



Series 1000 FleetKey Fuel Management System

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# Operation Manual

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This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

## Approvals

**Gasboy, Greensboro, is an ISO 9001:2000 registered facility.**

### Underwriters Laboratories (UL):

UL File#	Products listed with UL
MH4314	All dispensers and self-contained pumping units
MH6418	Power operated Transfer Pump Models 25, 25C, 26, 27, 28, 72, 72S, 72X, 73 and 1820
MH7404	Hand operated Transfer Pump Models 1230 Series, 1243 Series, 1520 and 1720 Series
MH10581	Key control unit, Model GKE-B Series Card reader terminals, Models 1000, 1000P Site controller, Model 2000S CFN Series Data entry terminals, Model TPK-900 Series Fuel Point Reader System

### New York City Fire Department (NYFD):

NYFD C of A #	Product
4823	9100A, 9140A, 9152A, 9153A, 9800A, 9840A, 9850A, 9852A, 9853A, 9140
4997	9822A, 9823A
5046	9100Q, 9140Q, 9152Q, 9153Q, 9800Q, 9840Q, 9852Q, 9853Q

### California Air Resources Board (CARB):

Executive Order #	Product
G-70-52-AM	Balance Vapor Recovery
G-70-150-AE	VaporVac

## National Conference of Weights and Measures (NCWM) - Certificate of Compliance (CoC):

Gasboy pumps and dispensers are evaluated by NCWM under the National Type Evaluation Program (NTEP). NCWM has issued the following CoC:

CoC#	Product	Model #	CoC#	Product	Model #	CoC#	Product	Model #
95-179A2	Dispenser	9100 Retail Series, 8700 Series, 9700 Series	91-019A2	Dispenser	9100 Commercial Series			
95-136A5	Dispenser	9800 Series	91-057A3	Controller	1000 Series FMS, 2000S-CFN Series			

## Patents

Gasboy products are manufactured or sold under one or more of the following US patents:

### Dispensers

5,257,720

### Point of Sale/Back Office Equipment

D335,673

Additional US and foreign patents pending.

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Infinity™

### Registered trademarks

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Slimline®

Additional US and foreign trademarks pending.

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# 1 – Important Safety Information

Before performing any task on this product, read the safety information in this section and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found.

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

### Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions that follow must be followed to prevent death, injury or damage to the equipment.

#### **DANGER**

This signal word is used to alert you to a hazard or unsafe practice which **will** result in **death or serious injury**.

#### **WARNING**

This alerts you to a hazard or unsafe practice that **could** result in **death or serious injury**.

#### **CAUTION**

This signal word designates a hazard or unsafe practice which **may** result in **minor injury**.

#### **CAUTION**

When used by itself, CAUTION designates a hazard or unsafe practice which may result in **property or equipment damage**.

## Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Be sure to clean hands after handling equipment. Do not place any equipment in mouth.

### **WARNING**

This area contains a chemical known to the State of California to cause cancer.

### **WARNING**

This area contains a chemical known to the State of California to cause birth defects or other reproductive harm.

## Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call a Gasboy Authorized Service Contractor (ASC) or call the Gasboy Call Center at 1-800-444-5529. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## 2 – Introduction

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This manual provides descriptions and operating procedures for your Gasboy Series 1000 FleetKey System. You should review this manual before your system start-up and reference it as you operate the system.

### Overview

The Gasboy Series 1000 FleetKey System is a microprocessor-based fuel control and data acquisition system. Access to the system is controlled by special data keys that contain encoded information about the user.

The Series 1000 System is designed to gather and record specific information about your fuel management operation. You set up the Series 1000 by defining your configuration (tanks, pumps, etc.). See [“Documentation/Getting Started” on page 4](#).

Once your Series 1000 is operational, a typical scenario might be: A valid user drives his vehicle into the fueling area. He places his key into the Series 1000, which reads and validates it. If a second key is required, he then inserts it and the system validates that key. Then, the system requests various pieces of information depending on the coding on the key (that is, personal identification numbers, odometer readings, etc.) Then it asks which pump he will be using. If everything checks out within the system, the pump is activated and the fueling process begins. When the fueling process ends and the user replaces the pump nozzle in its holder, the Series 1000 records transaction information in memory, and prints it out at the data terminal or logger, if setup permits. Based on the transaction information, the Series 1000 decrements the tank inventory and increments the pump totalizers. If the system was so configured, the user may return to the Series 1000 and obtain an MPG readout or a transaction receipt.

## System Features

Using a data terminal, or computer with interface, connected to one of two communications ports, you can issue commands and retrieve information from the Series 1000.

### Standard Features

The standard features of this system include:

- 24-hour, unattended, controlled access to your fuel dispensing equipment.
- Standard Series 1000 simultaneously controls two hose outlets and can be expanded in two hose increments to control up to eight. Supports pulsing rates of dollar (one penny per pulse); or quantity (1, 10, 100, 250, 500, or 1000 pulses per unit of product). The pulse rate selection switch is located in an area sealable by weights and measures for retail applications.
- Visual prompting messages displayed on an eye-level 20-character liquid crystal display (LCD) to guide the user through the fueling sequence.
- Access to the system restricted individually by key number.
- Controlled access to product type, using nine loadable authorization codes, key encoded.
- Limits on amount of fuel dispensed in a transaction, using 10 loadable limit codes, key encoded.
- Reasonable Odometer Check feature provides an odometer validity check for your vehicles.
- Transaction MPG enables keyholders to view MPG immediately after fueling.
- Automatic, immediate, transaction printing for hard copy backup or audit trail. Printing includes: transaction number, date, time, key numbers, identification fields, pump used, fuel type and quantity dispensed, price data (unit and total, if configured), odometer reading, miles and MPG (if configured) and a transaction status message.
- Automatic recording and storage of all transactions in system memory for later recall.
- Transaction printing in a variety of formats to meet your information requirements.
- Printing and storage of pricing data. Available options depend on pulser type. With dollar pulsers, the system can print unit price only or both unit and total price. With quantity pulsers, the system can print only unit and total price.
- Two asynchronous ports (both configurable to RS-232 or RS-422) for terminal and/or computer communications.
- For additional report processing, the ability to interface with communications and report software for IBM, and compatible, personal computers. Software is extra.
- A perpetual fuel inventory, maintained for up to eight tanks. Inventory adjustments are automatically made with each transaction and can be adjusted at the data terminal to ensure maximum inventory accuracy.
- Maintains up to eight resettable pump totalizers.
- One or two key receptacles.
- A Disable Pumps button on the cabinet face to quickly shut down dispensing equipment in case of emergency.
- Built-in AC and RS-422 transient protection reduce problems caused by power surges.
- To safeguard the system in a power failure, AC and DC power fail detect, deadman timer, and pump control fail-safe circuits ensure an orderly shutdown so the system can return to normal operation upon restoration. The system clock and memory are backed by batteries to maintain the time and transaction data during power failures.

## Optional Features

In addition to the standard features, your Series 1000 may have one or a combination of these available options:

- Activate Pump (AP) Data Entry Option - allows you to enter key data (key numbers, ID fields) and an odometer reading at the data terminal before activating a pump.
- Encoding Option - allows you to use the FleetKey system to encode your keys.
- Extended Pump Timeouts Option - allows you to extend the standard maximum timeout from 180 seconds to 3600 seconds (1 hour).
- Fuel Allocation Option - allows you to allocate predetermined amounts of fuel to a set number of users.
- Fuel Delivery and Dipstick Option - enables you to accept and record fuel delivery and dipstick reading data using special keys at the Series 1000.
- Gate Controller - enables you to use a dedicated Series 1000 to control a gate.
- Hours Option - Provides prompts at the LCD for users who record fuel consumption by an hour meter instead of an odometer. Does not affect vehicle file or transaction printout.
- Loadable Base Pump Option - allows you to assign different starting pump numbers for sites having more than one Series 1000.
- Maintenance Option - allows you to set up and enforce a maintenance schedule for up to three types of maintenance for your vehicles. Requires KE200 Key Encoder/Maintenance Terminal.
- Manual Entry of Off-site Fueling Transactions - allows you to enter, at the data terminal, transactions for vehicles which have fueled Off-site. This allows you to keep your system's files current.
- Manual Keypad Entry Option - provides an additional field that allows you to request specific input from the Series 1000 user.
- MPG History Option - calculates and maintains miles-per-gallon tallies for a set number of your vehicles.
- Multi-Level Password Option - allows two levels of password access: super user, which can access all commands; and standard user, which can access only commands authorized by the super user.
- Pump Switch Timer Option - allows you to prevent fueling at a pump when the handle has been left on from a previous transaction.
- Receipt Printer Option - allows you to obtain a fueling transaction receipt.
- Supervisor Key Option - allows you to use a specially encoded supervisor key to manually enter key information at the Series 1000 keypad.
- Tank Monitor Interface - enables you to communicate with a Gasboy TMS 500 or a Veeder-Root® TLS-250 tank monitoring system using the Series 1000 as an interface.

If problems arise or if you need assistance or information on options, call your authorized service representative or Gasboy customer service at 1-800-444-5529.

## Documentation/Getting Started

The following documentation is provided with the Gasboy Series 1000 FleetKey System:

- C08925 Series 1000 Fuel Management System Diagnostic Manual
- MDE-4344 Series 1000 Fuel Management System Installation Manual
- MDE-4480 Series 1000 FleetKey Fuel Management System Operation Manual (this manual)

In addition, your authorized service representative (ASR) is provided with the following manual:

C08921 Series 1000 Fuel Management System Start-Up Manual

When you get to this point, we assume:

- your system has been installed and tested (Reference: MDE-4344 Installation Manual).
- your ASR has started up your system, and helped you perform necessary tests (Reference: C08921 Start-up Manual).
- your ASR has helped you with your initial configuration (Reference: C08921 Start-up Manual and MDE-4480 Operation Manual)

When you configure your system you need to know the following:

- number of pumps (outlets)
- number of tanks
- pulser type
- pulses per gallon or dollar (penny pulsing)
- fuels and fuel codes
- fuel code authorizations and limitations
- communications port settings
- site shutdown start and end times
- the type of lockout file you wish to create

Your ASR will help you perform these commands:

SC	configure your system
MO	allows you to view data one screen at a time on your CRT (if desired)
RT	initialize transaction file
CT	initialize key receptacle read table
LN	load starting transaction number
LD	load system date and time
WK	load 4-digit working key
SD	load shutdown start and end times
LI	load initial inventory for each tank
LR	load an inventory reorder point for each tank
LP	assign specific fuels, tanks, totalizer readings, and timeouts to your pumps
LL	assign maximum fuel quantities to limitation codes
LF	assign fuel codes to authorization codes
VA or IA	validate or invalidate all keys depending on the type of lockout file you have chosen (negative or positive)

- Your keys should be encoded (Reference: [“Encoding Keys Option” on page 99](#), or C08380 KE200 Key Encoder/Maintenance Terminal Operation Manual).

Now you are ready to use the Series 1000 system. Your Operation Manual and your Diagnostic Manual should provide you with all you need to know for successful operation.

## How To Use This Book

This book is written in first person aimed at the system operator. Reviewing these items will help you as you use this book:

- We use the term, the system or FleetKey system to describe the Series 1000.
- When procedures say you, we infer that you are the system operator at the data terminal.
- When we say the user, we infer that the user is the person currently at the Series 1000 FleetKey system.
- Nearly all of the procedures in this book are initiated and entered from the data terminal.
- When we say on the Series 1000 keypad, we mean you enter data on the Series 1000 at the fueling island.
- When we say, the system displays, we are generally referring to the data terminal display. When we refer to display messages on the Series 1000, we usually say on the LCD display.
- When we tell you to press keys, either on the data terminal or on the Series 1000 keypad, we use the key name (that is, RETURN, ENTER, etc.). The control key (CTRL) is always pressed with another key. When you see a sequence like CTRL C, it means press the CTRL and C keys together.
- Data you enter in examples is shown in bold type.
- When you see the symbol ↵ in examples, it means to press RETURN after the entry of data.





## 3 – Fueling With the FleetKey System

The Gasboy Series 1000 System is designed to guide even untrained users effortlessly through the operation of the system. A series of prompts, which appear on the Liquid Crystal Display (LCD), guides the user through the fueling transaction. For additional reference, operating instructions are printed on the cabinet face.

A typical fueling using a Series 1000 is accomplished as follows:

- 1 Position your vehicle adjacent to the fuel dispensing equipment. Be sure to note the odometer reading (if your system requires you to enter it).
- 2 In its idle state, the FleetKey LCD display alternates between an INSERT KEY message and a The system may have one or two key receptacles and you may be required to use one or two keys.

If you have only one key, insert it into a key receptacle and turn it clockwise. The LCD displays PLEASE WAIT.

If you have two keys and two receptacles, insert both keys and turn them both clockwise together or separately. The LCD displays PLEASE WAIT.

If you have two keys and only one key receptacle, insert either key. The LCD displays PLEASE WAIT. A customized message appears prompting you to insert your other key. Remove the first key and insert and turn the second key. The LCD displays PLEASE WAIT.

- 3 If you have the receipt printer option or the transaction MPG/HPG feature enabled AND a prior transaction is present where a receipt or MPG/HPG reading was not obtained, the system may prompt you for a receipt or MPG/HPG. If you respond 0=NO, the fueling process continues. If you respond 1=YES, the system presents your receipt or displays MPG/HPG and then goes to idle. You must re-insert your keys to begin a new fueling transaction.

*Note: Systems with the receipt printer option will not prompt for MPG when the Transaction MPG feature is enabled. In this case, the transaction's MPG can be found in the transaction history file. Systems without the receipt printer option will prompt for MPG when the Transaction MPG feature is enabled.*

- 4 If your key requires Personal Identification Number (PIN) entry, proceed with Step 5. If your key requires Odometer entry only, skip to Step 6. If your key requires neither, skip to Step 7.
- 5 If you are required to enter a PIN, the LCD displays: ENTER PIN.

Using the keypad, enter your PIN number and press **ENTER**. To ensure security, an asterisk (\*) appears for each digit that you press. If you make a mistake while entering your PIN, press **CLEAR** and enter it again.

You have three tries to enter the correct PIN. After the third unsuccessful try, the display changes to TURN KEY LEFT, REMOVE, and you must turn and remove your key and start again at Step 2.

If your system uses the Auto Pin Lockout feature, the key is automatically locked out (invalidated) after the third unsuccessful PIN entry.

- 6 If you are required to enter an odometer (or hours) reading, the LCD displays: ENTER ODOMETER or ENTER HOURS.

Use the keypad to enter the mileage/time that appears on your vehicle's odometer or hour meter (up to seven digits, no tenths). The digits appear as they are entered. If you make a mistake, press CLEAR and enter the reading again. When you enter the correct reading, press ENTER. The system performs a reasonability check and if the reading is accepted, it writes the value to the key (into the last odometer field). For more on reasonable odometer check, see ["Reasonable Odometer Check and Transaction MPG" on page 35](#).

- 7 If your system has the Maintenance option, you may receive a message indicating that maintenance is DUE SOON, DUE NOW, or OVERDUE. For more on the Maintenance option, see ["Maintenance Option" on page 127](#).
- 8 If your system requires a manual entry field, the prompt for that field appears. Type the data requested and press ENTER. At this time, your odometer is written to your key and the LCD displays: PLEASE WAIT. When your key has been updated, the LCD displays: SELECT PUMP.

*Note: Do not remove the key during the PLEASE WAIT message. Removing the key early can cause key failure. If a read error is encountered on the next use, you must re-encode the key before it can be used again.*

- 9 Enter the desired pump number and press ENTER.

If the pump you selected cannot be accessed, one of the following messages appears:

NO SUCH PUMP  
PUMP IN USE!  
PUMP DISABLED  
INVALID FUEL

You have three tries to select a correct pump. If after three attempts, you have not chosen a correct pump, the display changes to TURN KEY LEFT, REMOVE, and you must turn and remove your key and start again at Step 2.

If the pump is available and you are authorized to use it, the display will show TURN KEY LEFT,REMOVE.

- 10 Remove the key(s) from the receptacle(s). If you leave the key(s) in the receptacles for more than five seconds, an alarm sounds to remind you to remove them.
- 11 The LCD displays: PUMP #x IS READY and you may proceed to dispense fuel.
- 12 When you finish fueling your vehicle, turn off the dispenser handle and return the nozzle to its holder. The transaction information is automatically recorded in the system's memory for later recall. The transaction information may also be printed on the data terminal or logger.

Transaction information includes transaction number, key 1 number, key 2 number, ID fields, date, time, pump number, product type, quantity dispensed, unit price and/or total price (if configured), odometer reading, miles and MPG/HPG (if enabled), and transaction message.

- 13** If you have the receipt printer option and wish to have a receipt, insert your key(s) into the receptacle and turn it clockwise. The LCD displays: RECEIPT? 1=YES 0=NO.

To print a transaction receipt, press **1** and **ENTER**.

The LCD displays: RECEIPT IS PRINTING.

If you have requested multiple receipts, they print out one after the other.

The system goes to idle.

*Note: For more on receipt printing, see [“Receipt Printer Option” on page 161](#).*

- 14** If you have transaction MPG/HPG enabled and wish to view your MPG/HPG, insert your key(s) into the receptacle and turn it clockwise.

The LCD displays: MPG? 1=YES 0=NO or HPG? 1=YES 0=NO.

To display your vehicle’s MPG (or HPG), press **1** and **ENTER**.

The LCD displays: MPG xxx.x or HPG xxx.x.

The system goes to idle.

For more on transaction MPG/HPG, see [“Reasonable Odometer Check and Transaction MPG” on page 35](#).

*Note: Systems with the receipt printer option will not prompt for MPG when the Transaction MPG feature is enabled. In this case, the transaction’s MPG can be found in the transaction history file. Systems without the receipt printer option will prompt for MPG when the Transaction MPG feature is enabled.*



## 4 – Communicating With the FleetKey System

### Communication Ports

The Gasboy FleetKey has two asynchronous communication ports (Port 1 and Port 2) for connecting with a data terminal and/or computer. The connection can be made by a direct cable, via a short haul modem, or via a telephone modem. An optional auxiliary port PCB is also available. It contains two additional ports and is used for connecting to a tank monitoring system and/or a receipt printer.

Ports 1 and 2 of the MPU PCB can be set to the following baud rates: 300, 600, 1200, 2400, 4800, or 9600. The auxiliary ports can be set to 300, 1200 or 9600 baud depending on the equipment being connected (the receipt printer requires 9600 baud; the tank monitoring system can be set for 300, 1200, or 9600). When sending data to the FleetKey system from a computer or tank monitoring system, do not exceed 1200 baud because data may be lost when sent at higher rates.

- Port 1 is normally used for direct connection of a data terminal located at the site. This port allows access to the system's Direct Printout Mode and Command Mode. See [“System Modes” on page 15](#) for explanations of these modes. See [Appendix B: Setup of Peripheral Equipment](#) for information on installation and setup of data terminals.
- Port 2 is commonly used to connect to a remote data terminal or computer. Port 2 allows access only to the Command Mode.
- The auxiliary port PCB is used to connect to a receipt printer and/or tank monitoring system. If you ordered your system with a receipt printer and/or tank monitoring system, these ports are already present. No additional wiring is required for the receipt printer. See the Series 1000 Installation Manual for installation wiring for a tank monitoring system.

Each port can be set individually for either RS-232 or RS-422 communications. RS-232 communication allows for the direct connection to RS-232 devices (e.g. data terminal, computer, phone modem). The cable length is limited to 100 feet.

RS-422 communications allow for a cable length of up to 1500 feet. A Gasboy Short Haul Modem, part number C05618, is needed to convert the RS-422 signal to RS-232 for the connection of RS-232 devices. See the Gasboy Series 1000 Installation Manual for more detail on RS-232 and RS-422 wiring.

### Communication Protocol

Devices that communicate with the FleetKey system must be able to transmit and receive full duplex, ASCII asynchronous data via an EIA-RS-232 connection.

The FleetKey system uses a simple terminal protocol; no special characters are transmitted to designate the beginning or end of the data blocks. Data is transmitted in serial bit format per character as follows: one start bit, eight data bits, one stop bit.

Each character is echoed back to the transmitting device. This checks the integrity and enables CRT operators to display transmitted data.

## Communication Terminals

The wiring terminations for the various communication options are indicated below:

Communications Type	System Terminal Block	Signal	System I/O	Notes
RS-232	1	TXD	Output	Transmitted data out of system
	2	DTR	Output	Data terminal ready out of system
	3	RXD	Input	Received data into system
	4	DCD	Input	Data carrier detect into system
	5	GND	Ground	Signal ground reference
RS-422	1	TX+	Output	Transmitted data out of system
	2	TX-	Output	Received data into system
	3	RX+	Input	
	4	RX-	Input	
	5	N/A	--	

The pinouts of Gasboy short haul modem (SHM) RS-232 connector are as follows:

Pin	Signal	SHM I/O	Notes
2	TXD	Input	Transmitted data into modem
3	RXD	Output	Received data out of modem
7	GND	Ground	Signal ground reference
8*	DCD	Output	Data carrier detect out of SHM
20	DTR	Input	Data terminal ready into SHM
* Pins 5 and 6 are connected internally to pin 8.			

## Initiating Communication

Once your data terminal is connected directly to the FleetKey system, or your phone modems are in place, you can communicate with your system. To guard against unauthorized access, the system requires a sign-on password before you can enter commands to change or print reports on the system.

- 1 Turn on the power to your data terminal.
- 2 If you are using phone modems, dial and make connection with the site modem. If you are using a computer, follow the instructions of your interface program.
- 3 Press **CTRL-F**, or press **RETURN**. The system displays SIGN ON:
- 4 Type the 1- to 10-character password and press **RETURN**. The password does not display as you type it. When the correct password is entered, an asterisk (\*) prompt appears and you can enter commands.

If you are signing on for the first time, the password is GASBOY. You must type it in all capital letters.

To change the password, use the LS (load sign-on password) command.

If you enter the password incorrectly, return to Step 3 and try again.

## LS - Load Sign-On Password

Use the LS command to change the password from the preset value of Gasboy to one of your choice. Passwords can be one to ten alphanumeric characters.

- 1 If you are signed on (already at the asterisk prompt), skip to Step 4.
- 2 If you are not signed on, press **CTRL-F** or press **RETURN**. The system displays: SIGN ON:
- 3 Type **GASBOY** and press **RETURN**. The \* prompt appears.
- 4 Type **LS** (Figure 4-1). The system responds with PASSWORD:
- 5 Type a new 1- to 10-character password and press **RETURN**. The \* prompt reappears.

**Figure: 4-1 Example of LS Command**

```
*LS  
PASSWORD:  PASSWORD↵  
*
```

## Lost or Forgotten Password

### Using the Password Key

If you forget your password, you may use a specially encoded password key to change the password back to GASBOY. Password keys are like any other keys, except that they have their own key type and require you to encode fewer fields. To encode a password key, you need only encode the Key Type (6), Key Number, System ID and Expiration Date fields. Zeros are entered for the remaining fields.

- 1 Insert the password key into the FleetKey system key receptacle and turn clockwise. The LCD displays: PASSWORD CHANGED.
- 2 Remove the key. A transaction is logged indicating a password change.
- 3 You may now sign on to the data terminal using the GASBOY password.
- 4 If desired, use the LS command to reload your own password.

### Using Diagnostic Mode

If you cannot access the system because of a system memory failure, you must use diagnostic test number one to change the password back to GASBOY. The Series 1000 Diagnostic Manual contains descriptions of all diagnostic tests; however, test one is summarized here for your convenience.

- 1 On the Series 1000 MPU board, at the center of its rear edge, turn the diagnostic switch from down (its normal position) to up. The LCD displays ENTER TEST 0-9.

- 2 On the Series 1000 keypad, press **1** and **ENTER**. The system displays NEW PASSWORD?
- 3 Press **1** and **ENTER** to return the password to GASBOY. If you press any other key, the password is not changed.
- 4 Exit from diagnostic mode by returning the switch to the off position.



## 5 – FleetKey Operating Modes

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### System Modes

The Series 1000 system has two modes:

- Direct Printout Mode
- Command Mode

In Direct Printout Mode, the Series 1000 prints transactions on the data terminal as they are completed. No commands are accepted from the keyboard except CTRL-F, RETURN, or CTRL-B.

In Command Mode, you enter two-letter commands to input data, change data, or print reports on the system. Unless otherwise specified, all commands are entered at the asterisk prompt.

The Series 1000 includes a help feature for referencing the available commands. An expanded help feature provides the two-letter commands and brief descriptions of their functions. The HE (help) command is described later in this section.

When you are in Command Mode, transactions do not print as they occur; instead they are stored in memory and printed when the system returns to Direct Printout Mode.

### Entering and Exiting Command Mode

#### Enter Command Mode - CTRL-F

You can access Command Mode through either port, but not through both simultaneously. (See [“Communication Ports”](#) on page 11).

- 1 Press **RETURN** or **CTRL-F**. The system displays SIGN ON:  
*Note: If you receive a BUSY prompt instead of SIGN ON:, the system is in use through the other communication port. Access is not allowed until the user of the other port signs off, or until the system receives an override (CTRL-B) command.*
- 2 Type your password and press **RETURN**. The \* prompt appears.

#### Exit Command Mode - EX Command

Direct Printout Mode is accessible only through Port 1. If no communications occur between you and the system for one minute, the system automatically exits Command Mode and enters Direct Printout Mode. Also, when you turn on a data terminal that is connected to Port 1, you are automatically in Direct Printout Mode. If your data terminal is connected to Port 2, it remains idle until you enter Command Mode.

If you are currently in Command Mode, type EX to exit and enter Direct Printout Mode on Port 1. A transaction heading prints on the data terminal, along with all transactions that occurred while you were in Command Mode.

## **Override Other Port - CTRL-B**

When you press CTRL-B, you override the user on the other port, and establish communications on your port. The system displays the SIGN ON: prompt and waits for the password before allowing you to enter Command Mode. Use CTRL-B with care as it can cause disruption of another user's data.

## **Entering Commands and Other System Input**

Commands are always entered at the asterisk (\*) prompt in uppercase (all capital) letters. If you make an error when you are entering a command and the system recognizes your entry as an error, it displays either an asterisk (\*) or several question marks (????). An asterisk displays when you have incorrectly typed a command. Question marks usually occur when you enter unacceptable data (that is, quantities over the specified system limitations).

If the system does not recognize your error, (for example, if you wanted to enter the LP command, but typed LF (which is a valid command), you can cancel the command by pressing CTRL-C.

You do not need to press RETURN after typing a command; however, you must press RETURN, as noted in procedures, after entering data.

When entering numeric data, you need not include leading zeros.

To accept existing field data, such as in system configuration, press RETURN without typing anything at the field.

If you make an entry error and you want to delete it, press the DELETE key on your data terminal. The system repeats the character you are trying to delete and you can enter the correct character. If are trying to type GASBOY and type GASBP, press DELETE to delete the P. Your system shows GASBPP, indicating that the P is being deleted. Now you can complete your typing. The display appears: GASBPPOY, but is understood as GASBOY.

You can do this for each character you wish to delete. For example:

If you type: GASVP

Press DELETE once to eliminate the P (GASVPP)

Press DELETE again to delete the V (GASVPPV)

Type the correct letters BOY.

Your entry looks like this: GASVPPVBOY, but is understood as GASBOY.

You can stop and resume command output by pressing CTRL-S and CTRL-Q. CTRL-S stops command output; CTRL-Q resumes output.

## HE - Help Command

The HELP command displays a list of the two-letter system commands either in short form or expanded. If you elect to view the commands in the expanded version, you get the command and a brief description of its function. Because the Series 1000 has optional software, all systems may not have the same commands.

*Note: Your program may have been ordered without the expanded help option to maximize program and/or transaction space.*

- 1 At the \* prompt, type HE. The system displays: EXPANDED HELP LIST? <Y OR N>.
- 2 Type N to view a list of the two-letter commands; type Y to list each command and its function. The listing displays.

If you chose expanded mode and are using a CRT, commands will scroll by faster than you can read them. Use the MO (MORE) command to control screen output. When the more key is set to YES, commands are listed by the screenfull followed by the message PRESS ANY KEY TO CONTINUE.

- 3 Press any key to display the next group of commands.

**Figure: 5-1 Example of Short Help List**

```
*HE
EXPANDED HELP LIST? <Y OR N> N↵

COMMANDS ARE :

LS VA VK IA IK CK PV PI LI AI
SI TI LR LP PP EP DP AP IP ZP
XP PT ST SS PC PH RP RT LN LF
PF LL PL WK LK SC PS KT CT LD
PD SD PR MO HE EX

*
```

Figure: 5-2 Example of Expanded Help List

```

*HE
EXPANDED HELP LIST? <Y OR N> Y↵

LS - Load sign-on code
VA - Validate all keys
VK - Validate a key
IA - Invalidate all keys
IK - Invalidate a key
CK - Check key validation
PV - Print valid key list
PI - Print invalid key list
LI - Load tank inventory
AI - Add to tank inventory
SI - Sub from tank inventory
TI - Print tank inventory
LR - Load inv. reorder point
LP - Load pump data
PP - Print pump data
EP - Enable pump
DP - Disable pump
AP - Activate pump
IP - inactivate pump

Press any key to continue...

ZP - Zero pump totalizers
XP - Print timeouts & pulsers
PT - Print trans
ST - Print stored trans
SS - Print trans for a specified
    value within a field
PC - Print compacted transactions
PH - Print compacted transactions
    with host interaction
RP - Reset trans pointer
RT - Reset trans file
LN - Load trans no.
LF - Load fuel authorizations
PF - Print fuel authorizations
LL - Load fuel limits
PL - Print fuel limits
WK - Load working key
LK - Print last key(s) read
SC - Load system config
PS - Print system config
KT - Print key totals

Press any key to continue...

CT - Clear key totals
LD - Load date and time
PD - Print date and time
SD - Load site down time
PR - Print program rev and date
MO - Display one screen at a time
EX - Exit command mode
HE - HELP

*

```

These commands are discussed in detail in the following sections of this manual.

## 6 – System Setup Commands

---

### Description

The commands in this section allow you to load or change your system configuration and enter or display values for various system options.

If you followed the sequence outlined in [“Documentation/Getting Started” on page 4](#), you have already (with the help of your ASR) performed the initial loading of these commands. If you have not, do so now.

The following section describes each of the system configuration parameters. If you have additional options on your Series 1000, see the chapters on those options for additional parameters to the system configuration process.

The commands in this section are:

<b>SC</b>	load or change your system configuration
<b>PS</b>	print your system configuration parameters
<b>LD</b>	load the current date and time
<b>PD</b>	print the current date and time
<b>SD</b>	load the time for system shutdown and restart
<b>PR</b>	print the revision level and date of the program
<b>WK</b>	load working key
<b>LK</b>	print last keys read
<b>KT</b>	print total keys read
<b>CT</b>	clear total keys read
<b>MO</b>	display one screen at a time

## System Configuration Parameters

System configuration requests the following:

- **Site number**  
Four numeric digits that identify your site number. This number appears at the beginning of each transaction listing and as the first four digits when you print compacted transactions.
- **Idle message**  
One to 20 character message that alternates with the INSERT KEY prompt when the Series 1000 is not in use.
- **Key Prompts**  
One to 20 character messages for prompting the user to insert his type 1 or type 2 key.
- **Number of pumps**  
One digit (1 to 8) indicating the number of pumps served by the FleetKey system.
- **Number of pulses per gallon**  
The Series 1000 can handle pulse rates of dollar (one penny per pulse); or quantity (1:1, 10:1, 100:1, 250:1, 500:1, and 1000:1 ratios). You must enter a pulse rate for each pump as they may differ.
- **Number of tanks**  
One digit (1 to 8) indicating the number of tanks served by the Series 1000.
- **Price Data Format**  
Sets an option by which price data is included for your pumps and transactions. The type of price data you can obtain depends upon how your unit is pulsing (a value you set in the Number of Pulses Per Gallon parameter).

If you are pulsing by dollar (penny pulse), you can select any of the options. 0 gives you no pricing data; 1 gives you unit price only; 2 gives you unit and total price.

*Note: Selecting 1 to store unit price as part of the transaction is recommended even if you do not wish to have full price data. See the LP command for more on unit price selection.*

If you are pulsing by quantity, you can select 0 for no pricing data or 2 for unit and total price. The setting you choose for this parameter affects the performance of these commands: LP, PP, PC, PH, PT, ST, SS. See the descriptions for these commands to see how the output is affected.

- **System identification**  
Four digits that identify your system. This number is unique to your system, assigned at the factory, and is encoded onto your access keys. It guards against users of other systems accessing your system.
- **Number of zero quantity transactions for automatic pump disable**  
A number (1-99) to indicate the number of consecutive zero quantity transactions (no fuel dispensed) that must occur to disable the pump. Usually configured to 3 or 5. See [“DP - Disable a Pump” on page 68](#) for more details.
- **Number of lines per page**  
If you are using a Wyse® Link MC5 terminal with an Okidata® 184 printer attached, you must specify the number of lines to be printed on each page (usually 62). If you are not using the terminal and printer, set the lines per page to 0 (zero).
- **Key expiration date**  
Keys can be encoded with an expiration date (year and month). Once the date is reached, the user is denied further access and an EXPIRED message appears on the LCD display. This parameter allows you to disable the feature (keys will not be denied access).
- **Auto PIN lockout**  
When enabled, this feature locks out (invalidates) the key from system access after three unsuccessful PIN entries. You must validate the key for it to be active again. When this

feature is disabled, you still get three tries to enter a correct PIN, but the TURN KEY LEFT,REMOVE message reappears and the key is not invalidated.

- **Auto site shut down**

This parameter allows you to enable or disable the automatic site shut down time indicated in the SD command. When this feature is enabled, the site shuts down at the entered time and a SITE IS DOWN message appears on the LCD display. You can still access other software features and can activate a pump for one transaction through the AP command. When this feature is disabled, shutdown does not occur.

- **Transaction MPG**

This parameter allows you to enable or disable the transaction MPG feature. This feature allows the keyholder to view the MPG for his vehicle on the FleetKey LCD subsequent to fueling. It also shows Miles and MPG headings and data in transactions displayed using the PT, SS, and ST commands.

You may receive other system configuration prompts depending on the options you have on your system. These differences are noted in the section describing the option.

## SC - Load or Change System Configuration

Use the SC command to enter or change your system configuration data.

### Load System Configuration

- 1 At the \* prompt, type **SC**. The system displays ARE YOU SURE? <Y OR N> (Figure 6-1)
- 2 To cancel and return to the \* prompt, type **N** and press **RETURN**.

~ OR ~

To continue, type **Y** and press **RETURN**. The system displays SITE NO.:

*Note: Only Y or N are valid responses; if you type anything else, the system re-prompts you until you enter a Y or N.*

- 3 Type your site number and press **RETURN**.  
The system displays IDLE MESSAGE: <20 CHARS>.
- 4 Type an idle message of up to 20 characters and press **RETURN**.  
The system displays: ENTER KEY TYPE 1 PROMPT:
- 5 Type a prompt message of up to 20 characters for inserting key type 1 and press **RETURN**.  
The system displays: ENTER KEY TYPE 2 PROMPT:.
- 6 Type a prompt message of up to 20 characters for inserting key type 2 and press **RETURN**.  
The system displays: NO. OF PUMPS: <1-8>  
*Note: If you try to change the number of pumps while a pump is active, the message TRAN IN PROGRESS! appears. Wait until the transaction is complete before changing pump assignments.*
- 7 Type the number of pumps in your configuration and press **RETURN**.

The system displays:

PUMP #1

\$ OR QTY PULSES? <\$ OR Q>

*Note: Your system displays the pulse configuration parameters only if the pulse rate change switch on the Series 1000 MPU board is enabled for changing of pulse rates. If you do not receive pulse indicator and rate indicators (Steps 7 through 10), the next prompt that appears is NO. OF TANKS. Skip to Step 11.*

- 8 Type a dollar sign **\$** if you have a penny pulsing pump and skip to Step 10.

~ OR ~

Type a **Q**, for quantity pulses.

The system displays:

PULSES PER GAL <1000,500,250,100,10,1>.



- 9 Type the number of pulses for your pump and press **RETURN**.  
The system displays the next pump number.

*Note: If you try to change the pulse rate for a pump while that pump is active, the message **TRAN IN PROGRESS!** appears. Change assignments for another pump or wait until the transaction is complete before changing pulse assignments.*

- 10 Repeat this procedure from Step 8 until all your pumps pulse rates are defined.  
The system displays: NO. OF TANKS: <1-8>

- 11 Type the number of tanks in your configuration and press **RETURN**.  
The system displays: SYSTEM ID: <xxxx>

- 12 Type the unique 4-digit number for your system and press **RETURN**.

The system displays:  
PRICE DATA FORMAT  
0 = NO PRICE DATA  
1 = UNIT PRICE  
2 = UNIT & TOTAL PRICE  
ENTER FORMAT: <0,1,2>

- 13 Type a number from 0 to 2 and press **RETURN** to set a price data format for your pumps and transactions.

The system displays:  
AUTO PUMP DISABLE  
NO. OF ZERO QTY TRANS. <1-99>

- 14 Type the number of consecutive zero quantity transactions to trigger automatic pump disable and press **RETURN**. Usual values are 3 or 5.

The system displays:  
LINES PER PAGE: <0-62>

- 15 Type the number of lines to print on each page. If you are using a terminal/printer combination, type **62**, otherwise, type zero (**0**).

The system displays:  
KEY EXPIRATION DATE  
ENABLE OR DISABLE? <E OR D>

- 16 To disable the key expiration date feature, type **D** and press **RETURN**. The system accepts all dated keys as valid regardless of their expiration date.

~ OR ~

To enable the key expiration date feature, type **E** and press **RETURN**. The system checks expiration dates and denies access to those keys with past dates.

The system displays:  
AUTO PIN LOCKOUT  
ENABLE OR DISABLE? <E OR D>

- 17 To enable automatic PIN lockout (key locked out after three unsuccessful PIN entries), type **E** and press **RETURN**.

~ OR ~

To disable automatic PIN lockout, type **D** and press **RETURN**.

The system displays:  
AUTO SITE SHUT DOWN  
ENABLE OR DISABLE? <E OR D>

- 18 Type **E** and press **RETURN** to enable the shutdown feature (site shuts down based on the time entered in the SD command).

~ OR ~

Type **D** and press **RETURN** to disable the shutdown feature.

The system displays:  
TRANSACTION MPG  
ENABLE OR DISABLE <E OR D>

- 19 Type **E** and press **RETURN** to enable the transaction MPG feature (MPG displayed in transactions and subsequent to fueling).

*Note: If you have the Hours option, the system will prompt for hours and display HPG subsequent to fueling.*

~ OR ~

Type **D** and press **RETURN** to disable the transaction MPG feature.

The system returns to the \* prompt.

You have now completed the system configuration process. You can proceed with processing.

### Change the System Configuration

Later, when you make changes to the system configuration, you need not fill in data for every prompt.

*Note: Pressing RETURN at a prompt without entering data preserves the original entry for that field.*

- 1 Press **RETURN** for each prompt until you reach the one you wish to change.
- 2 Type your changed data and press **RETURN**.
- 3 Continue this process until the system configuration prompts end and the \* prompt reappears.

To exit the configuration process at any time without going through all the prompts, press **CTRL-C**.

**Figure: 6-1 Example of SC Command**

```
*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y↵

SITE NO.: <XXXX> 0003↵

IDLE MESSAGE: <20 CHARS> GASBOY FLEETKEY↵

ENTER KEY TYPE 1 PROMPT: INSERT GRAY KEY↵

ENTER KEY TYPE 2 PROMPT: INSERT GREEN KEY↵

NO. OF PUMPS: <1-8> 4↵

PUMP #1
  $ OR QTY PULSES? <$ OR Q>$↵

PUMP #2
  $ OR QTY PULSES? <$ OR Q>Q↵
  PULSES PER GAL <1000,500,250,100,10,1>100↵

PUMP #3
  $ OR QTY PULSES? <$ OR Q>Q↵
  PULSES PER GAL <1000,500,250,100,10,1>10↵

PUMP #4
  $ OR QTY PULSES? <$ OR Q>Q↵
  PULSES PER GAL <1000,500,250,100,10,1>10↵

NO. OF TANKS: <1-8> 4↵

PRICE DATA FORMAT
  0 = NO PRICE DATA
  1 = UNIT PRICE
  2 = UNIT & TOTAL PRICE
  ENTER FORMAT: <0,1,2>0↵

SYSTEM ID:<XXXX> 5745↵

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS. <1-99> 5↵

LINES PER PAGE <0-62>: 62↵

KEY EXPIRATION DATE
  ENABLE OR DISABLE? <E OR D> E↵

AUTO PIN LOCKOUT
  ENABLE OR DISABLE? <E OR D> E↵

AUTO SITE SHUT DOWN
  ENABLE OR DISABLE? <E OR D> E↵

TRANSACTION MPG
  ENABLE OR DISABLE? <E OR D> D↵

*
```

## PS - Print System Configuration

Use the PS command to print a listing of your system configuration parameters and the current values.

- 1 At the \* prompt, type **PS**. The listing prints ([Figure 6-2](#)).  
*Note: For security reasons, SYSTEM ID is not printed.*
- 2 If the MO command is set to yes, the “Press any key to continue...” prompt appears. Press any key to complete the listing printout. This prompt is an aid for CRT users so that the configuration printout does not scroll off the screen; it does not serve any purpose if you are printing the listing.

**Figure: 6-2**Example of PS Command

```
*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                      0003

IDLE MESSAGE:                  GASBOY FLEETKEY

KEY TYPE 1 PROMPT:             INSERT GRAY KEY
KEY TYPE 2 PROMPT:             INSERT GREEN KEY

PUMP #01    PULSES PER GAL:    $
PUMP #02    PULSES PER GAL:    0100
PUMP #03    PULSES PER GAL:    0010
PUMP #04    PULSES PER GAL:    0010

NUMBER OF TANKS:                4

PRICE DATA FORMAT:             NO PRICE DATA

Press any key to continue...

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.:      05

LINES PER PAGE:                 62

KEY EXPIRATION DATE:            ENABLED

AUTO PIN LOCKOUT:               ENABLED

AUTO SITE SHUT DOWN:            ENABLED

TRANSACTION MPG:                DISABLED

*
```

## LD - Load Date and Time

Use the LD command to load the current date and time into the system.

- 1 At the \* prompt, type **LD**. The YEAR: prompt appears ([Figure 6-3](#)).
- 2 Type the current 2-digit year and press **RETURN**. The MONTH: prompt appears.
- 3 Type the number of the current month and press **RETURN**. The DAY: prompt appears.
- 4 Type the current day of the month and press **RETURN**. The HOURS: prompt appears.
- 5 Type the hour using 24-hour military time (00-23) and press **RETURN**. The MINS: prompt appears.
- 6 Type the minutes (0-59) and press **RETURN**. The \* prompt reappears.

### Figure: 6-3 Example of LD Command

If today's date is November 23, 2005, and the time is 9:30 a.m., you would enter:

```
*LD
YEAR: 05↵
MONTH: 11↵
DAY: 23↵
HOUR: 9↵
MINS: 30↵
*
```

*Note: The Series 1000 uses a battery backed-up clock; date and time will be retained after a power failure.*

## PD - Print Date and Time

Use the PD command to print the current date and time. In addition, these values also print: the first transaction to print (TRAN PTR), the last completed transaction (LAST TRAN), the site shutdown time (SITE DOWN TIME), the site restart time (SITE UP TIME). The shutdown parameters print only if the AUTO SITE SHUTDOWN parameter was enabled during the SC command.

If you run the RP command to set the transaction pointer to the last transaction plus 1, and then run the PD command before a new transaction is generated, the data in TRANS PTR will not reflect the new number entered during the RP command. TRANS PTR will correct itself as soon as a new transaction is generated.

At the \* prompt, type **PD**. The listing prints and the \* prompt reappears ([Figure 6-4](#)).

**Figure: 6-4 Example of PD Command**

```
*PD
DATE=07/23/92  TIME= 9:30  TRAN PTR=0001  LAST TRAN=0750
SITE DOWN TIME=23:00  SITE UP TIME= 7:00
*
```

## SD - Load Site Down Time

Use the SD command to set a daily time when the site is automatically shut down and users cannot access the fuel dispensing equipment. A **\*\*SITE IS DOWN\*\*** message appears on the LCD display. You can still access other software features and can activate a pump for one transaction through the AP command. Type the time entries using 24-hour military time.

- 1 At the \* prompt, type **SD** (Figure 6-5).

The system displays:

SITE SHUT DOWN START TIME:

HOURS:

- 2 Type the hour (0-23) for the start shutdown time and press **RETURN**.

The system displays: MINS:

- 3 Type the minutes (0-59) and press **RETURN**.

The system displays:

SITE SHUT DOWN END TIME:

HOURS:

- 4 Type the hour (0-23) for the end shutdown time and press **RETURN**.

The system displays: MINS:

- 5 Type the minutes (0-59) and press **RETURN**.

The \* prompt reappears.

If you type the SD command when the auto site shutdown feature is disabled, this message appears: **AUTO SITE SHUT DOWN OPTION MUST BE ENABLED!** Use the SC command to enable this feature.

**Figure: 6-5 Example of SD Command**

```
*SD
SITE SHUT DOWN START TIME:
HOURS: 23↵
MINS: 00↵

SITE SHUT DOWN END TIME:
HOURS: 7↵
MINS: 00↵

*
```

## PR - Print Program Revision and Date

Use the PR command to print the name of the program that is in your system along with its revision level and date. You may need to view this information if you have a problem with your system and need to contact your distributor or Gasboy for help. The data appears in the format: program revision, program name, and program date.

At the \* prompt, type **PR**. The information prints (Figure 6-6).

**Figure: 6-6 Example of PR Command**

```
*PR
KVx.x A123456 mm-dd-yy
*
```

## WK - Load Working Key

Use the WK command to load a unique 4-digit number (key) for encrypting and decrypting the PIN (personal identification number) on your keys. You can require your keyholders to enter a PIN for each transaction. This protects the system from unauthorized use should a key be lost or stolen and also protects your system from access by a user from another system. You can set up the system to automatically lock out the key after three unsuccessful PIN entries (see SC command, auto PIN lockout feature).

The system uses an encryption process with this 4-digit working key number and the PIN you specify. The PIN number for each key is selected at the time of encoding and can be assigned or user-selected. Encryption of PINs assures that an unauthorized person cannot determine a key's PIN even if he can obtain access to the actual data on the key.

The 4-digit working key number you use in this command is assigned when you order your system and is shown on the key layout provided with this manual or with your Key Encoder/Maintenance Terminal Manual. Do not change this working key number unless directed by an authorized service representative (ASR). If the working key is changed after the keys have been encoded, the PINs will no longer work in the system.

You can view the PIN number associated with a key by putting the system in diagnostic mode.

- 1 At the \* prompt, type **WK**. The system displays WORKING KEY NO. (Figure 6-7)
- 2 Type the 4-digit working key number and press **RETURN**. The \* prompt reappears.

**Figure: 6-7Example of WK Command**

```
*WK
WORKING KEY NO. 1234↵
*
```



## LK - Print Last Key(s) Read

Use the LK command to print the encoded information from the last key(s) used at the system.

At the \* prompt, type **LK**. The system prints as shown in one of the following examples (Figure 6-8 and Figure 6-9).

**Figure: 6-8 Example of Printing Encoded Information for Two-Key System**

```
*LK
FIRST KEY DATA
1-9999--00012-1234----07423336----9912-----2-0000000000000000-----
-----187-----5?4?

SECOND KEY DATA
2-9999--00954-----5201-----99123-0-0-1-00000000000000001-0301000500
150009327-0000000010573-0000000012650-000000--??-490?0012650000130000???1

*
```

**Figure: 6-9 Example of Printing Encoded Information for One-Key System**

*Note: The SECOND KEY DATA section contains dashes.*

```
*LK
FIRST KEY DATA
0-9999--00542-12345678-----97121-2-3-7-00000000000000002-0301000500
010000000-00000000000000-00000000000000-000000--?2??2?3?0009900000100000-?68

SECOND KEY DATA
-----
-----

*
```

## KT - Print Key Totals

Use the KT command to print, for each of your receptacles, the number of keys read and the total CRC-16 key read errors. The KT command always prints as two receptacles; if you have only one, the other will contain zeros.

At the \* prompt, type **KT**. Key totals print ([Figure 6-10](#)).

**Figure: 6-10 Example of KT Command**

```
*KT
TOTAL READS 1: 00000      TOTAL CRC ERRORS 1: 00000
TOTAL READS 2: 00000      TOTAL CRC ERRORS 2: 00000
*
```

## CT - Clear Key Totals

Use the CT command to clear the key receptacle read and error table.

- 1 At the \* prompt, type **CT**.  
The system displays: CLEAR KEY READ TOTALIZERS? <Y OR N> ([Figure 6-11](#)):

- 2 Type **Y** to clear and press **RETURN**.

~ OR ~

Type **N** to not clear and press **RETURN**.

**Figure: 6-11 Example of CT Command**

```
*CT
CLEAR KEY READ TOTALIZERS? <Y OR N>: Y↵
*
```

## MO - Display Output by Screen (More)

Use the MO (more) command to control screen output when you are using a CRT terminal. Normally, when output longer than one screen is sent from the FleetKey System to the CRT terminal, it scrolls by faster than you can read it. The MO command enables you to display the output one screenfull at a time, then press a key to display the next screenfull.

When you reply Y (yes) to the MO command prompt, the next time you request data output, the first screenfull appears followed by the message Press any key to continue... When you press a key, the next screenfull appears and so on until the entire output is displayed.

- 1 At the \* prompt, type **MO** (Figure 6-12).  
The system prompts: DISPLAY OUTPUT ONE SCREEN AT A TIME? <Y OR N>.
- 2 Type **Y** to display output one screen at a time.

~ OR ~

Type **N** to scroll the output to the end of the command.

**Figure: 6-12 Example of MO Command**

```
*MO↵
DISPLAY OUTPUT ONE SCREEN AT A TIME? <Y OR N> Y↵
*
```



## 7 – Reasonable Odometer Check and Transaction MPG

### Reasonable Odometer Description

When you encode your keys, you can require one or more entries to be made (PIN, odometer and manual entry). The requirement for these entries is indicated via a check digit which appears on the key. If the check digit indicates that odometer entry is required for fueling, the reasonable odometer check feature is used.

The reasonable odometer check feature uses six fields on the key:

- **Last Odometer:** Seven digit numeric field. Contains the odometer entered at the last (or current) fueling.
- **Previous Odometer:** Seven digit numeric field. Contains the odometer from the fueling prior to the current one.
- **Reasonableness Check Digit:** One digit numeric field containing one of the following values:
  - 0 Reasonableness check not required
  - 1 Reasonableness check required
  - 2 Mandatory reasonable odometer
- **Odometer Retries:** Two digit numeric field (00-99). Number of times the odometer will be re-prompted for when an incorrect odometer has been entered.
- **Minimum Miles:** Four digit numeric field. Minimum number of miles that must be traveled for an odometer entry to be considered reasonable.
- **Maximum Miles:** Four digit numeric field. Maximum number of miles that can be traveled for an odometer entry to be considered reasonable.

During a fueling, when an odometer entry is detected, the system checks the reasonableness check digit on the key. The check digit determines what action is to be taken on the entered odometer and is a number from 0 - 2.

- 0 indicates that no reasonableness check is performed; any odometer entered is accepted.
- 1 indicates that the check is required. If the odometer is invalid, the keyholder is re-prompted up to the number of retries indicated on the key. If the odometer is still invalid, an ODOM RANGE ERR transaction is logged and fueling is allowed.
- 2 indicates a mandatory reasonableness check. If the odometer is invalid, the keyholder is re-prompted up to the number of retries indicated on the key. If no acceptable odometer is entered, an ODOM RANGE ERR transaction is logged and no fueling is allowed.

The first time a key is used, the values for previous odometer and last odometer should be zero. If so, no reasonability check is performed. The system takes the odometer you enter (the current odometer) and writes it to the key as the last odometer and the previous odometer.

If the last odometer on the key is not zero, the system then checks the reasonableness check digit.

If the check digit is zero, any odometer entered is accepted. The last odometer value on the key is moved to the previous odometer and the odometer you enter (the current odometer) becomes the key's last odometer.

If the reasonableness check digit is other than zero, the system must determine a comparison odometer. If the current odometer equals the key's last odometer, the previous odometer value is used as the comparison odometer; if it does not equal the last odometer, the last odometer value is used as the comparison odometer. Then the system performs the following actions:

- checks if entered odometer (current) is greater than comparison odometer. If not, follow error routine.
- calculates miles traveled by subtracting the comparison odometer from current odometer
- checks if minimum miles is zero or miles traveled is greater than or equal to minimum miles value encoded on key. If not, follow error routine.
- checks if maximum miles is zero or miles traveled is less than maximum miles value encoded on key. If not, follow error routine.
- writes last odometer to previous odometer and current odometer to last odometer.

### Error Routine

When any of the above noted conditions are detected the following occurs:

- system prompts you to enter odometer up to the number of retries.
- if odometer is valid, checks as indicated above are performed. If odometer is not valid, the message INVALID ODOM is generated. If the reasonableness check digit is 2, a zero quantity ODOM RANGE ERR transaction is logged and the system returns to idle. If the reasonableness check digit is 1 or 0, the current odometer (last one entered) is written to the key and the fueling is allowed to proceed.

### **NOTE TO USERS UPGRADING TO VERSION 5 FROM A PRIOR FLEETKEY VERSION:**

*The first time your keys are used with the new version, no reasonableness check is performed; the odometer entered is stored in the new odometer fields (see “Key Layout” on page 39). The next time the key is used, the data in these fields is used as the basis for the reasonableness check.*

## Transaction MPG Description

*Note: Systems with the receipt printer option will not prompt for MPG when the Transaction MPG feature is enabled. In this case, the transaction's MPG can be found in the transaction history file. Systems without the receipt printer option will prompt for MPG when the Transaction MPG feature is enabled.*

*Note: If you measure consumption with an hour meter and have the Hours option, your system will request HPG instead of MPG and HOURS instead of ODOMETER.*

When you have enabled transaction MPG in your SC command, you enable the keyholder to display MPG at the fueling island immediately after fueling. In order to use the MPG feature, you must also require odometer entry. MPG is available with key types 0 and 2 and is obtained as follows.

After you fuel your vehicle in the normal fashion and want to see your MPG, go back to the Series 1000 and insert your key(s). The system asks if you want to display MPG:

MPG? 1=YES 0=NO.

- If you reply 1 for yes, your MPG is displayed (xxx.x MPG) and the transaction is finished.
- If you do not choose to display MPG (press 0 for no), you can proceed with fueling.

The next time you attempt to fuel, the system checks through the last 16 transactions with quantity. If one of these matches your account data (that is, key number, ID fields, etc.), the system asks if you want to display MPG for that transaction.

- If you select yes, the system displays MPG. You must then insert your key(s) again to begin your fueling transaction.
- If you select no, the system proceeds with a normal fueling operation.

*Note: For both transaction MPG and receipt printer, the system always checks the last 16 transactions with quantity. If none of the transactions matches the account data on your key, fueling proceeds as usual. If a match exists, you are prompted for MPG or receipt.*

## Transaction Headings With Transaction MPG

When you have transaction MPG and it is enabled, the transaction printout contains all of the standard fields, plus two additional fields: MILES and MPG. MILES is a four-digit field containing the difference between the current odometer reading and the previous odometer reading. MPG is the miles per gallon calculation for the transaction. These fields show up on transactions only when the Transaction MPG parameter is set to enabled on your SC command. When transaction MPG is disabled, no MPG is displayed on your LCD, and no field headings or data will appear in transactions printed with the PT (Figure 7-1), SS and ST commands. Fields always appear in compacted transactions (PC, PH commands).

Sometimes, the MILES and MPG fields may contain spaces or question marks (or zeros for PH, PC commands). These fields contain spaces if transaction MPG is enabled but no odometer entry is required. They could also contain spaces when a new key is being used and the last odometer value on the key is zero. In this case, no MPG could be calculated. The fields contain question marks if the odometer you enter is less than the last odometer recorded on your key or greater than the last odometer on the key plus 9999 and the message ODOM RANGE ERR is placed in the error field of the transaction.

**Figure: 7-1 Example of PT Command**

```
*PT↵
```

TRAN	KEY1	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	MILES	MPG	ERROR
0221	01328	00000	5967	2430	07/11/92	15:30	01	01	8.28	0054880	0375	45.3	
0222	01234	00000	5678	9012	07/11/92	15:37	03	03	13.6	0010222	0328	24.1	
0223	03024	00000	8132	9675	07/11/92	15:39	02	02	11.6	0059381	0250	21.5	





## 8 – Key Layout

### Key Fields

The Series 1000 FleetKeys are encoded with information to control access to the fuel dispensing equipment, the type of fuel(s), and the maximum amount of fuel dispensed. All of the fields on the key are set with regard to location and length. The system provides up to 20-digits of variable identification fields so you can customize the system to your particular information requirements. The names and sizes of these variable fields must be specified at the time of order. You can have any combination of fields equalling 20, but the maximum number of separate fields is eight. You may also specify which key(s) the various information fields are encoded on in a dual key application.

This section describes the information fields encoded on the keys. You do not need to use all of the fields. If you choose to not use certain fields, you can zero-fill the fields when you are encoding the key.

Field Name	Size
Key Type	1 digit
System ID	4 digits
Key Number	5 digits
ID Fields (8 maximum)	Maximum 20 digits
Expiration Date	4 digits
Product Limit	1 digit
Product Authorization	1 digit
Price Level	1 digit
Check Digit	1 digit
Previous Odometer (1)	7 digits
Last Odometer (1)	7 digits
Reasonableness Check Digit	1 digit
Odometer Retries	2 digits
Minimum Miles	4 digits
Maximum Miles	4 digits
Vehicle Class	2 digits
Maintenance A Odometer	7 digits
Maintenance A Date	6 digits
Maintenance B Odometer	7 digits
Maintenance B Date	6 digits
Maintenance C Odometer	7 digits
Maintenance C Date	6 digits
PIN	4 digits
CRC	4 digits
Previous Odometer (2)	7 digits
Last Odometer (2)	7 digits
Odometer CRC	4 digits

Field Descriptions

Key Type

A one-digit numeric field that is always the first field encoded on a key. It identifies the type of key being used. Possible values are:

- 0 Single Key
- 1 Employee Key (Dual key)
- 2 Vehicle Key (Dual key)
- 3 Supervisor Key (Supervisor Option Only)
- 4 Delivery Key (Delivery/Dipstick Option Only)
- 5 Dipstick Key (Delivery/Dipstick Option Only)
- 6 Password Key
- 7 Encoding Key (Encoding Option Only)

System ID

A four-digit numeric field that identifies your system and safeguards against access by users of other systems. Your unique system ID is assigned at the time of order and appears on your key layout. When using two keys, the system ID is encoded and verified on both.

Key Number

Five digit numeric field used for lockout. When using two keys, each key has its own unique key number. On a standard system with 10,000 key lockout, key numbers range from 00001-09999. Additional blocks of 10,000 lockouts can be specified at order time.

ID Fields

Numeric or alphanumeric fields, configurable at order time. Each field can be from 1- to 20-digits with the total of all fields not exceeding 20 digits. Number of separate fields cannot exceed eight. When using dual keys, each ID field is usually encoded on a separate key. Field separators take the place of the corresponding ID field on the other key. If an ID field appears on both keys, the ID field data must be the same on both keys.

If you have the supervisor key option, the system operator can use a specially encoded supervisor key to manually enter key information at the Series 1000 keypad. Supervisor keys are typically used when a key has been lost. The supervisor can enter data in any of the ID fields. Supervisor fields can be encoded onto key types 1, 2 or 3 and consist of special characters to designate the supervisor fields. Keys to be used with the Maintenance option cannot contain supervisor characters in the VEH field.

For example, assume that your system has the following ID fields and you want the supervisor to enter a 4-digit EMP and 3-digit DEPT. You would encode the fields as shown on the partial key layout in [Figure 8-1](#).

Figure: 8-1 Partial Key Layout

KEY TYPE	SYS ID	KEY	EMP	VEH	DEPT	EXP DATE
0	1234	12345	....	1226	...	9212

## Expiration Date

Four digit numeric field (YYMM) assigned to establish a lifetime for the key. If the expiration date is encoded on only one of the keys, field separators take its place on the other dual key. If you wish to encode the keys with a date in the distant future, you can code 9912 for December 1999. Your system can be configured through the SC command to ignore the expiration date on the key. In any case, a valid year (00-99) and a valid month (01-12) must be encoded on the key.

## Product Limit

One digit numeric field used to restrict the maximum quantity of product dispensed per transaction. When using dual keys, the product limitation code is usually encoded on only one of the keys, typically a vehicle key. A field separator takes the place of the digit on the other dual key. If the product limitation code appears on both keys, the code must be the same on both keys.

Product limitation is provided mainly as a safeguard to minimize accidental spillage. You can load into the system up to ten (0 - 9) limitation codes with quantities up to 99999. The vehicle key is generally assigned a limitation code with the nearest quantity greater than the vehicle's tank size. If the user dispenses fuel to the quantity limit of his key, the transaction automatically terminates. If the user wants additional product, he can initiate another transaction and dispense additional product up to the limit cutoff.

Complete [Figure 8-2: Product Limitation Codes](#) prior to ordering or encoding your keys. Make sure the completed table is available at start-up so it can be loaded into your system at that time.

**Figure: 8-2 Product Limitation Codes**

Limitation Code	Limit Cutoff Quantity (Five Digits)
0	_____
1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____
9	_____

## Product Authorization

One digit numeric field used to specify the type(s) of fuels a key is allowed to access. When using dual keys, the product authorization code is usually encoded on only one key (typically the vehicle key). A field separator takes the place of the digit on the other dual key. If the product authorization code appears on both keys, it must be the same on both keys.

You can load into the system, up to nine (1 - 9) authorization codes with up to nine fuel types

per code. The user is permitted to access only the product type(s) loaded into the system for the authorization code encoded on his key. The authorization code 0 permits access to all fuels.

Complete [Figure 8-3: Product Code Assignments](#) and [Figure 8-4: Product Authorization Codes](#) before ordering or encoding your keys and before system start-up. First, assign a one-digit product code to each product controlled by your system. The FleetKey system can maintain inventories for up to eight products. Typically the product codes are numbered 1 through 9. Second, assign the product code(s) to the product authorization codes as you require. Make sure your completed product code assignments and authorization code table are available at system start-up, so they can be loaded into your system at that time.

Figure: 8-3 Product Code Assignments

Product Code (Two Digits)	Description

Figure: 8-4 Product Authorization Codes

Auth Code	Product Code(s) Allowed								

Price Level

One digit numeric field. Unused at this time.

Check Digit

One digit numeric field used to determine what data must be entered at the keypad. When using two keys, a different check digit may be on each key. This allows the check digit to relate to the particular key on which it is encoded. For example, the odometer check digit is

usually associated with the vehicle key, whereas the Personal Identification Number (PIN) check digit is usually associated with the employee key. This is encoded by using a check digit of 1 on the vehicle key and a check digit of 4 on the employee key. [Figure 8-5: Required Manual Entries \(Check Digit Codes\)](#) shows the various check digit codes.

**Figure: 8-5 Required Manual Entries (Check Digit Codes)**

Code	Required Manual Entries
0	No manual entry required
1	Odometer entry required
2	Manual entry required
3	Odometer and manual entries required
4	PIN entries required
5	Odometer and PIN entries required
6	Manual and PIN entries required
7	Odometer, manual, and PIN entries required

### Previous Odometer (1)

Seven digit numeric field, filled with zeroes (not used as of KV5.1).

### Last Odometer (1)

Seven digit numeric field, filled with zeroes (not used as of KV5.1).

### Reasonableness Check Digit

One digit numeric field containing one of the following values:

- 0 Reasonableness check not required
- 1 Reasonableness check required
- 2 Mandatory reasonable odometer

In a dual key system, this field is usually on the vehicle key.

### Odometer Retries

Two digit numeric field (00-99). Number of times the odometer will be prompted for when an incorrect odometer has been entered. In a dual key system, this field is usually on the vehicle key.

### Minimum Miles

Four digit numeric field. Minimum number of miles that must be traveled for an odometer entry to be considered reasonable. In a dual key system, this field is usually on the vehicle key.

### Maximum Miles

Four digit numeric field. Maximum number of miles that can be traveled for an odometer entry to be considered reasonable. In a dual key system, this field is usually on the vehicle key.

### **Vehicle Class**

Two digit numeric field. Used only with the Maintenance Option. Valid vehicle classes are 00-20. Vehicle class appears on the key, vehicle maintenance table is defined within the FleetKey system. (See [“Maintenance Option” on page 127](#) for more details). In a dual key system, this field is usually on the vehicle key.

### **Maintenance X Odometer**

Seven digit numeric field to contain odometer at which maintenance type A, B, or C was last performed (X is replaced with A, B, or C). This field is used only with the Maintenance Option. In a dual key system, this field must be on the vehicle key. This field must be encoded with the last maintenance odometer or a starting odometer from which maintenance will be calculated. If zeros are encoded, the system assumes that maintenance will not be used.

### **Maintenance X Date**

Six digit numeric field (YYMMDD) to contain date on which maintenance type A, B, or C was last performed (X is replaced with A, B, or C). This field is used only with the Maintenance Option. In a dual key system, this field must be on the vehicle key. This field must be encoded with the last maintenance date or a starting date from which maintenance will be calculated. If zeros are encoded, the system assumes that maintenance will not be used.

### **PIN**

Four digit numeric field. Protects system from unauthorized use should a key be lost or stolen. You assign PINs to keyholders. The PIN is stored on the key in an encrypted form so that it is not readable without being decrypted. When using dual keys, the PIN must be encoded on the key which has the check digit configured for PIN. Zeros take the place of digits on the other key. If PIN is encoded on both keys, it must be the same on both. If your check digit does not require PIN entry, enter zeros when encoding this field.

### **CRC**

Four digit ASCII field (hexadecimal). The CRC is calculated based on all of the preceding data on the key. It is used to ensure the integrity of key data. You do not enter a CRC at the keypad, it will be encoded automatically.

### **Previous Odometer (2)**

Seven digit numeric field. Used for odometer reasonableness check when the current odometer is equal to the last odometer entered. In a dual key system, must be on vehicle key.

### **Last Odometer (2)**

Seven digit numeric field. Used for odometer reasonableness check. In a dual key system, must be on vehicle key.

### **Odometer CRC**

Four digit ASCII field (hexadecimal). The CRC is calculated based on Previous Odometer (2) and Last Odometer (2). You do not enter a CRC at the keypad, it will be encoded automatically.

## Preparing for Encoding

Before you can encode your keys, reference the key layout supplied with this manual. Most of the FleetKey fields are of set length and arrangement, but you will need to note the name and length of your custom ID fields to encode your keys. A sample key encoding form appears on the next page. You'll need to fill out a separate line on this form for each key you plan to encode. This allows you to outline all user-specific information that is to be encoded on the key.

### Filling Out the Key Encoding Form

- 1 Make a photocopy of the key encoding form. Make several if you are encoding a large number of keys or if you are defining multiple types.
- 2 At Key Type, fill in the type of key you are encoding. Key type can be from 0 to 7.
 

0	Single Key	
1	Employee Key	(Dual key)
2	Vehicle Key	(Dual key)
3	Supervisor Key	(Supervisor Option Only)
4	Delivery Key	(Delivery/Dipstick Option Only)
5	Dipstick Key	(Delivery/Dipstick Option Only)
6	Password Key	
7	Encoding Key	(Encoding Option Only)

*Note: If you are providing data for dual keys, use a separate sheet for each key type (for example, one for EMPLOYEE, one for VEHICLE). Do not list dual keys on the same sheet one after another.*

Special format keys (fuel delivery, supervisor, etc.) have different layout requirements. See the section on the specific option for details.

- 3 Fill in the data for each key field. You must define data for every field represented on your key layout. Do not leave spaces blank. The first row (Reference) on the body of the form is provided for you to write reference information for the key (for example, employee name, account name, etc.). This column of information is not encoded on the key, it is optional and for your use. Be sure to use the format YYMM on the Exp. Date field.
- 4 If you are having your keys encoded by GASBOY, fill out the top of the form (SYSTEM OWNER, BILL TO, and SHIP TO).

### Encoding Options

Encoding your keys involves taking all the information you want on the key (from the encoding form) and electronically writing it onto each key. There are several methods for encoding your keys. You can:

- encode them using a GASBOY KE200 Key Encoder/Maintenance Terminal
- encode them through the FleetKey system (Requires the FleetKey Encoding Option)
- have them encoded by GASBOY (only if Maintenance Option is not selected)

To encode your own keys using a KE200 Key Encoder, see C08380 Key Encoder/Maintenance Terminal Manual. If you select the Maintenance option, you will need a Key Encoder/Maintenance terminal to update the keys with the Maintenance information. You can also update key information or make additional keys if necessary.

To encode your keys using the Encoding option, see [“Encoding Keys Option” on page 99](#).

To have keys encoded by Gasboy, order them through your Gasboy distributor. You must provide a copy of the key encoding form.



## Series 1000/CFN Key Encoding Form

System Owner: \_\_\_\_\_ Ship To: \_\_\_\_\_  
 Bill To: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Key Type: \_\_\_\_\_ System ID: \_\_\_\_\_

Reference								
Key Number <sup>1</sup>								
*ID 1:								
*ID 2:								
*ID 3:								
*ID 4:								
*ID 5:								
*ID 6:								
*ID 7:								
*ID 8:								
Exp Date								
Prod Limit								
Prod Auth								
Price Level								
Check Digit								
Prev Odom								
Last Odom								
Reas Chk Dig								
Odom Retries								
Min Miles								
Max Miles								
Veh Class								
Maint A Odom								
Maint A Date								
Maint B Odom								
Maint B Date								
Maint C Odom								
Maint C Date								
PIN								

\* Up to 8 digits totaling up to 20 digits.



## 9 – Key Validation Commands

---

### Overview

Key validation commands allow you to control access to your system by validating/invalidating keys by number. Key numbers can be validated/invalidated individually, in strings of up to twenty assorted key numbers, or by ranges of consecutive key numbers. A key could also become invalid when a user tries to enter a PIN number unsuccessfully three consecutive times. A standard FleetKey system is configured to handle validation for 10,000 5-digit key numbers ranging from 00001 to 09999. Additional consecutive blocks of 10,000 numbers can be requested at order time. Remember, additional lockouts decrease the number of transactions that can be stored in the system.

Validating a user's key allows that user to access the system; invalidating a key locks out that user from the system. The process by which you control access to your system is called lockout. The file in which valid and invalid keys are stored is called the lockout file. There are two types of lockout files:

- a negative key file where you validate all keys and invalidate individual keys
- a positive key file where you invalidate all keys and validate individual key numbers

### Key Validation Commands

The key validation commands are:

<b>VA</b>	validate all keys
<b>VK</b>	validate a key
<b>IA</b>	invalidate all keys
<b>IK</b>	invalidate a key
<b>CK</b>	check key validation
<b>PV</b>	print valid key list
<b>PI</b>	print invalid key list

## VA - Validate All Keys

Use the VA command to validate all keys in the lockout file. This creates a negative key file, where you must invalidate keys individually to control access to the system.

- 1 At the \* prompt, type **VA** (Figure 9-1).  
The system displays: VALIDATE ALL KEYS? <Y OR N>.
- 2 Type **Y** to validate all keys (negative)

~ OR ~

Type **N** for the lockout file to remain unchanged.

**Figure: 9-1 Example of VA Command**

```
*VA  
VALIDATE ALL KEYS? <Y OR N> Y↵  
*
```

## VK - Validate a Key

Use the VK command to validate specific keys in the lockout file. You may need to do this when a key has been invalidated by the auto PIN lockout feature. You can validate a single key, a string of up to 20 assorted keys, or a range of key numbers.

### Validate a Single Key

- 1 At the \* prompt, type **VK** (Figure 9-2).  
The system displays: ENTER NO.:
- 2 Type the key number to be validated and press **RETURN**.
  - If the key was previously invalid and made valid, the system displays **VALIDATED**, followed by \*.
  - If the key was previously valid, the system displays **NO. IS VALID**, followed by \*.

**Figure: 9-2 Example of VK Command for Single Key**

```
*VK
ENTER NO. : 01023↵
VALIDATED
*
```

### Validate a String of Assorted Keys

- 1 At the \* prompt, type **VK** (Figure 9-3).  
The system displays: ENTER NO.:
- 2 Type the key number to be validated followed by a comma ( , ).
- 3 Repeat Step 2 for up to 20 key numbers.
- 4 When you enter your last key number or you reach 20, press **RETURN**.
  - If at least one key was previously invalid, the system displays: **VALIDATED**, followed by \*.
  - If all of the entered keys were previously valid, the system responds **NO. IS VALID** , followed by \*.

**Figure: 9-3 Example of VK Command for Assorted Keys**

```
*VK
ENTER NO. : 01234,02653,02812,02767↵
VALIDATED
*
```

## Validate a Range of Keys

- 1 At the \* prompt, type **VK** (Figure 9-4).  
The system displays: ENTER NO.:
- 2 Type the first key number in the range to be validated, followed by a hyphen ( - ).
- 3 Type the last key number of the range to be validated and press **RETURN**.
  - If at least one key was previously invalid, the system displays: VALIDATED, followed by \*.
  - If all of the entered keys were previously valid, the system responds NO. IS VALID , followed by \*.

*Note: If the last number in the range entry is less than the first number, the command is not executed.*

**Figure: 9-4 Example of VK Command for Range of Keys**

```
*VK
ENTER NO. : 02125-02135↵
VALIDATED
*
```

## IA - Invalidate All Keys

Use the IA command to invalidate all keys in the lockout file. This creates a positive key file, where you must validate keys individually to control access to the system.

- 1 At the \* prompt, type **IA** (Figure 9-5).  
The system displays: INVALIDATE ALL KEYS? <Y OR N>.
- 2 Type **Y** to invalidate all keys (positive)

~ OR ~

Type **N** for the lockout file to remain unchanged.

**Figure: 9-5 Example of IA Command**

```
*IA
INVALIDATE ALL KEYS? <Y OR N> Y↵
*
```

## IK - Invalidate a Key

Use the IK command to invalidate specific keys in the lockout file. You can invalidate a single key, a string of up to 20 assorted keys, or a range of key numbers.

### Invalidate a Single Key

- 1 At the \* prompt, type **IK**.  
The system displays: ENTER NO.:
- 2 Type the key number to be invalidated and press **RETURN**.
  - If the key was valid, the system displays INVALIDATED, followed by \*.
  - If the key was previously invalid, the system displays NO. IS INVALID, followed by \*.

### Invalidate a String of Assorted Keys

- 1 At the \* prompt, type **IK** (Figure 9-6).  
The system displays: ENTER NO.:
- 2 Type the key number to be invalidated followed by a comma ( , ).
- 3 Repeat Step 2 for up to 20 key numbers.
- 4 When you enter your last key number or you reach 20, press **RETURN**.
  - If at least one key was previously valid, the system displays: INVALIDATED, followed by \*.
  - If all of the entered keys were previously invalid, the system responds NO. IS INVALID, followed by \*.

**Figure: 9-6 Example of IK Command for Assorted Keys**

```
*IK
ENTER NO. : 01234,02653,02812,02767↵
INVALIDATED
*
```

## Invalidate a Range of Keys

- 1 At the \* prompt, type **IK** (Figure 9-7).  
The system displays: ENTER NO.:
- 2 Type the first key number in the range to be invalidated, followed by a hyphen ( - ).
- 3 Type the last key number of the range to be invalidated and press RETURN.
  - If at least one key was previously valid, the system displays: INVALIDATED, followed by \*.
  - If all of the entered keys were previously invalid, the system responds NO. IS INVALID, followed by \*.

*Note: If the last number in the range entry is less than the first number, the command is not executed.*

**Figure: 9-7 Example of IK Command for Range of Keys**

```
*IK
ENTER NO. : 02136-02145↵
INVALIDATED
*
```

## CK - Check Key Validation

Use the CK command to check on a key's validation status.

- 1 At the \* prompt, type **CK** (Figure 9-8).  
The system displays: ENTER NO.:
- 2 Type the key number you wish to check and press RETURN.  
The system displays: NO. IS VALID or NO. IS INVALID, followed by \*.

*Note: The CK command accepts only single entries; you cannot check a string or a range.*

**Figure: 9-8 Example of CK Command**

```
*CK
ENTER NO. : 01023↵
NO. IS VALID
*
```



## PV - Print Valid Key List

Use the PV command to print a list of all valid keys.

At the \* prompt, type, **PV** (Figure 9-9).

The system displays a list of all valid key numbers followed by \*.

**Figure: 9-9 Example of PV Command**

```
*PV
VALID LIST
00001 00002 00003 00004 00005 00006 00007 00008 00009 00010
00011 00012 00013 00014 00015 00076 00345 00456 01023 02125
02126 02127 02128 02129 02130 02131 02132 02133 02134 02135
02341 03378
*
```

## PI - Print Invalid Key List

Use the PI command to print a list of all invalid key numbers.

At the \* prompt, type **PI** (Figure 9-10).

The system prints a list of all invalid key numbers followed by \*.

**Figure: 9-10 Example of PI Command**

```
*PI
INVALID LIST
00000 00016 00017 00018 00019 00020 00021 00022 00023 00024
00025 00026 00027 00028 00029 00030 00031 00032 00033 00034
01234 02136 02137 02138 02139 02140 02141 02142 02143 02144
02145 02653 02767 02812
*
```

## Key Validation/Invalidation Error Messages

This section contains an alphabetic listing of key validation error messages. In most cases, the message appears immediately after the erroneous number is detected. Some errors cause several messages to appear. Check all appropriate messages.

### **ALL PREVIOUS ENTRIES (IN)VALIDATED**

You entered an out of range number or invalid character in a string of numbers. The system validates or invalidates all other legal numbers within the string.

### **ENTRY TERMINATED - INVALID CHARACTER ENTERED**

For IK or VK commands, you entered an illegal character either in a single entry or as part of a string or range. For single or range entries, entry is terminated at the error. For string entries, all entries before the illegal one are acted upon.

For the CK command, you tried to enter a comma (for string) or a hyphen (for range). The CK command can check only a single number.

### **ENTRY TERMINATED-TOO MANY DIGITS**

You entered a number with more than 5 digits. No action is taken for this entry.

### **INVALID RANGE!**

You entered either an end of range number less than the start of range number or a number greater than the maximum number in the lockout file.

### **OUT OF RANGE!**

You entered a number over the maximum number in the lockout file.

# 10 – Tank Inventory Commands

---

## Description

The Series 1000 System maintains inventory for up to eight tanks. When you start up your Series 1000 system, you load a starting tank inventory and the point (in gallons) at which you want to reorder fuel for that tank.

When you get deliveries of fuel, you use the AI command to add the amount to the existing inventory. You can also use the SI command to subtract inventory from a tank. You might need to do this to keep inventory amounts accurate (such as if the Series 1000 was down and fuel was being accessed manually).

If you have the Fuel Delivery and Dipstick Key option, a person possessing a delivery key (that is, your supplier) can enter delivery amounts right at the Series 1000 system as soon as the delivery is complete. This automatically increments your tank inventory and generates a transaction noted DELIVERY (see [“Fuel Delivery and Dipstick Key Option” on page 115](#)).

At any time, you can print an inventory listing for all your tanks.

## Tank Inventory Commands

Tank Inventory Commands are:

<b>LI</b>	load initial inventory
<b>AI</b>	add to tank inventory
<b>SI</b>	subtract from tank inventory
<b>TI</b>	print an inventory listing
<b>LR</b>	establish a reorder point level

## LI - Load Tank Inventory

Use the LI command to assign the initial amount of fuel (inventory) for each tank.

- 1 At the \* prompt, type **LI** (Figure 10-1).  
The system displays: TANK #
- 2 Type the tank number and press **RETURN**.  
The system displays: AMOUNT:  
Amount is a 10-digit field with 7-digits to the left of the decimal point and 3-digits to the right.
- 3 Type up to seven digits, a decimal point, then up to three more digits and press **RETURN**.  
*Note: If you type seven digits, the system adds the decimal point for you.*
- 4 The system prompts you for each tank; repeat Steps 2 and 3.  
To stop entering inventory data, press **RETURN** at the TANK # prompt.  
The \* prompt appears.

### Figure: 10-1 Example of LI Command

If Tank 2 currently contains 700 gallons, the entries are:

```
*LI
TANK #2↵
AMOUNT: 700.000↵
TANK # ↵
*
```

## AI - Add to Tank Inventory

Use the AI command to record the amount of fuel (inventory) added for a specific tank or tanks.

- 1 At the \* prompt, type **AI** (Figure 10-2).  
The system displays: TANK #
- 2 Type the tank number and press **RETURN**.  
The system displays: AMOUNT:  
Amount is a 10-digit field with seven digits to the left of the decimal point and three digits to the right.
- 3 Type up to seven digits, a decimal point, then up to three more digits and press **RETURN**.  
*Note: If you type seven digits, the system adds the decimal point for you.*
- 4 The system prompts you for each tank; repeat Steps 2 and 3.  
To stop entering additional inventory data, press **RETURN** at the TANK # prompt.  
The \* prompt appears.

### Figure: 10-2 Example of AI Command

If you add 2,000 gallons of diesel fuel to tank 4, the entries are:

```
*AI
TANK #4↵
AMOUNT: 2000↵

TANK #↵
*
```

## SI - Subtract from Tank Inventory

Use the SI command to subtract inventory from a tank or tanks. You may need to do this when a tank is accessed manually over a period of time.

- 1 At the \* prompt, type **SI** (Figure 10-3).  
The system displays: TANK #
- 2 Type the tank number and press **RETURN**.  
The system displays: AMOUNT:  
Amount is a 10-digit field with seven digits to the left of the decimal point and three digits to the right.
- 3 Type up to seven digits, a decimal point, then up to three more digits and press **RETURN**.  
*Note: If you type seven digits, the system adds the decimal point for you.*
- 4 The system prompts you for each tank; repeat Steps 2 and 3.  
To stop entering subtracted inventory data, press **RETURN** at the TANK # prompt.  
The \* prompt appears.

### Figure: 10-3 Example of SI Command

Tank 1, containing unleaded regular, was accessed manually for a period of three hours. At the end of that time, you received a report that 33.567 gallons were dispensed. Enter the information as follows:

```
*SI
TANK #1↵
AMOUNT: 33.567↵
TANK #↵
*
```

## TI - Print Tank Inventory

Use the TI command to print the current inventory totalizers and their reorder points.

At the \* prompt, type **TI** (Figure 10-4).

The system prints the current tank inventory totalizers and their reorder points.

*Note: Your tank inventory totalizers are adjusted automatically as transactions are completed, however, you can adjust your tank inventory to reflect additions or deletions by using the AI or SI commands.*

### Figure: 10-4 Example of TI Command

```
*TI
TANK #1 INVENTORY:    1236.000 REORDER 2000
TANK #2 INVENTORY:    9119.646 REORDER 2000
TANK #3 INVENTORY:    3913.536 REORDER 2000
*
```

## LR - Load Inventory Reorder Point

Use the LR command to assign an inventory reorder point for each tank. The reorder point is printed as a reminder when the current tank totalizers are printed. When the tank totalizer drops below the reorder level, REORDER FUEL appears in the error message field of all transactions drawing from that tank until the inventory is adjusted above the reorder level.

- 1 At the \* prompt, type **LR** (Figure 10-5)  
The system displays: TANK #
- 2 Type the tank number and press **RETURN**.  
The system displays: REORDER:  
Reorder is a four-digit number in whole gallons.
- 3 Type the reorder point number and press **RETURN**.
- 4 The system prompts you for each tank; repeat Steps 2 and 3.  
To stop entering inventory reorder data, press **RETURN** at the TANK # prompt.  
The \* prompt appears.

**Figure: 10-5 Example of LR Command**

```
*LR
TANK #2↵
REORDER: 700↵
TANK #↵
*
```





# 11 – Pump Commands

## Description

When you start up your Series 1000 system, you use the LP (load pump) command to describe all relevant pump information, such as the number of each pump, fuel codes, fuel names, tank numbers, current totalizer readings, and pump timeout values (safeguards against unattended active pumps). Once you describe your pumps, you can print a listing of each pump's assignments.

Other pump commands allow you to enable or disable a pump from the data terminal. You may need to enable a pump if it was disabled, such as for servicing, or after it was autodisabled due to a number of no quantity transactions. You may need to disable a pump if it is being serviced, or operational problems are detected. You can set a system configuration parameter to automatically disable a pump after a set number of consecutive no quantity transactions. This protects your system in the event of defective pulse transmitters in the pumps or Series 1000 failure.

You can also activate or inactivate a pump for one transaction from the data terminal. You might need to do this when a user needs to fuel but has lost or forgotten his key.

Other pump commands allow you to reset the Series 1000 pump totalizers and print the timeouts and pulses associated with each pump.

### Pump Commands

The pump commands are:

<b>LP</b>	load pump data
<b>PP</b>	print pump data
<b>EP</b>	enable a pump
<b>DP</b>	disable a pump
<b>AP</b>	activate a pump
<b>IP</b>	inactivate a pump
<b>ZP</b>	zero pump totalizers
<b>XP</b>	print timeouts and pulses

## LP - Load Pump Data

Use the LP command to assign specific fuels, prices, tanks, quantities, and timeout values to your pumps. Each pump must be assigned to a tank and more than one pump can be assigned to the same tank.

### Defining Unit Price

The LP command solicits unit price data (in Steps 4 and 5) depending on the setting you chose in the Price Data Format configuration parameter (SC command). When pulsing by quantity, you may have selected 0 for no data or 2 for unit and total price. If you selected 2, you will be prompted for unit price.

When pulsing in dollars (penny pulsing), you may have selected any of the options (0, no data, 1, unit price, or 2, unit and total price). If you selected 0, 1 or 2, you are prompted for unit price.

When pulsing by dollars, you must enter unit price even if you elect not to display the price data (0, no data) because the quantity is calculated based on the unit price. For example, assume you have a unit price on both the pump and the Series 1000 of one dollar (100 pulses per gallon). A person fuels his vehicle and the pump says he received 12.5 gallons. The pump sends 1250 pulses to the Series 1000. The Series 1000 divides the number of pulses by the unit price loaded (\$1.00), and correctly records the quantity of 12.5 gallons. However, if the unit price loaded into the Series 1000 is \$1.25 and the unit price at the pump is \$1.00, the person at the pump withdraws the 12.5 gallons, the pump sends 1250 pulses to the Series 1000 and the Series 1000 divides the number of pulses by the unit price loaded (\$1.25). It then records an incorrect gallon quantity of 10.0. This can cause numerous problems such as incorrect inventory readings, incorrect limit cutoffs, and billing problems.

### Assigning Timeout Values

Timeout values are assigned to ensure that the pumps are not activated and left unattended.

There are two timeout periods:

- Before Pump Activation - Interval in which the pump is activated by the system and the first pulse is received.
- After Pump Activation - Interval between turning off the nozzle (last pulse received) and turning off the pump handle. This timeout is reset if additional pulses are received.

Timeout periods range from 1 to 180 seconds and can be set individually for each pump. A typical timeout is 80 seconds. If either timeout period is exceeded during a transaction, the transaction ends automatically, and a TIMED OUT message appears in the transaction error field.

If you have the extended pump timeouts option, the timeout value can be extended up to 3600 seconds (1 hour).

## Loading the Data

- 1 At the \* prompt, type **LP** (Figure 11-1).  
The system displays: PUMP NO.
- 2 Type the pump number and press **RETURN**.  
The system displays: FUEL CODE:
- 3 Type the fuel code and press **RETURN**.  
*Note: This code denotes a specific type of fuel. You assign fuel codes and describe your fuel types before you perform key encoding. For more information on fuel type assignment, see the Product Code Table in your Series 1000 Key Encoding Manual.*  
The system displays: FUEL NAME:
- 4 Type a 1- to 12-character fuel name and press **RETURN**.
  - If you are pulsing in dollars (penny per pulse) and selected 0, 1, or 2 for the Price Data Format configuration parameter, the system prompts you for unit price (PRICE \$).  
*Note: The unit price you enter at the Series 1000 must match the unit price set on the pump. If it does not, your recorded gallon totals will be incorrect.*
  - If you are pulsing in quantity and selected 0 for price data format, the TANK # prompt appears. Skip to Step 6. If you selected 2, the system prompts you for unit price (PRICE\$). (1 is only for penny pulsing pumps).
- 5 Type the unit price of your product and press **RETURN**.  
The system displays: TANK #
- 6 Type the tank number to be accessed by this pump and press **RETURN**.  
The system displays: AMOUNT:
- 7 Type the quantity shown on the pump totalizer (or reset to zero, if desired) and press **RETURN**.  
*Note: There are two ways to use pump totalizers: as periodic totalizers (reset to zero after specified periods) or matched to the pump's mechanical totalizer.*  
  
The amount field accepts 10 digits for a totalizer value (7 digits to the left of the decimal point and three digits to the right). If seven digits are entered, the system automatically inserts the decimal point.  
The system displays: BEFORE PUMP ACTIVATION TIME:
- 8 Enter the duration of the timeout period (in seconds) and press **RETURN**.  
(Timeout refers to the amount of time between selecting a pump and sending the first pulse of fuel by turning on the nozzle.)  
The system displays: AFTER PUMP ACTIVATION TIME:
- 9 Enter the duration of the timeout period (in seconds) and press **RETURN**.  
(Timeout refers to the amount of time between turning off the nozzle and turning off the pump handle).  
*Note: The time may range from 1 to 180 seconds. A commonly used time is 80 seconds. If you have the extended pump timeouts option, the timeout period can be extended to 3600 seconds (1 hour).*

- 10 The system prompts you for each pump; repeat this procedure from Step 2. To stop entering pump data, press **RETURN** at the PUMP NO. prompt. The \* prompt reappears.

**Figure: 11-1 Example of LP Command**

```
*LP
PUMP NO. 1↵
FUEL CODE: 1↵
FUEL NAME: REGULAR↵
PRICE $1.189↵
TANK #1↵
AMOUNT: 0↵
BEFORE PUMP ACTIVATION TIME = 80↵
AFTER PUMP ACTIVATION TIME = 80↵
PUMP NO. ↵
*
```

### Changing Pump Data

Later, when you make changes to the load pump values, you need not fill in data for every prompt.

*Note: To exit the load pump process at any time, without going through all the prompts, press **CTRL-C**.*

- 1 Press **RETURN** for each prompt until you reach the one you wish to change.  
*Note: Pressing RETURN at a prompt without entering data preserves the original entry for that field.*
- 2 Type your changed data and press **RETURN**.
- 3 Continue this process until the load pump prompts end and the \* prompt reappears.

## PP - Print Pump Data

Use the PP command to print pump information such as pump number, tank, fuel number, fuel name, unit price (see Note), number of gallons dispensed through the pump, and the status of the pump.

*Note: Whether or not your unit price prints depends on the setting of the Price Data Format configuration parameter (SC command). If the setting is 0 or 1, the unit price heading (PRICE) and price data prints only if you have a penny pulsing pump. If your setting is 2, the heading and data prints for every pump regardless of pulser type.*

At the \* prompt, type **PP** (Figure 11-2).

A listing similar to the following prints.

**Figure: 11-2 Example of PP Command**

*PP						
P#	TANK	FUEL#	FUEL NAME	PRICE	GALLONS	STATUS
1	1	01	REGULAR	\$1.189	21569.020	IDLE
2	2	02	UNLEADED		66544.300	DISABLED
3	3	03	DIESEL		1223.300	PUMPING
4	4	04	SUPER UNLEAD		51100.654	IDLE
*						

## EP - Enable a Pump

- At the \* prompt, type **EP** (Figure 11-3).  
The system displays PUMP NO.
- Type the number of the pump to be enabled and press **RETURN**.  
This allows access to the pump.
- The system prompts you for more pumps; repeat this procedure from Step 2.  
To stop enabling pumps, press **RETURN** at the PUMP NO. prompt.  
The \* prompt reappears.

**Figure: 11-3 Example of EP Command**

```
*EP
PUMP NO. 2↵
PUMP NO. ↵
*
```

## DP - Disable a Pump

- 1 At the \* prompt, type **DP** (Figure 11-4).  
The system displays: PUMP NO.
- 2 Type the number of the pump to be disabled and press **RETURN**.  
This prohibits access to the pump.
- 3 You are prompted for more pumps; repeat this procedure from Step 2.  
To stop disabling pumps, press **RETURN** at the PUMP NO. prompt.  
The \* prompt reappears.

**Figure: 11-4 Example of DP Command**

```
*DP
PUMP NO. 2↵
PUMP NO. ↵
*
```

The status of each pump is indicated with the PP command (Figure 11-5).

**Figure: 11-5 Example of PP Command**

```
*PP
P#  TANK  FUEL#  FUEL NAME    PRICE    GALLONS  STATUS
1    1      01    REGULAR      $1.189   122.500
2    2      02    UNLEADED          61.100  PUMP DISABLED
3    3      03    DIESEL          45.900
4    4      04    SUPER UNLEAD     30.800
*
```

If the disabled pump is selected for fueling, the PUMP DISABLED message appears in the ERROR field (Figure 11-6). The pump remains disabled until you enable it using the EP command.

**Figure: 11-6 Example of PT Command**

```
*PT
SITE 1234

TRAN KEY1  KEY2  EMP  VEH  DATE    TIME  P#  PR  QUANTITY  ODOM  ERROR
1023 00543  99999 2813 7596 07/11/92 09:33 02 02    0.0    0045287 PUMP DISABLED
```

Sometimes, when a pump is not operating properly, fuel can be dispensed but not recorded. This is known as a no quantity transaction. You can set a system configuration parameter to automatically disable a pump after a set number of consecutive no quantity transactions. Typically, the number of no quantity transactions is configured to 3 or 5 but values can range from 1-99. If a pump becomes disabled in this manner, the PUMP # \_ DISABLED message appears on the direct printout as shown in [Figure 11-7](#). The pump remains disabled until you enable the pump using the EP command.

**Figure: 11-7 Example of Output from PT Command**

TRAN	KEY	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
0930	00543	99999	2813	7596	07/11/92	15:35	03	03	10.3	0005421	
0931	08877	00000	1122	3344	07/11/92	15:35	01	01	0.0	0000000	
PUMP #01 DISABLED											
0932	08877	00000	1122	3344	07/11/92	15:35	04	02	10.611	0000000	

AP - Activate a Pump

Use the AP command to activate a pump, for one transaction, from the data terminal. This transaction is recorded as a normal key entry transaction except that the information which is normally read from the key or entered from the keypad (key number, employee number, vehicle number, and odometer) appears as all 9s. The limit cutoff for an AP transaction is determined by the limit entered for limit code 9 (see “LL - Load Fuel Limitations” on page 88).

- 1 At the \* prompt, type **AP** (Figure 11-8).  
The system displays: PUMP NO.
- 2 Type the pump number and press **RETURN**.  
The \* prompt reappears.

*Note: If you attempt to turn on a pump already in use, the system responds PUMP IN USE! PUMP NO.*

*Note: If you attempt to activate a pump but the pulse rate switch (SW2) is set to enabled, the message REMOTE CONFIGURATION appears. Wait until pulse rate changes are complete before activating a pump.*

Figure: 11-8 Example of AP Command

```
*AP
PUMP NO. 1
*
```

The data normally read from the key and the odometer field is filled with nines. The message TERM ACTIVATE appears in the ERROR field (Figure 11-9).

Figure: 11-9 Example of Output from AP Command - TERM ACTIVATE Error

SITE 1234												
TRAN	KEY1	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR	
0874	99999	99999	9999	9999	07/11/92	09:17	01	01	22.21	9999999	TERM ACTIVATE	

At the completion of fueling, the TERM ACTIVATE message may be overwritten by one of these messages: EMERG STOP or PWR FAIL (Figure 11-10).

Figure: 11-10 Example of Output from AP Command - PWR FAIL Error

SITE 1234												
TRAN	KEY1	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR	
1904	99999	99999	9999	9999	07/11/92	13:12	03	06	15.1	9999999	PWR FAIL	



## IP - Inactivate a Pump

Use the IP command (Figure 11-11) to turn off any pump currently in use, from a data terminal. The pump is inactivated for that transaction only and the message TTY CMD (Figure 11-12) appears in the error field for that transaction.

- 1 At the \* prompt, type **IP** (Figure 11-11).

The system displays PUMP NO.

- 2 Type the pump number to inactivate and press **RETURN**.

The \* prompt reappears.

*Note: If you attempt to inactivate a pump which is not in use, the system responds PUMP NOT ON! PUMP NO.*

**Figure: 11-11 Example of IP Command**

```
*IP
PUMP NO. 1↵
*
```

**Figure: 11-12 Example of Output from IP Command**

```
SITE 1234

TRAN KEY1 KEY2 EMP VEH DATE TIME P# PR QUANTITY ODOM ERROR
0021 00543 99999 2813 7596 07/11/92 15:42 01 01 16.33 0054786 TTY CMD
```

If the pump was activated with the AP command and then turned off with the IP command, the message TERM ACTIVATE overrides TTY CMD (Figure 11-12).

ZP - Zero Pump Totalizers

Use the ZP command to reset the pump totalizers to zero. The pump totalizers on the Series 1000 are incrementing totalizers. They can be set back to zero using this command or set individually to match the corresponding pump totalizer (using the AMOUNT prompt in the LP command).

- 1 At the \* prompt, type **ZP** (Figure 11-13).  
The system displays RESET PUMP TOTALIZERS? <Y OR N>
- 2 Type **Y** and press **RETURN** to reset the totalizers to zero.

~ OR ~

Type **N** and press **RETURN** to leave the totalizers as is.

*Note: Y and N are the only valid responses; if you type anything else, the system re-prompts you until you enter a Y or N.*

The \* prompt reappears.

Figure: 11-13 Example of ZP Command

```
*ZP
RESET PUMP TOTALIZERS? <Y OR N> Y
*
```

XP - Print Timeouts and Pulses

Use the XP command to print, for each pump, the timeouts assigned with the LP command and the pulses per gallon assigned with the SC command. Pulse values are penny, 1, 10, 100, 250, 500, and 1000. If you have a penny pulsing pump, a dollar sign (\$) appears in the pulses per gallon field.

At the \* prompt, type **XP** (Figure 11-14).  
The system prints the data.  
The \* prompt reappears.

Figure: 11-14Example of XP Command

```
*XP
                                -PUMP TIMEOUTS-
                                IN SECONDS
P#    PULSES PER    BEFORE    AFTER
--    -GALLON      PULSES     PULSES
01      $           080        060
02     0010         080        080
03     0010         120        120
04     1000         120        080
*

```

# 12 – Transaction Commands

---

## Transaction Printing Options

Transactions can be recalled from the system memory in a variety of formats:

- transaction number sequence, transactions are printed as they occur
- sorted, by fields you specify
- sorted by a specified value within a field (for example, key number 09381)
- compacted with host interaction, the system waits for host confirmation before sending another transaction
- compacted string of data, no headings

### Transaction Commands

The transaction commands are:

<b>PT</b>	print transactions
<b>ST</b>	print sorted transactions
<b>SS</b>	print transactions sorted by a specific value
<b>PH</b>	print compacted transactions with host interaction
<b>PC</b>	print compacted transactions
<b>RT</b>	reset transaction file
<b>RP</b>	reset pointer to obtain transactions in memory
<b>LN</b>	load starting transaction number

## Transaction Headings

The transaction commands produce slightly different output based on which options or system features are enabled. The PT, ST, and SS commands produce a formatted report. The PC and PH commands produce strings of unformatted data. Additionally, the PC and PH formats include a 4-digit CRC-16 checksum at the end of each transaction. Differences in transaction printing are detailed in the section describing the option or system feature.

All formatted transaction printouts contain abbreviated headings. Some headings apply only if you have a specific option. The headings and their related fields are:

<b>SITE</b>	site number
<b>TRAN</b>	transaction number
<b>KEY1</b>	first or single-key number
<b>KEY2</b>	second key number
<b>ID fields*</b>	customized data fields
<b>DEPT</b>	optional manual entry field (variable name, designated at order)
<b>DATE</b>	Gregorian date
<b>TIME</b>	24-hour (military) time
<b>P#</b>	pump number
<b>PR</b>	product type
<b>QUANTITY</b>	quantity of product dispensed
<b>PRICE</b>	unit price of product (depends on Price Data Format setting)
<b>\$TOTAL</b>	total calculated transaction price (depends on Price Data Format setting)
<b>ODOM</b>	odometer mileage entry
<b>MILES</b>	miles travelled (only when transaction MPG enabled)
<b>MPG</b>	miles per gallon calculation (only when transaction MPG enabled)
<b>ERROR</b>	transaction message

*\* You designate the names for ID fields at the time of order. The name, number, and length of ID fields may vary but can contain no more than 20 characters totaled. Your field names may vary from the ones shown.*

### Price Data Format Effect on Headings

When you set your system configuration parameters, the choice you make for Price Data Format affects which headings are displayed on transaction printouts. You may get unit price (PRICE) and total transaction price (\$TOTAL) headings and data.

If you choose regular (PT) or sorted (ST or SS) transaction printing and your setting is 0, you get no headings for unit and total price and no pricing data. If you have a penny pulsing pump and your setting is 1, you get the unit price (PRICE) heading and the unit price. For quantity pulsing pumps, only the unit price heading is shown. If your setting is 2, you get unit price (PRICE) and total price (\$TOTAL) headings and price data for all transactions regardless of pulse rate.

If you choose compacted format (PC or PH), unit price and total price are always shown.

### Transaction MPG Effect on Headings

If transaction MPG is enabled in the SC command, MILES and MPG headings and data will print as part of the transaction. If it is disabled, these fields will not print except in the PC or

PH commands. See [“Transaction Headings With Transaction MPG” on page 37](#) for details.

### Transaction Printing with the Link Terminal and Okidata Printer

If you are using the Link MC5 terminal/Okidata printer combination, you can configure your system to put page breaks between pages of transaction output by setting up the lines per page with the SC command. The page breaks are used when printing transactions through direct printout or with the PT, ST, and SS commands. The system sends a form feed to the printer at the start of transaction printing so that your printout always begins at the top of a page. See [Appendix B: Setup of Peripheral Equipment](#) for information on setting up your system to use the printer.

## PT - Print Transactions

Use the PT command to print a list of completed transactions in numeric sequence by transaction number.

At the \* prompt, type **PT**.

Completed transactions print as shown in the following example.

The \* prompt reappears.

**Figure: 12-1 Example of PT Command**

```
*PT
SITE 1234

TRAN KEY1  KEY2  EMP  VEH  DATE      TIME  P# PR QUANTITY  ODOM  ERROR
0221 01328  00000  5967 2430 07/11/92 15:30 01 01    8.28  0054880
0222 01234  00000  5678 9012 07/11/92 15:37 03 03   13.6  0010222
0223 03024  00000  8132 9675 07/11/92 15:39 02 02   11.6  0000000
0224 03024  00000  8132 9675 07/11/92 16:23 01 01    0.0  0000000
0225 00147  00000  8523 6541 07/11/92 16:24 01 01    5.02  0082311  PUMP IN USE
0226 03024  00000  8132 9675 07/11/92 16:25 02 02    7.1  0000000  LIMIT CUTOFF
*
```

## ST - Print Sorted Transactions

Use the ST command to print sorted transactions. You can specify a sort and subsort by any of your transaction fields except \$TOTAL and MPG.

Total gallons are provided for each sort and subsort. Total price is shown when certain price data format options are configured.

*Note: Your program may have been ordered without the ST command option to maximize program and/or transaction space.*

- 1 At the \* prompt, type **ST**.  
The system displays **FIRST SORT**:
- 2 Type the field name for the first sort and press **RETURN**.  
You must specify the field name exactly as it appears in the listing.  
The system displays **SECOND SORT**:
- 3 If you do not wish to sort by two fields, press **RETURN** at the **SECOND SORT** prompt.

~ OR ~

If you wish to sort by another field, type the field name for the second sort and press **RETURN**.

You must specify the field name exactly as it appears in the listing.

The transactions are sorted by the **FIRST SORT** field and within that sort by the **SECOND SORT** field.

The \* prompt reappears.

**Figure: 12-2 Example of ST Command**

```
*ST
FIRST SORT: EMP↵
SECOND SORT: ↵

TRAN KEY1 KEY2 EMP VEH DATE TIME P# PR QUANTITY PRICE $TOTAL ODOM ERROR
0004 12345 00000 1122 3344 07/11/92 16:28 01 01 90.40 1.000 90.40 0000000

TOT GAL: 90.40 TOT PRICE: $ 90.40

TRAN KEY1 KEY2 EMP VEH DATE TIME P# PR QUANTITY PRICE $TOTAL ODOM ERROR
0025 88770 00000 1123 3344 07/11/92 16:29 04 02 15.000 1.00 15.00 0000000 LIMIT CUTOFF

TOT GAL: 15.000 TOT PRICE: $ 15.00

TRAN KEY1 KEY2 EMP VEH DATE TIME P# PR QUANTITY PRICE $TOTAL ODOM ERROR
0025 88770 00000 1234 3344 07/11/92 16:40 04 02 61.7 1.00 61.70 0000000
0031 88770 00000 1234 3345 07/11/92 16:50 04 02 22.0 1.00 22.00 0000000

TOT GAL: 83.700 TOT PRICE: $ 83.70

*
```

## SS - Print Transactions for Specified Value within a Field

Use the SS command to print transactions for a specific value within a field (for example, employee number 1234). If you choose to sort by date or time, type the digits without the punctuation. If you choose to sort by QUANTITY or PRICE, type the quantity with the decimal point. If you choose to sort by error, type the two-digit error code associated with the message that you wish to sort by.

*Note: Your program may have been ordered without the SS command option to maximize program and/or transaction space.*

- 1 At the \* prompt, type **SS**.  
The system displays FIRST SORT:
- 2 Type the field name for the first sort and press **RETURN**.  
You must specify the field name exactly as it appears in the listing.  
The system displays ENTER VALUE:
- 3 Type the value for transactions you wish to sort and press **RETURN**.  
The system displays SECOND SORT:  
If you do not wish to sort by two fields, press **RETURN** at the SECOND SORT prompt.

~ OR ~

If you wish to sort by another field, type the field name for the second sort and press **RETURN**.  
You must specify the field name exactly as it appears in the listing.

The transactions are sorted by the FIRST SORT field and within that sort by the SECOND SORT field.

The \* prompt reappears.

**Figure: 12-3 Example of SS Command**

```
*SS
FIRST SORT: EMP↵
ENTER NO. : 1234↵
SECOND SORT: ↵

TRAN KEY1 KEY2 EMP VEH DATE TIME P# PR QUANTITY ODOM ERROR
0022 09381 00001 1234 3344 07/11/92 16:28 01 01 11.71 0000000
0023 09381 00001 1234 3344 07/11/92 16:28 01 01 9.64 0000000

TOT GAL5: 21.350
*
```

## PH - Print Compacted Transactions with Host Interaction

Use the PH command to output compacted transactions (without spaces, headings, or punctuation). With the PH command, the microprocessor sends one transaction and waits for a response from the host computer.

- If the computer acknowledges the CRC of the last transaction (CRC agrees with calculated CRC), it transmits an A. The microprocessor responds with the next transaction. If no more transactions are available, the Series 1000 displays an asterisk in response to the last A command.
- If the computer does not acknowledge the CRC of the last transaction (CRC does not agree with calculated CRC), it transmits an X. The microprocessor responds with the same transaction.
- If the computer desires to terminate the PH command before all transactions are sent, it transmits an E.

**Figure: 12-4 Example of PH Command**

```
*PH
1234000500542000001234567807199210250101000617001000000061700000000000000000944B42A
123400060054200000123456780719921025020200027000200000005400000000000000000092207DA
12340007005420000012345678071992102601010006930010000000693000000000000000009AA0E0A
12340008005420000012345678071992102602020011350020000002270000000000000000009C6AFA
1234000900542000001234567807199210260101000735001000000073500000000000000000900B13A
*
```

**Figure: 12-5 Example of PH Command with Fields Identified**

The compacted or packed format can be broken down into the following fields.

*PH																			
1234	0005	00542	00000	12345678	091905	1025	01	01	00061700	1000	00006170	00000000	0000	0000	09	4B42	A		
1234	0006	00542	00000	12345678	091905	1025	02	02	00027000	2000	00005400	00000000	0000	0000	09	207D	A		
1234	0007	00542	00000	12345678	091905	1026	01	01	00069300	1000	00006930	00000000	0000	0000	09	A0E0	A		
1234	0008	00542	00000	12345678	091905	1026	02	02	00113500	2000	00022700	00000000	0000	0000	09	C6AF	A		
1234	0009	00542	00000	12345678	091905	1026	01	01	00073500	1000	00007350	00000000	0000	0000	09	0B13	A		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R		

**Legend:**

A is a 4-digit site number	J is a 8-digit quantity
B is a 4-digit transaction number	K is a 4-digit unit price
C is a 5-digit key 1 number	L is an 8-digit total price
D is a 5-digit key 2 number	M is a 7-digit odometer reading
E is an 8-digit ID field (custom: up to 20 characters)	N is a 4-digit miles traveled
F is a 6-digit Gregorian date in MMDDYY format	O is a 4-digit MPG
G is a 4-digit 24-hour time	P is a 2-digit error message code*
H is a 2-digit pump number	Q is a 4-digit CRC-16 check sum**
I is a 2-digit product code	R is the host response character

\* See "2-Digit Error Message Codes" on page 79 for a listing of message codes and their meanings. See "Transaction Messages" on page 83 for an explanation of the message.

\*\* See Appendix A: CRC Check Sum Calculation for CRC checksum calculation information.

*Note: If manual entry field is used, it appears in compacted format between fields E and F.*



## 2-Digit Error Message Codes

Message Code	Meaning	Message Code	Meaning
01	TIMED OUT	32	TERM ACTIVATE
02	LOCKED OUT	34	INVALID TANK (Fuel Delivery and Dipstick Option Only)
03	INVALID FUEL	35	DIPSTICK (Fuel Delivery and Dipstick Option Only)
04	PUMP IN USE	36	INV KEY TYPE
05	INV SYS ID	37	OFF SITE FUEL (Manual entry of Off-site Fueling Transaction Option only)
06	LIMIT CUTOFF	38	MAINT A SOON (Maintenance Option only)
08	TTY CMD	39	MAINT A NOW (Maintenance Option only)
09	COMPLETED TRANSACTION	40	MAINT A OVER (Maintenance Option only)
11	GATE	41	MAINT B SOON (Maintenance Option only)
13	ODOM RANGE ERR	42	MAINT B NOW (Maintenance Option only)
14	PIN ERROR	43	MAINT B OVER (Maintenance Option only)
15	ALLOC LIMIT (Fuel Allocation Option only)	44	MAINT C SOON (Maintenance Option only)
16	NO ALLOC (Fuel Allocation Option only)	45	MAINT C NOW (Maintenance Option only)
17	PUMP DISABLED	46	MAINT C OVER (Maintenance Option only)
18	PASSWORD KEY	47	MAINTS A, B (Maintenance Option only)
19	INVALID PUMP	48	MAINTS A, C (Maintenance Option only)
22	INV KEY FMT	49	MAINTS A, B, C (Maintenance Option only)
23	EMERG STOP	50	MAINTS B, C (Maintenance Option only)
24	KEY EXPIRED	51	PMP SW ERROR (Pump Switch Timer Option only)
29	REORDER FUEL	52	FPR TIMED OUT (Fuel Point Option only)
30	WRG KEY ENT	53	FPR AUTO CFG (Fuel Point Option only)
31	PWR FAIL	55	DELIVERY (Fuel Delivery and Dipstick Option only)

## PC - Print Compacted Transactions

Use the PC command to output compacted transaction data. This format is generally used to dump transactions in a group to a computer. This command should be used only when you are reasonably sure that you will have error-free transmission. Error messages are represented by a two-digit code, and the last four characters of each line represent the CRC-16 checksum calculated on the transaction data.

At the \* prompt, type **PC**.

The output appears as shown in the following example.

**Figure: 12-6 Example of PC Command**

```
*PC
123400050054200000123456780719921025010100061700100000006170000000000000000094B42
1234000600542000001234567807199210250202000270002000000054000000000000000009207D
12340007005420000012345678071992102601010006930010000000693000000000000000009A0E0
1234000800542000001234567807199210260202001135002000000227000000000000000009C6AF
123400090054200000123456780719921026010100073500100000007350000000000000000090B13
*
```

## RT - Reset Transaction File

Use this command only at initial start-up. The RT command resets the transaction file and transactions in your system's memory cannot be retrieved.

- 1 At the \* prompt, type **RT**.  
The system displays RESET TRANS FILE? <Y OR N>.
- 2 Type **Y** and press **RETURN** to reset the transaction file.

~ OR ~

Type **N** and press **RETURN** to leave the transaction file as is.

*Note: Only Y or N is a valid response; if you type anything else, the system re-prompts you until you enter a Y or N.*

The \* prompt reappears.

**Figure: 12-7 Example of RT Command**

```
*RT
RESET TRANS FILE ? <Y OR N> Y↵
*
```

## RP - Reset Transaction Pointer

Use the RP command to:

- set the transaction pointer to a specific number, such as when accessing transactions still available in memory, but not normally obtainable with the PT command.
- “free up” memory after a polling where you set the transaction pointer to the last transaction plus 1.

The RP command moves your transaction pointer and transaction printouts begin at the number entered. Before using the RP command to move your pointer, use the PD command to determine the location of your transaction pointer (TRANS PTR) so you can restore it later.

- 1 At the \* prompt, type **RP**.  
The system displays ENTER NO.:
- 2 Type the transaction number where you wish to move the pointer and press **RETURN**.  
The \* prompt reappears.

### CAUTION

Do not leave your transaction pointer ahead of transactions not yet printed in your regular polling session, or transactions will eventually be overwritten and lost.

Figure: 12-8 Example of RP Command

```
*RP
ENTER NO. : 0124↵
*
```

For an example of using the RP command, see [“Obtaining a Printout of Specific Transactions” on page 82](#).

## LN - Load Transaction Number

Use the LN command only at initial start-up to load the starting transaction number into the system. Transaction sequencing begins with the number immediately following the one loaded in the LN command.

- 1 At the \* prompt, type **LN**.  
The system displays ENTER NO.:
- 2 Enter **0000** for the initial transaction and press **RETURN**.  
The \* prompt reappears.

**Figure: 12-9 Example of LN Command**

```
*LN  
ENTER NO. : 0000↵  
*
```

## Obtaining a Printout of Specific Transactions

The transaction file uses a circular memory storage technique that always keeps accessible the last few hundred transactions. The number may vary depending on your system specifications.

Use the RP command to locate transactions still available in memory, but not normally obtainable with the PT command. The RP command moves your transaction pointer, or record keeper, and transaction printouts begin at the number entered. Before using the RP command, determine the location of your transaction pointer (the field labeled TRANS PTR), by using the PD (print date) command. The TRANS PTR field is also printed when you power on your system.

### CAUTION

Do not leave your transaction pointer ahead of transactions not yet printed in your regular polling session, or transactions will eventually be overwritten and lost.

- 1 At the \* prompt, type **PD**.
- 2 Make a note of the transaction number in the TRANS PTR field.
- 3 Type **RP**.  
The system displays ENTER NO.:
- 4 Type the transaction number you wish to research and press **RETURN**.  
The \* prompt reappears.
- 5 Type **PT**.  
The system begins printing transactions.
- 6 When the first transaction finishes printing, press **CTRL-C** to stop printing so you can review the transaction.  
The \* prompt reappears.  
*Note: Remember, when you use the RP command, you set the number to the transaction you want, therefore, it is the first one printed.*
- 7 Type **RP** to reset your transaction pointer back to its original position.  
The system displays ENTER NO.:

- 8 Type the transaction number you noted in Step 2 and press **RETURN**.  
Your transaction pointer is now back to its original position.

*Note: If you wish to print only one transaction that is within your current transaction pointers, you can use the SS command, entering TRAN as the first sort field and the desired transaction number as the value. (See “SS - Print Transactions for Specified Value within a Field” on page 77).*

## Transaction Messages

The following is a list of transaction messages that may appear in the ERROR column. If no message appears, fueling was completed within the coded limitation range with authorized fuel by an authorized user. In compacted transaction format, these messages appear as two-digit codes. See “2-Digit Error Message Codes” on page 79 for a list of codes and messages.

ALLOC LIMIT	Allocation option only. A fueling transaction was terminated because the user ran out of his allocated amount of fuel.
DELIVERY	Fuel Delivery and Dipstick Option only. A fuel delivery key was used to enter a fuel delivery and update the inventory totalizer.
DIPSTICK	Fuel Delivery and Dipstick Option only. A dipstick key was used to enter a dipstick reading.
EMERG STOP	The Emergency Stop button was pressed.
FPR AUTO CFG	Fuel Point Option only. Appears in transaction when Fuel Point AC command is used.
FPR TIMED OUT	Fuel Point Option only. Appears in transaction when Fuel Point Reader or FleetKey system goes down while a transaction is in progress.
GATE ENTRY	Gate Controller only. The gate controller was activated through the FleetKey system.
INVALID FUEL	User attempted access to fuel product not authorized on his key; no access permitted.
INVALID PUMP	User selected a pump that does not exist.
INVALID TANK	Fuel Delivery and Dipstick Option only. An invalid tank number was selected when using a fuel delivery or dipstick key.
INV KEY FMT	Necessary key data is missing. In a single key system, appears when field separators are found instead of key data. In a dual key system, appears when the combined data from both keys does not provide all necessary information.
INV KEY TYPE	A key was inserted that contained an invalid key type.
INV SYS ID	Invalid system identification on key used to access system; no access permitted. (Unauthorized access may have been attempted.)
KEY EXPIRED	The key has expired; no access permitted.
LIMIT CUTOFF	Limitation was reached, pump was turned off.
LOCKED OUT	Key invalidated; no access permitted.
MAINT x SOON	Maintenance option only. x can be A, B, or C. Indicates that vehicle is due for maintenance within a period of miles/time specified by the DS command.
MAINT x NOW	Maintenance option only. x can be A, B, or C. Indicates that vehicle is now due for maintenance. Message appears within a time period measured from the time the scheduled odometer/date is reached to the miles/date specified in the OD command.

MAINT x OVER	Maintenance option only. x can be A, B, or C. Indicates that the vehicle is now overdue for maintenance. Message appears when the odometer/date exceeds the limit set in the OD command. System can be configured to lock out users when maintenance is overdue.
MAINTS A, B NOW, SOON, or OVER MAINTS A, C NOW, SOON, or OVER MAINTS A, B, C NOW, SOON, or OVER MAINTS B, C NOW, SOON, or OVER	Maintenance option only. Combination messages appearing when one or more maintenance types is pending, immediate, or overdue.
NO ALLOC	Allocation option only. A user with no allocation attempted to obtain fuel. No access was permitted.
ODOM RANGE ERR	An incorrect odometer reading was entered.
OFF SITE FUEL	A transaction was entered manually at the data terminal to record an off-site fueling.
PASSWORD KEY	Password key was used to reset password to GASBOY.
PIN ERROR	Incorrect PIN entered; no access permitted.
PMP SW ERROR	Pump switch timer option only. The pump handle was turned on before the timeout period was completed.
PUMP DISABLED	User selected a pump that is disabled.
PUMP IN USE	User selected a pump already in use.
PWR FAIL	The system lost power and was restarted.
REORDER FUEL	The tank totalizer dropped below the reorder point; fuel should be ordered. This message replaces the original transaction message in all succeeding transactions that pump fuel from this tank. The message disappears when the tank inventory exceeds the reorder point (that is, a delivery is made).
TERM ACTIVATE	A pump was activated through the terminal (using the AP command).
TIMED OUT	The pump was not accessed (or turned off) within the timeout period.
TTY CMD	Pump was inactivated from the data terminal (using the IP command).
WRG KEY ENT	In a two-key system, the correct pair of keys was not entered.

# 13 – Fueling Restriction Commands

---

## Description

You use fueling restriction commands to load into the system, values that correspond to encoded indicators on the keys. For example, when you encode keys, you assign a fuel authorization number from one to nine. You use the LF command to load allowable fuels for each number. That user can access only the fuels that correspond to his authorization number.

Likewise, you assign a limitation number from one to nine when you encode keys. Then you use the LL command to assign limitation values to each of those nine digits. The user is restricted to the amount assigned to his limitation number.

### Fueling Restriction Commands

The key information commands are:

LF	load fuel authorizations
PF	print fuel authorizations
LL	load fuel limitations
PL	print fuel limitations

## LF - Load Fuel Authorizations

Use the LF command to assign fuel types to the product authorization codes. There are ten product authorization codes (0 to 9). Code zero is preset to allow all fuel types. You load codes 1 through 9 with up to nine fuel types per code.

When you encode the keys for your system, you decide which fuel types will go with which authorization code. You load these fuel types into the system when you use the LP command. Then you encode the authorization code (0 to 9) onto each user's key. They can access only the fuel types assigned to that code.

- 1 At the \* prompt, type **LF**.  
The system displays AUTH NO.:
- 2 Type an authorization code number from 1 to 9 and press **RETURN**.  
The system displays ALLOW: followed by the first of the nine present fuel codes.
- 3 To change the fuel code, type the 2-digit code and press **RETURN**.  
These 2-digit codes must match the ones you entered in the LP (load pump data) command.

~ OR ~

To keep the existing fuel code value, press **RETURN**.

The next currently assigned fuel code is listed.

*Note: If you do not wish to enter additional fuel codes, type 0 (zero) at the ALLOW: prompt and press **RETURN**. This displays the next AUTH NO.: prompt. Skip to Step 5.*

- 4 Repeat Step 3 to change or retain the next fuel code.  
When all desired fuel assignments are loaded, the AUTH NO.: prompt reappears.
- 5 Repeat this procedure from Step 2 to define fuel types for additional authorization codes.

~ OR ~

To stop entering authorization codes, press **RETURN** at the AUTH NO.: prompt.  
The \* prompt reappears.

**Figure: 13-1 Example of LF Command**

```
*LF
AUTH NO. : 3↵
ALLOW: 03 26↵
ALLOW: 00 13↵
ALLOW: 02↵
ALLOW: 16↵
ALLOW: 00 01↵

AUTH NO. : 4↵
ALLOW: 01↵
ALLOW: 00 0↵

AUTH NO. : ↵
*
```



## PF - Print Fuel Authorizations

Use the PF command to print a listing of each authorization code and its corresponding fuel code assignments.

At the \* prompt, type **PF**.  
The listing prints.

**Figure: 13-2 Example of PF Command**

```
*PF
AUTH CODE: 1  ALLOWS FUELS...04 03
AUTH CODE: 2  ALLOWS FUELS...02
AUTH CODE: 3  ALLOWS FUELS...26 13 69
AUTH CODE: 4  ALLOWS FUELS...01
AUTH CODE: 5  ALLOWS FUELS...01 02
AUTH CODE: 6  ALLOWS FUELS...07
AUTH CODE: 7  ALLOWS FUELS...12 23 34
AUTH CODE: 8  ALLOWS FUELS...10 20 40 80
AUTH CODE: 9  ALLOWS FUELS...01 02 04 08 10
*
```

## LL - Load Fuel Limitations

Use the LL command to assign quantity limits to each product limitation code. There are ten product limitation codes (0 to 9). When you encode the keys for your system, you decide what quantity limits to impose and assign a limitation code to each quantity. Limitation codes can contain any quantity from 1 to 99999 gallons. Usually, the limitation assignment reflects the nearest quantity greater than the vehicle's tank size. It is especially important to keep your limitation amount reasonable if you use the Fuel Allocation option.

Then you encode the limitation code onto each user's key. When that user performs a transaction and reaches the limit assigned to the code on his key, the pump automatically shuts off and sends a LIMIT CUTOFF error message.

For example, assume that user key number 09381 drives a vehicle with a 45-gallon tank. Your limitation values are 0=10, 1=20, 2=30, 3=40, 4=50, etc.. You would assign this user a limitation code of 4, which would be encoded onto his key.

- 1 At the \* prompt, type **LL**.  
The system displays CODE =.
- 2 Type the limitation code number and press **RETURN**.  
The system displays MAX. =

*Note: At initial start-up, assign quantities to all codes, beginning with Code 0 and continuing through Code 9.*

- 3 Type the maximum quantity of fuel (1 to 99999 gallons) to be dispensed and press **RETURN**.  
The CODE = prompt reappears.
- 4 Repeat Steps 2 and 3 until all limitation codes are defined.
- 5 To stop entering limitation codes, press **RETURN** at the CODE= prompt.  
The \* prompt reappears.

**Figure: 13-3 Example of LL Command**

```
*LL
CODE=1↵
MAX  =25↵
CODE=↵
*
```

## PL - Print Fuel Limitations

Use the PL command to print a listing of each limitation code and its corresponding quantity assignment.

At the \* prompt, type **PL**.

The listing prints.

**Figure: 13-4 Example of PL Command**

```
*PL
LIMITS:
0 =      250
1 =       10
2 =       20
3 =       30
4 =       50
5 =       70
6 =      100
7 =      120
8 =      150
9 =      200
*
```



## 14 – Polling Transaction Information

Polling means gathering transactions from your fueling sites for billing or recordkeeping. Polling should ideally be done regularly and at a time when the site has little or no activity. There are several methods of polling you can use and each one has slightly different requirements. Consult the appropriate section for your desired polling method.

### Polling Using the PT Command

- 1 Press **CTRL-F** or **RETURN** to establish communication with your Gasboy Series 1000 System.  
The system responds: SIGN ON:
- 2 Type your system password and press **RETURN**.  
The \* prompt appears.
- 3 Type **PT**.  
The completed transaction file, since your last polling session, prints out.  
When printing completes, the \* prompt reappears.
- 4 Type **PP** to print the pump totals since your last polling session.  
The \* prompt reappears.
- 5 Type **TI** to print your tank inventories.  
The \* prompt reappears.
- 6 If you are using totalizers for periodic totals rather than matching the totalizers on the pump, type **ZP** to reset the pump totalizers to zero.  
The system displays: RESET PUMP TOTALIZERS? <Y OR N>
- 7 Type **Y** and press **RETURN** to zero the pump totalizers.  
The \* prompt reappears.
- 8 Type **RP** to “free” memory space for more transactions.  
(See [“RP - Reset Transaction Pointer”](#) on page 81 for more details.)  
The system displays: ENTER NO.:
- 9 Locate the number of the last transaction printed with the PT command in Step 4 and add 1.  
For example, if the last transaction printed was number 1227, you would type 1228 for the RP command.
- 10 Type the number from Step 9 and press **RETURN**.

## Polling Using the ST Command

When using the ST command, it is very important to perform polling when there is no activity at the site. If you wish, you may use the SD command to shut down the site during polling.

- 1 Press **CTRL-F** or **RETURN** to establish communication with your Gasboy Series 1000 System.  
The system responds: SIGN ON:
- 2 Type your system password and press **RETURN**.  
The \* prompt appears.
- 3 Type **PD**.  
The system prints the date, time, first transaction to print, and last completed transaction number.  
Then the \* prompt appears.
- 4 Type **ST**.  
The sorted transaction file, since your last polling session, prints out.  
When printing completes, the \* prompt reappears.
- 5 Type **PP** to print the pump totals since your last polling session.  
The \* prompt reappears.
- 6 Type **TI** to print your tank inventories.  
The \* prompt reappears.
- 7 If you are using totalizers for periodic totals rather than matching the totalizers on the pump, type **ZP** to reset the pump totalizers to zero.  
The system displays: RESET PUMP TOTALIZERS? <Y OR N>
- 8 Type **Y** and press **RETURN** to zero the pump totalizers.  
The \* prompt reappears.
- 9 Type **RP** to “free” memory space for more transactions.  
(See [“RP - Reset Transaction Pointer” on page 81](#) for more details.)  
The system displays: ENTER NO.:
- 10 Locate the last transaction number from your PD printout (Step 3) and add 1.  
For example, if the LAST TRAN entry contained 1227, you would add one to that and get 1228.

## Polling Using a PC or Computer

When polling using a PC package or computer, follow the guidelines of the package you're using to establish communications and initiate polling with the FleetKey system. Refer to the PH and PC commands described earlier in this manual for transmission format and acknowledgement. In addition to polling, you may also wish to run these commands:

- PP to obtain pump totals
- TI to obtain tank inventory totals
- ZP to reset the the pump totalizers to zero

You will also need to reset the pointer in memory for future polling. To do this, determine the last transaction received, add one to that value and use the RP command to set this new value as the next transaction number.





## Optional Features

---

Sections 14 through 29 contain optional features which may or may not pertain to features incorporated in your system.



# 15 – Activate Pump (AP) Data Entry Option

## Description

This option allows you to enter key data and an odometer reading at the data terminal before activating a pump. The system prompts you for the key numbers, ID fields, and odometer before allowing you to select a pump. When this transaction is recorded, the digits of information, which are usually read from the key, are replaced by those entered at the data terminal. If you do not need to enter data for a particular field, press RETURN at that field; it will be filled with nines (9).

- 1 At the \* prompt, type **AP** (Figure 15-1).  
The system displays KEY 1 NUMBER:.
- 2 Type any data for this field and press **RETURN** or just press **RETURN** to skip this field.  
The system displays: KEY 2 NUMBER:.
- 3 Type any data for this field and press **RETURN** or just press **RETURN** to skip this field.  
The system then displays: (Field 1 name):

*Note: When a key number is entered, it is checked for validity against the lockout file. If the number is invalid, the message LOCKED OUT appears and the command is terminated.*

- 4 Type any data for this field and press **RETURN** or just press **RETURN** to skip this field.  
The system displays all other ID field prompts. You should respond as above.
- 5 When the system displays ODOM:, type any data for this field and press **RETURN** or just press **RETURN** to skip this field.  
The system displays PUMP NO.:.
- 6 Type the number of the pump you wish to access.  
The \* prompt reappears.

The data normally read from the key is filled with the data entered at the terminal. If no data is entered for a particular field, that field is filled with nines.

**Figure: 15-1 Example of AP Command**

```
*AP
KEY 1 NUMBER : 01187↵
KEY 2 NUMBER : 0↵
EMP : 0156↵
VEH : 0057↵
ODOM : 56750↵

PUMP NO.: 2↵
*
```

**Figure: 15-2 Example of Output - TERM ACTIVATE Error**

SITE 1234												
TRAN	KEY1	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR	
0002	01187	00000	0156	0057	07/12/92	15:30	02	02	91.0	0056750	TERM ACTIVATE	

## Software Options Affected by Activate Pump With Data Entries

Some optional software features affect the way this command functions. These options are described below.

### Auxiliary Manual Keypad Entry Option

After the ID data fields are entered, the system prompts for the manual entry field.

### Fuel Allocation Option

When the allocation field is entered, if there is a totalizer for that number, it is checked to see if the allocation limit has been reached. If it has, the message NO ALLOC appears and the command is terminated. If limit is not reached, the totalizer is decremented by the amount pumped when the transaction completes.

### Miles Per Gallon History Option

Odometer data cannot be validated upon entry, as the last odometer, minimum and maximum miles allowed, and the reasonableness check digit are not available without a key. When an odometer is entered for a record that exists in the MPG file, you will be prompted: ODOM CORRECT? <Y OR N>. Check to be sure that you have entered the correct odometer. If not, press N and you will be prompted for your odometer again. If the odometer is correct, press Y and you will be prompted to enter a pump number and fueling is permitted. This odometer is not written to the key. The next time you use your key at the FleetKey system, odometer verification will be based on the last written odometer to your key. See [“Reasonable Odometer Description” on page 35](#) for details. If you press RETURN at the ODOM prompt, the odometer will be filled with nines, and you will not be asked to verify it.

Upon completion of fueling, the MPG record will be updated with the gallons and the odometer will be updated according to the following rules. If the odometer is greater than or equal to the beginning odometer the entered odometer will be stored as the ending odometer. If the odometer is less than the beginning odometer, the entered odometer will be stored as the beginning and ending odometer and the gallons will be zeroed. If no odometer was entered for a record in the MPG file, only the gallons will be updated. The miles and MPG fields in the transaction will not be filled in, as we did not have a key to validate the odometer entry.

## 16 – Encoding Keys Option

The FleetKey Encoding option allows you to encode keys using the Series 1000 FleetKey system. There are two ways to encode keys:

- Using diagnostic mode (convenient for mass encoding)
- Using the encoding key (for the occasional encoding)

An encoding key is a special key that enables you to encode keys directly through the Series 1000 keypad.

### Encode Keys Using Diagnostic Mode

- 1 Enter diagnostic mode.
- 2 On the MPU PCB, turn the diagnostic switch located in the center back of the MPU PCB upward to **ON**.  
The LCD displays: ENTER TEST 0-9.
- 3 Press **9** and **ENTER**.  
The LCD displays: INSERT KEY.
- 4 Insert the key you wish to encode and turn it (1/4 turn clockwise).
- 5 If the key can be read (it was previously encoded), the existing data is shown for each field. You may keep the existing data for each field or change the data on a field-by-field basis.

~ OR ~

If the key is unreadable, and it is the first key that you are encoding since entering diagnostic mode, dashes (-) are shown for each field's data.

Enter the data that you wish to encode on the key.

~ OR ~

If the key is unreadable, and it is not the first key to be encoded since entering diagnostic mode, the system displays the data from the previous encoding.

The LCD display prompts you for each field on the key with the field name followed by either dashes or data.

- 6 To keep the existing data, press **ENTER**.

~ OR ~

To change the data, press the numbers for the new data and **ENTER**.

If you make a mistake before pressing **ENTER**, press **CLEAR** and the data will be erased and you can start again.

Key types 1 and 2 allow field separators in certain fields.

To encode field separators in a field, press **CLEAR** twice.

(Dashes are displayed to represent the field separators.)

You can toggle between a clear display and the dashes with the **CLEAR** button.

Press **CLEAR** again and the display is erased.

Press **CLEAR** again and you will see the dashes again.

Press **ENTER** to go on to the next field.

If you have the Supervisor Key Option, you can encode special characters (dots) in the ID fields of key types 1, 2 or 3 to indicate that the field data will be entered at the keypad.

The method for inserting these special characters varies by key type.

You can alternate among clear display and dots by repeatedly pressing the **CLEAR** button.

For key type 3, press **CLEAR** twice; the field is filled with dots.

For key types 1 and 2, press **CLEAR** three times to display the dots.

(Key types 1 and 2 also have a field separator character.)

Press **ENTER** to go on to the next field.

When you have entered data for all fields, the LCD displays: ENCODE? 1=YES 0=NO

**7 To encode the key, press 1 and ENTER.**

If you removed your key before arriving at this step, you will be prompted, INSERT KEY.

If you have a two receptacle system, you must put the key back into the same receptacle that it was originally in. Once the key is in place, the display will show WRITING RECEPTACLE X, where X is 1 or 2 (depending on which receptacle your key is in).

When the encoding is complete, the display will show ENCODING COMPLETE followed by TURN KEY LEFT,REMOVE.

~ OR ~

To terminate without encoding the key, press **0** and **ENTER**.

The LCD displays TURN KEY LEFT,REMOVE if your key is still in the receptacle.

**8 Turn the key to the left and remove it.**

The display returns to INSERT KEY.

**9 Insert another key to encode or press ENTER to select a different diagnostic test.**

*Note: Do not remove your key until you see TURN KEY LEFT, REMOVE. If the key is removed during the actual encoding process, the LCD displays ABORTED, KEY REMOVED and returns to the INSERT KEY prompt. Be sure to re-encode this key before using it for fueling.*

## Encode Key Using an Encoding Key

- 1 At the INSERT KEY prompt, insert the encoding key and turn it to the right.  
The LCD displays: PLEASE WAIT!, followed by INSERT KEY TO ENCODE.
- 2 If you have a one receptacle system, or are only using one receptacle on a two receptacle system, turn the encoding key to the left and remove it; insert the key that you wish to encode in the receptacle and turn it to the right.

~ OR ~

If you have a two receptacle system and are using two receptacles, leave the encoding key in the receptacle and insert the key to be encoded in the other receptacle and turn it to the right.

*Note: The key to be encoded cannot be a previously encoded encoding key. If you insert an encoding key as your key to be encoded, it will be ignored.*

- 3 If the key can be read successfully (it was previously encoded), the existing data is shown for each field. You may keep the existing data for each field, or change the data on a field-by-field basis.

~ OR ~

If the key is unreadable, dashes (-) are shown for each field's data and you must enter the data that you wish to encode on the key.

The LCD display prompts you for each field on the key with the field name followed by either dashes or data.

- 4 To keep the existing data, press **ENTER**.

~ OR ~

To change the data, press the numbers for the new data and press **ENTER**.

If you make a mistake before pressing ENTER, press **CLEAR** and the data will be erased and you can start again.

Key types 1 and 2 allow field separators in certain fields.

To encode field separators in a field, press **CLEAR** twice.

(Dashes are displayed to represent the field separators.)

You can toggle between a clear display and the dashes with the **CLEAR** button.

Press **CLEAR** again and the display is erased.

Press **CLEAR** again and you will see the dashes again.

Press **ENTER** to go on to the next field.

If you have the Supervisor Key Option, you can encode special characters (dots) in the ID fields of key types 1, 2 or 3 to indicate that the field data will be entered at the keypad.

The method for inserting these special characters varies by key type.

You can alternate among clear display and dots by repeatedly pressing the **CLEAR** button.

For key type 3, press **CLEAR** twice; the field is filled with dots.

For key types 1 and 2, press **CLEAR** three times to display the dots.

(Key types 1 and 2 also have a field separator character.)

Press **ENTER** to go on to the next field.

When you have entered data for all fields, the LCD displays: ENCODE? 1=YES 0=NO

- 5 To terminate without encoding the key, press **0** and **ENTER**.  
The LCD displays: TURN KEY LEFT,REMOVE.

~ OR ~

If you wish to encode the key, press **1** followed by **ENTER**.

The LCD displays: WRITING RECEPTACLE X, where X is 1 or 2, (depending on which receptacle your key is in) once the key is in place.

When the encoding is complete, the LCD displays: ENCODING COMPLETE, followed by TURN KEY LEFT,REMOVE.

- 6 Turn the key to the left and remove it.  
The LCD displays INSERT KEY.

*Note: Do not remove your key(s) until you see the TURN KEY LEFT,REMOVE prompt. Once the key to be encoded has been inserted, removing either key will cause the display to return to the INSERT KEY prompt. If this happens, your key has not been encoded properly. Be sure to re-encode this key before using it for fueling.*



# 17 – Fuel Allocation Option

## Description

The Fuel Allocation option allows you to allocate, over a period of time, predetermined amounts of fuel to users. This option works effectively only in a single site operation. As fuel is withdrawn from the system, the appropriate allocation totalizer is decremented. When the totalizer reaches zero, the user is denied fuel until you load a new allocation amount.

If you ordered this option, you indicated the numeric key-encoded field (Key, or one of the ID fields) to be assigned the allocation totalizers and the number of totalizers. Then you must assign an allocation offset (starting number) for the totalizers. For example, if you choose the vehicle number field, have 500 totalizers, and specify 1250 in the AO command, the totalizers are assigned to vehicle numbers 1250 through 1749.

You can add to, or subtract from, individual totalizers or ranges of totalizers at one time. An allocation table, showing the allocation numbers and their current totalizer values, may be printed on demand. A total of all totalizer values is also provided.

## Allocation Commands

The Fuel Allocation commands are:

AO	load a starting point for allocations (allocation offset)
LA	load single allocation value
ML	load allocations for multiple users
AA	add to single allocation
MA	add to allocation for multiple users
SA	subtract from single allocation
MS	subtract from allocation for multiple users
CA	check single allocation
AT	configure to print all totalizers
NZ	configure to print non-zero totalizers
PA	print allocation table
MP	print range of allocation

### Fuel Allocation Examples

The allocation option works in conjunction with the limits you set up for each user with the LL command. Be sure that you have assigned reasonable fuel limitations; unrealistic limits can cause system tie-ups when used with the allocation option. Consider these two examples: the first describes standard operation of the allocation option; the second, what happens when two users with the same allocation number attempt to fuel at the same time.

#### Example 1:

Assume user A has a limit of 40 gallons per transaction and an allocation limit of 400 gallons a month. When user A attempts to fuel his vehicle, the Series 1000 sets aside 40 of these 400 gallons. If user A pumps 40 gallons, 40 are decremented from the allocation totalizer. If only 35 gallons are pumped, 35 are decremented and the unused 5 are returned to the allocation totalizer.

If user A has less than his limitation amount remaining in his allocation totalizer, the lesser amount is authorized.

#### Example 2:

When two users that have the same allocation number try to get gas at the same time, the second key to be authorized can only get the amount in the allocation totalizer minus what the first key is authorized for. This is why it is important to keep the limitation amounts reasonable. In an extreme example, assume that individuals A and B, (who share the same allocation number) have limits of 400 gallons each. The allocation totalizer for these individuals is currently 400. When user A runs his key, his encoded 400 gallon limit is decremented from the totalizer leaving a balance of zero. If user B attempts to run a transaction at the same time, he cannot get his fuel until user A is finished. If user A takes all 400 gallons, user B cannot fuel until a new allocation amount is set. If users A and B had been assigned reasonable limits (that is, maybe 100 gallons), they could have fueled simultaneously and had allocation left over.

## AO - Allocation Offset

Use the AO command to load a starting point, or offset, for the allocation table. For example, if your system is configured for 200 allocation totalizers and the allocation offset is 1275, the allocation table ranges from 1275 to 1474.

You cannot execute the AO command if any transactions are in progress. If you try, the system displays this message: TRAN IN PROGRESS; the allocation offset remains unchanged.

- 1 At the \* prompt, type **AO** (Figure 17-1).  
The system displays: ALLOC OFFSET: XXXX  
where XXXX is the existing allocation offset.
- 2 Type a new allocation offset and press **RETURN**.  
If the new allocation offset is acceptable, the \* prompt reappears.  
If the allocation offset is unacceptable, the system responds with question marks.

~ OR ~

To keep the existing allocation offset, press **RETURN**.

**Figure: 17-1 Example of AO Command**

```
*AO  
ALLOC OFFSET: 0001 1275↵  
*
```

## LA - Load Allocation

Use the LA command to load an allocation amount into a totalizer.

- 1 At the \* prompt, type **LA** (Figure 17-2).  
The system displays: ENTER NO. :
- 2 Type the number of the totalizer where you want to load an allocation amount and press **RETURN**.  
(This number must be within the range of numbers specified through the AO command).  
The system displays: AMOUNT:
- 3 Type the totalizer amount and press **RETURN**.  
The system displays the next ENTER NO. prompt.
- 4 Repeat this procedure from Step 2 to load additional allocation amounts.

~ OR ~

To stop loading amounts, press **RETURN** at the ENTER NO.: prompt.  
The \* prompt reappears.

**Figure: 17-2 Example of LA Command**

```
*LA
ENTER NO. : 0025↵
AMOUNT: 1200↵
ENTER NO. : ↵
*
```

## ML - Multiple Load of Allocation

Use the ML command to assign the same amount to a block of allocation totalizers. The second allocation number must be greater than the first.

- 1 At the \* prompt, type **ML** (Figure 17-3).  
The system displays: ENTER NO. :
- 2 Type the beginning totalizer number of the block and press **RETURN**.  
The system displays: TO ENTER NO.:
- 3 Type the ending totalizer number of the block and press **RETURN**.  
The system displays: AMOUNT:
- 4 Type the totalizer amount and press **RETURN**.  
The \* prompt reappears.

**Figure: 17-3 Example of ML Command**

```
*ML
ENTER NO. : 0030↵
      TO
ENTER NO. : 0045↵
AMOUNT: 250↵
*
```

## AA - Add to Allocation

Use the AA command to add an additional amount to a totalizer.

- 1 At the \* prompt, type **AA** (Figure 17-4).  
The system displays: ENTER NO .:
- 2 Type the totalizer number where you want to add an amount and press **RETURN**.  
The system displays: AMOUNT:
- 3 Type the amount to be added and press **RETURN**.  
The ENTER NO.: prompt reappears.
- 4 To continue adding amounts to other totalizers, repeat this procedure from Step 2.

~ OR ~

To stop adding amounts, press **RETURN** at the ENTER NO.: prompt.  
The \* prompt reappears.

**Figure: 17-4 Example of AA Command**

```
*AA
ENTER NO. : 0030↵
AMOUNT: 100.0↵
ENTER NO. : ↵
*
```

## MA - Multiple Add to Allocation

Use the MA command to add the same value to multiple allocation totalizers. The second allocation number must be greater than the first. The parameters are inclusive.

- 1 At the \* prompt, type **MA** (Figure 17-5).  
The system displays: ENTER NO. :
- 2 Type the beginning totalizer number of the block and press **RETURN**.  
The system displays: TO ENTER NO. :
- 3 Type the ending totalizer number of the block and press **RETURN**.  
The system displays: AMOUNT:
- 4 Type the amount to be added to the block of totalizers and press **RETURN**.  
The \* prompt reappears.

**Figure: 17-5 Example of MA Command**

```
*MA
ENTER NO. : 0030↵
      TO:
ENTER NO. : 0045↵
AMOUNT: 050↵
*
```

## SA - Subtract from Allocation

Use the SA command to subtract an amount from a previously loaded totalizer.

- 1 At the \* prompt, type **SA** (Figure 17-6).  
The system displays: ENTER NO. :
- 2 Type the number of the totalizer where you want to subtract an amount and press **RETURN**.  
The system displays: AMOUNT:
- 3 Type the amount to be subtracted and press **RETURN**.
- 4 To continue subtracting amounts from other totalizers, repeat this procedure from Step 2.

~ OR ~

To stop subtracting amounts, press **RETURN** at the ENTER NO.: prompt.  
The \* prompt reappears.

**Figure: 17-6 Example of SA Command**

```
*SA
ENTER NO. : 0030↵
AMOUNT: 100.000↵
ENTER NO. : ↵
*
```



## MS - Multiple Subtract from Allocation

Use the MS command to subtract a value from multiple allocation totalizers. The second allocation number must be greater than the first. The parameters are inclusive.

- 1 At the \* prompt, type **MS** (Figure 17-7).  
The system displays: ENTER NO. :
- 2 Type the beginning totalizer of the block and press **RETURN**.  
The system displays: TO ENTER NO. :
- 3 Type the ending totalizer of the block and press **RETURN**.  
The system displays: AMOUNT:
- 4 Type the totalizer amount and press **RETURN**.  
The \* prompt reappears.

**Figure: 17-7 Example of MS Command**

```
*MS
ENTER NO. : 0030↵
TO:
ENTER NO. : 0045↵
AMOUNT: 020.000↵
*
```

## CA - Check Allocation

Use the CA command to print the totalizer amount for an individual allocation number.

- 1 At the \* prompt, type **CA** (Figure 17-8).  
The system displays: ENTER NO. :
- 2 Type the number of the allocation totalizer and press **RETURN**.
- 3 To continue checking other totalizers, repeat this procedure from Step 2.

~ OR ~

To stop checking totalizers, press **RETURN** at the ENTER NO.: prompt.  
The \* prompt reappears.

**Figure: 17-8 Example of CA Command**

```
*CA
ENTER NO. : 0030↵
ALLOCATION  97.000
ENTER NO. : ↵
*
```

## AT - Configure to Print All Totalizers

Use the AT command to configure the system to print all allocation totalizers, including those with zero allocation. (See [“PA - Print Allocation Table” on page 112](#)).

At the \* prompt, type AT ([Figure 17-9](#)).  
The \* prompt appears.

**Figure: 17-9 Example of AT Command**

```
*AT
*
```

## NZ - Configure to Print Non-Zero Totalizers

Use the NZ command to configure the system to print only the allocation totalizers that have allocation (non-zero). (See [“PA - Print Allocation Table” on page 112](#)). This command is especially helpful for systems where only a small percentage of the totalizers contain non-zero values.

At the \* prompt, type NZ ([Figure 17-10](#)).  
The \* prompt appears.

**Figure: 17-10 Example of NZ Command**

```
*NZ
*
```

## PA - Print Allocation Table

Use the PA command to print the allocation table. The totalizers that are printed depend on your use of the AT or NZ commands. The grand total of all printed totalizers will be printed at the end.

At the \* prompt, type PA ([Figure 17-11](#)).  
The listing prints.

**Figure: 17-11 Example of PA Command (with NZ selected)**

```

*PA
ALLOCATION TABLE
0000= 150.000 0002= 50.000 0003= 10.100 0007= 5.050
0010= 153.090 0035= 100.000 0052= 50.000 0053= 10.100
0095= 21.000 0096= 9.990 0097= 100.000 0098= 50.000
0099= 125.000
TOTAL: 834.330
*
```

## MP - Print Range of Allocation

Use the MP command to print a block of allocation totalizers. The second allocation number must be greater than the first. The parameters are inclusive.

- 1 At the \* prompt, type **MP** (Figure 17-12).  
The system displays: ENTER NO. :
- 2 Type the beginning totalizer number of the block and press **RETURN**.  
The system displays: TO ENTER NO. :
- 3 Type the ending totalizer number of the block and press **RETURN**.  
The listing prints.

**Figure: 17-12 Example of MP Command**

```

*MP
ENTER NO. : 0095↵
TO:
ENTER NO. : 0099↵
ALLOCATION TABLE
0095= 21.000 0096= 9.990 0097= 100.000 0098= 50.000 0099= 125.000
TOTAL: 305.990
*
```

## Transaction Headings with the Fuel Allocation Option

The Fuel Allocation option does not change the transaction printout.



# 18 – Fuel Delivery and Dipstick Key Option

## Description

Using special keys, the FleetKey system can accept and record fuel delivery and dipstick reading data. With this option, any key with a key type of 4 initiates a fuel delivery transaction and any key with a key type of 5 initiates a dipstick reading transaction. Fuel deliveries update the inventory totalizer for the designated tank and create a transaction. Dipstick readings only generate a transaction, inventory totalizers are not affected.

## Fuel Deliveries

To enter a fuel delivery at the Series 1000:

- 1 At the INSERT KEY prompt, insert the fuel delivery key into a key receptacle and turn clockwise.  
The LCD displays: PLEASE WAIT.
  - If you are required to enter a Personal Identification Number (PIN), the LCD displays ENTER PIN next.
  - If you are not required to enter a PIN, the LCD displays: ENTER TANK #. Skip to step 3.
- 2 Type your PIN digits on the keypad and press **ENTER**.  
If the PIN is correct, the LCD displays: ENTER TANK #.
- 3 Type the number of the tank that received a fuel delivery and press **ENTER**.  
If you select a valid tank, the LCD displays: ENTER QUANTITY.  
If you select a tank that is not available, this message appears: NO SUCH TANK!  
*Note: You have three tries to select a valid tank. If after three attempts, you have not selected a valid tank, the TURN KEY LEFT, REMOVE message appears and you must turn and remove your key and begin again at Step 1.*
- 4 Type the quantity of fuel that was delivered (up to 5 digits, in whole gallons only) and press **ENTER**.  
The quantity is added to the appropriate inventory totalizer, and the message QUANTITY RECORDED! appears on the display.
  - A transaction is recorded with the tank number appearing in the P# field and the quantity entered appearing in the QUANTITY field.
  - The PR and ODOM fields contain zeros.
  - The transaction message in the ERROR field is DELIVERY for a completed transaction (Figure 18-1) and INVALID TANK for an error transaction.

**Figure: 18-1 Example of DELIVERY Completed Transaction**

SITE 1234											
TRAN	KEY1	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
0221	54321	00000	5967	0000	07/11/92	15:30	01	00	5248.	0000000	DELIVERY

Dipstick Readings

To enter a dipstick reading at the Series 1000 key reader:

- 1 At the INSERT KEY prompt, insert the dipstick key into a key receptacle and turn clockwise. The LCD displays: PLEASE WAIT.
  - If you are required to enter a Personal Identification Number (PIN), the LCD will display ENTER PIN next.
  - If you are not required to enter PIN, the LCD displays ENTER TANK #. Skip to Step 3.
- 2 Type your PIN digits on the keypad and press ENTER. If the PIN is correct, the LCD displays ENTER TANK #.
- 3 Type the number of the tank where you want to enter a dipstick reading and press ENTER. If you select a valid tank, the LCD displays: ENTER QUANTITY. If you select a tank that is not available, this message appears: NO SUCH TANK! *Note: You have three tries to select a valid tank. If after three attempts, you have not selected a valid tank, the TURN KEY LEFT,REMOVE message appears and you must turn and remove your key and begin again at Step 1.*
- 4 Type the dipstick reading (up to 5 digits, in whole gallons only) and press ENTER. The LCD displays QUANTITY RECORDED! appears on the display.
  - A transaction is recorded with the tank number appearing in the P# field and the quantity entered appearing in the QUANTITY field.
  - The PR and ODOM fields contain zeros.
  - The transaction message in the ERROR field is DIPSTICK for a completed transaction (Figure 18-2) and INVALID TANK for an error transaction.

Figure: 18-2 Example of DIPSTICK Completed Transaction

SITE 1234												
TRAN	KEY1	KEY2	EMP	VEH	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR	
0221	54321	00000	5967	0000	07/11/92	15:30	01	00	5248.9	0000000	DIPSTICK	

Transaction Headings with the Fuel Delivery/Dipstick Option

The Fuel Delivery and Dipstick option does not change the transaction headings. The number in the pump number field is actually a tank number in a dipstick or delivery transaction.

# 19 – Gate Controller Option

## Description

The Gate Controller option enables you to control access to a gate using your FleetKey System. Separate FleetKey units are required to activate gates and pumps. When you insert your key(s), the gate controller verifies the key and activates the gate relay.

On a dual key system, access is granted after verification of the Employee key (key type 1). Field separators that occupy account data positions on dual key systems are converted to zeros for printout purposes. The Vehicle key (key type 2) is not accepted by the gate controller.

If you have the Gate Controller option, follow these steps:

- 1 Position your vehicle in front of the gate to be accessed.  
In its idle state, the FleetKey LCD alternates between an INSERT KEY message and a personalized system message.
- 2 Insert the key into a key receptacle and turn it clockwise.  
*Note: The system may have one or two key receptacles, but you will only be required to use one key.*  
The LCD displays PLEASE WAIT.  
If you are required to enter a Personal Identification Number (PIN), the LCD displays ENTER PIN.
- 3 If asked to enter a PIN, use the keypad to enter your PIN and press **ENTER**.  
To ensure security, an asterisk (\*) appears for each digit that you press.  
If you make a mistake while entering your PIN, press CLEAR and enter it again.  
*Note: You have three tries to enter the correct PIN. After the third unsuccessful try, the display changes to TURN KEY LEFT,REMOVE and you must turn and remove your key and start again at Step 2. If your system uses the Auto PIN Lockout feature, the key is automatically locked out (invalidated) after the third unsuccessful PIN entry.*
- 4 If your system requires a manual entry field, the prompt for that field appears. Type the data requested and press **ENTER**.  
The LCD displays TURN KEY LEFT,REMOVE.
- 5 Remove the key from the receptacle.  
*Note: If you leave the key in the receptacle for more than five seconds, an alarm sounds to remind you to remove it.*  
The FleetKey system activates the gate relay and the LCD displays GATE ACTIVATED.  
The message remains until the FleetKey System deactivates the gate controller relay.

## Gate Controller Commands

The Gate Controller Option commands allow you to:

LG	load gate timeout
PG	print gate timeout
AG	activate gate from terminal

## LG - Load Gate Timeout

Use the LG command to load the timeout value for the gate relay. This value represents the number of seconds the FleetKey energizes the gate relay (time depends on manufacturer specifications). This usually is not the amount of time the gate remains open. Most systems keep the gate open until the vehicle has driven through.

- 1 At the \* prompt, type **LG** (Figure 19-1).  
The system displays: ENTER GATE TIMEOUT:
- 2 Type the desired number of seconds (1 to 255) for the FleetKey system to energize the gate relay and press **RETURN**.  
Most gate systems use 4 seconds.  
The \* prompt reappears.

**Figure: 19-1 Example of LG Command**

```
*LG
ENTER GATE TIMEOUT: 4↵
*
```

## PG - Print Gate Timeout

Use the PG command to print the timeout value you loaded for the gate relay using the LG command.

At the \* prompt, type **PG** (Figure 19-2).  
The timeout value prints.  
The \* prompt reappears.

**Figure: 19-2 Example of PG Command**

```
*PG
GATE TIMEOUT = 004 SECONDS
*
```





## Changes in Standard Commands

The following standard commands are not available with the Gate Controller.

LI	load tank inventory	AI	add to tank inventory
SI	subtract from tank inventory	TI	print tank inventory
LR	load inventory reorder point	LP	load pump data
PP	print pump data	EP	enable pump
DP	disable pump	AP	activate pump
IP	inactivate pump	ZP	zero pump totalizers
XP	print timeouts and pulse rates	LF	load fuel authorizations
PF	print fuel authorizations	LL	load fuel limits
PL	print fuel limits		

All other operator commands are the same except SC and PS.

When using the SC command, the system will not prompt you for the following entries:

- KEY PROMPTS
- NUMBER OF PUMPS
- PULSE RATE
- NUMBER OF TANKS
- PRICE DATA FORMAT
- AUTO PUMP DISABLE
- TRANSACTION MPG

## Software Options Affected by Gate Controller

### Data Entries on Activate Gate (AG) Command Option

This option (the gate controller equivalent of Activate Pump with Data Entries) allows you to enter key data at the terminal before activating the gate. The system prompts you for the key number and ID fields before the gate is activated. When this transaction is recorded, the digits of information, which are usually read from the key, are replaced by those entered at the data terminal. If you do not need to enter data for a particular field, press RETURN at that field; it will be filled with nines (9).

- 1 At the \* prompt, type **AG**.  
The system displays KEY NUMBER:.

- 2 Press **RETURN** to skip this field.

~ OR ~

Type any data for this field and press **RETURN**.

When a key number is entered, it is checked for validity against the lockout file.

- If the number is invalid, the message LOCKED OUT appears and the command is terminated.
- If the number is valid, the system displays: (Field 1 name):

- 3 Press **RETURN** to skip this field.

~ OR ~

Type any data for this field and press **RETURN**.

The system displays all other ID field prompts. You should respond as above.

When you have entered the last ID field data, the system activates the gate relay and displays GATE ACTIVATED.

The \* prompt reappears.

The data normally read from the key is filled with the data entered at the terminal. If no data is entered for a particular field, that field is filled with nines (9).

**Figure: 19-6 Example of AG Command**

```
*AG
KEY NUMBER: 01187↵
EMP : 0156↵
VEH : 0057↵
GATE ACTIVATED!
*
```

**Figure: 19-7 Example of AG Transaction Printout**

```
SITE 1234

TRAN KEY   EMP  VEH  DATE      TIME      ERROR
0002 01187 0156 0057 08/12/92 15:30    TERM ACTIVATE
```

## Additional Software Options for Gate Controller

### Disable Memory Full Protection

You can order the FleetKey Gate Controller with the memory full protection disabled.

- When memory full protection is disabled, the system automatically writes over the oldest transactions when new transactions arrive and the memory is full.
- When memory full protection is disabled, you cannot retrieve transactions from the system memory. The only record of the transactions is the direct printout copy of the transaction as it occurs.
- When memory full protection is disabled, you cannot use the following commands:

PT	print transactions
ST	print sorted transactions
SS	print sorted transactions for a specified number
PC	print compacted transactions
PH	print compacted transactions with host interaction
RP	reset transaction pointer

# 20 – Loadable Base Pump Option

## Description

The Loadable Base Pump option allows you to assign different pump numbers at a site where you have more than one FleetKey. You can enter a base pump number that is used as the number of the first pump in a system. All pumps are numbered consecutively beginning with the base pump number. The maximum pump number is 99. Pump numbers that are less than the base pump number will not be available.

Example:

If the base pump number is loaded as 3, there will not be any pumps numbered 1 or 2 at that FleetKey. When pump number 3 is selected for fueling, the first relay in that system is activated.

## Changes in Standard Commands

When using any command that requires a pump number as input, the pump number must be within the range defined by the loaded base pump number.

All operator commands are the same except for the SC and PS commands. The SC command displays the Base Pump Number prompt right after you enter the number of pumps in your system (Figure 20-1). You can only enter a base pump number that will allow all of the pumps to be accessed. If you change the number of pumps in your system, and the existing base pump number is no longer valid, you must enter a new base pump number. You are re-prompted until a valid base pump number is entered. If the existing base pump number is valid, you can skip the entry by pressing RETURN. If you attempt to leave the SC command with CTRL-C and you have changed the number of pumps but not the base pump number, the new number of pumps you entered is not saved. If you try to change either the number of pumps or the base pump number while a transaction is in progress, this message appears: TRANS IN PROGRESS! Use the following guidelines to determine the valid base pump numbers for your system.

No. of Pumps in System	Highest Base Pump Number
1	99
2	98
3	97
4	96
5	95
6	94
7	93
8	92

Figure: 20-1 Example of SC Command

```
*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y↵

SITE NO.: <XXXX> 0003↵

IDLE MESSAGE: <20 CHARS> GASBOY FLEETKEY↵

ENTER KEY TYPE 1 PROMPT: INSERT GRAY KEY↵

ENTER KEY TYPE 2 PROMPT: INSERT GREEN KEY↵

NUMBER OF PUMPS: <1-8> 4↵

BASE PUMP NO.: <1-99> 5↵

PUMP #5
$ OR QTY PULSES? <$ OR Q>$↵
PUMP #6
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>100↵
PUMP #7
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵
PUMP #8
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵

NO. OF TANKS: <1-8> 4↵

PRICE DATA FORMAT
0 = NO PRICE DATA
1 = UNIT PRICE
2 = UNIT & TOTAL PRICE
ENTER FORMAT: <0,1,2>0↵

SYSTEM ID:<XXXX> 5745↵

AUTO PUMP DISABLE
NO. OF ZERO QTY TRANS. <1-99> 5↵

LINES PER PAGE <0-62>: 62↵

KEY EXPIRATION DATE
ENABLE OR DISABLE? <E OR D> E↵

AUTO PIN. LOCKOUT
ENABLE OR DISABLE? <E OR D> E↵

AUTO SITE SHUT DOWN
ENABLE OR DISABLE? <E OR D> E↵

TRANSACTION MPG
ENABLE OR DISABLE? <E OR D> D↵
```

The base pump number can be displayed with the PS command (Figure 20-2).

**Figure: 20-2 Example of PS Command**

```
*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY FLEETKEY

KEY TYPE 1 PROMPT:       INSERT GRAY KEY
KEY TYPE 2 PROMPT:       INSERT GREEN KEY

BASE PUMP NUMBER:        5

PUMP #05    PULSES PER GAL:  $
PUMP #06    PULSES PER GAL:  0100
PUMP #07    PULSES PER GAL:  0010
PUMP #08    PULSES PER GAL:  0010

NUMBER OF TANKS:         4

PRICE DATA FORMAT:      NO PRICE DATA

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.: 05

Press any key to continue...

LINES PER PAGE           62

KEY EXPIRATION DATE:     ENABLED

AUTO PIN LOCKOUT:        ENABLED

AUTO SITE SHUT DOWN:     ENABLED

TRANSACTION MPG:         DISABLED
*
```





## 21 – Maintenance Option

### Description

The Maintenance Option allows you to set up and enforce a vehicle maintenance timetable for up to three types of scheduled maintenance. The maintenance types are A, B, and C, and you can use them for whatever you wish, for example: A might be tune up/oil, B might be brakes, C might be tire maintenance. The Maintenance option requires the use of a Gasboy KE200 Key Encoder/Maintenance Terminal for the updating of the keys.

To use the Maintenance options, you must load a maintenance table. The maintenance table consists of the three Maintenance categories (A, B, and C) and a MILES and DAYS between maintenance entry for each. You can define a maintenance schedule for up to 20 classes (1-20) of vehicle. The vehicle class is encoded on the user's key. A class of 00 indicates no maintenance is performed. The key also contains a 7-digit maintenance odometer and 6-digit maintenance date field for each of the three maintenance types. This maintenance odometer is separate from the odometer a vehicle enters during fueling; it contains the vehicle's odometer from the last time maintenance was performed. The maintenance table uses this odometer as a starting point for calculating the next scheduled maintenance. The maintenance date is the date the maintenance was last performed. This date is the starting point for calculating the next scheduled maintenance date. Neither the maintenance odometer or the maintenance date can be set at zeros or the system assumes maintenance will not be used. If the last maintenance odometer or date is not known, enter an odometer or date from which to calculate future maintenance.

When the vehicle is sent to the garage for maintenance, the technician uses the KE200 as a maintenance terminal and reads the key to find out which maintenance is due. He will then perform that maintenance and update the user's key with the odometer and date at which maintenance was performed. A maintenance transaction is generated and placed in the maintenance transaction file. A copy of the transaction is also printed on the logger. Maintenance is valid only on key types 0, 2, or 3. Keys encoded with supervisor characters in the VEH field cannot be used with the maintenance option.

Once the table is loaded, you must indicate the number of miles and/or days before or after maintenance is due in which you wish to notify the user of impending maintenance. For example, assume a user had his last maintenance at 30,000 miles and is scheduled for tune-up/oil change every 10,000 miles (at 40,000 miles) and you have set your due soon indicator to 100. When that user fuels, he inputs a current odometer of 39,900 miles and receives the message MAINT X DUE SOON. When the maintenance date or mileage is reached, the message MAINT X DUE NOW appears on the LCD. All the maintenance messages are also appended to the ERROR field in each transaction until the maintenance is performed and the key is updated.

You can also set an indicator to warn users of overdue maintenance. If you set your overdue indicator to 500 and that user reaches 40,500 without having the necessary maintenance the message MAINT X OVERDUE appears. Using a parameter in the SC command, you can prohibit (lockout) the user from obtaining any more fuel until the overdue maintenance is performed.

## Maintenance Commands

The Maintenance option commands are:

CM	clear maintenance
LM	load the maintenance table
PM	print the maintenance table
DS	load the due-soon value for miles and days
OD	load the overdue value for miles and days

## CM - Clear Maintenance Table

Use the CM command to clear the contents of the maintenance table and place zeros in the class, days, and miles fields for each maintenance type. Then you can proceed to load a maintenance table with values you choose.

- 1 At the \* prompt, type **CM** (Figure 21-1).  
The system displays: CLEAR MAINT FILE <Y OR N>:
- 2 Type **Y** and press **RETURN**.  
The file is cleared and zeros are placed in the fields.

**Figure: 21-1 Example of CM Command**

```
*CM
CLEAR MAINT FILE <Y OR N>: Y↵
*
```

## LM - Load Maintenance Table

Use the LM command to load the maintenance table. The first time you load a maintenance table, use the CM (Clear Maintenance) command to clear any contents and place zeros in all the fields. The maintenance table consists of the three Maintenance categories (A, B, and C) and a MILES and DAYS between maintenance entry for each. You can define a maintenance schedule for up to 20 classes of vehicle. The vehicle class is encoded on the user's key. If class 00 is encoded, no maintenance is performed. When a transaction occurs, and the maintenance fields are checked, the system always checks miles first and, if nothing is found, it checks days. If you enter zeros into the maintenance table for a class, either in miles or days, or both, the system skips the maintenance check for that class. A fill-in chart appears in the Start-up Manual to assist you in loading your maintenance table.

*Note: If you are updating the table, you need not re-type every value. Instead, you can press RETURN to accept the current field value and go on to the next prompt.*

- 1 At the \* prompt, type **LM** (Figure 21-2).  
The system displays: CLASS:
- 2 Type the two-digit vehicle class (01-20) you are defining and press **RETURN**.  
The system displays: MAINT A MILES:
- 3 Type the number of miles between maintenance for type A maintenance (for example, for every 10,000 miles, enter 10000) and press **ENTER**.  
The system displays: MAINT A DAYS:
- 4 Type the number of days between maintenance for type A maintenance (for example, once a year, enter 365) and press **ENTER**.  
The system displays MAINT B MILES:
- 5 Repeat Steps 3 and 4 as needed until all desired maintenance types are defined for class 1.  
Then the system displays: CLASS:
- 6 Repeat this procedure from Step 2 for the next vehicle class.

**Figure: 21-2 Example of LM Command**

```
*LM
CLASS: 1↵
MAINT A MILES: 10000↵
MAINT A DAYS: 365↵
MAINT B MILES: 5000↵
MAINT B DAYS: 120↵
MAINT C MILES: ↵
MAINT C DAYS: ↵
CLASS: ↵
```

## PM - Print Maintenance Table

Use the PM command to print the maintenance table for a single class or all classes.

- 1 At the \* prompt, type **PM** (Figure 21-3).  
The system displays: ENTER CLASS <1-20, 0=ALL>:
- 2 Type the number of the class you wish to view, or **0** to view all, and press **RETURN**.  
The indicated classes print.

**Figure: 21-3 Example of PM Command**

*PM						
ENTER CLASS <1-20, 0=ALL> : 0↵						
CLASS	MAINT A		MAINT B		MAINT C	
	MILES	DAYS	MILES	DAYS	MILES	DAYS
01	010000	365	005000	120	000000	000
02	015000	365	001000	120	000000	000
03	020000	365	015000	120	000000	000
04	025000	365	020000	120	000000	000
05	030000	365	025000	120	000000	000
06	000000	000	000000	000	000000	000
07	000000	000	000000	000	000000	000
08	000000	000	000000	000	000000	000
09	000000	000	000000	000	000000	000
10	000000	000	000000	000	000000	000
11	000000	000	000000	000	000000	000
12	000000	000	000000	000	000000	000
13	000000	000	000000	000	000000	000
14	000000	000	000000	000	000000	000
15	000000	000	000000	000	000000	000
16	000000	000	000000	000	000000	000
17	000000	000	000000	000	000000	000
18	000000	000	000000	000	000000	000
19	000000	000	000000	000	000000	000
20	000000	000	000000	000	000000	000
*						

## DS - Load Due-Soon Value

Use the DS command to load the value, in miles and/or days, when the keyholder will be notified of impending maintenance. For example, if maintenance is to be performed every 10,000 miles or 360 days and you set a due soon value of 200 miles or 10 days, the user is notified via the LCD that maintenance is due when his odometer reaches 9,800 miles from the last maintenance odometer or 350 days from the last maintenance date. Assume a user received his last maintenance at 22,000 miles and his next maintenance is due at 32,000. He will receive a MAINT X DUE SOON message every time he fuels when his odometer is 31,800 up to 32,000 or when 350 days have elapsed since the last maintenance. At 32,000 miles or 360 days, the message changes to MAINT X DUE NOW. When the odometer or elapsed time reaches the number you set in the OD (overdue) command, the message changes to MAINT X OVERDUE.

- 1 At the \* prompt, type **DS** (Figure 21-4).  
The system displays: MAINT DUE SOON MILES:
- 2 Type the number of miles (up to six digits) before the maintenance is due that you want to warn the user and press **RETURN**.  
The system displays: MAINT DUE SOON DAYS:
- 3 Type the number of days (up to 3 digits) before the maintenance is due that you want to warn the user and press **RETURN**.

**Figure: 21-4 Example of DS Command**

```
*DS
MAINT DUE SOON MILES: 100↵
MAINT DUE SOON DAYS: 5↵
*
```

## OD - Load Overdue Value

Use the OD command to load the value, in miles and/or days, when the keyholder will be notified of overdue maintenance. For example, if maintenance is to be performed every 10,000 miles or 360 days and you set an overdue value of 300 miles or 10 days, the user is notified via the LCD that maintenance is overdue when his odometer reaches 10,300 or more miles from the last maintenance odometer. Assume user A received his last maintenance at 33,000 miles and his next maintenance is due at 43,000 or in 360 days. He will receive a MAINT X OVERDUE message every time he fuels when his odometer is 43,300 or greater or when 370 days have elapsed.

- 1 At the \* prompt, type **OD** (Figure 21-5).  
The system displays: MAINT OVERDUE MILES:
- 2 Type the number of miles (up to six digits) after the maintenance is due that you want to warn the user and press **RETURN**.  
The system displays: MAINT OVERDUE DAYS:
- 3 Type the number of days (up to 3 digits) after the maintenance is due that you want to warn the user and press **RETURN**.

**Figure: 21-5 Example of OD Command**

```
*OD
MAINT OVERDUE MILES: 300↵
MAINT OVERDUE DAYS: 10↵
*
```

## Changes in Standard Commands

All operator commands are the same except for the SC and PS commands (Figure 21-6 and Figure 21-7). You use the SC command to enable or disable the lockout feature that will prohibit fueling when a maintenance is overdue. When you enable this feature and maintenance is overdue, fueling is not allowed. The user receives a MAINT X OVERDUE message and the transaction terminates. When you disable this feature, the user still receives the MAINT X OVERDUE message, but fueling is allowed.

Figure: 21-6 Example of SC Command

```

*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y↵

SITE NO.: <XXXX> 0003↵

IDLE MESSAGE: <20 CHARS> GASBOY FLEETKEY↵

ENTER KEY TYPE 1 PROMPT: INSERT GRAY KEY↵

ENTER KEY TYPE 2 PROMPT: INSERT GREEN KEY↵

NUMBER OF PUMPS: <1-8> 4↵

PUMP #1
  $ OR QTY PULSES? <$ OR Q>$↵

PUMP #2
  $ OR QTY PULSES? <$ OR Q>Q↵
  PULSES PER GAL <1000,500,250,100,10,1>100↵

PUMP #3
  $ OR QTY PULSES? <$ OR Q>Q↵
  PULSES PER GAL <1000,500,250,100,10,1>10↵

PUMP #4
  $ OR QTY PULSES? <$ OR Q>Q↵
  PULSES PER GAL <1000,500,250,100,10,1>10↵

NO. OF TANKS: <1-8> 4↵

PRICE DATA FORMAT
  0 = NO PRICE DATA
  1 = UNIT PRICE
  2 = UNIT & TOTAL PRICE
  ENTER FORMAT: <0,1,2>0↵

SYSTEM ID:<XXXX> 5745↵

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS. <1-99> 5↵

LINES PER PAGE <0-62>: 62↵

KEY EXPIRATION DATE
  ENABLE OR DISABLE? <E OR D> E↵

AUTO PIN LOCKOUT
  ENABLE OR DISABLE? <E OR D> E↵

AUTO SITE SHUT DOWN
  ENABLE OR DISABLE? <E OR D> E↵

MAINT OVERDUE LOCK
  MAINT A ENABLE OR DISABLE? <E OR D> E↵
  MAINT B ENABLE OR DISABLE? <E OR D> E↵
  MAINT C ENABLE OR DISABLE? <E OR D> E↵

TRANSACTION MPG
  ENABLE OR DISABLE? <E OR D> D↵
*

```

**Figure: 21-7 Example of PS Command**

```
*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                      0003
IDLE MESSAGE:                  GASBOY FLEETKEY
KEY TYPE 1 PROMPT:             INSERT GRAY KEY
KEY TYPE 2 PROMPT:             INSERT GREEN KEY

PUMP #01    PULSES PER GAL:    $
PUMP #02    PULSES PER GAL:    0100
PUMP #03    PULSES PER GAL:    0010
PUMP #04    PULSES PER GAL:    0010

NUMBER OF TANKS:                4

PRICE DATA FORMAT:             NO PRICE DATA

Press any key to continue...

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.:      05

LINES PER PAGE                  62

KEY EXPIRATION DATE:           ENABLED

AUTO PIN LOCKOUT:              ENABLED

AUTO SITE SHUT DOWN:           ENABLED

MAINT OVERDUE LOCK
  MAINT A:                     ENABLED
  MAINT B:                     ENABLED
  MAINT C:                     ENABLED

TRANSACTION MPG:               DISABLED

*
```



## 22 – Manual Entry of Off-Site Fueling Transactions

### Description

This option allows you to enter an off-site fueling transaction at the data terminal. The system prompts you for the key 1 number, key 2 number, ID fields, year, month, day, hours, minutes, pump number, fuel code, quantity, unit price, and odometer and creates an OFF SITE FUEL transaction using the entered information. If you do not enter information for a particular field, and just press RETURN, the field will be filled with zeros.

- 1 At the \* prompt, type **OF**.  
The system displays: **KEY 1 NUMBER:**  
*Note: The key numbers are not checked against the lockout file, as we would not want to prevent the recording of a transaction for off-site fueling even if a key is locked out from the system.*
- 2 Type the data for this field and press **RETURN** or just press **RETURN** to skip this field.  
The system displays: **KEY 2 NUMBER:**
- 3 Type the data for this field and press **RETURN** or just press **RETURN** to skip this field.  
The system displays the ID field names, one at a time.
- 4 Type the data for each field and press **RETURN** or just press **RETURN** to skip the field.  
When the ID fields have been entered, you will be prompted to enter the date of the off-site fueling. The system displays: **YEAR:**
- 5 Type the 2-digit year and press **RETURN** or just press **RETURN** to skip this field.  
The system displays: **MONTH:**
- 6 Type the 2-digit month and press **RETURN** or just press **RETURN** to skip this field.  
If you enter an invalid month number, you will be re-prompted. Once you have entered a valid month, the system displays: **DAY:**
- 7 Type the 2-digit day and press **RETURN** or just press **RETURN** to skip this field.  
If you enter an invalid day number, you will be re-prompted. Once you have entered a valid date, you will be prompted to enter the time of the off-site fueling.  
The system displays: **HOURS:**
- 8 Type the 2-digit hour and press **RETURN** or just press **RETURN** to skip this field.  
If you enter an invalid hour, you will be re-prompted. Once you have entered a valid hour, The system displays: **MINS:**
- 9 Type the 2-digit minutes and press **RETURN** or just press **RETURN** to skip this field.  
If you enter invalid minutes, you will be re-prompted. Once you have entered a valid time, the system displays: **PUMP NO:**
- 10 Type the 1-digit pump number that you used when fueling off-site and press **RETURN** or just

press **RETURN** to skip this field.  
The system displays: FUEL CODE:

- 11 Type the 2-digit fuel code from your off-site fueling and press **RETURN** or just press **RETURN** to skip this field.

The system displays: QUANTITY:

- 12 Type the quantity dispensed off-site and press **RETURN** or just press **RETURN** to skip this field.

The quantity field accepts 8 digits (5 digits to the left of the decimal point and three digits to the right). If five digits are entered, the system automatically inserts the decimal point.

- If you selected 1 or 2 for the Price Data Format configuration parameter, the system prompts you for unit price (UNIT PRICE)
- If you selected 0 for the Price Data Format configuration parameter, the ODOM prompt appears. Skip to Step 14.

- 13 Type the unit price from your off-site fueling and press **RETURN** or just press **RETURN** to skip this field.

The unit price field accepts 4 digits (1 digit to the left of the decimal point and three digits to the right). When one digit is entered, the system automatically inserts the decimal point. The system displays: ODOM:

- 14 Type the 7-digit odometer reading from your off-site fueling and press **RETURN** or just press **RETURN** to skip this field.

The \* prompt reappears.

A transaction is created containing the information that you entered in response to the prompts. The message OFF SITE FUEL appears in the ERROR field.

## Software Options Affected by Manual Entry of Off-Site Fueling Transactions

### Miles Per Gallon History

The Miles Per Gallon History option affects the way this command functions. The effects are described below.

Odometer data is not validated upon entry, since fueling has already occurred and you are recording this transaction for informational purposes. When an odometer reading is entered for a record that exists in the MPG file, you are prompted: ODOM CORRECT? <Y OR N>. Check to be sure that you have entered the correct odometer reading. If not, press N and you are re-prompted. If the odometer reading is correct, press Y. You are prompted to enter a pump number and fueling is permitted. This odometer is not written to the key. The next time you use your key at the FleetKey system, odometer verification will be based on the last written odometer to your key. See [“Reasonable Odometer Description” on page 35](#) for details. If you press RETURN at the ODOM prompt, the odometer will be filled with zeros, and you will not be asked to verify it.

Upon completion of the transaction, the MPG record is updated with the gallons and the odometer is updated according to the following rules. If the odometer is greater than or equal to the beginning odometer the entered odometer will be stored as the ending odometer. If the odometer is less than the beginning odometer, the entered odometer will be stored as the beginning and ending odometer and the gallons will be zeroed. If no odometer was entered for a record in the MPG file, only the gallons will be updated. The miles and MPG fields in the transaction will not be filled in, as we did not validate the odometer entry.

### Manual Keypad Entry Option

After the key data fields are entered, the system prompts for the manual entry field.



## 23 – Manual Keypad Entry Option

### Description

The Manual Keypad Entry option provides an additional field that allows you to request input, from the Series 1000 user, during a key entry action. You can use this field to record anything from manual oil transactions, department numbers, trailer numbers, job numbers, or even vehicle or employee numbers that are not key encoded.

The field name and size were specified at the time of order. The field may be up to 20 digits. The check digit, encoded on the key, controls whether the individual user is prompted to enter the manual entry (For more information, see Manual Entry Check Digit in the Key Encoding Manual). The manual entry appears under its own heading in the transaction printouts [between last ID field and DATE field ([Figure 23-1](#)) or between last ID field and type in systems with Fuel Point option].

**Figure: 23-1 Example of Transaction Printout with Job as the Optional Entry**

*PT												
SITE 1234												
TRAN	KEY1	KEY2	EMP	VEH	JOB	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
0221	01328	00000	5967	2430	0032	07/11/92	15:30	01	01	8.28	0054880	
0222	01234	00000	5678	9012	0011	07/11/92	15:37	03	03	13.6	0010222	
0223	03024	00000	8132	9675	0011	07/11/92	15:39	02	02	11.6	0000000	
0224	03024	00000	8132	9675	0032	07/11/92	16:23	01	01	0.0	0000000	PUMP IN USE
0225	00147	00000	8523	6541	0123	07/11/92	16:24	01	01	5.02	0082311	LIMIT CUTOFF
0226	03024	00000	8132	9675	5678	07/11/92	16:25	02	02	7.1	0000000	
*												

### Lockout Using Manual Entry Field

In addition to the standard lockout by key number, the FleetKey system provides an option to also lock out by your manual entry field. You must specify this option at the time of order and your manual entry field is limited to four digits.

All operator commands are the same except for the key validation commands: VA ([Figure 23-2](#)), VK, IA, PI ([Figure 23-3](#)), PV, IK ([Figure 23-4](#)), and CK. When you use these commands, the system prompts you for the lockout file you wish to access. The examples shown on the next page use the standard lockout field of key number and the manual entry lockout field of job number. When the system prompts you for the lockout file (KEY OR JOB? <K OR J>), type a K or a J and press RETURN. No other entries are accepted. When you choose a manual entry field other than job, the system prompts for key and whatever your field name is and you type the first letter of that field as prompted.

**Figure: 23-2 Example of VA Command**

```
*VA
KEY OR JOB <K OR J> J↵
VALIDATE ALL JOB? <Y OR N> Y↵
*
```

**Figure: 23-3 Example of PI Command**

```
*PI
KEY OR JOB <K OR J> K
INVALID LIST
00001 00016 00017 00018 00019 00020 00021 00022 00023 00024
00025 00026 00027 00028 00029 00030 00031 00032 00033 00034
01234 02653 02812 02767
*
```

**Figure: 23-4 Example of IK Command**

```
*IK
KEY OR JOB <K OR J> K↵
ENTER NO. : 1234,2653,2812,2767↵
INVALIDATED
*
```

## 24 – Miles Per Gallon History Option

### Description

The MPG History option allows your Series 1000 FleetKey system to calculate and maintain a cumulative miles-per-gallon tally for your keyholders based on one of your ID fields that you specify at the time of order (this field is usually a vehicle number, VEH). The exact number of users supported depends upon the limit specified when you ordered your system.

MPG software computes fuel efficiency averaged over a period of time you determine (usually a month). Your standard transaction MPG (see [“Reasonable Odometer Check and Transaction MPG” on page 35](#)) provides MPG per transaction. To use the MPG history option, you enter information on each of your users into an MPG file record. Each MPG record contains four fields and a status flag:

REC	1- to 20-digit number from a field you specify at time of order
B ODOM	up to 7-digit beginning odometer reading
E ODOM	up to 7-digit ending odometer reading (last recorded)
GALLONS	up to 8-digits for total gallons for period
STAT	a record status code indicating MPG comments (for more on status flags, see the VF command)

You can print out the MPG file to view the record number, beginning and most recent odometer entries, the total number of miles, the total number of gallons, the miles per gallon calculation, and the record status.

### MPG History File Commands

The commands in this section allow you to:

CV	clear MPG file
LV	load an MPG record
RV	remove an MPG record
LO	load odometer
IV	initialize MPG file
VF	print MPG file
LE	load ending odometer
CR	check MPG record

## CV - Clear MPG File

Use the CV command only at initial start-up. This command erases any records previously stored in the system; they cannot be retrieved.

- 1 At the \* prompt, type **CV** (Figure 24-1).  
The system displays: CLEAR MPG FILE? <Y OR N>
- 2 Type **Y** and press **RETURN** to reset (erase) the vehicle file.  
If you attempt to clear the MPG file while transactions are in progress, the system displays: TRANS IN PROGRESS! You must wait until there are no transactions active to use this command.

~ OR ~

Type **N** and press **RETURN** to leave the vehicle file as is.

*Note: Only Y or N are valid responses; if you type anything else, the system re-prompts you until you enter a Y or N.*

The \* prompt reappears.

**Figure: 24-1 Example of CV Command**

```
*CV
CLEAR MPG FILE? <Y OR N> Y↵
*
```



## LV - Load an MPG Record

Use the LV command to enter a new record. If you wish to enter just odometer readings for an existing record, use the LO command.

- 1 At the \* prompt, type **LV** (Figure 24-2).

The system displays: REC NO.

*Note: If the record already exists, the system displays RECORD EXISTS ALREADY!*

*If you attempt to load the file while transactions are in progress, the system displays: TRANS IN PROGRESS! You must wait until there are no transactions active to use this command.*

- 2 Type a record number and press **RETURN**.

The system displays: BEGIN ODOM:

- 3 Type the vehicle's present odometer reading (up to seven digits) and press **RETURN**.

The system displays: REC NO.

- 4 To define additional records, repeat this procedure from Step 2.

~ OR ~

To stop entering vehicle information, press **RETURN** at the REC NO. prompt.  
The \* prompt reappears.

**Figure: 24-2 Example of LV Command**

```
*LV
REC NO. 0543↵
BEGIN ODOM: 12850↵
REC NO.
*
```

## RV - Remove and MPG Record

Use the RV command to remove a user from the MPG file.

- 1 At the \* prompt, type **RV** (Figure 24-3).  
The system displays: REC NO.
- 2 Type the record number that you wish to remove and press **RETURN**.  
The REC NO. prompt reappears.

*Note: If the record does not exist, the system displays NO RECORD FOUND! The REC NO. prompt reappears.*

*If you attempt to load the MPG file while transactions are in progress, the system displays: TRANS IN PROGRESS! You must wait until there are no transactions active to use this command.*

- 3 To remove additional user from the MPG file, repeat this procedure from Step 2.

~ OR ~

To stop removing users, press **RETURN** at the REC NO. prompt.

The \* prompt reappears.

**Figure: 24-3 Example of RV Command**

```
*RV
REC NO. 0543↵
REC NO. ↵
*
```

## LO - Load Odometer

Use the LO command to update odometer readings for an existing record. This command helps to maintain accurate odometer readings (such as in cases where the selected user may have fueled at another location, etc.)

- 1 At the \* prompt, type **LO** (Figure 24-4).  
The system displays: REC NO.
- 2 Type the record number and press **RETURN**.  
The system displays: BEGIN ODOM:
- 3 Type the user's present odometer reading and press **RETURN**.  
*Note: If the record does not exist, the system displays NO RECORD FOUND! The REC NO. prompt reappears.*
- 4 To update additional odometer readings, repeat this procedure from Step 2.

~ OR ~

To stop updating odometer readings, press **RETURN** at the REC NO. prompt.  
The \* prompt reappears.

*Note: Both the beginning and ending odometer field are loaded with the mileage entry.  
The gallon total field is reset to zero.*

**Figure: 24-4 Example of LO Command**

```
*LO
REC NO. 0543↵
BEGIN ODOM: 4580↵
REC NO. ↵
*
```

## IV- Initialize MPG File

Use the IV command to initialize the MPG file. Use this command only at initial start-up or at the beginning of a new month or MPG calculation period you set. This command resets the entire file; data cannot be retrieved. When this command is executed, the ending odometer entry becomes the beginning entry and gallon totals are reset to zero.

- 1 At the \* prompt, type **IV** ([Figure 24-5](#)).  
The system displays: INIT MPG FILE? <Y OR N>
- 2 Type **Y** and press **RETURN** to initialize (reset) the MPG file.

~ OR ~

Type **N** and press **RETURN** to leave the file as is.

*Note: Only Y or N are valid responses; if you type anything else, the system re-prompts you until you enter a Y or N.*

The \* prompt reappears.

**Figure: 24-5 Example of IV Command**

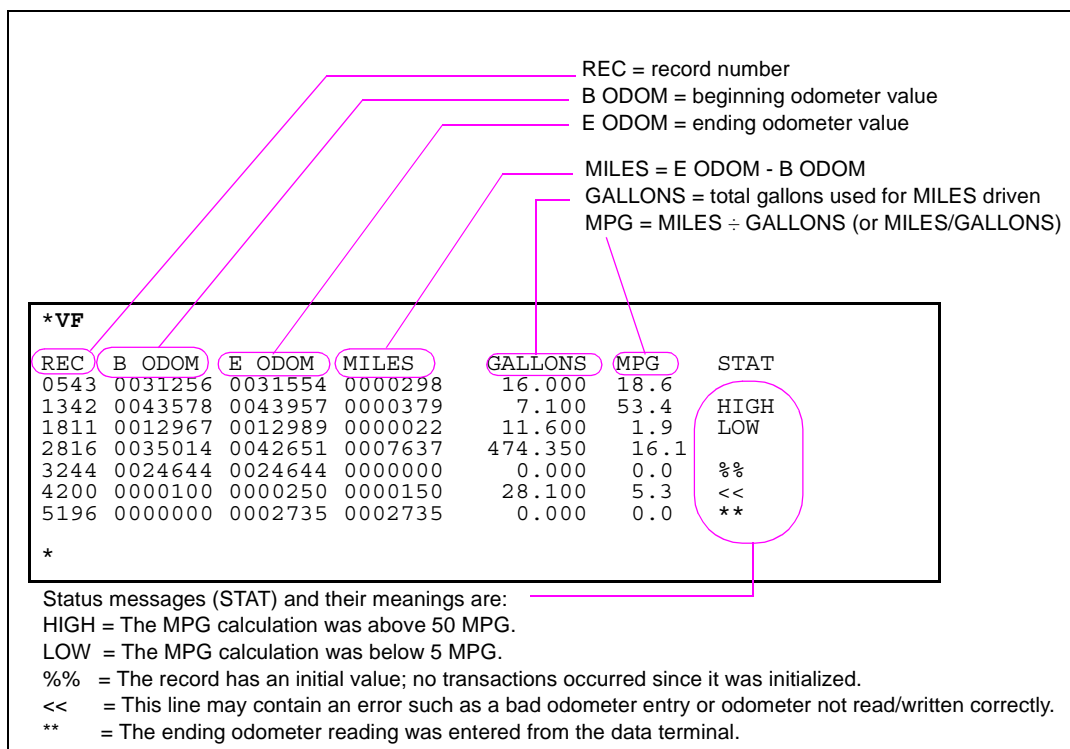
```
*IV
INIT MPG FILE? <Y OR N> Y↵
*
```

## VF - Print MPG File

Use the VF command to print the contents of the MPG file. This listing includes: the record number, beginning and ending odometer, total miles driven, total gallons used, the MPG calculation, and a status message.

At the \* prompt, type **VF** (Figure 24-6).  
The listing prints.

**Figure: 24-6 Example of VF Command**



## LE - Load Ending Odometer

Use the LE command to load an ending odometer reading. This is useful if a vehicle was fueled off-site or an invalid odometer entry was made.

- 1 At the \* prompt, type **LE** (Figure 24-7).  
The system displays: REC NO.
  - 2 Type the record number and press **RETURN**.  
The system displays: ENDING ODOM:  
*Note: If the record does not exist, the system displays NO RECORD FOUND!  
The REC NO. prompt reappears.*
  - 3 Type the current ending odometer reading and press **RETURN**.  
The REC NO. prompt reappears.  
*Note: The ending odometer reading must be greater than the beginning odometer reading or  
system displays the message INVALID ENDING ODOM!  
The REC NO. prompt reappears.*
  - 4 To type additional odometer readings, repeat this procedure from Step 2.
- ~ OR ~

To stop entering odometer readings, press **RETURN** at the REC NO. prompt.

The \* prompt reappears.

**Figure: 24-7 Example of LE Command**

```
*LE
REC NO. 0543↵
ENDING ODOM: 3560↵
REC NO. ↵
*
```

## CR - Check Record

Use the CR command to print a single record. The listing includes: beginning and ending odometer, total miles driven, total gallons used, the MPG calculation and a status message.

- 1 At the \* prompt, type **CR** (Figure 24-8).  
The system displays: REC NO.
- 2 Type the record number that you wish to view and press **RETURN**.  
The listing prints and the REC NO. prompt reappears.  
*Note: If the record does not exist, the system displays NO RECORD FOUND!  
The REC NO. prompt reappears.*
- 3 To view additional records, repeat this procedure from Step 2.

~ OR ~

To stop viewing records, press **RETURN** at the REC NO. prompt.  
The \* prompt reappears.

**Figure: 24-8 Example of CR Command**

```
*CR
REC NO. 0543 ↵
REC  B ODOM  E ODOM  MILES    GALLONS   MPG  STAT
0543 0031256 0031554 0000298    16.000   18.6
REC NO.
*
```

## MPG History Transaction Processing

When the system detects an odometer entry, the field you assigned at order time is checked to see if a matching record exists in the MPG file. If no record exists, the transaction is complete.

If a record exists and the odometer on your key prior to fueling was 0 (new key), the system updates the file record and places the odometer value you enter into both BEGIN ODOM and END ODOM. It also zeros the gallons in the MPG file record and the record is marked as initialized.

If a record exists and the transaction odometer on your key contains a value which is less than the BEGIN ODOM in the MPG file, the system updates the file record and places the odometer value you enter into both BEGIN ODOM and END ODOM. It also zeros the gallons in the MPG file record and the record is marked as initialized.

If a record exists and the transaction odometer on your key (last odometer) contains a value which is greater than or equal to the transaction BEGIN ODOM in the MPG file, the system updates the file record placing the odometer value into the END ODOM field. The transaction gallons are then added to the GALLONS field in the MPG file. You can print the MPG statistics for your file at any time by using the VF command.

## Miles Per Gallon Messages

The following lists all MPG messages that may appear at the data terminal:

INVALID ENDING ODOM!	Appears with the LE command. The ending odometer reading must be greater than the beginning odometer reading.
NO RECORD FOUND!	Appears with the RV, LO, LE, and CR commands. The record does not exist.
RECORD EXISTS ALREADY!	Appears with the LV command. You tried to enter a record that already exists.



## 25 – Multi-Level Password Option

### Description

The Multi-Level Password option provides two levels of passwords:

- super user
- standard user

When you use the code key to initialize the password, both passwords are set to GASBOY.

To change the super user password, sign on as GASBOY and use the LS command to change the password ([Figure 25-1](#)).

Use the EX (exit) command to exit command mode and sign on again as GASBOY. You are now in standard user mode. To change the standard user password, sign on as GASBOY and use the LS command to change the password ([Figure 25-1](#)).

**Figure: 25-1 Example of Sign On Procedure for Multi-Level Passwords**

```
SIGN ON:
-GRANTED SUPER USER ACCESS-

*LS
PASSWORD: SUPER
*EX
EXIT

SIGN ON:
-GRANTED STANDARD USER ACCESS-

*LS
PASSWORD: STANDARD
*EX
EXIT
```

## CP - Super User Authorization of Commands

Super user only: Use the CP command to authorize or unauthorize commands that the standard user can access. There are three authorization methods: A, for authorize all; U, for unauthorize all; and P, where you are prompted for each command and select its authorization.

When commands are printed out with the HE command, those that are available to the standard user are marked with an asterisk. If a standard user tries to use an unauthorized command, the message UNAUTHORIZED COMMAND! appears.

- 1 Sign on using the super user password.
- 2 At the \* prompt, type **CP**.  
The system displays:  
AUTHORIZE ALL/UNAUTHORIZE ALL/PROMPT EACH? <A/U/P> :
- 3 Type the desired letter for authorization (**A** for authorize all, **U** for unauthorize all, and **P** to authorize individual commands).

If you select A, all commands except CP are authorized for the standard user (Figure 25-2).

**Figure: 25-2 Example of Selection A for Super User Authorization of Commands**

```

SIGN ON:
-GRANTED SUPER USER ACCESS-

*CP
AUTHORIZE ALL/UNAUTHORIZE ALL/PROMPT EACH? <A/U/P> : A↵
*HE
EXPANDED HELP LIST? <Y OR N> N↵

COMMANDS ARE :

    * denotes Standard User access

LS*  VA*  VK*  IA*  IK*  CK*  PV*  PI*  LI*  AI*
SI*  TI*  LR*  LP*  PP*  EP*  DP*  AP*  IP*  ZP*
XP*  PT*  ST*  SS*  PC*  PH*  RP*  RT*  LN*  LF*
PF*  LL*  PL*  WK*  LK*  SC*  PS*  KT*  CT*  LD*
PD*  SD*  PR*  MO*  HE*  EX*  CP

```

If you select U, all commands except more (MO), help (HE) and exit (EX) are unauthorized for the standard user ([Figure 25-3](#)).

**Figure: 25-3 Example of Selection U for Super User Authorization of Commands**

```

SIGN ON:
-GRANTED SUPER USER ACCESS-
*CP
AUTHORIZE ALL/UNAUTHORIZE ALL/PROMPT EACH? <A/U/P> : U↵
*HE
EXPANDED HELP LIST? <Y OR N> N↵
COMMANDS ARE :
    * denotes Standard User access
LS  VA  VK  IA  IK  CK  PV  PI  LI  AI
SI  TI  LR  LP  PP  EP  DP  AP  IP  ZP
XP  PT  ST  SS  PC  PH  RP  RT  LN  LF
PF  LL  PL  WK  LK  SC  PS  KT  CT  LD
PD  SD  PR  MO* HE* EX* CP

```

If you select P, you are prompted for each command and you select A or U for each (Figure 25-4).

**Figure: 25-4 Example of Selection P for Super User Authorization of Commands**

```

SIGN ON:
-GRANTED SUPER USER ACCESS-

*CP
AUTHORIZE ALL/UNAUTHORIZE ALL/PROMPT EACH? <A/U/P> : P↵
LS  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
VA  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
VK  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
IA  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
IK  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
CK  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
PV  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
PI  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
LI  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
AI  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
SI  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
TI  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
LR  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
LP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
PP  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
EP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
DP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
AP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
IP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
ZP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
XP  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
PT  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
ST  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
SS  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
PC  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
PH  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
RP  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
RT  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
LN  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
LF  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
PF  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
LL  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
PL  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
WK  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
LK  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
SC  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
PS  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
KT  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
CT  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
LD  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
PD  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
SD  AUTHORIZE/UNAUTHORIZE? <A/U> : U↵
PR  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
MO  AUTHORIZE/UNAUTHORIZE? <A/U> : A↵
*

```

When you select P, as shown previously, the Help List display appears as shown in [Figure 25-5](#). The Expanded Help List appears as usual except an asterisk appears after the command for authorized standard user commands.

**Figure: 25-5 Example of Help List Command**

```
*HE
EXPANDED HELP LIST? <Y OR N> N↵
COMMANDS ARE :
    * denotes Standard User access
LS* VA  VK  IA  IK  CK* PV* PI* LI  AI
SI  TI* LR  LP  PP* EP  DP  AP  IP  ZP
XP* PT* ST* SS* PC* PH* RP  RT  LN  LF
PF* LL  PL* WK  LK  SC  PS* KT* CT* LD*
PD* SD  PR* MO* HE* EX* CP
```



## 26 – Pump Switch Timer Option

### Description

The Pump Switch Timer option allows you to prevent fueling at a pump when the handle has been left on from a previous transaction.

In a normal transaction when you request a pump, the pump is activated, the user turns on the pump handle and fueling begins. Occasionally, the pump handle may have been left on from a previous transaction. When a new transaction is initiated, the pump cannot reset and, if pumping is allowed, the quantity shown at the pump includes the previous transaction quantity.

With the pump switch timer option, the handle is checked at the beginning of each transaction. If it is found to be on, the user will see the message **TURN OFF PUMP HANDLE** and the transaction will be terminated. A transaction will be generated with the message **PMP SW ERROR**. The user must turn off the pump handle and begin a new transaction in order to fuel.

In order to use this option, you must set a time period during which the pump is checked. This time period must be less than the time that it takes for your pump to reset and transmit a switch detect signal back to the fuel management system. Nearly all pumps take more than one second to reset and transmit switch detect, so the values for this option range from .1 to 1 second, in tenths of a second, with .5 being a commonly used value. This value may need to be adjusted for your pumps. A setting of zero disables this option.

When you have the pump switch timer option, the SC command provides a prompt for you to enter this time period. Values to enter are 0 to 10, with zero being disable, 1 being one-tenth of a second, 2 being two-tenths of a second and so on up to 10 which is one second. These values can be loaded only when the pulse rate change switch on the MPU board is enabled.

## Changes in Standard Commands

All commands are the same with the pump switch timer option except for the SC, PS, and XP commands. The SC command (Figure 26-1) contains an additional prompt for the time period to check the pump. The PS and XP commands (Figure 26-2 and Figure 26-3) display the pump switch timer values entered for each pump.

**Figure: 26-1 Example of SC Command**

```
*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y↵

SITE NO.: <XXXX> 0003↵

IDLE MESSAGE: <20 CHARS> GASBOY FLEETKEY↵

ENTER KEY TYPE 1 PROMPT: INSERT GRAY KEY↵

ENTER KEY TYPE 2 PROMPT: INSERT GREEN KEY↵

NUMBER OF PUMPS: <1-8> 4↵

PUMP #1
$ OR QTY PULSES? <$ OR Q>$↵
PUMP SWITCH TIMER: <0-10>: 5↵

PUMP #2
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>100↵
PUMP SWITCH TIMER: <0-10>: 5↵

PUMP #3
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵
PUMP SWITCH TIMER: <0-10>: 5↵

PUMP #4
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵
PUMP SWITCH TIMER: <0-10>: 5↵

NO. OF TANKS: <1-8> 4↵

PRICE DATA FORMAT
0 = NO PRICE DATA
1 = UNIT PRICE
2 = UNIT & TOTAL PRICE
ENTER FORMAT: <0,1,2>0↵

SYSTEM ID:<XXXX> 5745↵

AUTO PUMP DISABLE
NO. OF ZERO QTY TRANS. <1-99> 5↵

LINES PER PAGE <0-62>: 62↵

KEY EXPIRATION DATE
ENABLE OR DISABLE? <E OR D> E↵

AUTO PIN LOCKOUT
ENABLE OR DISABLE? <E OR D> E↵

AUTO SITE SHUT DOWN
ENABLE OR DISABLE? <E OR D> E↵

TRANSACTION MPG
ENABLE OR DISABLE? <E OR D> D↵
*
```



Figure: 26-2 Example of PS Command

```

*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                      0003
IDLE MESSAGE:                  GASBOY FLEETKEY
KEY TYPE 1 PROMPT:            INSERT GRAY KEY
KEY TYPE 2 PROMPT:            INSERT GREEN KEY

PUMP #01  PULSES PER GAL:      $
           PUMP SWITCH TIMER:  05
PUMP #02  PULSES PER GAL:      0100
           PUMP SWITCH TIMER:  05
PUMP #03  PULSES PER GAL:      0010
           PUMP SWITCH TIMER:  05
PUMP #04  PULSES PER GAL:      0010
           PUMP SWITCH TIMER:  05

NUMBER OF TANKS:              4
PRICE DATA FORMAT:           NO PRICE DATA
Press any key to continue...

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.:     05
LINES PER PAGE                62
KEY EXPIRATION DATE:          ENABLED
AUTO PIN LOCKOUT:             ENABLED
AUTO SITE SHUT DOWN:          ENABLED
TRANSACTION MPG:              DISABLED
*
```

Figure: 26-3 Example of XP Command

```

*XP
                                -PUMP TIMEOUTS-
                                IN SECONDS

P#    PULSES PER    BEFORE  AFTER  PMP SW
      GALLON        PULSES  PULSES  TIMER
-----
01      $          080    060    0.5
02     0100        080    080    0.5
03     0010        120    120    0.5
04     0010        120    080    0.0
*
```



## 27 – Receipt Printer Option

---

### Description

The Receipt Printer option allows you to obtain a transaction receipt for fuel dispensed through the Series 1000. Receipts are available only for those transactions where fuel is dispensed; error and other no quantity transactions cannot be printed.

After you fuel your vehicle in the normal fashion and want a receipt, go back to the Series 1000 and insert your key(s). The system asks if you want a receipt. If you reply 1 for yes, a receipt is printed for you and the transaction is finished.

If you do not choose to get a receipt (press 0 for no), the next time you attempt to fuel, the system checks through the last 16 transactions with quantity. If one of these matches your account data (that is, key number, ID fields, etc.), the system asks if you want a receipt for that transaction. If you say yes, the system prints a receipt and the transaction is finished. You must then insert your key(s) again to begin your fueling transaction. If you say no, the system proceeds with a normal fueling operation.

Transaction receipts are not available if:

- There are no available receipt transactions in the system memory for your key(s).
- The receipt printer is in an error condition. (that is, printer jammed, paper out, printer down).

You can issue a receipt printer command, GR, from the data terminal to obtain a receipt for a specific transaction number.

## Fueling Procedure

When you have the receipt printer option, use this procedure:

- 1 Fuel your vehicle as detailed in [“Fueling With the FleetKey System”](#) on page 7.
- 2 When fueling is complete and the pump nozzle is replaced, return to the Series 1000.  
The LCD alternates between INSERT KEY and a personalized system message.
- 3 Insert your key(s) into the receptacle(s) and turn clockwise.  
The LCD displays: PLEASE WAIT!  
*Note: If you leave a key in the reader for more than five seconds, an alarm sounds to remind you to remove it.*
- 4 If you are using a two-key system, the LCD displays the key type 2 prompt (loaded in the SC command); proceed to next step.

~ OR ~

If you are using a one-key system skip to Step 6.

- 5 Insert the second key fully into the key receptacle and turn clockwise.  
The LCD displays: PLEASE WAIT!.  
If a transaction receipt is available, the LCD displays: RECEIPT? 1=YES 0=NO.
- 6 To print a transaction receipt, press **1** and **ENTER**.  
The LCD displays: RECEIPT IS PRINTING, followed by TURN KEY LEFT,REMOVE.  
Remove the key(s). If you have requested multiple receipts, they print out one after the other.

~ OR ~

If you do not want a receipt, press **0** and **ENTER**.  
The sequence for starting a new fueling transaction begins.

If you make a mistake while entering 1 or 0, press **CLEAR** before pressing **ENTER**.  
You have three tries to enter a correct response to RECEIPT? 1=YES 0=NO.  
After the third unsuccessful try, the display returns to TURN KEY LEFT,REMOVE and you must remove your keys and start again at Step 2. If a transaction receipt is not available, the sequence for starting a new fueling transaction begins.

- 7 When the printing completes, open the printer door and remove the receipt.

## GR - Get Receipt Command

Use the GR command at the data terminal to print a receipt at the Series 1000 key system for a transaction you specify. The system allows you to print a receipt for any transaction from the transaction pointer to the present.

Receipts may be printed only for transactions which contain quantity. If a receipt has been previously printed for the transaction entered, **DUPLICATE RECEIPT** is printed on the receipt.

- 1 At the \* prompt, type **GR** (Figure 27-1).  
The system displays: ENTER TRANS.:
- 2 Type the number of the transaction for which you want a receipt and press **RETURN**.  
A receipt is printed for the transaction number entered.  
The \* prompt reappears.

**Figure: 27-1 Example of GR Command**

```
*GR  
TRANS NO. : 1↵  
*
```

If a receipt is requested for a transaction which contains zero quantity, the system displays **NO QUANTITY IN TRANS!!**.

Receipts are not printed if an error condition exists or the printer test is active.  
The system displays **CHECK THE PRINTER!!** or **PRINTER TEST ACTIVE!!**.

## Changes in Standard Commands

All operator commands are the same except for the SC and PS commands (Figure 27-2 and Figure 27-3). You use the SC command to load the receipt heading and trailing messages. Heading lines are those printed before the body of the receipt and trailing lines are those printed after the body of the receipt. There are four heading lines and two trailing lines of up to 30 characters each (See the example and sample text below).

For any of the heading and trailing prompts, you can enter text or press **RETURN** to leave the line unchanged. The system prompts you for the next line.

If you do not want to load the heading or trailing lines allowed, type the caret character (^) as the first character of the line and press **RETURN**. If you were entering heading lines, the system prompts you for trailing lines. If you were entering trailing lines it prompts you with **NUMBER OF PUMPS**.

When all desired heading and trailing lines are loaded, you may continue entering system configuration data or press **CTRL-C** to exit. The \* prompt reappears.

Figure: 27-2 Example of SC Command

```

*SC
RESET SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y↵

SITE NO.: <XXXX> 0003↵

IDLE MESSAGE: <20 CHARS> GASBOY FLEETKEY↵

ENTER KEY TYPE 1 PROMPT: INSERT GRAY KEY↵

ENTER KEY TYPE 2 PROMPT: INSERT GREEN KEY↵

HEADING LINE #1 : <30 CHARS> GASBOY↵
HEADING LINE #2 : <30 CHARS> 7300 WEST FRIENDLY AVE↵
HEADING LINE #3 : <30 CHARS> GREENSBORO, NC 27420↵
HEADING LINE #4 : <30 CHARS> TELE: 1-800-444-5529↵

TRAILING LINE #1 : <30 CHARS> THANK YOU!↵
TRAILING LINE #2 : <30 CHARS> PLEASE COME AGAIN.↵

NUMBER OF PUMPS: <1-8> 4↵

PUMP #1
$ OR QTY PULSES? <$ OR Q>$↵
PUMP #2
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>100↵
PUMP #3
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵
PUMP #4
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵

NO. OF TANKS: <1-8> 4↵

PRICE DATA FORMAT
0 = NO PRICE DATA
1 = UNIT PRICE
2 = UNIT & TOTAL PRICE
ENTER FORMAT: <0,1,2>0↵

SYSTEM ID:<XXXX> 5745↵

AUTO PUMP DISABLE
NO. OF ZERO QTY TRANS. <1-99> 5↵

LINES PER PAGE <0-62>: 62↵

KEY EXPIRATION DATE
ENABLE OR DISABLE? <E OR D> E↵

AUTO PIN LOCKOUT
ENABLE OR DISABLE? <E OR D> E↵

AUTO SITE SHUT DOWN
ENABLE OR DISABLE? <E OR D> E↵

TRANSACTION MPG
ENABLE OR DISABLE? <E OR D> D↵
*

```

Figure: 27-3 Example of PS Command Showing Added Heading and Trailing Lines

```
*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY FLEETKEY

KEY TYPE 1 PROMPT:       INSERT GRAY KEY
KEY TYPE 2 PROMPT:       INSERT GREEN KEY

HEADING LINE #1:         GASBOY
HEADING LINE #2:         7300 WEST FRIENDLY AVE
HEADING LINE #3:         GREENSBORO, NC 37420
HEADING LINE #4:         TELE: 1-800-444-5529

TRAILING LINE #1:        THANK YOU!
TRAILING LINE #2:        PLEASE COME AGAIN.

PUMP #01    PULSES PER GAL: $
PUMP #02    PULSES PER GAL: 0100
PUMP #03    PULSES PER GAL: 0010
PUMP #04    PULSES PER GAL: 0010

Press any key to continue...

NUMBER OF TANKS:         4

PRICE DATA FORMAT:      NO PRICE DATA

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.: 05

LINES PER PAGE          62

KEY EXPIRATION DATE:     ENABLED

AUTO PIN LOCKOUT:        ENABLED

AUTO SITE SHUT DOWN:     ENABLED

TRANSACTION MPG:         DISABLED
```

## Additional Receipt Printer Option - Multiple Receipts

The Multiple Receipts option allows you to configure the number of receipts to be printed for each receipt request from the Series 1000 reader.

*Note: This option affects only the key-generated receipt requests. Requests issued from the data terminal (GR command), generate single receipts.*

You load the number of multiple receipts using the SC command:

- 1 At the \* prompt, type **SC** (Figure 27-4).  
The usual system configuration prompts appear.  
(See “[SC - Load or Change System Configuration](#)” on page 22)
- 2 Type any new configuration data or press **RETURN** at each prompt until the system displays:  
RECEIPTS PER TRANS: <1-3>:
- 3 Type the number of receipts (**1**, **2**, or **3**) to be printed for each key-generated receipt request and press **RETURN**.
- 4 If you wish to change additional system configuration parameters, continue to do so.

~ OR ~

To exit from system configuration, press **CTRL-C**.



Figure: 27-4 Example of SC Command

```

*SC
RESET SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y↵

SITE NO.: <XXXX> 0003↵

IDLE MESSAGE: <20 CHARS> GASBOY FLEETKEY↵

ENTER KEY TYPE 1 PROMPT: INSERT GRAY KEY↵

ENTER KEY TYPE 2 PROMPT: INSERT GREEN KEY↵

HEADING LINE #1 : <30 CHARS> GASBOY↵
HEADING LINE #2 : <30 CHARS> 7300 WEST FRIENDLY AVE↵
HEADING LINE #3 : <30 CHARS> GREENSBORO, NC 27420↵
HEADING LINE #4 : <30 CHARS> TELE: 1-800-444-5529↵

TRAILING LINE #1 : <30 CHARS> THANK YOU!↵
TRAILING LINE #2 : <30 CHARS> PLEASE COME AGAIN.↵

RECEIPTS PER TRANS <1-3>: 2↵

NUMBER OF PUMPS: <1-8> 4↵

PUMP #1
$ OR QTY PULSES? <$ OR Q>$↵
PUMP #2
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>100↵
PUMP #3
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵
PUMP #4
$ OR QTY PULSES? <$ OR Q>Q↵
PULSES PER GAL <1000,500,250,100,10,1>10↵

NO. OF TANKS: <1-8> 4↵

PRICE DATA FORMAT
0 = NO PRICE DATA
1 = UNIT PRICE
2 = UNIT & TOTAL PRICE
ENTER FORMAT: <0,1,2>0↵

SYSTEM ID:<XXXX> 5745↵

AUTO PUMP DISABLE
NO. OF ZERO QTY TRANS. <1-99> 5↵

LINES PER PAGE <0-62>: 62↵

KEY EXPIRATION DATE
ENABLE OR DISABLE? <E OR D> E↵

AUTO PIN LOCKOUT
ENABLE OR DISABLE? <E OR D> E↵

AUTO SITE SHUT DOWN
ENABLE OR DISABLE? <E OR D> D↵

TRANSACTION MPG
ENABLE OR DISABLE? <E OR D> D↵
*

```

**Figure: 27-5 Example of PS Command with Selected Number of Receipts per Transaction**

```

*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY FLEETKEY

KEY TYPE 1 PROMPT:      INSERT GRAY KEY
KEY TYPE 2 PROMPT:      INSERT GREEN KEY

HEADING LINE #1:        GASBOY
HEADING LINE #2:        7300 WEST FRIENDLY AVE
HEADING LINE #3:        GREENSBORO, NC 27420
HEADING LINE #4:        TELE: 1-800-444-5529

TRAILING LINE #1:       THANK YOU!
TRAILING LINE #2:       PLEASE COME AGAIN.

RECEIPTS PER TRANS:     2

Press any key to continue...

PUMP #01    PULSES PER GAL:  $
PUMP #02    PULSES PER GAL:  0100
PUMP #03    PULSES PER GAL:  0010
PUMP #04    PULSES PER GAL:  0010

NUMBER OF TANKS:        4

PRICE DATA FORMAT:     NO PRICE DATA

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.: 05

LINES PER PAGE          62

KEY EXPIRATION DATE:    ENABLED

AUTO PIN LOCKOUT:       ENABLED

AUTO SITE SHUT DOWN:    DISABLED

TRANSACTION MPG:        DISABLED

```

## Receipt Printer Messages

The Series 1000 System continuously monitors the transaction receipt printer. Changes which occur in the printer status appear on the direct printout. The following messages may appear.

- PAPER LOW!!
- PAPER OUT!!
- PAPER REFILLED!!
- PRINTER JAMMED!!
- PRINTER UNJAMMED!!

These messages alert the attendant that printer maintenance may be required. Maintenance procedures are detailed in [“Receipt Printer Maintenance” on page 175](#).

## 28 – Supervisor Key Option

### Description

This option allows you to use specially encoded supervisor keys to manually enter ID field information at the Series 1000 keypad. Supervisor keys are typically used when a key has been lost.

Supervisor fields can be encoded onto key types 1, 2 or 3 and consist of special characters to designate the supervisor fields. The method for inserting these special characters varies by key type.

- For key type 3, press **CLEAR** twice. The field is filled with dots.
- For key types 1 and 2, press **CLEAR** three times to display the dots.

You can alternate among clear display and dots by repeatedly pressing the **CLEAR** button; key types 1 and 2 also have a field separator character. Press **ENTER** to go on to the next field.

Keys to be used with the Maintenance Option (see [“Maintenance Option” on page 127](#)) cannot contain supervisor characters in the VEH field.

### Fueling with a Supervisor Key

- 1 At the INSERT KEY prompt, insert the supervisor key into the receptacle and turn clockwise. The LCD displays: PLEASE WAIT.  
The LCD prompts you to enter the required key data fields.
- 2 Enter the appropriate data. Complete each entry by pressing **ENTER**.
- 3 After you enter the appropriate key data, proceed with the fueling sequence as described in [“Fueling With the FleetKey System” on page 7](#) beginning at [step 6](#).



## 29 – Tank Monitor Interface

---

### Description

The Tank Monitor Interface option enables you to communicate with a Gasboy TMS 500, Veeder-Root TLS, or EBW AutoStik tank monitoring system using the Series 1000 as an interface. Once the communications link is established, commands issued from the Series 1000 data terminal are passed to the tank monitor and data output from the tank monitor appears at the Series 1000 data terminal. This interface is completely transparent except for the ENQ character which terminates the tank monitor interface. The ENQ character is generated by pressing CTRL-E.

## TM - Tank Monitor Link Command

Use the TM command to establish a communications link for the tank monitoring system.

- 1 At the \* prompt, type **TM** (Figure 29-1).  
The system displays: TANK MONITOR LINK? <Y OR N>
- 2 To establish the communications link, type **Y** and press **RETURN**.  
If the Series 1000 is successful in establishing a communications link with the tank monitoring system, it displays this character: >.

~ OR ~

To terminate the request, type **N** and press **RETURN**.

Figure: 29-1 Example of TM Command to Establish Communications

```
*TM
TANK MONITOR LINK <Y OR N> Y↵
>
```

What happens next depends on the protocol of the tank monitoring system you are using. The following example is for a Veeder-Root TLS-250.

To request a report on this system, press CTRL-A to send an SOH

Then type the desired report code and tank number.

In our example (Figure 29-2), we used 2A1. This prints an alarm status report (code 2A) for tank 1.

*Note: See the documentation supplied with your tank monitoring system for additional communications commands and report codes.*

Figure: 29-2 Example of TM Command for TLS-250, Report Code 2A, Tank 1

```
*TM
TANK MONITOR LINK <Y OR N> Y↵
>
 (press CTRL-A here
2A1
ALARM STATUS
FEB 27, 2006
9:38 AM
TANK   PRODUCT          LEAK    HIGH    OVER    LOW    THEFT
      1  SUPER UNLEADED  OFF     WATER  FILL   LIMIT
EXTERNAL INPUT STATUS: OPEN
```

## Terminate Tank Monitor Communications Link

There are two ways to terminate the communications link between the Series 1000 and the tank monitoring system:

- ENQ (CTRL-E) termination
- Timeout termination

### ENQ (CTRL-E) Termination

When you finish communicating with the tank monitoring system and wish to terminate the communications link, press **CTRL-E** on the Series 1000 data terminal ([Figure 29-3](#)).

The Series 1000 intercepts the ENQ as a termination character and breaks the communications link. The \* prompt reappears, indicating the Series 1000 is back in the standard command mode.

**Figure: 29-3 Example of TM Command with CTRL-E Termination**

```
*TM
TANK MONITOR LINK <Y OR N> Y↵
>(press CTRL-A here)
2A1
ALARM STATUS
FEB 27, 2006
9:38 AM
TANK  PRODUCT                LEAK    HIGH    OVER    LOW    THEFT
      1    SUPER UNLEADED      OFF    WATER  FILL    LIMIT
                                     OFF    OFF    OFF    OFF
EXTERNAL INPUT STATUS: OPEN
(press CTRL-E here)
*
```

### Timeout Termination

If no data is transmitted or received for 60 seconds after the communications link is established, the Series 1000 times out and the link is terminated ([Figure 29-4](#)). At this time, the Series 1000 also exits the command mode. You must sign back on to the Series 1000 if you wish to execute any terminal commands.

**Figure: 29-4 Example of TM Command with Timeout Termination**

```
*TM
TANK MONITOR LINK <Y OR N> Y↵
>(press CTRL-A here)
2A1
ALARM STATUS
FEB 27, 2006
9:38 AM
TANK  PRODUCT                LEAK    HIGH    OVER    LOW    THEFT
      1    SUPER UNLEADED      OFF    WATER  FILL    LIMIT
                                     OFF    OFF    OFF    OFF
EXTERNAL INPUT STATUS: OPEN
EXIT
```

## Tank Monitor Error Messages

The following messages may be displayed at the Series 1000 data terminal when using the tank monitor interface option:

TANK MONITOR OFFLINE!	Either the Series 1000 could not connect to the tank monitoring system or the Series 1000 could not communicate with the tank monitoring system after the link was established.
TM BUFFER OVERFLOW!	Data was transmitted by the tank monitoring system at a higher rate than what could be displayed at the Series 1000 data terminal. This error terminates the communications link.



## 30 – Receipt Printer Maintenance

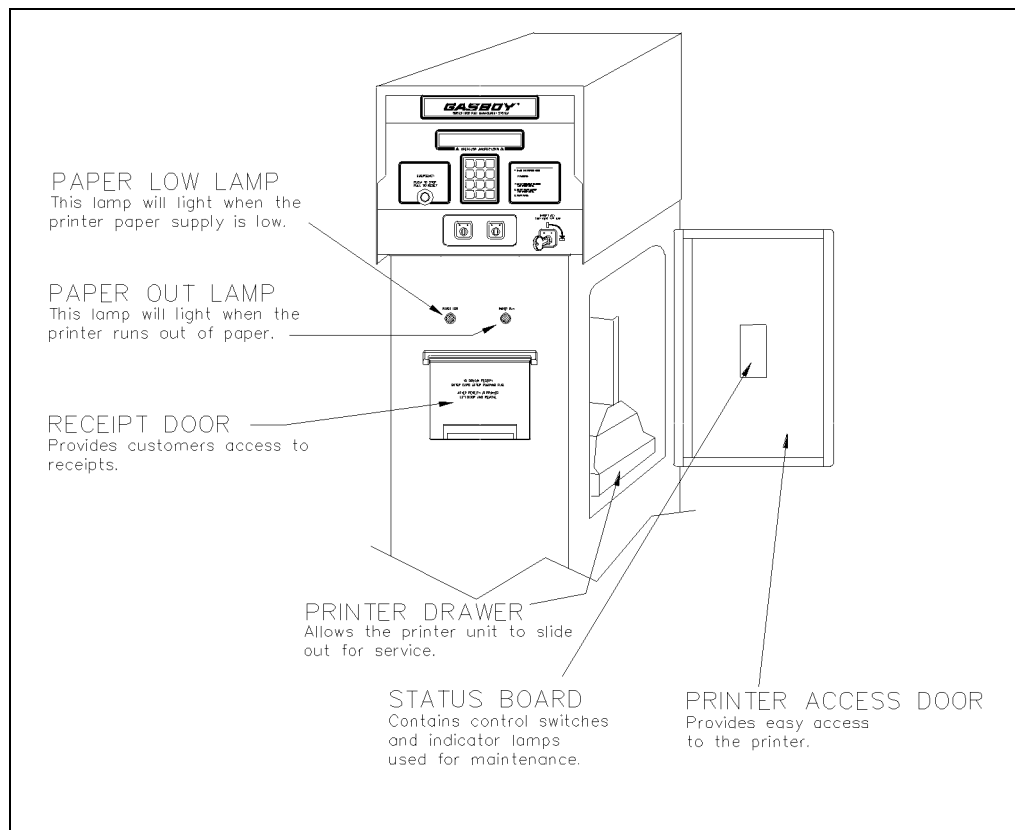
### Printer Description

The optional receipt printer that is used in Gasboy Series 1000 Key Systems enables you to print receipts for fueling transactions right at your key system.

The printer is housed within the pedestal of your key system. A printer access door is located on the side of the pedestal. Inside, the printer is mounted on a sliding drawer that enables you to easily slide it out for servicing or maintenance and then replace it. A receipt door on the front of the pedestal provides customer access to receipts. Indicator lamps, on the pedestal above the receipt door, indicate PAPER LOW or PAPER OUT conditions.

[Figure 30-1](#) highlights the location and features of a key reader with a receipt printer. The remainder of this section describes the printer, its internal switches and settings, and how to maintain it.

**Figure: 30-1 Key System with Receipt Printer**

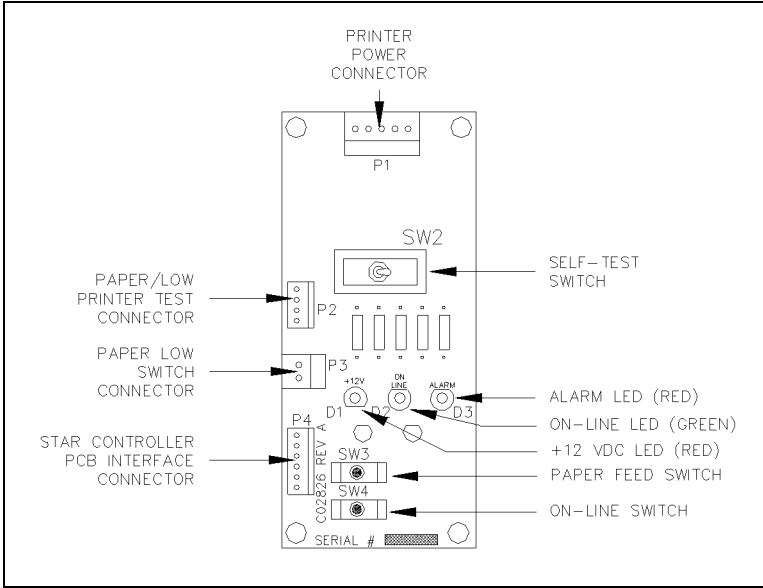


Switches and Settings

Printer Status Board

The printer status board (Figure 30-2) is attached to the inside of the printer access door (Figure 30-1) This location provides the site attendant easy access to the switches and indicator lamps needed to perform paper loading, self-tests, and simple troubleshooting.

Figure: 30-2 Printer Status Board



Status Board Switches

The following table summarizes switches and results for the printer status board and the table at “Status Board Lamps” on page 177 shows printer status board lamps and functions.

Switch	Function
SW1	POWER <ul style="list-style-type: none"><li>Switching SW1 to the left turns power on to the printer and the status board.</li><li>Switching SW1 to the right removes power from the printer and status board</li></ul>
SW2	SELF-TEST <p>A short self-test should be performed whenever the paper or ribbon is changed.</p> <ul style="list-style-type: none"><li>Switching SW2 to the left starts a self-test of the printer. It will print a barber-pole pattern of all the characters that may be printed on a receipt.</li><li>Switching SW2 to the right stops the printing and cuts the paper.</li></ul>
SW3	PAPER FEED <p>Pressing SW3 causes a continuous paper feed. This is used while loading new paper.</p>
SW4	ON LINE <p>Pushing this switch alternately puts the printer in the online or offline mode. The printer must always be online (green lamp on) to print receipts or do a self-test.</p>

## Status Board Lamps

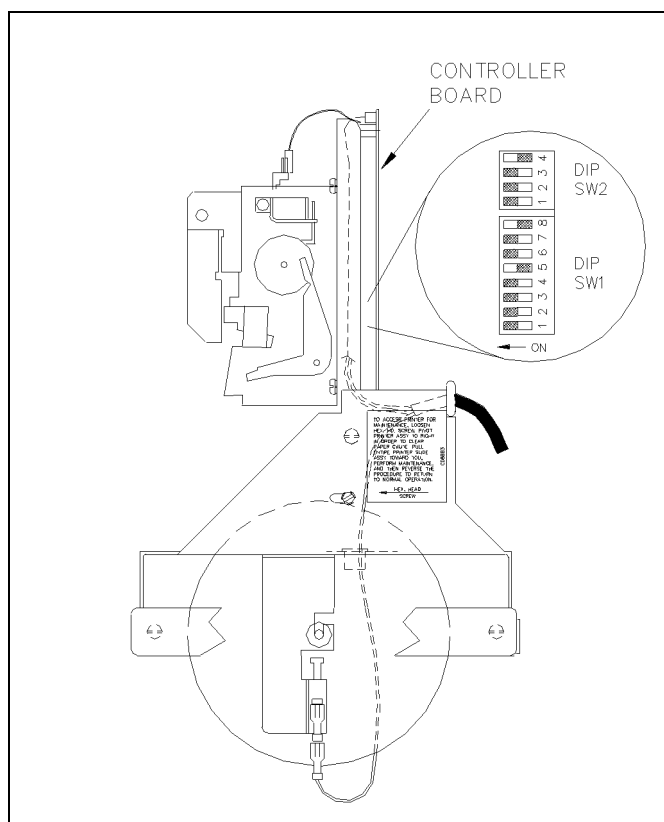
Lamp	Function
D1	+12 VOLTS This lamp should be lit whenever SW1 (Power) is on.
D2	ON LINE This lamp must be on to print receipts or do a self-test. If it is not on, momentarily press SW4. <i>Note: This lamp does not have to be lit to feed paper (SW3).</i>
D3	ALARM This lamp will light when a mechanical failure occurs, or when the printer runs out of paper.

## Controller Board DIP Switch Settings

*Note: DIP switches are only read by the controller at power up. DIP switch changes should be made with the power off.*

The controller board DIP switches (Figure 30-3) are set at the factory prior to shipment. For proper operation of the printer, set the controller board switch settings as shown in the following table.

**Figure: 30-3 DIP Switches**



DIP Switch Settings			
SW1		SW2	
1-1	ON	2-1	ON
1-2	ON	2-2	ON
1-3	ON	2-3	ON
1-4	ON	2-4	OFF
1-5	OFF		
1-6	ON		
1-7	ON		
1-8	OFF		

## Accessing the Printer for Maintenance or Service

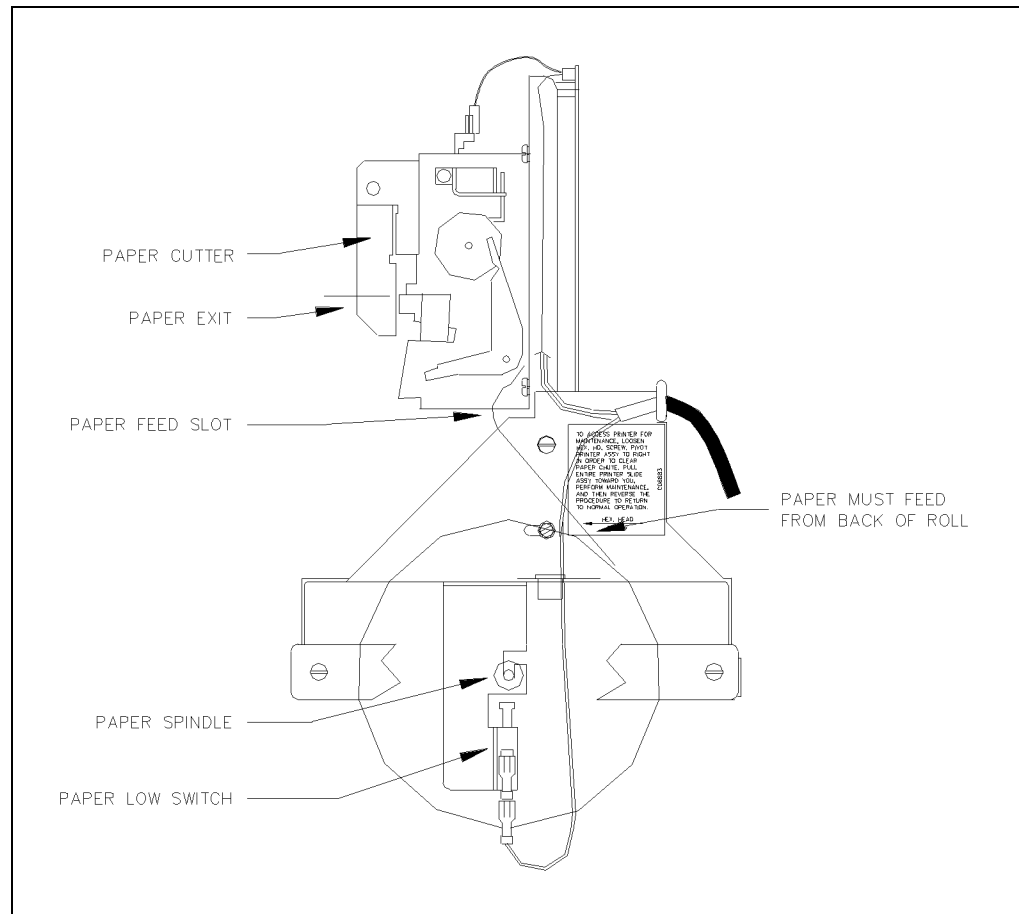
Before beginning any of the following maintenance procedures, you must pull the printer out to a serviceable position. Follow these steps:

- 1 Open the printer access door and loosen the hex head screw.
- 2 Pivot the printer assembly to the right in order to clear the paper chute.
- 3 Pull the entire printer slide assembly toward you.
- 4 Perform any required maintenance or service.
- 5 Reverse this procedure to return the printer to normal operation.

## Changing the Paper

### Removing the Paper

- 1 Follow the procedure above for accessing the printer ([Figure 30-4](#)).
- 2 Cut the paper where it comes off of the roll.
- 3 Press the PAPER FEED switch on the printer status board until all of the paper is removed from the printer mechanism.
- 4 Remove the paper roll, being careful not to bend the PAPER LOW switch.

**Figure: 30-4 Printer - Side View**

## Installing the Paper

- 1 Insert spindle into paper roll.
- 2 Insert roll into holder, being careful not to bend the PAPER LOW switch ([Figure 30-4](#)).
- 3 Make sure the paper feeds from the back of the roll.
- 4 Insert the paper into the paper feed slot while pressing the PAPER FEED switch on the printer status board.
- 5 Make sure the paper feeds easily out of the paper cutter. [Figure 30-4](#) shows a side view of the paper path.
- 6 Perform a short self-test.
- 7 Return the printer slide assembly to its normal position and lock it in place with the hex head screw.
- 8 Close and lock the printer access door.  
*Note: Make sure the printer access door is drawn tight in order to insure a watertight seal.*

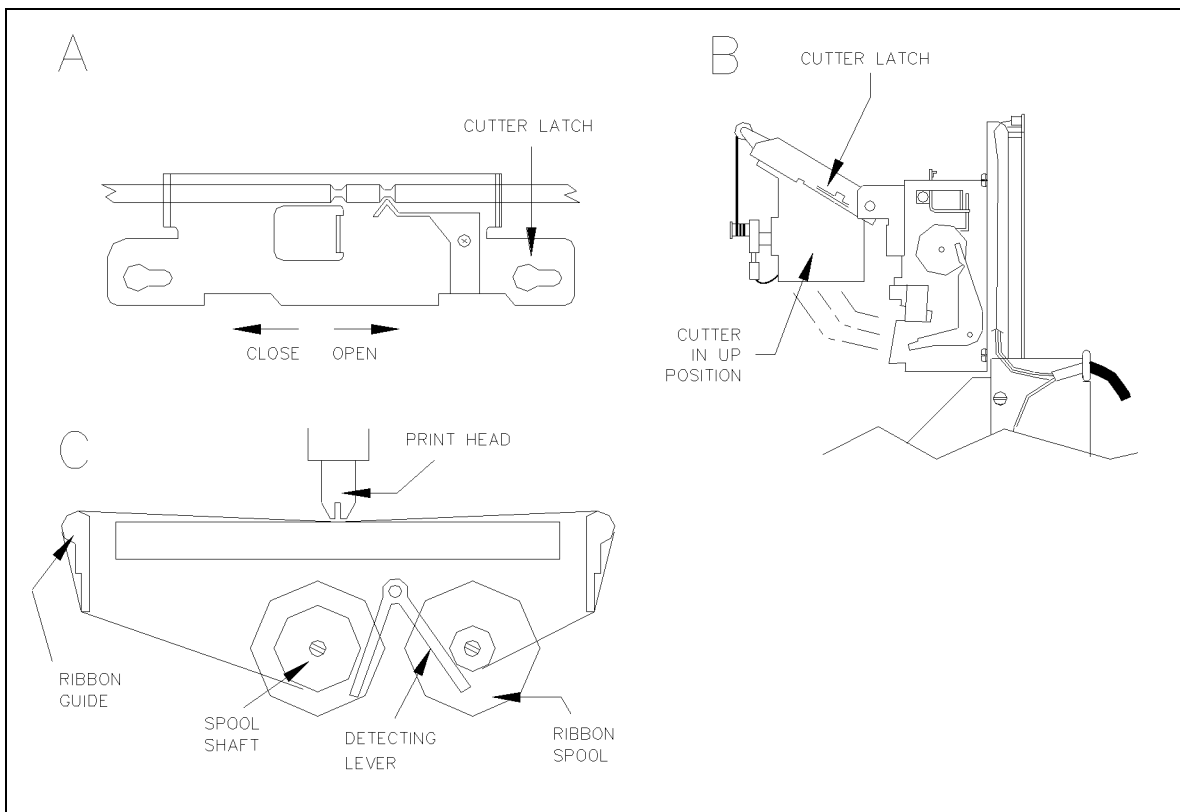
## Changing the Ribbon

It is recommended, in most cases, that the ribbon be replaced every 4000-5000 receipts or 2 to 3 rolls of paper to ensure acceptable print quality. Environmental conditions, such as temperature and humidity, may affect the life of the ribbon.

### Removing Old Ribbon Spools

- 1 Follow the procedure for accessing the printer.
- 2 Slide the cutter latch on the paper cutter unit to the right and swing the paper cutter up (Figure 30-5 A and B).
- 3 Rotate both spools to create some slack in the ribbon.
- 4 Pull one spool off of the shaft while pushing the ribbon detecting lever out of the way (Figure 30-5 C). Repeat for the other spool.

**Figure: 30-5 Ribbon Installation Sequence**



## Installing New Ribbon Spools

- 1 Place the ribbon spool onto the left shaft with the spool-driving pins pointing toward the printer (Figure 30-5 C).
- 2 Feed the ribbon over the left ribbon guide, under the print head, and over the right ribbon guide.
- 3 Repeat Step 1 for the right spool.
- 4 Rotate both spools to remove the slack from the ribbon.
- 5 Return the paper cutter unit to the normal position and slide the cutter latch to the left to lock (Figure 30-5 A).
- 6 Perform a short printer self-test.
- 7 Return the printer slide assembly to its normal position and lock it in place with the hex head screw.
- 8 Close and lock the printer access door.  
*Note: Make sure the printer door lock is drawn tight in order to insure a watertight seal.*

## Adjusting Cutter Blades

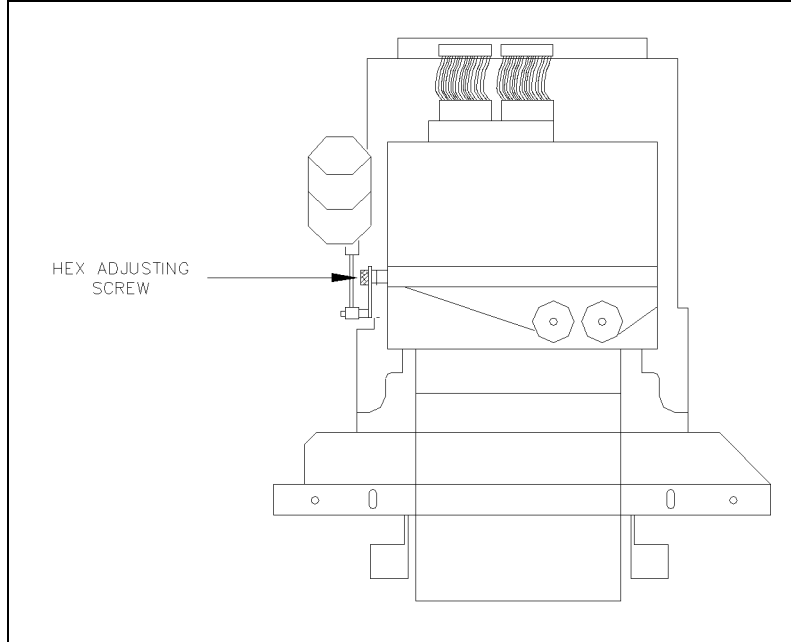
Adjustment of the cutter blades may become necessary if the cutter fails to operate properly. This may be indicated by receipts not being completely cut or paper becoming jammed inside the printer. Cutter blades are sharp! Keep fingers away from sharp edge of blade while making adjustments.

### Adjust After Incomplete Cuts

- 1 Follow the procedure for accessing the printer.
- 2 Loosen the hex adjusting screw (located on the lower left side of the cutter, [Figure 30-6](#)) using a 2.5 mm hex key. Do not use pliers as damage to the screw head may result. Pivot the bottom cutter blade upward. Tighten the hex screw to lock the blade in place.
- 3 Perform a few self-tests to make sure the cutter operates properly.
- 4 Return the printer slide assembly to its normal position and lock it in place with the hex head screw.
- 5 Close and lock the printer access door.

*Note: Make sure the printer door lock is drawn tight in order to insure a watertight seal.*

**Figure: 30-6 Cutter Bar Adjustment Screw**





## Adjust After Paper Jams

- 1 Follow the procedure for accessing the printer.
- 2 Carefully remove any paper that may be stuck inside the printer.
- 3 Loosen the hex adjusting screw (located on the lower left side of the cutter, [Figure 30-6](#)) using a 2.5 mm hex key. Do not use pliers as damage to the screw head may result. Pivot the bottom cutter blade down. Tighten the hex screw to lock the blade in place.
- 4 Perform a few self-tests to make sure the cutter operates properly.
- 5 Return the printer slide assembly to its normal position and lock it in place with the hex head screw.
- 6 Close and lock the printer access door.  
*Note: Make sure the printer door lock is drawn tight in order to insure a watertight seal.*



## 31 – Appendix A: CRC Check Sum Calculation

### The CRC-16 Check Sum

Transactions transmitted from the FleetKey system in the compacted format have a CRC-16 check sum appended to them. The computed CRC-16 check sum is in ASCII (hex). It consists of four ASCII characters that represent the four hexadecimal digits of the CRC-16 check sum.

The CRC-16 check sum is calculated on the transaction data beginning with the first digit of the site number and ending with the last digit of the error code. Listed below is an example of a FleetKey system transaction in the compacted format which contains the CRC-16 check sum (EEE2) at the end.

```
*PH
12340007000120500012340954072692111701010003180010000000318000000000000000006EEE2
```

### Sample Program

Listed below is a sample program which verifies that the CRC-16 check sum is correct. This example program is written in C and returns TRUE (1) if the check sum for the given transaction is correct or FALSE (0) if incorrect.

**Figure: 31-1 Sample CRC-16 Check Sum Verification Program (sheet 1 of 2)**

```
/*
** Function:  Validate CRC-16 check sum on a Fleet Key transaction.
** Syntax:   int crc16(register char *pa)
** Remarks:  The character pointer pa points to the first character of
**           a null terminated string containing the transaction
**           to be verified..
** Returns:  TRUE (1) if CRC-16 check sum is correct.
**           FALSE (0) if CRC-16 check sum is incorrect.
**
** Operator definitions:
**      =      assignment operator
**      &      logical AND
**      ^      EXCLUSIVE OR
**      << n    bitwise shift left n bits
**      ^=     EXCLUSIVE OR of operands with
**             result in the left operand
**      i++    post increment i by 1
**      !=     not equal to
**      <=<= 1  shift left operand by one and assign
**             to the left operand
**      0x     specifies a hexadecimal number
**      char *pa variable pa points to a character string
** */
```

(continued on next page)

Figure: 31-2 Sample CRC-16 Check Sum Verification Program (sheet 2 of 2)

```

int crc16(register char *pa)
{
    register int i;          /* Bit counter */
    int k;                  /* Character counter */
    register unsigned crc;   /* Calculated crc 16 bit value */
    register char c;        /* Character variable */

    crc = 0;                /* Initialize crc to 0 */
    k = strlen(pa) - 4;     /* k = # of chars in string to calc. */
                           /* the crc on */

    /* Begin outerloop here: Run loop for each character in the
    ** string excluding the 4 character CRC-16 value.
    */
    do
    {
        c = *pa++;          /* c = next char. in string */

        /* Begin innerloop here: Run loop 8 times for each
        ** character in outerloop.
        */
        for (i = 0; i < 8; i++)
        {
            if (c & 1)      /* If c is odd */
                crc ^= 0x8000; /* then EXCLUSIVE OR crc with */
                               /* 8000 hex. */

            c >>= 1;        /* Shift c bitwise right one bit */

            /* If most significant bit of crc is set, then
            ** execute crc = ((crc ^ 0x4002) << 1) + 1 statement.
            ** Otherwise, shift crc bitwise left one bit.
            */
            if (crc & 0x8000)
                crc = ((crc ^ 0x4002) << 1) + 1;
            else
                crc <<= 1;

        }                  /* End of innerloop */

    } while (--k);         /* End of outerloop if k = 0 */

    /* Next segment of program compares calculated CRC-16 to the CRC-16
    ** on the end of the transaction. If they are equal return TRUE (1)
    ** otherwise, return FALSE (0).
    **
    ** Note: *pa now points at the 4 character ASCII crc-16
    ** check sum appended to the end of the transaction.
    */
    if (crc == (unsigned) strtoul(pa, (char**)NULL, 16))
        return 1;
    else
        return 0;
}

```

## 32 – Appendix B: Setup of Peripheral Equipment

Some of the peripheral equipment that can be connected to the FleetKey system has special setup procedures that must be followed for proper operation. The following sections list some of the peripherals that may be connected to your system and the special requirements of each.

### Link MC5 Terminal Setup

Install and complete the setup of the terminal as specified in the manufacturer's setup instructions. Then you'll need to enter the Setup Mode and change parameters on five screens. This enables the terminal to function properly with both the Okidata printer and the FleetKey system. Be sure to set the LINES PER PAGE in the SC command ([“SC - Load or Change System Configuration” on page 22](#)) to 62.

When setting up the terminal, use the following keys as needed.

SHIFT and SELECT	Used together to enter Setup Mode.
Up/Down Arrows	Move to a menu item.
Left/Right Arrows	Change values for parameter.
TAB	Move to next column.
PAGE DOWN/UP	Move to next or previous screen.
F1 to F8	Select specific screens from 1 to 8.
E or F9	Exit Setup Mode.
S	Save current values.
P	Toggle between Main and Aux ports.
D	Defaults all values.
R	Restores values to previously saved settings.

In the steps that follow, setup parameters shown in bold are non-critical and can be configured to your preference.

- 1 Press **CAPS LOCK** to activate the caps lock feature.  
CAPS will appear in the upper lefthand corner of the status line.
- 2 Enter Setup Mode by pressing **SHIFT** and **SELECT**.  
Be careful not to press CTRL and SELECT. Doing so switches terminal control to Aux. If you find yourself in Aux mode, CTRL and SELECT will return you to Main mode.  
The first Setup Screen, General Setup displays ([Figure 32-1](#)):

Important: Before you begin to change parameters, check to be sure the message HOST IS ON MAIN PORT is displayed. If the message reads HOST IS ON AUX PORT, press **P** to return to the Main port configuration.

**Figure: 32-1 Setup - General Setup Screen**

General Setup			
Emulation	VT220-7	Auto Page	Off
Enhancements	Off	<b>Warning Bell</b>	<b>On</b>
Virtual Terminal	Off	<b>Margin Bell</b>	<b>Off</b>
Scroll Style	Jump	<b>Bell Sound</b>	<b>1</b>
Auto Scroll	On	Block Terminator	US/CR
Auto Wrap	On	Send ACK	Off
Received CR	CR	Monitor Mode	Off

- 3 Press **F2** or **PAGE DOWN** to display the next Setup Screen, Communications Setup (Figure 32-2).

**Figure: 32-2 Setup - Communications Setup Screen**

Communications Setup			
Main Baud	1200	Aux Baud	9600
Main Data/Parity	8/None	Aux Data/Parity	8/None
Main Stop Bits	1	Aux Stop Bits	1
Main Rcv Hndsk	XON/XOFF	Aux Rcv Hndsk	NONE
Main Xmt Hndsk	NONE	Aux Xmt Hndsk	XON/XOFF
Ignore 8th Bit	Off	Aux Rcv Level	50%
Comm Mode	Full Duplex	Aux Port	RS232
Disconnect	2 Sec	Aux Interface	RS232
		Printer	Serial

*Note: Series 1000 software prior to version 8.1 and FleetKey software prior to version 2.1 does not support XON/XOFF protocol. For these software versions, set the Main Rcv Hndsk, Main Xmt Hndsk, Aux Rcv Hndsk and Aux Xmt Hndsk parameters to NONE and set the Main Baud parameter to 1200 and Aux Baud parameter to 9600.*

- 4 Press **F3** or **PAGE DOWN** to display the next Setup Screen, Display Setup (Figure 32-3).

**Figure: 32-3 Setup - Display Setup Screen**

Display Setup			
<b>Columns</b>	<b>132</b>	Background	Dark
80/132 Clear	On	Attributes	Char
Lines	24	Wprt Intensity	Dim
Pages	1X Lines	Wprt Reverse	Off
Status Line	Ext	Wprt Underline	Off
<b>Cursor Style</b>	<b>Blink Block</b>	Refresh Rate	60Hz
Cursor	On	Pound Char	US
<b>Screen Saver</b>	<b>15 Min</b>	Auto Font Load	On

*Note: The Columns setting of 132 may be changed to 80 if desired; however, this may cause transactions displayed on the screen (and on the Okidata printer) to wrap, hindering readability.*

- 5 Press **F4** or **PAGE DOWN** to display the next Setup Screen, Keyboard Setup (Figure 32-4).

**Figure: 32-4 Setup - Keyboard Setup Screen**

Keyboard Setup			
Key Click	Off	Break	250 ms
Key Repeat	On	Xmt Limit	None
Key Lock	Caps	FKey Xmt Limit	None
Return Key	CR	Key Code	ASCII
Enter Key	CR	WP Keyboard Mode	Off
Back Space Key	DEL/BS	Lock Keyboard	Disable
Left Alt Key	Func	Language	US
Delete Key	Normal		

- 6 Press **F5** or **PAGE DOWN** to display the next Setup Screen, ANSI Setup (Figure 32-5).

**Figure: 32-5 Setup - ANSI Setup Screen**

ANSI Setup			
FKey Lock	Off	Print	National
Feature Lock	Off	Send	All
Keypad	Numeric	Send Area	Screen
Cursor Keys	Normal	Print Area	Screen
Xfer Term	EOS	Send Term	None
Char Mode	Multinational	Print Term	None
Keys	Typewriter	Print Mode	Auto
VT100 ID	VT 100	Auto Answerback	Off

- 7 Press **S** to save Setup changes.
- 8 Press **F9** or **E** to exit Setup Mode.

## Okidata 184 Setup

To prepare the Okidata printer for operation with the Link MC5 terminal and your Gasboy Fuel Management System, perform the following steps. Install and complete the setup of the printer as specified in the manufacturer's setup instructions. Then set up the switches as follows:

SW1	Position	Function
SW1-1	ON	Parity: Odd
SW1-2	ON	Parity: Without
SW1-3	ON	Data bits: 8
SW1-4	OFF	Protocol: XON/XOFF (Series 1000 V8.1 or higher)
	ON	Ready/Busy (Series 1000 versions prior to V8.1)
SW1-5	ON	Test select: Circuit
SW1-6	ON	Mode select: Print
SW1-7	ON	Busy line selection: DTR - Pin 20
SW1-8	ON	Busy line selection: DTR - Pin 20

SW2			
Baud Rate	SW2-1	SW2-2	SW2-3
9600	OFF	ON	ON

SW2			
Baud Rate	SW2-1	SW2-2	SW2-3
2400	OFF	OFF	ON
1200	ON	ON	OFF
300	ON	OFF	OFF

*Note: Any change made to the baud rate must also be changed on the Link terminal Communications Setup screen, Aux Baud parameter (Figure 32-2).*

SW2	Position	Function
SW2-4	ON	DSR output signal: Active
SW2-5	ON	Buffer threshold: 32 bytes
SW2-6	OFF	Busy signal timing: 1 sec (min.)
SW2-7	ON	DTR signal: Space after power on
SW2-8	OFF	Not used

- 1 Turn the printer offline by pressing **SELECT**.  
The SELECT light should go off.
- 2 Position the print head at the top of the paper and press the **TOF SET** button.
- 3 Put the printer back online by pressing **SELECT**.  
The SELECT light should go on.
- 4 Press the **MODE** button until the light next to HSD is lit.
- 5 Press the **PITCH** button until the light next to 17 is lit.

*Note: Pitch may be set to a lower number (resulting in larger print) if transactions are less than 80 characters.*

## Tank Monitor Setup

### Gasboy TMS 500

- 1 On the TMS PCB, locate the J22 jumper patch and set the jumper to RS-232 or RS-422 depending on the type of communication you are using.  
See the TMS 500 Installation and Startup Manual for details.
- 2 Following instructions in your TMS 500 Operation Manual, set up the TMS 500 parameters to the values shown:

Baud Rate: 1200 or 300

Stop Bits: 1

Parity: EVEN

Data Bits: 7

Security Code: Software defaults to 0001; delete this value



### **Veeder-Root TLS-250 or 250I**

- 1 Inside the right hinged cover of the TLS-250, is the Option PCB. Locate the rotary baud rate switch in the lefthand corner of the PCB. Set the rotary baud switch to position 4 (1200 baud) or position 6 (300 baud).
- 2 On the Parity/Security Code dip switch on the upper lefthand side of the TLS Main PCB, set the switches as follows: 1, 2, 3, CLOSED; 4 and 5 OPEN. This sets the TLS for even parity and no security code.

### **Veeder-Root TLS-350**

- 1 Inside the printer door on the lefthand side of the TLS, locate a four position dip switch labeled S1. Set position 2 of the switch to OPEN to disable the security code.
- 2 Following the instructions in your TLS-350 manual, set these parameters to the values shown:

Baud Rate: 1200 or 300	Stop Bits: 1
Parity: EVEN	Data Bits: 7

### **Series 1000 Setup**

For any of the tank monitors, the setup on the Series 1000 is the same.

- 1 On the Auxiliary Communications PCB (This is the small PCB located at the upper right of the MPU PCB inside the Series 1000 head), locate the K1 jumper patch.
- 2 Set the baud rate on position 1 of the K1 jumper patch to match the baud rate being used on the tank monitor. Do not exceed 1200 baud.
- 3 Locate the P2 (RS-232) and P3 (RS-422) connectors on the Auxiliary Communications PCB. Connect the cable from the tank monitor to either P2 or P3 depending on the type of communication you are using.



## 33 – Appendix C: Fleetkey Preventive Maintenance

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To prevent key read errors, perform the following maintenance on the keys as needed:

Clean the key's contacts using isopropyl alcohol and a toothbrush. Dip the toothbrush in the alcohol and brush the contacts of the key until they are clean.



## 34 – Appendix D: Fuel Point Option

### General

The FleetKey system can be purchased with a Fuel Point option. The hardware required for the Fuel Point option can be factory-installed on a new system, or retrofitted to an existing system. Refer to the following Fuel Point manuals for information on system installation and retrofitting:

- C35593 Fuel Point Hose and Dispenser Retrofit Installation
- C35628 Fuel Point Reader Installation
- C35629 Vehicle Module Programming Manual
- C35699 Vehicle Module Installation
- C35709 Fuel Point Parts

There are two variations on the Fuel Point option: the standard Fuel Point option or the Fuel Point Gate option. The standard option allows you to authorize up to 8 fueling positions. The gate option allows you to designate a fueling position (hose) as a gate controller. The gate option requires a special vehicle module with gate antenna connectors on the vehicle and installation of a special ground loop antenna buried in the driveway.

### Fuel Point Operation

In addition to your standard key access to the FleetKey system, the Fuel Point system provides fueling access and control as follows:

- 1 User removes nozzle from pump and inserts it into the fill pipe on the vehicle.
- 2 The vehicle information (identification, odometer, fuel type, etc.) is automatically sent from the Vehicle Module (VM) through the N-Ring and T-Ring antennas to the Fuel Point reader (FPR). All customer data for the transaction comes from the vehicle module (VM).  
*Note: You cannot mix VMs and FleetKeys in the same transaction.*
- 3 The FPR communicates the information the GASBOY Fuel Management System (FMS), which authorizes fueling and records the vehicle and transaction information. No user prompts or information appears on the FleetKey LCD display. If a Fuel Point vehicle is locked out, no authorization will occur and no user notification is sent.
- 4 When the nozzle is removed from the tank at the completion of fueling, or to transfer to another tank on the same vehicle, the transaction is suspended (duration determined by a system parameter). Three actions may occur:
  - If the nozzle is reinserted into the same vehicle, the transaction resumes (provided the suspension period has not expired).*Note: On the GASBOY Series 9800 and other electronic reset pumps, it will be necessary to turn off and on the pump handle before resuming a suspended transaction.*
  - If the nozzle is inserted into a different vehicle, the transaction is terminated and a new one initiated.
  - If the nozzle is returned to the pump, the pump remains IN USE to FleetKey users until the suspension period expires.

Transactions are stored in memory and may be printed at transaction completion on an optional logger printer (direct printout).

## Fuel Point Option Differences for Fleetkey Operations

### Direct Printout Mode

In Direct Printout Mode, the Series 1000 prints transactions on the data terminal as they are completed. If the FleetKey system is equipped with the Fuel Point option, the following two messages may appear in the direct printout:

FPR communications Lost @date time

This message appears when communications between the FPR and the FMS halt for 15 seconds.

FPR communications established @date time

This message appears at system power-up when FPR and FMS communications are established.

### LP - Load Pump Command

With a standard FleetKey system, you use the LP command ([Figure 34-1](#)) to assign specific fuels, prices, tanks, quantities, and timeout values to your pumps. With the Fuel Point option, you follow the same guidelines for the command prompts but you also use the LP command to indicate whether you are using the pump as a Fuel Point outlet and set a timer value for suspending transactions.

- 1 Follow Steps 1 through 9 of the LP command procedure ("[Loading the Data](#)" on page 65). At the end of Step 9, the following prompt appears: N-RING? <Y OR N>:

- 2 If the hose position is not a Fuel Point outlet, select **N**.  
This hose position can only be activated by a fleetkey.  
The PUMP NO. prompt reappears and you can continue entering pumps.

~ OR ~

If you have a Fuel Point N-Ring installed at this hose position, type **Y**.

This hose position can be activated by either a fleetkey or a fuel point-equipped vehicle.

The following prompt appears: SUSPEND TIMER <0-255>:.

*Note: The suspend timer value is the amount of time in seconds that you will allow between the time the nozzle is removed from the vehicle fill pipe and the transaction is ended.*

- 3 If you have vehicles with more than one tank, you may wish to set this value between **30 - 60** seconds.

~ OR ~

For vehicles with one tank, set this value to **5** seconds.

Fuel Point transactions are suspended when the nozzle is removed from the fill pipe. If you have an additional tank on the same vehicle to fill, you can then insert the nozzle into that tank and the transaction resumes.

If you are finished fueling and return the nozzle to the pump, the transaction remains suspended until the suspend timer expires. Any FleetKey user attempting to authorize the pump will get a PUMP IN USE message until the timer expires. Then the pump can be used. Any Fuel Point user initiating a new transaction on another vehicle, overrides the suspend timer and a new transaction begins.

**Figure: 34-1 LP Command**

```
*LP
PUMP NO. 1↵
FUEL CODE: 1↵
FUEL NAME: REGULAR↵
PRICE $1.189↵
TANK #1↵
AMOUNT: 0↵
BEFORE PUMP ACTIVATION TIME = 80↵
AFTER PUMP ACTIVATION TIME = 80↵
N-RING? <Y OR N>: Y↵
SUSPEND TIMER <0-255>: 30↵

PUMP NO. ↵
*
```

### PP - Print Pump Command

Version KV4 of the FleetKey added two columns to the Print Pump listing: N-RING, to indicate Fuel Point equipped, and STATUS to indicate the status of each pump (Figure 34-2).

**Figure: 34-2 PP Command**

*PP	P#	TANK	FUEL#	FUEL NAME	N-RING	PRICE	GALLONS	STATUS
	1	1	01	REGULAR	Y	\$1.189	21569.020	IDLE
	2	2	02	UNLEADED	N		66544.300	DISABLED
	3	3	03	DIESEL	Y		1223.300	PUMPING
	4	4	04	SUPER UNLEAD	Y		51100.654	SUSPEND
	*							

### XP - Pump Timeouts Print

The standard XP command printout lists, for each pump, the timeouts assigned with the LP command and the pulses per gallon assigned with the SC command. With the Fuel Point option, the XP printout also includes the SUSPEND TIMER column. This column lists the value assigned to the SUSPEND TIMER for each hose position (Figure 34-3).

At the \* prompt, type **XP**.

The system prints the data. The \* prompt reappears.

Figure: 34-3 XP Command

*XP				
-PUMP TIMEOUTS- IN SECONDS				
P#	PULSES PER GALLON	BEFORE PULSES	AFTER PULSES	SUSPEND TIMER
01	\$	080	060	030
02	0010	080	080	
03	0010	120	120	045
04	1000	120	080	005
*				

### AC - Autoconfigure FPR Command

Gasboy has one reader program to support any Fuel Point applications. Based on individual site requirements, configurations for the vehicle modules can be quite different. The Autoconfigure FPR command (AC) allows you to configure the Fuel Point Reader (FPR) to read vehicle modules based on the first vehicle module to use the system after running this command. This command is used only at start-up.

- 1 At the command prompt, type **AC**.  
The system responds AUTO CONFIG FPR? <Y OR N>:.
- 2 Type Y or N as desired.  
The first vehicle module to be read configures the FPR. A transaction is generated indicating that the FPR was autoconfigured. When viewed using a print transactions command (PT), the message text is FPR AUTO CFG; using print compacted (PC), the message code is 53. (See “2-Digit Error Message Codes” on page 79 for a complete list of transaction message codes.)

### VA & IA - Validate/Invalidate Keys Commands

Just as you do for keys, you can use the standard FleetKey commands to validate/invalidate vehicle modules (VMs). Vehicle modules can be validated individually, in strings of up to twenty assorted key numbers, or by ranges of consecutive key numbers.

Validating a VM allows that vehicle to access the system; invalidating a VM locks out that vehicle from the system. The process by which you control access to your system is called lockout. The file in which valid and invalid VMs are stored is called the lockout file. There are two types of lockout files:

- a *negative* key file where you validate all keys/VMs and invalidate individual keys/VMs
- a *positive* key file where you invalidate all keys/VMs and validate individual keys/VMs

All standard FleetKey validation commands apply to the Fuel Point option with the following differences. The prompts for the validate all keys (VA) and invalidate all (IA) commands now contain references to vehicle modules as shown in [Figure 34-4](#).



Figure: 34-4 VA and IA Commands

```

*VA
VALIDATE ALL KEYS/VMS? <Y OR N> Y↵
*
*IA
INVALIDATE ALL KEYS/VMS? <Y OR N> Y↵
*

```

## Transaction Changes

The Fuel Point option changes the transaction format of your FleetKey transactions as follows:

- The KEY1 field is now KEY/VM. This field will contain either a first or single key number or a vehicle module number.
- A T column appears right before the DATE column indicating the type of transaction. Possible values are: 0=FleetKey transaction, 1=Fuel Point transaction, 2=Fuel Point gate transaction.
- The HOURS column will always be present in addition to the standard field ODOM. This accommodates VMs with two inputs (odometer and hours). If transaction is FleetKey or Fuel Point where VM has only one input, data is contained in ODOM field only. If transaction is Fuel Point with both odometer and hours inputs, data is contained in both fields. The MILES and MPG fields, if used, are calculated based on the value in the ODOM field (provided it is non-zero). If no value is in the ODOM field, value is calculated on HOURS field.
- If your FleetKey system has the Hours option, there are several changes.

With the standard FleetKey Hours option, user input is placed in the ODOM field; with the Fuel Point option, since an HOURS field is already provided, FleetKey input is placed in the HOURS field and the ODOM field contains zeros.

In the transaction printout, the MILES field becomes E/HRS and the MPG field becomes HPG. Values for these fields are calculated based on the value in the HOURS field (provided it is non-zero). If no value is in the HOURS field, value is calculated on ODOM field.

- A transaction is generated when the FPR is autoconfigured. With the PT command, the ERROR column contains the message FPR AUTO CFG; with the PC command, transaction message code 53 is shown.

Sample transactions are shown in [Figure 34-5](#), [Figure 34-6](#), and [Figure 34-7](#).

Figure: 34-5 Sample PT Transaction (with Fuel Point differences in bold)

```

*PT
SITE 1234

TRAN KEY/VM  KEY2  EMP  VEH  T  DATE      TIME  P#  PR  QUANTITY  HOURS  ODOM  ERROR
0221 01328  00000  5967  2430  0  04/30/96  15:30  01  01      8.28  0000000  0054880  INVALID FUEL
0222 00234  00000  4567 9381  1  04/30/96  15:32  00  00      0.0  0000000 0000000  FPR AUTO CFG
0223 01234  00000  5678  9012  1  04/30/96  15:37  03  03     15.0  0000000  0010222  LIMIT CUTOFF
0224 03024  00000  8132  9675  1  04/30/96  15:39  02  02     11.6  0000000  0000000
0225 03024  00000  8132  9675  0  04/30/96  16:23  01  01      0.0  0000000  0000000  PUMP IN USE
0226 00147  00000  8523  6541  1  04/30/96  16:24  01  01      5.02  0000000  0082311  LIMIT CUTOFF
0227 03024  00000  8132  9675  0  04/30/96  16:25  02  02      7.1  0000000  0000000

```

### Figure: 34-7 Sample PH Format Broken Down Into Fields

PH																			
1234	0005	00542	00000	12345678	1	112105	1025	01	01	00061700	1000	00006170	00000000	00000000	0000	0000	09	4B42	A
1234	0006	00542	00000	12345678	1	112105	1025	02	02	00027000	2000	00005400	00000000	00000000	0000	0000	09	207D	A
1234	0007	00542	00000	12345678	0	112105	1026	01	01	00069300	1000	00006930	00000000	00000000	0000	0000	09	A0E0	A
1234	0008	00542	00000	12345678	0	112105	1026	02	02	00113500	2000	00022700	00000000	00000000	0000	0000	09	C6AF	A
1234	0009	00542	00000	12345678	0	112105	1026	01	01	00073500	1000	00007350	00000000	00000000	0000	0000	09	0B13	A

A is a 4-digit site number	K is a 8-digit quantity
B is a 4-digit transaction number	L is a 4-digit unit price
C is a 5-digit key 1 number	M is an 8-digit total price
D is a 5-digit key 2 number	N is a 7-digit hours field (Fuel Point only)
E is an 8-digit ID field (custom: up to 20 characters)	O is a 7-digit odometer reading
F is a 1-digit type field (Fuel Point only)	P is a 4-digit miles traveled field
G is a 6-digit Gregorian date (MMDDYY)	Q is a 4-digit MPG field
H is a 4-digit 24-hour time	R is a 2-digit error message code (see <a href="#">"2-Digit Error Message Codes" on page 79</a> )
I is a 2-digit pump number	S is a 4-digit CRC-16 check sum (see <a href="#">Appendix A: CRC Check Sum Calculation</a> )
J is a 2-digit product code	T is the host response character

## Fuel Point Gate Option Differences for Fleetkey Operations

When you have the Fuel Point gate option, there are differences in the way you configure your system (SC and PS commands), the way you load your pumps (LP and PP commands) and the pump timeouts command (XP command).

In the pump data section of the system configuration where you define data for each pump (PUMP #), the system will prompt PUMP OR GATE? <P OR G>.

- When you select G, an additional prompt appears: GATE TIMEOUT: <1-255>. This value represents the number of seconds the FleetKey energizes the gate relay (time depends on manufacturer specifications). This usually is not the amount of time the gate remains open. Most systems keep the gate open until the vehicle has driven through. A typical value for this timeout is 4 seconds.

Another special prompt for Fuel Point appears after PRICE DATA FORMAT that enables you to save gate transactions. The prompt is SAVE GATE TRANS? <Y OR N>.

- If you select **Y** for yes, gate transactions are stored as normal fueling transaction with GATE appearing in the error field.
- If you select **N** for no, no record is kept anywhere for gate transactions.

## PS - Print System Configuration

The print system configuration command (Figure 34-8) contains the following changes (in bold):

**Figure: 34-8 PS Command**

```

*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY FLEETKEY

KEY TYPE 1 PROMPT:      INSERT GRAY KEY
KEY TYPE 2 PROMPT:      INSERT GREEN KEY

PUMP #01    PULSES PER GAL:  $
PUMP #02    PULSES PER GAL:  GATE
PUMP #03    PULSES PER GAL:  0010
PUMP #04    PULSES PER GAL:  0010

NUMBER OF TANKS:        4

PRICE DATA FORMAT:      NO PRICE DATA

SAVE GATE TRANS:        YES

Press any key to continue...

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.: 05

LINES PER PAGE:         62

KEY EXPIRATION DATE:    ENABLED

AUTO PIN LOCKOUT:       ENABLED

AUTO SITE SHUT DOWN:    ENABLED

TRANSACTION MPG:        DISABLED

```

## LP - Load Pump

With a standard FleetKey system, you use the LP command to assign specific fuels, prices, tanks, quantities, and timeout values to your pumps. With the Fuel Point gate option, where your pump (hose position) is defined as a gate (SC command) the load pump command will not display prompts for any pump assigned as a gate; instead, when you type the pump number for the PUMP NO.: prompt the word GATE appears on the next line and the PUMP NO.: prompt returns (Figure 34-9).

Figure: 34-9 LP Command

```
*LP
PUMP NO. 1↵
FUEL CODE: 1↵
FUEL NAME: REGULAR↵
PRICE $1.189↵
TANK #1↵
AMOUNT: 0↵
BEFORE PUMP ACTIVATION TIME = 80↵
AFTER PUMP ACTIVATION TIME = 80↵
N-RING? <Y OR N>: Y↵
SUSPEND TIMER <0-255>: 30↵

PUMP NO. 2↵
GATE

PUMP NO. ↵
*
```

PP - Print Pump Command

With the Fuel Point gate option, the print pump command displays blanks in the TANK and FUEL# columns, GATE in the FUEL NAME column, Y in the N-RING column, and blanks in the PRICE and GALLONS columns (Figure 34-10).

Figure: 34-10 PP Command

*PP							
P#	TANK	FUEL#	FUEL NAME	N-RING	PRICE	GALLONS	STATUS
1	1	01	REGULAR	Y	\$1.189	21569.020	IDLE
2			GATE	Y			DISABLED
3	3	03	DIESEL	Y		1223.300	PUMPING
4	4	04	SUPER UNLEAD	N		51100.654	SUSPEND
*							

XP - Pump Timeouts Print

The standard XP command printout lists, for each pump, the timeouts assigned with the LP command and the pulses per gallon assigned with the SC command. With the Fuel Point gate option (Figure 34-11), the XP printout includes all changes for the Fuel Point option but lists the following data:

- GATE appears under PULSES PER GALLON
- the gate timeout value appears under BEFORE PULSES
- blanks appear in the AFTER PULSES and SUSPEND TIMER columns

Figure: 34-11 XP Command

*XP				
-PUMP TIMEOUTS- IN SECONDS				
P#	PULSES PER GALLON	BEFORE PULSES	AFTER PULSES	SUSPEND TIMER
01	\$	080	060	030
02	GATE	004		
03	0010	120	120	045
04	1000	120	080	005
*				

## Fuel Point Differences with Receipt Printer Option

### SC - Load or Change System Configuration

When you order the Fuel Point option and the receipt printer option together, you also get an Auto Receipt function, which allows you to automatically obtain receipts for transactions. The prompts appear in the SC command after the KEY TYPE prompts. In addition to the standard HEADING and TRAILING line prompts you get with the receipt printer option, the AUTO RECEIPT prompt allows you to indicate how you wish to receive receipts. The options are DISABLE (receipts available only via GR receipt command); FUEL POINT (receipts available immediately after Fuel Point transaction or when key is re-inserted on a FleetKey transaction); or BOTH (receipts available automatically on either Fuel Point or FleetKey transaction).

### PS - Print System Configuration

The print system configuration command contains the following changes (in bold) ([Figure 34-12](#)):

Figure: 34-12 PS Command

```
*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY FLEETKEY

KEY TYPE 1 PROMPT:      INSERT GRAY KEY
KEY TYPE 2 PROMPT:      INSERT GREEN KEY

HEADING LINE #1:        GASBOY
HEADING LINE #2:        7300 WEST FRIENDLY AVE
HEADING LINE #3:        GREENSBORO, NC 27420

TRAILING LINE #1:       THANK YOU!

AUTO RECEIPT:           FUEL POINT

RECEIPTS PER TRANS:     1

PUMP #01    PULSES PER GAL:  $
PUMP #02    PULSES PER GAL:  GATE
PUMP #03    PULSES PER GAL:  0010
PUMP #04    PULSES PER GAL:  0010

NUMBER OF TANKS:        4

PRICE DATA FORMAT:     NO PRICE DATA

SAVE GATE TRANS:        YES

Press any key to continue...

AUTO PUMP DISABLE
  NO. OF ZERO QTY TRANS.: 05

LINES PER PAGE:         62

KEY EXPIRATION DATE:    ENABLED

AUTO PIN LOCKOUT:       ENABLED

AUTO SITE SHUT DOWN:    ENABLED

TRANSACTION MPG:        DISABLED
```

## 35 – Appendix E: Trademark Information

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The following are non-Gasboy trademarks used in this document.

- Okidata® is a registered trademark of Oki Electric Industry Company, Ltd.
- Veeder-Root® is a registered trademark of Western Pacific Industries Inc.
- Wyse® is a registered trademark of Wyse Technology, Inc.





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# GASBOY

## GASBOY WARRANTY POLICY STATEMENT

### (Limited Warranty) New Product WARRANTY for USA and CANADA

#### GASBOY GUARANTEES NEW SERVICE STATION EQUIPMENT MANUFACTURED BY GASBOY IN ACCORDANCE WITH THE PROVISIONS STATED BELOW:

Gasboy will repair or replace parts and equipment found to be defective in materials or workmanship during the warranty period, subject to the following:

- Labor and travel costs incurred by the Authorized Service Contractor (ASC) while servicing Gasboy equipment are included, unless excepted, and will be paid at previously contracted rates to the qualified ASC.
- Warranty services must be performed by the nearest Authorized Service Contractor qualified to perform service on the defective equipment.
- Gasboy will supply new or rebuilt parts to replace parts which are found to be defective within the warranty period. Parts returned to Gasboy must be shipped with transportation charges paid and will be replaced with parts with transportation charges prepaid by Gasboy.
- New Equipment installations must be registered with the Gasboy Call Center within 24 hours of installation to receive full warranty benefits; otherwise, the warranty period commences at the date of invoice.
- Warranty service response time is 24 hours from time service is requested, Monday through Friday (8:00 am until 5:00 pm), excluding weekends. Emergency warranty response time is on-site within 4 hours. Hazardous warranty response time is on-site within one hour. Priority situations, emergency and hazardous, include imminent release of hazardous of dangerous materials, situations with imminent danger to life or property, and a complete site-down situation or 50 percent or more of the fuel dispensing capacity for any one product is inoperative. Overtime will be paid for priority situations only occurring outside routine warranty service hours.
- Warranty repair requiring rented equipment, overtime premium, lodging or charter travel must be approved in advance of service expenditure by the Gasboy Warranty Administration Department.

#### Commercial Pumps and Dispensers, Full -Cabinet Consumer Pumps

Commercial Pumps and Dispensers, Full-Cabinet Consumer Pumps are warranted against defects in material and workmanship for one year from date of installation or 24 months from date of original invoice, whichever occurs first. Warranty coverage includes parts and labor.

**Exclusions:** This warranty excludes hose breakaways, nozzles, hoses and fittings, nozzle-end swivels, retriever cables, graphics materials specified by the customer, fuel filters, belt adjustments, meter calibration, fluorescent lamps, vapor recovery testing and balance system piping, customer-specified items manufactured by others, and customer requested reprogramming of equipment. Some of these excluded items may be warranted by their manufacturer, and warranty claims in connection with these items should be presented directly to the manufacturer.

#### Small Transfer Pumps, Meters, Pressure Regulators

Small Transfer Pumps, Meters and Pressure Regulators are warranted against defects in material and workmanship for 24 months from date of installation or 30 months from date of original invoice, whichever occurs first. Non-registered equipment warranty will default to invoice date. The warranty covers parts only. Excepting the Model 2020 Hand Pump, which has a 90-day part warranty from date of original invoice.

#### New Spare Parts

All new spare parts or warranted replacement parts are warranted against defects in material and workmanship for one year from date of original invoice. The warranty covers parts only.

#### Keytrol

The Keytrol is warranted against defects in material and workmanship for one year from date of installation or 24 months from date of original invoice, whichever occurs first. Warranty coverage includes parts and labor.

#### Fuel Management Systems

CFN/Profit Point, Series 1000/FleetKey, TopKat, and factory installed Fuel Point Reader are warranted against defects in material and workmanship for one year from date of installation or 24 months from date of original invoice, whichever occurs first. Warranty coverage includes parts and labor.

Standalone and Retrofit Fuel Point Readers, and Fuel Point-vehicle and dispenser components are warranted against defects in material and workmanship for one year from date of installation or 24 months from date of original invoice, whichever occurs first. The warranty covers parts only.

The warranty for field installed/retrofitted Fuel Point Readers is non-transferable. The removal and installation of such components into another pump/dispenser will void the warranty.

#### Fuel Management System Peripherals

Peripherals (Modems, CRT's, Flat Screen, Scanner, PIN Pad, Customer Display) are warranted against defects in material and workmanship for one year from date of installation or 24 months from date of original invoice, whichever occurs first. The warranty covers parts and labor.

Printers (Logger, Receipt, etc.) are warranted against defects in material and workmanship for 90 days from date of installation or 180 days from date of original invoice. The warranty coverage is parts and labor.

Peripherals (Encoders and Embossers) are warranted against defects in material and workmanship for six months from date of original invoice. The warranty covers parts only.

#### General Exclusions

1. Problems caused by faulty installation are not covered by this warranty. This warranty applies only if equipment has been installed and used in accordance with Gasboy Installation, Operating and Service Instructions. Problems caused by improper maintenance of equipment are not covered by this warranty.
2. Use of service personnel other than qualified Gasboy service providers without prior approval of the Warranty Administration Department will void payment of the warranty claim in question.
3. Damage suffered by Gasboy's equipment resulting from shipping, accident, power surges, neglect, misuse, act of Nature, or abuse is not covered by this warranty.
4. Use of non-Gasboy replacement parts, defects caused by the unauthorized addition of non-Gasboy items to Gasboy equipment or by the unauthorized alteration of Gasboy equipment voids this warranty.
5. THIS WARRANTY DOES NOT COVER ANY INDIRECT DAMAGES OR LOSS OF PRODUCT OR REVENUE. Repair or replacement of the defective part or component under the terms of this warranty is the EXCLUSIVE REMEDY. Gasboy is not liable for incidental, consequential or indirect damages or loss, including without limitation personal injury, death, property damage, environmental damages, product damages, loss of product, or loss of revenue or profits. Gasboy is not liable for any claims or lawsuits against the customer.
6. This warranty does not cover any pump or dispenser components in contact with fuels containing more than 5% methanol or 10% ethanol or 15% MTBE by Volume. This warranty does not cover any component(s) exposed to M85/E85 fuel or other alcohol rich fuel.

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