**Office:** (800) 683-7248 **Technical Support:** (702) 651-3444 **FAX:** (702) 651-0214
**E-Mail:** optipaysupport@jcm-american.com **Web-Site:** www.jcm-american.com

# Optipay™ CC

## A-66 Coin Changer

***Operation and Maintenance Manual (Revision 2)***

***Includes configuration setup using a Palm Pilot® Setting Module***

**JCM Part No. 960-000102R_Rev. 2**

a RoHS Compliant Product

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# Optipay™ CC
## A-66 Coin Changer
Section 1

## 1 GENERAL INFORMATION

This section provides a general overview of the advantages and options of the Optipay™ A-66 Coin Changer. This first section is designed to help you navigate through this manual with ease.

### Preface

This manual describes the design, operation and functional range of the A-66 Coin Changer (See Figure 1-1 ). Sections 5, 6 and 7 explain the installation, energizing and operation of the coin changer.

Chapters 8 to 11 describe how the Coin Changer is cleaned, transported and electronically configured. The Section entitled “Configuration” deals primarily with the use of a Palm Pilot® to configure the Coin Changer. The JCM WinEMP©, PalmA66© and PalmEMP© configuration programs are described separately in the software instructions of Section 11.

The "Index", and appended "Troubleshooting" sections reduce the search for specific explanations and provide additional help when required.

To make operation of this device and make navigation within this manual easier, the following illustrations were used within the text:

- **Safety instructions**, have been written in bold text and have been given the pictographs: ⚠
- **Special *Notes***, have been written in *italic* text and have been given the pictograph: ☞
- **Steps,** requiring the operator to perform specific actions are given sequential numbers (1., 2., 3., etc.).

**Figure 1-1** Optipay™ CC A-66 Coin Changer


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At the beginning of each section you will find a "Section Guide", that summarizes the content of the specific section.

Separate software instructions to configure the Coin Changer are located in "Configuration" Section 11.

- WinEMP© – Runs on the Microsoft Windows© Operating System and includes test, configuration, and channel set programming functions for the A-66 Coin Changer.
- PalmA66© – Includes configuration, service, and diagnostic functions for the A-66 Coin Changer.
- PalmEMP© – Includes test, configuration and channel set programming functions for the A-66 Coin Changer in a Palm application format.

*NOTE: If these instructions are not available to you, they can be downloaded at any time from the JCM home page (www.jcm-american.com) in a compressed Portable Document File (PDF) format.*

### Coin Changer General Information

The integrated Coin Validator contains the same reliable and secure recognition technology as the G40-4000 model used in the G-46 Global Changer.

New or fraudulent coin issues can be resolved quickly at the service center using the WinEMP© application or at the machine by means of the PalmEMP© application. This manual covers the configuration procedure using the Palm Pilot®. For configuration using the WinEMP© or PalmEMP© applications, refer to Section 11.

Token types not programmed by the manufacturer, can be programmed directly at the Coin Changer by using the Palm A-66 software. Refer to Section 12.

### Advantages

- Easy configuration allows for fast reaction to changing market situations and new false coin introductions
- Configuration tools:
  - WinEMP© PC software for the workshop
  - PalmA66© or PalmEMP© with Palm Pilot® handheld software for field use
- Reliable sensing system and optimum rejection of false coins due to the integrated, electronic A-66 Coin Validator
- Universal payout mechanism for different coin diameters and thicknesses
- Flexible payout combinations
- Splash-proof electronics
- Acceptance speed of 2 coins per second
- Teach mode, able to learn up to three different tokens types or sizes
- Flash Memory technology for time-saving software updates
- Sophisticated anti-tampering system
- Troubleshooting LED's for quick diagnostics.

## Service Tools

In order to test the Coin Changer and adapt it to the individual needs of your facility, the following accessories can be acquired from JCM:

### PC Test Station

If you only wish to check the functionality of the Coin Changer without making any adjustments, the JCM Test Station is sufficient for this purpose. The Test Station is composed of the following two components:

- Test software WinSPT©
- Tester G-19.0654 for Vending Machine simulation and MDB functional testing.

### Configuration Tools

In order to react as quickly as possible to new false coins in the workshop or on site, and enable individual adjustments, the coin changer can be connected to a:

- JCM Programming Station consisting of:
  - WinEMP© configuration and diagnostics software
  - Tester G-19.0641
- JCM Palm Pilot®, and applications PalmEMP© and PalmA66© for a Palm Pilot® handheld

Section 11 "Configuration" describes the configuration tools required to change the Coin Changer's operating parameters.

### Update Tools

The Coin Changer's integrated Coin Validator is equipped with microprocessor circuitry that contains Flash Memory. This allows quick updates of the Coin Validator's operating software without complications. In order to load new operating


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software into the Coin Validator, one of the following three alternatives is required:

- a JCM PC Update Station consisting of:
  - WinFlash© software
  - Tester G-19.0641
  - Programming adapter G-19.0646
- a JCM Flash Programmer G-55.0350 or
- JCM Palm "PalmFlash©" application for a Palm Pilot® handheld and a Flash Adapter.


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## 2 SAFETY INSTRUCTIONS

This section provides safety instructions for using the Optipay™ A-66 Coin Changer.
Read this manual carefully before operating the unit.

### Proper use

The four tube A-66 Coin Changer is intended for use in vending machines using the serial MDB interface. Only use the A-66 Coin Changer for this purpose. Under no circumstances can the manufacturer be held liable for any damage or loss resulting from improper use of the device.

The Coin Changer series is state of the art and has been constructed in compliance with recognized safety regulations.

### Protecting Yourself and the Equipment

**The A-66 Coin Changer may only be connected by a qualified technician.**

**Only use the Coin Changer for it's intended use. Under no circumstances can the manufacturer be held liable for any damage or loss resulting from improper use of this device.**

**The Coin Validator's printed circuit board (pcb) is fitted with electronic components which may be damaged beyond repair by electrostatic discharge.**
**Please observe the handling instructions regarding static sensitive components.**

**Select the correct operating voltage for the Coin Changer (see device label directly, or Figure 3-4 in Section 3). Never disconnect the harness when power is applied!**

**Remove the Vending Machine's Power Plug before you install, clean or remove the Coin Changer.**

**Always transport the Coin Changer empty and in its original packaging. Never carry the Coin Changer by its cables.**

**Keep water and other liquids away from the Coin Changer.**

**JCM reserves the right to make technical modifications to the unit which are not covered in this manual.**


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# Optipay™ CC
## A-66 Coin Changer
Section 3

## 3 DESIGN

This section describes the general design of the Optipay™ A-66 Coin Changer and the various components within it important to operating the device. The following items will be discussed:

- Return lever, keypad, indicator lights, interfaces, DIP Switch block, product labels
- Tube cassette, pay out set, and filling level sensors

## The Coin Validator

Coins inserted into the Coin Validator **(3)** (See Figure 3-1 ) pass through the Coin Insertion Funnel (**11**) into the validation area of the device. Here the coin's properties are compared with the values contained in the stored in memory. Rejected coins are routed to the Vending Machine's return cup. In the event of a sale, accepted coins are either directed to one the four cassette tubes (**6**) or into the Cash Box below them.

## Device Overview

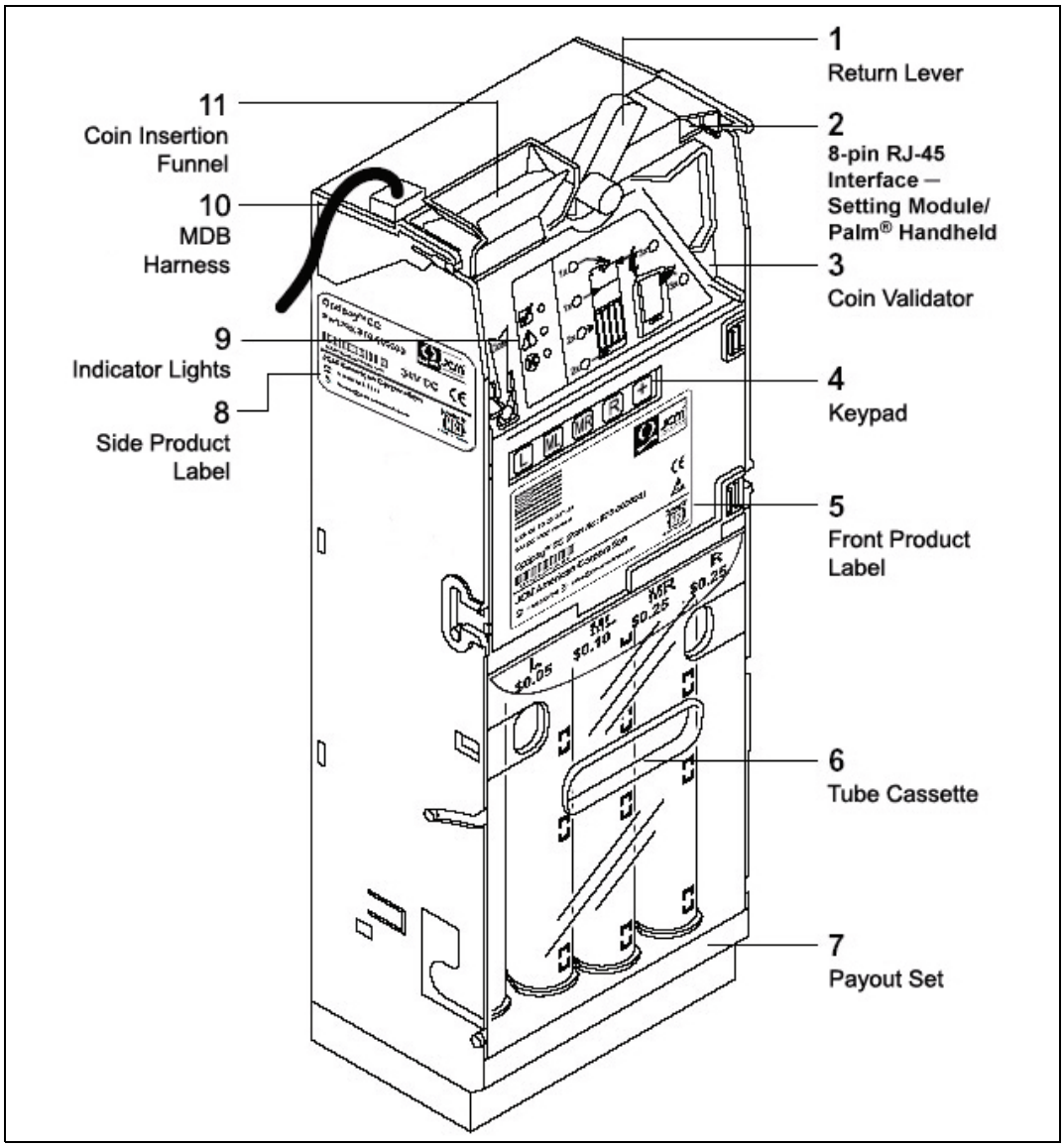


**Figure 3-1** A-66 Features


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## Return Lever

The Return Lever (See Figure 3-1 [**1**]) on the top of the Coin Validator is operated by using the Vending Machine's Return Button. The Return Lever is used to return coins or clear jams. When pushed, the fly deck opens so that all objects within the Coin Validator are directed to the return cup. (See Figure 3-1 ).

## Keypad

The front of the Coin Validator is equipped with a five key touch-sensitive Keypad (See Figure 3-1 [**4**]) which is used to dispense coins from an individual tube and to perform filling procedures to increase coin inventory before the unit is placed into operation (See Section 4 "Functions" and Section 7 "Operation" for further information).

## Indicator Lights

There are three Light-Emitting Diode (LED) indicator lights on the front of the Coin Validator positioned beneath one another colored Green, Yellow, and Red, respectively (See Figure 3-1 [**9**]).

These lights are mainly used for quick diagnostics, and current status indication (See Figure 3-1 ).

If the top Green LED lights or flashes, no faults are indicated and the device is working properly. If the middle Yellow LED flashes there is a definite general fault indicated that can usually be easily repaired.
If the bottom Red LED flashes, a fault that must be remedied by a service technician is indicated (also see the Section 14 "Troubleshooting" appendix).

## Interfaces

There is a 40-Pin Dual Inline connector on the back of the Coin Validator module (See Figure 3-2 [**12**]). This module connects with the main chassis by means of a flat ribbon cable. On the top right front of the Coin Validator there is an 8-pin RJ-45 receptacle jack (See Figure 3-1 [**2**]). It allows the Coin Changer to be connected to a Palm Pilot® handheld device for configuration purposes. On the left side of the Coin Validator there is a direct 5-Pin Printed Circuit Board (PCB) edge connector (See Figure 3-2 [**11**]) which previously allowed the Coin Validator to be connected to a programming PC or a JCM Test Station.

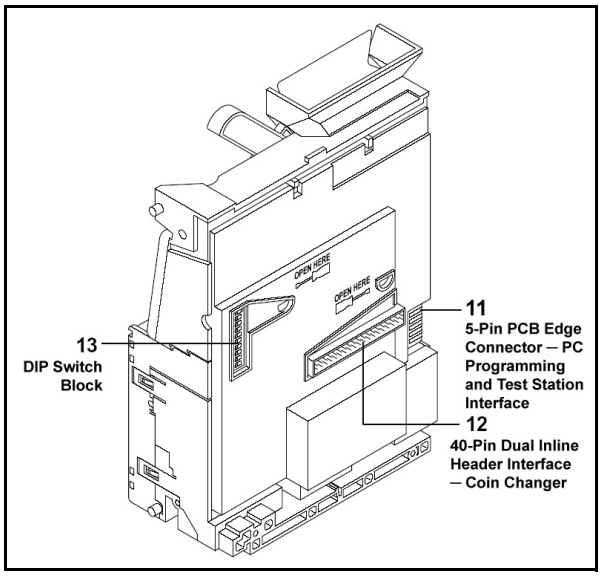


**Figure 3-2** Coin Validator's Rear Side

## DIP Switch Block

Individual settings for inhibiting various coin types can be easily made by selecting the proper switches on the 10-position DIP Switch Block located on the back of the Validator Module (See Figure 3-2 (**13**) as well as Section 7 "Operation" for detailed user information).

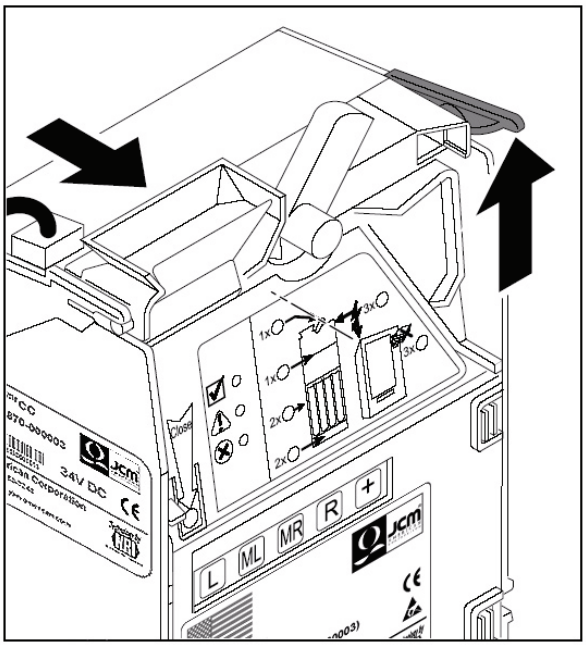


**Figure 3-3** Coin Validator Removal


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## Product Labels

The Coin Validator's Side Product Label (See Figure 3-1 [**11**] and Figure 3-4) contains the part and serial numbers, voltage, brand and certification information. Detailed information for which can be found in Table 3-1.

**Figure 3-4** Coin Validator Side Label

**Table 3-1** Side Label Features

| | |
|---|---|
| **1.** Data block number | **6.** Order number (6 digit) |
| **2.** Device part number | **7.** Serial number (3 digit) |
| **3.** Barcode | **8.** Certified European mark |
| **4.** Date of manufacture (4 digit) | **9.** Nominal Operating Voltage |
| **5.** Ordering code (8 digit) | **10.** Product Trade Marked name |

The Front Product Label (See Figure 3-1 [**5**] and Figure 3-5) contains similar information as the side label with additional content regarding safety and coinset information listed in Table 3-2.

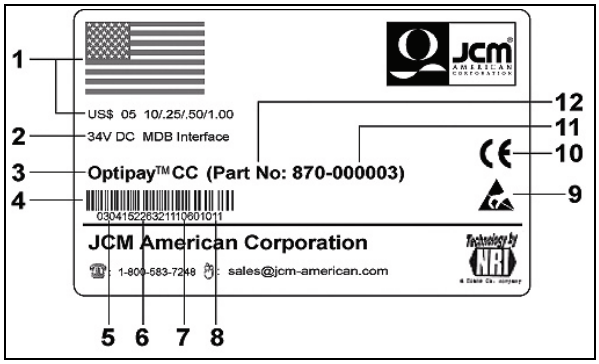


**Figure 3-5** Coin Validator Front Label

**Table 3-2** Front Label Features

| | |
|---|---|
| **1.** Country flag, country code and currency/coin type requirements | **7.** Order number (6 digit) |
| **2.** Nominal voltage & Interface | **8.** Serial device number (3 digit) |
| **3.** Product name | **9.** Safety tested certification logo |
| **4.** Barcode | **10.** Certified European mark |
| **5.** Date of manufacture (4 digit) | **11.** Data block number |
| **6.** Ordering code (8 digit) | **12.** Device part number |

# The Payout Unit

The Payout Unit consists of the four tube cassette and the payout set. The device is equipped with filling level sensors and tube counters to monitor each tubes inventory.

## Tube Cassette

The Tube Cassette (See Figure 3-1 [**6**] and Figure 3-6 [**1**]) incorporates four change tubes with different diameters for coin storage. These coins are available for change. A sticker located at the top of the cassette identifies the coin denomination for each tube.

The tube coin storage capacity depends on the thickness of each coin type (example: approximately 87 U.S. 25¢ coins can fill a tube), See Table 3-3 for a listing of the U.S. coin values and quantities allowed per tube.

**Table 3-3** U.S. Coin Cassette Capacity

| Coin Value | Thick-ness (cm) | Nº. of Coins @ 100% Sensor Level | Empty | @ 50% | @ 75% |
|---|---|---|---|---|---|
| 0.5 | 1.87 | 78 | 10 | 39 | 59 |
| 0.10 | 1.3 | 112 | 14 | 56 | 85 |
| 0.25 | 1.67 | 87 | 11 | 44 | 66 |
| 1.00 | 2.0 | 73 | 9 | 36 | 55 |

The Coin Validator tests whether an accepted coin should be sorted into one of the four tubes, or be directed to the Cash Box according to customer programming.

If at any time another combination of tube coins is required, the appropriate cassette can be ordered


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from JCM and simply exchanged in the assembly (See Figure 3-6 [**1**]). Firmware may require an upgrade depending on the cassette configuration. This can be accomplished in the field with the use of a Palm Pilot® handheld device containing the appropriate application software.

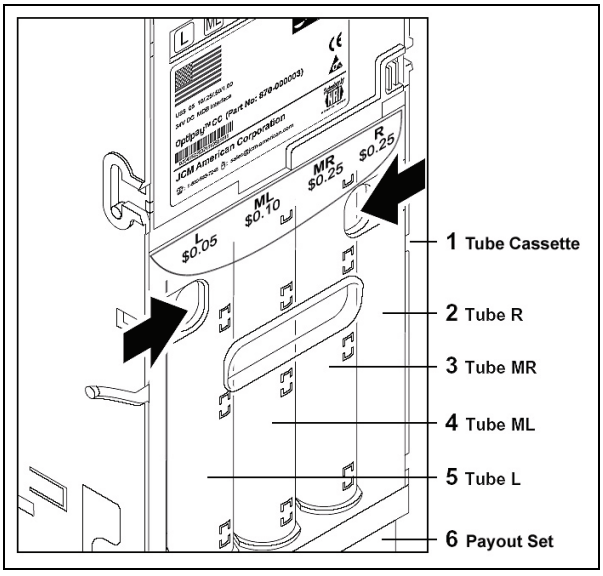


**Figure 3-6** Tube Cassette Removal/Replacement

### Payout Module

Change is dispensed by two motors installed at the bottom of the Payout Set (See Figure 3-1 [**7**]).

The left motor is responsible for dispensing coins from the left "Tube L (**5**)" and middle left "Tube ML (**4**)" coin tubes, and the right motor is responsible for dispensing coins from the right "Tube R (**2**)" and middle right "Tube MR (**3**)" coin tubes.

### Filling Level Sensors

The coin level in each tube is monitored by four sets of independent sensors:

- An empty sensor is positioned at the height of 8 to 10 coins
- A 50% sensor is located approximately half way up the cassette
- A 75% sensor is located near the top
- A full sensor is positioned at the top rim of each tube.

In order for the tube counters to work correctly, the tubes have to be filled by inserting coins through the Coin Validator. If the cassette is removed to fill or remove coins from it, the coin count recorded by the counters would be inaccurate. In this case, the Coin Changer uses the coin thickness and level sensors to recalculate the correct amount of coins in the tubes.

If a tubes "full" sensor displays the message "Tube Full", all further coins for this tube will be automatically directed to the Cash Box. Only when coins have been dispensed again from this tube, will more coins be allowed into the tube.

## MDB Harness

The MDB Harness (See Figure 3-1 [**10**]) is installed at the top left corner of Coin Changer. For details on how to install the Coin Changer into a Vending Machine, see Section 5 "Installation".


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## 4 FUNCTIONS

This section describes the main functions of the Optipay™ CC A-66 Coin Changer with particular emphasis on:

- Filling and emptying the change tubes
- Configuring the maximum change tube coins
- Security stock considerations
- Coin inhibits
- Disabling the inventory keys
- Configuring tokens
- Tube counter automatic correction
- Resetting the tube counter
- Accepting and converting a second currency (optional)
- Minimizing Coin-on-a-String Manipulation (optional)

If adjustable functions require changing, see Section 7 "Operation" for direct Coin Changer adjustments, and Section 11 "Configuration" for using the configuration tools to reset them.

### Filling and Emptying Change Tubes

The simplest and quickest way to fill and empty the tubes is to remove the cassette (See Figure 4-1 ).

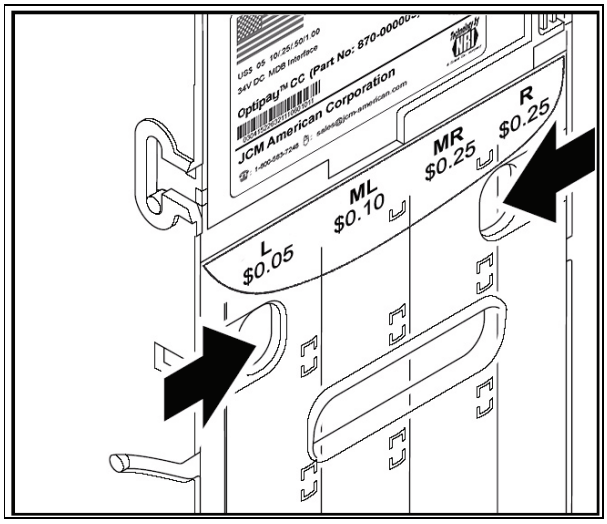


**Figure 4-1** Tube Cassette Removal

This allows for coin sorting or the removal of several coins at once.

If the correct number of coins is required for accurate coin management, the tubes can be filled by inserting coins into the Coin Validator one at a time. The tube counter registers every coin inserted or paid out (see Section 6 "Energizing" and Section 7 "Operation").

The tubes can also be emptied using a Palm Pilot® handheld containing the Palm A66 US software (see Section 11 "Configuration").

Coins can be dispensed individually, (e.g. for test purposes), consecutively for inventory purposes, prior to transporting the device.

If the tubes have to be filled or emptied to a certain level, a “float level” can be configured (see Section 11 "Configuration"). This filling level guarantees that a known number of coins is present for accounting purposes. If the “float level” function is activated, Cash Box coins will not be accepted.

### Configuring the Maximum Change Tube Coins

The Coin Changer can be configured so each tube will accept a maximum number of coins. When this number is reached, all subsequent coins for that tube will be automatically directed to the Cash Box. Only when coins have been dispensed from this tube, will more coins be allowed to enter it. (See Section 11 "Configuration").

If this function is unused, the full sensor located at the top of the tube determines when the coins will be directed into the Cash Box and no longer into the coin tube, regardless of the number of coins inserted.

### Security Stock Considerations

If a coin security stock is configured for the individual tubes, the Coin Changer will not vend a minimum number of tube coins. The security stock can be set between 1 and 9 coins. It should be set higher for coins which have stacking problems.

The Coin Changer can also be configured in such a way that the security stock can be paid out of the Vending Machine, or the security stock can be delivered to the Vending Machine, when the machine polls the capacity level used to make change (see Section 11 "Configuration").



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## Coin Inhibits

Coins types can be inhibited directly by setting specific DIP Switches on the rear DIP Switch Block located on the backside of the Validator Module (See Chapter 7 "Operation"), or by applying the PC software by means of the Palm Pilot® handheld (see Section 11 "Configuration").

## Disabling the Inventory Keys

The inventory keys constitute a part of the Coin Changer's front Keypad: (e.g., keys [L], [ML], [MR] and [R]).

These keys allow the dispensing of one, several or all coins from the corresponding Left, Middle Left, Middle Right and Right change tubes. Should operation of these keys no longer be desired, they can be inhibited, or configured in such a way that they can be enabled by Vending Machine's controller (see Section 11 "Configuration").

## Configuring Tokens

The Coin Changer contains three dedicated coin channels for configuring three different types of tokens. Therefore, a new token's measured value can be directly assigned to a coin channel on the Vending Machine by inserting the corresponding tokens into it. This operation can be done at the machine, using the Palm Pilot® and the Palm A-66 US application. The acceptance band generated will then accept these tokens for payment within the Vending Machine.

In addition, you can choose between a normal and wide acceptance band for the configured tokens. However, a wide acceptance band should only be set if a limited number of the tokens are available for generating the token's value measurement, or if the tokens show very large tolerance values. Otherwise, there is the danger that a large number of false coins will be accepted.

Tokens can either be configured so the customer gets his selected product free of charge (free vend tokens), or configured to assign a certain set denomination or credit a value (value tokens). The Coin Changer can either direct the accepted tokens to the cash-box or send them back to the customer in the return tray.

Chapter 11 "Configuration" describes which configuration tool is required to configure tokens.

## Sending the Telephone/Currency Code to the Vending Machine Controller

Depending on which state or country the machine is installed, a telephoned currency code can be remotely sent to the Vending Machine control and set into the Coin Changer (e.g. for setting menu and display text).

For more details on how to change the pre-programmed telephone/currency code, please see Section 11 "Configuration".

## Tube Counter Automatic Correction

Usually after every coin acceptance and pay out, the Coin Changer compares the tube counter status and the sensor's measured fill level, and, if necessary, corrects the tube counter data.

If the Vending Machine's controller is unable to process the automatic tube counter correction, the Coin Changer can be set so that the tube count will not be automatically corrected (see Section 11 "Configuration").

## Resetting the Tube Counter

When needed, the tube counters can be reset using the Palm Pilot® or can be reset manually. Manual reset consists of pressing individual dispense keys for 5 dispense cycles and allowing the payout action to stop by itself. After this operation is complete for all 4 tubes, the coin inventory build up procedure must be performed. Resetting counters using the Palm Pilot® is discussed in Section 12.

## Accepting and Converting a Second Currency (optional)

If the Coin Changer needs to accept two currency types, the second currency value can be converted to the main currency value using a set exchange rate.
The second currency value is rounded up or down respectively in such a way that it can be managed by the main currency counter. Chapter 11 "Configuration" describes which configuration tool is used to program a second currency.

## Minimizing Coin-on-a-String Manipulation (optional)

The Coin Changer can be optionally equipped with a String Sensor. This device recognizes coins inserted that are connected to a string and prevents this type of coin from being accepted. By recogniz-


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ing this security condition these coin types will not generate a credit value. For this type of fraud attempt, a credit will not be issued. The sensitivity of the String Sensor can be individually set for each unit is adjustable (see Section 11 "Configuration").

Following a string manipulation attempt it is possible to reject the next 100 tube coins inserted by directing them to the Cash Box instead of the coin tubes. Coins directed to the Cash Box are less prone to manipulation, so further attempts at string manipulation will obviously fail (see Section 11 "Configuration").


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# Optipay™ CC
## A-66 Coin Changer
Section 5

## 5 INSTALLATION

This section provides a installation instructions for the Optipay™ A-66 Coin Changer.The A-66 Coin Changer is either:

- Installed in a Vending Machine, or
- Connected to a Test Station using WinMDB© software
- Connected to a Palm Pilot® handheld containing installed PalmA66® and/or PalmEMP® software.

*NOTE: For Coin Changer mounting instructions, see the Optipay Coin Changer Installation Guide available at the JCM website (www.jcm-american.com).*

This section describes how to connect the Coin Changer to a Vending Machine. For details on connecting the service tools, see section 11 "Configuration".

**To avoid damage to the equipment, please make sure that you check the following before installation:**

- **check that the Coin Changer's MDB connecting cable is suitable for the Vending Machine interface.**
- **check that the Coin Changer's power supply is the same as the nominal voltage stated on its product label.**

The following steps describe how to install the Coin Changer into a Vending Machine:

1. Disconnect the Vending Machine's main AC power plug.
2. Unlock (See Figure 5-1 [**1**]), pull out [**2**] and remove the Coin Validator from the Coin Changer assembly by carefully lifting the left and right side catches and gently pulling forward as indicated by the arrows illustrated by Figure 5-2 [**1** & **2**].
3. Hang the A-66 in the Vending Machine using the three mounting holes located at the backside of the Coin Changer. Two holes are located at the top (See Figure 5-1 [**3**]) and another one is located at the bottom [**4**] (not shown).

**Ensure that the Coin Validator assembly remains safely connected to the Coin Changer by the flat 40-wire ribbon cable.**

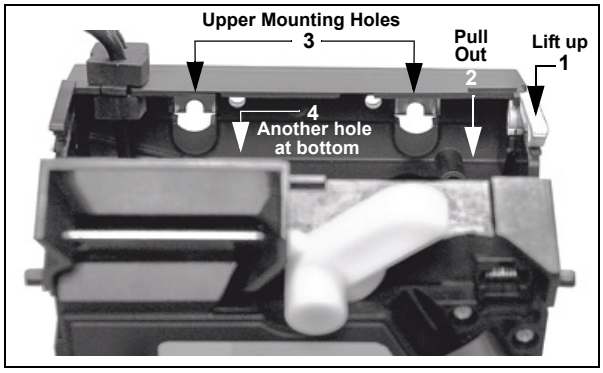


**Figure 5-1** Coin Changer mounting hole locations

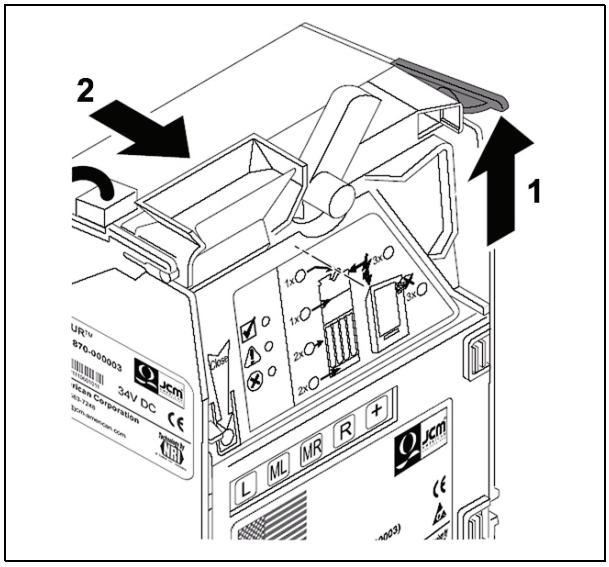


**Figure 5-2** Opening the Coin Validator

4. Tightly secure the Coin Changer's housing to the Vending Machine.
5. Replace the Coin Validator back into the Coin Changer and engage.

**Ensure that an air space exists between the Vending Machine's return lever and that of the Coin Changer when closing.**

*NOTE: A second four pin connector Harness is used with the optional DBV-30X Validator's RC-10 Optipay Recycer. It should be tied off if not being used.*


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6. Connect the Coin Changer to the Vending Machine using the MDB connecting cable harness (See Figure 5-3 [**1**]).

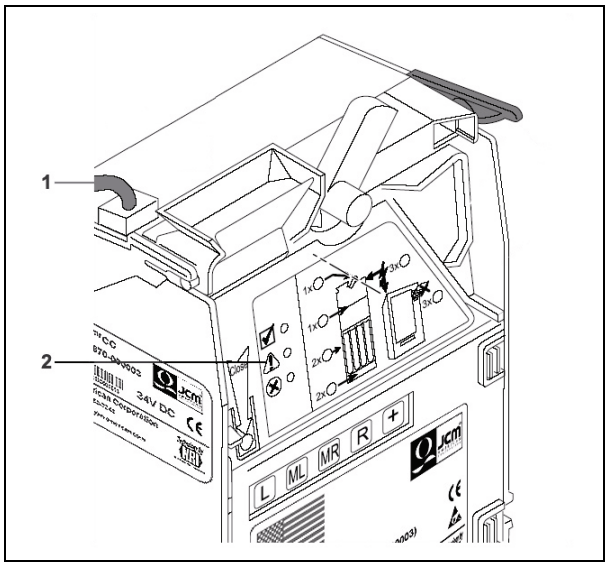


**Figure 5-3** Coin Validator Removal

7. Reconnect the Vending Machine's main AC power supply plug. The three LEDs (See Figure 5-3 [**2**]) located on the Coin Validator's front panel will briefly illuminate to test their functions. Afterwards, the Green LED should remain lit. The Coin Changer is now operational and ready for use.


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## 6 ENERGIZING/POWER-UP

This section provides energizing (power-up) instructions for the Optipay™ A-66 Coin Changer.

Although the individual functions of the A-66 Coin Changer are pre-programmed by the manufacturer to customer specifications, the first time the device is activated, the four Tube Cassette change tubes must be filled with relevant coin types. At first power-up, the process of building coin inventory needs to be accomplished.

To begin the energizing process:

1. Ensure the machine is powered ON.
2. Wait until the Green LED is solidly lit.
3. Press the Plus (+) key (See Figure 6-1 [**4**]). An audible signal will sound and the Green LED (See Figure 6-1 [**1**]) will begin flashing indicating that the Coin Changer is no longer in a standard operating mode and has now entered the coin filling mode.

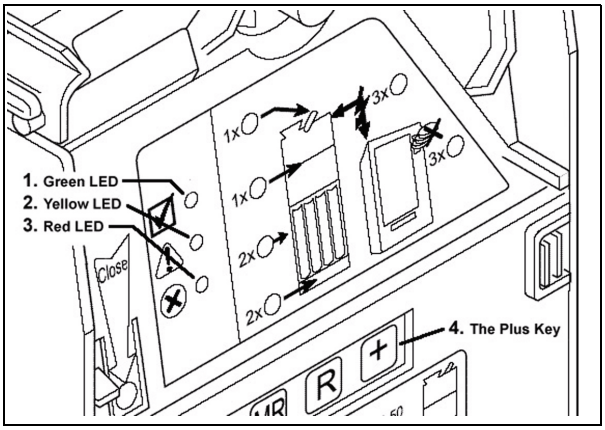


**Figure 6-1** Coin Validator Keyboard

4. Insert coins.
   The Coin Changer keeps count of the inserted coins and builds up inventory until:
   - The full sensor is covered, or
   - The programmed maximum coin number is reached, or
   - The float level is reached.

   Coins inserted thereafter will not be accepted and will be directed to the return area tray. When the desired number or level of coins is reached:
5. Press the Plus (+) key again.
   Two audible signals will sound and the Green LED will light constantly indicating that the Coin Changer is no longer in the filling level mode and has returned to the normal operational mode.

*NOTE: If no coins are inserted in a 30 second time period, the Coin Changer will automatically return to the operating mode, without having to press the Plus (+) key a second time.*


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## 7 OPERATION

This section explains how to enter functions and settings directly on the Optipay™ A-66 Coin Changer using its various operating controls (e.g., the front panel Keypad and the DIP Switch Block), rather than using the additional programming tool accessories.

### Dispensing Coins/Emptying Coin Tubes

Coins can be dispensed one by one or continuously.

*NOTE: If the Coin Changer is configured so the inventory keys are disabled, the keypad will not be active. The device is either configured so the Keypad can be enabled by the Vending Machine's control system, or so the Keypad must be initially activated by one of the various configuration tools (see section 11 "Configuration").*

To dispense coins individually, simply press the corresponding [L], [ML], [MR] or [R] key for the desired tube once. One coin will be dispensed each time the specific key is pressed.

To dispense several tube coins:

1. Press and hold down the desired [L], [ML], [MR] or [R] key for approximately five dispense cycles.
   The corresponding tube will empty automatically without having to press the respective key again.
2. Press any other key.
   The coins will stop dispensing if not already completely emptied.

*NOTE: If the Coin Changer is configured so the inventory keys are disabled, the keypad will not be active. The device is either configured so the Keypad can be enabled by the Vending Machine's control system, or so the Keypad must be initially activated by one of the various configuration tools (see section 11 "Configuration").*

### Emptying the Change Tubes to a Certain Fill Level

The tubes can be emptied (float down) until the tube counters reach a pre-programed "float" level.

To empty the change tubes to the set float level:

1. Press the Plus [+] key.
   An audible signal will sound and the Green LED will begin flashing indicating that the Coin Changer is no longer in a standard operating mode and has now in the filling mode.
2. Press and hold any key down, for approximately five dispense cycles (the Green LED illuminates).
   All tubes will automatically empty to the preconfigured float level. Afterwards, two audible signals will sound and the Green LED will light constantly indicating that the Coin Changer is no longer in the filling level mode, and has returned to the operating mode.

### Tube Filling Procedure

After an inventory or repair the tube cassette's four change tubes can be refilled with relevant coin types through the Coin Validator using the Keypad.

*NOTE: In many cases the Vending Machine's control will offer a filling function. In this case this function should be used, because the controling unit might not accept the filling level capacity of the Coin Changer.*

*NOTE: If the Cash Box contains coins, it must be emptied, otherwise new coins directed to the Cash Box will not be counted.*

1. Ensure the machine is powered ON.
2. Wait until the Green LED is solidly lit.
3. Press the Plus [+] key (See Figure 7-1 [**4**]).
   An audible signal will sound and the Green LED (See Figure 7-1 [**1**]) will begin flashing indicating that the Coin Changer is no longer in a standard operating mode and has now entered the coin filling mode.


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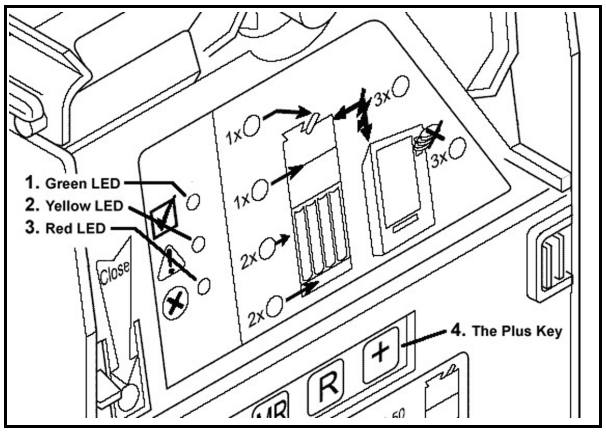


**Figure 7-1** Coin Validator Keypad

4. Insert coins.
   The Coin Changer keeps count of the inserted coins and builds up inventory until:
   - The full sensor is covered, or
   - The programmed maximum coin number is reached, or
   - The float level is reached.

   Coins inserted thereafter will not be accepted and will be directed to the return area tray.

   When the desired number or level of coins is reached:
5. Press the Plus [+] key again.
   Two audible signals will sound and the Green LED will light constantly indicating that the Coin Changer is no longer in the filling level mode and has returned to the normal operational mode.

*NOTE: If no coins are inserted in a 30 second time period, the Coin Changer will automatically return to the operating mode, without having to press the Plus [+] key a second time.*

## Inhibiting Coins Using DIP Switches

By setting various switches on the DIP Switch Block located on the back side of the Coin Validator, it is possible to inhibit the first eight coin channels of the Coin Changer without using any of the additional configuration tools available. For information on coin assignments for each channel, please contact Optipay™ customer service, or apply power to the Coin Changer, and connect the Coin Validator to the Palm Pilot® using PalmA66® software (see section 11 "Configuration").

To inhibit a specific coin type:

1. Remove the Coin Validator from the Coin Changer assembly by carefully lifting the right side lever arms [**1**] and gently pulling forward [**2**] as indicated by the arrows illustrated in Figure 7-1.

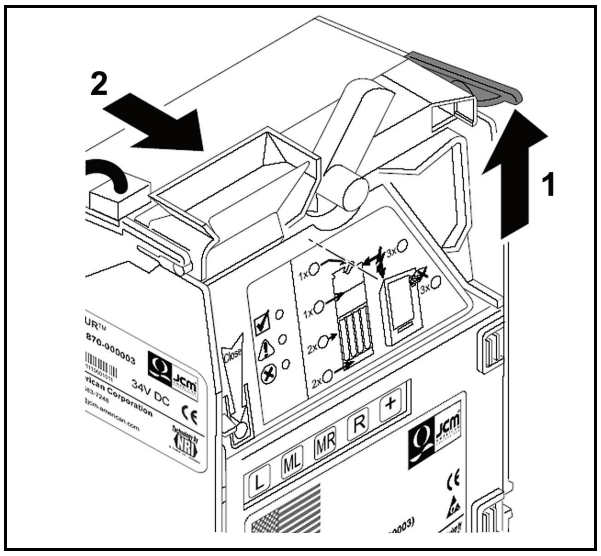


**Figure 7-1** Coin Validator Removal

**Ensure that the Coin Validator remains safely connected to the Coin Changer by the flat 40-wire ribbon cable.**

2. Set the related DIP Switches (1 through 8) to their correct position (ON) using a scribe, small screw driver or an opened paper clip (See Figure 7-2 ).

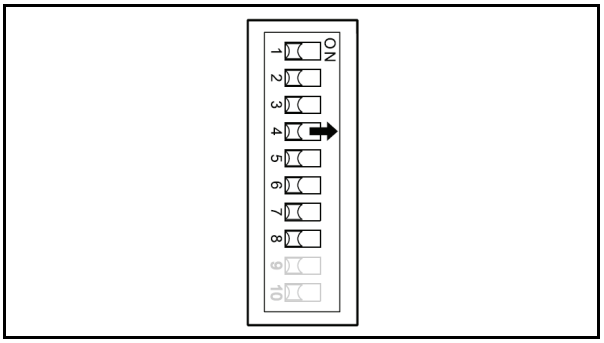


**Figure 7-2** Coin Validator Switch Block

   The assigned coin types will no longer be accepted, and will now be directed to the return area change cup.
3. Reinstall the Coin Validator.

*NOTE: With the aid of the configuration tools, the possibility to inhibit any or all of the pre-programmed coin types also exists (see section 11 "Configuration").*


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# Optipay™ CC
## A-66 Coin Changer
Section 8

## 8 CLEANING

This section explains how to clean the Optipay™ A-66 Coin Changer.

Only wipe the Coin Validator from time to time with a damp cloth (use luke warm water containing a mild dish cleaning liquid detergent):

> ⚠ **Under no circumstances should the cloth be wet enough to allow excess fluid to run into the unit. Otherwise the printed circuit board (pcb) may be damaged.**
>
> **Do not use any solvents or scouring agents which can harm the plastic surfaces of the unit.**

1. Remove the Vending Machine's main AC power.
2. Press up on the locking catch lever and open the Coin Validator's fly deck (See Figure 8-1 [**1**]).
3. Wipe the coin runway clean inside the coin validation area.
4. Close the Coin Validator's fly deck and gently press in on the "Close" arrow white dot until the metal spring engages behind the lever and a click is heard (See Figure 8-1 [**2**]).
5. Reconnect the Vending Machine to the main AC power.

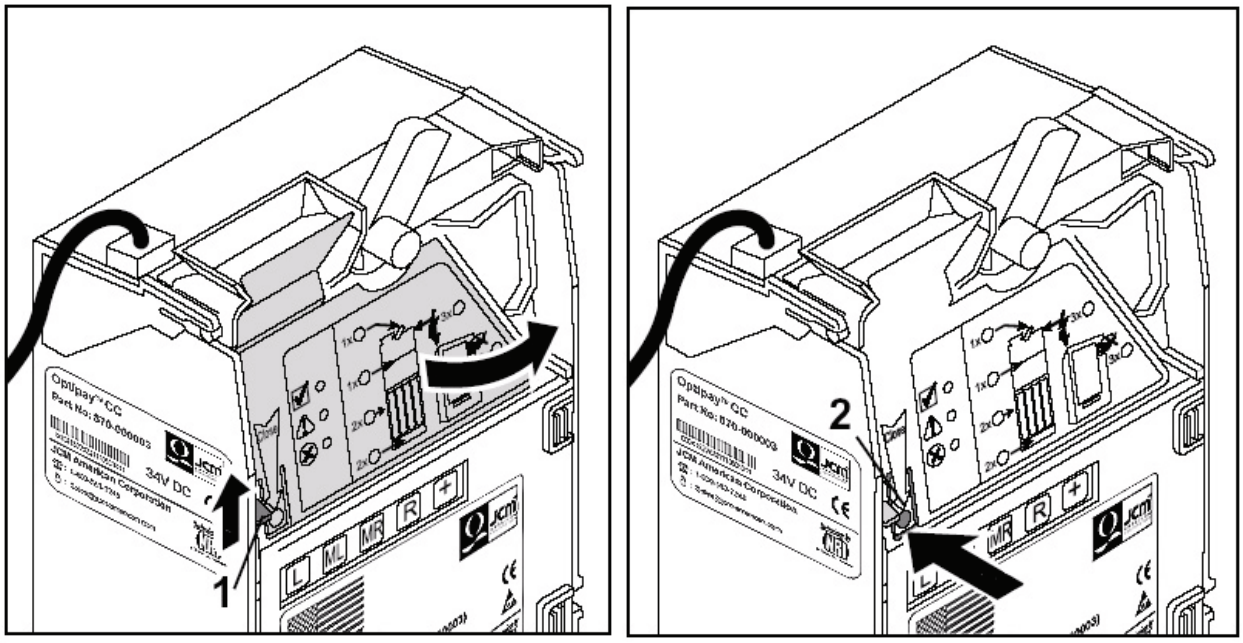


**Figure 8-1** Opening and Closing the Coin Validator's Access Panel



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## 9 TRANSPORT

This chapter explains how to transport the Optipay™ A-66 Coin Changer.

**Empty the tube cassette before transporting the device so that loose coins do not fall out of the unit.**

**Turn the Vending Machine's main AC power OFF before removing the Coin Changer from the Vending Machine.**

**To avoid unnecessary damage, only transport the unit in its original protective packaging; and, under no circumstance lift the unit by it's harness.**


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# Optipay™ CC
## A-66 Coin Changer
Section 10

## 10 TECHNICAL DATA

This section lists and defines the Optipay™ A-66 Coin Changer specifications.

### A-66 Specifications

| | |
|---|---|
| Coin acceptance | 20 coin types maximum<br>16 different coin channels (up to 3 tokens)<br>Coin diameter: 0.59–1.23 in. (15–33 mm)<br>Coin thickness: 0.047–0.138 in. (1.2–3.5 mm) |
| Coin vending: | 4 coin types from a tube cassette<br>(coin diameter and thickness depends on the specific tube cassette) |
| Device dimensions: | Height: 14.96 in. (380.0 mm)<br>Width: 5.25 in. (133.5 mm)<br>Depth: 3.01 in (76.5 mm [80 mm with return]) lever depressed]) |
| Machine interface: | Serial **M**ulti-**D**rop **B**us (MDB) interface |
| Mounting position: | Vertical (maximum deviation = 2°) |
| Temperature range: | -4 °F to 167 °F (-20 °C to +75 °C) |
| Humidity: | 90% maximum |
| Nominal voltage: | 24 Volts DC |
| Power consumption: | Standby = 1.2 Watts; maximum 6 Watts with 24 V DC |
| Noise immunity: | The device fulfills the current requirements on generic immunity and generic emissions according to current EC directives (a EMC law) |
| Safety prescriptions: | Low voltage directive |

### CE Certification

The CE certificate (CE = Communautés Européennes) confirms that our products comply with the specified basic requirements of the applicable directive. The CE certificate is not a quality assurance certificate in terms of the quality expected by the manufacturer, but only in terms of the quality demanded legally. It is a pure administrative certificate and is intended only as proof of compliance with the directives for the monitoring authorities and not directed at clients or final customers.

The following directives and their subsequent changes can be applied partially to JCM devices:

1. The EMC Directive (89/336/EEC) regarding devices that cause electromagnetic interference or are interfered with by same.
2. The Low Voltage Directive (73/23/EEC) regarding electrical equipment used with a nominal voltage between 50 and 1000 Volts AC and 75-1500 Volts DC.

The CE Certificate Labelling Directive (93/68/EEC) modification regarding the application and use of CE labels.


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# 11 CONFIGURATION

This section explains how to configure the Optipay™ A-66 Coin Changer for use.

In order to test the A-66 Coin Changer, react quickly to new false coin occurrences, and make individual adjustments in the workshop or on site, service tools are available to test the Coin Changer and make field adjustments.

This section includes:

- A presentation of the individual service tools required depending on where the Coin Changer is to be tested or configured
- Lists of the functions which can be set with each service tool
- Lists of the equipment required for testing or configuring using the respective tool
- Brief descriptions detailing how to connect the various service tools to the Coin Changer

## Bench Testing the Coin Changer

If Coin Changer functionality needs to be checked without making any adjustments, the JCM WinMDB© Test Station is sufficient for this purpose. The Test Station is composed of the following:

- Test Software WinMDB© and
- Tester G-19.0654

## Bench Testing and/or Configuring the Coin Changer

If the Coin Changer requires testing and configuration in the workshop, the following three JCM configuration option is available:

- A PC programming station consisting of:
  - A Palm Pilot® handheld containing:
    - PalmA66© software installed
    - Tester G-19.0641or G55.0338 for checking the power supply.

*If the vending unit does not require testing, it is unnecessary to dismantle the entire Coin Changer. In this case it is just sufficient to remove the Coin Validator from the Coin Changer in order to configure or test it.*

## Testing and/or Configuring the Coin Changer at the Vending Machine

If the Coin Changer must be tested or configured at the Vending Machine, the following configuration tool is available:

- A Palm Pilot® Handheld with PalmA66© software installed

## Palm Pilot® Handheld Use

The PalmA66© application is used to diagnose and configure the Coin Changer to update the data block (coin information) in the unit's memory (data block download). Both programs identify the Coin Changer and the unit's own data, and presents the information on the video screen of the Palm Pilot® handheld's display.

## Which Functions Can be Configured?

All available functions of the Coin Changer can be set by means of the PalmA-66US© application. In addition to Coin Changer diagnostics, (e.g. in Service cases) the following functions can be set:

## PalmA66© Software

PalmA66© software provides:

- Replacement of the tube cassette
- Resetting of the tube counters
- Configuring up to three token types
- Other tube coin type configuration
- Configuring the maximum number of tube coins
- Configuring a security stock
- Inhibiting individual coin types
- Disabling the inventory keys
- Configuring telephone and currency codes
- Suppressing or activating the tube counter correction
- Configuring an individual wake-up time
- Configuring a second currency including its conversion factor
- Minimizing string manipulation


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- Configuring the smallest coin values decimal point reference and the calculations basis for all coin types
- Storing Coin Changer settings for a standardized configuration (cloning)

## Connecting a Palm Pilot® Handheld

PalmA66© is a software solution that can be installed on a Palm Pilot® handheld. The Palm Pilot® handheld can be connected to the Coin Changer by means of an additional connecting cable through a Dongle (See Figure 11-1 illustrating the software delivery method).

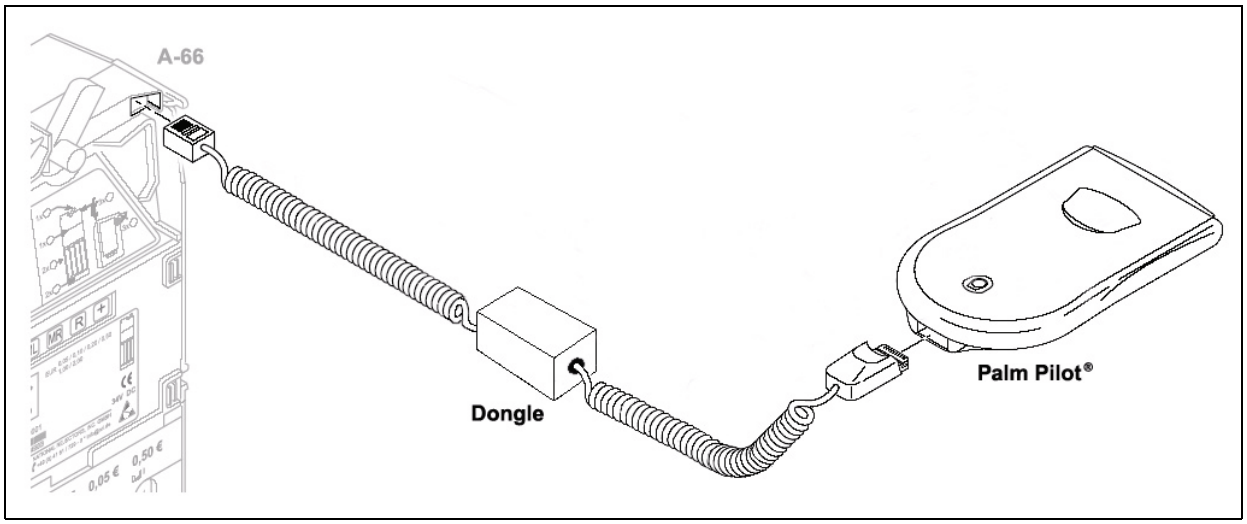


**Figure 11-1** Palm to Validator or Changer Connection via the Palm Dongle Black Box


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# Optipay™ CC
## A-66 Coin Changer
Section 12

## 12 USING THE PALM PILOT

### A66US Program Application

This section describes the use of a Palm Pilot® to configure the Optipay™ A-66 Coin Changer using the PalmA66US© software application.

#### Equipment Requirements

- A Palm Pilot® Handheld – All M100, 500 and Tungsten Series handhelds (See Figure 12-1)
- Coin Changer Communication Cable & Dongle
- Palm A66US Changer Program for the Palm Pilot® Application
- PC with Windows 2000 or XP O/S
- Palm Pilot® Application Suite
- Hot Sync Cradle or Cable*.

*NOTE: *Refer to the Palm Pilot® user's manual for program installation and Hot Sync instructions.*

**Figure 12-1** Typical M100/500 Series Palm Pilot Handheld & Software

### Managing Coin and Configuration Settings

1. Turn on the Palm Pilot® and select the JCM Palm A66US application (See Figure 12-2).

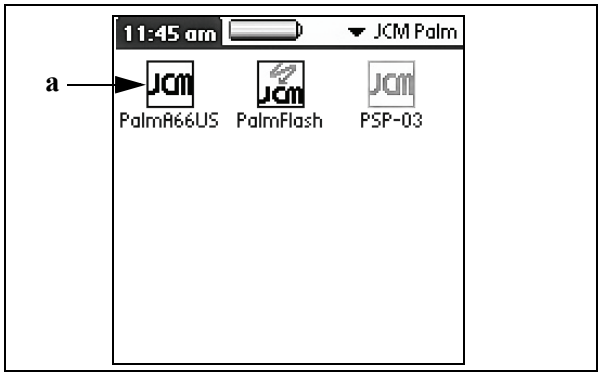


**Figure 12-2** Palm A66US Selection

2. Select the **Settings** tab on the main menu screen (See Figure 12-3 a).

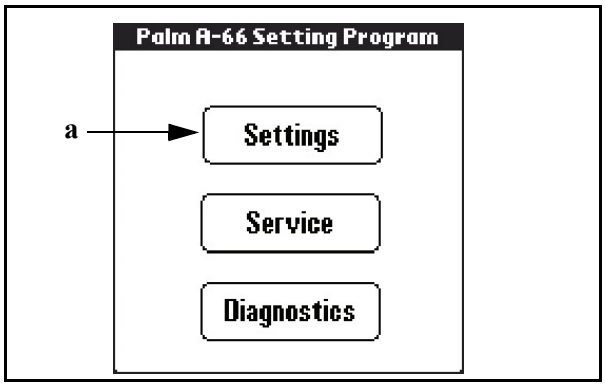


**Figure 12-3** Selecting Settings

3. Select the **Operating modes...** tab on the **Settings** menu screen (See Figure 12-4 a).

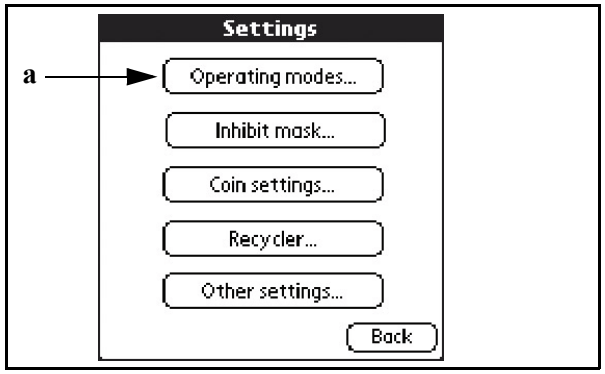


**Figure 12-4** Selecting Mode


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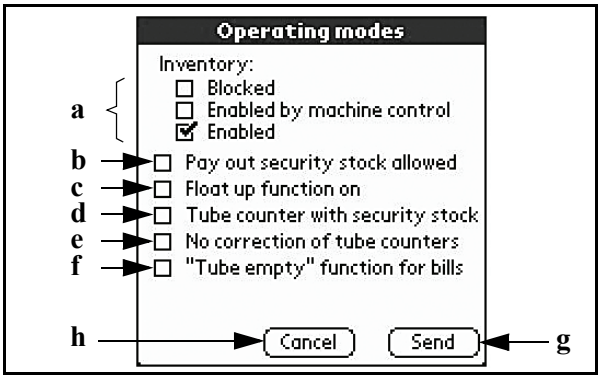


**Figure 12-5** Operating Modes

4. Set **Operating modes** functions listed in Figure 12-5 "a" through "f".

*NOTE: Select the desired settings and click* Send (See Figure 12-5 g) *to program the Coin Changer or* Cancel (See Figure 12-5 h) *to return to the* Settings

a). **Inventory** check box functions are:

- **Blocked** – Inventory keypad is disabled
- **Enabled by machine control** – Inventory keypad can be enabled by the Vending Machine. This requires a service pass code
- **Enabled** – Inventory keypad enabled

b). **Payout security stock allowed** – Check to enable the machine to pay the entire contents of the change tubes.

c). **Float up function on** – Enable to allow float up levels. Coin "float" values are set on the "Coin Settings" page.

d). **Tube Counter with security stock** – Check Tube Counter's security stock, including the security stock values, to transmit tube contents to the VMC.

e). **No correction of tube counters** – to disable the automatic Coin Changer Coin Tube Sensors.

f). **"Tube empty" function for bills** – Check this function to disable acceptance of high value bills when the Coin Changer is empty.

5. Select Inhibit Mask… on the **Settings** screen to enable or disable coin/bill acceptance (See Figure 12-6 a).

a). Select the tick box next to each denomination that is to be disabled (See Figure 12-6 b).

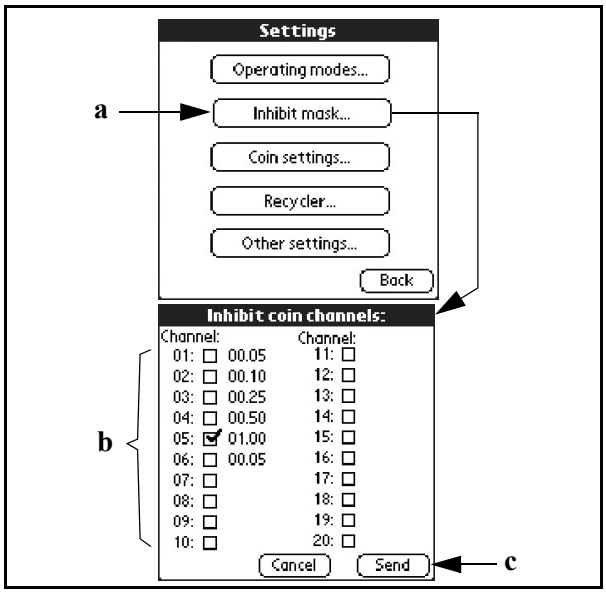


**Figure 12-6** Inhibit Coin Channels Mode

b). Select Send to program the Coin Changer or Cancel to return to the **Settings** screen (See Figure 12-6 c).

6. Select the Coin Settings… tab to set the Changer's "Float Level".

a). Configure the "Float Level" for each coin denomination by using the triangular "up" and "down" pointing arrows on the **Float Level** screen (See Figure 12-7 a).Click Send to program the Coin Changer (See Figure 12-7 b).

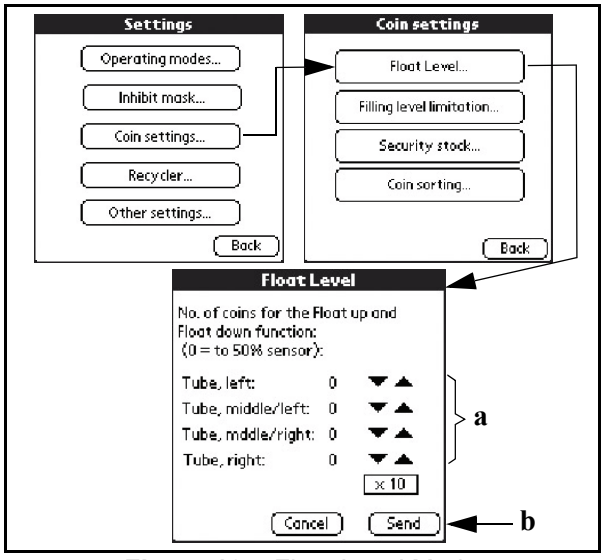


**Figure 12-7** Float Level Mode

b). Float-up function warning (See Figure 12-8).


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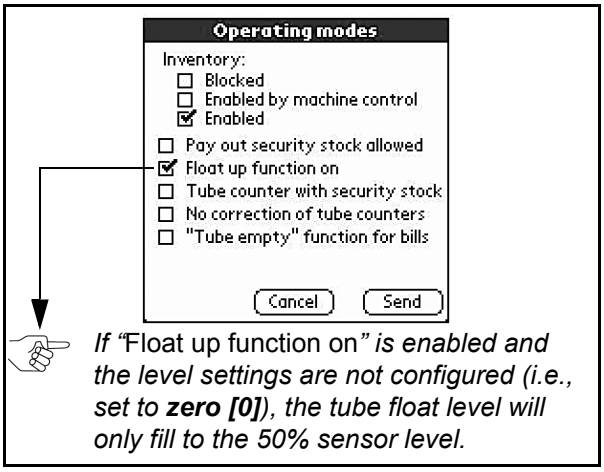


*If "*Float up function on*" is enabled and the level settings are not configured (i.e., set to **zero [0]**), the tube float level will only fill to the 50% sensor level.*

**Figure 12-8** Float up Selection Warning

7. Select the Coin Settings… tab to Set the Coin Changer "Security Stock" quantities.

   a). Configure the "Security Stock" for each tube by using the **Security stock** drop down menu's triangular "up" and "down" arrows to set the desired value (See Figure 12-9 a).

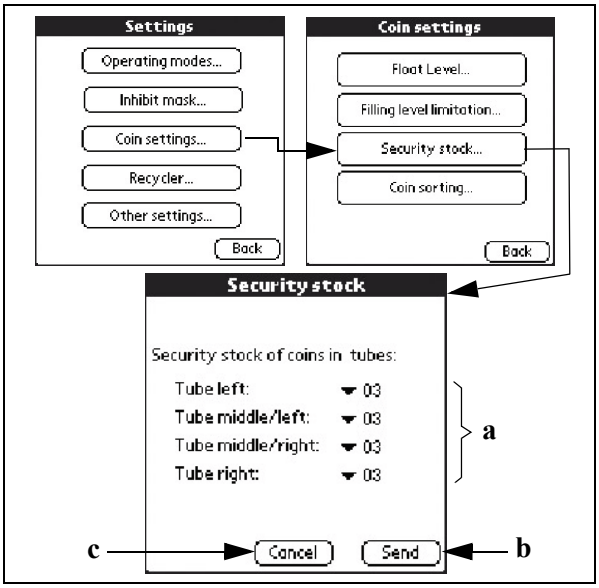


**Figure 12-9** Security Stock Mode

   b). Click Send (See Figure 12-9 b) to program the Coin Changer or Cancel (See Figure 12-9 c) to return to the **Coin settings** mode menu.

*NOTE: A "Security Stock" level of **three (3)** coins is recommended to prevent "coin bounce" and possible stacking issues in the Coin Changer tubes.*

8. Select the Coin Settings… tab to Configure the Coin Changer tube's "Coin Sorting".

   a). Select the Coin sorting… tab from the **Coin settings** mode menu.

   b). The **Coin sorting, channel 1-8** screen shows the current tube configuration (See Figure 12-10).

   c). To change the tube configuration, select Change (b) and then select from the available payout combinations listed.

   d). Click OK (c) to select or

   e). Back to reset to Step "b" and then

   f). Send to program the Coin Changer.

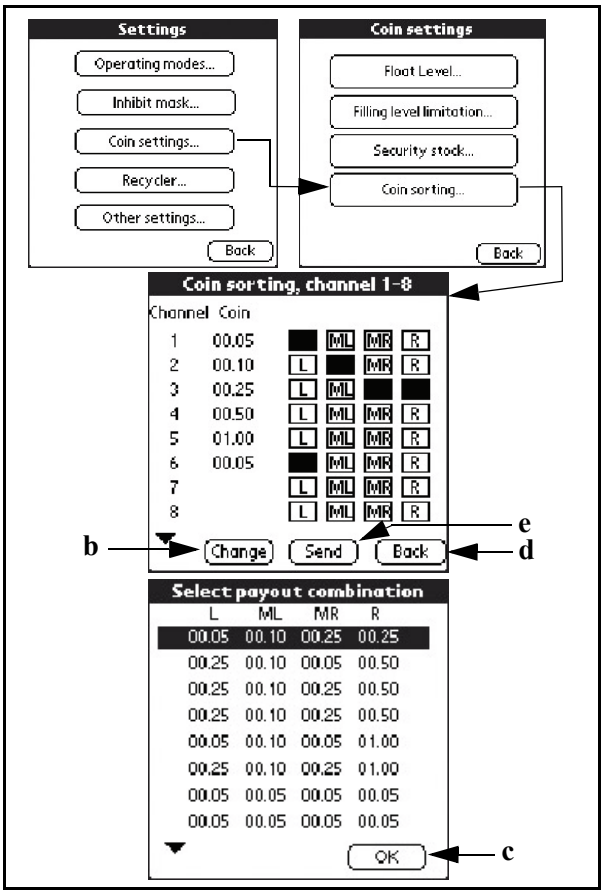


**Figure 12-10** Coin Sorting Mode

9. Enabling the Bill Recycler.

   a). Select the Recycler… tab on the **Settings** menu screen and then check the ☑ Recycler active tick box to enable the RC-10 recycling unit (See Figure 12-11).

10. The "Other settings" configurations.

    a). Select the Other settings… tab on the **Settings** menu screen and the following selections will appear:


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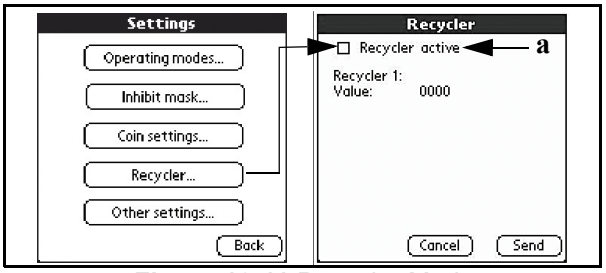


**Figure 12-11** Recycler Mode

- **Smallest coin value:** – Reference value for all coin values programmed. All coin values to be accepted must be a multiple of the smallest coin value (See Figure 12-12).

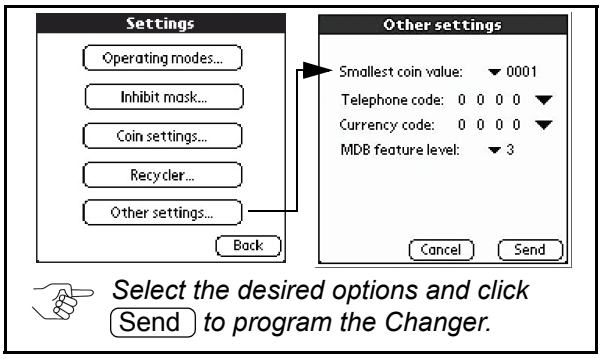


**Figure 12-12** Other Settings Mode

- **Telephone code: – and Currency code:** – These codes are used in combination to set the Vending Machine's language and currency type.

*NOTE: The Telephone Code is initially set to "01" and the Currency Code is initially set to "9001".*

- **MDB feature level:** –
  - **Level 3** – The changer controls all payout functions
  - **Level 2** – The vending VMC controls all payout functions

b). Make value changes by using the related Up/Down menu triangular arrows to set the desired value and select Send .

11. Cloning configuration settings.

a). Click on the Settings menu bar, then click on the Clone menu bar and select the Clone setting data bar that appears (See Figure 12-13 a).

b). To record the Coin Changer's settings, select Read out from the Clone setting data menu that appears, then select the desired record number (See Figure 12-13 c-to-d) in the Save data as: menu that appears.

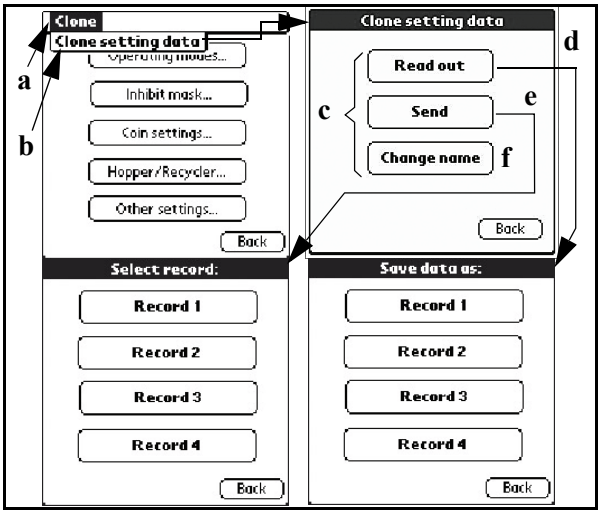


**Figure 12-13** Clone Mode

c). To program the settings into a new Coin Changer, select Send (See Figure 12-13 c) or Back to reset to Step "c" and

d). Select the appropriate Record 1 , Record 2 , Record 3 , or Record 4 button (See Figure 12-13 e).
Once a record has been stored, the Change name tab allows the specific record to be renamed to whatever the user decides appropriate for that record.

## Changer Service, Token Programming, and Currency Conversion

1. Changer payout set & tube counter editing.

a). Select the Service tab on the main menu screen (See Figure 12-14 a).

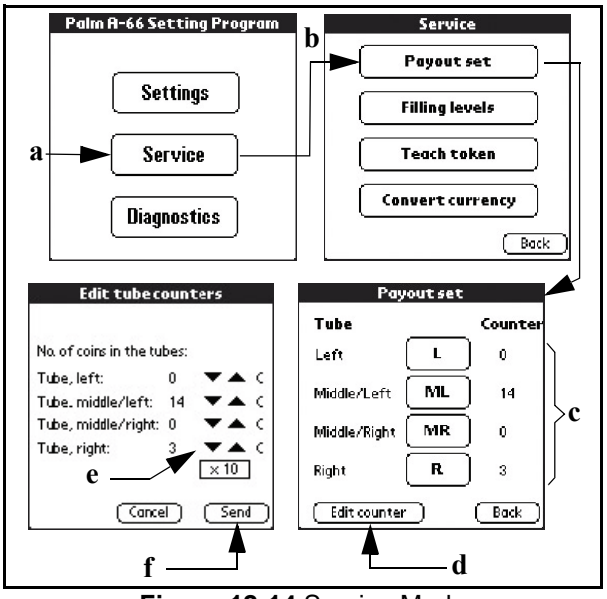


**Figure 12-14** Service Mode


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b). Select [Payout set] on the **Service** menu that appears to view the coin levels in each tube (See Figure 12-14 b). Click on the related [L] [ML] [MR] [R] tube position tab to perform a payout test on the respective tube (See Figure 12-14 c).

c). To edit the counter, click [Edit counter] (See Figure 12-14 d) and

d). Adjust levels using the respective "up" and "down" pointing triangular arrow (See Figure 12-14 e).

e). Click [Send] to program the Coin Changer (See Figure 12-14 f).

5. Viewing the "Filling Levels".

a). Select the [Service] tab on the main menu screen (See Figure 12-15 a); then

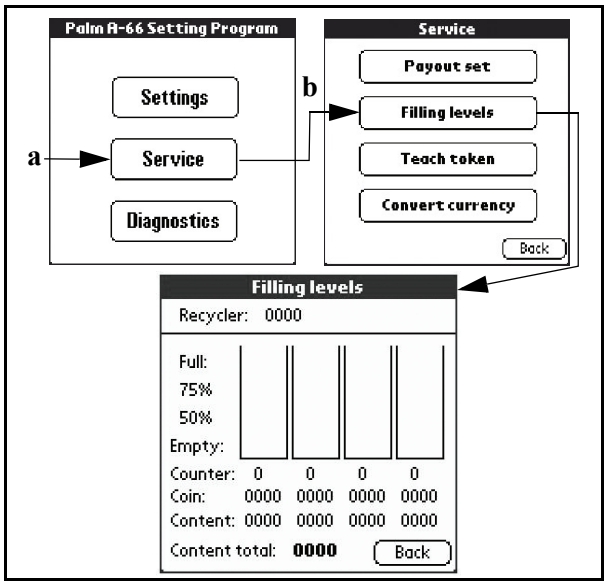


**Figure 12-15** Filling Levels Mode

b). Select [Filling levels] to view the coin level barographs, count, each tube's total coin value and the entire Tube Cassette's total monitory value.

6. Teaching new coins & tokens.

a). Select [Teach token] on the **Service** menu screen (See Figure 12-16 a -b), then

b). Select the desired channel to program the chosen token (See Figure 12-16 c).

c). From the **Token Teach:** screen select a new token to program (i.e., [Teach]) or one to change that has already been programmed into the Coin Changer memory (i.e., [Change code]).

d). While in the "Teach Token" mode insert a minimum of 10 coins to program tokens into the Coin Changer's memory (See Figure 12-17 d).

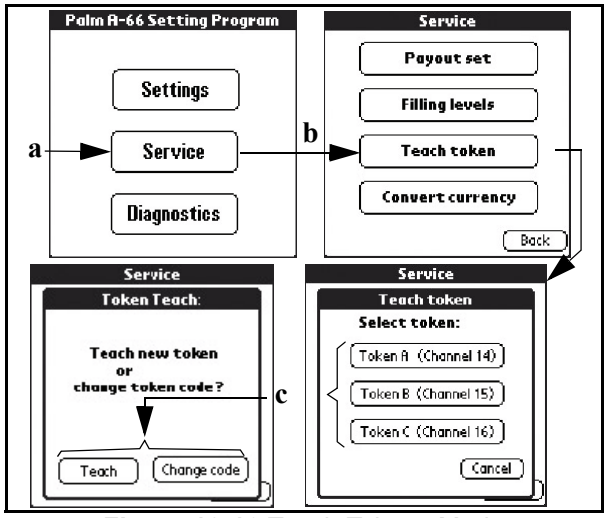


**Figure 12-16** Teach Tokens Mode

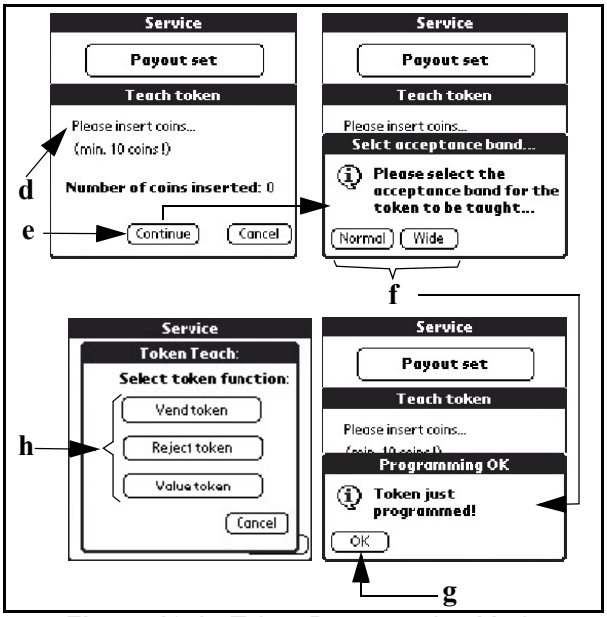


**Figure 12-17** Token Programming Mode

e). Select [Continue] on the **Teach token** menu screen within the **Service** menu revealing a third **Selct acceptance band...** menu (See Figure 12-17 e).

f). Select either [Normal] or [Wide] acceptance parameters (See Figure 12-17 f); then

g). Select [OK] in the **Programming OK** menu that appears (See Figure 12-17 g).

h). Select the appropriate **Token Teach:** function tab (e.g., [Vend token], [Reject token] or [Value token]) to complete token programming within the **Service** menu.


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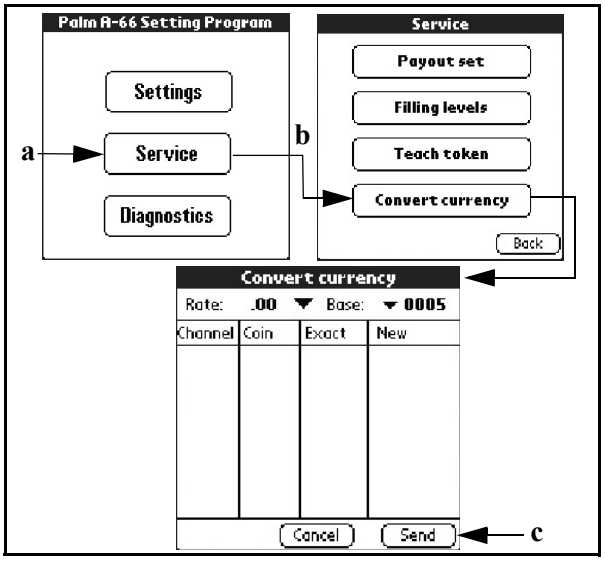


**Figure 12-18** Conversion Setting Mode

5. Currency conversion settings

   a). Select the **Service** tab on the main menu screen (See Figure 12-18 a); then

   b). Select Convert currency (See Figure 12-18 b) to view the **Convert currency** screen.

   c). Set the required coin base and conversion rate values. In addition, the appropriate coin channel parameters must also be set.

*NOTE: Currency conversion can only be set if multiple currencies are programmed into the Coin Changer.*

   d). Select Send when finished programming (See Figure 12-18 c).

## Changer Diagnostics

1. Select **Diagnostics** from the main menu screen (See Figure 12-19 a-b).

   a). The **Diagnostic** menu functions available (See Figure 12-19 b) are as follows:

   - **Software:** – Current software version number
   - **EMP:** – Changer self test
   - **Sorting:** – Sorting gate test
   - **Tube sensors:** – Self test
   - **Payout module:** – Self test
   - **Inhibit switches** – Current switch positions graphic.

   b). Select Details (See Figure 12-19 c) to access the fault description **Status** page and review the fault status if any.

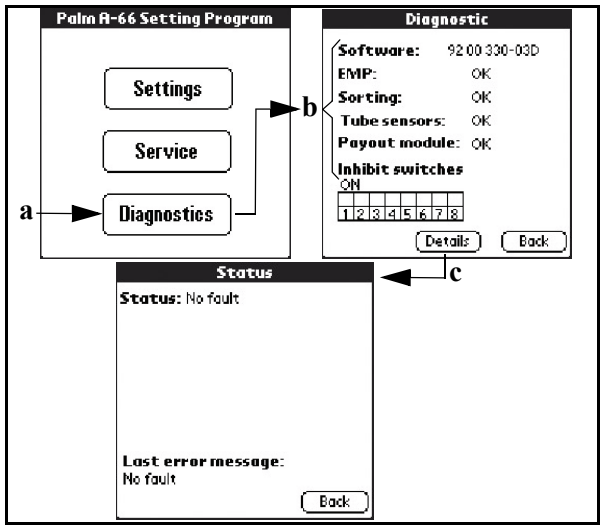


**Figure 12-19** Diagnostics Mode

2. To view the changer statistical meters:

   a). Click on the menu bar and then

   b). Select from one of the three available Meter lists (i.e., **Error list**, **Statistic counter 1**, or **Statistic counter 2** [See Figure 12-20 a]).

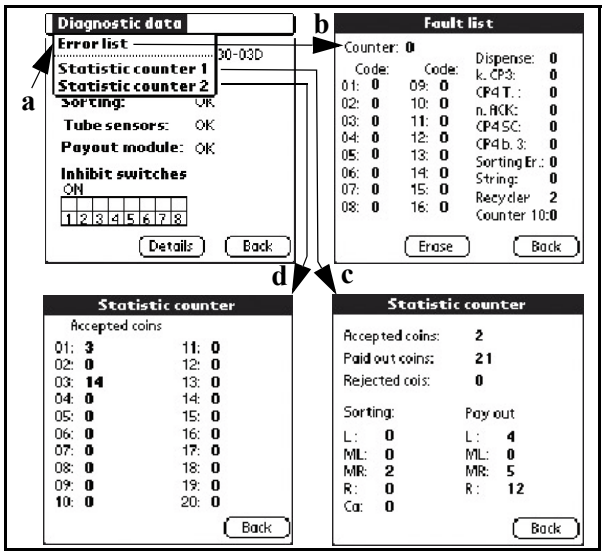


**Figure 12-20** Error List Mode

   c). The **Error list** reveals the **Fault list** menu screen (See Figure 12-20 b) that displays an error "Counter:"value, an error "Code:" list and 10 sensor type failure totals.

   d). **Statistic counter 1** (See Figure 12-20 c) displays the page 1 listing of the coins accepted relative to the coin channel.

   e). **Statistic counter 2** (See Figure 12-20 d) displays the page 2 listing of the total coins accepted, paid out, and rejected. It also shows the total transactions for each coin tube.


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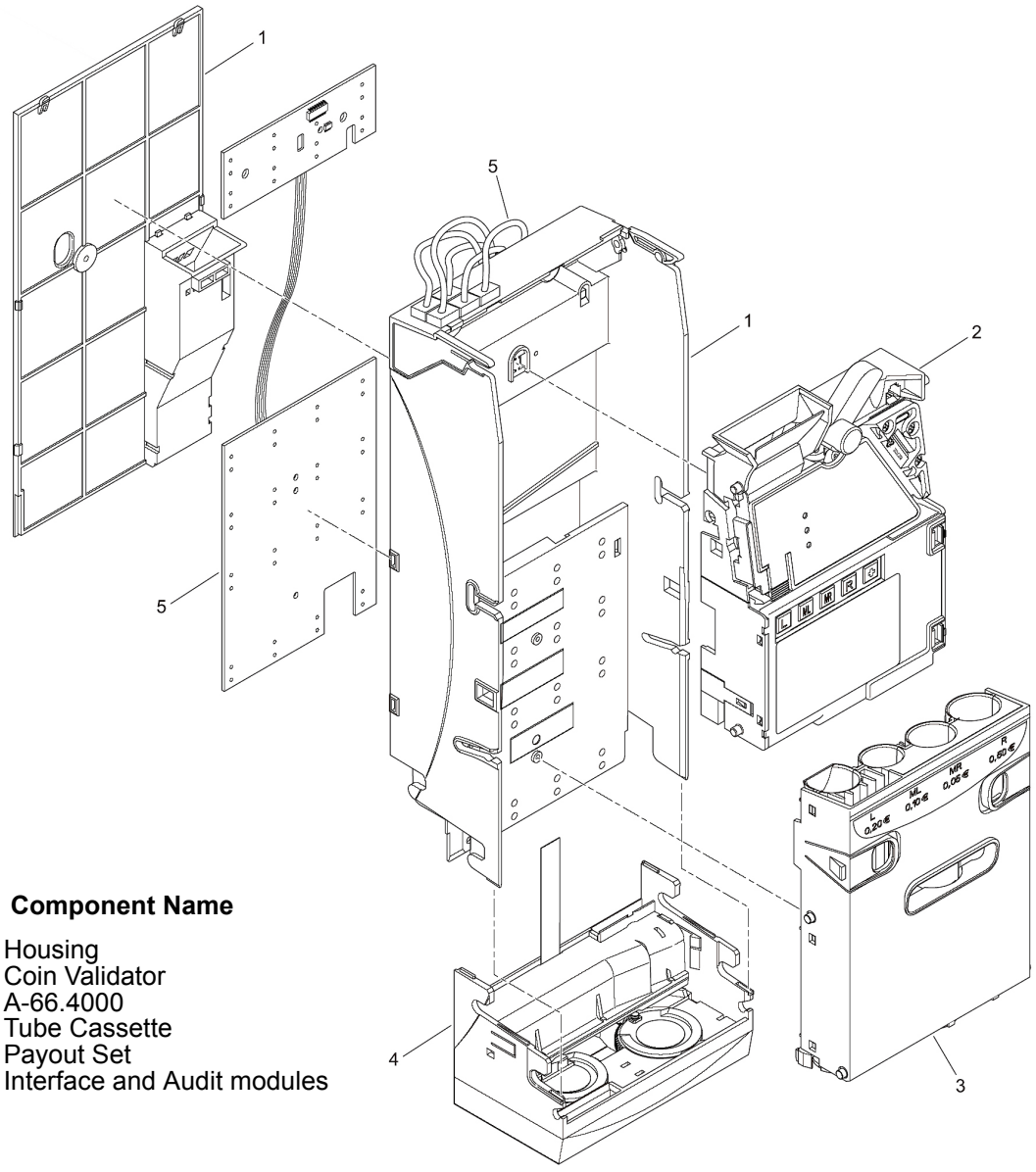
# Optipay™ CC
## A-66 Coin Changer
Section 13

## 13 EXPLODED VIEWS AND PARTS LIST

This section provides product exploded views and the parts list for the Optipay™ CC A-66 Coin Changer. This section contains the following information:

- Entire A-66 Assembly Exploded View and Parts List
- A-66 Housing Exploded View and Parts List
- A-66 Coin Validator Exploded Front View and Parts List
- A-66 Coin Validator Exploded Rear View and Parts List
- A-66 Tube Cassette Exploded View and Parts List
- A-66 Payout Set Exploded View and Parts List

### Entire A-66 Assembly Exploded View




| No. | Component Name |
|---|---|
| 1. | Housing |
| 2. | Coin Validator A-66.4000 |
| 3. | Tube Cassette |
| 4. | Payout Set |
| 5. | Interface and Audit modules |

**Figure 13-1** A-66 Entire Assembly Exploded View



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## Entire A-66 Assembly Parts List

**Table 13-1** Entire A-66 Assembly Parts List

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1 | 23557 | | Housing | 1 |
| 2 | | | Coin Validator E-66.4000/A-66.4000 | 1 |
| 3 | See Table 13-5 | | Tube Cassette | 1 |
| 4 | 22772 | | Payout Set | 1 |
| 5 | See Table 13-7 | | Interface and audit modules | 1 |


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## A-66 Housing Exploded View

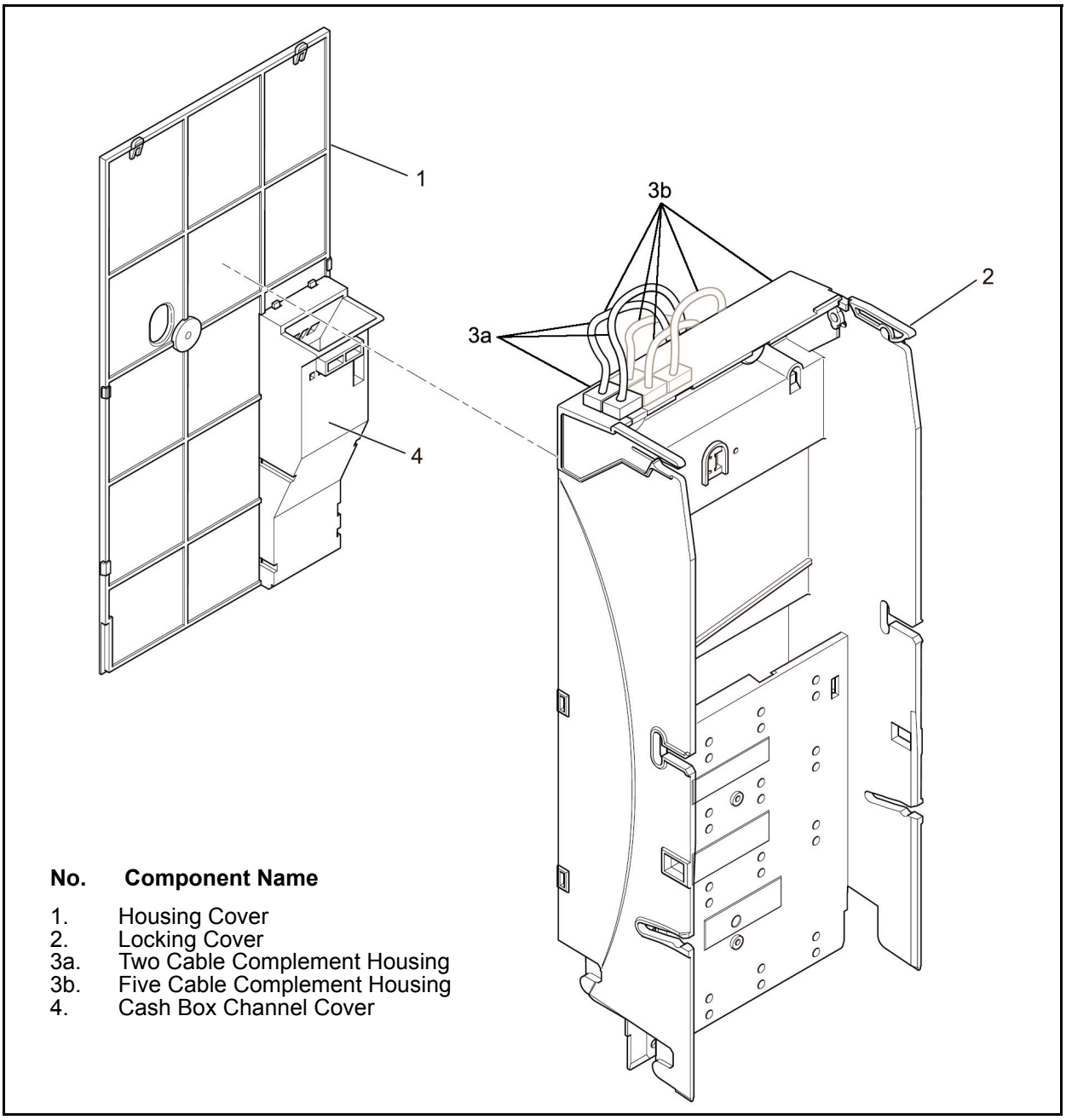


**Figure 13-2** A-66 Frame Housing Exploded View

## A-66 Housing Assembly Parts List

**Table 13-2** A-66 Frame Housing Parts List

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1 | 22966 | 900-100209 | Housing Cover | 1 |
| 2 | 22776 | 900-100210 | Locking Lever | 1 |
| 3a | 23557 | 450-100182 | Housing, complement (for 2 cables) | 1 |
| 3b | 25663 | | Housing, complement (for 5 cables) | |
| 4 | 22965 | 900-100211 | Cash Box Channel Cover | 1 |


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## A-66 Coin Validator Exploded Front View

**No. Component Name**

1. Return Lever
2. Insert Funnel
3. Flight Deck Cover
4. Flight Deck Flexable PCB
5. Front Sorting Cover
6. Membrane Keypad

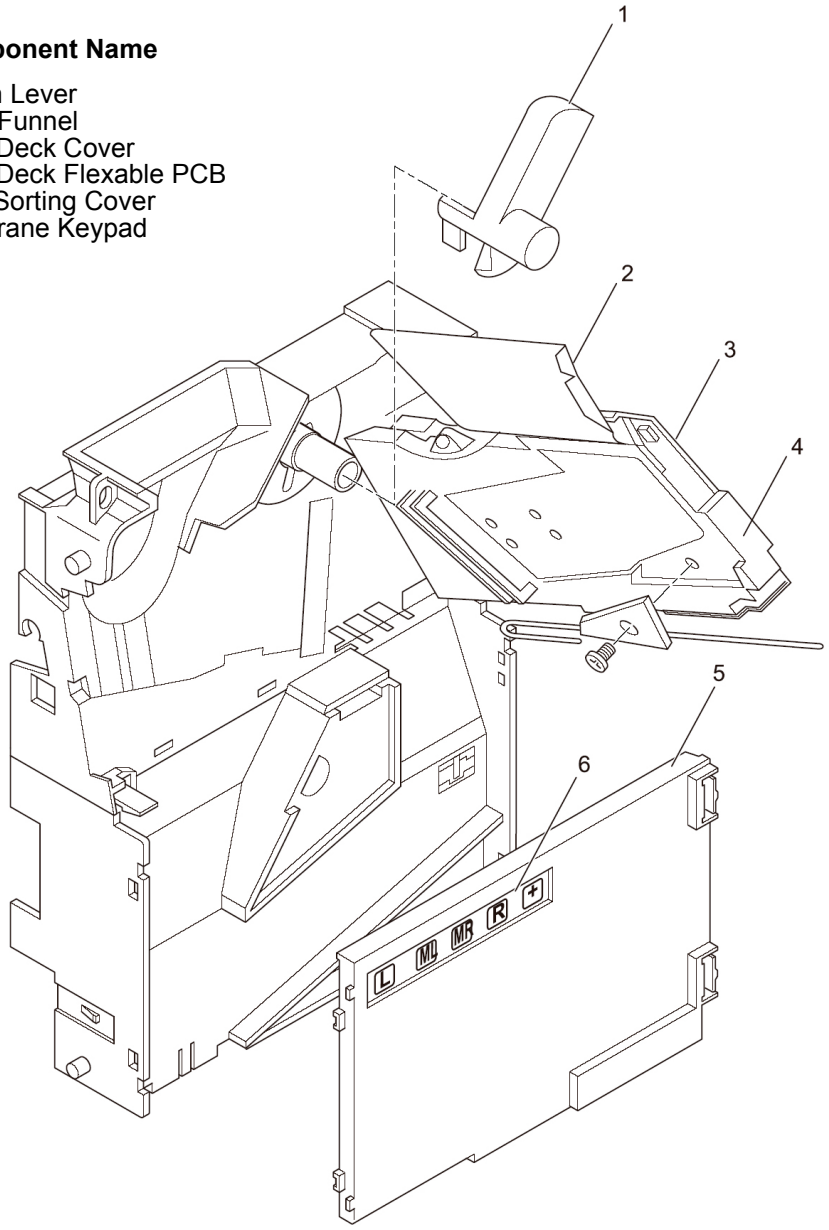


**Figure 13-3** A-66 Coin Validator Exploded View (Part 1)

### A-66 Coin Validator Parts List

**Table 13-3** A-66 Coin Validator Front Section Parts List (Part 1)

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1 | 15572 | 900-100212 | Return Lever | 1 |
| 2 | 19618 | 900-100213 | Insert Funnel | 1 |
| 3 | 23493 | 900-100214 | Flight Deck Cover | 1 |
| 4 | 22798 | 300-500006 | Flight Deck Flex PCB | 1 |
| 5 | 11655 | 900-100215 | Front Sorting Cover | 1 |
| 6 | 23190 | 900-100216 | Membrane Keypad | 1 |


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# A-66 Coin Validator Exploded Rear View

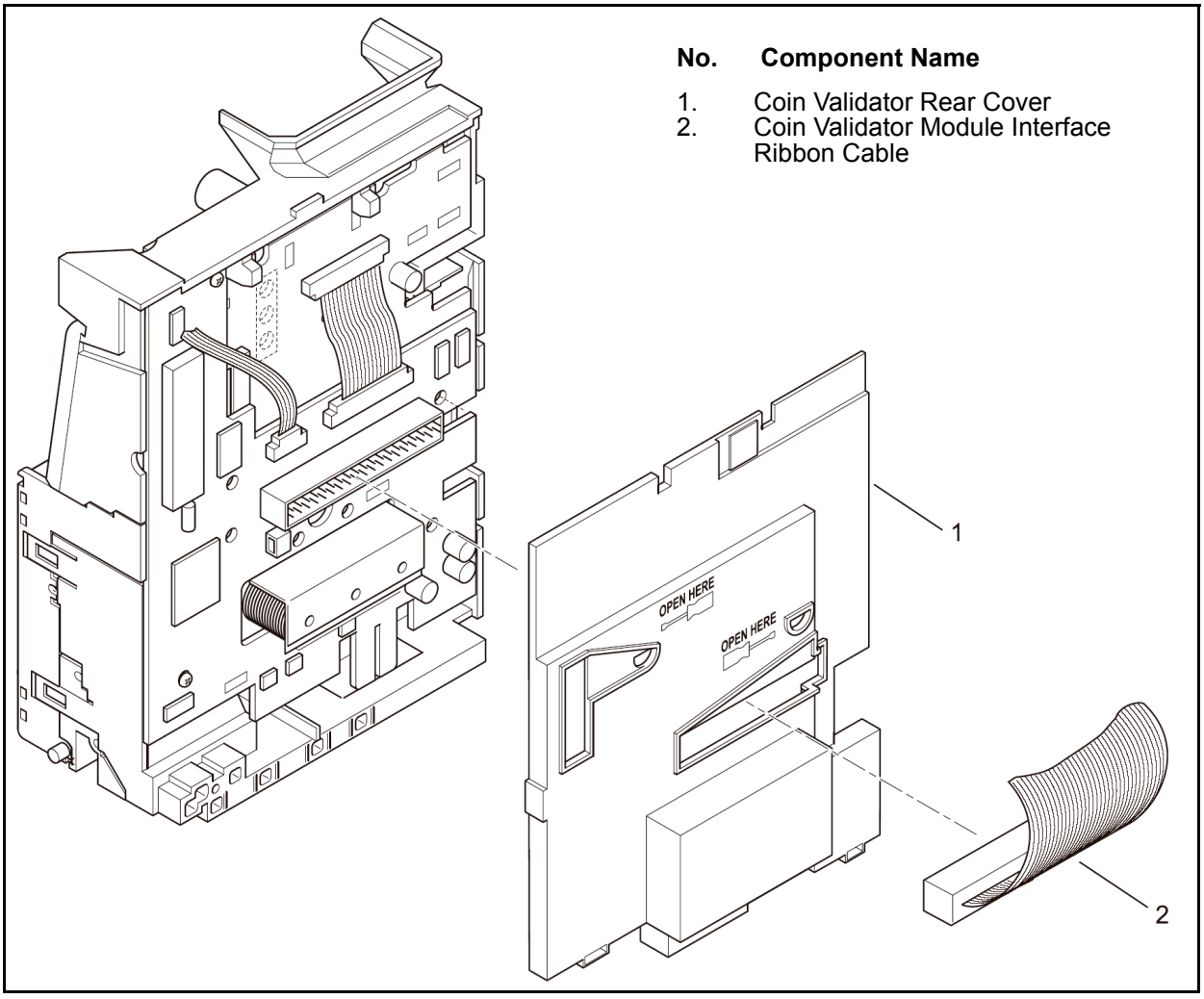


**Figure 13-4** A-66 Coin Validator Exploded Rear View (Part 2)

## A-66 Coin Validator Parts List

**Table 13-4** A-66 Coin Validator Rear Section Parts List (Part 2)

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1 | 22973 | 900-100217 | Coin Validator Rear Cover | 1 |
| 2 | 23364 | 450-100183 | Interface Module Ribbon Cable | 1 |


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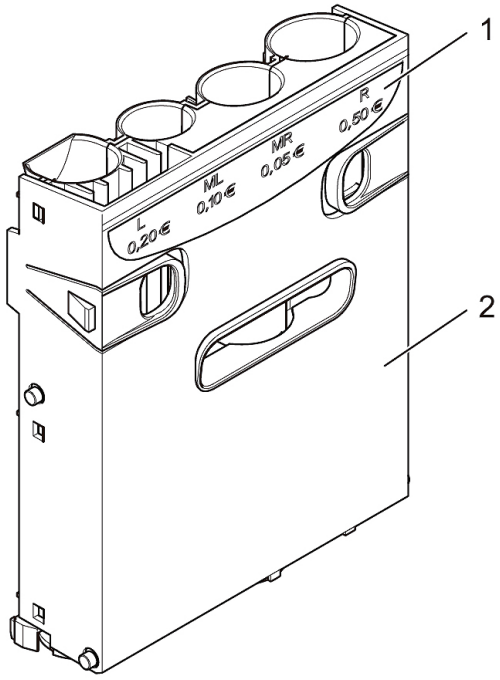
## A-66 Tube Cassette Exploded View




**No.** **Component Name**

1. Payout Combination Value Label
2. Coin Validator Module Interface Ribbon Cable

**Figure 13-5** A-66 Tube Cassette Exploded View

### A-66 Tube Cassette Parts List

**Table 13-5** A-66 Tube Cassette Parts List

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1a | 23655 | 950-100104 | 0.05/0.10/0.25/0.25 (USD1 Cassette) | 1 |
| 1b | 26296 | 950-100105 | 0.05/0.10/0.25/1.00 (USD1 Cassette) | 1 |
| 1c | 26297 | 950-100107 | 0.25/0.25/0.25/1.00 (USD2 Cassette) | 1 |
| 1d | 26298 | 950-100106 | 0.25/0.25/1.00/1.00 (USD2 Cassette) | 1 |
| 1e | 26487 | 950-100108 | 0.25/0.25/0.25/0.25 (USD2 Cassette) | 1 |
| 2a | 26753 | 900-100196 | UDSD2 (without label) | 1 |
| 2b | 23612 | 900-100195 | USD1 (without label) | 1 |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## A-66 Payout Set Exploded View

| No. | Component Name |
|---|---|
| 1. | Payout Set Complement |

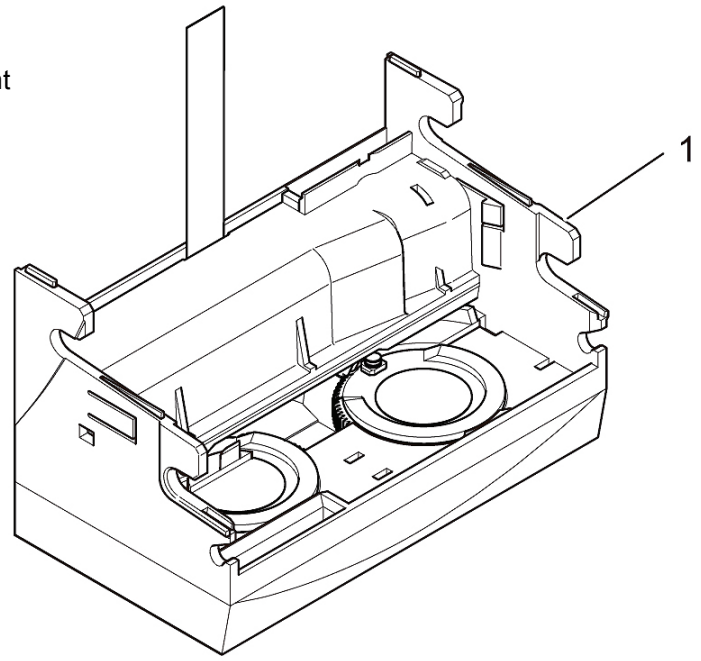


**Figure 13-6** A-66 Payout Set Exploded View

## A-66 Payout Set Parts List

**Table 13-6** A-66 Payout Set Parts List

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1 | 22772 | 900-100218 | Payout Set (Complement) | 1 |
| | | | | |


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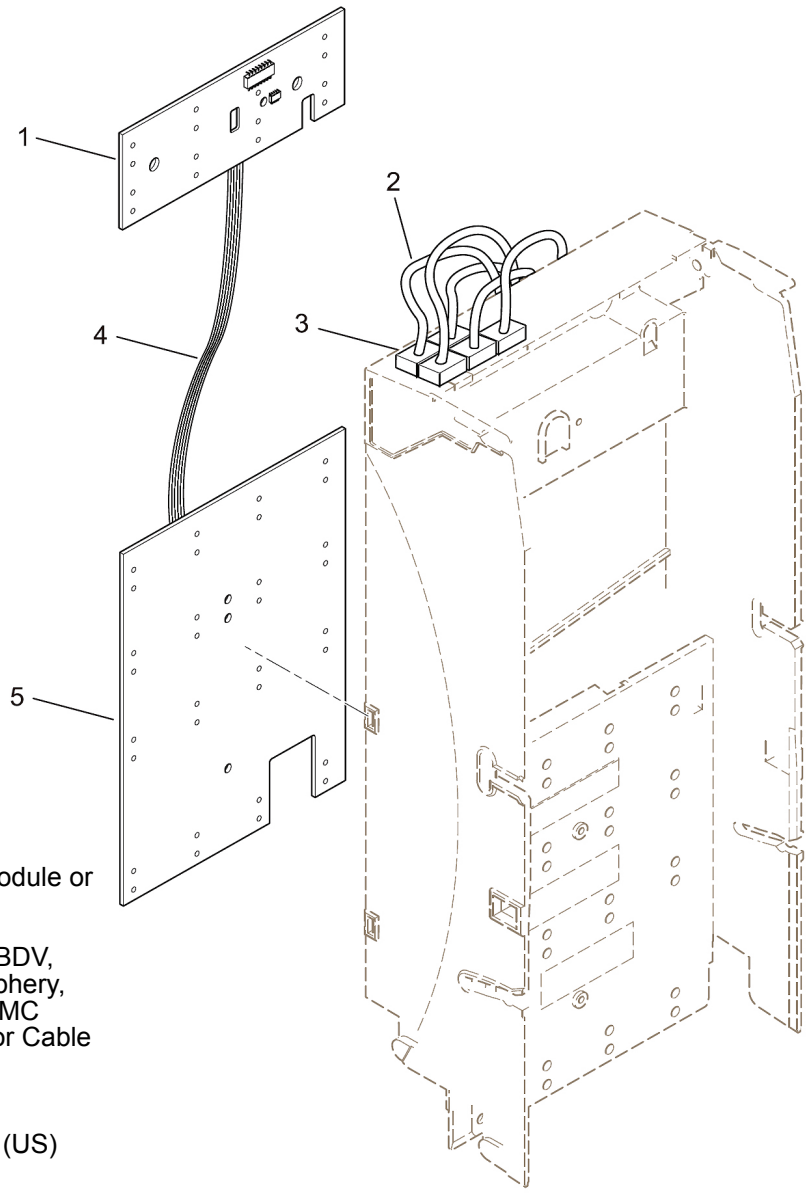
## A-66 Interface and Audit Module Exploded View




| No. | Component Name |
|---|---|
| 1. | Simplex V/BDV Master Module or MDB Audit Module |
| 2. | Connecting Cable for: MDB, Printer, Simplex V, BDV, BDV periphery, MDB periphery, DEX/UCS or DEX/UCS-VMC |
| 3. | RC-10 Recycler Connector Cable |
| 4. | Connecting Cable |
| 5. | Interface Module for: Standard, MDB Battery or RC-10 Recycler Interface (US) |

**Figure 13-7** A-66 Interface and Audit Module Exploded View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## A-66 Interface and Audit Module Parts List

**Table 13-7** A-66 Interface and Audit Module Parts List

| Ref Nº. | EDP Number | Part Nº. | Description | Quantity |
|---|---|---|---|---|
| 1a | G-53.0493 | 900-100219 | Simplex V/BDV Master Module | 1 |
| 1b | G-53.0496 | 900-100220 | MDB Audit Module | 1 |
| 2a | 25823 | | MDB Connecting Cable | 1 |
| 2b | 25356 | 450-100184 | Printer Connecting Cable | 1 |
| 2c | 17508 | 450-100185 | Simplex V Printer Connecting Cable | 1 |
| 2d | 17509 | 450-100186 | BDV Connecting Cable | 1 |
| 2e | 16873 | 450-100187 | BDV Periphery Connecting Cable | 1 |
| 2f | 23217 | | MDB Periphery Connecting Cable | 1 |
| 2g | 26611 | 450-100188 | DEX/UCS Connecting Cable | 1 |
| 2h | 26712 | 450-100189 | DEX/UCS-VMC Connecting Cable | 1 |
| 3 | 12304 | 450-100190 | RC-10 Recycler Connector Cable | 1 |
| 4 | 631 | | Connecting Cable | 1 |
| 5a | G-53.0486 | 900-100221 | Standard Interface Module | 1 |
| 5b | G-53.0490 | 900-100222 | MDB Battery Interface Module | 1 |
| 5c | G-53.0491 | 900-100223 | US Interface Module (includes RC-10 Recycler interface) | 1 |

*NOTE: When ordering spare parts, always indicate the model number of your device, the correct order number and designation of the spare part you require.*

*NOTE: This spare parts list corresponds to the JCM development status at the time of publication.*

*JCM is not obliged to announce further developments or modifications nor carry out similar modifications on previously delivered devices.*

*JCM reserves the right to stop the manufacturing of devices at its own discretion.*

*Spare parts availability is a maximum of 5 years following the discontinuation of a specific model.*


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# Optipay™ CC
## A-66 Coin Changer
Section 14

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# Optipay™ CC
## A-66 Coin Changer
Appendix A

## A TROUBLESHOOTING

If a Coin Changer occurrence fault occurs, the pilot lights at the top of the Coin Validator will indicate the fault's location.

The following JCM diagnostic service tools are available to detail diagnose the fault's cause (see the "Diagnosis Using the Setting Module" area in this appendix, as well as the in related information located in sections 1 and 11 of this manual).

### Front Panel LED Indicators

If the Green LED at the top of the Coin Validator is lit or is flashing, no faults are indicated and the device is working properly (See Figure A-1).

If the Yellow LED in the middle of the Coin Validator flashes there is a definite fault which generally can be easily remedied.

If the Red LED at the bottom of the Coin Validator flashes, a fault that must be remedied by a service technician is probable.

The label at the top of the Coin Validator may help in locating the fault and Table A-1 lists their meanings.

### Quick Pilot Light Diagnosis

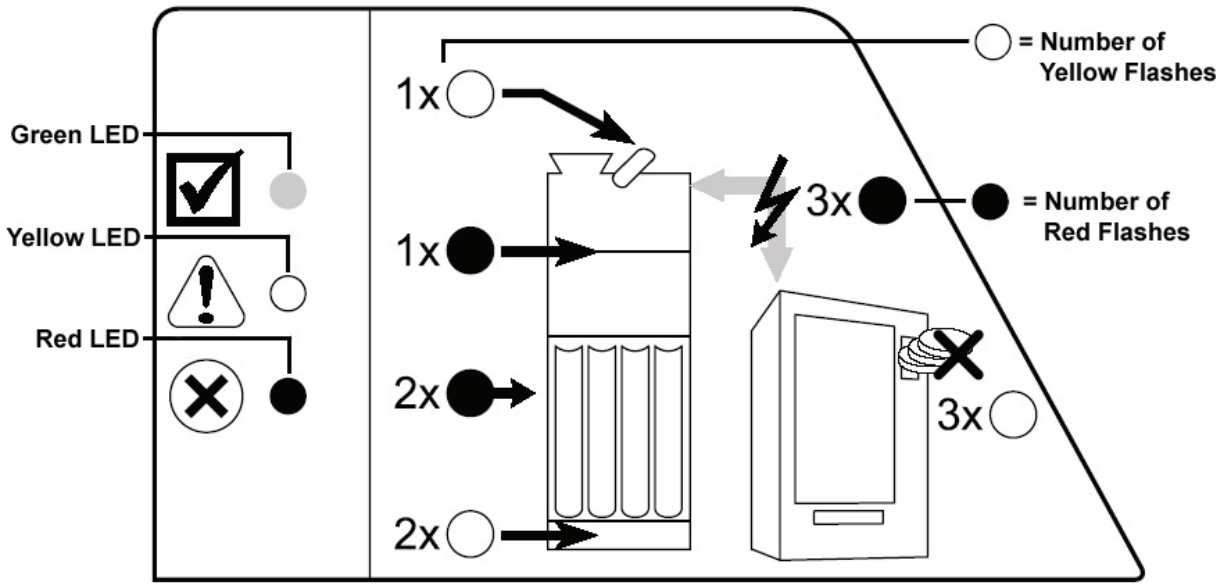


**Figure A-1** Quick Diagnosis with the Help of the Pilot Lights

**Table A-1 LED Indicator Meanings**

| LED | Meaning | Trouble |
|---|---|---|
| Green Lit | Coin changer operational | No error |
| Green Flashing | Filling level mode active | No error |
| Green & Yellow Lit | Inserted coin inhibited from the Vending Machine | Check vending machine settings (a possibility that high value coins were inhibited as tube is empty) |

**Table A-1 LED Indicator Meanings (Continued)**

| LED | Meaning | Trouble |
|---|---|---|
| Green & Red Lit | Inserted coin inhibited from the Vending Machine | Activate coin channel using switching block or Palm Setting Module with WinEMP© or Palm Pilot® with PalmA66© |
| Yellow Flashes once | Return lever pressed or switch in Coin Validator defective | Check return mechanism in Vending Machine or Service case |



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**Table A-1 LED Indicator Meanings (Continued)**

| LED | Meaning | Trouble |
|---|---|---|
| Yellow Flashes Twice | Coins stuck in vend area or motor failure | Remove tube cassette and any jammed coins, then vend one coin from each tube using the inventory keys or Service case |
| Yellow Flashes 3 times | Coin changer inhibited by Vending Machine | Check Vending Machine (possibly empty or defective) |
| Red Flashes once | Fault in Coin Validator | Remove jammed coins by pressing the return lever on the Coin Validator or Service case, Coin Validator may have to be exchanged |
| Red Flashes twice | Fault in Coin Validator | Service case, Coin Validator may have to be exchanged |
| Red Flashes 3 times | Vending Machine no longer communicates with Coin Changer (has sent no command in 2 seconds). | Check Vending Machine control or connecting cable |

## Diagnosis Using a Palm Pilot® Setting Module

If a Coin Changer fault occurs, the Palm Pilot® Setting Module displays the appropriate status or error message as soon as you connect it to the RJ-45 interface jack on the Coin Changer's front panel (see chapter 11 "Configuration"). Depending on the operating mode or fault, three status or fault messages are displayed as follows:

- **INFO messages**: used in general only for information about particular operating states
- **AN/AB messages**: indicate where a coin was accepted (AN) or why a coin was rejected (AB)
- **FE messages**: indicate why the Coin Changer no longer functions (Table A-2).

**Table A-2 Display Indicators**

| Display | Meaning | Trouble |
|---|---|---|
| **INFO**<br>INFO -01 | Return Lever pressed or a switch in Coin Validator defective | No error or, check the return mechanism in Vending Machine, or Service case |

**Table A-2 Display Indicators (Continued)**

| Display | Meaning | Trouble |
|---|---|---|
| InFo-09 | String sensor active | Coin on string recognized (no error), or check sensor (Service case) |
| InFo-09A | Tube coins are delivered to the cash-box after a recognized string manipulation | No error. This function can be deactivated however, using PRO 04 02 |
| InFo-80 | Coin Changer inhibited by Vending Machine | Check Vending Machine (possibly empty or defective) |
| **AN**<br>An X YY<br><br><br><br><br><br><br>An X YY | Accepted coin will be sorted into:<br>X = 0 cash-box<br>X = 1 left tube<br>X = 2 middle left tube<br>X = 3 middle right tube<br>X = 4 right tube<br><br>Inserted coins accepted in the coin channel<br>YY = 01–16 (Channel No.) | No error |
| **AB**<br>Ab-01 | Measured inserted coin values are outside the acceptance band limit | If necessary, widen acceptance band limit using with WinEMP© or PalmEMP© |
| Ab-02 | Inserted coin inhibited by the Coin Changer | Enable coin channel using DIP Switch Block or Palm Setting Module with WinEMP© or Palm Pilot® with PalmA66© |
| Ab-03 | Inserted coin has not passed through measurement section in the appropriate amount of time | Remove coins or foreign objects by pressing the return lever on the Coin Validator, or check measurement by air-core coil or CP2 level (Service case) |
| Ab-04 | Inserted coin was not recognized | Insert coin again more slowly |
| Ab-05 | CP3 or CP4 sensor active | Insert coin more slowly, or inserted coin not on string or check sensors (Service case) |


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**Table A-2 Display Indicators (Continued)**

| Display | Meaning | Trouble |
|---|---|---|
| Ab-06 | Sensor behind the acceptance gate has not recognized the inserted coin | Check acceptance gate with WinEMP® or PalmEMP® and if necessary, exchange it (Service case) or check the CP3 sensor (Service case) |
| Ab-07 | Sensor behind the acceptance gate has not recognized inserted coin | Check acceptance gate with WinEMP® or PalmEMP® and if necessary, exchange it (Service case) or Check the CP4 sensor (Service case) |
| Ab-08 | Inserted coin has covered the sorting control for too long a time | Insert coin more slowly, or Inserted coin not on string or check the CP4 sensor (Service case) |
| Ab-09 | String manipulation recognized | Inserted coin not on string or if necessary, reduce sensitivity of the String Sensor using PRO 21 01 or clean and/or exchange String Sensor (Service case), or check acceptance gate for ease of movement (Service case) |
| Ab-10 | Inserted coin recognized in false money coin channel | No error |
| Ab-11 | Inserted coin recognized as enabling token | No error |
| Ab-12 | Inserted coin inhibited from the Vending Machine | Check Vending Machine's settings (is possible that high value coins were inhibited because tubes are empty) |
| Ab-00 | Other fault with coin acceptance | Service case |
| **FE** FE-01 | Coins jammed in the payout area (left tube) | Remove the cassette and jammed coins, then vend one coin from this tube using the "L" inventory key, or a Service case |

**Table A-2 Display Indicators (Continued)**

| Display | Meaning | Trouble |
|---|---|---|
| FE-02 | Coin jammed in the payout area (middle left tube) or motor failure of middle left tube | Remove the cassette and jammed coin, then vend one coin from this tube using the "ML" inventory key, or a Service case |
| FE-03 | Coin jammed in the payout area (middle right tube) or motor failure (middle right tube) | Remove the cassette and jammed coin, then pay out one coin from this tube using the "MR" inventory key, or a Service case |
| FE-04 | Coin jammed in the payout area (right tube) or motor failure (right tube) | Remove the cassette and jammed coin, then pay out one coin from this tube using the "R" inventory key or a Service case |
| FE-13 | Checksum fault by acceptance band | Check and, if necessary, adjust the acceptance band of the appropriate coin channel with WinEMP© or PalmEMP© |
| FE-14 | Checksum fault by coin values | Check and, if necessary, correct coin values with WinEMP© or PalmEMP© |
| FE-15 | Checksum fault by configuration | Check PRO functions with the Palm Setting Module and, if necessary, correct them |
| FE-38 | Vending Machine no longer communicates with Coin Changer (has sent no command in 2 seconds.) | Check Vending Machine control or the interconnecting cable |


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# Optipay™ CC
# A-66 Coin Changer
Appendix B

## B GLOSSARY

**Nº. Term**

**A**

1 **A-66** – The Coin Changer Series product code number.

**C**

2 **Optipay™ CC** – The A-66 Coin Changer's Series product name.
3 **Coin Validator** – An integral part of the A-66 Centaur product

**D**

4 **Data Block** – a specific data area in a programmable memory used to hold coin setup data.
5 **DIP Switch** – Dual Inline Package Switch - a printed circuit board mountable two-position slide switch package containing up to 16 individual switches.
6 **DIP Switch Block** – a single Dual Inline Package two-position circuit board switch set.
7 **Dual Inline Header** – a chassis connector consisting of two female or male pin rows counting greater than ten.

**F**

8 **Filling Level Sensor** – four sensors that detects the relative volume of coins within a given tube. More than one sensor is usually present mounted in the chassis behind the coin cassette.
9 **Flash Memory** – Electronically programmable memory integrated circuits that can be reused without requiring special erasure procedures.
10 **Float Level** – A specific amount of coinage remaining in a cassette tube when servicing a vending machine.

**L**

11 **LED** – acronym for Light Emitting Diode.

**M**

12 **MDB** – acronym for Multi Drop Bus - a communications protocol standard used by the Vending Machine Industry.

**P**

13 **Palm Pilot** – A portable handheld programmable electronic device that functions as a personal organizer, but can also contain other applications that allow music playback, photographic display, view and edit documents, up and down loading of software and much more. Also commonly called a Personal Digital Assistant (PDA).
14 **Payout Module** – a motorized coin dispensing mechanism.
15 **Payout Set** –a motorized coin dispensing assembly located below the coin cassette.


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# Glossary of Terms
## Continued

**Nº. Term**

16 **PCB Edge Connector** – a keyed set of printed circuit tabs at the edge of a printed circuit board designed to receive a mating pin count interface connector.

17 **Pilot Lights** – different colored incandescent or Light Emitting Diodes (LEDs) surface mounted on a device to visually indicate specific operation conditions or warnings.

## R

18 **Receptacle Jack** – a diagnostics connector located on the Validator's front panel for cable connection to a Palm Pilot® handheld programming device.

## S

19 **Security Stock** – a preset number of coins programmed to remain in a cassette to prevent jamming problems caused when coins bounce off the cassette's plastic surface.

## T

20 **Token** – a non-negotiable coin designed for inhouse or promotional use.

21 **Tube Cassette** – a four tube coin holder that facilitates easy bulk coin removal and filling operations.

22 **Tube Counter** – a memory counter that tracks the number of coins accepted and reports same to the host machine housing the Coin Changer.

## W

23 **Wake-up Time** – part of a power saving circuit feature used with a battery powered Coin Changer.


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925 Pilot Road, Las Vegas, Nevada 89119
Office & Technical Support: (800) 683-7248 (option 5 after hours), FAX: (702) 651-0214
E-mail: optipaysupport@jcm-american.com http://www.jcm-american.com


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