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Operational Manual for the ACW-5-D

IMPORTANT

PLEASE READ THIS MANUAL CAREFULLY PRIOR TO INSTALLING THIS UNIT. A complete understanding of the operation of this unit is essential for a successful installation.

ABOUT THIS MANUAL

This manual was designed to introduce the ACW-5-D and to provide general information about operation, installation and maintenance. This manual will enable the operator to program the Controller, perform audits, detect error codes and perform basic troubleshooting procedures. Also included are pre-programmed factory settings, Item Names and Welcome Messages, as well as a Tokenote® Training Guide for use with the optional Tokenotes®. Basic information is provided for the Hopper, Stacker and Validator. However, if additional information is needed for these components, refer to the appropriate manual. To obtain assistance from the manufacturer, please call (800) 837-5561 or (419) 867-4858. You can also contact Hamilton Mfg. online @http:\\www.hamiltonmfg.com.

When calling for assistance, it is important to have serial numbers readily available. Please take the time to record these numbers in the spaces provided.

AUTO-TEC SERIAL #_____

POS 4000 SERIAL #_____

CONTROLLER SERIAL #_____

HOPPER SERIAL #_____

STACKER SERIAL #_____

VALIDATOR SERIAL #_____

LOCK / KEY #_____

Please complete the warranty card, which was included with your changer, and return it to the manufacturer.

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I. INTRODUCTION

The ACW-5-D combines the convenience of offering several different car wash payment options with the flexibility of being integrated into systems of any size. The ACW-5-D works well with any configuration, from a single stand-alone automatic bay, to major oil company installations. The Hamilton ACW-5-D is able to handle both of these extremes by combining a "heavy duty" reliable cash handling system with a powerful code entry system.

❑ The ACW-5-D consists of two parts, the Auto Cashier Station and the Audit Code System.

- **AUTO CASHIER STATION:** This portion of the system is mounted outside, in front of the car wash. The Auto Cashier station contains the money handling equipment, such as the bill acceptor (Validator), the coin acceptor, the keypad for entering codes and the coin dispenser (Hopper) for returning change.

- **AUDIT CODE SYSTEM:** This part of the unit is installed inside the convenience store, or wherever the cashier is located. The Audit Code System is responsible for generating, and subsequently checking, codes and recording system audit information.

The cash-handling portion of the ACW-5-D allows customers to deposit money in both bills and coins, make a wash selection, and receive change, all without the need of an attendant.

On the other hand, if a customer is inside paying for gas and a bag of chips, the Audit Code System allows a customer to pay for a car wash at the same time. In this situation, the customer will be given a random code that can be entered on the auto cashier's keypad and processed using the code entry portion of the system.

❑ The following is a list of features for the ACW-5-D:

- **A large, bright character display that welcomes customers and guides them through their transactions.**
- **The ACW-5-D allows customers to select and pay for one of four possible washes, returning change if necessary.**
- **The ACW-5-D has the ability to process a second customer's transaction while the first customer is still in the bay receiving a wash. This eliminates long waits and increases revenue and customer satisfaction.**
- **The ACW-5-D is capable of accepting Hamilton Tokenotes®. Tokenotes® are paper tokens that are inserted into the bill acceptor like dollar bills and used as credit towards the desired car wash selection.**
- **When used with an HV-X Validator (v3.19 or higher), the Controller has the ability to cycle the Stacker in an attempt to clear a possible bill jam.**
- **The ACW-5-D uses an Audible Beeper to provide feedback to customers to help guide them through their transactions.**

❑ The following optional equipment is available for use with the ACW-5-D:

- **An External Display featuring a 3" x 19" display area. The External Display is used to display customized messages and to guide customers through transactions by displaying instructions in a large, bold fashion.**
- **Pre-formed bases that place the Auto Cashier Station at the factory recommended height for various mounting situations.**
- **A lighted cap, which is recommended if the Auto Cashier Station is mounted on a base.**
- **An Out of Service Relay Kit used to signal an auto-dialing modem to contact the owner if the unit goes into an error mode.**
- **An optional programmable feature that displays a factory set message that prompts a customer to upgrade to the next best car wash. It does this by displaying the name of the next wash and how much more it would be to "buy up" to this wash**

II. OPERATION

The Auto Cashier Station of the ACW-5-D has three main phases of operation. These phases include the initial customer contact, completing a transaction, and if there is already another car in the wash bay, the ability to stack washes.

❑ NORMAL OPERATION

- **INITIAL CUSTOMER CONTACT** **The bright, large character display on the face of the Auto Cashier System is used to make initial customer contact. Up to four sequencing messages can be programmed. These messages can be anything from a Welcome Message to step by step instructions on how to use the Auto Cashier interface. Or, possibly an advertisement for a weekly special.**

- **CUSTOMER TRANSACTION:** **In order to complete a transaction, two requirements must be met:**

    1. **One of four possible washes must be selected,**
    2. **There must be enough credit accumulated to pay for the selected wash.**

    These two requirements can be met in any order. This means that a customer may:

    - **Begin by paying for a wash, then select the desired wash.**
    - **Make a selection first, then begin paying.**
    - **Make a selection in the middle of a payment.**

The ACW-5-D offers the customer flexible payment options. The ACW-5-D is able to accept $1, $5, $10, and $20 bills, quarters, token coins and Tokenotes®. The ACW-5-D is also able to process codes for washes that have already been paid for. For each form of payment, the display clearly shows either the amount of credit accumulated, or the amount still needed to pay for a selected wash.

★ **Please keep in mind that if you have an ACW-5-D-CRC Credit Card System, it will accept all of the payment options mentioned above, except for token coins. This is because the ACW-5-D-CRC only has one coin acceptor, which is intended for quarters.**

- **COMPLETING A TRANSACTION:** **Once payment and a selection have been made, the transaction is considered complete. It is important to remember that a selection must be made. There are, however, two exceptions to this requirement.**

    - **To make the ACW-5-D easy to use, there is a built in provision for completing a transaction even if the customer does not make a wash selection. This can occur if a customer deposits money or enters a valid code and drives ahead to the wash without making a selection. In this instance, the ACW-5-D determines the best wash possible with the amount of credit accumulated and signals the car wash to start that wash.**
    - **The other exception is if the Auto Cashier Station is set for UPGRADES DISABLED (see the PROGRAMMABLE OPTIONS section), and a customer enters a code. In this instance, the transaction is considered complete after entering a valid code.**

After the transaction is complete and the wash bay is empty, the sequencing display lets the customer know he may now pull into the wash by displaying the Proceed Messages. At this time, the Auto

Cashier Station signals the car wash as to which wash was selected. In order for the Auto Cashier Station to know that there is a customer in the wash bay, the car wash signals the Auto Cashier Station when the customer enters the wash bay. It maintains this signal until the car leaves the bay after the wash is complete.

For proper operation, it is very important that the car wash sends a constant signal to the Auto Cashier Station during the entire time the customer is in the wash bay. (Refer to the INSTALLATION/MAINTENANCE section.)

❑ STACKING WASHES

If there is already a customer in the wash bay when another customer pulls up, the ACW-5-D is able to start the transaction process with the second customer. This is called Stacking Washes. The operation is identical to the one previously mentioned up to the point where the customer has selected and paid for a wash. At this point, since the wash bay is still in use and the customer cannot pull in, the Proceed Messages will not be displayed. Instead, the message displayed depends on whether or not you have chosen to include "buy-up" messages by enabling upgrades in the "SET UPGRADE MODE" programming category. (Refer to the PROGRAMMABLE OPTIONS section for more information.).

- **If upgrades are enabled, the messages shown while the customer waits for the wash bay to clear are "YOU MAY UPGRADE TO", the name of the next better wash, "BY ADDING $1.00". The dollar amount shown is the difference between the wash selected and paid for, and the next best wash.**

  ★ **Because of this upgrade feature, it is very important to price the washes in descending order with Wash #4 being the most expensive and Wash #1 being the least expensive. If this order is reversed, the unit will not function properly!**

  This sequence of messages continues until the car in the wash bay leaves, or the customer decides to deposit the additional fee. If the upgrade is selected by depositing the additional fee, the display will change to the message "PLEASE WAIT!", "CAR WASH IN USE" and will remain there until the car already in the wash bay is finished. When the wash bay is clear, the customer will be instructed to pull ahead.

- **When the upgrade option is disabled, the Auto Cashier simply displays the message "PLEASE WAIT!", "CAR WASH IN USE". This message remains until the car in the wash bay leaves. Then the customer is instructed to pull into the wash bay.**

III. PROGRAMMABLE OPTIONS

The ACW-5-D System has a number of programmable options that can be used by the car wash owner to customize the operation of the machine. These programmable options give the car wash owner the ability to:

- **Set the desired prices**
- **Program custom messages**
- **Program the amount of credit given for token coins and/or Hamilton Tokenotes®**

The following is a description of all of the programmable options, in the order they will be encountered in the PROGRAMMING MODE. For information on the actual programming sequences necessary, refer to the PROGRAMMING section.

- **SET OPERATING MODE?** **The Auto Cashier Station is able to operate in two different modes, the ONLINE MODE or the OFFLINE MODE. The ONLINE MODE enables the Auto Cashier Station to communicate with the Audit Code System located inside a convenience store. In this mode, it is necessary to have the Audit Code System and the Auto Cashier Station communicating with each other. If either one is not responding, or there is a break in the communications line, transactions cannot be processed. The OFFLINE MODE should be used in the event that the communications between the Audit Code System and the Auto Cashier Station are no longer operable. In the OFFLINE MODE, the Auto Cashier Station becomes a stand-alone device that does not communicate with any other equipment. This enables the Auto Cashier to continue processing cash and token transactions even when the communication line is inoperable. This category is used to select which of these two modes will be enabled.**

  ★ **The unit must be in the ONLINE MODE to communicate with the Audit Code System. While in the OFFLINE MODE, the ACW-5-D will only recognize the Item Passwords. It will not accept any of the codes issued by the Audit Code System. Likewise, while in the ONLINE MODE, the ACW-5-D will only accept codes issued by the Audit Code System.**

- **SET ITEM PASSWORDS?** **The SET ITEM PASSWORDS? category is used to define a code that can, when entered, vend a car wash when operating in the OFFLINE MODE. There are four programmable passwords, Password #1 through Password #4, and the wash vended depends on which of these passwords is entered. For example, if Password #1 is entered on the Auto Cashier Station keypad, the wash sequence associated with Wash #1 will start; if Password #2 is entered, Wash #2 will vend, and so on. In the ONLINE MODE, entering these passwords has no effect.**

  The default setting for all four passwords is 00. With this setting the password is disabled and no code will be able to vend a wash while in the OFFLINE MODE. To enable a password, it is necessary to program a non-zero number for the desired password. The password codes can range from 10-99990 (the last digit must always be 0). To terminate the use of a particular password, it is necessary to either change the password code to another number or change it to 00, which will disable the password feature for the particular wash being programmed. Once programmed, these codes remain constant until re-programmed.

- **SET QUE MODE?** **The SET QUE MODE? category is used to select when the Auto Cashier Station signals the car wash controller which wash was purchased. The two selections are**

SUSPEND VEND PULSE and RELEASE VEND PULSE. When SUSPEND VEND PULSE mode is selected, the Auto Cashier Station will wait until the wash bay is empty before signaling the car wash of the next wash that was purchased. In contrast, while operating in RELEASE VEND PULSE mode, the Auto Cashier Station signals the car wash as soon as the transaction is complete, regardless whether the wash bay is empty or occupied. The release mode should only be used if your car wash controller has a wash memory. Refer to your car wash controller documentation before selecting the RELEASE VEND PULSE.

- **TOKEN COIN MODE?** The term "credit" is used to mean any non-cash form of payment. For the ACW-5-D, this includes token coins, Tokenotes®, and debit or credit cards if the machine is so equipped. There are two choices for the TOKEN COIN MODE, MULTIPLE CREDITS and SINGLE CREDIT MODE. MULTIPLE CREDITS allows the customer to insert as many token coins as necessary to pay for the selected wash. The SINGLE CREDIT MODE, on the other hand, limits the customer to receiving credit for only one token coin per transaction. SINGLE CREDIT MODE is often used when token coins are distributed as a promotion to get customers to choose your car wash for reduced car wash rates. By only accepting one credit per customer, the customer will not be able to accumulate the promotional token coins and receive a free wash. In this mode, you will still be collecting some revenue on every car washed.

  Token Coins are not accepted by the ACW-5-D-CRC Credit Card System. If using an ACW-5-D-CRC, the setting for this mode is irrelevant.

- **TOKEN COIN VALUE?** The TOKEN COIN VALUE? category is used to program the amount of credit given when a token coin is accepted by the ACW-5-D. The value can be anything from $0.00 to $63.75 in $0.25 increments. (Refer to APPENDIX C and the PROGRAMMING section for information on programming the TOKEN COIN VALUE.)

- **TOKENOTE® MODE?** The term "credit" is used to mean any non-cash form of payment. For the Auto-Tec System, this includes token coins, Tokenotes®, and debit or credit cards if the machine is so equipped. There are two choices for the TOKENOTE® MODE, MULTIPLE CREDITS and SINGLE CREDIT MODE. MULTIPLE CREDITS allows the customer to insert as many Tokenotes® as necessary to pay for the selected wash. The SINGLE CREDIT MODE, on the other hand, limits the customer to receiving credit for only one Tokenote® per transaction. SINGLE CREDIT MODE is often used when Tokenotes® are distributed as a promotion to get customers to choose your car wash for reduced car wash rates. By only accepting one credit per customer, the customer will not be able to accumulate the promotional Tokenotes® and receive a free wash. In this mode, you will still be collecting some revenue on every car washed.

  Token Coins are not accepted by the ACW-5-D-CRC Credit Card System. If using an ACW-5-D-CRC, the setting for this mode is irrelevant. For more information, refer to your CRC Manual.

- **TOKENOTE® VALUE?** The TOKENOTE® VALUE? category is used to program the amount of credit given when the Validator accepts a Tokenote® trained without a Training Coupon. The value can be anything from $0.00 to $63.75 in $0.25 increments. (Refer to APPENDIX C and the PROGRAMMING section for information on programming the TOKENOTE® VALUE.)

- **COUPON DISCOUNTS?** The COUPON DISCOUNTS? category is used to program the amount of credit given when a Tokenote®, trained with one of the four Training Coupons (Coupon #1-4), is accepted by the Validator. Each coupon code can have its own value that ranges from $0.00 to $63.75 in $0.25 increments. (Refer to APPENDIX C for information on training Tokenotes®.)

- **ITEM PRICES?** The ITEM PRICES? category is used to program the price of each of the four wash selections available on the ACW-5-D. The values can be anything from $0.00 to $63.75 in $0.25 increments.

- **ITEM NAMES?** The ITEM NAMES? category is used to assign a wash name to each of the four wash selections. These names may be chosen from a list of pre-programmed names or a custom name may be created. Up to eight different custom names can be programmed. If a ninth custom name is attempted, it overwrites the first custom name programmed. Once a custom name has been programmed, it will be listed along with the pre-programmed names when scrolling through the available wash name choices. These custom names can be de-selected or overwritten, but never erased. Since it is a built in feature of the Auto Cashier Station to display the wash name and the wash price whenever a wash selection button is pressed, it is recommended that a name be selected for all four washes. (Refer to APPENDIX E for a list of Item Names.)

- **PROCEED PROMPTS?** The PROCEED PROMPTS? category is used to select the sequencing messages that are seen after a customer makes a wash selection and is waiting to proceed into the wash. There are up to four sequencing Proceed Prompts possible. These four messages may be chosen from a list of pre-programmed messages or a custom message may be created. (Refer to APPENDIX F for a list of pre-programmed messages.) Up to eight different custom messages can be programmed. If a ninth custom message is attempted, it overwrites the first custom message programmed. Once a custom message is programmed, it will be listed along with the pre-programmed messages when scrolling through the available message choices. These custom messages can be de-selected or overwritten, but never erased. If you do not wish to use all four messages, simply program the desired messages with the pre-programmed or custom messages and program the remaining messages with the " --- NOT USED ---" message located in the pre-programmed message list. This message will not appear on the screen. When this message is encountered in the message sequence, it automatically skips to the next message in the sequence without any time delay.

  Proceed Prompts Example: To guide a customer through a transaction, the following messages may be selected:

PROCEED MESSAGE #1	"THANK YOU"
PROCEED MESSAGE #2	"PLEASE DRIVE AHEAD"
PROCEED MESSAGE #3	"—NOT USED—"
PROCEED MESSAGE #4	"—NOT USED—"

- **WELCOME PROMPTS?** The WELCOME PROMPTS category is used to select the sequencing messages that are seen when a customer first pulls up to the Auto Cashier Station. There are up to four sequencing messages possible. The first four messages may be chosen from a list of pre-programmed messages or a custom message may be created. (Refer to APPENDIX F for a list of pre-programmed messages.) Up to eight different custom messages can be programmed. If a ninth custom message is attempted, it overwrites the first custom message programmed. Once a custom message is programmed, it will be listed along with the pre-programmed messages when scrolling through the available message choices. These custom messages can be de-selected or overwritten, but never erased. If it is undesirable to sequence through all four messages, program the desired messages with pre-programmed or custom messages and program the remaining messages with the " --- NOT USED ---" message located in the pre-programmed message list. This message will not appear on the screen. When this message is encountered in the message sequence, it automatically skips to the next message in

the sequence without any time delay.

Welcome Prompts Example: **To guide a customer through a transaction, the following messages may be selected:**

WELCOME MESSAGE #1	**"WELCOME"**
WELCOME MESSAGE #2	**"PRESS ITEM BUTTON"**
WELCOME MESSAGE #3	**"OR DEPOSIT MONEY"**
WELCOME MESSAGE #4	**NOT USED**

- **SET DATE & TIME?** **The SET DATE & TIME? category is used to program the current day, date and time. The time is programmed similar to the following example:**

SAT_08-06-94_05:30_P

the day is selected followed by the month, date, and year, then the hour and minute, and finally the AM/PM specification.

- **VEND DURATION?** **The VEND DURATION? category is used to program the length of time that the Auto Cashier Station turns on its vend relays. The vend relays are turned on to signal the car wash that the customer has finished the transaction and is ready to drive ahead. The length of time these relays should be held depends on the requirements of the particular car wash controller being used.** **Refer to your car wash manual before programming this setting.** **The possible values range from 0.1 - 4.0 seconds.**

- **SET EMPTY MODE?** **The SET EMPTY MODE? category is used to program how the Auto Cashier will respond when its coin dispenser runs out of coins. There are two choices, OUT OF SERVICE, and USE EXACT AMOUNT. If OUT OF SERVICE is selected and the Hopper goes empty, the display will stop showing the Welcome Messages and instead show the sequencing messages "OUT OF SERVICE" and "HOPPER EMPTY". When this occurs, the bill acceptor and coin acceptors will be de-activated and no further transactions can occur until the Hopper is filled with coins. If USE EXACT AMOUNT is selected and the Hopper goes empty, the bill acceptor and coin acceptors will remain activated and the display will stop showing the Welcome Messages and instead show the sequencing messages "USE EXACT AMOUNT" and "NO CHANGE RETURNED". In this mode, it is possible to continue performing transactions even though the Hopper is empty since the customer is being notified that no change will be returned and the exact amount must be deposited.**

- **SET BUILD MODE?** **The SET BUILD MODE? category is used to enable or disable the Cash Buildup Limit feature. There are two choices, LIMIT DISABLED and LIMIT ENABLED. If LIMIT DISABLED is selected, a customer is able to build up credit indefinitely by continuing to deposit money. This can be undesirable if the customer is using the Auto Cashier as a changer that will deplete the Hopper contents more rapidly than expected. However, if LIMIT ENABLED is selected, the maximum amount of cash buildup is limited by the price of the most expensive wash. This is accomplished by constantly comparing the amount of credit deposited and the four programmed wash prices. As soon as the credit amount is equal to, or greater than, the most expensive wash price, the Auto Cashier de-activates the Validator and coin acceptors. No further deposits can be made until a wash is selected.**

- **SET PAY DEFAULT?** **The SET PAY DEFAULT? Mode is used when a fault is detected in one of the payment devices, such as the Validator or one of the coin acceptors. There are two options to choose from in this mode, USE ALT PAYMENT or OUT OF SERVICE. If a fault has been detected and the default payment mode is set to OUT OF SERVICE, the Auto Cashier Station will shut itself down until the error has been corrected. However, if the default payment mode is set to USE ALT PAYMENT, the Auto Cashier can continue operating, even if there is a fault in one or more of its payment devices. For example, a coin acceptor malfunctions, giving a constant payout pulse. In this situation, instead of shutting down the Auto Cashier Station, it will continue to operate but change the messages the customer sees. It will stop displaying the normal Welcome Messages and instead display the messages "PAYMENT OPTIONS…" and "USE BILLS ONLY". This gives the customer the message not to use coins and tells the operator something has gone wrong with one of the coin acceptors and service is required. The Auto Cashier will continue to operate as long as there are payment options available. If all payment options are determined to be faulty, the machine will shut down, displaying an error message for the last device to have a problem.**

  If there is a breakdown in communications between the Auto Cashier Station and the Audit Code System, the USE ALT PAYMENT mode will allow continued operation of the Auto Cashier. However, it is very important to realize that in this situation, the Auto Cashier will have the only correct audit information. In order for the Audit Code System to receive this information, it is necessary to re-establish communications between the Auto Cashier and the Audit Code System and to run an additional transaction, all without cycling power to the Controller. This is because if power to the Controller were to be interrupted, none of this information would be reported to the Audit Code System. If the payment mode is set to OUT OF SERVICE, the Auto Cashier will shut itself down until communications between the Auto Cashier and the Audit Code System have been re-established.

- **SET DISPLAY STYLE?** **The SET DISPLAY STYLE? category is used to program which display style is being used on your Auto Cashier. The current display being used on all Hamilton Auto Cashiers is the single line display, which has a longer viewing area than the older two line style displays. Because of this, older cabinets designed for use with the two line displays cannot display all 20 characters available on the newer single line displays. This feature allows the operator to select the desired display style by choosing REGULAR (20 CHAR) for single line displays or RETROFIT (18 CHAR) for two line displays. IT IS IMPORTANT TO REMEMBER THAT EACH TIME THE DISPLAY STYLE IS CHANGED, IT IS NECESSARY TO CLEAR OUT ANY PROGRAMMED MESSAGES. BECAUSE OF THIS, IT WILL BE NECESSARY TO REPROGRAM ALL WELCOME MESSAGES, WASH NAMES, AND PROCEED MESSAGES EVERY TIME THE DISPLAY STYLE IS CHANGED. (EXTERNAL DISPLAY MESSAGES ARE LEFT INTACT.)**

- **SET UNIT NUMBER?** **In the ACW-5-D, each piece of equipment is given a unit number. This is done to identify which machine has information to report, and thus keep individual audits of each machine in a single or multi-Auto Cashier Station System. The Audit Code System is always assigned to be Unit #1. Each Auto Cashier Station should then be given a unit number in order from Unit #2 through Unit #5, depending on how many Auto Cashier Stations are in the system. The first Auto Cashier Station (and only station in the case of a single Auto Cashier Station System) should be assigned Unit #2. For any remaining Auto Cashier Stations, the numbering must be in sequential order with no skipped numbers, and there should not be two or more machines with the same unit number.**

- **SET UPGRADE MODE?** **The SET UPGRADE MODE? category is used to select whether to enable or disable special upgrade messages. If enabled, these upgrade messages would appear when a customer has completed a transaction and is waiting while another customer is still in the wash bay. These messages entice the waiting customer by displaying the next higher priced wash and showing the additional amount of credit needed for that wash. It is then possible for the customer to deposit this credit and receive the higher priced wash. There are two selections in this category, UPGRADES ENABLED and UPGRADES DISABLED. Enabling upgrades displays these messages, while disabling upgrades does not.**

- **SET BUTTON ORDER?** **The SET BUTTON ORDER? category is used to select whether the order of washes are listed from highest price to lowest price or from lowest price to highest price. The two selections in this category are WASH #1 TOP and WASH #1 BOTTOM. If WASH #1 TOP is selected, the wash selection button just under the REFUND BUTTON will correspond to Wash #1. The next button down will select Wash #2. The next button after that will select Wash #3 and the last button will select Wash #4. This setting results in listing washes from least to most expensive.**

  If WASH #1 BOTTOM is selected, the wash selection button just under the REFUND BUTTON will correspond to Wash #4. The next button down will select Wash #3. The button after that will select Wash #2 and the last button will select Wash #1.

  ★ **It is important for washes to be priced in order, with Wash #1 being the least expensive and Wash #4 the most expensive. The selection for SET BUTTON ORDER only changes the assignment of a button and does not change wash prices or relays.**

- **SET BUTTON ENABLE?** **The SET BUTTON ENABLE? category is used to program which buttons are enabled or disabled. Each of the four wash selection buttons, as well as the refund button, is selectable between enabled or disabled. If a button is enabled, it will register as a valid selection if a customer should press that button. If a button is disabled, pressing it will have no affect. This is a valuable feature if only 3 washes are being utilized, or if the owner wishes to disable the refund button.**

IV. AUDITS

For added security, the ACW-5-D contains two complete sets of audits.

The RESETTABLE AUDIT CATEGORIES include:

- **INVENTORY DEPOSITS?**
- **INVENTORY VENDING?**
- **INVENTORY OVERPAID?**
- **AUDIT VAULT COUNT?**

The NON-RESETTABLE AUDIT CATEGORIES include:

- **TOTAL DEPOSITS?**
- **TOTAL VENDING?**
- **TOTAL OVERPAID?**
- **TOTAL VAULT COUNT?**

The information stored is the same for both sets. However, the RESETTABLE AUDITS are values accumulated since the last time the audits were cleared. The NON-RESETTABLE AUDITS contain values accumulated throughout the entire life of the Controller while it has been inside the Auto Cashier.

For details on how to view the audit information on your ACW-5-D, refer to the PROGRAMMING Section. (It may be necessary to read the entire section to get a complete understanding of how the Controller functions.)

The information stored in each audit is described below.

- **INVENTORY and TOTAL DEPOSITS?** **The DEPOSITS category shows a complete dollar amount of everything deposited into the machine, minus the change returned to the customer. It is broken down into three sub-categories, CASH, TOKENS and CARDS. The CASH deposit sub-category gives a total dollar amount of all $1, $5, $10, $20 bills and quarters deposited. It takes into consideration change that has been returned to the customer, displaying the amount of profit made. The TOKEN deposits sub-category gives a total dollar amount of all token coins, Tokenotes® and code values, while the CARDS sub-category gives a total dollar amount of all WashCard®, debit card and credit card transactions, if applicable.**

- **INVENTORY and TOTAL VENDING?** **The VENDING category gives a complete breakdown of each wash purchased and the method of payment for each wash. It does this by showing the total amount of cash received in payment for each of the four washes as well as the dollar amount of token credit and debit card credit received. The VENDING category also takes into consideration the amount of change that has been returned to the customer, displaying the amount of profit made.**

- **INVENTORY and TOTAL OVERPAID?** **The OVERPAID category totals the amount of**

change that could not be dispensed to customers. Most frequently, this category is adjusted when the Coin Hopper is empty and the Auto Cashier Station is operating in the USE EXACT AMOUNT Empty Mode. If a customer deposits more than the selected wash price, the difference between the amount deposited and the selected wash rate will be added to the overpaid categories.

- **AUDIT and TOTAL VAULT COUNT?** **The VAULT COUNT category gives a complete breakdown of all deposits and cash payouts. It does this by offering specific counts on the number of each denomination bill that has been deposited, the number of each type of Tokenote® deposited, and the number of token coins, debit card swipes and quarters deposited. There is also a count of the number of quarters dispensed as change.**

- **CLEAR RESETTABLE INVENTORIES?** **Clearing the RESETTABLE INVENTORIES has the effect of zeroing out all values and counts that have been accumulated since the last time these inventories were cleared. The categories affected are INVENTORY DEPOSITS, INVENTORY VENDING, INVENTORY OVERPAID, and AUDIT VAULT COUNT. The NON-RESETTABLE categories remain unchanged. Refer to the PROGRAMMING section for details on how to clear the inventories.**

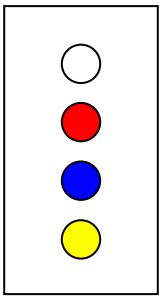
V. PROGRAMMING

The ACW-5-D comes pre-programmed from the factory. (Refer to Appendix D for the factory settings.) However, you may decide to program the ACW-5-D to meet your individual needs.

❑ **IN ORDER TO PROGRAM THE ACW-5-D, YOU MUST FIRST GAIN ACCESS TO THE CONTROLLER BY FOLLOWING THE STEPS BELOW:**

1. **Open the cabinet to view the Controller. It is positioned inside the large metal enclosure mounted on the lower right portion of the door.**
2. **To gain access to the Controller, remove the cover from the enclosure. (Refer to the directions printed on the enclosure.)**
3. **Once inside, the Controller is the piece of equipment that the wiring harness plugs into. (There is also a label to identify the Controller.)**

❑ **THERE ARE FOUR BUTTONS ON THE SIDE OF THE CONTROLLER THAT LOOK LIKE THIS:**



WHITE BUTTON – "RETURN"

RED BUTTON

BLUE BUTTON (OR BLACK)

YELLOW BUTTON – "ACTION"

❑ **THE CONTROLLER HAS THREE LEVELS (OR "MODES") OF OPERATION:**

- **RUN MODE:** **Where transactions are carried out with the customer. (Welcome Prompts are displayed.)**
- **MENU MODE:** **Scrolls through all of the programming categories. (Refer to page 15 for a list of these categories and their definitions.)**
- **PROGRAMMING MODE:** **Scrolls through all of the messages or dollar amounts available for a particular category.**

- **THE FOLLOWING TABLE SHOWS THE FUNCTION OF EACH BUTTON AND HOW TO MOVE FROM MODE TO MODE.**

BUTTON	FUNCTION
WHITE - "RETURN"	**USED TO MOVE UP ONE MODE LEVEL AT A TIME.**
RED	Used to move down through the programming categories while in the MENU MODE, or to move through lists of messages or dollar amounts and to increase dollar amounts in the PROGRAMMING MODE.
BLUE or BLACK	Used to move up through the programming categories while in the MENU MODE, or to move through lists of messages or dollar amounts and to decrease dollar amounts in the PROGRAMMING MODE.
YELLOW – "ACTION"	Used to move down one MODE level at a time.

- **IN ORDER TO PROGRAM THE CONTROLLER, IT IS NECESSARY TO:**

1. Have the machine turned on and running.
2. Have access to the four programming buttons on the side of the Controller.
3. Be able to view the display on the front of the machine.

- **TO PROGRAM A PARTICULAR CATEGORY YOU MUST FOLLOW THE STEPS BELOW:**

1. Starting from the RUN MODE (Welcome Prompts), press the ACTION (YELLOW) button once. This will move you down one mode to the MENU MODE.
2. Using the RED and BLUE buttons, scroll through the different categories until you find the category you wish to change.
3. Once the desired category is displayed, use the ACTION (YELLOW) button to move down one mode to the PROGRAMMING MODE.
4. Using the RED and BLUE buttons, scroll through the messages or dollar amounts for that particular category until you find the desired selection.
5. Press the RETURN (WHITE) button twice to move up two modes and to return you to the RUN MODE (Welcome Prompts).
6. Or, if you wish to make a change to another category, press the RETURN (WHITE) button once to move up one mode to the MENU MODE. Repeat Step 4 for each category you wish to change.

★ **Once a selection is displayed, it is automatically saved into the Controller's memory.**

MENU MODE	
PROGRAMMING CATEGORIES	**DESCRIPTIONS**
INVENTORY DEPOSITS?	The amount taken in by the Auto Cashier in cash, Tokenotes®, token coins, debit cards and credit cards.
INVENTORY VENDING?	Individual counts of the four wash selections.
INVENTORY OVERPAID?	The total change unable to be refunded while in the "USE EXACT AMOUNT" mode.
AUDIT VAULT COUNT?	Totals of each bill and coin denomination.
SET OPERATING MODE?	Enable or disable communications interface
SET ITEM PASSWORDS?	Set password to issue a car wash while in the OFFLINE mode.
SET QUE MODE?	Determine when a wash signal is sent to the car wash.
TOKEN COIN MODE?	Allows either single or multiple token coin use. (If using an ACW-5-D-CRC, this setting is irrelevant.)
TOKEN COIN VALUE?	Amount of credit given for a valid token coin. (If using an ACW-5-D-CRC, this setting is irrelevant.)
TOKENOTE® MODE?	Allows either single or multiple Tokenote® use.
TOKENOTE® VALUE?	Amount of credit given for a valid Tokenote®.
COUPON DISCOUNTS?	Amount of credit given for a valid coupon.
ITEM PRICES?	Amount of credit needed for each of the four washes.
ITEM NAMES?	Names that appear when each of the four washes are selected. Choose from pre-programmed Item Names or program custom names.
PROCEED PROMPTS?	Up to four proceed messages can be displayed. Choose from pre-programmed Proceed Prompts or program custom messages.
WELCOME PROMPTS?	Up to four sequencing messages displayed while system is enabled and in stand-by. Choose from pre-programmed Welcome Messages or program custom messages.
SET DATE & TIME?	Sets current date and time in non-military format.
VEND DURATION?	Sets duration of vend relay closure.
SET EMPTY MODE?	Choice of shutting down ("OUT OF SERVICE") or requesting exact change ("USE EXACT AMOUNT") when Hopper is empty.
SET BUILD MODE?	Choice of enabling or disabling the Cash Buildup Limit feature.
SET PAY DEFAULT?	Choice of shutting down ("OUT OF SERVICE") or giving payment options ("USE ALT PAYMENT") when a fault has been detected in one of the payment devices.
SET DISPLAY STYLE?	Used to set the number of characters displayed on the single line display or the older two line displays.

MENU MODE	
PROGRAMMING CATEGORIES	**DESCRIPTIONS**
SET UNIT NUMBER?	Set machines identification number.
SET UPGRADE MODE?	Enable or disable upgrade messages.
SET BUTTON ORDER?	Determines if washes are listed from highest to lowest price or from lowest to highest.
SET BUTTON ENABLE?	Used to enable or disable each of the four wash selection buttons as well as the REFUND button.
TOTAL DEPOSITS?	A cumulative non-resettable total of cash taken in and token credit (Tokenotes®, token coins, debit and credit cards).
TOTAL VENDING?	A cumulative non-resettable total of services performed.
TOTAL OVERPAID?	A cumulative non-resettable total of change unable to be refunded when in the "USE EXACT AMOUNT" mode.
TOTAL VAULT COUNT?	A cumulative non-resettable total of each bill denomination and coin.

The following section explains the programming steps required for each category. The categories will be listed in the order that they appear in the menu mode.

INVENTORY DEPOSITS?

❑ **TO VIEW THE INVENTORY DEPOSITS VALUES:**

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE. "INVENTORY DEPOSITS" is the first category so it should already be displayed.**
- **With Inventory Deposits appearing on the display, press the ACTION (YELLOW) button again. The display should read:**

CASH = $0.00
or
TOKENS = $0.00
or
CARDS= $0.00

*** The dollar amounts shown are the current dollar, token and debit/credit totals.**

- **Use the ACTION (YELLOW) button to toggle between these values.**
- **When these values have been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

INVENTORY VENDING?

❑ TO VIEW THE INVENTORY VENDING VALUES:

- Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.
- Using the RED and BLUE buttons, scroll through the categories until "INVENTORY VENDING?" is displayed.
- Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:

	VEND 1 CNT = 0	Number of Item 1 fees received
or	VEND 1 CSH = $0.00	Number of Item 1 fees received in cash
or	VEND 1 TOK = $0.00	Number of Item 1 fees received In token credit
or	VEND 1 DEB = $0.00	Number of Item 1 fees received in debit or credit cards

*The amounts shown are the current values.

- Use the ACTION (YELLOW) button to toggle between these values.
- When these values have been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.

INVENTORY OVERPAID?

❑ TO VIEW THE INVENTORY OVERPAID VALUE:

- Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.
- Using the RED and BLUE buttons, scroll through the categories until "INVENTORY OVERPAID?" is displayed.
- Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:

OVERPAID $0.00

*The dollar amount shown is the current overpaid totals.

- When this information has been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.

AUDIT VAULT COUNT?

❑ TO VIEW THE AUDIT VAULT COUNT VALUES:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "AUDIT VAULT COUNT?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. One of the following will be displayed:**

$20 BILL CNT	**0**
$10 BILL CNT	**0**
$5 BILL CNT	**0**
$2 BILL CNT	**0**
$1 BILL CNT	**0**
QUARTER CNT	**0**
TOKEN CNT	**0**
TOKENOTE CNT	**0**
COUPON 1 CNT	**0**
COUPON 2 CNT	**0**
COUPON 3 CNT	**0**
COUPON 4 CNT	**0**
HOPPER CNT	**0**

***The values shown are the current counts for each of these denominations.**

- **Press the ACTION (YELLOW) button to scroll through these displayed values.**
- **When this information has been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET OPERATING MODE?

❑ TO VIEW THE CURRENT OPERATING MODE:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET OPERATING MODE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

ONLINE MODE

or

OFFLINE MODE

***Depending on the current setting.**

- **To change this setting, use the RED or BLUE buttons to toggle between the two settings.**
- **Use the RETURN (WHITE) button to return to the MENU or RUN MODE.**

SET ITEM PASSWORDS?

❑ TO VIEW THE CURRENT ITEM PASSWORDS:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET ITEM PASSWORDS?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

PASSWORD #1 = 00

***The value shown is the current password for wash #1.**

- **To change this value, use the RED and BLUE buttons to change the Password. The password code can range from 10-99990 (the last digit must always be 0).**
- **When the desired value is displayed, you may program the next password or exit the PROGRAMMING MODE. To program the next coupon use the ACTION (YELLOW) button to scroll through each of the four passwords and the RED and BLUE buttons to raise or lower the value. Repeat this step for each password you wish to program.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET QUE MODE?

❑ TO VIEW THE CURRENT QUE MODE:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET QUE MODE?" is displayed.**

- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

SUSPEND VEND PULSE

or

RELEASE VEND PULSE

***Depending on the current setting.**

- **Use the RED or BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

TOKEN COIN MODE?

❑ TO VIEW THE CURRENT TOKEN COIN MODE:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "TOKEN COIN MODE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

MULTIPLE CREDITS

or

SINGLE CREDIT MODE

***Depending on the current setting.**

- **Use the RED and BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**
- **If using an ACW-5-D-CRC, this mode can be set to either MULTIPLE CREDITS or SINGLE CREDIT MODE. The ACW-5-D-CRC does not accept token coins, so this setting is irrelevant.**

TOKEN COIN VALUE?

❑ TO VIEW THE CURRENT TOKEN COIN VALUE:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "TOKEN COIN VALUE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

TOKEN COIN = $0.00

***The dollar amount is the current value.**

- **Using the RED and BLUE buttons, raise or lower the value in $0.25 increments. The value can range from $0.00 to $63.75.**
- **When the desired value is displayed, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**
- **If using an ACW-5-D-CRC, this mode can be set to either MULTIPLE CREDITS or SINGLE CREDIT MODE. The ACW-5-D-CRC does not accept token coins, so this setting is irrelevant.**

TOKENOTE® MODE

❑ TO VIEW THE CURRENT TOKENOTE® MODE:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "TOKENOTE® MODE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

MULTIPLE CREDITS

or

SINGLE CREDIT MODE

***Depending on the current setting.**

- **Use the RED and BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

TOKENOTE® VALUE?

❑ TO VIEW THE CURRENT TOKENOTE® VALUE:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "TOKENOTE® VALUE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

TOKENOTE = $0.00

***The dollar amount is the current value.**

- **Using the RED and BLUE buttons, raise or lower the value in $0.25 increments. The value can range from $0.00 to $63.75.**
- **When the desired value is displayed, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

COUPON DISCOUNTS?

❑ TO VIEW THE CURRENT COUPON DISCOUNT VALUES:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "COUPON DISCOUNTS?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

COUPON 1 = $0.00

***The dollar amount is the current value for coupon #1.**

- **Using the RED and BLUE buttons, raise or lower the value in $0.25 increments. The value can range from $0.00 to $63.75.**
- **When the desired value is displayed, you may program the next coupon or exit the PROGRAMMING MODE. To program the next coupon use the ACTION (YELLOW) button to scroll through each of the four Coupon Discounts and the RED and BLUE buttons to raise or lower the value. Repeat this step for each coupon you wish to program.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

ITEM PRICES?

❑ TO VIEW THE CURRENT ITEM PRICES:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "ITEM PRICES?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

ITEM 1 = $0.00

***The dollar amount is the current wash #1 price.**

- **Using the RED and BLUE buttons, raise or lower the value in $0.25 increments. The value can range from $0.00 to $63.75.**
- **When the desired value is displayed, you may program the next Item price or exit the PROGRAMMING MODE. To program, use the ACTION (YELLOW) button to scroll through each of the four Item Prices and the RED and BLUE buttons to raise or lower the value. Repeat this step for each Item Price you wish to program.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

ITEM NAMES?

❑ TO VIEW THE CURRENT ITEM NAMES:

- **From the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "ITEM NAMES?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

ITEM #1 NAME

briefly, then

WASH & RINSE

***The second message displayed is the current item #1 name.**

- **To change this name, use the RED and BLUE buttons to scroll through the factory pre-programmed Item Names. (Refer to APPENDIX E for a complete list of pre-programmed Item Names).**
- **When the desired message is displayed, you may program the next Item Name or exit the PROGRAMMING MODE. To program, use the ACTION (YELLOW) button to scroll through each of the four Item Names and the RED and BLUE buttons to scroll through the factory pre-programmed names. Repeat this step for each Item Name you wish to program.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

❑ **IF THERE IS NOT A PRE-PROGRAMMED NAME SUITABLE FOR YOUR APPLICATION, IT IS POSSIBLE TO PROGRAM A CUSTOM MESSAGE:**

- **Starting from the RUN MODE, enter the MENU MODE by pressing the ACTION (YELLOW) button.**
- **Use the RED and BLUE buttons to scroll through the categories until "ITEM NAME?" is displayed.**
- **To enter the PROGRAMMING MODE, press the ACTION (YELLOW) button. This will bring up the Item #1 name.**
- **If the new custom message is not intended for Item #1, repeatedly press the ACTION (YELLOW) button until the proper item number is displayed.**
- **Using the RED and BLUE buttons, scroll through the pre-programmed names until a blank name is displayed.**
- **Press and hold the ACTION (YELLOW) button until a flashing cursor is displayed, then release the ACTION (YELLOW) button.**
- **Use the RED and BLUE buttons to scroll through the displayable letters and characters.**
- **Once the desired character or letter is displayed, move to the next space by pressing the ACTION (YELLOW) button.**
- **When the name is complete, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

PROCEED PROMPTS?

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "PROCEED PROMPTS?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

PROCEED MESSAGE #1 briefly, then
SELECT SERVICE

***The second message displayed is the current Proceed Message #1.**

- **Use the RED and BLUE buttons to scroll through the factory pre-programmed Proceed Messages. (Refer to APPENDIX F for a complete list of pre-programmed Proceed Messages.)**
- **When the desired message is displayed, you may program the next message or exit the PROGRAMMING MODE. To program the next message, use the ACTION (YELLOW) button to scroll through each of the four Proceed Messages and the RED and BLUE buttons to scroll through the list of factory pre-programmed messages. Repeat this step for each Proceed Message you wish to program.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

❑ **IF THERE IS NOT A PRE-PROGRAMMED MESSAGE SUITABLE FOR YOUR APPLICATION, IT IS POSSIBLE TO PROGRAM A CUSTOM MESSAGE:**

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Use the RED and BLUE buttons to scroll through the categories until "PROCEED PROMPTS?" is displayed.**
- **To enter the PROGRAMMING MODE, press the ACTION (YELLOW) button. This will bring up Proceed Message #1.**
- **If the new custom message is not intended for Message #1, press the ACTION (YELLOW) button until the proper message number is displayed.**
- **Using the RED and BLUE buttons, scroll through the pre-programmed messages until a blank message is displayed.**
- **Press and hold the ACTION (YELLOW) button until a flashing cursor is displayed, then release the ACTION button.**
- **Use the RED and BLUE buttons to scroll through the displayable letters and characters.**
- **Once the desired character or letter is displayed, move to the next space by pressing the ACTION (YELLOW) button.**
- **When the message is complete, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

WELCOME PROMPTS?

❑ TO VIEW THE CURRENT WELCOME PROMPT MESSAGES:

- **From the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "WELCOME PROMPTS?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

WELCOME MESSAGE #1

briefly, then

SELECT SERVICE

***The second message displayed is the current Welcome Message #1.**

- **Use the RED and BLUE buttons to scroll through the factory pre-programmed Welcome Messages. (Refer to APPENDIX F for a complete list of pre-programmed Welcome Messages).**
- **When the desired message is displayed, you may program the next welcome message or exit the PROGRAMMING MODE. To program the next message, use the ACTION (YELLOW) button to scroll through each of the four Welcome Messages and the RED and BLUE buttons to scroll through the list of factory pre-programmed messages. Repeat this step for each Welcome Message you wish to program.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE, or twice to return to the RUN MODE.**

❑ IF THERE IS NOT A PRE-PROGRAMMED MESSAGE SUITABLE FOR YOUR APPLICATION, IT IS POSSIBLE TO PROGRAM A CUSTOM MESSAGE:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Use the RED and BLUE buttons to scroll through the categories until "WELCOME PROMPTS?" is displayed.**
- **To enter the PROGRAMMING MODE, press the ACTION (YELLOW) button. This will bring up the Welcome Message #1.**
- **If the new custom message is not intended for Message #1, press the ACTION (YELLOW) button until the proper message number is displayed.**
- **Using the RED and BLUE buttons, scroll through the pre-programmed messages until a blank message is displayed.**
- **Press and hold the ACTION (YELLOW) button until a flashing cursor is displayed, then release the ACTION (YELLOW) button.**
- **Use the RED and BLUE buttons to move through the displayable letters and characters.**
- **Once the desired character or letter is displayed, move to the next space by pressing the ACTION (YELLOW) button.**
- **When the message is complete, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET DATE & TIME?

❑ TO VIEW THE DATE AND TIME:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET DATE & TIME" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

SAT 08-06-94 05:30 P

- **There will be a flashing cursor on the day setting. This is the current day of the week. To change this, use the RED and BLUE buttons to adjust the day.**
- **When the correct day is displayed, press the ACTION (YELLOW) button to program the current month. The cursor will move to the first pair of numbers. Use the RED and BLUE buttons to adjust the month.**
- **Follow this same sequence to program the current date, year, hour, minute, and the AM/PM setting.**
- **When the correct day, date, and time are displayed, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

VEND DURATION?

❑ TO VIEW THE CURRENT VEND DURATION TIME:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**

- **Using the RED and BLUE buttons, scroll through the categories until "VEND DURATION?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

VEND PULSE = 1.0s

***The value shown is the current time in seconds.**

- **To change this value, use the RED and BLUE buttons to raise or lower the value in 0.1 second increments. The factory recommendation is 2.0 seconds, however, REFER TO YOUR CAR WASH MANUAL FOR THEIR RECOMMENDATION BEFORE PROGRAMMING THIS SETTING.**
- **When the desired value is displayed, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET EMPTY MODE?

❑ TO VIEW THE CURRENT EMPTY MODE:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET EMPTY MODE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

USE EXACT AMOUNT

or

OUT OF SERVICE

***Depending on the current setting.**

- **Use the RED and BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET BUILD MODE?

❑ TO VIEW THE CURRENT BUILD MODE:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET BUILD MODE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

LIMIT ENABLED

or

LIMIT DISABLED

***Depending on the current setting.**

- **Use the RED and BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET PAY DEFAULT?

❑ TO VIEW THE CURRENT PAYMENT MODE:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET PAY DEFAULT?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

OUT OF SERVICE

or

USE ALT PAYMENT

***Depending on the current setting.**

- **Use the RED or BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET DISPLAY STYLE?

❑ TO VIEW THE CURRENT DISPLAY STYLE:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET DISPLAY STYLE" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display should read:**

REGULAR (20 CHAR)

or

RETROFIT (18 CHAR)

***Depending on the current setting.**

- **Use the RED or BLUE buttons to toggle between the two settings.**

- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET UNIT NUMBER?

❑ TO VIEW THE CURRENT UNIT NUMBER:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET UNIT NUMBER?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

UNIT #2

***The value shown is the current unit number.**

- **To change this value, use the RED and BLUE buttons to increase or decrease the unit number.**
- **When the desired unit number is displayed, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET UPGRADE MODE?

❑ TO VIEW THE CURRENT UPGRADE MODE:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET UPGRADE MODE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

UPGRADES ENABLED

or

UPGRADES DISABLED

***Depending on the current setting.**

- **Use the RED or BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE**

SET BUTTON ORDER?

❑ TO VIEW THE CURRENT BUTTON ORDER:

- **Starting in the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET BUTTON ORDER?" is displayed.**

- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

WASH #1 TOP

or

WASH #1 BOTTOM

***Depending on the current setting.**

- **Use the RED or BLUE buttons to toggle between the two settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

SET BUTTON ENABLE?

❑ TO VIEW THE CURRENT ENABLE SETTING:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "SET BUTTON ENABLE?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display should read:**

BUTTON 1 = ENABLE

or

BUTTON 1 = DISABLE

***Depending on the current setting.**

- **Use the RED or BLUE buttons to toggle between the two settings.**
- **When the desired message is displayed, you may program the next button or exit the PROGRAMMING MODE. To program, use the ACTION (YELLOW) button to scroll through each of the button categories and the RED and BLUE buttons to toggle between the settings.**
- **Press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

TOTAL DEPOSITS?

❑ TO VIEW THE TOTAL DEPOSITS VALUES:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "TOTAL DEPOSITS" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display should read:**

CASH = $0.00
or
TOKENS = $0.00
or
CREDITS = $0.00

* The dollar amounts shown are the current dollar, token and debit/credit totals.

- To toggle between these values press, the ACTION (YELLOW) button.
- When these values have been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.

TOTAL VENDING?

❑ TO VIEW THE TOTAL VENDING VALUES:

- Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.
- Using the RED and BLUE buttons, scroll through the categories until "TOTAL VENDING?" is displayed.
- Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:

	VEND 1 CNT = 0	Number of Item 1 fees received
or	VEND 1 CSH = $0.00	Number of Item 1 fees received in cash
or	VEND 1 TOK = $0.00	Number of Item 1 fees received in token credit
or	VEND 1 DEB = $0.00	Number of Item 1 fees received in debit or credit cards

- Use the ACTION (YELLOW) button to toggle between these values.
- When these values have been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.

TOTAL OVERPAID?

❑ TO VIEW THE TOTAL OVERPAID VALUE:

- Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.

- **Using the RED and BLUE buttons, scroll through the categories until "TOTAL OVERPAID?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. The display will read:**

OVERPAID $0.00

***The dollar amount shown is the current overpaid totals.**

- **When this information has been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

TOTAL VAULT COUNT?

❑ TO VIEW THE TOTAL VAULT COUNT VALUES:

- **Starting from the RUN MODE, press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until "TOTAL VAULT COUNT?" is displayed.**
- **Enter the PROGRAMMING MODE by pressing the ACTION (YELLOW) button. One of the following will be displayed:**

$20 BILL CNT	0
$10 BILL CNT	0
$5 BILL CNT	0
$2 BILL CNT	0
$1 BILL CNT	0
QUARTER CNT	0
TOKEN CNT	0
TOKENOTE CNT	0
COUPON 1 CNT	0
COUPON 2 CNT	0
COUPON 3 CNT	0
COUPON 4 CNT	0
HOPPER CNT	0

***The values shown are the current counts for each of these denominations.**

- **Press the ACTION (YELLOW) button to scroll through these displayed values.**
- **When this information has been recorded, press the RETURN (WHITE) button once to return to the MENU MODE or twice to return to the RUN MODE.**

CLEAR RESETTABLE INVENTORIES

❑ TO CLEAR THE INVENTORIES:

- **Starting from the RUN MODE, first press the ACTION (YELLOW) button to enter the MENU MODE.**
- **Using the RED and BLUE buttons, scroll through the categories until any of the "INVENTORY" categories are displayed.**
- **Next, press the ACTION (YELLOW) button to enter the PROGRAMMING MODE and to display the contents of the category entered.**
- **At this point, press and hold both the RED and BLUE buttons until the display reads:**

CLEAR INVENTORIES?

- **Release both buttons. When both buttons have been released, the display will begin sequencing through the following messages:**

CLEAR INVENTORIES?

ACTION TO CLEAR

OR RETURN TO ABORT

- **This message sequence will continue until either the ACTION (YELLOW) button or the RETURN (WHITE) button is pressed.**
- **If the ACTION (YELLOW) button is pressed, the display will read:**

MEMORY CLEARED!

briefly, then return to the beginning of the MENU MODE.

- **If the RETURN (WHITE) button is pressed, the display will read:**

MEMORY NOT CLEARED!

briefly, then return to the beginning of the MENU MODE.

- **Press the RETURN (WHITE) button once to return to the RUN MODE.**

VI. INSTALLATION / MAINTENANCE

★ **It is very important to read and understand all of these instructions before attempting installation.**

The installation process contains two distinct operations, **MECHANICAL INSTALLATION**, and **ELECTRICAL INSTALLATION**.

THE MECHANICAL INSTALLATION INVOLVES:

- Unpacking the machine
- Positioning the Auto Cashier Station Unit
- Mounting the Auto Cashier Station Unit
- Running wiring conduits to the car wash

THE ELECTRICAL INSTALLATION INVOLVES:

- Running the necessary wiring
- Making the proper wiring terminations
- Correctly setting the Car Wash Cycle Synchronization Switch
- Setting the PROGRAMMABLE OPTIONS
- Performing a General Systems Test

The following sections provide detailed explanations for each of these installation procedures.

A. MECHANICAL INSTALLATION

1. UNPACKING

There are a number of things to keep in mind while unpacking your ACW-5-D that will make the installation and continued operation of your machine run smoother. These tips are listed below.

❑ **BE SURE TO SAVE YOUR KEYS**

The keys and lock inserts are placed inside a small cloth bag attached to the outside of the machine in a visible, secured spot. This bag should be located between the layers of shrink-wrap that encircle the outside of the cabinet. When removing this shrink-wrap, be sure to locate the bag containing the keys and set it aside so it is not thrown away. **MAKE A PERMANENT RECORD OF THE NUMBERS ON YOUR KEYS IN CASE A KEY IS LOST AND MUST BE REORDERED.**

❑ **REMOVE THE PACKING STRAP FROM THE VALIDATOR**

The Validator comes shipped with a packing strap secured around it to minimize the vibrations of shipping. If this strap is not removed, a high bill rejection rate could result. The strap may be cut off with a pair of wire cutters or sturdy scissors.

❑ **LOOSEN THE VALIDATOR THUMBSCREW**

The Validator comes shipped with a tightly secured thumbscrew that holds the Validator to the Validator Bracket. This is to minimize the vibrations caused by shipping. This thumbscrew should be loosened three full turns. If the thumbscrew is not loosened, bill stealing or Stacker jamming could result. The screw may be loosened by hand or with a small pair of pliers.

❑ **REMOVE THE PACKING STRAP FROM THE HOPPER**

The Hopper comes shipped with a packing strap secured around it to minimize the vibrations caused by shipping. If this strap is not removed, the Hopper will not tip out for easy filling. The strap may be cut off with a pair of wire cutters or sturdy scissors. Cardboard is placed around the edges of the Hopper to protect it during shipping. After removing the strap, be sure to remove the cardboard as well.

❑ **REMOVE ALL PACKING DEBRIS FROM THE HOPPER**

During packing and unpacking, it is possible for debris to fall into the Hopper Bowl (the area where the coins go). If this material is not removed, Hopper jamming could occur. With the power completely disconnected, remove all loose material inside the Hopper Bowl.

❑ **FILL HOPPER WITH COINS**

Before powering up the machine for the first time, it is recommended that the Hopper be filled with coins. In order for the Hopper to dispense coins, there must be enough coins in the Hopper Bowl to touch the two sensing plates located at the bottom of the bowl. Otherwise, the Hopper will register as empty.

2. POSITIONING

There are no set guidelines for the placement of the Auto Cashier Station. However, it is recommended that the machine is positioned far enough away from the wash entrance to minimize the amount of overspray that may get into the Auto Cashier Station. Also, there is a typical height, from the pavement to the bottom of the cabinet, of approximately 26" (see Figure 2).

3. MOUNTING

It is recommended that the Auto Cashier Station be mounted in a permanent enclosure. Safety is a primary concern, so the equipment must be securely mounted. Hamilton recommends using one of the following methods:

- **The first method is to construct a small brick or concrete kiosk that will house the Auto Cashier. Fig. 1 and Fig. 2 give the Auto Cashier Station mounting hole locations as well as suggested kiosk dimensions. Have your engineer or contractor recommend construction suitable for strength and stability. For an illustration of this mounting procedure, refer to APPENDIX G.**

- **The other method involves mounting the Auto Cashier Station on an optional ACW Base. In this situation, the base is secured to the pavement and the Auto Cashier Station is secured to the base. Fasteners to be used should be recommended by your engineer as to strength and suitability. If this method is chosen, it is strongly recommended that the optional ACW Lighted Cap be installed. This addition serves to better insulate the Auto Cashier from harsh environmental conditions as well as offering an attractive lighted top. Contact Hamilton Mfg. for installation instructions for the ACW Lighted Cap.**

★ **Hamilton will not be responsible for injury due to improper**

installation.

4. RUNNING CONDUIT

Typical electrical code requires low and high voltage wiring to be run in separate conduits. Because of this, the Auto Cashier Station has two ¾" conduit mounting holes in the back of the cabinet, as well as two ¾" and one ½" conduit holes in the bottom of the cabinet. These bottom holes are matched with identical holes in any of the optional ACW Bases offered by Hamilton Mfg.

★ **At least one bottom hole must remain unused at all times.**

- **Conduit carrying high voltage 120VAC power lines, as well as any signal lines containing 120VAC, should be connected to the center mounting hole on the back wall of the Auto Cashier Station, or any one of the bottom mounting holes.**

- **Conduit carrying lines with 24VAC, 24VDC, 12VAC or 12VDC signals should be connected to the mounting hole on the right side of the back wall (when viewed from the front of the machine), or any unused bottom mounting hole.**

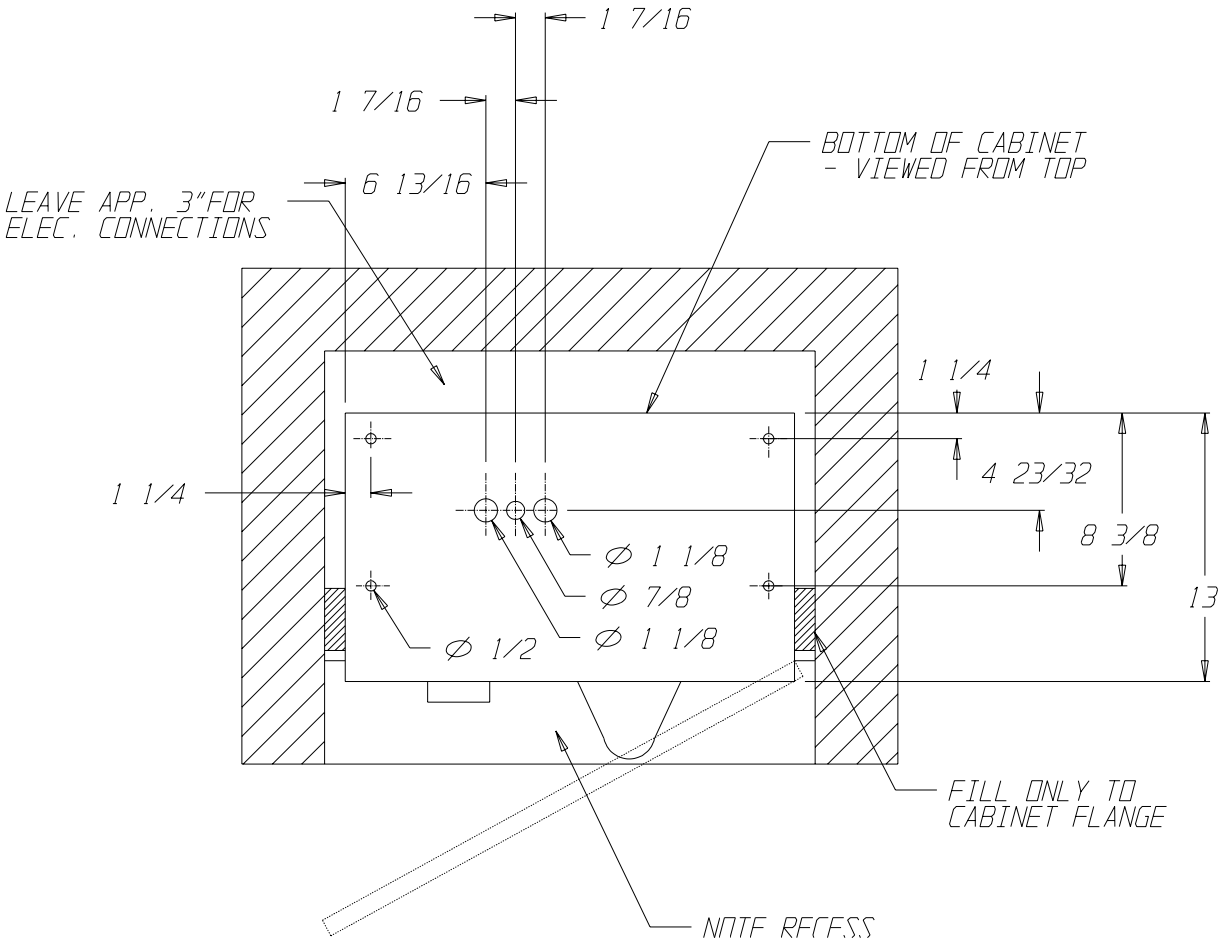


Figure 1

MOUNTING DETAILS A

(All dimensions in inches)

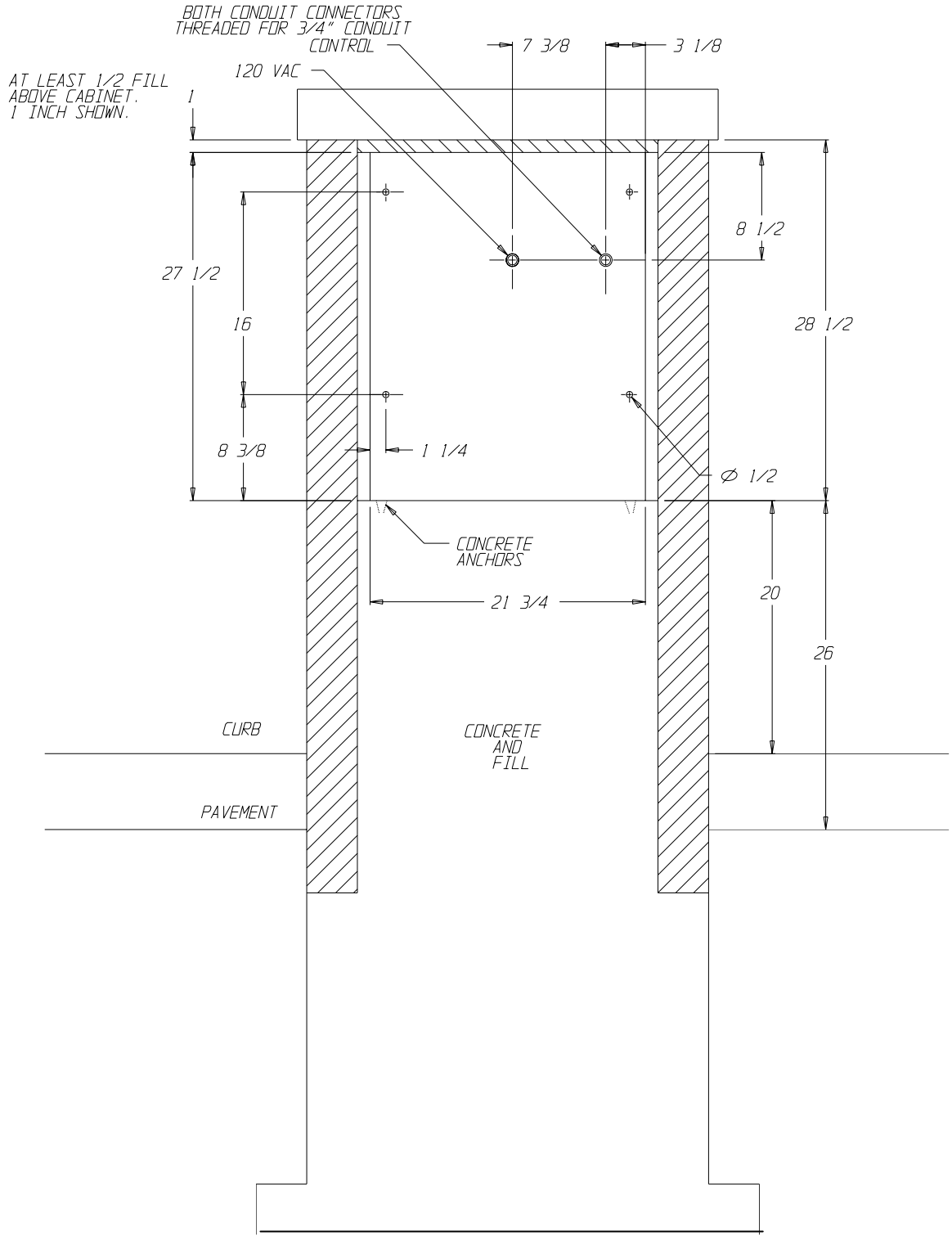


Figure 2
MOUNTING DETAILS B
(All dimensions in inches)

B. ELECTRICAL INSTALLATION

This auto cashier operates on 120 VAC, 60Hz. This unit uses a 5 AMP circuit breaker. Unit may be hard-wired with conduit if desired.

A GROUND FAULT INTERRUPTER IS REQUIRED. **The recommended Ground Fault Interrupter is sometimes referred to as an ELCI (Equipment Leakage Circuit Interrupter) and should have the following specifications:**

- **120 VAC**
- **15 AMP**
- **6-10mA trip level**
- **Should <u>not</u> trip when power is removed from circuit.**

1. PULLING WIRES

❑ **THE NUMBER AND TYPE OF WIRES NEEDED TO BE PULLED FOR THE AUTO CASHIER STATION IS SHOWN BELOW.**

WIRES	WIRE GAUGE	WIRE DESCRIPTION	WIRE COLOR
3	14 AWG or local code specification	120VAC HOT, NEUTRAL, EARTH GROUND	BLK, WHT, GRN
*2	20 AWG	ITEM 1 SIGNAL ITEM 1 RETURN	ANY COLOR
*2	20 AWG	ITEM 2 SIGNAL ITEM 2 RETURN	ANY COLOR
*2	20 AWG	ITEM 3 SIGNAL ITEM 3 RETURN	ANY COLOR
*2	20 AWG	ITEM 4 SIGNAL ITEM 4 RETURN	ANY COLOR
2	20 AWG	CYCLE / INHIBIT COIL CYCLE / INHIBIT COIL	ANY COLOR
1	22 AWG single pair shielded cable	COMMUNICATIONS	ANY COLOR

***It is also acceptable to run one common line, which is then connected to all ITEM RETURN lines.**

For proper operation of the Auto Cashier Station, all wires listed above must be pulled and terminated as explained in the following section, WIRE TERMINATIONS.

2. WIRE TERMINATIONS

❑ **THE WIRE TERMINATIONS SHOULD PROCEED AS FOLLOWS:**

1) **One side of the three power supply wires (120VAC HOT, 120VAC NEU, and 120VAC GND) should be attached directly to the electrical service panel supplying power to the installation. They should be connected to a 15 AMP circuit breaker and the Auto Cashier Station should be the only device on this circuit. The other end of these three wires should**

be routed into the Auto Cashier Station through the installed conduit. The wires should be terminated using wire-nuts so that each of the colors (WHT, BLK, and GRN) mates with the same color wire coming from within the service box connected to the Relay Panel of the Auto Cashier Station.

2) **The ITEM 1 wire pair (ITEM 1 SIGNAL and ITEM 1 RETURN) is used to signal the wash controller that a customer has completed a transaction and has selected the Wash #1 sequence. The signal presented to the car wash controller is a normally open, dry contact relay closure. In the Auto Cashier Station, connect one end of this pair to terminals 1 and 2 on the Relay Panel terminal block. Refer to your car wash controller literature for proper connections on the other end of this pair.**

3) **The ITEM 2 wire pair (ITEM 2 SIGNAL and ITEM 2 RETURN) is used to signal the wash controller that a customer has completed a transaction and has selected the Wash #2 sequence. The signal presented to the car wash controller is a normally open, dry contact relay closure. In the Auto Cashier Station, connect one end of this pair to terminals 3 and 4 on the Rely Panel terminal block. Refer to your car wash controller literature for proper connections on the other end of this pair.**

4) **The ITEM 3 wire pair (ITEM 3 SIGNAL and ITEM 3 RETURN) is used to signal the wash controller that a customer has completed a transaction and has selected the Wash #3 sequence. The signal presented to the car wash controller is a normally open, dry contact relay closure. In the Auto Cashier Station, connect one end of this pair to terminals 5 and 6 on the Rely Panel terminal block. Refer to your car wash controller literature for proper connections on the other end of this pair.**

5) **The ITEM 4 wire pair (ITEM 4 SIGNAL and ITEM 4 RETURN) is used to signal the wash controller that a customer has completed a transaction and has selected the Wash #4 sequence. The signal presented to the car wash controller is a normally open, dry contact relay closure. In the Auto Cashier Station, connect one end of this pair to terminals 7 and 8 on the Rely Panel terminal block. Refer to your car wash controller literature for proper connections on the other end of this pair.**

6) **The CYCLE/INHIBIT pair is used for the car wash controller to signal the Auto Cashier when a car has completed its wash and has left the bay. The signal coming from the car wash controller must be able to energize the coil of a relay on the Relay Panel. This means that the car wash controller is supplying both voltage and current when it energizes the coil. Inside the Auto Cashier Station, the wiring connections depend on the signal provided by the car wash controller.**

   - **If the externally supplied signal is a 120VAC signal, the CYCLE/INHIBIT pair should be connected to the two RED wires coming from the service box connected to the Relay Panel. This connection is made by using wire-nuts to connect the CYCLE/INHIBIT SIGNAL to one of the RED wires (it doesn't matter which one), and connecting the CYCLE/INHIBIT RETURN wire to the other RED wire. If there are no RED wires coming from the service box, contact your equipment supplier or Hamilton Mfg. before proceeding.**

   - **If the externally supplied signal is 24VAC, 24VDC, 12VAC or 12VDC, the CYCLE/INHIBIT pair should be connected directly to the terminal block of the Relay Panel. The proper connection will have one wire of this pair connected to terminal 9 of the Relay Panel (it doesn't matter which one) and the other wire of the pair connected to terminal 10. If there are RED wires coming from the service box connected to the Relay Panel, contact your equipment supplier or Hamilton Mfg. before proceeding.**

7) **The communications cable is used to transfer information back and forth between the Auto Cashier Station, or Stations, and the Audit Code System located inside the convenience store. This cable should be run in a conduit by itself or with other low voltage lines (less than 30V). It should never be run with wires carrying more than 30V, even for very short distances. If the supplied communications cable is to be used, the ends of the cable should already be terminated. If using the supplied cable, the white Molex 4-circuit plug connector gets plugged into the open 4-circuit receptacle connector labeled DATA LINE in the harness schematic of the Auto Cashier Station. The other end, with the green 3-circuit terminal block plug, should be plugged into the open 3-circuit terminal block receptacle on the Audit Code Controller. If either of these connectors needs to be removed to pull the cable, make careful note of the connections and what color wire goes to which position so that re-connection will be trouble free. If the supplied cable is not going to be used, the following instructions detail the cable termination parts and procedures.**

   - **Inside the Auto Cashier Station there is a 4-circuit Molex receptacle connector, which is the connection point of the communications line. To make this connection, the two wires of the communications cable should be terminated by crimping one Molex 02-09-1119 receptacle terminal onto each of the two wires. These wires should then be inserted into positions 1 and 2 of a Molex 03-09-1041 4-circuit plug connector (usually a RED wire goes to position 1 and a WHT wire goes to position 2). The plug connector of the communications cable should then be inserted into the receptacle connector of the Auto Cashier Station's harness.**

   - **At the Audit Code Controller, the communications cable should be terminated by screwing the two wires into positions 1 and 2 of the 3-circuit terminal block plug. The positions of the wires should be opposite of what was installed at the Auto Cashier Station end (usually a WHT wire goes to position 1 and a RED wire goes to position 2). If these wire connections are not crossed as indicated, the communications features of the ACW-5-D will not operate.**

❑ ADDITIONAL WIRE TERMINATIONS FOR USE WITH THE CRC CREDIT CARD SYSTEM.

The installation of the changer should proceed as outlined in the above section. However, if a CRC Credit Card System is being used, the following must be performed, as well.

- **The telephone line used for the changer must be a dedicated line. No other telephones or equipment can be connected with the same line (the use of line splitters is not permitted). If more than one CRC changer is to be installed at the same location, a dedicated phone line must be run to each machine.**
- **The telephone line should be run in a separate conduit. If any other wiring is run in the same conduit, communications problems could occur.**
- **For more detailed information on installing the CRC, refer to the CRC manual.**

3. SETTING THE CAR WASH CYCLE SYNCHRONIZATION SWITCH

The Car Wash Cycle Synchronization Switch is the silver toggle switch located on the Relay Panel (refer to Figure 3). The proper setting of this switch depends on the equipment used in your car wash system. If the car wash equipment normally leaves the CYCLE/INHIBIT RELAY de-energized while in stand-by, and then energizes the relay briefly while the customer is in the bay, this switch should be set to PASSIVE. If the reverse occurs, where the car wash equipment normally energizes the CYCLE/INHIBIT RELAY while in stand-by, then de-energizes the relay briefly while the customer is in the bay, the switch should be set to ACTIVE.

4. PROGRAMMING CONTROLLER OPTIONS

To set the PROGRAMMABLE OPTIONS, first refer to the PROGRAMMABLE OPTIONS section of this manual for a description of what features are programmable and an explanation of the different selections. Then, refer to the PROGRAMMING section for in-depth coverage of the actual programming process.

5. GENERAL TEST

After completing all of the steps under MECHANICAL and ELECTRICAL INSTALLATION, the following test can be conducted:

- **Be sure to test all facets of the operation, including the bill acceptor and coin acceptors.**
- **Test for proper wash actuation and Cycle/Inhibit control.**
- **Ensure that coins are being dispensed for both change and as a refund. If there are any problems refer to the TROUBLESHOOTING section or contact Hamilton Mfg.**

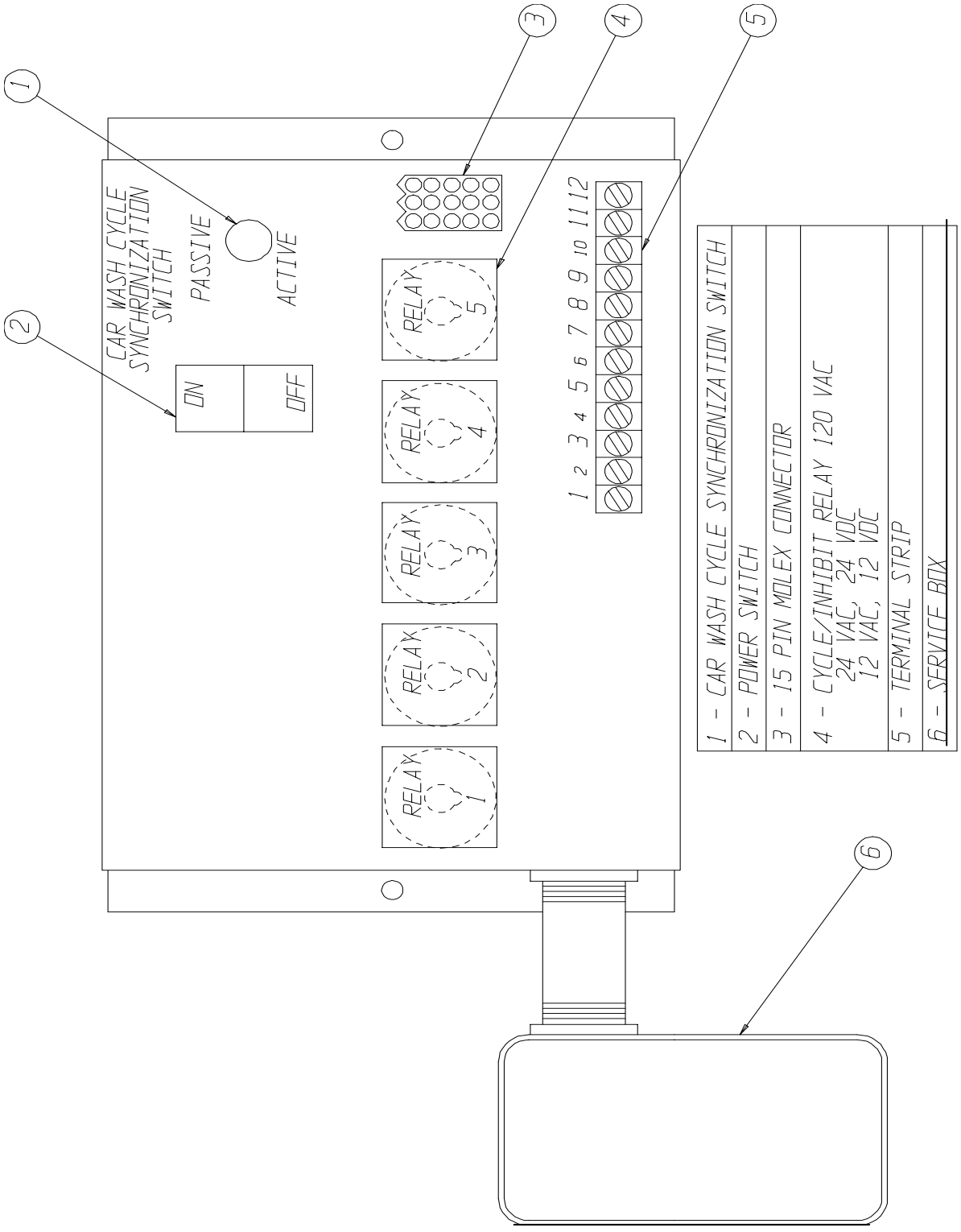


Figure 3
RELAY PANEL

C. MAINTENANCE

A few simple maintenance routines can extend the usefulness and productivity of the ACW-5-D.

CAUTION!

DO NOT USE OIL, GREASE OR SOLVENTS ON ANY PART OF THIS UNIT EXCEPT AS CLEARLY SPECIFIED IN THIS MANUAL, THE HOPPER MANUAL, OR IN THE VALIDATOR/STACKER MANUAL.

❑ Monthly Maintenance

1. HOPPER

To remove the Hopper from the machine and clean it, follow the steps below:

- **Disconnect the CIRCUIT BREAKER on the relay panel to turn off all power to the machine.**
- **Empty all of the coins from the Hopper.**
- **Unplug the main harness from the bottom of the Hopper.**
- **Tilt the top of the Hopper backwards slightly, then lift up and forward to remove the Hopper Assembly from the cabinet.**
- **Use a Phillips screwdriver to remove the eight #8 x 1/4" self-tapping screws that hold the cover on the outer housing.**
- **Remove the coin baffle from the outer housing.**
- **Sweep all debris out of the Hopper with a clean soft brush.**
- **Dampen a cloth and apply a HOUSELHOLD CLEANER to all surfaces inside the coin bowl. Scrub if needed.**
- **Dampen a clean cloth and soak up any remaining residue.**
- **Vacuum the inside of the Hopper thoroughly, and return the coins.**
- **Reassemble the Hopper and re-install it into the machine.**

2. VALIDATOR

- **Clean the Validator by unplugging and removing it from the cabinet.**
- **Unscrew the two thumb wheels and open the bottom plate.**
- **Use a clean soft brush or cloth to remove any lint, dust or dirt that may have become deposited on the sensor lenses, belts and/or wheels.**
- **Reassemble the Validator and re-install it into the machine.**

3. STACKER

The Auto Cashier Station can be operated without the Stacker. If you do not wish to use the Stacker, the BY-PASS PLUG attached to the Stacker Harness must be used. Unplug the Stacker and connect the Harness to the BY-PASS PLUG.

If the Stacker is being used, it is important to perform the following maintenance on a monthly basis:

- **Keep the Stacker clean by using a clean soft brush or cloth to remove any lint, dust or dirt.**
- **Make sure the relay is tight in the socket with the relay bail in place.**
- **Check operation; the Stacker should cycle smoothly.**
- **With the Stacker empty, check the pressure plate. Push the plate down and let it go. It should snap freely to the top.**

❑ Annual Maintenance

1. VALIDATOR

The Validator should be serviced annually to maintain maximum performance. This work should only be done by a trained technician.

2. STACKER

- **All pivot points must be cleaned and re-greased.**
- **Check the switch tightness and the cam to see if it is still in round.**
- **Check for bent, loose, worn, rusted or corroded parts.**
- **Check the motor for coasting.**
- **Use a small amount of Dry Slick™ on the slides. Do not use grease or WD-40™.**

VII. ERROR CODES / TROUBLESHOOTING

The ACW-5-D System is equipped with a self-diagnostic capability that makes it possible for common problems to be quickly detected and serviced. When most errors occur, the Controller will automatically shut down the entire unit as a precaution in order to prevent further malfunctions. When the Auto Cashier Station shuts itself down after an error has been detected, it deactivates the bill acceptor and coin acceptors so that further deposits cannot be accepted. When this occurs, the display will read:

OUT OF SERVICE

It is necessary to troubleshoot and correct the problem before normal operation can resume. Shutting off power to the unit will not erase this error condition.

TO RESUME NORMAL OPERATION, IT IS NECESSARY TO:

1. **Acknowledge that you have seen the error. To do this, press the YELLOW button on the Controller labeled ACTION. When this button is pressed the display will show the detected error. (Possible errors and their descriptions are covered later in this section.)**
2. **After making note of the error and correcting the problem, it is necessary to again press the ACTION button to return to normal operation. When this button is pressed the display will read:**

ERROR ACKNOWLEDGED

briefly, then return to the welcome prompt.

It is possible for the ACW-5-D to detect an error and remain operational. This occurs when the default payment mode has been set to USE ALT PAYMENT instead of OUT OF SERVICE. In the USE ALT PAYMENT mode, the Controller will only shut down the component that is malfunctioning. The controller will stop displaying the normal Welcome Messages and instead display the messages "PAYMENT OPTIONS…" and "USE BILLS ONLY" (depending on which payment options are available). When all the payment options have been exhausted, the Auto Cashier Station will shut down and display an error message for the last component malfunction. When this occurs, follow the above steps to return to normal operation.

ERROR CODES

❑ $5 INPUT STUCK

The normal signal on the $5 line, in standby, is a TTL level logic high. When signaling that a $5, $10 or a $20 bill has been accepted this line is pulled low briefly. If this line should get pulled low for an extended period of time, this error will result and the machine will be shut down.

❑ $1 INPUT STUCK

The normal signal on the $1 line, in standby, is a TTL level logic high. When signaling that a $1 bill has been accepted this line gets pulled low briefly. If this line should get pulled low for an extended period of time, this error will result and the machine will be shut down.

❑ 25¢ INPUT STUCK

The normal signal on the Quarter line, in standby, is a TTL level logic high. When signaling that a quarter has been accepted this line is pulled low briefly. If this line should get pulled low for an extended period of time, this error will result and the machine will be shut down.

❑ VALIDATOR SHUT DOWN

If the Validator (only an HV-X v3.15 or higher) detects an error, it will send a pulse of specific length to the Controller and a special Validator Shut Down error will be displayed. This error indicates a Validator problem, not a Controller problem.

❑ TOKEN INPUT STUCK

The normal signal on the Token Line, in standby, is a TTL level logic high. When signaling that a token coin has been accepted, this line is pulled low briefly. If this line should be pulled low for an extended period, this error will result and the machine will be shut down.

❑ DROP SWITCH STUCK

The normal signal on the Drop line, in standby, is a TTL level logic low. When signaling that a coin is being dispensed, this line is pulled high briefly. If this line should be pulled high for an extended period, this error will result and the machine will be shut down. This situation is only tested during the time a payout is occurring.

❑ UNEXPECTED COIN DROP

The normal signal on the Drop line, in standby, is a TTL level logic low. When a coin is dispensed, this line goes high briefly, then returns to its logic low state. If the Controller records two unexpected coin drop signals while in standby, the machine will shut down with this error.

❑ HOPPER COASTING ERROR

If two coin drop signals are recorded immediately after the Hopper has paid out, the machine will shut down with this error.

❑ HOPPER TIME-OUT

The normal signal on the Drop line, in standby, is a TTL level logic low. When a coin is dispensed, this line goes high briefly then returns to its logic low state. If during the time a payout is occurring a high pulse is not detected for 10 consecutive seconds, this error will result and the machine will be shut down.

❑ STACKER TIME-OUT

The normal signal on the Busy line, in standby, is a TTL level logic low. This line goes high during the bill stacking process then returns to its logic low state when the Stacker reaches its home position. If the Stacker never returns to its home position, this error will result and the machine will be shut down.

❑ MULTIPLE POWER INT

There is special circuitry inside the Controller to determine if a power outage has occurred. If there are several power outages while processing money (dispensing coins, stacking bills, etc.), this error will occur and the machine will be shut down.

❑ MEMORY DATA ALTERED!

There are special detection routines built into the Controller's program that can determine if its memory has been corrupted. If the memory is corrupted, values such as wash prices and audits can no longer be trusted. If this should occur, the entire memory is cleared and the machine will be shut down. Re-programming the Controller will be necessary since all settings will default to the lowest possible denomination ($0.00) for credits and the highest possible denomination ($63.75) for any payment option. This default mechanism is used as a safeguard to ensure that the machine does not give away free washes. Below is a list of the PROGRAMMABLE OPTIONS and their default settings.

PROGRAMMABLE OPTIONS	DEFAULT SETTINGS
SET OPERATING MODE?	ONLINE MODE
SET ITEM PASSWORDS?	00
SET QUE MODE?	SUSPEND VEND PULSE
TOKEN COIN MODE?	MULTIPLE CREDITS
TOKEN COIN VALUE?	$0.00
TOKENOTE® MODE?	MULTIPLE CREDITS
TOKENOTE® VALUE?	$0.00
COUPON DISCOUNTS?	$0.00
ITEM PRICES?	$63.75
ITEM NAMES?	BLANK
PROCEED PROMPTS?	BLANK
WELCOME PROMPTS?	BLANK
SET DATE & TIME?	SUN 01-01-00 12:00 A
VEND DURATION?	1.0 SECOND
SET EMPTY MODE?	OUT OF SERVICE
SET BUILD MODE?	LIMIT DISABLED
SET PAY DEFAULT?	OUT OF SERVICE
SET HOPPER STYLE?	NEW STYLE HOPPER
SET DISPLAY STYLE?	REGULAR (20 CHAR)
SET UNIT NUMBER?	UNIT #2
SET UPGRADE MODE?	ENABLED
SET BUTTON ORDER?	WASH #1 TOP
SET BUTTON ENABLE?	ENABLED

★ **The following errors will be displayed as long as the faulty condition exists, but will clear as soon as the condition is corrected. THIS MEANS THAT THESE ERRORS DO NOT NEED TO BE ACKNOWLEDGED BY PRESSING THE ACTION BUTTON.**

❑ HOPPER EMPTY

The normal signal on the Empty line, in standby, is a TTL level logic low. When there are not enough coins to make a connection from the bottom of the Hopper up to the two coin sensing plates in the Hopper bowl, this line goes high. When this happens, the Hopper Empty error will result. Refilling the Hopper with coins will automatically clear this error.

❑ RELEASE BUTTON

When one of the item selection buttons is held in for an extended period, this message will appear on the display. Releasing the button should automatically clear this error. If the error does not clear, however, it could indicate a broken or stuck REFUND button or contact block. Dislodge or replace the button or contact block to remedy this error. If the error still does not clear, there may be damage to the CPU, in which case you should contact the factory for assistance.

❑ –PLEASE WAIT!—CAR WASH BUSY—

The normal signal at the Controllers cycle input is a TTL level logic low. When the car wash signals that a customer is leaving the bay, this line goes to a high logic level for the duration of the signal from the car wash. If this line should unexpectedly go high (no car should be in the wash) for more than 8 seconds, this error will occur indicating a malfunction in the car wash system. Returning the cycle line to its normal state will automatically clear this error.

Another cause for this error may be that the blue connector on the split harness has come loose or undone. Be sure to check this connection. If it is loose, reconnect it to clear the error.

❑ –OUT OF SERVICE—CAR WASH CLOSED—

The normal signal at the Controllers cycle input is a TTL level logic low. When the car wash signals that a customer is leaving the bay, this line goes to a high logic level for the duration of the signal from the car wash. If this line should unexpectedly go high (no car should be in the wash) for more than 10 minutes, this error will occur indicating a malfunction in the car wash system. Returning the cycle line to its normal state will automatically clear this error.

TROUBLESHOOTING

In addition to the self-diagnostic error codes, there are other possibilities that could arise either in the installation, or at some point during the extended operation of your ACW-5-D. This section provides general troubleshooting guides, broken down into categories of symptoms.

TROUBLESHOOTING GUIDE		
DISPLAY QUESTIONS		
SITUATION	**PROBABLE CAUSE**	**CORRECTIONS**
• Display is blank • No manual Hopper run • No functions • No LED on Validator	A. No power source B. Circuit Breaker is set to off	A. Switch on main power B. Switch on Circuit Breaker
• Display is always blank • Hopper runs using manual switch located on bottom rear of Hopper	Controller display problems	Contact the factory for assistance
Display is blank until button is pushed or credit is deposited	Welcome Messages are not programmed	Program Welcome Messages
Display reads "OUT OF SERVICE" alternating to "HOPPER EMPTY", or display reads "USE EXACT AMOUNT" alternating to "NO CHANGE RETURNED"	A. Coin Hopper is empty B. Sensors are dirty C. Loose connection on Empty Circuit	A. Refill Hopper B. Clean Sensors (See INSTALLATION / MAINTENANCE section) C. Locate and repair the connection
Display reads "OUT OF SERVICE"	Error detected by Controller (See Error Codes)	Correct malfunction, acknowledge error
Display reads "RELEASE BUTTON"	A. Refund Button or contact block is stuck B. Damage to CPU	A. Dislodge stuck button or contact block B. Contact the factory for assistance
• In ONLINE mode • Display stuck on "DRIVE AHEAD", "CHECKING CODE" or "REFUND"	A. Communications line break B. Audit Code System communications defective C. Auto Cashier not communicating D. Auto Cashier set to wrong unit number	A. Check communications cable connections B. Contact the factory for assistance C. Contact the factory for assistance D. Change unit number to correct setting

TROUBLESHOOTING GUIDE		
DISPLAY QUESTIONS (continued)		
SITUATION	**PROBABLE CAUSE**	**CORRECTIONS**

Display on Audit Code System shows that Bay "X" is not responding	**A. Communications line break** **B. Audit Code System communications defective** **C. Auto Cashier not communicating** **D. Auto Cashier set to wrong unit number** **E. Operating in OFFLINE mode**	**A. Check communications cable connections** **B. Contact the factory for assistance** **C. Contact the factory for assistance** **D. Change unit number to correct setting** **E. Change operating mode to ONLINE mode**
During a Stacked Wash situation, customer sees credit from the previous customer	**Incorrect cycle signaling from car wash controller (cycle pulses when car leaves)**	**Ensure the cycle signal starts when a car pulls into the bay and does not end until it leaves**
During a Stacked Wash situation, customer is told to "DRIVE AHEAD" when another car is in the wash bay	**Incorrect cycle signaling from car wash controller (cycle pulses when car enters)**	**Ensure the cycle signal starts when a car pulls into the bay and does not end until it leaves**
Customer sees a buy-up message for over $16,000	**Wash prices are set in incorrect order**	**Washes must be priced in ascending order with Wash #1 being the cheapest and Wash #4 the most expensive**

TROUBLESHOOTING GUIDE

MONEY ACCEPTANCE QUESTIONS

SITUATION	PROBABLE CAUSE	CORRECTIONS
• Cannot activate refund • Credit is showing on display	A. In "USE EXACT AMOUNT" mode B. Contact buttons are not working C. CPU input is missing	A. Fill coin Hopper or change mode to "OUT OF SERVICE" B. Replace contact block C. Contact the factory for assistance
Accepts fee, but car wash does not start	Que Mode set incorrectly	Change Que Mode to SUSPEND VEND PULSE
• Accepts fee, but car wash does not start • "DRIVE AHEAD" or similar message shown on Auto Cashier Display	Observe the VEND RELAYS and see below	Observe the VEND RELAYS and see below
IF THE RELAY ACTIVATES…	A. Duration of relay closure is too long or too short for wash equipment to recognize B. Wash equipment is not accepting signal from Auto Cashier C. Broken connection in wiring between Auto Cashier and wash equipment	A. Reprogram "VEND DURATION" setting in Auto Cashier Controller B. Refer to the car wash manual C. Locate and repair connection
IF RELAY DOES NOT ACTIVATE…	A. Vend relay is loose or defective B. Broken connection in wiring between Auto Cashier Controller and relay panel C. Output missing from Controller	A. Reinstall or replace relay B. Locate and repair connection C. Contact the factory for assistance
One Coin Acceptor does not accept coins	A. Broken connection on power wires to Coin Acceptor B. Coin Acceptor sensitivity is too high C. Coin Acceptor is defective	A. Locate and repair connection B. Adjust sensitivity C. Replace Coin Acceptor

TROUBLESHOOTING GUIDE

MONEY ACCEPTANCE QUESTIONS (CONT...)

SITUATION	PROBABLE CAUSE	CORRECTIONS
• Both Coin Acceptors do not accept coins • Validator does accept bills	A. Broken connection on either the power wires supplying the Transformer, or the wires from the Transformer to the Coin Acceptor B. Transformer not working C. Both Coin Acceptors are defective	A. Locate and repair connection B. Replace Transformer C. Replace Coin Acceptors
• Both Coin Acceptors do not accept coins • Validator is disabled	A. Controller is either OUT OF SERVICE, in PROGRAMMING MODE or TRANSMITTING DATA B. Broken connection on ENABLE wire which runs from the Controller to the Validator and Transformer C. ENABLE output missing from Controller	A. Place Controller in RUN MODE B. Locate and repair connection C. Contact the factory for assistance
Coin Acceptor accepts only some coins	A. Coins being used are of poor quality B. Coin Acceptor sensitivity too high C. Loose connection to Coin Acceptor	A. Use a different coin sample B. Adjust sensitivity C. Locate and repair connection
• Validator disabled (Validator LED flashing only half of "1") • Coin Acceptor is working	A. Broken connection on ENABLE wire from Controller to Validator B. Validator ENABLE circuit changed	A. Locate and repair connection B. Contact the factory for assistance
• Validator dead (No LED lit on Validator) • Coin Acceptor is working	A. Broken connection on power wires to Validator B. Validator is defective	A. Locate and repair connection B. Contact the factory for assistance

TROUBLESHOOTING GUIDE

MONEY ACCEPTANCE QUESTIONS (CONT...)

SITUATION	PROBABLE CAUSE	CORRECTIONS
• Validator dead (LED lit, but not displaying error code) • Coin Acceptor is working	A. Dirty or blocked sensor inside Validator B. Blocked bill path (will not allow insertion) C. Validator drive train problems D. Validator PCB damaged	A. Remove obstruction or clean sensors B. Remove obstruction C. Contact the factory for assistance D. Contact the factory for assistance
Validator dead (LED flashing error code)	Error detected by Validator PCB	Refer to the Validator Manual for Validator error codes
Validator runs without inserting a bill	Dirty blocked sensor inside Validator	Remove obstruction or clean sensors
Validator rejects too many bills or all bills (bill goes in and comes back out)	A. Dirty sensor, magnetic heads or rollers B. Validator requires service	A. Clean as needed or contact the factory for assistance B. Contact the factory for assistance
• Validator accepts bills • Does not give credit	A. Bill stuck completely or partially in Validator B. Error detected C. Broken connection on vend wires between Validator and Controller D. Controller CPU missing input	A. Determine cause of sticking and remove bill from Validator (Refer to the Validator Manual), or Contact the factory for assistance B. Refer to the Validator Manual or contact the factory for assistance C. Locate and repair connection D. Contact the factory for assistance
Washes given are opposite of selection button pressed	Button order set incorrectly	Change button order to opposite setting

TROUBLESHOOTING GUIDE

HOPPER QUESTIONS

SITUATION	PROBABLE CAUSE	CORRECTION
Overpayment of change	A. Wash prices set incorrectly B. Hopper not counting coins	A. Check wash prices B. Perform HOPPER PAYOUT TEST (Refer to the Hopper Manual), or contact the factory for assistance
• Hopper does not run • Hopper does not pay back change	A. Coin or foreign material lodged in Hopper B. Broken connection in wire between Controller and Hopper motor C. Output missing from Controller	A. Clear obstruction in Hopper B. Locate and repair connection C. Contact the factory for assistance
Hopper runs slowly	A. Foreign material in Hopper B. Output weak from Controller	A. Remove foreign material B. Contact the factory for assistance
• Underpayment of change • Controller does not go into "OUT OF SERVICE"	A. Wash prices set incorrectly B. Coins fall back into Hopper after counting C. CPU misreads coin count	A. Check wash prices B. Perform HOPPER PAYOUT TEST (Refer to the Hopper Manual), or contact the factory for assistance C. Contact the factory for assistance
• Underpayment of change • Controller does go into "OUT OF SERVICE"	Error detected by Controller (See ERROR CODES)	Correct malfunction, acknowledge error

TROUBLESHOOTING GUIDE		
CODE QUESTIONS		
SITUATION	**PROBABLE CAUSE**	**CORRECTION**
Does not accept codes from Audit Code System	**Operating in OFFLINE mode**	**Change Operating Mode to ONLINE mode**
Does not accept Item Passwords	**Operating in ONLINE mode**	**Change Operating Mode to OFFLINE mode**

VIII. RETURNING ITEMS FOR SERVICE

If any part or component must be shipped to the distributor or the manufacturer for replacement or repair, the following procedure is used:

- **CALL BEFORE SHIPPING. BE READY WITH THE MACHINE SERIAL NUMBER AND THE COMPONENT SERIAL NUMBER. YOU WILL RECEIVE A RETURN AUTHORIZATION NUMBER (RA NUMBER). WRITE THE RA NUMBER ON THE OUTSIDE OF THE BOX YOU ARE USING TO RETURN THE COMPONENT, AS WELL AS ON AN ENCLOSED NOTE.**

- **If shipping components, first place in a plastic bag before putting in a box and surrounding with good packing material.**

- **Ship via UNITED PARCEL SERVICE (UPS) if possible.**

- **If shipped by U.S. POSTAL SERVICE (Parcel Post), send by SPECIAL HANDLING.**

- **Adequately insure shipments; if uncertain about the value, call the distributor or the manufacturer for information.**

- **Include a note in shipment describing the nature of the problem, along with a full return address. WE CANNOT RETURN SHIPMENTS TO POST OFFICE BOXES. Be sure to include the RA Number.**

- **Please include your NAME and a TELEPHONE NUMBER where you can be reached.**

IX. PARTS

The following is a list of parts for the ACW-5-D System, which may be ordered from your Hamilton Distributor or direct from the factory. When calling to place a part order, make sure you have the changer model and serial number available.

PART NO.	PART DESCRIPTION	QTY
11-0033	HOPPER PIVOT BRACKET	1
11-0101	HOPPER ASSEMBLY, ACW-4	1
36-0036	SINGLE STACKER	1
46-0170R	VALIDATOR, HV-X WITH CHUTE (Specify Serial Number)	1
46-7000A	COIN MECH TRANSFORMER ASSEMBLY	1
47-0024	PAYOUT RELAY	*5
	or	
47-0202	PAYOUT RELAY, 24VAC	*1
	or	
47-0203	PAYOUT RELAY, 24VDC	*1
	or	
47-0205	PAYOUT RELAY, 12VAC	*1
	or	
47-0206	PAYOUT RELAY, 12VDC	*1
47-0049	CONTACT BLOCK	5
47-0050	SWITCH BUTTON , ACW RED	4
47-0077	CHANGER GROUND TERMINAL	3
47-0084	SWITCH BUTTON, ACW BLACK or BLUE	1
47-0155A	OUT OF SERVICE RELAY KIT (Optional)	1
47-0214B	250' COMMUNICATION CABLE ASSEMBLY (For use with the ACW-5-D-CRC)	1
47-0232	CLAMP, CABLE PANDUIT	14
47-0275	CABLE TIE 6"	**17
47-3000	AUDIT CODE PRINTER	1
47-3001	AUDIT CODE PRINTER CABLE	1
48-0006A	HEATER ASSEMBLY	1
48-0033A	STACKER BYPASS PLUG	1
48-1000C	COIN MECH HARNESS, SINGLE	1

PART NO.	PART DESCRIPTION	QTY
48-1011	HARNESS, AC/DC SPLIT	1
48-2136A	ACW-D-CRC COMMUNICATION HARNESS (For use with the ACW-5-D-CRC)	1
49-0560A	CRC COMMUNICATION CONTROLLER (For use with the ACW-5-D-CRC) (Specify Model and Serial Number)	1
49-0562A	ACW BEEPER ASSEMBLY	1
49-1029C	RELAY PAN & OUTLET ASSEMBLY COMPLETE	1
49-1212B	AUTOTEC CRC/E CONTROLLER COMPLETE (For use with the ACW-5-D-CRC) (Specify Model and Serial Number)	1
	or	
49-1201A	AUTOTEC CONTROLLER COMPLETE (For use with the ACW-5-D) (Specify Model and Serial Number)	1
49-2010A	AUDIT PRO REMOTE w/CABLE (For use with the ACW-5-D-CRC)	1
49-2016A	CARD READER ASSEMBLY (For use with the ACW-5-D-CRC)	1
49-3000P	AUDIT CODE SYSTEM COMPLETE	1
60-0282	HV-X SLIDER FACEPLATE	1
60-0284	HV-X CLAMPING FACEPLATE	1
60-0064	COIN ENTRANCE CHUTE, .25	2
60-0011	TOKEN BOX, ACW-4	1
60-0014	COIN SLOT, .25	1
60-0040	COIN SLOT, 1 1/8" TOKEN	1
60-0115	VALIDATOR BRACKET, NS	1
60-0116	VALIDATOR SUPPORT BRACKET	1
60-0205	CHUTE, ACW COIN	1
60-0206	CHUTE, ACW COIN RETURN	1
60-0207	BRACKET, ACW-4 STACKER MOUNTING	1
60-0240A	ASSEMBLY, ACW-4 FAN ENCLOSURE	1
60-0241	ENCLOSURE, ACW-4 CONTROLLER	1
60-0242	BRACKET, VALIDATOR SEAL CLAMPING	1
60-0243	SEAL, VALIDATOR WATER	1
60-0245A	ACW-4 ENVIRO ENCLOSURE KIT	1
60-0249	COIN MECH BRACKET and CHANNEL ASSY.	2
61-0581A	26" STAINLESS STEEL BASE (Optional)	1
61-0582A	20" PEDESTAL BASE (Optional)	1

PART NO.	PART DESCRIPTION	QTY
61-0589A	26" PEDESTAL BASE (Optional)	1
61-0592A	20" STAINLESS STEEL BASE (Optional)	1
61-0590A	ACW ENCLOSURE (Optional)	1
61-0590C	ACW ENCLOSURE w/EXTERNAL DISPLAY (Optional)	1
61-0594A	EXTERNAL DISPLAY (Optional)	1
61-0615A	ACW-5 CABINET COMPLETE	1
	or	
61-0615D	ACW-5-D-CRC CABINET COMPLETE	1
63-0420A	FACE PANEL ASSEMBLY, ACW-5 (Specify Model and Serial Number)	1
63-5005	LOCK INSERT, 1 PAIR	1
63-5006	LOCK BARRELS	2
80-0008	COIN ACCEPTOR	2
80-0051B	AUTO TEC COIN MECH ASSEMBLY	1
90-0026	SCREW, 4-40 x 1/2" PH	3
90-0129	SCREW, 6-32 x 3/8" PH	2
90-0131	SCREW, 6-32 x 3/16" PH	8
90-0142	SCREW, 8-32 x 1/4"	4
90-0250	MOUNTING STUD CONTROLLER, LONG	4
90-0275	LOCK BOLT	2
90-0301	NUT, 10-24 x 3/8"	2
90-0310	NUT, 6-32 x 5/ 16" HEX	2
90-0326	NUT, 10-24 LOCK	4
90-0331	NUT, 1/4-20" x 1/2"	4
90-0336	LOCK NUT, SPRING LOADED	2
90-0403	INTERNAL LOCKWASHER, 1/4"	4
90-0428	WASHER, SPACER	6
90-0429	WASHER, 1/4 x 3/4"	4
90-0514	SCREW, 10-32 x 5/16" PH	2
90-0611	INTERNAL LOCKWASHER, #8	3
90-0612	INTERNAL LOCKWASHER, #10	5
90-0661	SET SCREW, 10-24 X 3/8"	1
96-0052	DECAL, ACW FUNCTION & PRICE	1

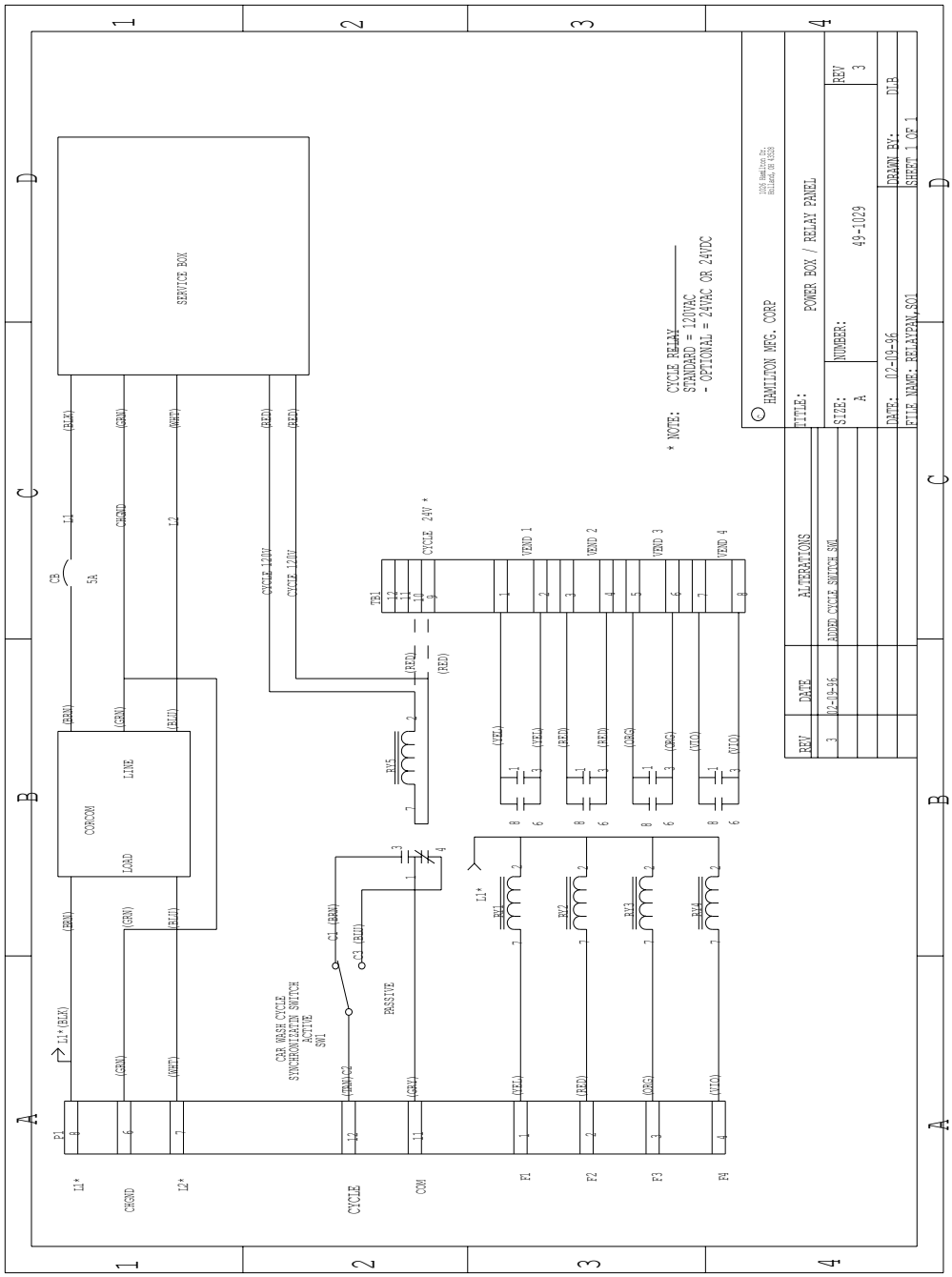
*** The following combinations of PAYOUT RELAYS can be used:**

- **5 of part number 47-0024, or**
- **4 of part number 47-0024 and 1 of part number 47-0202 (24VAC), or**
- **4 of part number 47-0024 and 1 of part number 47-0203 (24VDC), or**
- **4 of part number 47-0024 and 1 of part number 47-0205 (12VAC), or**
- **4 of part number 47-0024 and 1 of part number 47-0206 (12VDC)**

**** An additional 11 Cable Ties are needed for the ACW-5-D-CRC.**

APPENDIX A

POWER BOX / RELAY PANEL

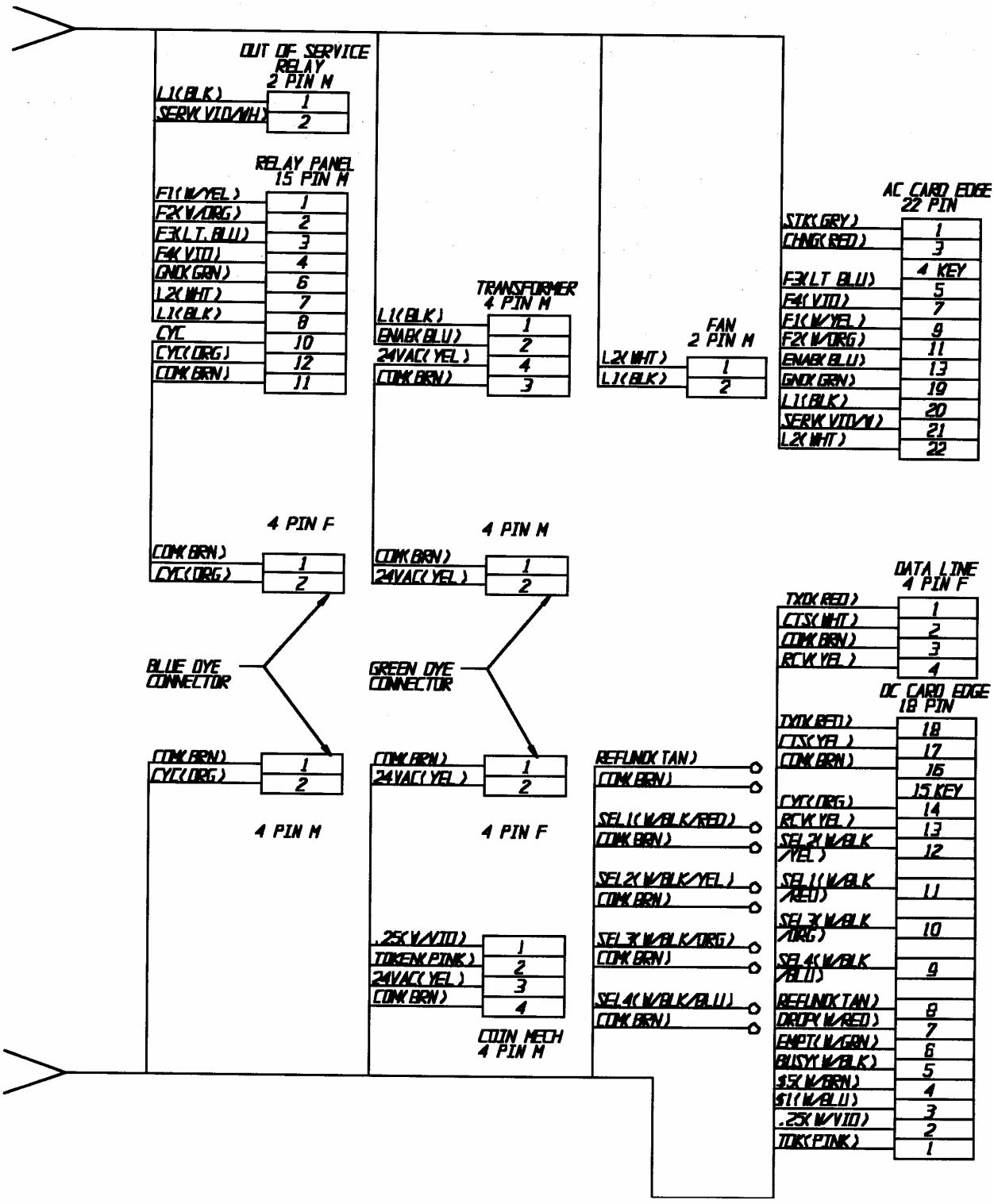


APPENDIX B

ACW-4 SPLIT HARNESS

(Left Side)

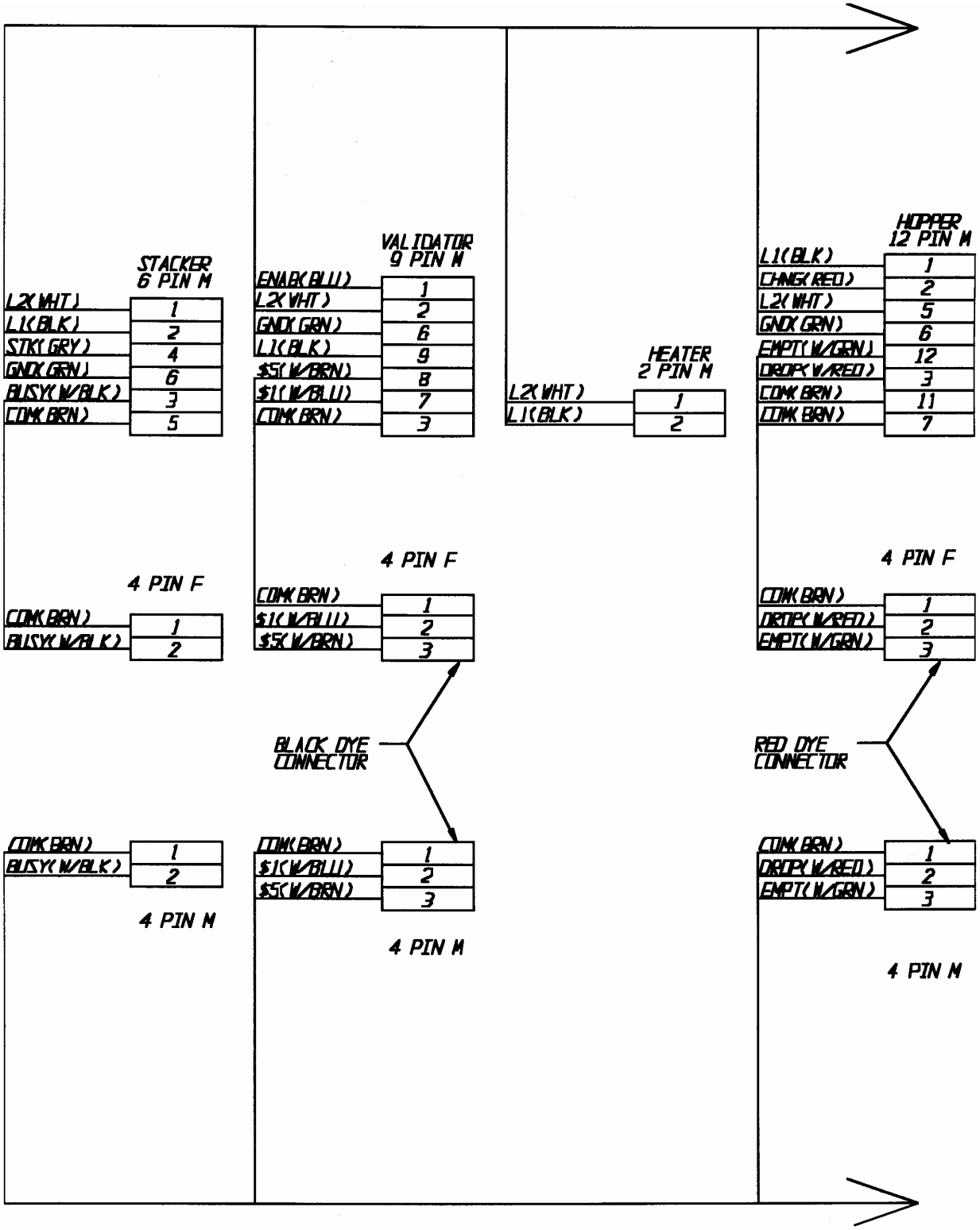
PART # 48-1011



ACW-4 SPLIT HARNESS

(Right Side)

PART # 48-1011



SPLIT HARNESS LEGEND	
SYMBOL	**FUNCTION**
$.25	The Coin Mech sends a signal to the Controller indicating a coin or token is accepted (normally open connection to logic ground)
$1	The Validator sends a signal to the Controller for $1 (normally open connection to the logic ground)
$5	The Validator sends a signal to the Controller, using different pulses for 5, 10 or 20 dollar bills (normally open connection to the logic ground)
24VAC	24 Volt Alternating Current to power the Coin Acceptors
BUSY	Signal from the Stacker to the Controller that indicates the Stacker is not in standby position (normally closed connection to the logic ground)
CHNG	Powers the Hopper during coin payout, 120VAC Neutral
COM	Common (logic ground connection used in all components)
CTS	Clear To Send, from printer to Controller
CYC	A signal that indicates a car has exited. The Signal comes from the car wash or parking gate to toggle the Cycle Relay (normally closed connection to logic ground within the Cycle Relay)
DROP	Sends a signal to the Controller that indicates a coin payout (normally closed connection to the logic ground)
EMPT	A circuit opens when the Hopper is near empty, sending a signal to the Controller (normally closed connection to the logic ground)
ENAB	Allows Validator to take bills, 120VAC Neutral signal comes from the Controller
F1	Relay 1 activation ,120VAC Neutral signal comes from the Controller to the Relay Pan
F2	Relay 2 activation, 120VAC Neutral signal comes from the Controller to the Relay Pan
F3	Relay 3 activation , 120VAC Neutral signal comes from the Controller to the Relay Pan
F4	Relay 4 activation , 120VAC Neutral signal comes from the Controller to the Relay Pan
GND	Earth Ground
L1	120VAC Hot
L2	120VAC Neutral
RCV	Signal from the computer to the Controller in a credit card system, indicates if card is approved or denied
REFUND	An open circuit that sends a signal to the Controller when the selection is pushed (normally open connection to logic ground)
SEL1	An open circuit that sends a signal to the Controller when the selection is pushed (normally open connection to logic ground)

SPLIT HARNESS LEGEND (cont...)	
SYMBOL	**FUNCTION**
SEL2	An open circuit that sends a signal to the Controller when the selection is pushed (normally open connection to logic ground)
SEL3	An open circuit that sends a signal to the Controller when the selection is pushed (normally open connection to logic ground)
SEL4	An open circuit that sends a signal to the Controller when the selection is pushed (normally open connection to logic ground)
SERV	OUT OF SERVICE light activation. This line is a switched 110VAC Neutral line
STK	Triggers the Stacker to run. A momentary 120VAC Neutral signal comes from the Controller
TOK	Coin Mech sends a signal to the Controller indicating a coin or token is accepted (normally open connection to logic ground)
TXD	Serial Data Out , from Controller to printer

APPENDIX C

TOKENOTE® TRAINING GUIDE
FOR AUTO CASHIERS

A Tokenote® is a paper coupon that can be accepted by the Validator. It is intended to give credit towards the wash price and not as a substitute for cash. Because of this, change will not be dispensed if the value of a Tokenote® exceeds the wash price. Likewise, the value of a Tokenote® cannot be refunded in cash.

When programming your machine to accept Tokenotes®, refer to the options listed below to help you decide which programming method to use.

- **To program one or more Tokenotes® with the same value, refer to SECTION A.**
- **To program two or more Tokenotes® with different values, refer to SECTION B.**
- **To Program Token Coins, refer to SECTION C.**
- **To Void Tokenotes, refer to SECTION D.**

Sections A-D can be found on the following pages.

Refer to the PROGRAMMABLE OPTIONS section and the PROGRAMMING section for additional information.

A. PROGRAMMING ONE OR MORE TOKENOTES® WITH THE SAME VALUE

❑ MATERIALS NEEDED:

- **VALIDATOR** - A Hamilton HVX, or HV7-T or HV5-T Validator

- **TOKENOTE®** - A uniquely coded paper coupon that can be accepted by the Validator and used as credit towards a wash. These must be specially ordered from Hamilton Mfg. or your Hamilton Distributor.

- **CLEAR ALL COUPON –** The CLEAR ALL Coupon is used to erase all previously trained Tokenotes® so that the Validator will no longer accept any of those Tokenotes®.

❑ TO PROGRAM, FOLLOW THE STEPS BELOW:

VALIDATOR

1. With the power on, check the operation of the changer. A dot flashing on the LED indicates the machine is operating normally.
2. Note the position of each switch on the DIP switch. (The DIP switch is located on the side of the Validator.)
3. Set all 10 DIP switches to the OFF position. Then, starting with Switch #10, slowly move the switches to the ON position, one switch at a time and in decreasing order (10, 9, 8, 7…). The LED should now be flashing the letter "P". This signifies that the Validator is in the Tokenote® Programming Mode. (If using an HV7-T or HV5-T Validator, it is not necessary to set the switches in order.)
4. At this point, it is recommended to insert the CLEAR ALL Training Coupon, especially if this the first time the Validator is being programmed or if it has just been returned after being service. The CLEAR ALL Coupon will erase all previously trained Tokenotes® from the Validator's memory but will not affect the Controller's memory.
5. Insert one Tokenote® into the Validator, making sure that it is accepted.
6. Repeat Step 5 for each uniquely coded Tokenote® you wish to program. (Make sure that each Tokenote® is equal in value.) Up to 16 different codes can be programmed.
7. Starting with Switch #1, slowly move the switches back to their original positions one at a time. This must be done in increasing order (1, 2, 3, 4…). A dot should now be flashing on the LED. (If using an HVX Validator, Switch #2 must be in the OFF position in order to accept Tokenotes®.)

CONTROLLER

1. **Press the ACTION (YELLOW) button on the side of the Controller to enter the MENU MODE.**
2. **Use the RED and BLUE (or BLACK) buttons to scroll through the categories until "TOKENOTE® VALUE?" is displayed.**
3. **Press the ACTION button to enter the PROGRAMMING MODE.**
4. **Use the RED and BLUE (or BLACK) buttons to increase or decrease the value in $0.25 increments.**
5. **When the desired value is displayed, press the RETURN (WHITE) button twice to return to the RUN MODE.**

B. PROGRAMMING TWO OR MORE TOKENOTES® WITH DIFFERENT VALUES

❑ MATERIALS NEEDED:

- **VALIDATOR** - A Hamilton HVX, or HV7-T or HV5-T Validator

- **TOKENOTE®** - A uniquely coded paper coupon that can be accepted by the Validator and used as credit towards a wash. These must be specially ordered from the manufacturer or your Hamilton Distributor.

- **TRAINING COUPONS –** Training Coupons are used to program Tokenotes® into the Validator's memory. There are four different Training Coupons: Coupon #1, Coupon #2, Coupon #3, and Coupon #4.

- **CLEAR ALL COUPON –** The CLEAR ALL Coupon is used to erase all previously trained Tokenotes® so that the Validator will no longer accept any of those Tokenotes®.

❑ TO PROGRAM, FOLLOW THE STEPS BELOW:

VALIDATOR

1. With the power on, check the operation of the changer. A dot flashing on the LED indicates the machine is operating normally.
2. Note the position of each switch on the DIP switch. (The DIP switch is located on the side of the Validator.)
3. Set all 10 DIP switches to the OFF position. Then, starting with Switch #10, slowly
4. move the switches to the ON position, one switch at a time and in decreasing order (10, 9, 8, 7…). The LED should now be flashing the letter "P". This signifies that the Validator is in the Tokenote® Programming Mode. (If using an HV7-T or HV5-T Validator, it is not necessary to set the switches in order.)
5. At this point, it is recommended to insert the CLEAR ALL Training Coupon, especially if this is the first time the Validator is being programmed or if it has just been returned after being service. The CLEAR ALL Coupon will erase all previously trained Tokenotes® from the Validator's memory but will not affect the Controller's memory.
6. Insert one Tokenote® into the Validator, making sure that it is accepted.
7. Insert Training Coupon #1 into the Validator, making sure that it is accepted.
8. Repeat Steps 5 and 6 to program each uniquely coded Tokenote® of the same value.
9. To program a differently coded Tokenote® with a different payout, simply insert that Tokenote® into the Validator, followed by Coupon #2. Repeat as needed, using Coupons #3 and #4 for each new value. Altogether, up to 16 different codes can be programmed.
10. Starting with Switch #1, slowly move the switches back to their original positions one at a time. This must be done in increasing order (1, 2, 3, 4…). A dot should now be flashing on the LED. (If using an HVX Validator, Switch #2 must be in the OFF position in order to accept Tokenotes®.)

CONTROLLER

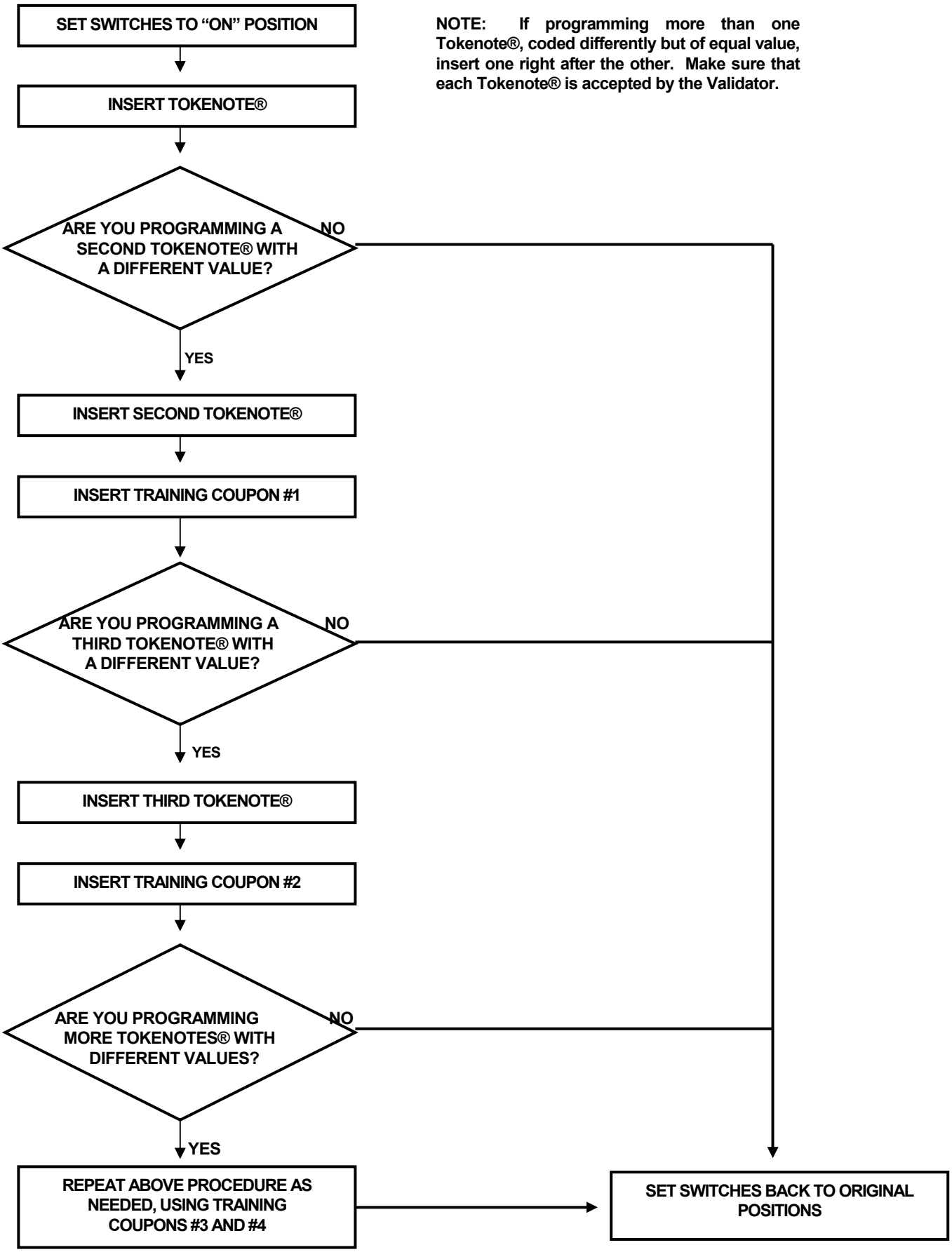
1. Press the ACTION (YELLOW) button on the side of the Controller to enter the MENU MODE.

2. **Use the RED and BLUE (or BLACK) button to scroll through the categories until "COUPON DISCOUNTS" is displayed.**
3. **Press the ACTION button to enter the PROGRAMMING MODE. "COUPON #1" will be displayed.**
4. **Use the RED and BLUE (or BLACK) buttons to scroll through the values until the desired amount is displayed.**
5. **To program the next coupon, use the ACTION button to scroll through the four coupons, and the RED and BLUE (or BLACK) buttons to raise or lower the values.**
6. **Press the RETURN (WHITE) button twice to return to the RUN MODE.**

❑ WHEN PROGRAMMING MORE THAN ONE TOKENOTE®, IT IS IMPORTANT TO KEEP THE FOLLOWING IN MIND:

- **Tokenotes® may be programmed into the four COUPON DISCOUNTS categories (using Training Coupons #1 – 4) and the TOKENOTE® VALUE? category all at the same time. Tokenotes® may be distributed evenly throughout these categories, or spread out using any combination, as long as the Tokenote® values are the same for each category. When programming, always start the first Tokenote® in the TOKENOTE® VALUE? category. Use the COUPON DISCOUNTS categories when using multiple values.**
- **Up to 16 differently coded Tokenotes® can be programmed at one time. (The Validator can learn up to 16 different codes.)**
- **It is possible to use one coupon to program several differently coded Tokenotes®, as long as they are of equal value. (For example, Coupon #1 can be used to program 3 differently coded Tokenotes® with a value of $5 each.)**

TRAINING TOKENOTES® ON THE VALIDATOR



NOTE: If programming more than one Tokenote®, coded differently but of equal value, insert one right after the other. Make sure that each Tokenote® is accepted by the Validator.

C. PROGRAMMING TOKEN COINS

❑ MATERIALS NEEDED

- **COIN ACCEPTOR**

- **TOKEN COINS – For information on where to purchase Token Coins, check with your distributor, or contact Hamilton for a distributor in your area.**

❑ TO PROGRAM, FOLLOW THE STEPS BELOW:

COIN ACCEPTOR

1. **With the power on, check the operation of the changer. A dot flashing on the Validator LED indicates the machine is operating normally.**
2. **Insert a sample token into the coin acceptor.**
3. **Insert a second token to verify acceptance.**

CONTROLLER

1. **Press the ACTION (YELLOW) button on the side of the Controller to enter the MENU MODE.**
2. **Use the RED and BLUE (or BLACK) button to scroll through the categories until "TOKEN COIN VALUE?" is displayed.**
3. **Press the ACTION button to enter the PROGRAMMING MODE.**
4. **Use the RED and BLUE (or BLACK) buttons to increase or decrease the value in $0.25 increments.**
5. **When the desired value is displayed, press the RETURN (WHITE) button twice to return to the RUN MODE.**

D. VOIDING TOKENOTES®

To void unwanted Tokenotes® it is necessary to have three additional Training Coupons; NULL, VENDING CLEAR ONE, and CLEAR ALL. The use of any Tokenote® can be eliminated by one of the three methods described below.

- **Use the NULL Training Coupon to continue accepting a particular Tokenote® but stop giving credit for it** **(This will erase any value that the Tokenote® had)**

  VALIDATOR

  1. **With the power on, check the operation of the changer. A dot flashing on the LED indicates the machine is operating normally.**
  2. **Note the position of each switch on the DIP switch. (The DIP switch is located on the side of the Validator.)**
  3. **Set all 10 DIP switches to the OFF position. Then, starting with Switch #10, slowly move the switches to the ON position, one switch at a time and in decreasing order (10, 9, 8, 7…). The LED should now be flashing the letter "P". This signifies that the Validator is in the Tokenote® Programming Mode. (If using an HV7-T or HV5-T Validator, it is not necessary to set the switches in order.)**
  4. **Insert the Tokenote® you no longer wish to credit into the Validator, making sure that it is accepted.**
  5. **Insert the NULL Training Coupon into the Validator, making sure that it is accepted.**
  6. **Repeat Steps 4-5 for each Tokenote® that you no longer wish to give credit for.**
  7. **Starting with Switch #1, slowly move the switches back to their original positions one at a time. This must be done in increasing order (1, 2, 3, 4…). A dot should now be flashing on the LED.**

- **Use the VENDING CLEAR ONE Training Coupon to stop accepting a particular Tokenote** **(This will erase any record that the Tokenote® was ever programmed)**

  VALIDATOR

  1. **With the power on, check the operation of the changer. A dot flashing on the LED indicates the machine is operating normally.**
  2. **Note the position of each switch on the DIP switch. (The DIP switch is located on the side of the Validator.)**
  3. **Set all 10 DIP switches to the OFF position. Then, starting with Switch #10, slowly move the switches to the ON position, one switch at a time and in decreasing order (10, 9, 8, 7…). The LED should now be flashing the letter "P". This signifies that the Validator is in the Tokenote® Programming Mode. (If using an HV7-T or HV5-T Validator, it is not necessary to set the switches in order.)**
  4. **Insert the Tokenote® you wish to clear into the Validator, making sure that it is accepted.**
  5. **Insert the VENDING CLEAR ONE Training Coupon into the Validator, making sure that it is accepted.**
  6. **Repeat Steps 4-5 for each Tokenote® you wish to void.**
  7. **Starting with Switch #1, slowly move the switches back to their original positions one at a time. This should be done in increasing order (1, 2, 3, 4…). A dot should now be flashing on the LED.**

- **Use the CLEAR ALL Training Coupon to stop accepting all Tokenotes® already programmed into the Validator** (This erases any record that the Tokenotes® were ever programmed)

  VALIDATOR

  1. With the power on, check the operation of the changer. A dot flashing on the LED indicates the machine is operating normally.
  2. Note the position of each switch on the DIP switch. (The DIP switch is located on the side of the Validator.)
  3. Set all 10 DIP switches to the OFF position. Then, starting with Switch #10, slowly move the switches to the ON position, one switch at a time and in decreasing order (10, 9, 8, 7…). The LED should now be flashing the letter "P". This signifies that the Validator is in the Tokenote® Programming Mode. (If using an HV7-T or HV5-T Validator, it is not necessary to set the switches in order.)
  4. Insert the CLEAR ALL Training Coupon into the Validator, making sure that it is accepted.
  5. Starting with Switch #1, slowly move the switches back to their original positions one at a time. This should be done in increasing order (1, 2, 3, 4…). A dot should now be flashing on the LED.

- **The following table shows the different types of Training Coupons needed to successfully program Tokenotes® on an Auto Cashier.**

TRAINING COUPONS	
Training Coupon Type	**Usage**
COUPON #1	Used to program credit for Coupon #1 discount
COUPON #2	Used to program credit for Coupon #2 discount
COUPON #3	Used to program credit for Coupon #3 discount
COUPON #4	Used to program credit for Coupon #4 discount
CLEAR ALL	Used to erase all trained Tokenotes® so that the Validator will no longer accept any Tokenotes®
NULL	Used to accept a particular Tokenote® without giving credit for it (such as an expired note)
CLEAR ONE	Used to erase one or more trained Tokenotes® so that the Validator will no longer accept cleared Tokenotes®

APPENDIX D

FACTORY PROGRAMMED SETTINGS

PROGRAMMABLE OPTIONS	FACTORY SETTINGS
TOKEN COIN MODE	MULTIPLE CREDITS
TOKEN COIN VALUE	$1.00
TOKENOTE® MODE	MULTIPLE CREDITS
TOKENOTE® VALUE	$1.25
COUPON #1 VALUE	$0.25
COUPON #2 VALUE	$0.50
COUPON #3 VALUE	$0.75
COUPON #4 VALUE	$1.00
ITEM #1 PRICE	$1.00
ITEM #2 PRICE	$2.00
ITEM #3 PRICE	$3.00
ITEM #4 PRICE	$4.00
ITEM #1 NAME	“WASH”
ITEM #2 NAME	“WASH & WAX”
ITEM #3 NAME	“WASH, WAX, & DRY”
ITEM #4 NAME	“SUPER WASH”
PROCEED MESSAGE #1	“THANK YOU”
PROCEED MESSAGE #2	“PLEASE DRIVE AHEAD”
PROCEED MESSAGE #3	“---NOT USED---”
PROCEED MESSAGE #4	“---NOT USED---”
WELCOME MESSAGE #1	“SELECT SERVICE”
WELCOME MESSAGE #2	“OR DEPOSIT MONEY”
WELCOME MESSAGE #3	“--- NOT USED ---”
WELCOME MESSAGE #4	“--- NOT USED ---”
VEND DURATION	2.0 seconds
EMPTY MODE	OUT OF SERVICE
BUILD MODE	LIMIT DISABLED
PAY DEFAULT	OUT OF SERVICE
HOPPER STYLE	NEW STYLE HOPPER
DISPLAY STYLE	REGUALR (20 CHAR)
UNIT NUMBER	UNIT #2
UPGRADE MODE	ENABLED
BUTTON ORDER	WASH #1 TOP
BUTTON ENABLE	ENABLED

APPENDIX E

PRE-PROGRAMMED ITEM NAMES		
“	WASH	”
“	WASH ONLY	”
“	WAX	”
“	POLISH WAX	”
“	RINSE	”
“	BRUSH	”
“	PRE HEAT	”
“	DRY	”
“	SUPER WASH	”
“	DELUXE WASH	”
“	SUPER RINSE	”
“	WASH & DRY	”
“	WASH & RINSE	”
“	NO SPOT RINSE	”
“	SPOT FREE RINSE	”
“	LEMON WAX	”
“	WASH & LEMON WAX	”
“	SIMONIZE WAX	”
“	WASH & SIMONIZE WAX	”
“	WASH & NO SPOT RINSE	”
“	WASH WAX & RINSE	”
“	WASH & WAX	”

PRE-PROGRAMMED ITEM NAMES (cont...)		
“	DOUBLE WASH & RINSE	”
“	WASH & POLISH WAX	”
“	DOUBLE WASH & POLISH	”
“	DOUBLE WASH & TIRE	”
“	WASH & HOT WAX	”
“	WASH HOT WAX & DRY	”
“	WASH WAX & DRY	”
“	WASH WAX RINSE TIRE	”
“	WASH & SIDEWALL	”
“	WASH WAX & SIDEWALL	”
“	WASH & TIRE	”
“	WASH WAX & TIRE	”
“	WASH HOT WAX & TIRE	”
“	WASH & WHITEWALL	”
“	WASH WAX & WHITEWALL	”
“	UNDERCARRIAGE	”
“	WASH & UNDERCARRIAGE	”
“	UNDER BODY SPRAY	”
“	WASH & UNDER SPRAY	”
“	RUST INHIBITOR	”
“	WASH & RUST INHIBITOR	”
	(BLANK)	

APPENDIX F

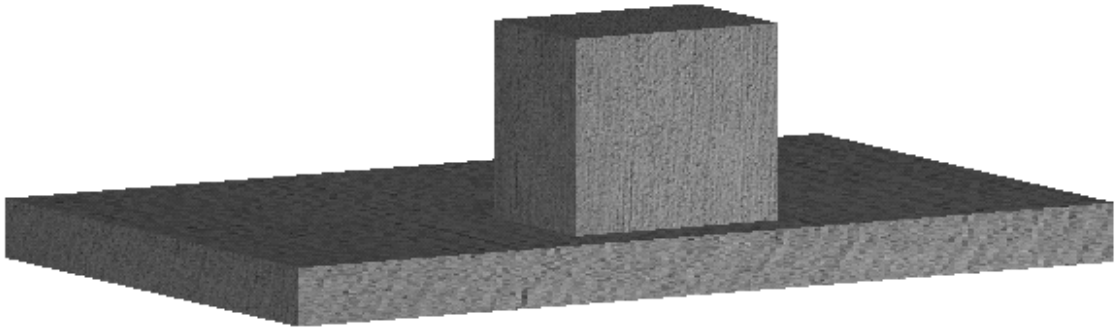
PRE-PROGRAMMED PROCEED MESSAGES		
	NOT USED	
“	THANK YOU	”
“	PLEASE DRIVE AHEAD	”
“	PUT CAR IN NEUTRAL	”
“	DO NOT BRAKE/STEER	”
“	PLEASE PROCEED	”
“	DRIVE FORWARD	”

PRE-PROGRAMMED WELCOME MESSAGES		
“	--NOT USED--	“
	CURRENT DAY DATE & TIME	
“	WELCOME	“
“	SELECT ITEM PLEASE	“
“	PLEASE CHOOSE ITEM	“
“	PRESET ITEM BUTTON	“
“	MAKE ITEM SELECTION	“
“	SELECT DESIRED WASH	“
“	ENTER CODE	“
“	OR ENTER CODE	“
“	ENTER TICKET NUMBER	“
“	USE CODE OR CASH	“
“	OR SELECT ITEM	“
“	SELECT ITEM	“
“	SELECT SERVICE	“
“	OR DEPOSIT MONEY	“
“	MAKE SELECTION	“
“	PAY IN CASH OR TOKEN	“
“	USE CASH OR TOKEN	“
“	SELECT WASH	“
“	USE KEYPAD TO CREDIT	“
	(BLANK)	

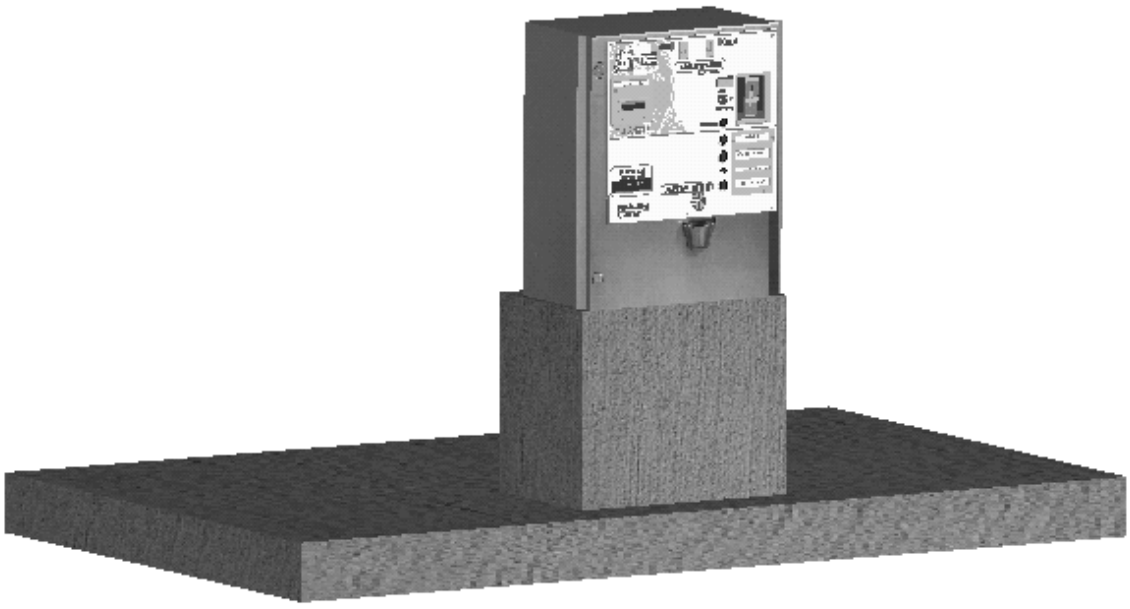
APPENDIX G

INSTALLATION / MOUNTING INSTRUCTIONS

A curb and base are poured. Form the base according to dimensions on the accompanying drawing. These dimensions will locate the user controls most conveniently. Precisely locate the conduit in the base where they will match the holes in the bottom of the cabinet as shown in the drawing, OR, locate the conduit in a position behind the cabinet if the conduit holes in the rear of the cabinet will be used.



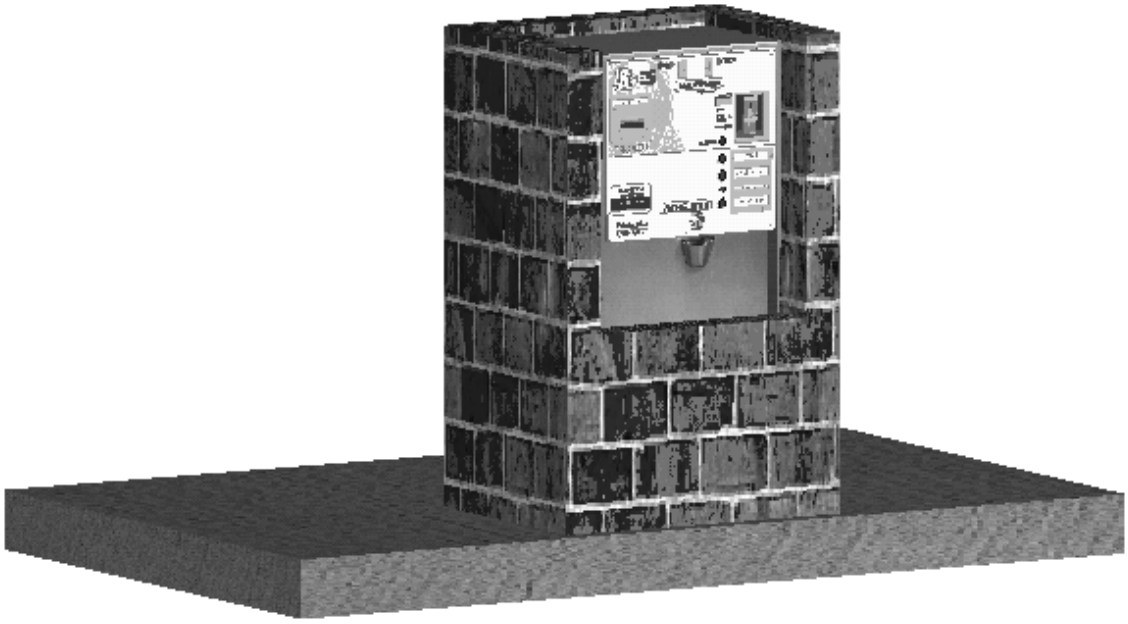
Mount the Auto Cashier onto the concrete base using appropriate fasteners. The mounting hole locations in the cabinet are shown on pages 43 and 44, FIGURE 1 and FIGURE 2.



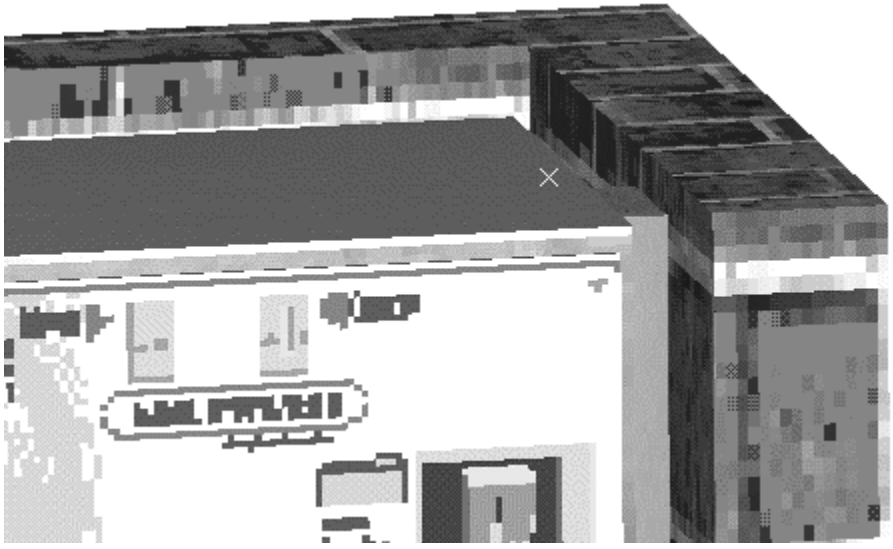
A close-up shows that the concrete base is as wide as the cabinet – including flanges.

Complete conduit connections before completing masonry work.

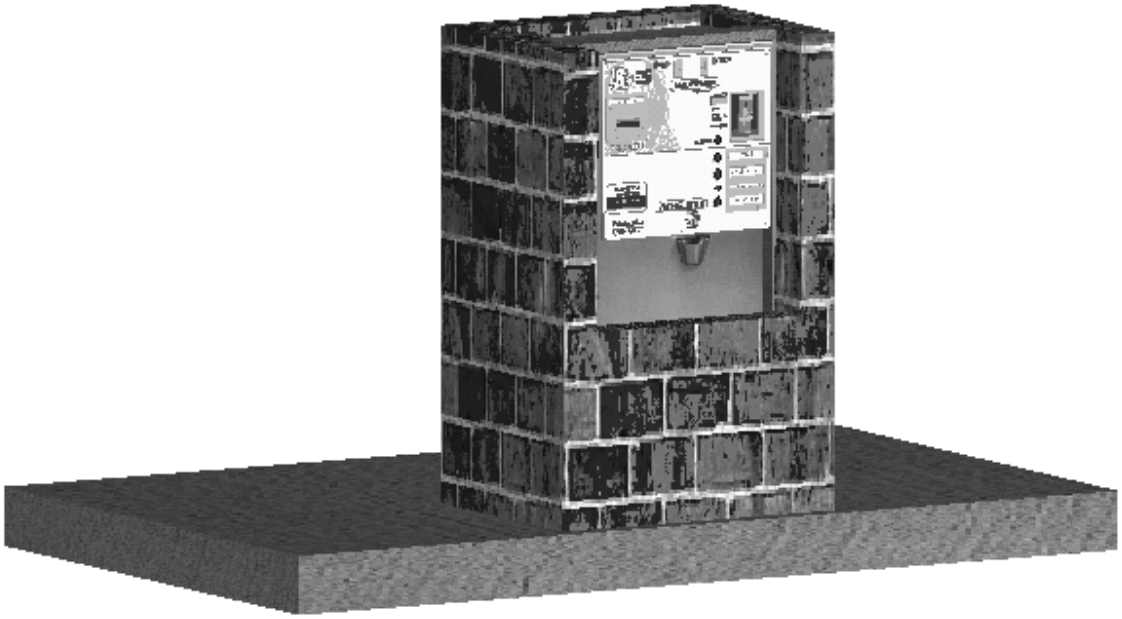
Brick in the cabinet and base. Note that fill is required behind the flanges. DO NOT BRICK OF FILL IN FRONT OF THE FLANGES. These allow clearance for door opening. Hamilton recommends that masonry is extended a few inches in front of the cabinet.



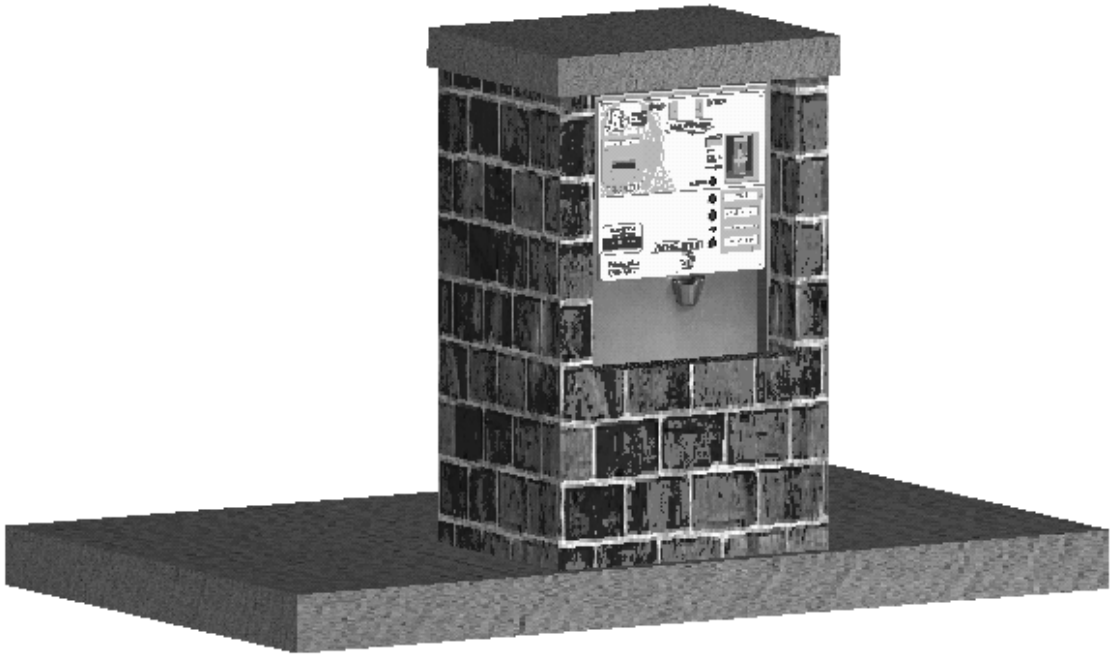
The masonry MUST come to height at least ½ inch above the level of the top surface of the cabinet.



Concrete or mortar is placed on top of the cabinet to the height of the masonry.



Cap off the construction.



LIMITED WARRANTY AGREEMENT
OF HAMILTON MANUFACTURING CORP.

Hamilton Manufacturing Corp., an Ohio Corporation, ("Seller") warrants to Purchaser that all new equipment shall be free from defects in material and factory workmanship for a period of one (1) year from the original shipping date. Hamilton Manufacturing Corp. further warrants if any part of said new equipment in Seller's sole opinion, requires replacement or repair due to a defect in material or factory workmanship during said period, Seller will repair or replace said new equipment. Purchaser's remedies and the liabilities and obligations of Seller herein shall be limited to repair or replacement of the equipment as Seller may choose, and Seller's obligation to remedy such defects shall not exceed the Purchaser's original cost for the equipment. Purchaser EXPRESSLY AGREES this is the EXCLUSIVE REMEDY under this warranty. There are no other express or implied warranties which extend beyond the face hereof. All warranty repair service must be performed by either a Factory Trained Service Representative or **HAMILTON MANUFACTURING CORP., 1026 Hamilton Drive, Holland, Ohio 43528 PHONE (419) 867-4858 or (800) 837-5561, FAX (419) 867-4867.**

The limited warranty for new equipment is conditioned upon the following:

1. The subject equipment has not, in the Seller's sole opinion, been subjected to: accident, abuse, misuse, vandalism, civil disobedience, riots, acts of God, natural disaster, acts of war or terrorism.
2. The Seller shall not be liable for any expense incurred by Purchaser incidental to the repair or replacement of equipment and Purchaser shall assume full responsibility for any freight or shipping charges.
3. The coverage of this warranty shall not extend to expendable parts.
4. Purchaser shall have a warranty registration card on file with Seller prior to any claim in order for warranty protection to apply.
5. No warranty coverage is applicable to any equipment used for currency other than that specified at the time of the purchase.
6. Seller expressly disclaims any warranty that counterfeit currency will not activate said equipment.
7. Seller expressly disclaims any warranty for any losses due to bill manipulation or theft or loss of cash under any circumstances.

Seller further warrants all repair or service work performed by a factory trained representative or Hamilton Manufacturing Corp. for a period of ninety (90) days from the date the repair or service work was performed. Purchaser's remedies and the liabilities and obligations of Seller herein shall be limited to repair or replacement of equipment as Seller may choose, and Seller's obligation to remedy such defects shall not exceed the Purchaser's depreciated value of the equipment. Purchaser EXPRESSLY AGREES this is an EXCLUSIVE REMEDY under this warranty. There are no other express or implied warranties on repair or service work performed by a factory trained representative or Hamilton Manufacturing Corp. which extend beyond the face hereof.

(see next page for additional provisions)

The limited warranty for repair and service work is conditioned upon the following:

1. The subject equipment has not, in the Seller's sole opinion, been subjected to: accident, abuse, misuse, vandalism, civil disobedience, riots, acts of God, natural disaster, acts of war or terrorism.
2. The Seller shall not be liable for any expense incurred by Purchaser incidental to the repair or replacement of equipment and Purchaser shall assume full responsibility for any freight or shipping charges.
3. The coverage of this warranty shall not extend to expendable parts.
4. Purchaser shall have a warranty registration card on file with Seller prior to any claim in order for warranty protection to apply.
5. No warranty coverage is applicable to any equipment used for currency other than that specified at the time of the purchase.
6. Seller expressly disclaims any warranty that counterfeit currency will not activate said equipment.
7. Seller expressly disclaims any warranty for any losses due to bill manipulation or theft or loss of cash under any circumstances.
8. No person or entity other than a factory trained representative or Hamilton Manufacturing Corp. has performed or attempted to perform the subject repair or service.

THIS AGREEMENT IS MADE WITH THE EXPRESS UNDERSTANDING THAT THERE ARE NO IMPLIED WARRANTIES THAT THE EQUIPMENT SHALL BE MERCHANTABLE, OR THAT THE GOODS SHALL BE FIT FOR ANY PARTICULAR PURPOSE. PURCHASER HEREBY ACKNOWLEDGES THAT IT IS NOT RELYING ON THE SELLER'S SKILL OR JUDGMENT TO SELECT OR FURNISH EQUIPMENT SUITABLE FOR ANY PARTICULAR PURPOSE AND THAT THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THAT WHICH IS DESCRIBED HEREIN.

The Purchaser agrees that in no event will the Seller be liable for direct, indirect, or consequential damages or for injury resulting from any defective or non-conforming new, repaired or serviced equipment, or for any loss, damage or expense of any kind, including loss of profits, business interruption, loss of business information or other pecuniary loss arising in connection with this Limited Warranty Agreement, or with the use of, or inability to use the subject equipment regardless of Sellers knowledge of the possibility of the same.

Hamilton Manufacturing Corporation

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