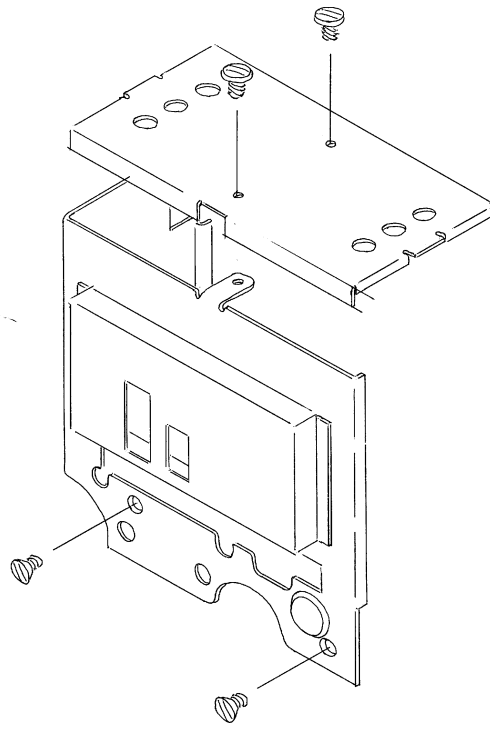


FIGURE 1, A

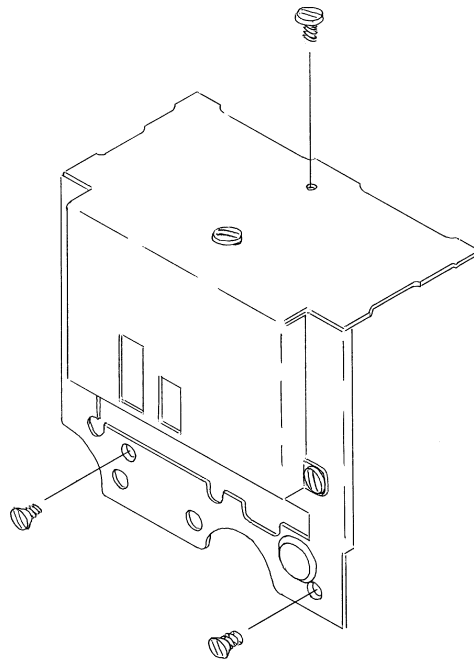
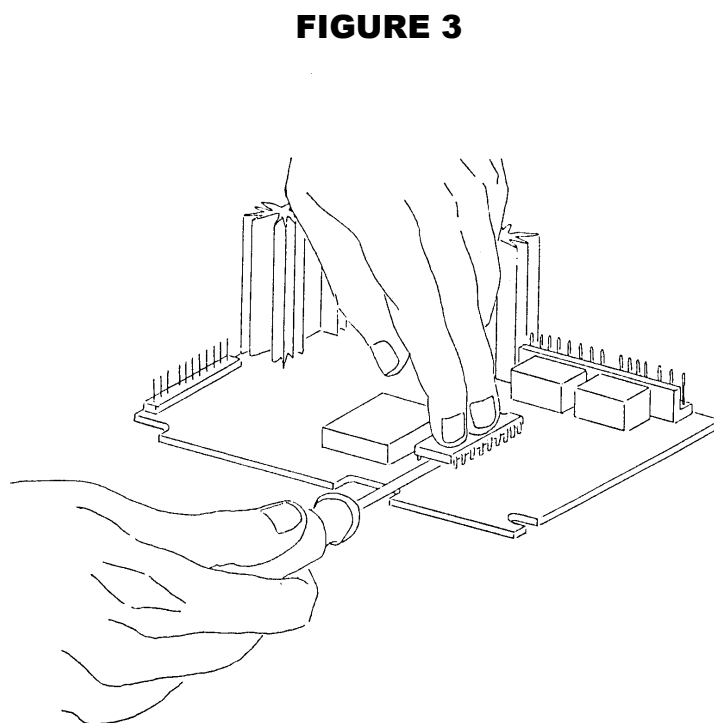
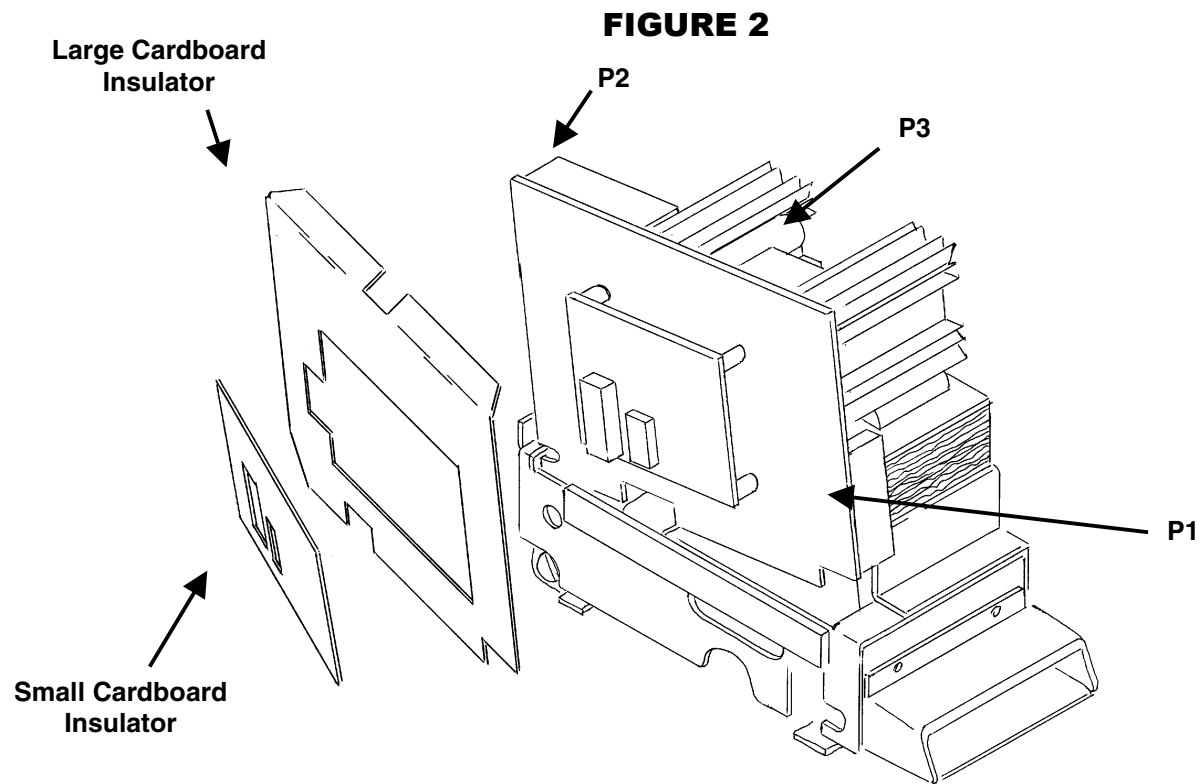


FIGURE 1, B



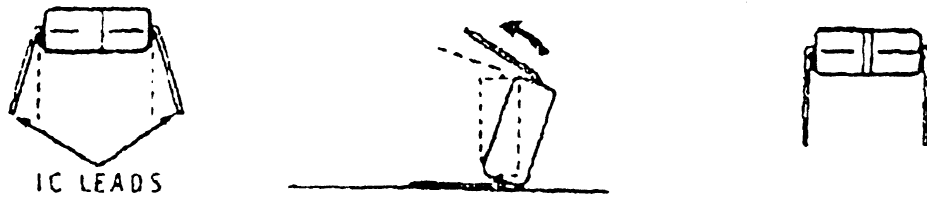


FIGURE 4

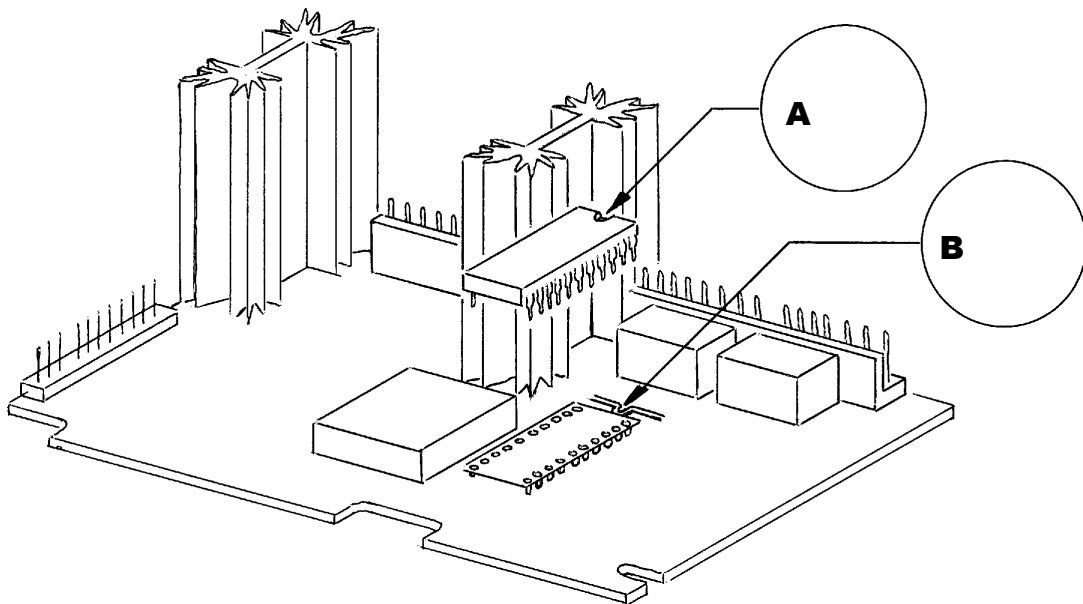


FIGURE 5