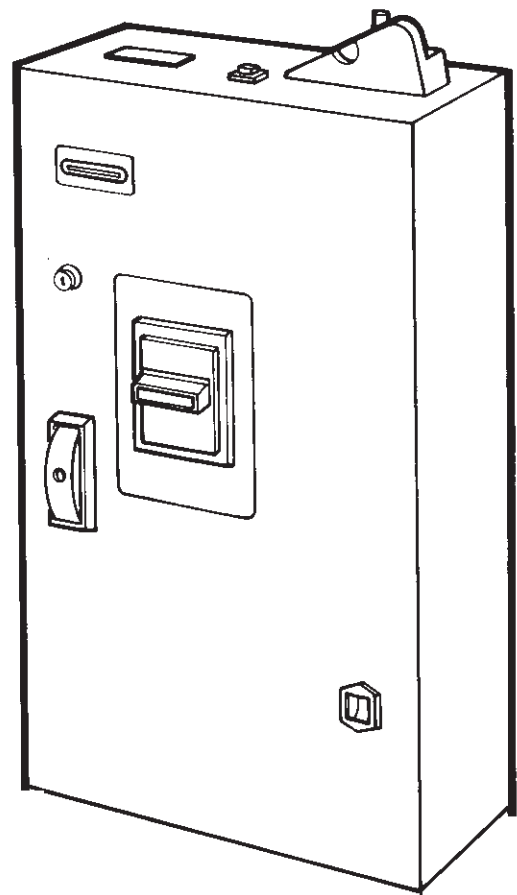


Schlumberger

TOWER USER'S GUIDE



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Printed in U.S.A., 12/07/99
Part Number 4970033001, Rev. E

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About This Guide

This guide provides instructions for installing, setting up, and operating your Schlumberger Tower. Installation and service technicians, as well as the vending system administrator, should closely follow these instructions.

How This Guide Is Organized

This guide breaks down into seven chapters, two appendices, a glossary, and an index. (Because your Tower may not have all of the features and options described in this guide, some sections—and even entire chapters—may not apply to you.) An overview of the contents of each chapter is provided below:

- Chapter 1 describes the features and capabilities of the your Tower.
- Chapter 2 describes Tower components.
- Chapter 3 describes hardware installation and setup.
- Chapter 4 describes software initialization and setup.
- Chapters 5 and 6 describe the administrative and maintenance procedures required once your Tower is in use. Chapter 5 describes hardware maintenance procedures, while Chapter 6 describes software maintenance.
- Chapter 7 explains how to use the Tower to access a copier and provides operating instructions and information to post near each copier.
- Appendix A provides a full list of the error messages that may appear in the Display Window, as well as a separate list of the messages that may appear during administrative use of the Tower.
- Appendix B provides a quick reference to Management Mode prompts.
- A Glossary and Index are provided at the end of this guide.

Documentation Conventions

Display Window Prompts and Messages. Messages and prompts that appear in the Display Window are printed in Courier (typewriter) typeface; for example:

READY or ADD ONLY

References to Major Loops. All references to major loops that appear in headings and numbered procedures are shown in bold, Courier typeface; for example:

SEE TOT?

Keypad Keys. The keys on the internal keypad are represented by rectangles surrounding the appropriate word or number; for example:

YES or 1

Model Specific Information. Parts of this guide are applicable only to models with certain features and options. These sections and procedures are indicated as follows:

BILL applicable only to models equipped with a Bill Acceptance Kit

COMM applicable only to models equipped with a Communications Kit
(232 or 485)

applicable to models with the D/CRK magnetic stripe Card Reader Kit

applicable to models with the P/CRK/TWR Payflex Smart Card Reader Kit

applicable to models with the TS/CRK Transactional Payflex Smart Card Reader Kit

Hints and Suggestions. The following symbol appears to the left of text containing helpful operating hints and recommendations.



The Importance of Keeping a Manual Log

Keeping a written record of vending activity is an important part of administering your vending system. To aid you with this task, the Tower records and stores usage information.

When you first set up your system, you should also set up a manual log, then, decide upon a procedure for periodically retrieving the information stored by your Towers and recording that information in the log (for instance, at the end of each month). Over time, you will have a written history of Tower activity.

We recommend that you keep (as a minimum) entries for each of the following in your log:

- A record of the sum of money collected from the Coin Box and (if applicable) the Bill Stacker.
- A record of the counts shown by the Non-resettable Meters.
- A record of the copy totals stored by Towers.
- A record of the credit account balances stored by Towers (if you use Credit Cards at your site).
- A record of any problems you've had with your Tower and of all service and maintenance calls.

Note

RECAP Software automates manual record-keeping by allowing you to control and monitor your Towers from a central PC. All configuration, data collection, and system activity reporting can be handled from this PC. Contact your Schlumberger sales representative or authorized Schlumberger dealer for more information on this product.

What is a Smart Card?

A smart card is a plastic card the size of a credit card. An embedded chip stores information and protects the card from unauthorized use. Smart cards are used for transactions that require security, convenience and flexibility. Typical uses include: laundry service, copiers, vending, network printing, add value stations, and point-of-sale.

What is OPUS?

OPUS is Schlumberger's smart card-based Open architecture PURse System. OPUS consists of:

- Card acceptance terminals
- OPUS card operating system
- OPUS cards
- Add-value devices
- Software
- System integration support

An OPUS card is a 2nd generation smart card. It contains an embedded integrated processor (IP) chip. First generation smart cards, such as the type 896, use an embedded integrated circuit (IC) for storing value on the card. These first generation cards are referred to as protected memory cards.

The OPUS card is more capable than previous smart cards. The card can process information, store value in purses, perform more than one application, and provide advanced security features.

Note that cards initialized for another system (e.g. phone calling cards) cannot be used with OPUS card units.

OPUS Security

A key component of the system is the Security Application Module (or SAM). The SAM contains keys that are used by the application during secure transfer of funds to and from customer cards. SAM also provides a secure electronic purse. This limits the exposure of the system to possible theft. Currently, two types of SAM are used: 1) Add Value and 2) APOS.

OPUS Features

Some of the following features can be accessed through your installed system. Not all units support all features. Only those features explained later are included on this unit.

- Electronic Purse is a place where limited value can be stored. Up to two electronic purses can be accessed.
- Card Serial Number is a printed and encoded number used for card identification purposes.

- Location code is a unique code assigned by Schlumberger to a customer site. This prevents using a card from site A at site B.
- Group code is a unique code assigned by the customer to identify card holder groups at a location.
- Expiration date is a security feature which expires the card after a given date.
- Account number is a code assigned to a card holder for internal charge purposes.
- PIN Code is a Personal Identification Number that secures protected applications.
- Counters (frequency, account and limit) can be used to record loyalty program points, gather account balance or limit card usage.
- Activity logs furnish detail activity for specific types of transactions. Logs are stored on all cards, and in each device.

OPUS units can also use protected memory cards. However, this limited system supports only a single purse, card serial number, group codes, and a smaller card log.

1

Introduction

What Are Towers?

Towers typically control and monitor photocopy vending—although they can be used to control other vending operations as well. Each Tower is connected to a copier (or similar piece of equipment, such as a laser printer) to control and monitor its use. Depending on the optional upgrade kits purchased, some or all of the following can be inserted for equipment access:

- coins (standard on all Towers)
- bills (requires Bill Acceptance Kit)
- magnetically encoded cards (requires Card Reader Kit)
- smart cards (standard on TS/Towers, all others require Card Reader Kit)

Refer to Figure 1-1.

Units with card acceptance capabilities can also be used as *add value stations*. (Users can increase the monetary balance encoded on Debit and Debit-Limit Cards by inserting the card into the Tower, then adding coins and/or bills.)

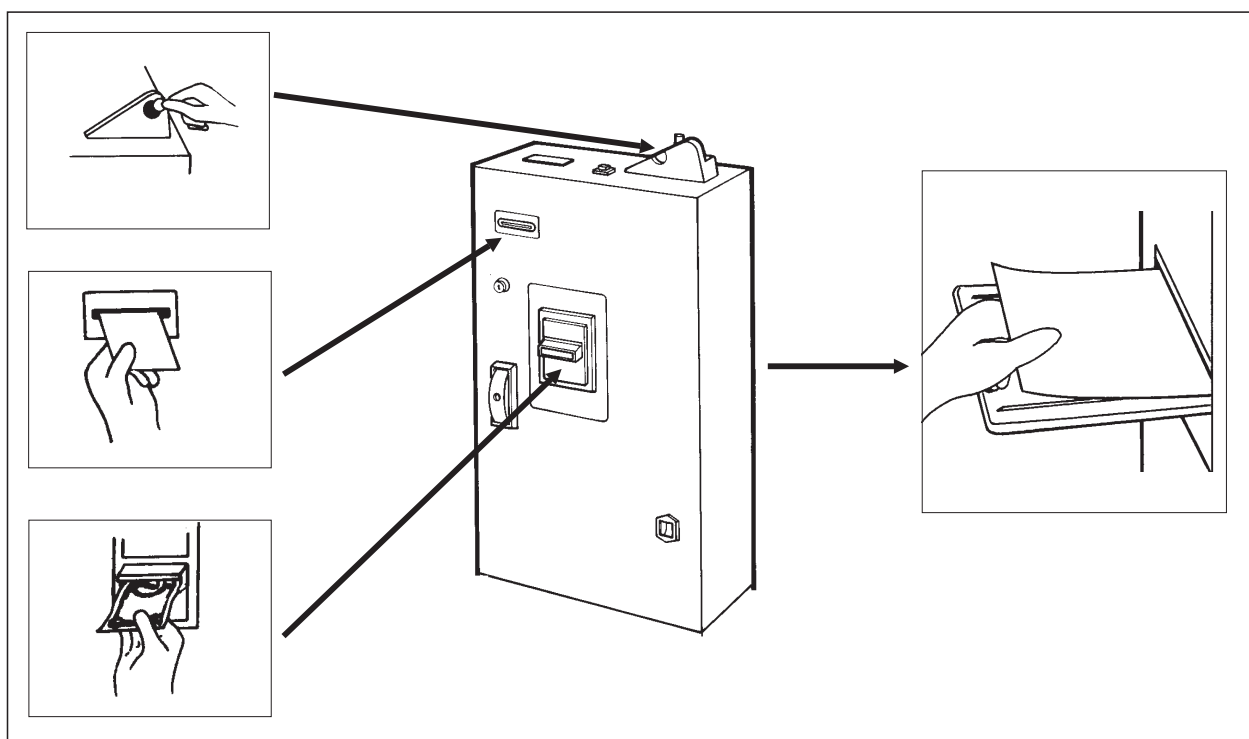


Figure 1-1:

Depending on the upgrade kits purchased, users can insert coins, smart or magnetically encoded cards, or bills to access the copier.

About the Models and Upgrade Kits Available

One basic upgradeable model is available. A non-upgradeable, coin-only model, the TWR1B, is also available. If you have the TWR1B, please see the user's guide for that product. This user's guide does not apply to the TWR1B. Check the label on the side of your unit to determine which model you have.

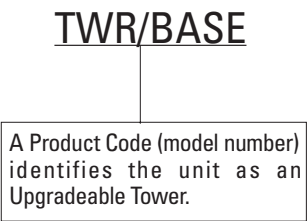


Figure 1-2:
Tower Model Number

The Tower/Base is a coin only unit that may be configured to your individual requirements with the addition of upgrade kits. The model number of Card Reader Kit, if installed, is defined in figure 1-3.

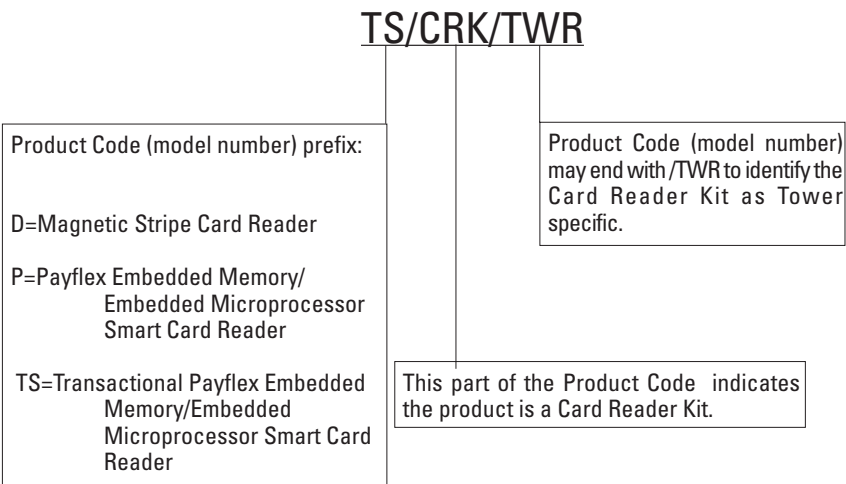


Figure 1-3:
Card Reader Kit Models (Upgrades)

About the Cards Used with Towers



Regardless of whether you're using magnetic stripe or smart cards, the cards can be broken down into two categories, based on function:

- user cards, which permit access to the controlled copier
- administrator cards, which permit access to Tower setup and maintenance routines

User Cards

Depending on the Card Reader Kit used with the Tower, up to four types of user cards can be inserted to gain copier access: Debit, Limit, Debit-Limit, and Credit. Table 1-1 indicates which cards each Card Reader Kit accepts.

Model	Debit	Debit-Limit	Limit	Credit	Protected Memory Card	Embedded Micro-processor Chip
D/CRK 	4	4	4	4		
P/CRK 					4	4
TS/CRK 					4	4
Table 1-1: Card Acceptance Capabilities of the Card Reader Kits						

Debit Cards. Debit Cards are encoded with a monetary value. As copies are made, the Tower deducts the cost of each copy from this value. When the card's balance falls below the minimum balance required, the Tower automatically terminates the copying session. (Users can increase the monetary balance encoded on cards by using the add value capability of card-accepting Towers, and properly equipped Dispensers. Administrators can re-encode cards with a higher value at any Card-access Terminal equipped with the Encoder Capability.)

Limit Cards. Limit Cards work in a manner similar to Debit Cards, but instead of being encoded with a monetary value, they are encoded with a point limit, or pre-set number of points. As the card is used, points are deducted from this limit. Typically, one point is deducted for each copy. However, you can program the unit to deduct up to 99 points per copy. When the balance (point limit) remaining on the card falls below the balance required to make a single copy, the copying session is terminated.

Debit-Limit Cards. Encoded on the magnetic stripe of this card is both a *debit field*, or monetary value, and *limit field*, or preset number of points. As the card is used, the Tower deducts from either the monetary value or point limit. (Which field the unit deducts from is determined by how you've programmed the Tower, as discussed in Chapter 4.)

Credit Cards. Credit Cards are encoded with an account number. As the card is used, the Tower stores the copy total associated with the account. (Copy totals for up to 5000 accounts can be stored.¹) You can then retrieve this information and charge the department (or individual) for the copies made.

Credit Cards used with Vending units can be encoded with an expiration date and/or PIN (Personal Identification Number), although the PIN feature is not active at Towers. (Only Card-access Terminals use PINs.) With SINGLE Card or ALLCARD units, though you can not encode both a PIN and expiration date on the same card, you can use up to four types of Credit Cards:

Standard Credit—encoded with account number

Credit with PIN—encoded with account number and PIN

Credit with Expiration Date—encoded with account number and expiration date

Credit with Limit—encoded with account number and point limit. As with Limit Cards, when the allowed points have been used, the copying session is terminated.

Administrator Cards

When you placed your Tower order, you should also have ordered at least one administrator card set. If you have more than one Site Code (sometimes referred to as a Group Code, or G/C) assigned to your site, you should have one administrator card set per Site Code. (Site Codes are discussed later in this chapter.) Each card set contains two cards:

- + *It is a good idea to keep a backup of each administrator card set. This way, if a card is ever lost or damaged, you'll have a replacement card to begin using immediately.*

Set Site Code (Set G/C) Card. Set Site Code Cards are used to program the Tower (and other Schlumberger vending equipment) with your Site Codes.

View Totals Card. View Totals Cards permit access to groups of prompts that allow you to view information about Tower activity. Although you can access this same set of information with your Management Key (discussed later), the View Totals Card allows you to quickly and conveniently view, record, and maintain this information—while bypassing inapplicable administrative functions.

¹ If you set your Load Type feature to either NEGATIVE VERIFY or HOT LIST (discussed in Chapter 4), the number of accounts your Tower is capable of storing will be slightly under 5000.

Features, Options, and Accessories

The specific features and capabilities of your Tower are determined by the upgrade kits used with the unit. Read the appropriate sections below to determine the features and capabilities of your Tower.

	TWR/BASE	D/CRK	P/CRK	TS/CRK
Features				
Programmable Cost Per Copy	4	4	4	4
Auxiliary Channel Pricing	4	4	4	4
MULTI-VEND	4	4	4	4
Multiple Operating Modes	4	4	4	4
Variable Vend Price		4	4	4
Add Value (RECHARGE)		4		4
Cash Bonus Capability		4		4
Limit Costing		4	4	4
AUTO-RESTORE		4	4	
RECOVER		4	4	4
Read After Write		4	4	4
Credit Capability		4	4	4
Expiration Date		4	4	4
Site Codes		4	4	4
Automatic Power Loss Disable		4	4	4
Copy Required [BILL]		4	4	4
Change Control [BILL]		4	4	4
Transactional Data Recording				4
Options (ordered separately - not included with base unit)				
Bill Acceptor	Available for all models			
Communications Option				
Floor Stand Accessory				
Accessories (ordered separately - not included with base unit)				
Collection Cable (unit to laptop PC)	Available for all models			
RECAP Software				
Card Reader Cleaning Kit				

Table 1-2:
Features, Options, and Accessories

Standard Features

All Towers are equipped with the features described here:

Programmable Cost Per Copy.

This feature allows you to set the copy vend price (the cost charged per copy) to any value from \$0.001 to \$9.999. [You can set separate costs for cash and card users. Pricing for card users can also be varied (based on the Site Code encoded on user cards).]

Auxiliary Channel Pricing.

You can set an additional fee to be charged for use of special copier features, such as alternate paper sizes or reductions/enlargements. (This feature can be used only if the copier allows the Tower to distinguish between different types of copies. Special cabling is also required.)

MULTI-VENDsm.

This feature, which eliminates the bothersome task of inserting currency for each copy vended, allows copies to be made at rated copier speed until the deposited value (whether in coin, bill, or card) is depleted.

Multiple Operating Modes

You can place the unit in any of these three operating modes:

- Normal Mode permits use of the Tower's vending and (if you have a Card Reader Kit) add value capabilities.
- Management Mode permits access to programming and maintenance functions.
- Bypass Mode permits copies to be made without insertion of cash or cards.

Three types of upgrade kits are available for the base Tower unit

Card Reader Kits

Depending on the type cards you use at your site, you can purchase Schlumberger's Magnetic Stripe Card Reader Kit (D/CRK) or the Payflex Smart Card Reader Kit (P/CRK). To upgrade existing units to Transactional Payflex, contact customer service for information about the TS/TWR/UPGRADE/D or TS/TWR/UPGRADE/P kits.

Bill Acceptance Kits

The Bill Acceptance Kit (model TWR/BAK) upgrades the unit for acceptance of \$1, \$2, \$5, \$10, and \$20 bills.

Communications Kits

Two Communications Kits are available to equip the Tower for communications with an external device (typically, a PC on which RECAP Software is installed). All configuration, data collection, and system activity reporting can be handled from this PC. Depending on your needs, either an RS-232 or RS-485 kit can be ordered.

Card Acceptance Features



Only Towers equipped with a Card Reader Kit have these features:

Variable Vend Prices.

You can program the Tower so that different equipment usage fees are charged to different groups of users. For instance, separate vend prices can be set for cash and card users. You can also charge different rates to different groups of card users based on the Site Code encoded on user cards.

Add Value (RECHARGEsm) Capability.

This feature allows users to increase the cash balance encoded on Debit and Debit-Limit Cards by inserting bills and/or coins into the Tower.

Cash Bonus Capability



The Cash Bonus Capability allows you to encode a card with a cash bonus (an amount greater than the amount the user inserts to add value to the card). The bonus amount given is programmable and can be used to encourage users to encode cards with a higher dollar value or to use larger bills for add value operations.

Limit Costing.

Limit "costing" allows you to set the number of points you want deducted per copy whenever a Limit, Debit-Limit, or Credit with Limit Card is inserted. (A separate limit cost can be associated with each Site Code stored by the Tower to allow you to vary costing for different groups of users.)

AUTO-RESTOREsm



On occasion, a sudden power loss can invalidate a card in the Tower. AUTO-RESTORE automatically re-encodes that card with its proper balance once power returns.

RECOVERsm.

Though all Towers are designed to provide efficient and reliable service, on occasion, a Tower may fail to encode a card with valid data, or a sudden power loss may disrupt a cash operation. The RECOVER feature allows you to view, or *recover*, the information that should have been encoded on the card or the amount of change due a user from a cash copying session.

Read After Write



Towers write data to (encode) cards at the end of every copying session. When Read After Write is turned on (enabled), the Tower checks that the encoded data is valid. If invalid data is detected, the Tower can be programmed either to issue a warning message before returning the card, or it can hold the card until you or one of your staff members comes to retrieve it.

Credit Capability.

The Credit Capability allows up to 5000 credit accounts to be stored in Tower memory.² As users insert Credit Cards to make copies, the Tower stores the number of copies charged to the account. Periodically, you can retrieve this Credit Card use information and charge the department, or individual, for the number of copies made.

Expiration Date.

Expiration dates can be used to limit the use of Credit and administrator cards. If you choose to use expiration dates, you do not have to use them on all cards. If an expiration date is encoded on a card, the date on that card must be the same as—or later than—the expiration date programmed into the Tower.

Site Codes (S/Cs)



Site Codes [sometimes referred to as G/Cs (Group Codes)] are unique, four-digit codes (five digit if you are configuring with RECAP 3.0 or higher), assigned to your vending site by Schlumberger. Depending on the specific requirements of your site, you may be assigned as many as 32 of these codes. Each card (magnetically encoded or smart

² If you set your Load Type feature to either NEGATIVE VERIFY or HOT LIST (discussed in Chapter 4), the number of accounts your Tower is capable of storing will be slightly under 5000.

card) used at your site must be encoded with one of these preassigned Site Codes. All card-accepting Schlumberger equipment must also be programmed with one—or more—of these codes. Before a card can be used at the equipment, the Site Code on the card is compared to the list of Site Codes stored in memory. If the code on the card does not match one of the codes in memory, equipment access is not permitted.

Site Codes serve two purposes:

- **Access Control.** They prevent cards from other vending sites from being used in equipment at your site. They also allow you to control which groups of users within your own site have access to which pieces of equipment at your site. For instance, if you want only law students to have access to a certain Copy Machine, simply set aside one of your Site Codes as the code that identifies law students, then encode all law student user cards with that code. You can then set up the TOWER so that the only Site Code stored by the unit is the law student code. Consequently, anyone inserting a card with a Site Code other than the stored code will be turned away.
- **Variable Vend Pricing** (used with Schlumberger Laundry Controllers, Towers, and Card-access Terminals). Site Codes can be used as a basis for charging different equipment usage fees to different groups of users. (Refer to your Laundry Controller, Tower, or Card-access Terminal user's guide for more information on this function.)

Automatic Power Loss Disable



The Automatic Power Loss Disable feature helps to discourage fraudulent use of the unit. Should a vandal steal the unit, you can set it to automatically "lock up" after a preprogrammed period of time. During lockup, access to user services is inhibited—preventing the thief from using the unit for add value purposes.

Bill Acceptance Features

Only Towers equipped with a Bill Acceptance Kit have these features:
(See chapter 3 for DIP switch setting procedure.)

Copy Required.

This feature can be activated to prevent the Tower from being used as a change machine—thus conserving the coin supply. (Once a user has inserted sufficient cash to enable the copier, the user can not receive change for inserted bills until at least one copy has been made.)

Change Control Feature.

This feature controls how much change can be dispensed for inserted bills. At one setting, bills are rejected if they cause the cash balance shown in the Display Window to exceed the amount of cash required to make a copy by \$5.00 or more. At another setting, they are rejected if they cause the cash balance to exceed the cash required by \$1.00 or more.

Transaction Logging

All access to the Transaction Log is through Schlumberger's optional RECAP software. A unit that has been upgraded with the TS/CRK is able to store information of approximately 1000 individual transactions. The transaction log includes:

- Date
- Time
- Site Code
- Discount (percent of transaction cost not charged to user)
- Type (codes explained in the RECAP User's Guide)
- Number of Transactions Reported for Each Card Used
- Cumulative Count of Transactions
- Dollar Amount of Transaction
- Balance Remaining on the user's card (after transaction)
- User's Card Number
- SAM Serial Number
- Power ON
- Settlements

The Transaction Log may be configured as either "fixed" or "continuous".

MODES

- Fixed:
 - No transaction data lost
 - When the log is full, the unit is out of service until data is collected
- Continuous:
 - Some transaction data may be lost
 - When the log is full, the terminal continues to operate

In the fixed mode, the terminal stores information about the last 1000 transactions. When the log is 90% filled, and the unit is idle, the unit will display an asterisk (*) beside the word READY. When the Transaction Log is full, the unit displays LOG FULL. At that time, no more transactions are allowed until data is collected using RECAP.

In the continuous mode, the Transaction Log is a circular buffer. When the log is full, each new transaction replaces the oldest transaction while the terminal continues to operate.

Communications Option

The unit can be equipped with a Communications Option to allow for communications with an external device. This means that the unit can be connected to a central PC (or portable laptop) on which Schlumberger's RECAP Software has been installed. All unit configuration, data collection, and activity reporting can be handled from this computer. Both RS-232 and RS-485 interfaces are available:

- BASE/COM/232 equip the unit for direct connection to a PC or modem.
- BASE/COM/485 equip the unit for multi-drop communications (e.g. the unit can be connected to a Schlumberger wiring loop, which contains other Schlumberger vending products communicating with the PC via a Schlumberger LineMaster.)

Floor Stand Accessory

This optional, pedestal-style stand (V/STAND1) provides an attractive, stable base for Tower. See figure 1-2.

RECAP Software

Schlumberger's RECAP Software allows you to control and monitor your vending equipment from a central PC or portable laptop. All configuration, data collection, and system activity reporting can be handled from this PC.

Card Reader Cleaning Kit

Optional cleaning kits are available for either the smart card or the magnetic stripe card readers. Be sure to order the cleaning that is appropriate for your installed card readers.

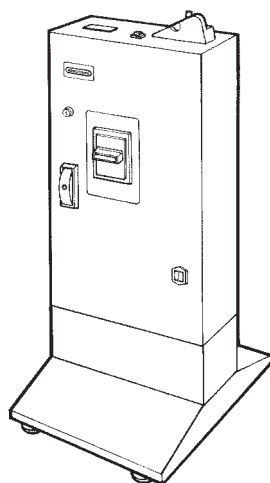


Figure 1-2:

Other Schlumberger Products

You will be using your TOWER with some or all of the Schlumberger products described below.

Card Value Centers

The Schlumberger Card Value Center (CVC) also vends the cards used at Terminals, Towers, Vending Controllers, Laundry Controllers, and SoloVend units. CVCs can also be equipped with the RECHARGE feature to allow users to use cash, credit or debit cards, or an online account to increase the dollar value encoded on their stored value cards.

Card-access Terminals

Like Towers, Card-access Terminals attach to photocopiers (or other devices) to control and monitor activity; however, Terminals offer access via cards only. In addition, models equipped with the Encoder Capability can be used to encode new user cards and to re-encode existing cards (for instance, when the card balance drops below the balance required for a single copy).

Laundry Controllers

Laundry Controllers (LCUs) are used to centrally control and monitor laundry operations. (Each LCU unit can control up to 20 machines.) Like Card-access Terminals, Laundry Controllers offer card-only access to machines.

Laundry Single Unit Plus (LSU Plus)/SoloVend (LSU)

These single unit Laundry Controllers are wired to a single washer or dryer to control and monitor its operation. (Each unit controls one machine.) Like the other laundry controllers, these controllers offer card-only access to machines.

Vending Control Units

Vending Control Units (VCUs) bring stored value card access to cash-based vending machines. Designed for both single-price and multi-priced machines VCUs mount right on the door of the vending machine. The units offer a convenient alternative to cash transactions, and can be set up to allow users to utilize the vending equipment to add value to their stored value cards.

RECAP Software

Schlumberger's RECAP Software allows you to control and monitor your equipment from a central PC or portable laptop. All configuration, data collection, and system activity reporting can be handled from this PC.

For more information on these products, refer to the documentation included with each unit or contact your sales representative or authorized Schlumberger dealer.

2

Tower Components

This chapter illustrates and describes the external and internal components of your Tower. Depending on the upgrade kits purchased, you will have some or all of these components.

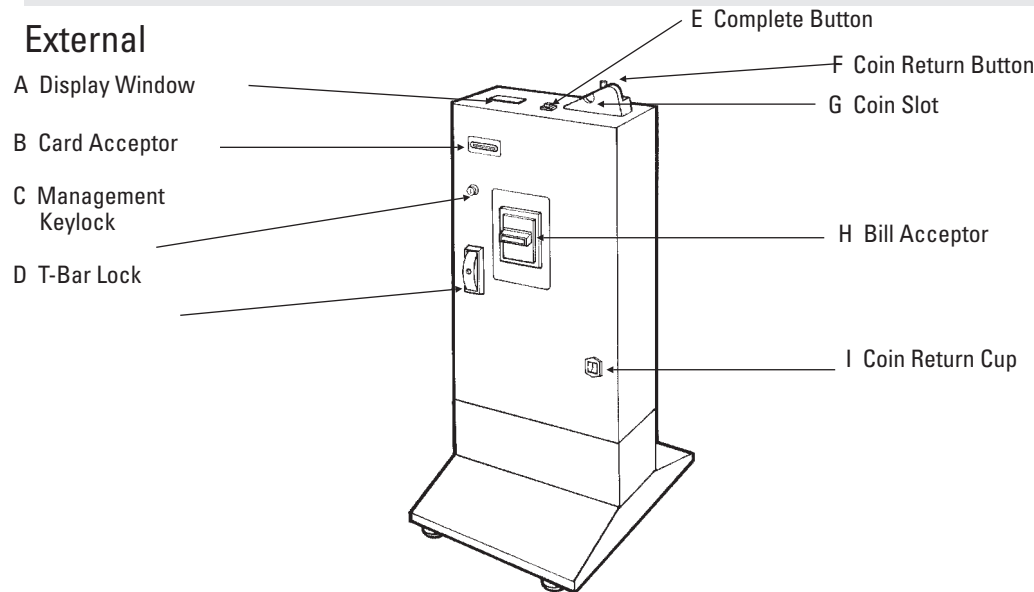


Figure 2-1:
Front View of Tower
(shown attached to optional floor stand)

Components

A Display Window. This 16-character window displays one of the following types of information:

When a copying session is in progress, the window displays the cash or card balance, which changes to reflect each copy made.

When an add value operation is in progress, the window displays the card balance, which increases as coins or bills are inserted.

When the Tower is in Management Mode, the window displays the prompts, responses, and activity totals accessed by the administrator.

B Card Acceptor.  User and administrator cards are inserted into this slot to access the vending, add value, and management capabilities of the Tower. All cards must be inserted face up, magnetic stripe down and to the right.

C Management Keylock. You insert your Management Key into this keylock to control the operating mode of the Tower and clear error messages from the Display Window. Figure 2-2 illustrates keylock positions.

The center position places the Tower in *Normal Mode*. This mode provides access to vending and add value capabilities.

The right position places the Tower in *Bypass Mode*. This mode permits copies to be made without insertion of coins, bills, or a card.

The left position places the Tower in *Management Mode*. This mode permits access to programming and maintenance routines. Turning the keylock to Management Mode also clears error messages from the Display Window.

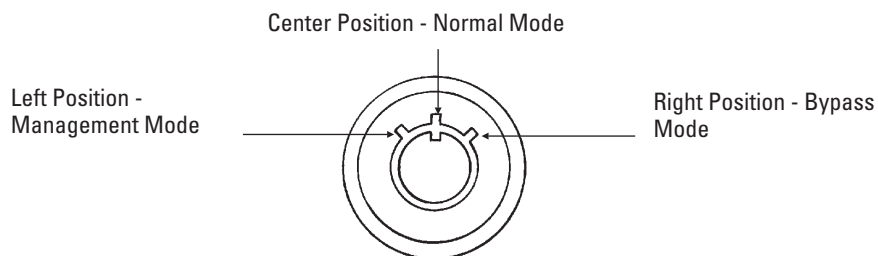


Figure 2-2:
Management Keylock Positions and Operating Modes

D T-Bar Lock. This lock controls access to internal Tower components (such as the coins and cash stored inside the unit).

E Complete Button. This red button is used for two functions:

When a copying or add value operation is in progress, the user can press this button to end the session.

When used in conjunction with the Management Key, you can press this button to override the AUTO-TIME option.

F Coin Return Button. The Coin Return Button clears coin jams and returns any coins that do not register. Pressing this button during a copier or add value operation ends the session.

G Coin Slot. Users insert coins into this slot to purchase copies and (if you have a card-accepting Tower) add value to Debit and Debit-Limit Cards. The unit accepts U.S. only or U.S./Canadian nickels, dimes, quarters, and dollar coins (depending on how you've set the Coin Changer option switches, described in Chapter 3).

H Bill Acceptor. BILL Users insert bills into this slot to purchase copies and (if you have a card-accepting Tower) add value to Debit and Debit Limit Cards. The specific denominations accepted by this unit vary depending on the model Bill Acceptor and on how you've programmed your Tower:

Standard Bill Acceptors (models TWR/BAK) accept \$1, \$2, \$5, \$10, and \$20 bills. (\$10 and \$20 bills are accepted only for add value operations.)

I Coin Return Cup. Any coins due the user upon completion of a cash copying session are deposited in this cup.

Internal

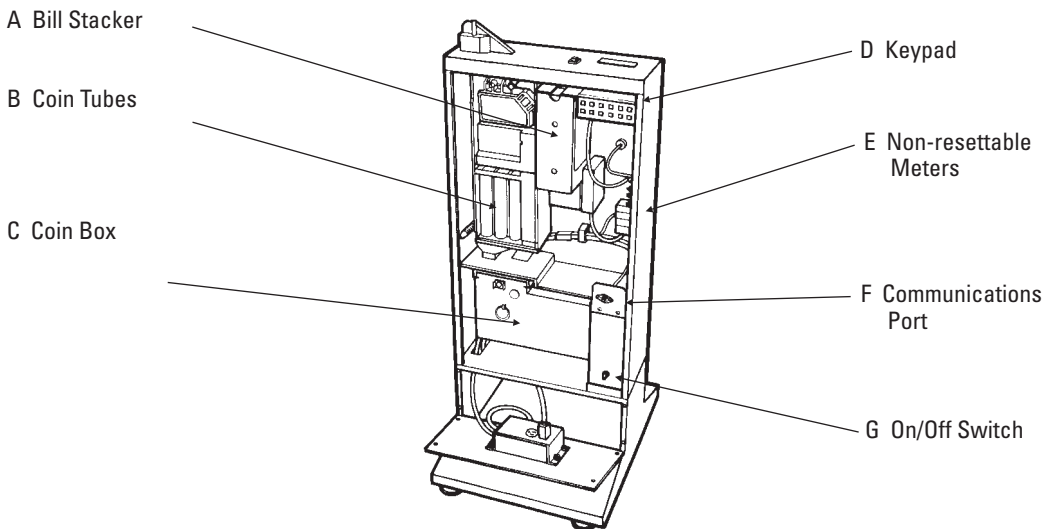


Figure 2-3:
Rear View of Tower
(shown attached to optional floor stand)

Components

- A Bill Stacker. **BILL** This 400-bill-capacity enclosure stores the bills fed through the Bill Acceptor.
- B Coin Tubes. These three cylindrical tubes hold the quarters, dimes, and nickels inserted into the Coin Slot. After any coin tube is full, the overflow of coins falls into the Coin Box. (All dollar coins fall directly into the Coin Box.)
- C Coin Box. This removable box is designed to hold the overflow of coins after any coin tube reaches its maximum holding capacity.
- D Keypad. This keypad is used to respond to the prompts displayed in Management Mode.
- E Non-resettable Meters. These meters, located on the Control Board, are described on the following page.
- F Communications Port. **COMM** This optional port allows the Tower to communicate with an external device, such as a PC with RECAP Software installed. (Either an RS-232 or RS-485 interface can be used.)
- G ON/OFF Switch. This switch turns power to the unit on and off.

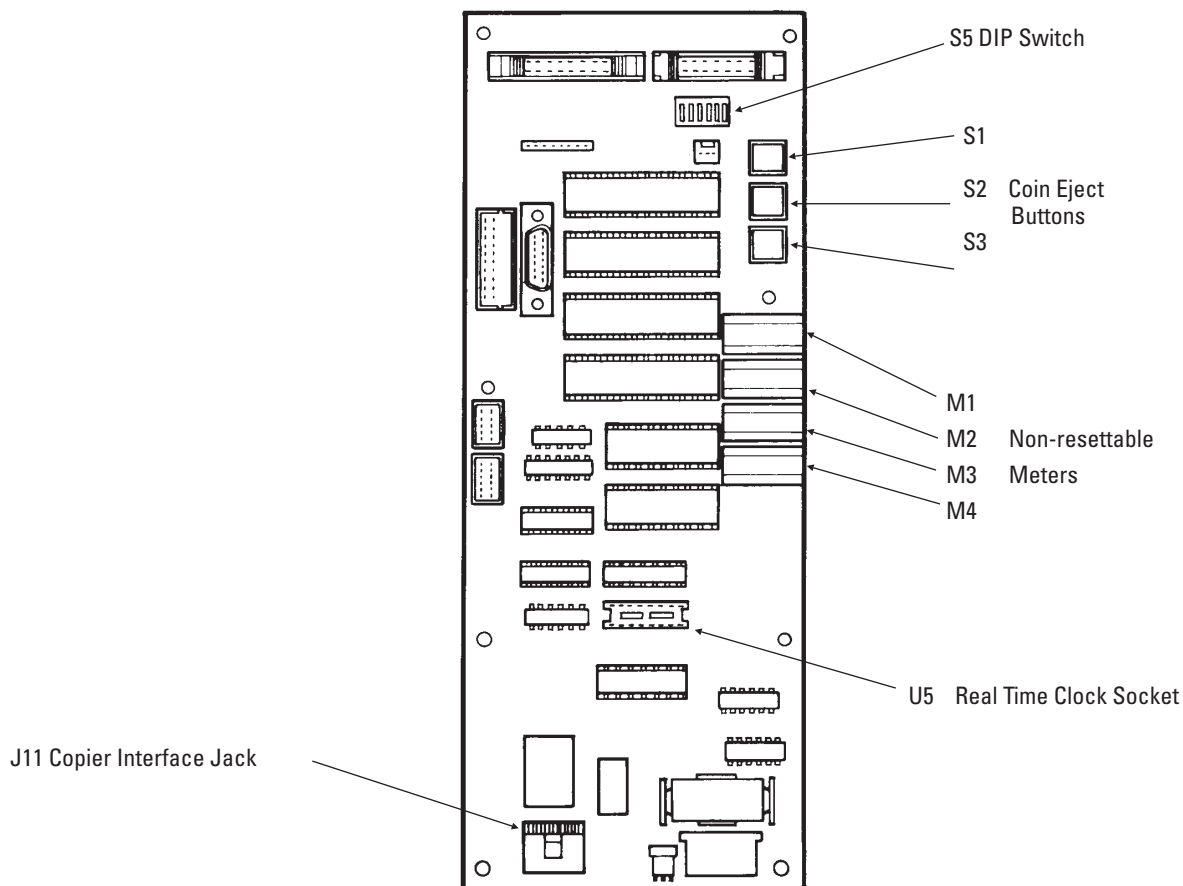


Figure 2-4:
Control Board

J11 Copier Interface Jack. This jack connects the Tower to the photocopier.

S5 DIP Switch Block. The switches on this six-position DIP switch block control certain operating characteristics of your Tower. (Chapter 3 provides a detailed discussion of the exact functions of each switch and provides instructions for setting the switches.)

S1, S2, S3 Coin Eject Buttons. These buttons allow you to manually dispense coins from the coin tubes as follows:

S1—Nickels

S2—Dimes

S3—Quarters

M1, M2, M3, M4 Non-resettable Meters. These meters reflect the following counts:

M1—the sum (not just the number) of bills inserted into the Bill Acceptor

M2—the number of copies made with magnetically encoded cards

M3—the number of copies made with coins and bills

M4—the number of copies made in Bypass Mode

Because these meters are non-resettable, they initially reflect counts recorded during factory testing.

U5 Real Time Clock Socket. This socket holds the Real Time Clock chip, which is used with the Auto-Power Loss Disable Feature. (This clock was also used in conjunction with the discontinued AUTO-TIME feature.)

3 Hardware Setup

This chapter describes the procedures required to set up the physical components of your Tower. The procedures in this chapter and in Chapter 4, "Initialization and Software Setup," must be completed before you make the Tower available to users. Table 3-1 outlines the procedures contained in this chapter.

Procedure	Required for
1 Unpacking the Tower	All Towers
2 Mounting the Tower	All Towers
3 Routing the Power and Copier	All Towers Interface Cables
4 Installing the Communications Kit	Towers for which a Communications Kit was purchased
5 Installing the Card Reader Kit	Towers for which a Card Reader Kit was purchased
6 Installing the Bill Acceptance Kit	Towers for which a Bill Acceptance Kit was purchased
7 Installing the Coin Changer	All Towers
8 Setting the DIP Switches	All Towers
9 Installing the Coin Box	All Towers
10 Filling the Coin Tubes	All Towers
11 Installing the SAM	Towers for which the P/CRK or TS/CRK were purchased for use with Payflex Cards
12 Powering Up the Tower	All Towers

Table 3-1
Overview of Hardware Setup Procedures

Unpacking the Tower

Before you attempt to install and set up the Tower, inspect the shipping materials for any evidence of damage or tampering. If you suspect the unit is not intact, do not unpack the carton until you have contacted the carrier and requested an inspection report, then, if necessary:

- Complete the forms to file a damage insurance claim.
- Notify your dealer or sales representative of the damaged shipment.

When you are satisfied that your Tower has arrived intact, carefully remove it from the carton. Packed with your Tower, you should find:

- a Coin Box
- 4 Coin Box Keys—2 to release the box from the Tower and 2 to open the Coin Box lid
- a MARS ELECTRONICS® Coin Changer
- 2 T-Bar Lock Keys
- 2 Management Keys

(TS/TWR/BASE should have a card reader already installed)

Mounting the Tower

Follow the appropriate instructions in this section to mount your Tower.

Mounting the Tower on a Floor Stand

Follow the instructions provided with the Floor Stand to mount your Tower on a Stand.

Mounting the Tower on a Wall

Wall mounting procedures vary from one customer site to the next. Consult your maintenance supervisor to determine an appropriate procedure for your site. Keep in mind these guidelines:

- The Display Window and Coin Slot should be convenient to use. (We recommend that the top of the Tower be 3 to 3-1/2 feet off the floor.)
- Internal Tower components (such as the Coin Box) should be easily accessible. (The rear panel of the unit will be attached to the wall. To access internal components easily, you must check that enough space is available for the unit to swing fully open on its hinges.)
- Use adequate support for your Tower. The unit weighs approximately 44 lbs. However, as coins are collected, this weight will increase proportionally.

Routing the Power and Copier Interface Cables

Note

Before you begin this procedure, your copier interface cable (the cable that connects the Tower to the copier) and copier vend pulse cable must be installed on the copier. Because procedures for installing these cables vary with the type copier on which they are installed, installation instructions are not included in this guide. Refer to the instruction sheets provided with your cables.

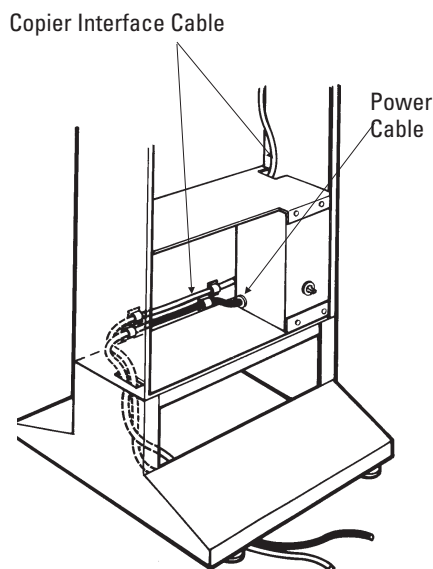


Figure 3-1:

Routing the Power and Copier Interface Cables (Tower shown attached to optional floor stand)

- 1 Feed the power cable through the rectangular punchout in the base of the Tower (Figure 3-1).
- 2 Route the copier interface cable as shown in Figure 3-1, then plug it into the jack located at J11 on the Control Board (Figure 3-2). *NOTE: If you're connecting a 12-pin cable, insert the cable so that it is flush with the left side of the jack. If you're connecting a 20-pin cable (required for Auxiliary Channel Pricing), remove the two blockers from the right side of the jack to expose all 20 pins, then plug in the cable.*
- 3 Using a ball point pen or small screwdriver, pry open the latches on the ferrite bead (Figure 3-3). Place the copier interface cable into the bead then close the bead over the cable. (Be sure the latches engage.)

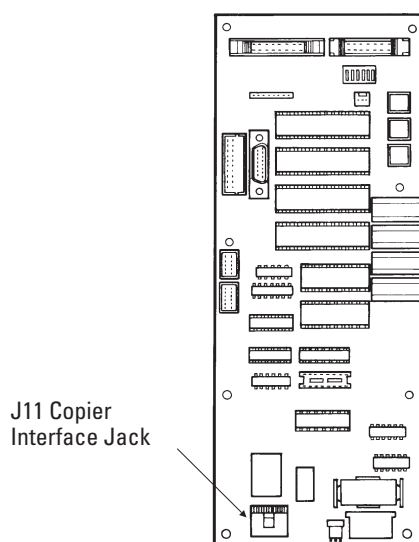


Figure 3-2:

Location of Copier Interface Jack on Control Board

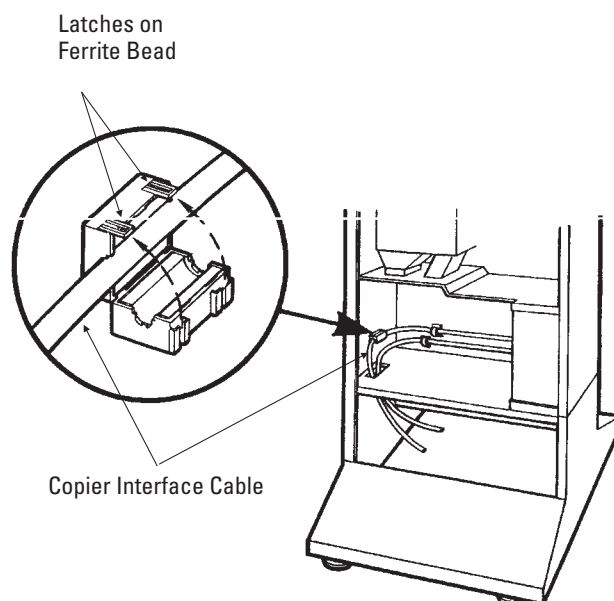


Figure 3-3:

Clamping the Interface Cable into the Ferrite Bead

Installing the Option Kits

If you purchased a Card Reader Kit, or a Bill Acceptance Kit, install those options now. (Instructions are provided with those options.)

Installing the Coin Changer

Follow these instructions to install the Coin Changer.

Tools Required:

#2 Phillips Screwdriver

Instructions:

- 1 Release and lower the Acceptor/Gate Assembly by depressing both spring clips and rotating the Gate toward you (Figures 3-4 and 3-5). Locate the mounting holes, shown in Figure 3-6.
- 2 Adjust the mounting screws on the Tower wall so that the heads of the screws are at least 1/8 inch away from the wall.
- 3 Plug the Changer Main Harness (Figure 3-4) into the appropriate Power Distribution Cable (one of the cables leaving the top of the Tower's Power Supply Box).
- 4 Align the Coin Changer mounting holes with the mounting screws, then slide the Changer down onto the screws.

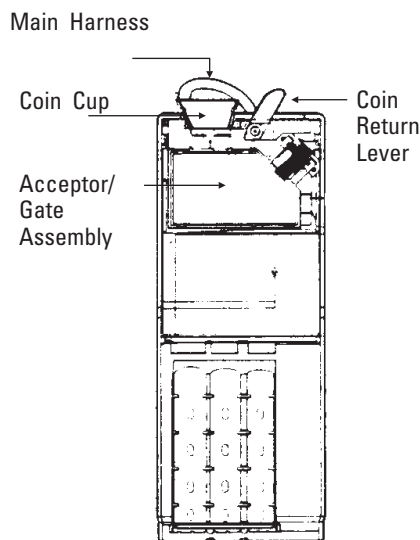


Figure 3-4:
External Coin Changer
Components

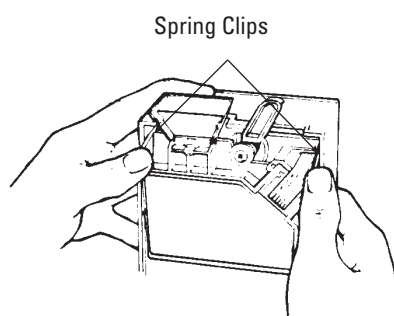


Figure 3-5:
Releasing the
Acceptor/Gate Assembly

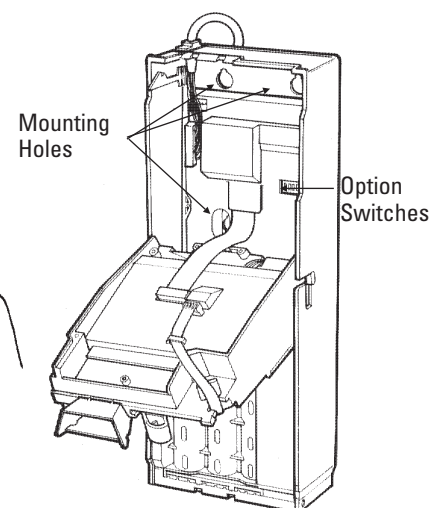


Figure 3-6:
Internal Coin Changer
Components

- 5 Tighten the mounting screws to secure the Changer in place. Check that:
 - Changer is flush against Tower wall.
 - Tower Coin Insert Chute is aligned above center of Changer Coin Cup.
 - Tower Coin Return/Reject Chute is aligned with Changer Coin Return/Reject Chutes.
 - Tower Coin Return Button, when pressed, fully depresses Changer Coin Return Lever; when released, the two should not touch.
 - Main Harness is clear of Changer Coin Cup.
- 6 Using a small screwdriver or retracted ball point pen, position the Option Switches (Figures 3-6 and 3-7). Do not use a graphite pencil point. Refer to Table 3-2 to set these switches.

+ *You may want to circle the selected settings in Table 3-2.*

- 7 Press the Acceptor/Gate Assembly back into the housing until the spring clips engage.

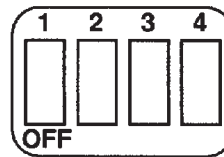


Figure 3-7:
Changer Option Switches

* An asterisk indicates default (factory) settings.

Switch	Setting	Result
1	ON*	Accepts U.S. and Canadian coins
	OFF	Accepts U.S. coins only
2	ON	Stores six quarters for change
	OFF*	Stores 69 quarters for change
3	ON*	Accepts dollar coins
	OFF	Rejects dollar coins
4	ON	Accepts dollar coins regardless of quarter tube level
	OFF*	Accepts dollar coins only when at least 6 quarters are in the quarter tube

Table 3-2:

Changer Option Switch Settings

Setting the DIP Switches

This applies to all Towers EXCEPT the TS/Tower.

The DIP switches, shown in Figures 3-8, 3-9, and 3-10, are used to set certain operating characteristics of the Tower. (Other characteristics are set by responding to the prompts displayed in Management Mode, as described in Chapter 4.)

To set a switch to ON or OFF, simply refer to Figures 3-9 and 3-10. Use a small screwdriver to move the switch to the desired position. The function of each switch is explained in Table 3-3.

+ *You may want to make a copy of the Table 3-3 for each Tower being configured and circle the settings.*

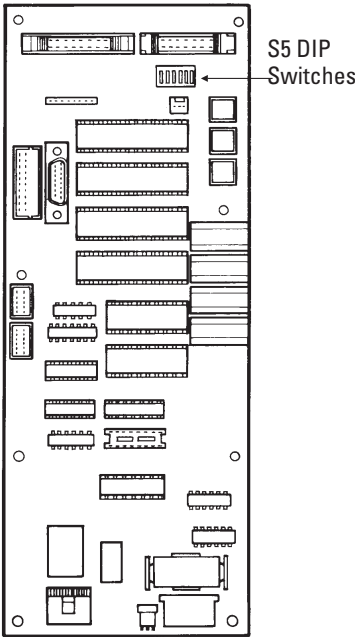


Figure 3-8:
Location of DIP Switches on Control Board

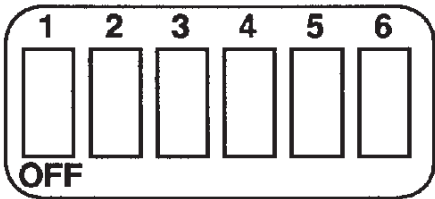


Figure 3-9:
S5 DIP Switch

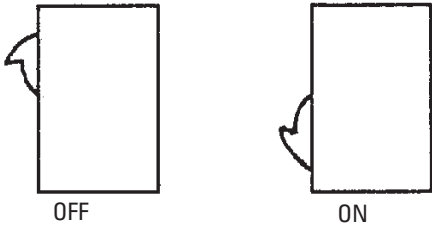


Figure 3-10:
Side View of Switch Settings

Switch	Setting	Explanation
1	ON	(discontinued) Informs the Tower that you are using the AUTO-TIME option. This switch must be ON if you purchased and plan to use this option. (References to AUTO-TIME apply to units with the option already installed. This option is no longer available.)
	OFF*	Set this switch OFF if you are not using the AUTO-TIME option.
2	OFF*	RECHARGE disabled (firmware Rev. H and later). This switch was not used and should always be OFF for units with firmware older than Rev. H.
	ON	Enables RECHARGE feature (firmware Rev. H and later).
3	ON	Enables (activates) the Copy Required feature, which prevents the Tower from being used as a Coin Changer. Once the user has inserted sufficient cash to enable the copier, users can not receive change for inserted bills until at least one copy has been made.
	OFF*	If set to OFF, the Tower can be used as a convenient bill changer. Users can insert bills, then press the Coin Return Button to receive change without making a copy.
4	ON *	Enables (activates) the Read After Write feature, used to ensure that the Tower properly encodes cards as they are ejected from the Card Reader. If invalid data is found, the Tower re-encodes the card then repeats the Read procedure. If invalid data is still detected, the Tower alerts the user of the problem. (The exact way in which the Tower alerts the user depends on how you set up software, as described in Chapter 4.) The recommended setting is ON.
	OFF	Tower does not check that the data written to a card is valid.
5	ON	Informs the Tower that it has card acceptance capabilities. This position must be ON if your Tower has a Card Reader Kit installed.
	OFF	Turn this position OFF if your Tower does not have a Card Reader.
6	ON	Controls how much change can be dispensed for inserted bills. When ON, inserted bills are rejected if they cause the cash balance shown in the Display Window to exceed the amount of cash required to enable the copier by \$5.00 or more.
	OFF*	When OFF, bills are rejected if they cause the cash balance to exceed the cash required by \$1.00 or more.

Table 3-3:
DIP Switch Functions

* = Default Setting

Setting the
TS/Tower DIP
Switches

The DIP switches, shown in Figures 3-11, 3-12, and 3-13, are used to set certain operating characteristics of the Tower. (Other characteristics are set by responding to the prompts displayed in Management Mode, as described in Chapter 4.)

To set a switch to ON or OFF, simply refer to Figures 3-12 and 3-13. Use a small screwdriver to move the switch to the desired position. The function of each switch is explained in Table 3-4.

+ *You may want to make a copy of the Table 3-4 for each Tower being configured and circle the settings.*

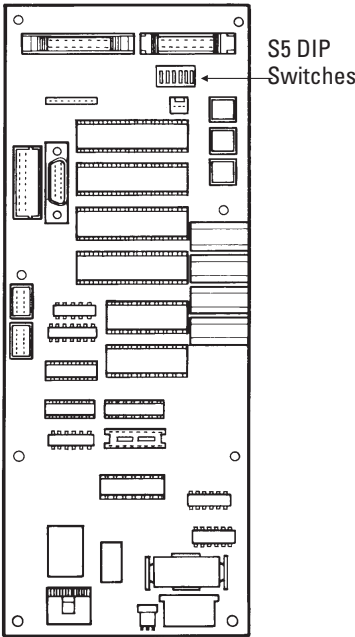


Figure 3-11:
Location of DIP Switches on Control Board

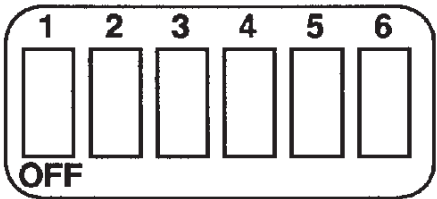


Figure 3-12:
S5 DIP Switch

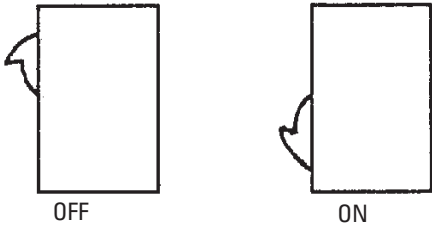


Figure 3-13:
Side View of Switch Settings

Switch	Setting	Explanation
1	ON	Enables the use of coins to add value to a card is Switch 2 is set to the "ON" position
	OFF*	Disables the use of coins to add value to a card.
2	ON	Enables RECHARGE feature (firmware Rev. H and later). An AV SAM is required when switch 2 is on.
	OFF*	RECHARGE disabled (firmware Rev. H and later).
3	ON	Enables (activates) the Copy Required feature, which prevents the Tower from being used as a Coin Changer. Once the user has inserted sufficient cash to enable the copier, users can not receive change for inserted bills until at least one copy has been made.
	OFF*	If set to OFF, the Tower can be used as a convenient bill changer. Users can insert bills, then press the Coin Return Button to receive change without making a copy.
4	ON *	Enables (activates) the Read After Write feature, used to ensure that the Tower properly encodes cards as they are ejected from the Card Reader. If invalid data is found, the Tower re-encodes the card then repeats the Read procedure. If invalid data is still detected, the Tower alerts the user of the problem. (The exact way in which the Tower alerts the user depends on how you set up software, as described in Chapter 4.) The recommended setting is ON.
	OFF	Tower does not check that the data written to a card is valid.
5	ON	Enables the Card Reader.
	OFF	Turn this position OFF if your Card Reader malfunctions and you still want to be able to operate the copier (cash/coin only) while awaiting repair. With the switch in this position, the idle display will alternate between "USE EXACT CHANGE" or "READY TO VEND" and "DO NOT USE CARD" .
6	ON	Controls how much change can be dispensed for inserted bills. When ON, inserted bills are rejected if they cause the cash balance shown in the Display Window to exceed the amount of cash required to enable the copier by \$5.00 or more.
	OFF*	When OFF, bills are rejected if they cause the cash balance to exceed the cash required by \$1.00 or more.

Table 3-4:
TS/Tower DIP Switch Functions

* = Default Setting

Installing the Coin Box

Refer to Figures 3-14 through 3-16 as you follow these instructions.

- 1 Insert the lid key into the lid lock and turn it clockwise (Figure 3-14). Remove the lid from the Box.
- 2 Holding the lid as shown in Figure 3-15, insert a ballpoint pen or very small screwdriver into the hole in the trigger arm and slide it first to the right, then down. (The trigger arm should move about a quarter of an inch and remain in the unlocked position.)

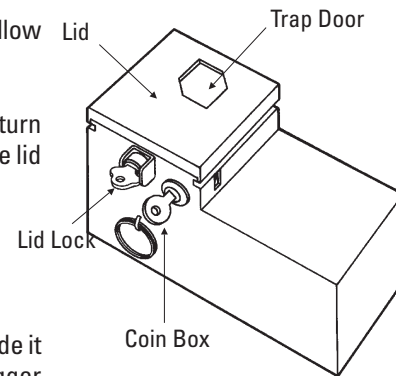


Figure 3-14:
Coin Box

- 3 Check that the trigger arm is unlocked by slightly compressing the tension spring to open the trap door. If the spring does not move, it still needs to be unlocked. If you push the spring too far, the arm releases and must be reset.
- 4 Place the lid back onto the Coin Box, secure it with the lid key, then remove the key.
- 5 Slide the Coin Box into the placement grooves of the Tower (Figure 3-16).

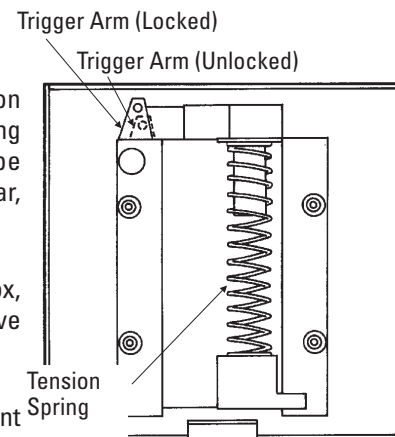


Figure 3-15:
Coin Box Lid
(view from underneath)

- 6 Push the Coin Box into the Tower frame until you hear the click of the trigger mechanism locking.
- 7 Keeping pressure on the Coin Box, insert the Coin Box key into the Coin Box and turn the key counter-clockwise. (If you release pressure before locking the Box into place, the trigger arm will lock, and you will be unable to insert the Box. If this occurs, begin again at Step 1.)
- 8 Remove the Coin Box key and store it in a secure place.

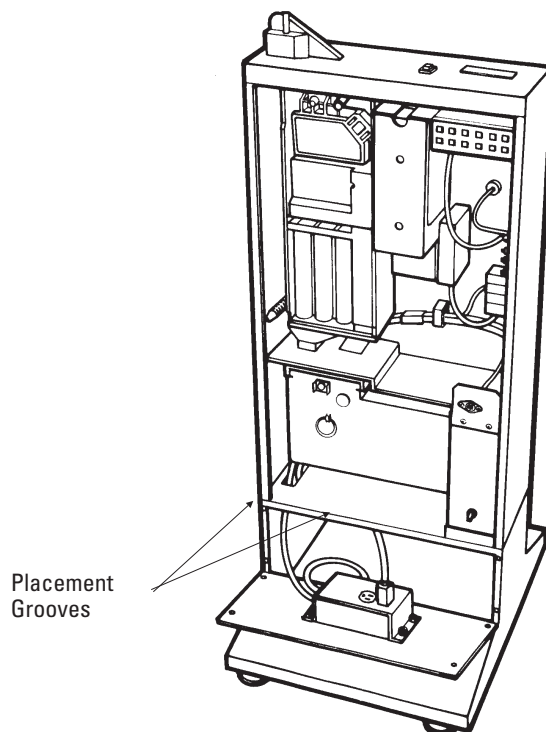


Figure 3-16:
Coin Box Installed in Tower

Filling the Coin Tubes

When fully loaded, the coin tubes hold approximately \$17.00 in quarters, \$3.30 in nickels, and \$9.80 in dimes.

The Tower can then keep track of exactly how much change is in the tubes and will rely on its memory to determine whether or not to accept a bill during a copier operation.

+ *As you follow the steps below, record the amount of money inserted into the tubes in your manual log so that you can later reconcile the amount of money collected with the number of copies made.*

- 1 Refer to Figure 3-17 as you fill the quarter coin tube up to the top sensor (Figure 3-18). (Coin denominations are printed on each tube.)
- 2 Repeat Step 1 for the nickel and dime tubes.

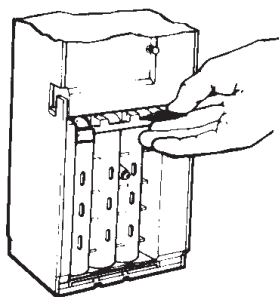


Figure 3-17:
Filling the Coin Tubes

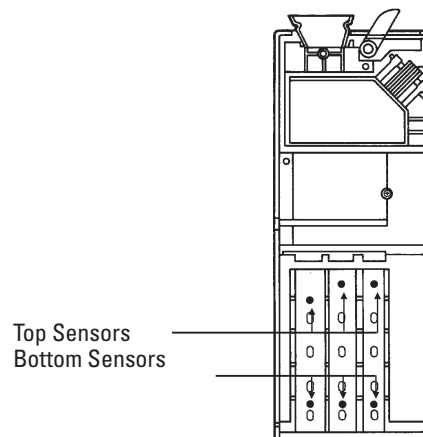
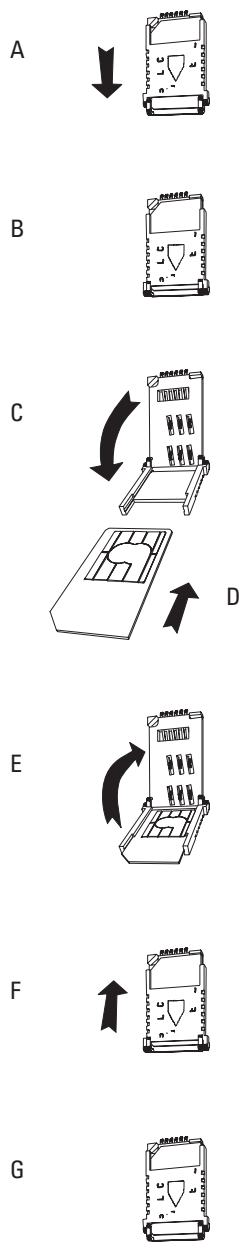


Figure 3-18:
Coin Tube Top and Bottom Sensors

SAM Insertion



SAM Insertion in the Smart Card Reader

- 1 Be sure that there is no power to the Tower, then open up the unit.
- 2 Open the SAM holder on the smart card reader by sliding the top portion of the holder forward until it clicks open.
- 3 Lift the top portion of the SAM holder until it is vertical in relation to the bottom portion of the SAM holder.
- 4 Slide the SAM into the upper portion of the SAM holder so that the diagonal corner is on the top right hand side. The copper contacts of the SAM should be facing the installer.
- 5 Lower the upper portion of the SAM holder so that it covers the bottom portion of the holder.
- 6 Slide the upper portion of the holder back until it snaps shut.
- 7 Power up the Tower as described on the following page.

Figure 3-19:
Inserting a Security Application Module (SAM)

Powering Up the Tower

- 1 Check that the ON/OFF switch is in the OFF (down) position (Figure 3-20).
- 2 Insert the power cable into a grounded electrical outlet or power strip.
- 3 Turn the ON/OFF switch to ON and turn the Management Key to Normal Mode (center position).
- 4 As the Tower has completes its initial checksum and system checks it will display the revision level of the main and card reader EPROM's. Observe the Display Window, which should show the following:

```
TESTING SYSTEM  
REV 1101985583 XX (firmware p/n and rev)  
RAM TEST OK  
-----  
READER TEST OK ( applies to TS/CRK only)  
REV 1101987541 XX (card reader p/n and rev)
```

If a SAM was installed correctly in the smart card reader, the display messages will not refer to the SAM.

- 5 Make sure that all coin tubes are filled.
- 6 Drop a single quarter into the Coin Slot on the top of the Tower. (It should fall directly into the Coin Box.)
- 7 Repeat Step 5 for the nickel and dime tubes.
- 8 Press the Coin Return Button. Your escrow (40 cents) should be returned, and the Display Window should read READY TO VEND.

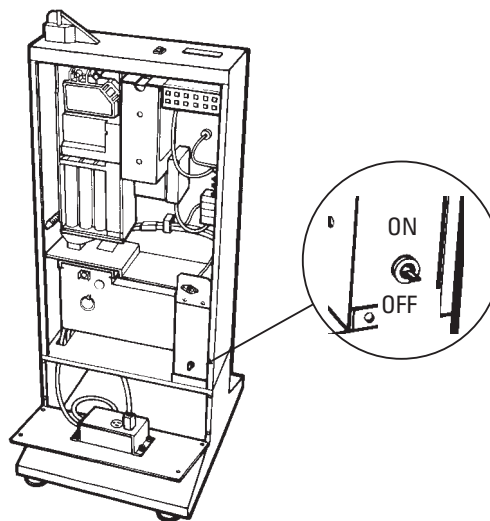


Figure 3-20:
ON/OFF Switch

4

Initialization and Software Setup

In this chapter, you will be preparing Tower software for use. Before beginning these procedures, you must have completed the hardware setup procedures in Chapter 3.

Table 4-1 outlines software setup procedures and indicates which procedures are required for your Tower.

Procedure	Required for
1 Setting the Site/Group Code(s)	Towers equipped with a Card Reader Kit
2 Initializing the Tower	All Towers
3 Programming Tower Features	All Towers
4 Preparing the Tower for Communications	Towers equipped with Communications Kit
5 Setting the Clock	Towers using the Auto Power Loss Disable Feature
6 Adding Credit Accounts to the Tower	Towers that use Credit Cards for copier access
Table 4-1	

+

Before beginning these procedures, you must have completed the hardware setup procedures in Chapter 3.

Before You Begin

During initialization and programming, you will be asked to respond to a series of prompts (or *major loops*) and sub-prompts (or *minor loops*) that appear in the Tower Display Window. Respond to these prompts by pressing keys on the internal keypad:

☐ YES to view and/or change the setting for a displayed feature,
OR
to select a displayed setting,
OR
to enter a response keyed in at the keypad

☐ NO to skip a prompt or prompt group,
OR
to bypass displayed settings to reach a desired setting

numbered keys, such as ☐ 1 and ☐ 5 , to key in specific information, such as a cost per copy

Setting the Site Code(s)



Set Site Code

As discussed in Chapter 1, all Towers that accept cards must be programmed with one or more of your Site/Group Codes. Card users will not be able to access Tower services unless the Site Code encoded on the user card matches one of the Site Codes programmed into Tower memory.

When determining which Site Code(s) you want programmed into Tower memory, remember that Site Codes can be used for these two purposes:

- Access Control—Only users with cards encoded with a Site Code stored by the Tower have access to that unit.
- Variable Pricing—You can vary the amount you want deducted from the debit and/or limit fields of cards based on the Site Code encoded on cards. (You will be instructed how to set costing for each Site Code later in this chapter.)

Follow the numbered steps throughout the remainder of this section to program the Tower with your Site Code(s). Before beginning this procedure, be sure you have each of these items:

- Set Site Code (G/C) Card(s). You will need a separate Site Code Card for each code you want programmed into the Tower. (Each administrator card set contains a Site Code Card.)
- your Administrator Card ID number. (This number is provided along with your administrator card set.)

+ *The Tower must be in Normal Mode (the Management Keylock must be in the center position) to set Site Codes.*

Note

—Adding Site Codes After Initial Setup:
If you have already programmed one or more Site Codes into the Tower and are using this procedure to add another Site Code, the Set Site Code Card you insert in Step 1 must correspond to a Site Code already stored by the Tower; after this first card is ejected, you may begin inserting the cards required to add additional codes.

System Status	User Action
1 Display reads: READY TO VEND	Insert your Set Site Code Card, magnetic stripe down and to the right, into the Card Acceptor.

- 2 Display reads: SET THE S/C?
- 3 Display reads: CARD ID NUMBER?
- 4 Display reads: THE S/C IS nnnn, (for about three seconds) where nnnn represents the Site Code you've just programmed into the Tower; the Set Site Code Card is returned, and the display reads: REMOVE THE CARD or READY TO VEND

Press .

Key in your Administrator Card ID number and press .

Remove the Set Site Code Card and store it in a secure place. If you have other Site Codes to add to this Tower, insert the next Site Code Card. (You will not be prompted to enter your Administrator Card ID number this time.) Continue inserting Site Code Cards until the Tower has been programmed with all desired codes.

Initializing the Tower

Initializing the Tower erases any information that may have been recorded and stored by the Tower during factory testing. You must initialize the Tower to prevent combining this test data with actual user data.

Caution!!!

After your Tower has been in use, *DO NOT* use the Erase function. With the exception of the stored Site Codes, this function will delete all information in Tower memory. *ONCE THIS INFORMATION IS DELETED, IT CAN NOT BE RETRIEVED!*



To initialize the Tower, insert your Management Key into the Management Keylock and turn the key full left (counter-clockwise) to Management Mode.

System Status	User Action
1 Display reads: EXAMINE TOTALS?	Press NO to each prompt displayed until INITIALIZE MEM? appears.
2 Display reads: INITIALIZE MEM?	Press YES .
3 Display reads: RESET TOTALS?	Press NO .
4 Display reads: ERASE MEMORY?	Press YES .
5 Display reads: ARE YOU SURE?	Press YES .
6 Display reads: PRESS THE 3 KEY	Press 3 .
7 Display reads: MEMORY IS ERASED (for about three seconds), then: SEE THE TIME?	To continue with software setup, turn to the following page. If you do not want to continue at this time, turn the Management Key back to the center position, remove the key, and store it in a secure place.

Programming Tower Features

Some operating characteristics of your Tower can be customized to meet the needs of your site. Customizing your unit is easy—the Tower displays prompts asking how you want certain features and options set; you respond by pressing keys on the keypad. Depending on the Tower model, you can have up to 24 items to customize.

Note

Although most of the operating characteristics are set as described in this section, a few others are set via the DIP switches (discussed in Chapter 3).

Before You Begin: **ENTER SETUP MODE**

The 24 minor loops that aid you in customizing these items are discussed on this and the following pages. Step-by-step programming instructions are provided later in this section.

MACHINE ID. This minor loop allows you to set the Machine ID. The Machine ID, which can be up to eight digits, is for your own identification purposes and is not connected with the factory-assigned Site Codes or Administrator Card ID number.

SET CARD COST.   This minor loop allows you to specify costing data. You are prompted to set separate costs for each Site Code stored by the Tower. Both debit and limit costs must be specified for each code:

- The debit cost is the monetary value you want deducted from Debit and Debit-Limit Cards for each copy made. Costs can range from \$0.001 to \$9.999.
- The limit cost is the number of points per copy you want deducted from Limit, Debit-Limit, and Credit with Limit Cards. From 1 to 99 points can be deducted.

MINIMUM CARD VALUE.   If you are using Auxiliary Channel Pricing and the "Auxiliary Signaling" minor loop (described below) is set to either PULSES or SELECT, a user card can occasionally end up with a negative debit balance. (How this can occur is explained under the "Auxiliary Signaling" minor loop discussion, which follows.) This can also occur if the Tower is connected to a copier with "late" copy signals (copy signals that reach the Tower too late to prevent the next copy from being made). The "Minimum Card Value" minor loop can be used to prevent this. It permits you to program the Tower with a *Minimum Card Value* (the lowest value a card can be encoded with and still be used to make a copy). If a card falls below this value at any time while copies are being made, that session is terminated. To prevent negative balances:

Set the Minimum Card Value equal to twice your copy cost (for copiers that send "late" copy signals) or to the highest possible auxiliary copy cost. (See the "Auxiliary 1 Cost and Auxiliary 2 Cost" minor loop discussion, which follows.) The Minimum Card Value can be set from \$0.001 to \$9.999.

If you do not want to require a Minimum Card Value greater than your base copy cost, simply be sure that the cost of a new card is always higher than any negative balance that may be on a card. This gives users an incentive to re-encode cards that have negative balances (at which time you can recoup your loss) rather than purchase new cards.

- + If the base cost per copy (set using the "Card Cost" minor loop) for a particular Site Code is higher than the programmed Minimum Card Value, the base cost per copy is used in place of the Minimum Card Value whenever a card with that Site Code is inserted.

SET CASH COST. This minor loop allows you to set the Cash Cost (the amount charged for one copy made with coins or bills). This cost can range from \$0.05 to \$9.95, in 5¢ increments.

MINIMUM CASH VALUE. Just as the "Minimum Card Value" minor loop allows you to set a minimum debit balance for card vending operations, the "Minimum Cash Value" minor loop allows you to set a minimum cash balance for cash vending. For example, if you set the Minimum Cash Value to 50¢ and the base copy cost is 10¢, a user must always have a cash escrow of at least 50¢ for the copier to remain enabled. If the escrow drops below 50¢, the Tower automatically ends the copying session. The Minimum Cash Value can range from \$0.05 to \$9.95, in nickel increments.

AUXILIARY SIGNALING. The "Auxiliary Signaling" minor loop allows you to select the way in which the Tower detects auxiliary channel copies (special copies such as oversized and reductions). If you plan to use Auxiliary Channel Pricing, you must set this loop to match the type copier feedback received from your particular copier. Four settings are available:

NONE—Select this setting if your copier does not allow for use of Auxiliary Channel Pricing or if you choose not to use this method of pricing. (To use Auxiliary Channel Pricing, your copier must provide feedback that allows the Tower to detect when a special copy is made. Refer to your copier manual or contact your authorized copier technician to determine whether your copier has this ability.)

EARLY LEVEL MODE—Select this setting if the two auxiliary input lines from the copier are maintained at a constant voltage, or *level* (e.g. 0V), then changed to another constant level (e.g. 24V) when a user selects a special function at the copier. (This "special function" voltage remains constant until the copier is returned to its normal, 8½" x 11" copy setting.) When the Tower detects this special function voltage, it adjusts the cost per copy as required and prevents copier use if the card or cash value is less than the higher of these two values: (1) the adjusted copy cost or (2) the Minimum Card or Cash Value (explained previously).

PULSE MODE—Select this setting if the two auxiliary input lines from the copier transmit an electrical pulse each time a special copy is made. (Depending on which of the two lines the pulse is received on, the Tower designates it as either an Auxiliary 1 or Auxiliary 2 copy.) *NOTE: Because the Tower has no way of detecting a special copy until after the copy has been made, copier access is permitted as long as the debit or cash value does not fall below the base cost per copy or the Minimum Card or Cash Value, whichever is highest.* (Minimum Card and Cash Values are discussed on the previous pages.) Thus, if the Minimum Card Value is less than the highest possible auxiliary copy cost, a user card may occasionally end up with a negative debit balance.

SELECT MODE—This method of detecting special copies is almost the same as the PULSE method—except with SELECT, the two auxiliary input lines do not operate independently. Instead, one line indicates only that a special copy has been made; the other specifies the type copy made (e.g. 11" x 17", enlargement, and so on).

SET AUXILIARY 1 COST and SET AUXILIARY 2 COST. These two minor loops allow you to set the amount to be added to the base cost per copy for each Auxiliary 1 and Auxiliary 2 copy detected. Use the keypad to key in the desired amount. (Allowable values are between \$0.000 and \$0.999.) For each auxiliary copy made, the amount keyed in will be deducted in addition to the regular, or base, cost per copy. *NOTE: If the Tower detects that both the Auxiliary 1 and Auxiliary 2 special copier features have been used, it adds both the Auxiliary 1 and 2 costs to the base copy cost.* For example, if your Tower

detects oversized copies (designated Auxiliary 1 copies) and enlargements (designated Auxiliary 2 copies), a user who makes an enlargement on oversized paper will be charged the base cost per copy, plus the Auxiliary 1 cost, plus the Auxiliary 2 cost.

CARD MAXIMUM.   This minor loop allows you to set the maximum dollar value permitted on a Debit or Debit-Limit Card used at this Tower. Cards encoded with values greater than this *Card Maximum* are not accepted. Allowable values are \$5, \$10, \$20, \$50, \$99, \$300, \$500, \$750, and \$999.

SET BONUS MODE.   This minor loop permits you to set the Cash Bonus Capability, which allows you to encode cash bonuses on cards during add value operations. These bonuses can be used as an incentive for users to encode cards with a higher dollar value or to use larger bills for add value operations. Three settings are available:

NORMAL MODE disables the Cash Bonus Capability. During an add value operation, the cash value the user inserts to add value to the card exactly matches the cash value added to the card. No bonus is given.

TOTAL BILLS MODE enables the Cash Bonus Capability. During an add value operation, bonuses are given in accordance with the total amount the user inserts to add value to the card. For instance, if a user inserts two \$5 bills and four quarters, the value added to the card is \$11 plus the specified bonus for an \$11 add value operation. Using TOTAL BILLS MODE, you can encourage users to add higher values to cards by offering larger bonuses for higher add value operations. For instance, a user who inserts \$3.00 to add value to a card may receive a 5% bonus, whereas a user who inserts \$10.00 may receive a 15% bonus. You determine the exact bonus amount by using the "Set Bonus Level" minor loop.

SINGLE BILL MODE also enables the Cash Bonus Capability. However, with this setting, the bonus given is determined by the denomination of each bill inserted. With the exception of dollar coins—which are treated as \$1 bills—no bonuses are given for inserted coins. For instance, if a user inserts a \$5 bill, a dollar coin, and two quarters, the value added to the card is \$6.50 plus the bonus for a \$5 bill, plus the bonus for a \$1 bill or coin. Using this setting, you can encourage users to use larger denomination bills for add value operations—which means less frequent bill collections for you. For instance, you can program the Tower so that a user who inserts five \$1 bills receives \$5.50 added to his card, whereas a user who inserts a \$5 bill receives \$6.00 added to the card. Again, you determine the exact bonus amount by using the "Set Bonus Level" minor loop.

SET BONUS LEVEL.   This minor loop permits you to determine the bonus amount given during add value operations.

If you set the Cash Bonus Capability to TOTAL BILLS MODE, you must specify the amount you want added to a card for each of these cash insertion levels: \$1.00, \$5.00, \$10.00, \$20.00, and \$50.00. The Tower uses the amount you specify to determine the amount to add to a card at the end of an operation. For instance, if you want to give a 10% bonus for cash insertions in the \$1.00 to \$4.00 range, set the \$1.00 level at \$1.10:

$$\$1.00 + \text{Bonus (10\% of \$1.00 = 10¢)} = \$1.10$$

If you want to give a 20% bonus for cash insertions in the \$5.00 to \$9.00 range, set the \$5.00 level at \$6.00:

$$\$5.00 + \text{Bonus (20\% of \$5.00 = \$1.00)} = \$6.00$$

Given the previous settings, if \$3.00 is inserted, \$3.30 is added to the card:

$$\$3.00 + \text{Bonus (10\% of \$3.00 = 30¢)} = \$3.30$$

If \$7.00 is inserted, \$8.40 is added to the card:

$$\$7.00 + \text{Bonus (20\% of \$7.00 = \$1.40)} = \$8.40$$

Use Table 4-2 to determine the amount you want encoded on a card for the \$1.00, \$5.00, \$10.00, \$20.00, and \$50.00 levels.

Caution

Be sure to set *each and every* level so that the amount encoded on the user's card at that level at least equals the amount acquired at the previous level.

- If you set the Cash Bonus Capability to SINGLE BILL MODE, you must specify the amount you want added to a card whenever a bill (or coin) of one of the following denominations is inserted: \$1.00, \$5.00, \$10.00, and \$20.00. (Of course, if your Tower is not equipped with the High Bill Acceptance Kit, \$10 and \$20 bills are not accepted by your unit.) The Tower uses the amounts you specify to determine the amount to add to a card at the end of an add value operation. For instance, if you want to give a 10¢ bonus for each \$1 bill (or dollar coin) inserted, set the \$1.00 level at \$1.10:

$$\$1.00 + \text{Bonus (10¢)} = \$1.10$$

If you want to give a \$1.00 bonus for each \$5 bill inserted, set the \$5.00 level at \$6.00:

$$\$5.00 + \text{Bonus (\$1.00)} = \$6.00$$

Given these settings, if one \$1 bill and one \$5 bill are inserted, \$7.10 is added to the card:

$$\$1.00 + \$1 \text{ Bonus (10¢)} + \$5.00 + \$5 \text{ Bonus (\$1.00)} = \$7.10$$

However, if six \$1 bills are inserted, \$6.60 is added to the card:

$$\$6.00 + 6[\$1 \text{ Bonus (10¢)}] = \$6.60$$

Use Table 4-3 to determine the amount you want encoded on a card whenever any of the following bill (or coin) denominations are inserted: \$1, \$5, \$10, or \$20.

EXPIRATION DATE.   This minor loop allows you to enable or disable the Expiration Date feature. When enabled, the Tower checks Credit and administrator cards for an expiration date. If the date on the card is prior to the date stored in Tower memory, the card can not be used at this Tower.  For TS units, if the date on the card is prior to the current date, the card can not be used at this Tower.

SET EXP DATE.   This minor loop allows you to program the Tower with an expiration date. This minor loop is not used for TS units.

Cash Insertion Level	Cash Insertions in the range of	Receive a bonus of	Amount to add to card
\$1.00	\$1.00 - \$4.95	_____ %	\$1.00 + (_____ % of \$1.00) =
\$5.00	\$5.00 - \$9.95	_____ %	\$5.00 + (_____ % of \$5.00) =
\$10.00	\$10.00 - \$19.95	_____ %	\$10.00 + (_____ % of \$10.00) =
\$20.00	\$20.00 - \$49.95	_____ %	\$20.00 + (_____ % of \$20.00) =
\$50.00	\$50.00 +	_____ %	\$50.00 + (_____ % of \$50.00) =

Table 4-2:

Setting Bonuses (TOTAL BILLS MODE):

- (1) Determine the bonus percentage you want given for each cash insertion level and write that bonus on the blank lines in Columns 3 and 4. (2) Calculate the amount to be added to the card and record it in the box in Column 4.

Denomination	Bonus Amount to be received for this bill/coin	Amount to add to card
\$1.00	\$ _____	\$1.00 + _____ =
\$5.00	\$ _____	\$5.00 + _____ =
\$10.00	\$ _____	\$10.00 + _____ =
\$20.00	\$ _____	\$20.00 + _____ =

Table 4-3:

Setting Bonuses (SINGLE BILL MODE):

- (1) Determine the bonus amount you want given for each bill (or coin) denomination and write that bonus on the blank lines in Columns 2 and 3. (2) Calculate the amount you want encoded on the card and record it in the

CMP BUTTON TIME. This minor loop allows you to set the amount of time the copier remains active after a user ends a copying session (after the Complete or Coin Return Button is pressed).

When set to **CMP BUTTON ZERO**, the Tower disables the copier immediately after the session is terminated. This is the recommended setting as it prevents users from making no-cost copies. (These no-cost copies can be made if the copier remains active after the user presses the Complete or Coin Return Button.) In rare instances, however, this setting may cause an occasional copier jam. If otherwise unexplainable jams occur when a session is terminated, try changing this setting to **CMP BUTTON NORML**.

If set to **CMP BUTTON NORML**, the Tower disables the copier at the end of the Exit Delay period (described next).

SET EXIT DELAY. The "Exit Delay" minor loop allows you to set the number of seconds (from one to nine) that elapse between the time at which the user ends a copying session and the time at which the Tower returns the user's card or change. (The Exit Delay period is expressed by the message **PLEASE WAIT** in the Display Window.) Like a Complete Button Time of **ZERO**, an Exit Delay of two to four seconds usually prevents users from making free copies without inconveniencing the user.

RELAY DROP TIME . The "Relay Drop" minor loop allows you to set the number of seconds the copier remains active after the cash or card balance falls below the balance required to keep the copier enabled. Allowable values are between 0.0 seconds and 5.0 seconds for firmware rev. K and earlier. Starting with firmware rev. L, the allowable values are between 0.0 seconds and 25.5 seconds. The extended times are required for some large print size, color copiers.

Normally, this value is set to 0.0.

In rare instances, however, a 0.0 setting may cause an occasional copier jam. If otherwise unexplainable jams occur when balances fall below the minimum balance required, experiment with increasing the Relay Drop. (To prevent users from potentially making free copies, keep the Relay Drop Time as short as possible.)

CHANGE TIMEOUT. The "Timeout" minor loop determines the number of seconds the Tower allows between copies before assuming a session is complete and returning the user's card or dispensing coins in escrow. Allowable values are **NONE**, 30, 60, 90, and 120.

If set to **NONE**, the Tower will not return a card until the Complete or Coin Return Button is pressed.

If set to a value other than **NONE**, the Tower automatically terminates the session and returns the user's card after the specified Timeout.

COPY BLIND TIME. The "Copy Blind Time" minor loop determines the number of seconds the Tower waits after receiving a copy pulse before acknowledging any additional pulses. (Allowable times are from 0.0 to 9.9 seconds.) For example, if the Blind Time is set to 0.5 seconds, copy pulses received less than 0.5 seconds apart are ignored. *Unless instructed by a Schlumberger service representative, keep this setting at 0.0 seconds.*

CHOOSE EXIT BEEP. The "Exit Beep" minor loop allows you to determine whether an alarm sounds to remind users to retrieve cards or change when a copying session is automatically terminated. Three settings are available:

EXIT AND 15 SEC—alarm sounds 15 seconds after the last copy is detected and when the card or change is returned

EXIT BEEP ONLY—alarm sounds only as the card or change is returned

BEEP INACTIVE—alarm does not sound

KEYBOARD TONE. This minor loop allows you to enable or disable a tone to sound whenever a key on the internal keypad is pressed.

ENTER LOAD TYPE.  The "Load Type" minor loop allows you to determine how credit accounts are stored in Tower memory and under what conditions credit accounts are verified before equipment access is permitted. Four settings are available:

VERIFY MODE—When you select VERIFY MODE, an area of Tower memory is set aside to store authorized credit accounts (the credit accounts you want permitted access to this unit's vending services). (This area also stores the copy balance for each account.) When a Credit Card is inserted, the Tower checks the account number encoded on the card against the list of authorized accounts. Only cards that match one of these prestored numbers are allowed access. This means that you must preload all accounts into memory—either manually, by keying in individual account numbers at the keypad, or by using RECAP Software to download accounts.

SELF LOAD MODE—As with VERIFY MODE, an area of Tower memory is set aside to store account numbers and their copy balances. However, with SELF LOAD, accounts do not need to be preloaded. Instead, they are automatically added to memory the first time a Credit Card is used. This means that any Credit Card inserted is permitted access (providing it also meets other acceptance criteria, such as being encoded with a valid Site Code, expiration date, and so on). The SELF LOAD setting helps avoid filling the Tower with unused accounts—as well as eliminates the task of manually entering accounts or downloading accounts from RECAP Software. (You may want to use SELF LOAD to create the account listing, then switch over to VERIFY MODE once most of the accounts have been entered.)

NEGATIVE VERIFY—NEGATIVE VERIFY works the same as SELF LOAD, except that in addition to the area of memory set aside for accounts and their copy balances, a second area is set aside to store "bad" (unauthorized) accounts (accounts that you do not want permitted access). When a Credit Card is inserted, the Tower checks the account number on the card against the list of unauthorized accounts. If that number matches a number stored in the unauthorized list, equipment access is denied.

HOT-LIST—HOT LIST works the same as NEGATIVE VERIFY, except that all "bad" Credit Cards inserted (cards encoded with account numbers that match one of the numbers stored in the "bad" accounts list) are invalidated by the Tower. (The Tower returns the card to the user in an invalid state—which means that the card can not be used anywhere in the system unless an authorized administrator re-encodes that card with valid data.)

Note**—Altering the Load Type Setting after Initial Setup**

If you need to change the Load Type after initial setup, you may find that you are unable to access the desired setting. This is because switching back and forth from either VERIFY MODE or SELF LOAD MODE to NEGATIVE VERIFY or HOT-LIST requires a reallocation of Tower memory. This means that credit account data must be collected and cleared from memory before you can change settings. To do this, you must activate the ERASE function from the "Initialize Memory" major loop or use your RECAP Software. Be sure you've collected and recorded all stored data (not just credit account data) before activating ERASE. Once you've performed the ERASE procedure, you'll be able to access all four Load Type settings.

DEBIT-LIMIT MODE.  This minor loop allows you to determine whether the Tower deducts from the debit or the limit field when a Debit-Limit Card is inserted.

- If set to the DEBIT MODE, then the Tower deducts from the debit field.
- If set to the LIMIT MODE, then the Tower deducts from the limit field.

WRITE ERR MODE.  If you kept the switch-selectable Read After Write feature at its default (enabled) setting (as described in Chapter 3), you can use this loop to determine how the Tower reacts when it detects invalid data (when a *failed write* occurs):

If set to WARNING, the messages INVALID DATA and PUSH END alternately flash in the Display Window. Users simply press the Complete Button to receive invalid cards.

If set to RETAIN, the message CALL FOR SERVICE appears. Users must call an administrator to retrieve invalid cards. Because the Tower overwrites any data stored for a previously recorded failed write when the next failed write occurs, this setting ensures that the data stored corresponds to the card held in the Tower—which prevents disputes between administrators and users over the card value.

AUTO DISABLE.  This minor loop allows you to set the anti-fraud, Auto Power Loss Disable feature, which helps to discourage fraudulent use of the unit. Should a vandal steal the unit, you can set it to automatically "lock up" after a pre-programmed period of time with no power—thus preventing the thief from using the unit for add value purposes. Three settings are available:

OFF—disables this security feature

RECHARGE ONLY—prevents use of add value (RECHARGE) services. (The message CAN' T ADD VALUE appears in the Display Window.)

COMPLETE DISABLE—inhibits all user services (both vending and add value).

If either RECHARGE ONLY or COMPLETE DISABLE is selected, access to Management Mode functions will also be prevented. (To unlock the unit, simply insert a Set Site Code Card that corresponds to one of the Site Codes stored by the unit.)

AUTO DISABLE TM.  If you selected either the RECHARGE ONLY or COMPLETE DISABLE setting from the above minor loop, you must decide how long you want the unit to wait before locking up when it loses power. Allowable settings are from one to 99 minutes. A setting of approximately 15 minutes helps to prevent lockups due to normal power outages (such as during thunderstorms), yet provides a short enough time interval to make it unlikely that a vandal would resupply power within that 15-minute period.

Step-by-step Programming Instructions

Management
Mode



Place the Tower in Management Mode by turning the Management Keylock counter-clockwise (to the far left position). Follow the steps below.

System Status

User Action

- | | | |
|---|---|--|
| 1 | Display reads: EXAMINE TOTALS? | Press <input type="button" value="NO"/> to each prompt displayed until ENTER SETUP MODE? appears. |
| 2 | Display reads: ENTER SETUP MODE? | Press <input type="button" value="YES"/> . |
| 3 | Display reads: MACHINE ID? | Press <input type="button" value="YES"/> . |
| 4 | Display reads: MACH ID
00000000 | <i>Key in the Machine ID (up to 8 digits) of your choice and press <input type="button" value="YES"/>.</i> |



Steps 5 - 11 apply to units with card readers only.

- | | | |
|----|--|---|
| 5 | Display reads: SET CARD COST? | Press <input type="button" value="YES"/> . |
| 6 | Display reads: SITE CODE
nnnn, where "nnnn"
represents the Site Code for
which you will be setting
cost data. | Press <input type="button" value="YES"/> . |
| 7 | Display reads: VALUE IS
\$0.10 | <i>Key in the debit cost you want associated with this Site Code, then press <input type="button" value="YES"/>.</i> |
| 8 | Display reads: LIMIT
COUNT 01 | <i>Key in the number of limit points you want deducted per copy for this Site Code, then press <input type="button" value="YES"/>.</i> |
| 9 | Display reads: SITE CODE
nnnn, where "nnnn"
represents the next Site
Code for which you will be
setting cost data. | Press <input type="button" value="YES"/> to set cost data for this Site Code. Repeat Steps 7 and 8 for each Site Code until you have set the desired data for all Site Codes. (The Tower displays the message NO MORE DEFINED after you've entered data for the last code.) |
| 10 | Display reads: MIN CARD
VALUE? | Press <input type="button" value="YES"/> . |
| 11 | Display reads: VALUE IS
\$0.10 | <i>Key in the Minimum Card Value you want set at this Tower, then press <input type="button" value="YES"/>.</i> |

- | | | |
|----|--------------------------------|---|
| 12 | Display reads: SET CASH COST? | Press <input type="button" value="YES"/> . |
| 13 | Display reads: VALUE IS \$0.10 | <i>Key in</i> the cost per copy you want charged for cash vending operations and press <input type="button" value="YES"/> . |
| 14 | Display reads: MIN CASH VALUE? | Press <input type="button" value="YES"/> . |
| 15 | Display reads: VALUE IS \$0.10 | <i>Key in</i> the Minimum Cash Value you want set at this Tower, then press <input type="button" value="YES"/> . |
| 16 | Display reads: AUX SIGNALING? | Press <input type="button" value="YES"/> . |
| 17 | Displays reads: NONE | Repeatedly press <input type="button" value="NO"/> until the desired setting appears, then press <input type="button" value="YES"/> . |
| 18 | Display reads: SET AUX 1 COST? | Press <input type="button" value="YES"/> . |



Steps 19 - 20 apply to units with card readers only.

- | | | |
|----|--------------------------------|---|
| 19 | Display reads: SET CARD COST? | Press <input type="button" value="YES"/> . |
| 20 | Display reads: VALUE IS \$0.10 | <i>Key in</i> the additional fee you want charged to card users for Auxiliary 1 copies, then press <input type="button" value="YES"/> . |
-
- | | | |
|----|--------------------------------|---|
| 21 | Display reads: SET CASH COST? | Press <input type="button" value="YES"/> . |
| 22 | Display reads: VALUE IS \$0.10 | <i>Key in</i> the additional fee you want charged to cash users for Auxiliary 1 copies, then press <input type="button" value="YES"/> . |
| 23 | Display reads: SET AUX 2 COST? | Press <input type="button" value="YES"/> . |



Steps 24 - 25 apply to units with card readers only.

- | | | |
|----|--------------------------------|--|
| 24 | Display reads: SET CARD COST? | Press <input type="button" value="YES"/> . |
| 25 | Display reads: VALUE IS \$0.10 | <i>Key in the additional fee you want charged to card users for Auxiliary 2 copies, then press <input type="button" value="YES"/>.</i> |

-
-
- | | | |
|----|--------------------------------|--|
| 26 | Display reads: SET CASH COST? | Press <input type="button" value="YES"/> . |
| 27 | Display reads: VALUE IS \$0.10 | <i>Key in the additional fee you want charged to cash users for Auxiliary 2 copies, then press <input type="button" value="YES"/>.</i> |



Steps 28 - 38 apply to units with card readers only.

- | | | |
|----|----------------------------------|--|
| 28 | Display reads: CARD MAXIMUM? | Press <input type="button" value="YES"/> . |
| 29 | Displays reads: VALUE IS \$99.00 | Repeatedly press <input type="button" value="NO"/> until the desired setting appears, then press <input type="button" value="YES"/> . |
| 30 | Display reads: SET BONUS MODE? | Press <input type="button" value="YES"/> . |
| 31 | Displays reads: NORMAL MODE | Repeatedly press <input type="button" value="NO"/> until the desired setting appears, then press <input type="button" value="YES"/> . |
| 32 | Display reads: SET BONUS LEVEL? | Press <input type="button" value="YES"/> . |
| 33 | Displays reads: \$1 BONUS LEVEL? | Press <input type="button" value="YES"/> to set the \$1 Level. |
| 34 | Displays reads: \$01.00 | <i>Key in the dollar amount you recorded in the last column of Table 4-2 or 4-3). Answer <input type="button" value="YES"/> to proceed to the next prompt. You are prompted to set the next bonus level. Continue setting bonus levels until the prompt for the next minor loop appears.</i> |
| 35 | Display reads: EXPIRATION DATE? | Press <input type="button" value="YES"/> . |
| 36 | Display reads: DISABLED | Press <input type="button" value="NO"/> until the desired setting appears, then press <input type="button" value="YES"/> . |

- 37 Display reads: SET EXP DATE? Press **YES** to program the Tower with an Expiration Date. (If the Expiration Date feature is disabled, press **NO** and skip to Step 39.)
- 38 Display reads: EXP DATE MM/YY, where MM/YY represents the Expiration Date currently programmed into the Tower. **Key in** the Expiration Date in MM/YY format (for example, "0292" for February 1992), then press **YES**.
-
- 39 Display reads: CMP BUTTON TIME? Press **YES**.
- 40 Display reads: CMP BUTTON ZERO Press **NO** until the desired setting appears, then press **YES**.
- 41 Display reads: SET EXIT DELAY? Press **YES**.
- 42 Display reads: 3 SECONDS **Key in** the number of seconds for the Exit Delay (between one and nine seconds) and press **YES**.
- 43 Display reads: RELAY DROP TIME? Press **YES**.
- 44 Display reads: 0.0 SECONDS **Key in** one of the following numbers to indicate the desired number of seconds, then press **YES**.
- 0 = 0.0 seconds
1 = 0.5 seconds
2 = 1.0 seconds
3 = 1.5 seconds
4 = 2.0 seconds
5 = 2.5 seconds
6 = 3.0 seconds
7 = 3.5 seconds
8 = 4.0 seconds
9 = 5.0 seconds
- Note: Firmware rev. L and later, use the keypad to directly enter the desired Relay Drop Time, then press **YES**.
- 45 Display reads: CHANGE TIMEOUT? Press **YES**.
- 46 Displays reads: TIMEOUT 30 SECS Repeatedly press **NO** until the desired setting appears, then press **YES**.
- 47 Display reads: COPY BLIND TIME Press **YES**.
- 48 Display reads: 0.0 SECONDS **Key in** the Blind Time you want set at the Tower, then press **YES**.

- | | | |
|----|------------------------------------|---|
| 49 | Display reads: CHOOSE
EXIT BEEP | Press <input type="button" value="YES"/> . |
| 50 | Display reads: EXIT BEEP
ONLY | Press <input type="button" value="NO"/> until the desired setting
appears, then press <input type="button" value="YES"/> . |
| 51 | Display reads: KEYBOARD
TONE? | Press <input type="button" value="YES"/> . |
| 52 | Display reads: ENABLED | Press <input type="button" value="NO"/> until the desired setting
appears, then press <input type="button" value="YES"/> . |



Steps 53 - 58 apply to units with card readers only.

- | | | |
|----|--|---|
| 53 | Display reads: ENTER
LOAD TYPE? | Press <input type="button" value="YES"/> . |
| 54 | Display reads: VERIFY
MODE | Press <input type="button" value="NO"/> until the desired setting
appears, then press <input type="button" value="YES"/> . |
| 55 | ☐ Display reads:
DEB / LIM MODE? | Press <input type="button" value="YES"/> . |
| 56 | ☐ Display Reads: DEBIT
MODE | Press <input type="button" value="NO"/> until the desired setting appears,
then press <input type="button" value="YES"/> . |
| 57 | Display reads: WRITE ERR
MODE? | Press <input type="button" value="YES"/> . |
| 58 | Display reads: RETAIN
CARD? | Press <input type="button" value="NO"/> until the desired setting appears,
then press <input type="button" value="YES"/> . |

- | | | |
|----|------------------------------------|---|
| 59 | Display reads: AUTO
DISABLE? | Press <input type="button" value="YES"/> . |
| 60 | Display reads: OFF | Press <input type="button" value="NO"/> until the desired setting appears,
then press <input type="button" value="YES"/> . |
| 61 | Display reads: AUTO
DISABLE TM? | Press <input type="button" value="YES"/> . |
| 62 | Display reads: 01
MINUTES | Key in the number of minutes you want the
Tower to wait before locking up after a
power failure, then press <input type="button" value="YES"/> . |
| 63 | Display reads: ENTR COMM
SETUP? | Turn to the next section, "Preparing the
Tower for Communications," to continue
with software setup. If you do not want to
continue at this time, simply turn the
Management Keylock back to Normal
Mode (center position) and store the
Management and T-Bar Lock keys in a
secure place. |

Preparing the Tower for Communications

The **ENTER COMM SETUP?** prompt, displayed at the end of "Step 3: Programming Tower Features and Options," allows you to prepare the Tower for communications with the PC on which RECAP Software is installed.

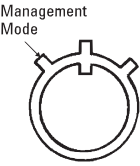
Before You Begin: **ENTER COMM SETUP?**

The "Communications Setup" major loop allows you to prepare the unit for communications with an external device. The minor loops that aid you in preparing the Tower for communications are described below:

- **SET PROTOCOL** —This minor loop allows you to select RECAP 2 or RECAP 3 communications protocol. If you have RECAP 3 Software, you should select RECAP 3 protocol to take advantage of product enhancements. *While RECAP 3 Software will communicate with earlier versions of the TOWER, RECAP 2 Software will not communicate with any equipment that is configured for RECAP 3 protocol.*
- **SET TERM ADDR (Set Terminal Address)**—This minor loop allows you to set a 3-digit identification number if the protocol is RECAP 2 or a 5-digit number if the protocol is RECAP 3 (from 001 to 999 or 00001 to 65534) for each unit. This number is used by the PC software to link each individual unit with the alphabetic description of that unit set at the PC.
- **SET SECURITY ID**—This minor loop allows you to program the unit with an 8-digit security identification code, used to prevent communications between the unit and an unauthorized device. Refer to the manual provided with your RECAP Software for more information.
- **SET BAUD RATE**—The "Baud Rate" minor loop allows you to set the baud rate for a speed of 300, 1200, 2400, or 9600. The speed set here must match the speed set at the external device (e.g. the modem or PC).
- **SET COMM PARITY** —This minor loop can be set at EVEN, ZERO, ODD, or ONE. As with the baud rate, this setting must match the setting at the external device. TS units parity is always EVEN.
- **CONNECT TYPE**—This minor loop allows you to specify how the unit communicates with the PC. Three settings are available (use the diagram below to determine how to set this loop):
 - DIRECT Communications
 - MODEM Communications
 - MUL DROP Communications

- **ANSWER RINGS** (Modem Connect Type Only)—The ANSWER RINGS? minor loop allows you to select the number of rings (1-99), that must occur before the modem will answer an incoming call.
- **SET MONITOR**—The SET MONITOR minor loop is a diagnostic tool for monitoring communications activity. While having it enabled will not adversely affect the unit operation, it is recommended that you leave the setting at "disabled."
- **COMM LOOP TST** (Communications Test)—The "Communications Test" minor loop is used only for test purposes. Refer to the manual provided with your RECAP Software for more information.

Step-by-Step Instructions



To prepare the Tower for communications, insert your Management Key into the Management Keylock and turn the key full left to Management Mode.

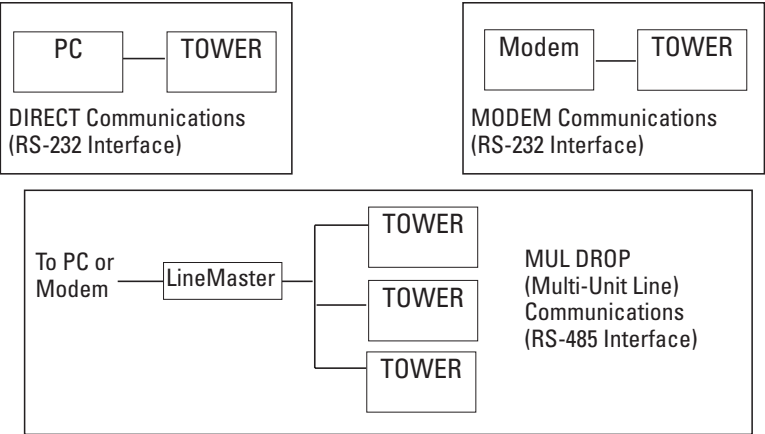
System Status	User Action
1 Display reads: EXAMINE TOTALS?	Press NO to each prompt displayed until ENTER COMM SETUP? appears.
2 Display reads: ENTER COMM SETUP?	Press YES .

Note:

Steps 3 through 6 apply only to the TS/CRK equipped units.

3 Display reads: PROTOCOL?	Press YES .
4 Display reads: RECAP2?	Press YES to accept or press NO if RECAP3 is desired, then press YES .
5 Display reads: RECAP3?	Press YES .
6 Display reads: SURE?	Press YES .

7 Display reads: TERM ID?	Press YES .
----------------------------------	--------------------



- | | | |
|----|--|---|
| 8 | Display reads:
000 (if RECAP2)
or
00000 (if RECAP3) | Key in the three or five-digit Terminal ID, then press YES . (Note: the Terminal ID can not be zero.) |
| 9 | Display reads: SET SECURITY ID? | Press YES . |
| 10 | Display reads: ENTER SECURITY ID | Key in the Security ID and press YES . |
| 11 | Display reads: SET BAUD RATE? | Press YES . |
| 12 | Display reads: SPEED 2400 | Press YES if the displayed value matches the baud rate you want set at this Tower. Otherwise, press NO until the desired setting appears, then press YES . |
| 13 | Display reads: SET COMM PARITY? | Press YES . |
| 14 | Display reads: PARITY EVEN | Press YES if the displayed setting matches the parity you want set at this Tower. Otherwise, press NO until the desired setting appears, then press YES . |
| 15 | Display reads: CONNECTION TYPE? | Press YES . |
| 16 | Display reads: DIRECT CONNECT | Press YES if the displayed setting matches the communications type used by this Tower. Otherwise, press NO until the desired setting appears, then press YES . |
| 17 | <i>If MODEM is selected for connect type</i> , Display reads: ANSWER RINGS 02? | Press YES if the displayed number of rings matches the setting for which you want the modem to respond. Otherwise, press NO , key in the desired setting using the numeric keypad, then press YES . |
| 18 | Display reads: SET MONITOR? | Press YES . |
| 19 | Display reads: MONITOR DISABLED or MONITOR ENABLED | Press NO until MONITORED DISABLED appears, then press YES . |
| 20 | Display reads: COMM LOOP TEST? | Press NO . |
| 21 | Display reads: INITIALIZE MEM? | This prompt signifies the start of the next major loop. Turn to the next section, "Setting the Clock," to continue with software setup. If you do not want to continue at this time, turn the Management Keylock back to center (Normal Mode) position and store your Management and T-Bar Lock keys in a secure place. |

Setting the Clock

Follow these instructions to set the unit clock, used in conjunction with the Auto Power Loss Disable feature and the AUTO-TIME option.

Note

If you are not using either the Auto Power Loss Disable feature or the AUTO-TIME option, you can skip this section and continue to the next setup step.

Before You Begin: SEE THE TIME? and SET THE CLOCK?

Two major loops allow you to view and set the unit clock.

SEE THE TIME. This major loop allows you to view the currently stored time, date, and day of the week.

SET THE CLOCK. The prompts in this major loop allow you to program the Tower with the current time, date, and day of the week.

Step-by-step Instructions



To set the unit clock, turn the Management Keylock to the far left (Management Mode) position, then follow these steps:

System Status	User Action
1 Display reads: EXAMINE TOTALS?	Press NO to each prompt displayed until SEE THE TIME? appears.
2 Display reads: SEE THE TIME?	Press YES .
3 Tower displays (in rapid succession) the currently programmed day, time, and date. Display reads: SEE THE TIME?	Press NO to continue to the next prompt.
4 Display reads: SET THE CLOCK?	Press YES .
5 Display reads: SET THE TIME?	Press YES .
6 Display reads: 00 - 00	<i>Key in</i> the current time in 24-hour, HHMM format (for instance, 13-30 for 1:30 PM), then press YES .
7 Display reads: SET THE DATE?	Press YES .

- | | | |
|----|---|--|
| 8 | Display reads: 00 /00 /00 | <i>Key in</i> the current date in MM/DD/YY format (for instance 03/13/93 for March 13, 1993), then press <input type="button" value="YES"/> . |
| 9 | Display reads: ENTER NEW DAY? | Press <input type="button" value="YES"/> . |
| 10 | Display reads: SUNDAY? | Press <input type="button" value="NO"/> until the current day appears, then press <input type="button" value="YES"/> . |
| 11 | Display reads: EXAMINE
RECOVER? or COPIER
TIMER VAL | To continue with software setup, turn to the next section, "Adding Credit Accounts to the Tower." If you do not want to continue at this time, turn the Management Keylock to the center (Normal Mode) position and store your Management and T-Bar Lock keys in a secure place. |

Adding Credit Accounts to the Tower

Note

If you are not using Credit Cards with this Tower, you can skip this step.

How you programmed the Load Type (described previously) determines whether you must add credit accounts to Tower memory:

- If you set the Load Type to VERIFY MODE, you must create your list of authorized accounts—either by keying in account numbers at the Tower keypad, as described in this section, or by downloading accounts from RECAP Software. (Refer to the manual provided with that software for instructions.)
- If you set the Load Type to SELF LOAD, you do not need to add any accounts to memory. Skip this step and continue on to the next setup step.
- If you set the Load Type to either NEGATIVE VERIFY or HOT LIST, you must create your list of unauthorized accounts—either by keying in account numbers at the Tower keypad, as described in this section, or by downloading accounts from RECAP Software. (Refer to the manual provided with that software for instructions.)

Step-by-step Instructions



To key in account numbers at the Tower keypad, turn the Management Keylock full left to Management Mode, and follow these instructions.

Note

Keep a list of any account numbers you mistakenly add. You will be instructed how to delete these accounts at the end of this procedure.

System Status	User Action
1 Display reads: EXAMINE TOTALS?	Press NO .
2 Display reads: ACCOUNT MAINT?	Press YES .
3 Display reads: VIEW ACCOUNTS?	Press NO .
4 Display reads: ADD AN ACCOUNT?	Press YES .
5 Display reads: ENTER AN ACCOUNT	<i>Key in the account number you want to add (as many as six digits) and press YES.</i>

- | | |
|---|---|
| 6 Display reads: ACCOUNT IS ADDED
(for about three seconds)
then: ADD AN ACCOUNT? | If you want to add more accounts, press YES and repeat Step 5. Otherwise, press NO . |
| 7 Display reads: DELETE ACCOUNT? | Press YES if you want to delete one or more accounts. Otherwise, press NO and skip to Step 12. |
| 8 Display reads: ENTER AN ACCOUNT | <i>Key</i> in the account number you want to delete and press YES . |
| 9 Display reads: ARE YOU SURE? | Press YES . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 10 Display reads: PRESS THE 3 KEY | Press 3 . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 11 Display reads: ACCOUNT DELETED
(for about three seconds)
then: DELETE ACCOUNT? | If you have more accounts to delete, press YES and repeat Steps 8 through 10. Otherwise, press NO . |
| 12 Display reads: CLEAR ACCOUNTS? | Press NO . |
| 13 Display reads: ENTER SETUP MODE? | If you do not want to change any settings that you have programmed, turn the Management Keylock to the center (Normal Mode) position and store your Management and T-Bar Lock keys in a secure place. |

5 Hardware Maintenance

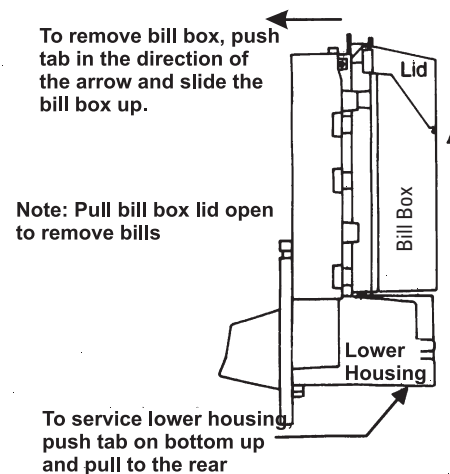
This chapter provides instructions for maintaining Tower hardware:

- Collecting Bills from the Bill Stacker
- Collecting Coins from the Coin Box
- Maintaining Coin Supply Levels

Removing Bills from the Coinco Bill Acceptor

Follow these steps to remove bills from the Coinco Bill Acceptor:

- 1 Unlock and open the unit.
- 2 Release the Bill Box by pushing forward on the tab (Figure 5-5), then slide the Bill Box upwards.
- 3 Pull the Bill Box lid open and remove all bills by sliding the bills toward you (Figure 5-5). Remember to record the sum of bills collected in your manual log.
- 4 Return the Bill Box to its latched position. (Be sure it snaps it into place.)
- 5 Close and lock the unit. Remember to store your T-Bar Lock key in a secure place.



Collecting Bills from the Mars Bill Stacker BILL

Periodically, you must empty the Bill Stacker. Follow these steps to remove bills:

- 1 Open the rear panel of the Tower and release the Stacker by lifting up on the spring latch, located in the groove in the top center of the Stacker (Figure 5-1). Because this hinged box drops forward when released, be sure to cradle the Stacker before you release it.
- 2 Gently ease the box down to its resting position.

Caution

Do not attempt to remove bills by pressing down on the spring-loaded pressure plate. This can damage the Stacker.

- 3 Open the top cover of the Stacker and remove bills by sliding the bills toward you.

+ *Remember to record the sum of bills collected in your manual log so that you can later reconcile this sum with the counts recorded by your non-resettable meters and Tower software.*

- 4 Lift the Stacker back up and snap it into place.
- 5 Close and lock the rear panel of the Tower and store your T-Bar Lock key in a secure place.

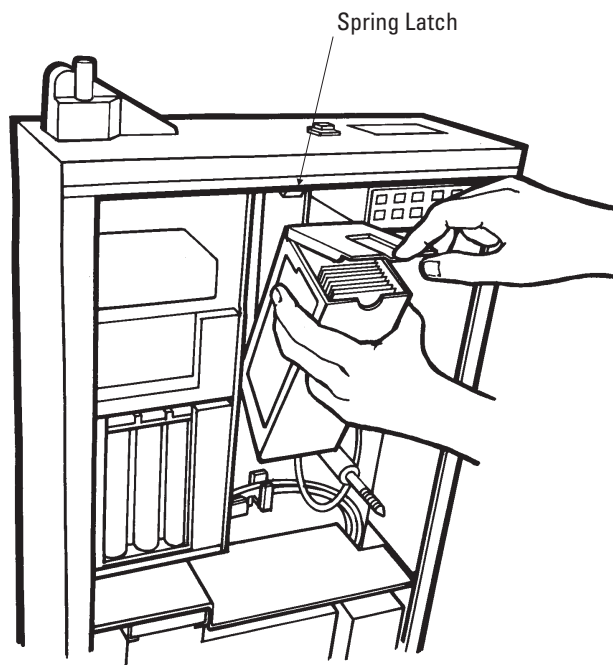


Figure 5-1:
Removing Bills from the Bill Stacker

Collecting Coins from the Coin Box

Before You Begin

The Coin Box, illustrated in Figure 5-2, consists of two parts:

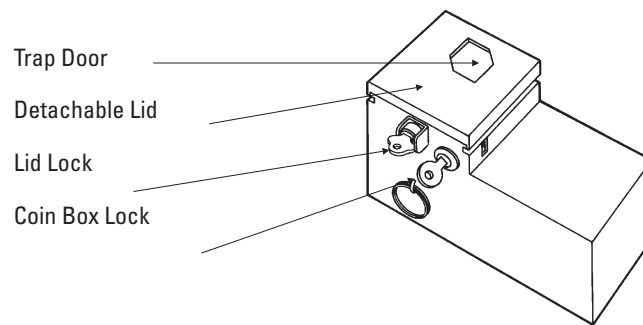


Figure 5-2:
Coin Box Components

- the metal body of the Box, which holds the excess coins
- a detachable lid, which contains a “trap door” and trigger mechanism

The Box is secured with two locks:

- The Coin Box lock, located on the body of the Coin Box, allows you to remove the Box from the Tower.
- The lid lock, located near the top of the Coin Box, allows you to detach the lid.

Before you replace a full Coin Box with an empty one, you must set the *trigger mechanism* of the empty Box. The trigger mechanism allows the trap door to open (only once) as the empty Coin Box is placed into the Tower. When the Coin Box is fully inserted, the trigger releases, allowing the trap door to close and lock when the Coin Box is removed. This prevents access to the coins inside until the lid is unlocked and removed.

- + Depending on the needs of your site, you may want to keep an extra Coin Box (with the trigger mechanism set) for each Tower. If you choose to do so, you can simply replace the full Coin Box with an empty one, then unlock and remove the coins from the full Box at a later time.

Step 1: Remove the Coin Box

As the Coin Box is removed from the Tower, the trap door snaps shut to prevent access to the coins inside. Once the Box is removed, it can not be replaced until the lid is unlocked and the trigger mechanism reset.

- 1 Open the rear access door of the Tower.
- 2 Insert the Coin Box key into the Coin Box lock.
- 3 Push the Coin Box slightly forward to release the spring tension, then turn the key clockwise. (Failing to release the spring tension can result in bent or broken keys.) When unlocked, the Coin Box ejects slightly from its placement grooves.
- 4 Remove the Coin Box from the Tower.

Step 2: Remove the Coins from the Box and Reset the Trigger Mechanism

After you remove the Coin Box from the Tower, it can not be replaced until the lid has been unlocked and detached and the trigger mechanism, reset.

- 1 Insert the lid key into the lid lock and turn it clockwise.
- 2 Lift the lid and detach it from the Box. The trigger mechanism should be locked. (You should be unable to compress the spring to open the trap door.)
- 3 Remove the coins from the Box. (*Remember to record the sum of coins collected in your manual log.*)
- 4 Holding the detached lid as shown in Figure 5-3, insert a ballpoint pen or very small screwdriver into the hole in the trigger arm and slide it first to the right, then down. (The trigger arm should move about a quarter of an inch and remain in this new position.)

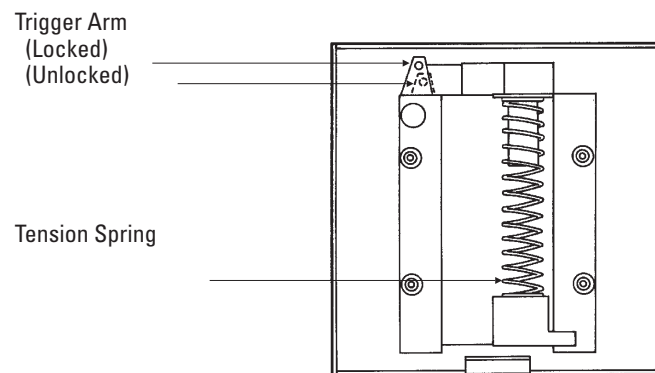


Figure 5-3:
Coin Box Lid (view from underneath showing the trigger mechanism)

5 Test the trigger mechanism by slightly compressing the spring to open the trap door. If the spring does not move, the trigger mechanism still needs to be unlocked. If you push the spring too far, the trigger arm releases and must be reset.

6 Place the lid back onto the empty Coin Box, secure it with the Lid Key, and remove the key.

Step 3: Replace the Coin Box in the Tower

Note

The Coin Box cannot be placed into the Tower unless the trigger mechanism in the lid is unlocked (as described in the previous step).

1 Reinsert the Coin Box into the placement grooves of the Tower.

2 Push the Box into the Tower frame until you hear the click of the trigger mechanism locking.

3 Keeping pressure on the Coin Box, turn the key counter-clockwise, then remove the key. (*NOTE: If you fail to lock the Coin Box into place before releasing pressure, the trigger mechanism will lock and you will be unable to re-insert the box. If this occurs, you must remove the Coin Box lid and reset the trigger mechanism.*)

Maintaining Coin Supply Levels

When fully loaded, the coin tubes hold approximately \$17.00 in quarters, \$9.80 in dimes, and \$3.30 in nickels. Periodically loading the tubes reduces or eliminates the time you or your staff must spend providing change to copier users.

When the coin supply drops below the amount necessary to provide change to users, the message `USE EXACT CHANGE` appears in the Display Window. When this message appears, bills are not accepted, and change may not be returned to a user who inserts more coins than necessary for the copies made.

Be sure to follow the procedure below when filling the tubes. (This ensures that the Tower can keep track of exactly how much change is in the tubes.)

+ *Remember to record the sum of coins inserted to fill the tubes in your manual log.*

- 1 Fill the quarter coin tube up to the top sensor (Figure 5-4).
- 2 Drop a single quarter into the Coin Slot on the top of the Tower. (It should fall directly into the Coin Box.)
- 3 Repeat Steps 1 and 2 for the nickel and dime tubes.
- 4 Press the Coin Return Button. Your escrow (40¢) should be returned, and the Display Window should read `READY TO VEND.`

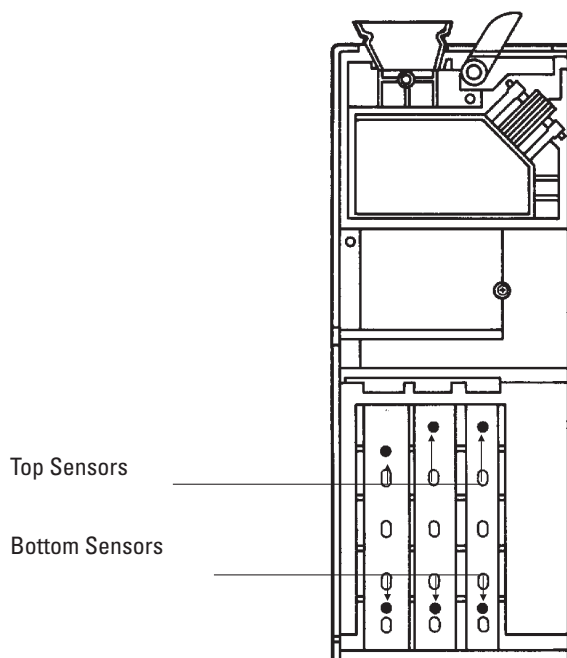


Figure 5-4:
Coin Tubes
(showing top and bottom sensors)

6 Software Maintenance

This chapter provides instructions and recommendations for managing and maintaining Tower software:

- Using Management Mode
- Viewing Stored Totals
- Maintaining Credit Accounts
- Global Software Maintenance Functions
- Examining Failed Write and Power Down Data

Using Management Mode

Software maintenance tasks are performed by responding to groups of prompts that appear in the Display Window when Management Mode is accessed.

About Management Mode Prompts

Management Mode prompts are organized into logical, continuous groups. When you access Management Mode, you are prompted to respond to the first prompt group. After you finish responding to one group, you are prompted to respond to the next. Because of this continuous nature, the groups are referred to as *loops*. Loops simplify Tower setup and maintenance; if you want to change the response made to a prompt, just "cycle" through the loops (by repeatedly answering "no" when prompted to enter a loop) until the desired prompt reappears.

Depending on the upgrade kits and options installed on your Tower, you may have up to 9 *major management loops*. Each major loop contains one or more *minor loops*, which allow you to perform various administrative and programming tasks. A quick, complete reference to Management Mode prompts is provided in Appendix B.

Accessing and Responding to Prompts

You access Management Mode by inserting your Management Key into the Management Keylock then turning the key full left as shown in Figure 6-1. Your View Totals Card (Figure 6-1) can also be used to access some Management Mode functions (functions related to viewing and maintaining stored activity totals). Respond to these prompts by pressing keys on the internal keypad:

YES to access the prompts of a loop, OR
to continue on to the next prompt after a function has been completed, OR
to enter a response keyed in at the keypad

NO to skip a prompt or prompt group

numbered keys, such as **1** and **5**, to key in specific information, such as the cost per copy

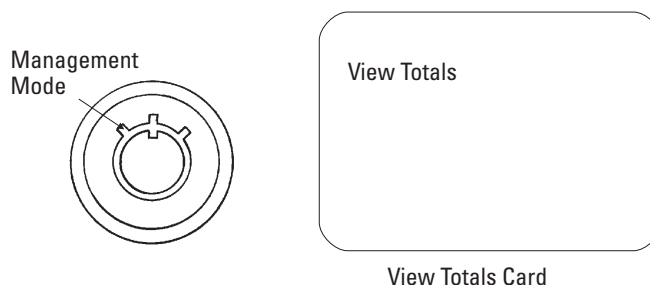


Figure 6-1:

Two Methods of Accessing Management Mode Prompts

Viewing Stored Totals

The "Examine Totals" major loop, which can be accessed with either the Management Key or View Totals Card, allows you to view the information stored about the sum of cash collected and the number of copies made at the Tower.

Note

If you're using RECAP Software, all collection and maintenance of stored totals can be done through that software.

Before You Begin: **EXAMINE TOTALS**

Each minor loop within the "Examine Totals" major loop allows you to view a specific group of totals:

SEE CASH TOTALS. This minor loop allows you to view information about the sum of money collected at the Tower. When you enter this loop, the following totals are displayed:

+ *You should record each of these totals in your manual log as you view them. You can then clear the totals when you get to the end of this minor loop.*

- TOTAL CASH—indicates the total sum of coins and bills collected
- COPY CASH—indicates the sum of coins and bills inserted for copier operations
- RECHARGE CASH—indicates the sum of coins and bills inserted for all add value (RECHARGE) operations whether or not a bonus was given
- BONUS CASH—indicates the sum of cash bonuses encoded on cards
- RECHARGED TOTAL—indicates the total amount encoded on cards during only those add value operations for which a bonus was given (includes base RECHARGE CASH for these operations plus BONUS CASH)
- DOLLAR COUNT—indicates the sum (not just the number) of bills inserted into the Bill Acceptor
- CLEAR CASH TOT—prompts you to clear the totals displayed in the "See Cash Totals" minor loop

SEE COPY TOTALS. This minor loop allows you to view information about the number of copies made at the Tower:

+ *You should record each of these totals in your manual log as you view them. You can then clear the totals when you get to the end of this minor loop.*

- TOTAL COPIES—indicates the total number of copies made
- CASH COPIES—indicates the number of copies made with coins and bills
- BYPASS COPIES—indicates the number of copies made in Bypass Mode
- CARD COPIES—indicates the number of copies made with encoded cards
- DEBIT COPIES—indicates the number of copies made with Debit Cards and (if this Tower deducts from the debit field of Debit-Limit Cards) Debit-Limit Cards.

- LIMIT COPIES—indicates the number of copies made with Limit Cards and (if this Tower deducts from the limit field of Debit-Limit Cards) Debit-Limit Cards.
- CREDIT COPIES—indicates the number of copies made with Credit Cards
- AUX 1 DEBIT TOTAL—indicates the number of Debit Card copies made on the Auxiliary 1 copy channel. (Debit-Limit Card copies are also included in this count if the copy was deducted from the debit portion of the card.)
- AUX 1 CASH TOTAL—indicates the number of cash copies made on the Auxiliary 1 copy channel.
- AUX1 TOTAL COUNT—indicates the total number of copies made on the Auxiliary 1 channel.
- AUX 2 DEBIT TOTAL—indicates the number of Debit Card copies made on the Auxiliary 2 copy channel. (Debit-Limit Card copies are also included in this count if the copy was deducted from the debit portion of the card.)
- AUX2 CASH TOTAL—indicates the number of cash copies made on the Auxiliary 2 copy channel.
- AUX2 TOTAL COUNT—indicates the total number of copies made on the Auxiliary 2 channel.
- TOTAL TRANS—indicates the number of times cards were used for copier access.
- LIMIT COST UNITS—indicates the total number of points deducted from Limit and Debit-Limit Cards.
- USED DEBIT TOTAL—indicates the total monetary value deducted from Debit and Debit-Limit Cards.
- CLEAR COPY TOT—allows you to clear all of the totals displayed in the "Copy Totals" minor loop—as well as the copy totals displayed in the "Site Totals" minor loop, described next.

SEE SITE TOTALS. This minor loop allows you to view totals broken down by Site Code. The following totals are displayed for each Site Code:

+ *You should record each of these totals in your manual log as you view them. You can then clear the totals using the "Clear Cash Totals" and "Clear Copy Totals" functions described in the previous minor loops.*

- RECHARGE CASH
- BONUS CASH
- RECHARGED TOTAL
- DEBIT COPIES
- LIMIT COPIES
- CREDIT COPIES
- LIMIT COST UNITS
- USED DEBIT TOTAL

SEE NR TOTALS. This minor loop allows you to view non-resettable totals (totals that can not be reset to zero). The following totals are displayed:

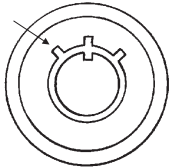
- TOTAL COPIES
- CASH COPIES
- BYPASS COPIES
- CARD COPIES
- DEBIT COPIES
- LIMIT COPIES
- CREDIT COPIES

- TOTAL CASH
- COPY CASH
- RECHARGE CASH
- BONUS CASH
- DOLLAR COUNT

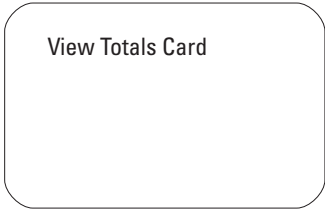
Instructions

To view totals, insert your View Totals Card or turn the Management Keylock to Management Mode. If you inserted your View Totals Card, proceed directly to Step 2.

View Totals



View Totals Card



System Status	User Action
1 Display reads: EXAMINE TOTALS?	Press YES .
2 Display reads: SEE CASH TOTALS?	Press YES .
3 Display reads: TOTAL CASH (for about three seconds) then the total amount of coins and bills collected is displayed.	If you want to redisplay the alphabetic description that preceded this numeric total, press 1 . Press YES to view the next total.
4 Display reads: COPY CASH (for about three seconds) then the total amount of coins and bills collected for copier operations is displayed.	Continue pressing YES (or 1) to redisplay the alphabetic description) until all cash totals have been viewed, at which time you will be prompted to clear these totals.
5 Display reads: CLEAR CASH TOT?	Press YES if you want to clear cash totals. (<i>CAUTION: Activating this function clears ALL cash totals—both the totals just viewed AND the cash totals stored in the "Site Totals" minor loop. Be sure you have recorded each of these totals in your manual log before clearing.</i>) If you do not want to clear cash totals, press NO and skip to Step 8.
6 Display reads: ARE YOU SURE?	Press YES . (Pressing any other key returns you to the <i>previous</i> prompt.)

- | | | |
|----|--|---|
| 7 | Display reads: PRESS THE
3 KEY | Press 3 . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 8 | Display reads: TOTALS ARE
RESET (for about three
seconds) then: SEE COPY
TOTALS? | Press YES . |
| 9 | Display reads: TOTAL
COPIES (for about three
seconds) then the total
number of copies made is
displayed. | If you want to redisplay the alphabetic description that preceded this numeric total, press 1 . Press YES to view the next total. When all totals have been displayed, you are prompted to clear copy totals. |
| 10 | Display reads: CLEAR COPY
TOT? | Press YES if you want to clear copy totals. (<i>CAUTION: Activating this function clears ALL copy totals—both the totals just viewed AND the copy totals stored in the "Site Totals" minor loop. Be sure to record these totals before clearing.</i>) |
| 11 | Display reads: ARE YOU
SURE? | Press YES . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 12 | Display reads: PRESS THE
3 KEY | Press 3 . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 13 | Display reads: TOTALS ARE
RESET (for about three
seconds) then: SEE SITE
TOTALS? | Press YES . |
| 14 | Display reads: S/C nnnn,
where "nnnn" represents the
Site Code for which you are
prompted to view totals. | Press YES . |
| 15 | Display reads: TOTAL
COPIES (for about three
seconds) then the total
number of copies made with
cards encoded with this Site
Code is displayed. | If you want to redisplay the alphabetic description that preceded this numeric total, press 1 . Press YES to view the next total stored for this Site Code. Continue viewing and recording totals for each Site Code until the message NO MORE S/C is displayed. (This indicates that there are no more Site Codes stored by the unit.) |
| 16 | Display reads: ACCOUNT
MAINT? or ENTER SETUP
MODE? | If you are finished with software maintenance tasks and want to exit Management Mode, turn the Management Keylock back to center (Normal Mode) position and store the key in a secure place. |

Maintaining Credit Accounts

The "Account Maintenance" major loop allows you to retrieve Credit Card use information and maintain credit accounts.

Note

If you're using RECAP Software, all account maintenance tasks can be performed through that software.

Before You Begin: **ACCOUNT MAINT?**

Six minor loops within the "Account Maintenance" major loop allow you to perform maintenance tasks.

VIEW ACCOUNTS. This minor loop, which can be accessed with either the Management Key or View Totals Card, permits you to view the copy balance of any or all credit accounts. If you've set your Load Type to either **NEGATIVE VERIFY** or **HOT LIST**, this minor loop will be divided into two sub-loops:

VIEW USE—allows you to view account copy balances.

VIEW VERIFY—permits you to view the list of "bad" (unauthorized) accounts. If a user has attempted to access any of these accounts, a message is displayed after the account number to notify you of this. (**ATTEMPTED USE** is displayed if you set the Load Type to **NEGATIVE VERIFY**; **DISABLED CARD** is displayed if you set the Load Type to **HOT LIST**.)

ADD AN ACCOUNT. Depending on how you've set the Load Type, this minor loop can be used for one of two functions:

If the Load Type is set to either **VERIFY MODE** or **SELF LOAD**, this loop can be used to add or more accounts to Tower memory. (Of course, if **SELF LOAD** is selected, manually adding accounts is not necessary since accounts are automatically added to memory the first time a Credit Card is used.)

If the Load Type is set to either **NEGATIVE VERIFY** or **HOT LIST**, this loop can be used to add one or more accounts to the "bad" (unauthorized) accounts list (the list of accounts not permitted use of this equipment).

DELETE ACCOUNT. Again, how this loop functions depends on how you've set the Load Type:

If set to **VERIFY MODE** or **SELF LOAD**, you can use this loop to mark one or more accounts for deletion from memory. If you mark an *inactive* account (an account with a zero copy balance), that account will be removed immediately. *Active* accounts will be removed whenever you next activate the "Clear Account Balances" minor loop, described next (or when you collect totals using RECAP Software). (Once an account has been marked for deletion, additional copies can not be charged to that account.)

If set to **NEGATIVE VERIFY** or **HOT LIST**, you can remove one or more accounts from the "bad" (unauthorized) accounts list.

CLEAR ACCOUNTS. This minor loop, which can be accessed with either the Management Key or View Totals Card, allows you to clear (reset to zero) all credit account balances. If your Load Type is set to **NEGATIVE VERIFY** or **HOT LIST**, this function also removes the

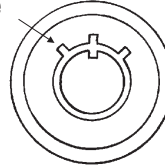
messages displayed in the "View Verify" sub-loop when a user has attempted to access an account.

- + *Be sure to record all balances in your manual log before clearing.*

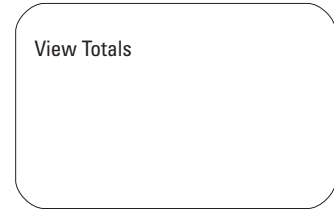
Accessing the "Account Maintenance" Major Loop

Two methods are available for accessing the minor loops within this major loop. Your View Totals Card allows you access to the "View Accounts" and "Clear Accounts" minor loops. Your Management Key allows you access to all of these minor loops.

Management
Mode



View Totals



Using Your Management Key. To access the "Account Maintenance" major loop with your Management Key, insert the key into the Management Keylock, turn it to the far left (Management Mode) position, press **NO** to each prompt displayed until **ACCOUNT MAINT?** appears, then press **YES**. To reach a specific minor loop within this major loop, simply press **NO** to each prompt until the prompt for the desired minor loop is displayed. Instructions for using each minor loop are provided throughout the remainder of this section.

Using Your View Totals Card. If you only need to access the "View Accounts" and/or "Clear Accounts" minor loops, use your View Totals Card. When you insert this card, you are prompted to enter your Administrator Card ID number. Key in this five-digit number, followed by **YES**, then press **NO** to each prompt displayed until **VIEW ACCOUNTS?** appears. Follow the instructions in the next section to view account balances.

Viewing Account Balances

Follow these steps to view account balances.

System Status	User Action
1 Display reads: VIEW ACCOUNTS? or VIEW USE?	Press YES .
2 Tower displays the lowest-numbered account (an asterisk indicates that the account is marked for deletion), then displays the copy balance.	<i>Record the balance in your manual log, then press YES to view the next consecutive account. Continue viewing and recording balances until the message NO MORE is displayed.</i>
+ <i>You can use special function keys to specify an account to view and to redisplay the account number that corresponds to the displayed balance. Press 1 to redisplay an account number. Press 2 to view a specific account (as opposed to viewing the next consecutive account).</i>	
3 Display reads: NO MORE ACCOUNTS (for about three seconds) then: CLEAR ACCOUNTS? (if you inserted a View Totals Card) or VIEW VERIFY? or ADD AN ACCOUNT?	If you are finished with Management Mode tasks, turn the Management Keylock back to center (Normal Mode) position or, if you inserted a View Totals Card, press NO if you do not want to clear accounts.

Viewing the "Bad" Accounts List

Follow these steps to view the accounts on the "bad" (unauthorized) accounts list.

System Status	User Action
1 Display reads: VIEW VERIFY?	Press YES .
2 Tower displays the lowest-numbered account on the list (an asterisk indicates that someone has attempted to use this account).	Press YES to view the next consecutive account. Continue viewing accounts until the message NO MORE is displayed.
+ <i>You can use the special function key 2 to view a specific account (as opposed to viewing the next consecutive account).</i>	
3 Display reads: NO MORE ACCOUNTS (for about three seconds) then: ADD AN ACCOUNT?	If you are finished with Management Mode tasks, turn the Management Keylock back to center (Normal Mode) position or, if you inserted a View Totals Card, press NO if you do not want to clear accounts.

to center (Normal Mode) position, and store the key in a secure place.

Adding Accounts

Follow these instructions to add one or more accounts to memory. (Remember, how you've set the Load Type determines how this minor loop functions, as explained earlier in this section).

- 1 Display reads: ADD AN ACCOUNT? Press .
- 2 Display reads: ENTER AN ACCOUNT *Key in* the account number you want to add (as many as six digits) and press .
- 3 Display reads: ACCOUNT IS ADDED (for about three seconds) then: ADD AN ACCOUNT? If you want to add more accounts, press and repeat Step 2. Otherwise, press .
- 4 Display reads: DELETE ACCOUNT? If you are finished with Management Mode tasks, turn the Management Keylock back to the center (Normal Mode) position, and store the key in a secure place.

Deleting Accounts

Follow these steps to delete one or more accounts from memory. (Remember, how you've set the Load Type determines how this minor loop functions, as explained earlier in this section).

- 1 Display reads: DELETE ACCOUNT? Press .
- 2 Display reads: ENTER AN ACCOUNT *Key in* the account number you want to delete and press .

+ Remember, if you're using this minor loop with a Load Type setting of either VERIFY MODE or SELF LOAD, accounts marked for deletion will be removed from memory the next time you activate the "Clear Account Balances" function (unless the account is inactive, in which case it is deleted immediately). Once marked for deletion, additional copies can not be charged to that account. If you change your mind about deleting an account before it's been removed from memory, you can "unmark" that account simply by using the "Add Accounts" minor loop. When you add an account marked for deletion, that account is returned to its normal state, with its existing copy balance intact.

- 3 Display reads: ARE YOU SURE? Press . (Pressing any other key returns you to the *previous* prompt.)

- | | |
|---|---|
| 4 Display reads: PRESS THE 3 KEY | Press 3 . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 5 Display reads: ACCOUNT DELETED (for about three seconds), then: DELETE ACCOUNT? | If you want to delete more accounts, press YES and repeat Steps 2 through 4. Otherwise, press NO . |
| 6 Display reads: CLEAR ACCOUNTS? | If you are finished with Management Mode, turn the Management Keylock back to center (Normal Mode) position, and store the key in a secure place. |

Clearing All Account Balances

Follow these steps to clear (reset to zero) all account balances.

CAUTION

Be sure you have recorded all account balances in your Manual Log before clearing.

- | | |
|--|--|
| 1 Display reads: CLEAR ACCOUNTS? | Press YES only if you want to reset all account balances to zero. |
| 2 Display reads: ARE YOU SURE? | Press YES . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 3 Display reads: PRESS THE 3 KEY | Press 3 . (Pressing any other key returns you to the <i>previous</i> prompt.) |
| 4 Display reads: TOTALS ARE RESET (for about three seconds) then: ENTER SETUP MODE? | If you are finished with Management Mode, turn the Management Keylock back to the center (Normal Mode) position and store the key in a secure place. (If you inserted a View Totals Card, it will be returned at this time.) |

Global Software Maintenance Functions

The "Initialize Memory" major loop is typically used only once—during initial setup to erase any information that may have been stored during factory testing. However, you may also need to use it for the following post-setup functions:

- to erase Site Codes from memory
- If your Load Type is set to NEGATIVE VERIFY or HOT LIST and the area of Tower memory set aside for storing account usage data becomes full, you will need to use the "Erase" function of this loop to clear this area. *CAUTION: Activating "Erase" deletes everything stored in memory (not just account usage data), as described in "Before You Begin," below. (If your Load Type is set to VERIFY MODE or SELF LOAD, use the "Delete Account" minor loop of the "Account Maintenance" major loop to maintain this portion of memory.)*

Before You Begin: **INITIALIZE MEM?**

CAUTION!!!

Once your Tower has been in use, data should be cleared using other major loops. Because the risk of inadvertently deleting data that you may still need is greater when clearing totals from the "Initialize Memory" major loop, *WE RECOMMEND THAT YOU DO NOT USE THIS LOOP AFTER INITIAL SETUP EXCEPT FOR THE BULLETED FUNCTIONS LISTED ABOVE. Should you ever need to use this loop, carefully read the minor loop descriptions provided below, record all stored data in your manual log, and proceed with caution.*

RESET TOTALS. This minor loop deletes all totals stored in the "Examine Totals," "Account Maintenance," and "RECOVER" major loops:

- all copy totals, including the copy balance stored for each credit account. (Any accounts marked for deletion will be removed at this time. Messages alerting you that a user has attempted to access an account on the unauthorized list will also be removed.)
- all cash collection totals.
- all totals stored about the sum of cash encoded on cards during add value operations.
- all failed write and power down information.

ERASE MEMORY. This minor loop, used for initial setup only, deletes the same information as the "Reset Totals" minor loop, plus:

- all account codes (codes stored in both the account usage and the unauthorized list portions of memory)
- all programmed settings stored for Tower features and options (these are reset to default values)

CLEAR S/C LIST. This minor loop allows you to remove all Site Codes from memory.

Instructions

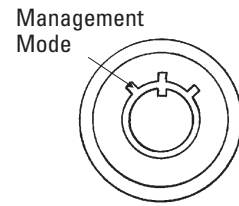
These instructions describe how to remove Site Codes from memory. If you need to use the "Erase" function, refer back to "Initializing the Tower," in Chapter 4.

To remove Site Codes, turn your Management Keylock full left to Management Mode, then follow these steps.

- 1 Display reads: **EXAMINE TOTALS?** Press to each prompt displayed until **INITIALIZE MEM?** appears.
 - 2 Display reads: **INITIALIZE MEM?** Press .
 - 3 Display reads: **RESET TOTALS?** Press to each prompt displayed until **CLEAR S/C LIST?** appears.
- +** Once you delete all Site Codes, you must follow the instructions in Chapter 4 to add Site Codes to memory before any of the Tower's card services can be used again.
- 4 Display reads: **CLEAR S/C LIST?** Press .
 - 5 Display reads: **ARE YOU SURE?** Press . (Pressing any other key returns you to the *previous* prompt.)
 - 6 Display reads: **PRESS THE 3 KEY** Press . (Pressing any other key returns you to the *previous* prompt.)
 - 7 Display reads: **SITE CODES CLEAR**
(for about three seconds),
then: **SEE THE TIME?** If you are finished with Management Mode, turn the Management Keylock back to center (Normal Mode) position, and store the key in a secure place.

Viewing Read After Write and Power Down Data

Though all Towers are designed to provide efficient and reliable service, on occasion, a unit may fail to encode a card with valid data or a sudden power loss may disrupt a cash transaction. The "Examine Recover" major loop allows you to *view*, or *recover*, the data that should have been encoded on the card or the amount of change due a user from a cash transaction.



Before You Begin: **EXAMINE** **RECOVER**

R/W CARD COUNT (Read After Write Card Count) ☐ = ☐. This minor loop, which appears only if Read After Write is enabled, displays the number of times a failed write has occurred.

- + Unlike other stored totals, this count can be cleared only through the "Initialize Memory" major loop. However, as a general rule, you should not use this loop after initial setup. Therefore, we suggest that you record the R/W counts—and the dates on which they were recorded—in your Manual Log. You'll then have no reason to clear this count.

VIEW R/W DATA (View Read After Write Data). This minor loop, which also appears only if Read After Write is enabled, allows you to view the data stored for the last card(s) not properly encoded at the Tower.

Tower model TS/TOWER stores data for the last three cards not properly encoded. All other Tower models store data for the last card not properly encoded.

If you choose to view this data, the following information is displayed:

- Card Serial Number
- Card Type (e.g. Debit, Limit, Debit-Limit, and so on)
- Site Code
- Debit (cash) or Limit (point) Balance
- Account Number (for Credit Cards)

Note

For Tower models other than TS/TOWER, the following information is displayed:
Card Type (e.g. Debit, Limit, Debit-Limit, and so on); Group Code; Debit (cash) or
Limit (point) Balance; and Account Number (for Credit Cards)

- +** If you set the "Write Error Mode" minor loop to hold, or retain, cards during failed writes (as described in Chapter 4), you can recover the card balance when you remove the invalid card from the Card Acceptor. (Instructions for removing cards are provided under the CALL FOR SERVICE error message in Appendix A.)

CLEAR R/W DATA (Clear Read After Write Data). From this minor loop, you can clear the data displayed in the "View R/W Data" minor loop.

- ✚ *Be sure you have recorded this information before clearing it.*

POWER DOWN DATA (View Power Down Data). If AUTO-RESTORE is unable to revalidate a card after a power failure, you can use this loop to view the information stored for that card. This loop also allows you to view the change due a user when a cash copier operation is disrupted by a power failure.

Tower model TS/TOWER stores data for the last three cards not properly encoded. All other Tower models store data for the last card not properly encoded.

If you choose to view this data, the following information is displayed:

- Card Serial Number
- Card Type (e.g. Debit, Limit, Debit-Limit, and so on)
- Site Code
- Debit (cash) or Limit (point) Balance

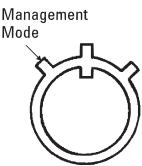
Note

For Tower models other than TS/TOWER, the following information is displayed: Card Type (e.g. Debit, Limit, Debit-Limit, and so on); Group Code; Debit (cash) or Limit (point) Balance; and Account Number (for Credit Cards)

CLR POWER DOWN (Clear Power Down). From this minor loop, you can erase the data displayed in the "Power Down Data" minor loop.

+ Be sure you have recorded this information before clearing it.

Instructions



To view the information stored in the "Examine Recover" major loop, insert your Management Key and turn it counter-clockwise (to the far left position).

System Status	User Action
1 Display reads: EXAMINE TOTALS?	Press NO until EXAMINE RECOVER? appears.
2 Display reads: EXAMINE RECOVER?	Press YES .



Steps 3 - 9 apply to units with card readers only.

3 For TS/TOWER, skip to step 5. For all other models - Display reads: R/W CARD COUNT?	Press YES to view the number of times a failed write has occurred.
4 Display reads: R/W CARD COUNTER (for about three seconds), then the total number of failed writes is displayed.	If you want the Tower to redisplay the alphabetical description that preceded this numeric count, press 1 . Press YES to continue to the next minor loop.

- 5 Display reads: VIEW R/W DATA? Press **YES**. (The following steps assume the data stored is for a Debit Card.)
- 6 Display reads: DEBIT (for about three seconds), then the Site Code and card balance are displayed (also for about three seconds); the VIEW R/W DATA? prompt reappears. If you want to see this data again, press **YES**. When you are finished viewing—and have recorded—the data, press **NO**.  TS units will display card serial number first.

Note

For model TS/TOWER, three buffers are available for card write errors. These buffers allow storing card write errors on three different cards before losing data.

- 7 Display reads: CLEAR R/W DATA? If you want to clear the data viewed in Step 6, press **YES**. (**CAUTION: Be sure you have recorded this information before clearing.**) Otherwise, press **NO** and proceed to Step 10.
- 8 Display reads: ARE YOU SURE? Press **YES**. (Pressing **NO** returns you to the *previous* prompt.)
- 9 Display reads: PRESS THE 3 KEY Press **3**. (Pressing any key other than **3** returns you to the *previous* prompt.)
-
- 10 Display reads: POWER DOWN DATA? Press **YES** to view the data stored during the last power down. (These instructions assume the stored data is for a cash copying session.)
- 11 Display reads: CASH TRANSACTION (for about three seconds), then the change due the user is displayed (also for about three seconds); the POWER DOWN DATA? prompt reappears. If you want to see this data again, press **YES**. When you are finished viewing—and have recorded—the data, press **NO**.  TS units will display card serial number first.
- 12 Display reads: CLR POWER DOWN? If you want to clear the data viewed in Step 11, press **YES**. (**CAUTION: Be sure you have recorded this information before clearing.**) Otherwise, press **NO** and skip to Step 15.
- 13 Display reads: ARE YOU SURE? Press **YES**. (Pressing **NO** returns you to the *previous* prompt.)

- 14 Display reads: PRESS THE 3 KEY Press **3**. (Pressing any key other than **3** returns you to the *previous* prompt.)
- 15 Display reads: PWR DOWN CLEARED
(for about 3 seconds) then: **EXAMINE
TOTALS?** If you are finished with Management Mode, turn the Management Keylock back to the center (Normal Mode) position, and store the Management and T-Bar Lock keys in a secure place.

7

User Instructions

This chapter describes how to use the Tower's vending and add value services. Some form of these instructions (appropriate for your site) should be posted near each Tower. (Post-up instructions and a list of the Display Window messages users may see are included at the end of this chapter.)

Using Coins and Bills to Access the Copier

To use coins or bills, one of these messages must be in the Display Window:

<u>Message</u>	<u>Explanation</u>
READY TO VEND	You can use coins and bills to make copies.
USE EXACT CHANGE	Sufficient coins are not available in the coin tubes to ensure correct change return; use exact change. (Bills are not accepted.)
CANNOT USE BILLS	Use only coins to make copies (exact change is not necessary).
CAN' T ADD VALUE	The Tower can not be used to add value to cards at this time; however, you can still use copier services.

If you see any other messages, you can not use coins or bills to access the copier at this time.

Note

The sum of bills permitted for copier access, as well as the bill denominations accepted by the Tower, depend on the type Bill Acceptance Kit installed and on the change control settings established by the administrator. (Bill denominations greater than \$5.00 are never permitted.)

System Status	User Action
1 Display reads: READY TO VEND, USE EXACT CHANGE, or CANNOT USE BILLS	Insert the currency necessary to make the desired number of copies. (Later, you can insert additional currency if necessary—even while copies are being made.)
2 As you insert currency, the amount inserted appears in the Display.	Use the copier as normal to make copies. As copies are made, your decreasing cash balance is shown. (If the balance falls below the minimum balance required, the session is ended.) When finished making copies, press the red Complete Button.

Using Cards to Access the Copier

To use cards for copier access, one of the following messages must be displayed:

<u>Message</u>	<u>Explanation</u>
READY TO VEND	You can use cards to make copies.
USE EXACT CHANGE	Sufficient coins are not available in the coin tubes to ensure correct change return. Use your card as normal to make copies.
ONLY USE CARDS	Although coins and bills are not accepted at this time, you can use your card as normal to make copies.
CANNOT USE BILLS	Although bills are not accepted at this time, you can use your card as normal to make copies.
CAN'T ADD VALUE	The Tower can not be used to add value to cards at this time; however, you can still use copier services.

If any other message is displayed, you can not use cards for copier access at this time.

System Status	User Action
1 Display Window reads: READY TO VEND , USE EXACT CHANGE , ONLY USE CARDS, CANNOT USE BILLS, or CAN/T ADD VALUE.	Insert your card, (Magnetic Stripe Card Tower) face up, magnetic stripe down and to the right, (Smart Card Tower) face up, metallic chip up and away from you into the Tower.
2 The Tower activates the copier and displays the current card or account balance.	Use the copier as normal to make copies. As copies are made, your changing balance is shown. (If the balance falls below the minimum required, the session is ended and your card, returned.) When finished making copies, press the Complete or Coin Return Button.
3 After a few seconds, the Tower returns your card.	Remove your card from the Tower.

Using the Add Value Service of the Tower



At any time after you purchase a Debit or a Debit-Limit Card or a smart card, you can increase the cash value encoded on the card by using the unique add value feature.

Notes

- *The TWR/BAK bill acceptor accepts \$1 through \$20 bills. Previous bill acceptors limited which bills were accepted.*
- *The maximum value permitted on a Debit Card (the Card Maximum) is controlled by the system administrator. Cards with values greater than the programmed Card Maximum are not accepted. If a card reaches its maximum during the add value operation, additional bills and coins are not accepted.*
- *Debit-Limit Cards can only be recharged if the Tower's Debit-Limit Mode is programmed for Debit.*

System Status

User Action

1 To add value, the Display Window must read: READY TO VEND, USE EXACT CHANGE, or CANNOT USE BILLS.

Insert your card,

(Magnetic Stripe Card Tower)
face up, magnetic stripe down and to the right,

(Smart Card Tower)
face up, metallic chip up and away from you

into the Tower.

2 The Tower displays the current card balance.

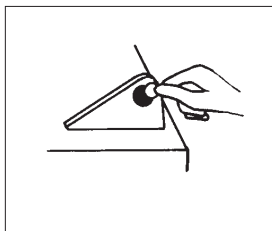
Insert coins and/or bills to increase this value. The increasing balance is displayed. When finished, press either the red Complete Button or Coin Return Button.

3 The Tower returns your card.

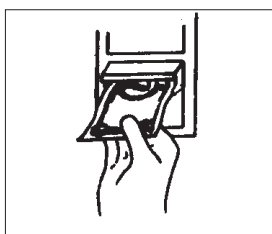
Remove your card.



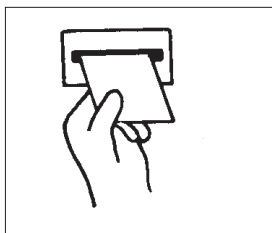
To Make Copies:



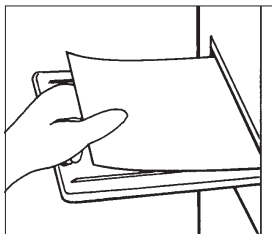
1. Insert coins . . .



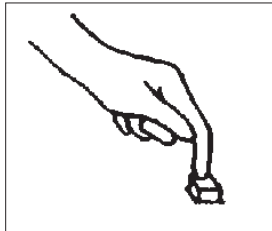
or insert bills . . .



or insert card, magnetic stripe
down and to the right.
or
metallic chip up and away from
you

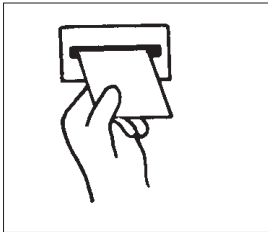


2. Make copies as normal.

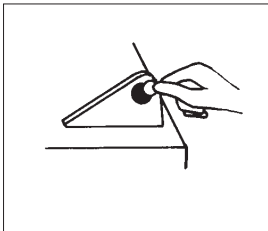


3. Press red Complete Button when
finished.

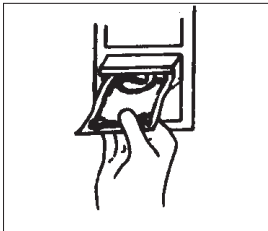
To Add Value to a Debit or Debit-Limit Card:



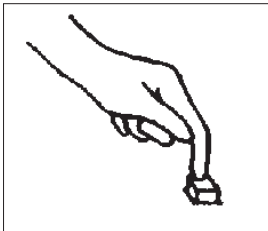
1. Insert card, magnetic stripe down and to the right
or
metallic chip up and away from you.



2. Insert coins . . .



or insert bills.



3. Press red Complete Button
when finished.

User Display Window Messages

ACCESS DENIED	You can not charge copies against your account at this Tower. Try another unit or contact your vending system administrator.
ACNT IS DENIED	Your credit account has been marked for deletion. You can not use this card to make copies.
ACCOUNT IS FULL	Your account balance has reached its maximum copy limit. Additional copies can not be made.
BAD DATA ON CARD	The Tower was unable to properly encode your card. Press the red Complete Button to have the Tower return your card and report the problem to your vending system administrator.
BUSY PLEASE WAIT	Data is being transmitted between the Tower and RECAP Software. You can not use the Tower at this time.
CALL FOR SERVICE	The Tower was unable to properly encode your card. You will be unable to remove the card from the Tower. Notify the vending system administrator.
CANT ADD VALUE	The add value services of this unit can not be used at the present time. Notify your vending system administrator.
CANNOT USE BILLS	The Bill Acceptor has failed. You can use only coins and cards to make copies.
CARD IS EXPIRED	Your card has reached its expiration date; access denied.
CARD IS JAMMED	Something is jammed in the Card Reader. Push the red Complete Button to try to clear the reader. If the message persists, report it to the vending system administrator. DO NOT USE CARDS AT THIS TOWER UNTIL THE PROBLEM HAS BEEN RESOLVED.
CARD MAX	Either you inserted a card encoded with a cash value higher than the Card Maximum permitted at this Tower OR you attempted to add more value to your card than this Tower permits. Press the red Complete Button to have the Tower return your card. (Card Maximums should be posted near each Tower.)
CARD UNREADABLE	A card has been damaged, altered, or inserted incorrectly. Retry the operation. If the problem persists, report it to your vending system administrator.
CHECK MODEM	You can not use the Tower at this time. Notify your vending system administrator.
COPY REQUIRED	You can not receive change until you have made at least one copy.
DATA IS CORRUPT	The data encoded on your card is in an invalid format. Report the problem to your vending system administrator.
DISABLED	This Tower can not be used at the present time. Notify your vending system administrator of the problem.
DO NOT USE COINS	The coin mechanism has failed. You can use either bills or cards to make copies. However, if bills are used, change will not be returned.

INVALID DATA	The Tower was unable to encode your card with valid data (press the red Complete Button to have the Tower return the card) or the Credit Card inserted has been placed on an unauthorized accounts list (the Tower has been instructed to invalidate your card).
INVALID S/C	The Site Code encoded on your card does not match a Site Code programmed into unit memory; access denied.
INVALIDATED CARD	The card inserted has been invalidated by a power failure. Report the problem to your vending system administrator.
NO MORE ROOM	Tower memory is full. Your account number can not be added; access denied. Use your card at some other Tower and report the problem to your vending system administrator.
ONLY USE CARDS	There is a malfunction with the coin mechanism. Use only cards to make copies; bills are not accepted.
RE - INSERT FIRMLY	The card was not pushed far enough into the Card Reader. Apply more pressure as you insert the card.
USE EXACT CHANGE	The coin tubes do not have sufficient coins to ensure correct change return. Bills are not accepted. Use exact change or cards to make copies. (Change may not be returned if excess coins are used.)
READY TO VEND	The Tower is working normally. Insert coins, bills, or (as appropriate for the Tower) magnetically encoded or smart card to make copies.

A Display Window Messages

This appendix is divided into three sections that provide explanations of and instructions for responding to the various error messages that may appear in the Display Window:

The first section lists those error conditions that appear when you first put the Tower into Management Mode after an error occurs.

The second section lists alphabetically all of the error messages that may appear in the display.

The third section is a post-up list of the error messages that may appear during administrative use of the Tower.

- + *A post-up list of the error messages that may appear when users are at the Tower is provided in Chapter 7. Post these messages near each Tower to help users solve problems without consulting you or your staff.*

Many error messages take care of themselves if you just attempt the same action again. If you have a card-accepting Tower and an error message persists, try to determine whether the message is created by a problem with the card or the Tower. Replace faulty cards or call your service representative or authorized Schlumberger dealer to correct problems with your Tower.

Error Conditions

Some errors occur when the Control Board detects a malfunction with a particular Tower component. These are often transient malfunctions, however, and you should follow the suggested corrective action before calling your dealer or service representative.

Below are those error conditions that may be displayed when you first put the Tower into Management Mode after an error occurs. Determine the error code number after every message that indicates a malfunction with a Tower component. After you record the number (and the circumstances surrounding the error, if possible), press the red Complete Button to clear the error code.

If the error code reappears, contact your dealer or service representative.

Error 0	Unexpected coin tube status.
Error 1	Communication is not possible with Coin Changer.
Error 2	Communication is not possible with Bill Acceptor.
Error 3	Unexpected coin message.
Error 4	Copier hung.
Error 5	Bill Acceptor failure.
Error 6	Bill Stacker is full.
Error 7	Bill Acceptor did not acknowledge return of currency to user.
Error 8	Bill Acceptor did not acknowledge inserted currency.
Error 9	Coin Acceptor signal did not go "ON" as expected.
Error A	Coin Acceptor signal did not go "OFF" as expected.
Error B	Bill Acceptor signal did not go "OFF" as expected.
Error C	Bill Acceptor signal did not go "ON" as expected.
Error D	No communication response from Bill Acceptor.
Error E	No communication response from Coin Changer.

Full List of Display Window Messages

ACNT IS DENIED	<i>Explanation:</i> This account is on the "bad" (unauthorized) account list. <i>Action:</i> No action required. (If you want to allow use of this account, you must remove it from the unauthorized list. (Refer to the "Maintaining Credit Accounts" section of Chapter 6 for instructions.)
ACCOUNT IS FULL	<i>Explanation:</i> The account has reached its maximum balance of 799,999 copies. Additional copies can not be made. <i>Action:</i> Reset the account balance to zero. (Refer to the "Maintaining Credit Accounts" section of Chapter 6.)
BAD DATA ON CARD	<i>Explanation:</i> The data written to the card by the Tower was found to be invalid when the system read the information back. <i>Action:</i> Use the "Examine RECOVER" major loop (described in Chapter 6) to view and record the data that should have been encoded on the card. If you have a Card-access Terminal with Encoder Capability at your site, use that unit to re-encode the card with the appropriate data.
BAD LIMIT COST	<i>Explanation:</i> An invalid entry was made. A value between 1 and 99 must be entered. <i>Action:</i> Retry the entry with an appropriate value.
BATTERY IS LOW	<i>Explanation:</i> The battery on the Control Board needs to be replaced (although the Tower will continue to operate normally for as long as AC power is supplied). <i>Action:</i> Call your dealer or service representative immediately for assistance. IF A POWER FAILURE OCCURS OR IF YOU REMOVE AC POWER, ALL DATA STORED IN THE TOWER WILL BE LOST! (Because replacing the battery requires that you remove power, be sure to collect or record all data before replacing the battery.)
BUSY PLEASE WAIT	<i>Explanation:</i> Data is being transmitted between the Tower and optional RECAP Software. You can not use the Tower at this time. <i>Action:</i> No action required.
CALL FOR SERVICE	<i>Explanation:</i> The Read After Write feature detected an invalidly encoded card. The Tower will hold this card until an authorized staff member comes to retrieve it. <i>Action:</i> To retrieve the card, place the Management Keylock in the far left (Management Mode) position. The Tower returns the card and displays the card balance [for 60 seconds or until you return the Management Keylock to center (Normal Mode) position]. (If you forget to record this balance before it is cleared from the screen, use the "RECOVER" major loop to re-view the balance. Instructions for using "RECOVER" are provided in Chapter 6.)

CANNOT USE BILLS	<i>Explanation:</i> The Bill Acceptor has failed and will not accept bills. <i>Action:</i> Use coins and (if applicable) encoded cards at this unit. Call your dealer or service representative.
CANT ADD VALUE	<i>Explanation:</i> The Auto Power Loss Disable feature has "locked" (disabled) the add value services of this unit. <i>Action:</i> To restore the Tower to normal operation, insert a Set Site Code Card that matches one of the Site Codes stored by the unit.
CARD IS EXPIRED	<i>Explanation:</i> An administrator or Credit Card has reached its expiration date. <i>Action:</i> Expired administrator cards must be re-ordered. If you have a Card-access Terminal with Encoder Capability at your site, you can use that unit to re-encode expired Credit Cards.
CARD IS JAMMED	<i>Explanation:</i> Something is jammed in the Card Reader. <i>Action:</i> Push the Complete Button to try to clear the reader and/or call your dealer or service representative for assistance. DO NOT USE CARDS AT THIS TOWER UNTIL THE PROBLEM HAS BEEN RESOLVED.
CARD MAXIMUM	<i>Explanation:</i> The card inserted is encoded with a cash value higher than the Card Maximum allowed at this Tower, or a user has attempted to use add value services to encode a card with a value higher than the Card Maximum. <i>Action:</i> Press the red Complete Button to end an add value operation and have the Tower return the user's card. (Be sure to post Card Maximums near each unit so that users know the allowed maximums.)
CARD UNREADABLE	<i>Explanation:</i> A card has been damaged, altered, or inserted incorrectly. <i>Action:</i> Retry the operation; if necessary, replace the card.
CARD WAS REMOVED	<i>Explanation:</i> Card was removed before action was complete. <i>Action:</i> Re-insert the card to check for invalid data.
CHECK MODEM	<i>Explanation:</i> Modem did not respond to commands. <i>Action:</i> Check modem settings, cables, and power.

COMMUNICATION ERR	<i>Explanation:</i> Communications Error. Communications between the Tower and RECAP Software have been interrupted. <i>Action:</i> For information on RECAP operations, refer to the manual provided with that software.
COPIER LINE HUNG	<i>Explanation:</i> The copy signal has been active for too long. <i>Action:</i> Check for copier jams. Check cables.
COPY REQUIRED	<i>Explanation:</i> The user can not receive change until he has made at least one copy. <i>Action:</i> Make a copy. (If you would like this Tower to be used as a convenient change maker, use the DIP switches, described in Chapter 3, to reset change control features.)
DATA IS CORRUPT	<i>Explanation:</i> The data encoded on the card is in an invalid format. <i>Action:</i> If you have a Card-access Terminal with the Encoder Capability, attempt to re-encode card. If necessary, issue a new card.
DISABLED	<i>Explanation:</i> The Auto Power Loss Disable feature has "locked" (disabled) user services at this unit. <i>Action:</i> To restore the Tower to normal operation, insert a Set Site Code Card that matches one of the Site Codes already stored by the unit.
DO NOT USE COINS	<i>Explanation:</i> The Coin Changer has failed. This message appears if, at power up, the Tower does not recognize that a Coin Changer is in place. <i>Action:</i> Though you can use both cards and bills to make copies, if bills are used, change will not be returned. Call service.
DUPLICATE ACNT	<i>Explanation:</i> Duplicate Account. You tried to add an account that is already stored in memory. <i>Action:</i> Duplicate accounts are not permitted. (Check that you are adding the account to the correct Tower and that you have not assigned the same account code to two separate users.)
INVALID ACCOUNT	<i>Explanation:</i> You tried to view a credit account not stored in memory. <i>Action:</i> Double check that you have the correct account number and that you are at the appropriate Tower. If necessary, add the account to the Tower.
INVALID CARD ID	<i>Explanation:</i> You entered an incorrect Administrator Card ID number. <i>Action:</i> Retry entering the number.

INVALID DATA	<i>Explanation:</i> The Tower was unable to encode the card with valid data, or a Credit Card on the unauthorized accounts list was inserted and invalidated. <i>Action:</i> If the Tower was unable to encode the card with valid data, press the red Complete Button to have the Tower return the card. Use the "Examine RECOVER" major loop to view and record the data which should have been encoded on the card. If you have a Card-access Terminal with the Encoder Capability, you can re-encode that card to its appropriate balance. Otherwise, issue a new card. If the Tower invalidated a Credit Card, no further action is required. (Refer back to the Load Type discussion in Chapter 3 if you need further explanation.)
INVALID DATE	<i>Explanation:</i> You entered an invalid date. <i>Action:</i> Enter the correct date. (The valid format for clock settings is MM/DD; for instance 02/16 for February 16. The valid format for expiration dates is MM/YY; for instance 04/94 for April 1994.)
INVALID DAY SET	<i>Explanation:</i> You entered an invalid day. <i>Action:</i> Enter the correct day.
INVALID S/C	<i>Explanation:</i> The Site Code encoded on the card does not match a Site Code stored in memory. This card can not be used at this Tower. <i>Action:</i> Only cards encoded with Site Codes that match a code stored by the Tower are accepted. To add Site Code to Tower memory, follow the instructions provided in Chapter 3.
INVALID TIME	<i>Explanation:</i> You entered an invalid time. <i>Action:</i> Enter the correct time. The valid format for times is HHMM, and they should be entered in military (24-hour) format; for instance, 13:30 for 1:30 PM.
INVALIDATED CARD	<i>Explanation:</i> A card invalidated by a power failure has been inserted. <i>Action:</i> Use the "Examine RECOVER" major loop, described in Chapter 6, to retrieve the information that was lost during the power failure.
MEMORY CORRUPTED	<i>Explanation:</i> The battery-backed memory failed. <i>Action:</i> Reset Tower features and call service.
NO DATA STORED	<i>Explanation:</i> No data is stored for a failed write or power failure. <i>Action:</i> No action required.

NO MORE LEFT	<i>Explanation:</i> You tried to enter too many timed values. <i>Action:</i> Do not enter any more times.
NO MORE ROOM	<i>Explanation:</i> Tower memory is full. No new accounts can be added. <i>Action:</i> Delete unnecessary accounts.
ONLY USE CARDS	<i>Explanation:</i> There is a malfunction with the Coin Changer. <i>Action:</i> Use only cards to make copies; coins and bills are not accepted. (This message appears if the coin mechanism malfunction occurred while the Tower was powered on.) Call service.
*READY TO VEND	<i>Explanation:</i>  Applies to Towers with the TS/CRK and P/CRK only. The SAM is low. <i>Action:</i> Replace the SAM chip as soon as possible.
READY TO VEND*	<i>Explanation:</i>  Applies to Towers with the TS/CRK only. The Transaction Log is 90% filled. <i>Action:</i> Collect Transaction Data using RECAP software
RE - INSERT FIRMLY	<i>Explanation:</i> The card was not pushed far enough into the Card Reader. <i>Action:</i> Apply more pressure as you insert the card.
USE EXACT CHANGE	<i>Explanation:</i> The coin tubes do not have sufficient coins to ensure correct change return. Bills are not accepted when this message is displayed. <i>Action:</i> Users should use exact change or cards to make copies. (Change may not be returned if excess coins are inserted.)
*USE EXACT CHNG	<i>Explanation:</i>  Applies to Towers with the TS/CRK and P/CRK only. The SAM is low and the coin tubes do not have sufficient coins to ensure correct change return. Bills are not accepted when this message is displayed. <i>Action:</i> Replace the SAM chip as soon as possible. Users should use exact change or cards to make copies. (Change may not be returned if excess coins are inserted.)
USE EXACT CHNG*	<i>Explanation:</i>  Applies to Towers with the TS/CRK only. The Transaction Log is 90% filled and the coin tubes do not have sufficient coins to ensure correct change return. Bills are not accepted when this message is displayed. <i>Action:</i> Collect Transaction Data using RECAP software. Users should use exact change or cards to make copies. (Change may not be returned if excess coins are inserted.)

Administrative Display Window Messages

ACCESS DENIED	<i>Explanation:</i> The card inserted is used for a function not active at Towers. <i>Action:</i> Use the card at the appropriate machine.
BATTERY IS LOW	<i>Explanation:</i> The battery on the Control Board needs to be replaced (although the Tower will continue to operate normally for as long as AC power is supplied). <i>Action:</i> Call your dealer or service representative immediately for assistance. IF A POWER FAILURE OCCURS OR IF YOU REMOVE AC POWER, ALL DATA STORED IN THE TOWER WILL BE LOST! (Because replacing the battery requires that you remove power, be sure to collect or record all data before replacing the battery.)
BUSY PLEASE WAIT	<i>Explanation:</i> Data is being transmitted between the Tower and optional RECAP Software. The Tower can not be used at this time. <i>Action:</i> No action required.
CANT ADD VALUE	<i>Explanation:</i> The Auto Power Loss Disable feature has "locked" (disabled) the add value services of this unit. (Access to administrative functions has also been disabled.) <i>Action:</i> To restore the Tower to normal operation, insert a Set Site Code Card that matches one of the Site Codes stored by the unit.
CARD IS EXPIRED	<i>Explanation:</i> Your administrator card has reached its expiration date. <i>Action:</i> Contact your authorized Schlumberger dealer to order a new card.
CARD IS JAMMED	<i>Explanation:</i> Something is jammed in the Card Reader. <i>Action:</i> Push the Complete Button to try to clear the reader and/or call your dealer or service representative for assistance. DO NOT USE CARDS AT THIS TOWER UNTIL THE PROBLEM HAS BEEN RESOLVED.
CARD UNREADABLE	<i>Explanation:</i> A card has been damaged, altered, or inserted incorrectly. <i>Action:</i> Retry the operation; if necessary, replace the card.
CHECK MODEM	<i>Explanation:</i> Modem did not respond to commands. <i>Action:</i> Check modem settings, cables, and power.
COMMUNICATION ERR	<i>Explanation:</i> Communications Error. Communications between the Tower and RECAP Software have been interrupted. <i>Action:</i> For information on RECAP operations, refer to the manual provided with that software.
DATA IS CORRUPT	<i>Explanation:</i> The data encoded on the card is in an invalid format. <i>Action:</i> Replace the card.

Invalid EQN syntax: DISABLED	<i>Explanation:</i> The Auto Power Loss Disable feature has "locked" (disabled) user and services at this unit. (Access to administrative functions is also disabled.) <i>Action:</i> To restore the Tower to normal operation, insert a Set Site Code Card that matches one of the Site Codes already stored by the unit.
DO NOT USE COINS	<i>Explanation:</i> The Coin Mechanism has failed. This message appears if, at the time of powering up the Tower, the system does not recognize that a coin mechanism is in place. <i>Action:</i> Though both cards and bills can still be used to make copies, if bills are used, change will not be returned. Call service.
DUPLICATE ACNT	<i>Explanation:</i> Duplicate Account. You tried to add an account that is already stored in memory. <i>Action:</i> Duplicate accounts are not permitted. (Check that you are adding the account to the correct Tower and that you have not assigned the same account number to two separate users.)
INVALID ACCOUNT	<i>Explanation:</i> You tried to view a credit account not stored in memory. <i>Action:</i> Double check that you have the correct account number and are at the appropriate Tower. If necessary, add the account to the Tower.
INVALID CARD ID	<i>Explanation:</i> You entered an incorrect Administrator Card ID number. <i>Action:</i> Retry entering the number.
INVALID DATE	<i>Explanation:</i> You entered an invalid date. <i>Action:</i> Enter the correct date. (The valid format for clock settings is MM/DD; for instance 02/16 for February 16. The valid format for expiration dates is MM/YY; for instance 04/93 for April 1993.)
INVALID DAY SET	<i>Explanation:</i> You entered an invalid day. <i>Action:</i> Enter the correct day.

INVALID S/C	<i>Explanation:</i> The Site Code encoded on the card does not match a Site Code stored in unit memory. <i>Action:</i> Only cards encoded with Site Codes that match a code stored by the Tower can be used. If you need to add a Site Code to the Tower, follow the instructions in Chapter 3 to do so.
INVALID TIME	<i>Explanation:</i> You entered an invalid time. <i>Action:</i> Enter the correct time. The valid format for times is HHMM, and the time must be entered in military (24-hour) format; for instance, 14:40 for 2:40 PM.
MEMORY CORRUPTED	<i>Explanation:</i> The battery-backed memory failed. <i>Action:</i> Reset Tower features and call service .
NO DATA STORED	<i>Explanation:</i> No data is stored for a failed write or power failure. <i>Action:</i> No action required.
NO MORE LEFT	<i>Explanation:</i> You tried to enter too many timed values. <i>Action:</i> Do not enter any more times.
NO MORE ROOM	<i>Explanation:</i> Tower memory is full. No new accounts can be added. <i>Action:</i> Delete unnecessary accounts.
RE - INSERT FIRMLY	<i>Explanation:</i> The card was not pushed far enough into the Card Reader. <i>Action:</i> Apply more pressure as you insert the card.

B A Quick Reference Guide to Management Mode Prompts

This appendix provides a quick reference guide to the prompts and information displayed in Management Mode. Detailed explanations of these prompts and step-by-step instructions for responding to prompts are provided in the appropriate chapters of this guide.

Read these notes before attempting to use this appendix:

- The default settings for features in the "Setup" and "Communications Setup" major loops are shown in bold type.
- An asterisk (*) appears next to prompts that require more than just a "yes/no" response (e.g. prompts that require you to key in information, such as a cost per copy).
-  next to a prompt indicates that the loop applies to TS/TOWERS only.
-  next to a prompt indicates that the loop applies to all smart and magnetic card Towers *except* TS/TOWERS.

Major LoopsMinor Loops

EXAMINE TOT? (See Totals) allows you to view information about the sum of money collected and the number of copies made.	SEE CASH TOTALS?	TOTAL CASH
	CAUTION: Be sure to record these cash totals, as well as the cash totals displayed in the "Site Totals" minor loop, before activating the "Clear Cash Totals" function.	COPY CASH RECHARGE CASH BONUS CASH RECHARGED TOTAL DOLLAR COUNT CLEAR CASH TOTALS?
	SEE COPY TOTALS	TOTAL COPIES
	CAUTION: Be sure to record these copy totals in your manual log before activating the "Clear Copy Totals" function.	CASH COPIES BYPASS COPIES CARD COPIES DEBIT COPIES LIMIT COPIES CREDIT COPIES AUX1 DEBIT TOTAL AUX1 CASH TOTAL AUX1 TOTAL COUNT AUX2 DEBIT TOTAL AUX2 CASH TOTAL AUX2 TOTAL COUNT TOTAL TRANS LIMIT COST UNITS USED DEBIT TOTAL CLEAR COPY TOTALS?
	SEE SITE TOTALS?	S/C nnnn
	NOTE: Be sure to record these site totals in your manual log. After recording, use the "Clear Cash Totals" function of the "Cash Totals" minor loop to reset	S/C nnnn • • Additional Site Codes • NO MORE DEFINED

	SEE NR TOTALS ?	TOTAL COPIES
	NOTE: Be sure to record these non-resettable totals—along with the dates on which they were recorded—in your manual log.	CASH COPIES
		BYPASS COPIES
		CARD COPIES
		DEBIT COPIES
		LIMIT COPIES
		CREDIT COPIES
		TOTAL CASH
		COPY CASH
		RECHARGE CASH
		BONUS CASH
		DOLLAR COUNT
ACCOUNT MAINT?(Account Maintenance) allows you to view account balances and maintain credit accounts.	VIEW ACCOUNTS?	ACCOUNT nnnnnnn
		BALANCE T nnnnnnn
	OR	
	VIEW ACCOUNTS? (IF LOAD TYPE IS NEGATIVE VERIFY OR HOT LIST)	VIEW USE ACCOUNT nnnnnnn BALANCE T nnnnnnn
		VIEW VERIFY ACCOUNT nnnnnnn ATTEMPTED USE DISABLE CARD
	ADD AN ACCOUNT?	ENTER AN ACCOUNT
		ACCOUNT nnnnnnn ACCOUNT IS ADDED
	DELETE ACCOUNT?	ENTER AN ACCOUNT
		ACCOUNT nnnnnnn ARE YOU SURE? PRESS THE 3 KEY

	CLEAR ACCOUNTS?	ARE YOU SURE?
		PRESS THE 3 KEY
ENTER SETUP MODE? allows you to program TOWER features.	MACHINE ID?	MACH ID 00000000
	SET CARD COST?	S/C nnnn
		S/C nnnn
		• • Additional Site Codes •
		NO MORE DEFINED
	MIN CARD VALUE?	\$0.100
	SET CASH COST?	\$0.10
	MIN CASH VALUE?	\$0.10
	AUX SIGNALING?	NONE
AUX1 and AUX2 COST prompts will not display unless AUX SIGNALING is turned on		EARLY LEVEL MODE
		PULSE MODE
		SELECTIVE MODE
SET AUX1 COST		SET CARD COST?
		SET CASH COST?
SET AUX2 COST		SET CARD COST?
		SET CASH COST?
CARD MAXIMUM?		VALUE IS \$nn.nn
		\$5.00 MAXIMUM
		\$10.00 MAXIMUM
		\$20.00 MAXIMUM

	\$50.00 MAXIMUM
	\$99.00 MAXIMUM
	\$300.00 MAXIMUM
	\$500.00 MAXIMUM
	\$750.00 MAXIMUM
	\$999.00 MAXIMUM
SET BONUS MODE?	NORMAL MODE (Disabled)
	TOTALS BILLS MODE
	SINGLE BILL MODE?
SET BONUS LEVEL	\$1 LEVEL \$1.00 *
	\$5 LEVEL \$5.00 *
	\$10 LEVEL \$10.00 *
	\$20 LEVEL \$20.00 *
	\$50 LEVEL \$50.00 *
EXPIRATION DATE?	DISABLED
	ENABLED
SET EXP DATE?	EXP DATE 99/99
CMP BUTTON TIME?	CMP BUTTON 0
	CMP BUTTON NORML
SET EXIT DELAY?	3 SECONDS *
RELAY DROP TIME?	0.0 SECONDS *

NOTE:  firmware rev. K and earlier. The Relay Drop Time is selected by keying in a number from 0 through 9:

0 = 0.0 sec	5 = 2.5 sec
1 = 0.5 sec	6 = 3.0 sec
2 = 1.0 sec	7 = 3.5 sec
3 = 1.5 sec	8 = 4.0 sec
4 = 2.0 sec	9 = 5.0 sec

NOTE:  (all) and  firmware rev L and later. The Relay Drop Time, 00.0 to 25.5 seconds, is entered using the keypad.

ENTER COMM SETUP? (<i>Communications Setup</i>) allows you to prepare the unit for communication with the optional PC software, RECAP.	CHANGE TIMEOUT?	TIMEOUT 30 SECS
		TIMEOUT 60 SECS
		TIMEOUT 90 SECS
		TIMEOUT 120 SECS
		TIMEOUT NONE
	COPY BLIND TIME?	0.0 SECS
	CHOOSE EXIT BEEP?	EXIT BEEP ONLY
		EXIT AND 15 SEC
		BEEP INACTIVE
	KEYBOARD TONE?	ENABLED
		DISABLED
	ENTER LOAD TYPE?	VERIFY MODE
		SELF LOAD MODE
		NEGATIVE VERIFY
		HOT-LIST
	DEB/LIM MODE?	DEBIT MODE
		LIMIT MODE
	WRITE ERR MODE?	RETAIN MODE
		WARNING MODE
	PROTOCOL 	RECAP2
		RECAP3
	SET TERM ADDR	000 *
	SET SECURITY ID	00000000 *

CAUTION: To prevent the loss of valuable data, we recommend that you always record stored totals in your manual log before activating any of the functions in the "Initialization" major loop.

SET BAUD RATE	2400
	9600
	300
	1200
SET COMM PARITY?	EVEN
Note: The TS/TOWER parity is always EVEN. The Parity Minor Loop is not used with the TS/TOWER.	ZERO
	ODD
	ONE
CONNECTION TYPE?	DIRECT
	MODEM
	MUL DROP
MONITOR?	OFF
	ON
COMM LOOP TEST?	<i>Contact Customer Support if required</i>

AUTO DISABLE? (*Auto Power Loss Disable*) allows you to program how the Auto Power Loss Disable feature works.

OFF (Disabled)

RECHARGE ONLY

COMPLETE DISABLE

AUTO DISABLE TM (*Auto Power Loss Disable Time*) allows you to specify the number of minutes until lockup when the Auto Power Loss Disable feature is enabled.

01 MINUTE *

SEE THE TIME? allows you to view the currently stored date, time, and day of the week.

DAY DISPLAYED

TIME DISPLAYED

DATE DISPLAYED

SET THE CLOCK? allows you to program the unit clock with the current time, date, and day of the week.	SET THE TIME	00-00 *
	SET THE DATE	00/00/00 *
	SET THE DAY	SUNDAY
		MONDAY
		TUESDAY
		WEDNESDAY
		THURSDAY
		FRIDAY
		SATURDAY
INITIALIZE MEM? (<i>Initialization</i>) allows you to erase activity totals, settings for features and options, and/or Site Codes from unit memory. <u>CAUTION:</u> To prevent the loss of valuable data, it is recommended that you do not use this loop after initial setup. (Most any of the information that you will need to delete as a part of periodic maintenance functions can be deleted from other major loops, where the risk of inadvertently deleting data you may still need is greatly reduced.)	CLEAR MEMORY	ARE YOU SURE?
		PRESS THE 3 KEY
		MEMORY CLEARED
	ERASE MEMORY	ARE YOU SURE?
		PRESS THE 3 KEY
		MEMORY CLEARED
	CLEAR SITE CODES	ARE YOU SURE?
		PRESS THE 3 KEY
		MEMORY CLEARED

EXAMINE RECOVER? <i>(Recover Lost Data)</i> allows you to view the data stored by the unit in the event of a failed write or power failure.	R/W CARD COUNT 	R/W CARD COUNTER
	SEE R/W DATA 	NO VIEW (or) Card Type
		Card Value Card Site Code
	SEE R/W DATA 	Card Serial Number
		Group Code Card Value
	CLEAR R/W DATA	ARE YOU SURE?
		PRESS THE 3 KEY
		MEMORY CLEARED
	SEE POWER DOWN	NO DATA (or) Card Type
		Card Value Card Site Code
	POWER DOWN DATA	Card Serial Number (all zeros for cash transaction) Transaction Type DEBIT CARD or LIMIT CARD or CASH TRANSACTION
		Group Code (all zeros for cash transaction) Card Value
	CLEAR POWER DOWN	ARE YOU SURE?
		PRESS THE 3 KEY
		MEMORY CLEARED

Glossary

Add Value Capability	A feature of card-accepting Towers that allows users to increase the monetary value encoded on a card's debit stripe. (Properly equipped Card Dispensers also have this feature.)
Administrator Cards	A group of encoded cards used to access the setup, administrative, and maintenance routines of Schlumberger vending products. Included within this card group are <i>Set Site Code (G/C)</i> , <i>Management</i> , <i>View Totals</i> , <i>Make Limit</i> , <i>Make Debit</i> , <i>Make Debit-Limit</i> , and <i>Make Credit</i> Cards. (Set G/C and View Totals Cards are the only administrator cards used with Towers.)
Administrator Card ID Number	A factory-assigned number that is encoded onto all administrator cards to prevent unauthorized use of these cards. When an administrator card is inserted into a vending unit, the unit prompts for this number. If the number entered does not match the number encoded on the card, access to administrative functions is denied.
ALLCARD Card	A card designed for use within an ALLCARD System. Typically, these systems are found on college and university campuses, where they permit one card to be used for multiple campus functions. For instance, a single card may be used for meal plans, bookstore purchases, food and beverage vending, photocopy vending, laundry services, library lending, dorm access, and others.
AUTO-RESTORE	A feature that automatically re-encodes a card with its proper value if the card becomes invalidated by a power failure.
Bonus	See <i>Cash Bonus</i> .
Bypass Mode	A Tower operating mode that permits COPIES to be made without insertion of coins, bills, or cards.
Card Dispenser	A Schlumberger vend product used to sell pre-encoded Debit Cards. If properly equipped, these units can also be used to add value to the debit stripes of cards.
Card-access Terminal	A Schlumberger unit that connects to a photocopier (or similar device, such as a laser printer) to control vending activity. This unit offers card-only access to vending services. It can also be equipped with the Encoder Capability, which allows you to create new user cards and to re-encode existing cards.
Cash Bonus	The additional amount added to a card during add value operations (e.g. the amount above the sum of cash inserted by the user to add value).
Credit Card	A magnetically encoded card used at card-accepting Schlumberger vend products for machine access. Encoded on the magnetic stripe of this card is an account number, which identifies the individual or department to which COPIES will be charged. As the card is used, the Schlumberger unit stores information about its use. You can then retrieve this information and charge the department, or individual, the appropriate usage rates.
Debit Card	A magnetically encoded card used at card-accepting Schlumberger vend equipment for machine access. Encoded on the magnetic stripe of this card is a monetary value. As the card is used, the Schlumberger unit deducts value from the card in accordance with the usage rates set by the administrator.

Debit-Limit Card	A magnetically encoded card used to access equipment controlled by SINGLE Card or ALLCARD vending products. Encoded on the magnetic stripe of this card is both a debit field, or monetary value, and a limit field, or preset number of points. As the card is used, the Schlumberger unit deducts from either the monetary value or the point limit. (Which field the unit deducts from is determined by how that unit is programmed, as discussed in Chapter 4.)
Encoder Capability	A feature found on some Card-access Terminals (models identified by the letter "E" at the end of the model number) that allows you to encode new user cards and to re-encode existing cards (for instance, when the debit or limit balance drops below the balance required to make a copy).
FAC (Facility Access Code)	See <i>Site Code</i> .
G/C (Group Code)	See <i>Site Code</i> .
Limit Card	A magnetically encoded card used at card-accepting Schlumberger vending equipment for machine access. Encoded on the magnetic stripe of this card is a point limit, or preset number of points. As the card is used, points are deducted from this limit in accordance with the "limit cost" set by the administrator.
Management Mode	The operating mode that permits access to setup and maintenance routines.
Normal Mode	The operating mode that permits access to vending capabilities.
Read After Write Feature	A feature used by Schlumberger products to check that the data written to a card is valid.
RECHARGE	See <i>Add Value Capability</i> .
Set G/C Cards	See <i>Set Site Code Card</i> .
Set Site Code Cards	Administrator cards used to program card-accepting Schlumberger units with one or more of your Site Codes.
Site Codes	Sometimes referred to as G/Cs (Group Codes), these codes are unique, four-digit codes assigned to your vending site by Schlumberger. Depending on the specific requirements of your site, you may be assigned as many as 10 of these codes. (Refer to Chapter 1 for a discussion of the functions of these codes.)
Terminal	See <i>Card-access Terminal</i> .
User Cards	The cards used to access the equipment controlled by Schlumberger units. Included within this card group are <i>Debit</i> , <i>Limit</i> , <i>Debit-Limit</i> , and <i>Credit</i> (magnetically encoded) Cards and Smart (embedded chip) Cards.
View Totals Card	An administrator card that permits you to access, view, and maintain the information stored by your Tower about the sum of money collected and number of COPIES made. (Though you can access this same information with the Management Key, the View Totals Card allows you to quickly and conveniently access activity totals—while bypassing prompts inapplicable to maintaining totals.)
Vendamat Cards	The original line of Schlumberger vending cards—as opposed to SINGLE Card or ALLCARD Cards, which are designed for use in an SINGLE Card or ALLCARD System.

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