

SANDVAULT GROUP

# **SmartVend Water Dispenser Manual**

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Version R.5

### **Notice**

The information contained in this manual has been researched and prepared according to the best efforts of SandVault Group. Due to continued efforts in product improvement, the information could be subject to change without notice and does not represent a commitment on the part of SandVault Group.

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<p><b>SandVault Group</b> designs, manufactures and markets self-serve smart card solutions compatible with systems developed by major financial institutions and with proprietary card schemes.</p>
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# Revision Log

Revision	Section	Description of Change	Date
0-1.4	all	create	AJL 05/2003
1.5	3,B	Update menu setup	AJL 11/2003
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## Limited Warranty

### Terms

SandVault Group warrants each new **SmartVend** and/or accessory to be free from defects in materials and workmanship to the original purchaser for a period of twelve (12) months from the date of shipment. Our responsibility is limited to repair or replacement of the **SmartVend** and/or accessory or part thereof at our option. Warranty coverage for repairs shall include both parts and labor.

This limited warranty does not extend to any defect, malfunction or failure caused by or resulting from improper service, repacking, maintenance or repair, abuse, neglect, problems with electrical power, accident or any other cause beyond the control of SandVault Group or to any product whose serial number has been removed, altered, replaced, defaced or rendered illegible. If, in our opinion, repairs, replacement or service are not covered by warranty, the customer will be billed at our standard rates in effect at that time.

SandVault Group shall not be liable to the purchaser or to any other person or firm for any specified or consequential damages of any kind which result from the use or misuse by any person or loss of profits or product resulting from any defect in, malfunction or failure of this product. No person, agent, distributor, service facility or company is authorized to change, modify or amend the terms of this limited warranty.

### Warranty Procedure

If common troubleshooting cannot resolve your equipment problem, notify SandVault Group by telephone, FAX or E-mail.

Describe the problem in detail. You may be asked to provide the make, model and software revision of the equipment interfaced to SmartVend Products.

If the trouble requires the return of the unit or components SandVault Group will issue a **Return Material Authorization number (RMA#)** and will fax an **RMA Report** to be completed and enclosed with the returning merchandise.

## Packing and Shipping

**Do not return a unit before contacting our Service Department. We will issue a Return Material Authorization number.** This number should be prominently displayed on the package and packing slip. Without an RMA#, shipments will be refused.

Complete and enclose the RMA Report with the returning merchandise. Be as specific as possible. Reference the unit's Model and Serial numbers. If non-warranty, specify whether an estimate of repairs is desired before work is performed and to whom this estimate should be sent.

Pack the unit in its original carton, using the original packing materials. If they are not available, be sure to pack the unit securely. Poor packaging may cause damage, adding cost and delay to repairs.

Ship prepaid to the address specified on the RMA report form. Collect shipments will be refused and returned. Customer must insure or accept all risk of loss or damage due to shipping. The customer is responsible for all shipping costs for warranty and non-warranty repairs or replacements.

## Items Repaired by Manufacturer or Authorized Service Centers

SandVault Group personnel do not repair the following items; rather, they are returned to the manufacturer or a designated service center for repair and return to SandVault Group. Additional time is required for this secondary servicing point.

### **Bill Acceptors, Coin Mechs, UPSs, PCs & Printers**

The most expedient and cost effective method of having bill acceptors, coin mechs, UPSs, PCs and printers repaired after the warranty period has expired is to have them serviced locally by a servicing center authorized by the manufacturer of the unit. If you need assistance in locating a service center, please contact SandVault Group Customer Service Department.

## **Items Excluded from Repair Services**

The following items are non-repairable, and will probably need to be replaced if they become damaged after the 12-month limited warranty period has expired:

- All cables and harnesses (including com's link cable)
- Machine Interfaces
- Pinpads/Pinpad Assemblies
- Card connector in the card reader

Additionally, any unit that has been vandalized, or has been mistreated whether intentional or accidental, is exempt from the flat fees posted in this Repair Policy. Such items will be considered on a case-to-case basis, and, if determined repairable, you will be contacted with the repair costs prior to SandVault Group performing repairs.

## **Overnight Shipping Requests**

All repair prices include return shipping via ground collect. If you request return via overnight service, we will honor your request and will bill you the actual freight charges incurred in addition to the standard flat rate, plus an administration fee for 25% of the actual freight charges.

# Preface

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## About This Manual

This manual contains three chapters, three appendices, and an index. The title page, contact information, and revision page are presented at the beginning of the manual, and are not included in a section.

Chapter 1, **Introduction**, contains an overview of the document's subject matter and a glossary of Abbreviations, Acronyms, and Terms.

Chapter 2, **Setup**, describes the layout of the software, and summarizes the meaning and function of the various displays..

Chapter 3, **Changing The Settings**, steps through the process of configuring a CAD with this software.

Appendix A, **Troubleshooting**, lists solutions to some possible problems.

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## Conventions

The following conventions are used in this manual.

Screen text  
Arial

This font is used to represent all text printed to the screen. This font is used in headings for text, figures, and tables, as well as inside tables, flowcharts, and component lists for figures.

[Key]

Characters in brackets indicate keyboard input.



**CAUTION!** PROVIDES AN ADVISORY WARNING REGARDING CERTAIN SAFETY PROCEDURES.



**NOTE:** A note provides information that is, or may be, of special interest.



# 1. Introduction

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## 1.1 Purpose

This document is designed to enable a first-time user to easily set up and configure the SmartVend Water Dispenser. It is also meant to be a reference for using, configuring and troubleshooting the device.

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## 1.2 Abbreviations, Acronyms and Terms

LCD	Liquid Crystal Display – The backlit readout panel where unit instructions are displayed.
GPS	Gallons per second – A measurement of how much water is being dispensed by the unit, per second.



## **2. Installation**

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### **2.1 Required Hardware**

The following components are needed to successfully operate SmartVend Water Dispenser:

- SmartVend Water Dispenser
- SmartVend Flow Meter
- Water Dispensing Station



## 3. Changing The Settings

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### 3.1 Configuring Water Dispenser For First Use

SmartVend Water Dispenser needs to be configured before it can be used.

The administration menu structure appears in Appendix B.

To enter the administration menu system, press the [5] and [8] keys simultaneously. The LCD screen will display a “\_” character in the lower left of the screen. At this prompt, enter your password using the numeric keypad. The underscore character will advance across the screen with each key press. The default (level 3) password is 1 1 2 3 4 4 3 3.

To navigate through the menu system, use the [9] key to select a menu option, [7] to exit to the previous level, [5] to select the previous option in the current level, and [8] to select the next option in the current level. The [\*] and [#] keys act as the Cancel and Enter keys where such choices are applicable (such as in applying changes to menu options). See Appendix B for a complete diagram of the menu structure.

#### 3.1.1 Setting the Date & Time if equipped.

To set the SmartVend Reload's internal date and time, navigate to the Set Date & Time menu in the administration menu system, and press [9]. The date and time will be displayed. Enter the current date and time using the numeric keypad. Press the **RED** button if an incorrect entry has been made and reenter the date and time.

### 3.1.2 Editing The Meter Pulse

The SandVault Group controller works with pulse type water meters. Different meters give very different numbers of pulses per gallon. The meter input to the controller is adjustable to match the pulse rate of any meter. To support fine calibration the controller pulse rate is set as the number of pulses per 10 gall.(Liters). Therefore, use the pulses per gall. (Liter) specified for the meter and multiply the number by 10. To adjust the meter pulse calibration, navigate to the “Edit Meter Pulse” menu in the administration menu system, and press [9]. The current setting will be displayed. Use the numeric keypad to overwrite the current number of pulses per 10 with your new setting. Press [#] to save the changes.

### 3.1.3 Editing The Water Price

The Water Price setting allows the administrator to adjust the price. To allow for prices below 1 cent per gallon the price is specified in cents per 10 gallon increment. The default value is 10 cents per 100 gallons or 100 liters.

To adjust the price, navigate to the “Edit Water Price” menu in the administration menu system, and press [9]. Then, use the numeric keypad to overwrite the current price in cents with your new value. Press [#] to save the changes.

### 3.1.4 Editing The Shutoff Volume

The Shutoff Volume commences shutdown a fixed volume before the target volume is reached.

Some valves, particularly diaphragm valves, require several seconds to close. This setting allows the operator to compensate for valve closing time by commencing the shutoff a fixed number of gallons before the target value is dispensed.

To estimate the appropriate setting, use the flow rate (gps) and the time for the valve to cycle. Assume the flow rate will decline linearly during valve closure. For example, if the flow rate is 1.8 gps and the time to closure is 10 seconds, the shutoff volume is  $1.8/2 \times 10$ , or 9 gallons.

To adjust the pre-shutoff volume, navigate to the “Shutoff Volume” menu in the administration menu system, and press [9]. Then, use the numeric keypad to overwrite the current shutoff volume number with your new value. Press [#] to save the changes.



**NOTE:** *The Water Dispenser cannot dispense less water than is indicated in the Shutoff setting, as this amount of water will already have been dispensed before the valve can cut off the flow to the water. At the default Shutoff setting, this means that the user must select at least 9 gallons of water, or the Dispenser will refuse to vend and will not debit money from the user’s card.*

### 3.1.5 Editing The Pre-Start Volume

The Pre-Start Volume adds a known volume of water to the water meter reading.

In some conditions such as freezing weather, the stand pipe may be drained between transactions. This setting allows a fixed volume of water to be pumped to refill the pipe before the meter starts for the current transaction. This allows the dispenser to accurately bill the customer for the amount of water they received. The default value for this setting is 0.

To adjust the pre-start volume, navigate to the “Pre-Start Volume” menu in the administration menu system, and press [9]. Then, use the numeric keypad to overwrite the current volume in gallons with your new volume. Press [#] to save the changes.

### 3.1.6 Changing the Password (IMPORTANT!)



**CAUTION! IT IS VERY IMPORTANT THAT YOU CHOOSE A NEW ADMINISTRATION PASSWORD FOR YOUR WATER DISPENSER BEFORE PEOPLE WITHOUT ADMINISTRATION PRIVILEGES HAVE ACCESS TO IT. OTHERWISE, THEY MAY USE THIS MANUAL TO MODIFY ANY OF THE SETTINGS DESCRIBED HEREIN.**

Other configurations of the Water Dispenser have 3 levels of access; however, levels 1 and 2 are not needed in this configuration, and are disabled prior to shipment. The only password you need to change is the Level 3 password.

To change the Level 3 password, navigate to the Change Password menu (see Appendix B), and press [9]. You will be prompted to enter and then re-enter a new 8 digit administration password. Keep this password secure.

### 3.1.7 Setting the CAD ID

A Card Accepting Device (CAD) ID is a unique 16 digit value associated with a specific Water Dispenser. This ID is used in generating transaction reports for the Water Dispenser, and so each Water Dispenser should contain a different CAD ID.

To set the CAD ID, navigate to the Edit CAD ID entry in the administration menu (see Appendix B), and press [OK]. The current CAD ID will be displayed, with a blinking block cursor over top of the first digit. Use the numeric keypad to enter a unique 16 digit CAD ID for this Water Dispenser. When you have entered all 16 digits, you will return to the main administration menu. If you decide not to change the CAD ID, pressing the **RED** button will abandon all changes and return you to the main menu.

## 3.2 Adjusting Water Dispenser Features

### 3.2.1 Transaction Summary

Water Dispenser is able to display transaction summaries on screen. The summary is laid out as follows:

Heading	Description
CNT	Number of water vends
VAL	Cash received
VOL	Volume of water dispensed

#### 3.2.1.1 Display Summary

To view the card summaries, navigate to the DISPLAY SUMMARY menu (see Appendix B) and press [9]. The CNT and VAL values will be shown on the screen for three seconds, followed by the VOL value. After this, the DISPLAY SUMMARY menu will be shown once more.

#### 3.2.1.2 Clear Summary

To reset the transaction summary values, navigate to the CLEAR SUMMARY menu in the administration menu (see Appendix B). Press [9] to clear the counter values. Press [7] to exit from these menus without clearing the counters, or [9] to clear them.

### 3.2.2 Clearing the Datastore

Clearing the datastore clears all transaction records from the Water Dispenser. This means that the next card used in a transaction will be recorded as card summary 0 and all previous information will be lost. To clear the datastore, navigate to the Clear Datastore menu (see appendix B), press [9], and press [#] to confirm. After a few seconds, the screen will display “Datastore Empty.” All transaction data has now been cleared.

## 4. Using Water Dispenser

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### 4.1 Payment Sequence

The following is an extended example of how to use the dispenser to dispense water:

INSERT CARD  
IN SLOT

*{User inserts the water nozzle in his tank, and inserts his card in the card reader.}*

CARD INSERTED  
PLEASE WAIT

BAL: \$360.20  
CARD BALANCE

Vol: \_  
Key In Volume

*[5] [#]*

Volume  
Is Too Small!

Vol: \_  
Key In Volume

*[5] [0] [#]*

Press # To  
Purchase...

*[#]*

PRESS START TO DISPENSE

*[PRESS GREEN 'START' BUTTON]*

DISPENSING...

Selected: 50  
Dispensed: 1

*{As the water is dispensed, the value 1 increases to 50. At 14, the user presses the STOP WATER button. At this point, the water flow is cut off, and the excess value is reimbursed to the user's card.}*

\$:2.70  
Refund

Vol: \_  
Key In Volume

[1] [0] [#]

Press # To  
Purchase...

[#]

PRESS START TO DISPENSE

[PRESS GREEN 'START' BUTTON]

DISPENSING...

DISPENSING  
DONE!

*{The water reaches the 10 gallon mark faster than the monitoring readout reports how much has been dispensed, so no readout is displayed. After all 10 gallons are dispensed, the flow is cut off.}*

BAL:\$356.90  
REMOVE CARD

*{The customer removes his card.}*

INSERT CARD  
IN SLOT

## 5. Maintenance

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### 5.1 What To Look For

Check regularly to ensure that:

- The keypad and display window of the Water Dispenser are not punctured or torn.
- All buttons are readable.
- The display is readable and not cracked or faded.
- The plugs on the cable still attach securely at both ends.
- There is no visible damage to the Water Dispenser case.



**NOTE:** *If any components are damaged, contact SandVault Group for replacements.*

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### 5.2 Cleaning

To clean the outside of the Water Dispenser case, wipe clean with a cloth dampened with a mild glass cleaner.



**CAUTION!** **DO NOT IMMERSE WATER DISPENSER IN ANY LIQUID, AND DO NOT SPRAY WITH LIQUID, AS LIQUID MAY GET INSIDE THE DEVICE AND CAUSE DAMAGE.**



# Appendix A: Troubleshooting

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## Possible Problems and Solutions

**Table 1: Problems & Solutions**

<p>The water does not turn off fast enough; the customer receives extra water. OR The water turns off before the customer receives all their water.</p>	<p>See Section 3.1.3 – <b>Editing the Shutoff Volume</b>. Your system needs to be calibrated based on the valve used to control water flow.</p>
<p>After draining the stand pipe, the first customer does not receive the correct amount of water.</p>	<p>See Section 3.1.4 – <b>Editing the Pre-Start Volume</b> The Pre-Start value needs to be set to the volume of water needed to fill your stand pipe.</p>



# Appendix B: Administration Menu

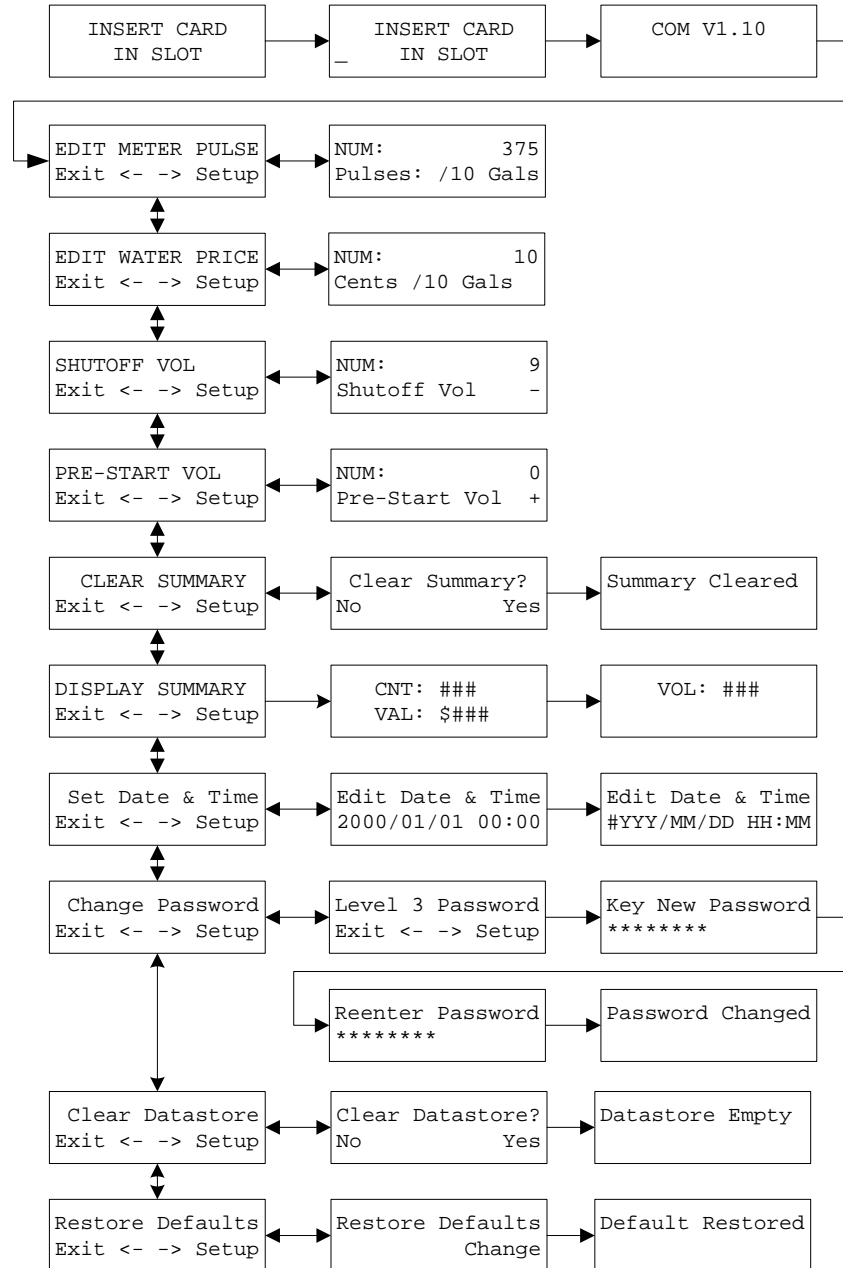


Figure 5-1 Administration Menu

# Appendix C: Specifications

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## Source Materials

A SmartVend Water Dispenser is made up of the following parts:

- PCB
- Start & Stop buttons
- Reload console
- RJ 45 Cable
- D9 to RJ45 converter
- 120 VAC to 24 VDC power Supply
- SmartKit Console
  - Key pad
  - LCD screen
  - PCB
  - Card Acceptor
- Metal Enclosure

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