



GASBOY

SERIES 1000 CARDLESS FUEL MANAGEMENT SYSTEM OPERATION MANUAL

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GASBOY INTERNATIONAL LLC

GASBOY
SERIES 1000
CARDLESS
FUEL MANAGEMENT SYSTEM
OPERATION MANUAL

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GASBOY INTERNATIONAL LLC
LANSDALE, PA

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INTRODUCTION

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

OVERVIEW

The GASBOY Series 1000 Cardless Fuel Management System is a keypad-activated, microprocessor-based fuel control and data acquisition system.

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** later in this section.

Once your Series 1000 is operational, a typical scenario might be: A valid user drives his vehicle into the fueling area. He enters his vehicle number at the Series 1000 keypad and the system validates the entry. The system then requests various pieces of information depending on what additional entries are required for that vehicle (i.e., odometer readings, employee and personal identification numbers, 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.

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 vehicle number or second account number.
- Controlled access to product type, using nine loadable authorization codes.
- Limits on amount of fuel dispensed in a transaction, using 10 loadable limit codes.
- Automatic, immediate, transaction printing for hard copy backup or audit trail. Printing includes: transaction number, date, time, vehicle number, second account field (e.g., employee number), pump used, fuel type and quantity dispensed, price data (unit and total, if configured), odometer reading, 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 are dependent 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 (RS-232 or RS-422) for terminal and/or computer communications and an optional auxiliary port for receipt printer and/or tank monitoring system connection.
- 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.
- 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 account data (vehicle, second account field) and an odometer/hours reading at the data terminal before activating a pump.
- **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 a specified range of vehicle numbers at the Series 1000.
- **Gate Controller Option** - enables you to use a dedicated Series 1000 to control a gate.
- **Hours Option** - For users who monitor their equipment with an hour meter instead of an odometer. When this option is selected, transaction odometer field (ODOM) becomes HOURS; in the MPG option, MILES values are calculated in HOURS and MPG as HPG; in the reasonable odometer option, ODOM becomes HOURS.
- **Loadable Base Pump Option** - allows you to assign different starting pump numbers for sites having more than one Series 1000.
- **Manual Keypad Entry Option** - provides an additional field that allows you to request specific input from the Series 1000 user.
- **MPG/HPG Option** - calculates and maintains miles-per-gallon tallies for a set number of your vehicles. This option can also be ordered to calculate hours-per-gallon for users' equipment operating on an hour meter.
- **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.
- **Reasonable Odometer/Hours Check Option** - provides an odometer validity check for a set number of your vehicles. This option can also be ordered to provide a reasonable hours check for users' equipment operating on an hour meter.
- **Receipt Printer Option** - allows you to obtain a fueling transaction receipt.
- **Tank Monitor Interface** - enables you to communicate with a GASBOY TMS 500, Veeder-Root TLS, or an EBW AutoStik 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 Cardless Fuel Management System:

- *Installation Manual, C08922*
- *Operation Manual, C08923*
- *Diagnostic Manual, C08925*

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

- *Start-up Manual, C08921*

When you get to this point, we assume:

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

When you configure your system you need to know:

- 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
RT	initialize transaction file
LN	load starting transaction number
LD	load system date and time
LK	load 4-digit PIN 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 records depending on the type of lockout files you've chosen (negative or positive)

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* 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 fueling 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 at the Series 1000 fueling system.
- 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 (i.e., 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.
- The Series 1000 cardless system uses a second account field in addition to the standard vehicle field. The name of the second account field was selected by the system owner at the time of order and is configured into the system at the factory. This account field will be referred to in this manual as **Employee** or **EMP**.

Section 2

FUELING WITH THE SERIES 1000

The GASBOY Series 1000 Cardless 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 Cardless System is accomplished as follows:

1. Position your vehicle adjacent to the fuel dispensing equipment. Be sure to note the odometer reading (if your system uses this feature).

In its idle state, the Series 1000 LCD display alternates between an **ENTER VEHICLE** message and a personalized system message.

2. Using the keypad, enter your vehicle number and press ENTER. If you make a mistake while entering your vehicle number, press CLEAR and enter it again.

If the vehicle number entered is valid the system proceeds to the next step, otherwise an error message displays on the LCD and the system returns to its idle state.

3. If you are required to enter an odometer reading, the LCD displays: **ENTER ODOMETER**

Use the keypad to enter the mileage that appears on your vehicle's odometer (up to six digits, no tenths). The digits appear as they are entered. If you make a mistake, press CLEAR and enter the odometer reading again. When you enter the correct odometer reading, press ENTER.

4. If you are required to enter a second account field such as an employee number, the LCD displays: **ENTER EMP.**

Use the keypad to enter the employee number. The digits appear as they are entered. If you make a mistake, press CLEAR and enter the employee number again. When you have entered the correct number press ENTER.

If the number entered is valid, the system proceeds to the next step otherwise, an error message displays on the LCD and the system returns to its idle state.

5. If you are required to enter a Personal Identification Number (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 you press. If you make a mistake while entering your PIN, press CLEAR and enter it again.

You have three tries to enter your PIN. After the third unsuccessful try, the display returns to **ENTER VEHICLE** and you must start again at Step 2.

After a successful PIN entry the LCD displays: **SELECT PUMP**

6. Enter the desired pump, and press ENTER. If the pump is available and you are authorized to use it, the LCD displays: **PUMP #x IS READY** and you may proceed to dispense fuel.

If the **PUMP #x IS READY** is not displayed, 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, the system does not display **PUMP #x IS READY**, the display returns to **ENTER VEHICLE** and you must begin again at Step 2.

7. When you finish fueling your vehicle, turn off the fuel 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, vehicle number, account field 2 (**EMP**), date, time, pump number, product type, quantity dispensed, unit price and/or total price (if configured), odometer reading, and transaction message.

8. If you have the receipt printer option and you desire a receipt, return to the Series 1000 keypad. Enter your vehicle number and press ENTER. If a transaction receipt is available, 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. When the printing completes, open the printer door and remove the receipt.

COMMUNICATING WITH THE SERIES 1000

COMMUNICATION PORTS

The GASBOY Series 1000 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 baud. 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 Series 1000 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** in Section 4 for explanations of these modes. See Appendix A 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 Series 1000 must be able to transmit and receive full duplex, ASCII asynchronous data via an EIA-RS-232 connection.

The Series 1000 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 TERMINATIONS

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

	System TB	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	
	3	RX+	input	Received data into system
	4	RX-	input	
	5	N/A	--	

Pinout of GASBOY Short Haul Modem RS-232 Connector

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

NOTE: Pins 5 and 6 are tied to Pin 8 internally.

TB=Terminal block PIN=PIN connection on RS-232 connector I/O=input/output

INITIATING COMMUNICATION

Once your data terminal is connected directly to the Series 1000, 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, press RETURN to redisplay the **SIGN ON:** prompt. Repeat Step 4.

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 (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**. The system responds: **PASSWORD:**
5. Type a new 1- to 10-character password and press RETURN. The * prompt reappears.

Example:

```
*LS
PASSWORD: PASSWORD_
*
```

LOST OR FORGOTTEN PASSWORD

If you forget your password or cannot access the system because of a system memory failure, you can use diagnostic test 1 to change the password back to **GASBOY**. See the *Series 1000 Diagnostic Manual* for details.

SERIES 1000 OPERATING MODES

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 Section 3, **Communication Ports**).

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 through Port 1, 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 (i.e., 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 don't 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 zeroes.

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 will resume 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.

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 command 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.

Example: Short Help List

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

COMMANDS ARE :

LS VA VR IA IR RC PV PI LI AI
SI TI LR LP PP EP DP AP IP ZP
XP PT ST SS PC PH RP RT LN CV
LV RV VF CR LF PF LL PL LK SC
PS LD PD SD PR MO HE EX

*
```

Example: Expanded Help List

```

*HE
EXPANDED HELP LIST? <Y OR N> YJ

LS - Load sign-on code
VA - Validate all records
VR - Validate a record
IA - Invalidate all records
IR - Invalidate a record
RC - Check record validation
PV - Print valid record list
PI - Print invalid record 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 sorted trans
SS - Print trans for a specified
    no. 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.
CV - Clear veh file
LV - Load veh record
RV - Remove veh record
VF - Print veh file
CR - Check veh record
LF - Load fuel authorizations
PF - Print fuel authorizations
LL - Load fuel limits
PL - Print fuel limits

Press any key to continue...

LK - Load PIN key
SC - Load system config
PS - Print system config
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.

SYSTEM MAINTENANCE 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 **Getting Started**, you have already (with the help of your ASR) performed the initial loading of these commands. If you haven't, 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:

- **SC** load or change your system configuration
- **PS** print your system configuration parameters
- **LD** load the current date and time
- **PD** print the current date and time
- **SD** load the time for system shutdown and restart
- **PR** print the program's revision level and date
- **LK** load PIN key
- **MO** 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 **ENTER VEHICLE** prompt when the Series 1000 is not in use.
- **Number of pumps**
One digit (1 to 8) indicating the number of pumps served by the Series 1000.
- **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.

- **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 the **DP** command for more details.
- **Number of lines per page**
If you are using a 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).
- **PIN Entry**
When enabled, this feature requires users who enter a second account field (i.e., employee number) to enter a PIN.

- **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.

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.

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

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: **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.*

5. 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 5 through 8), the next prompt that appears is **NO. OF TANKS**. Skip to Step 9.*

6. Type a dollar sign **\$** if you have a penny pulsing pump and skip to Step 8. Type a **Q**, for quantity pulses. The system displays:

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

7. 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.*

8. Repeat this procedure from Step 6 until all your pumps pulse rates are defined. The system displays: **NO. OF TANKS: <1-8>**

9. Type the number of tanks in your configuration 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>
10. 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>
11. 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>**
12. Type the number of lines to print on each page. If you are using a terminal/printer combination, type 62, otherwise, type zero. The system displays:
- PIN ENTRY**
ENABLE OR DISABLE? <E OR D>
13. To disable the PIN entry feature, type **D** and press RETURN. The system will not prompt users for PIN entry.
- To enable the PIN entry feature, type **E** and press RETURN. The system requires a PIN entry for all users who enter a second account field at the keypad (i.e., employee number).
- The system displays:
- AUTO SITE SHUT DOWN**
ENABLE OR DISABLE? <E OR D>
14. 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 returns to the * prompt.
15. You have now completed the system configuration process. You can proceed with processing.

Changing the System Configuration

Later, when you make changes to the system configuration, you need not fill in data for every prompt. Press RETURN for each prompt until you reach the one you wish to change. Type your changed data and press RETURN. You can continue this process until the system configuration prompts end and the * prompt reappears. Pressing RETURN at a prompt without entering data preserves the original entry for that field. To exit the configuration process at any time, without going through all the prompts, press CTRL C.

Example:

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

SITE NO.: <XXXX> 0003

IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000

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

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

LINES PER PAGE <0-62>: 62

PIN ENTRY
  ENABLE OR DISABLE? <E OR D> E

AUTO SITE SHUT DOWN
  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.

*NOTE: For security reasons, **SYSTEM ID** is not printed.*

2. If you are using a CRT and chose **Y** (yes) at the **MO** command, your output is listed by the screenfull followed by the message **PRESS ANY KEY TO CONTINUE**.
3. Press any key to display the next group of commands.

Example:

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

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

PUMP #01  PULSES PER GAL.: $
PUMP #02  PULSES PER GAL.: 100
PUMP #03  PULSES PER GAL.: 10
PUMP #04  PULSES PER GAL.: 10

NUMBER OF TANKS:        4

PRICE DATA FORMAT:     NO PRICE DATA

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

LINES PER PAGE          62

PIN ENTRY:              DISABLED

Press any key to continue...

AUTO SITE SHUT DOWN:    ENABLED

*
```

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.
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.

Example:

If today's date is January 23, 1992 and the time is 9:30 AM, you would enter:

```
*LD
YEAR: 92↵
MONTH: 1↵
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.

1. At the * prompt, type **PD**. The listing prints and the * prompt reappears.

Example:

```
*PD
DATE=01/23/92  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**. 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.

Example:

```
*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.

1. At the * prompt, type **PR**. The information prints.

Example:

```
*PR
V8.1 A213981 7-1-92
*
```

LK - LOAD PIN KEY

Use the **LK** command to load a unique 4-digit key for PIN (personal identification number) calculations. You need to do this when your vehicle records contain a check digit requiring a second account entry and when the **PIN Entry** parameter in the **SC** command is set to **ENABLED**. You can require your system users to enter a PIN for each transaction. This protects the system from unauthorized use, such as someone keying in any number and attempting to fuel.

The system generates PINs by taking this 4-digit number and the employee number, and using an algorithm to calculate a PIN number for each record.

The 4-digit number you use in this command is assigned when you order your system. **Do not** change this PIN key number unless directed by an authorized service representative (ASR).

You can view the PIN number associated with a record by putting the system in diagnostic mode and running test 0. See the *Series 1000 Diagnostic Manual* for details.

1. At the * prompt, type **LK**. The system displays **PIN KEY NO.**
2. Type the 4-digit PIN key number and press RETURN. The * prompt reappears.

Example:

```
*LK
PIN KEY NO. 0015.
*
```

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 Series 1000 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**. The system prompts: **DISPLAY OUTPUT ONE SCREEN AT A TIME? <Y OR N>**.
2. Type **Y** to display output one screen at a time; type **N** to scroll the output to the end of the command.

Example:

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


VEHICLE FILE COMMANDS

DESCRIPTION

The Series 1000 Cardless System requires you to keep a record for each vehicle which will access your system. These records are stored in the vehicle file. Each vehicle record contains the following parameters:

- Vehicle number
- Fuel limitation code
- Fuel authorization code
- Check digit code
- Lockout flag

When a user enters a vehicle number at the Series 1000 keypad, the system uses the data stored in the vehicle file to determine which action to take next. If the vehicle file does not contain a record for the vehicle number entered at the keypad, access is denied for that user.

The maximum number of records that may be stored in the vehicle file was configured into your system's program and matches the number specified when your system was ordered.

Vehicle File Commands

The vehicle file commands are:

- **CV** clear vehicle file
- **LV** load/edit a vehicle record
- **RV** remove a vehicle record
- **VF** print vehicle file
- **CR** check a vehicle record

VEHICLE FILE PARAMETERS

Each vehicle record contains the following:

- **Vehicle number**

A numeric data field which identifies a particular vehicle and record. The number of digits in this field was configured into your system's program and matches the size specified when your system was ordered.

- **Fuel limitation code**

A one-digit field used to restrict the maximum quantity of product dispensed per transaction.

Fuel limitation is provided mainly as a safeguard to minimize accidental spillage. Valid entries for the fuel limitation code are 0-9. Each code is assigned a maximum quantity using the **LL** (load fuel limitations) command which is explained in Section 11 of this manual. The fuel limitation code generally assigned to a vehicle is one that matches the nearest quantity greater than the vehicle's tank size. If the user dispenses fuel to the quantity limit selected for his vehicle, the transaction automatically terminates. If the user wants additional product, he can initiate another transaction and dispense additional product up to the limit cutoff.

- **Fuel authorization code**

A one-digit field used to specify the type(s) of fuel a vehicle is allowed to access.

Valid entries for the fuel authorization code are 0-9. Codes 1-9 are assigned up to 5 fuel types per code. The user is permitted to access only the product type(s) loaded into the system for the fuel authorization code assigned to his vehicle. The authorization code **0** permits access to all fuels. The **LF** (load fuel authorizations) command, explained in Section 11 of this manual, is used to assign product type(s) to each authorization code.

- **Check digit code**

A one-digit field used to determine what additional data must be entered at the keypad.

Valid entries for the check digit code are 0-7. The additional entries required for each code are as follows:

Table 6-1. Check Digit Code Table

Code	Additional entries required
0	No additional entries required
1	Odometer entry required
2	Auxiliary entry required (i.e., Dept #)
3	Odometer and Auxiliary entries required
4	Second account field entry required (i.e., Employee) (See <i>NOTES</i>)
5	Odometer and second account field entries required (See <i>NOTES</i>)
6	Auxiliary and second account field entries required (See <i>NOTES</i>)
7	Odometer, Auxiliary, and second account field entry required (See <i>NOTES</i>)

*NOTES: If **PIN Entry** was enabled through the **SC** command, all entries with a second account field must have a PIN number.*

*** Second Account Field name is designated at time of order and entry is required only when the appropriate check digit (4, 5, 6, or 7) is loaded.*

- **Lockout flag**

A one-digit field used to set the lockout status of the vehicle.

This field is modified through the record validation commands explained in Section 7 of this manual. When the vehicle record is locked out (invalid), the lockout flag is set to **Y**. When the vehicle record is not locked out (valid), the lockout flag is set to **N**. The lockout flag is initially set to **N** (valid), when a new record is created.

CV - CLEAR VEHICLE FILE

Use the CV command only at initial start-up. This command erases any vehicle records previously stored in the vehicle file; they cannot be retrieved.

1. At the * prompt, type **CV**. The system displays: **CLEAR VEHICLE FILE? <Y OR N>:**

*NOTE: If you attempt to clear the vehicle file while transactions are in progress, the system will display: **TRANS IN PROGRESS!** You must wait until there are no transactions active to use this command.*

2. Type **Y** and press RETURN to remove all vehicle records from the vehicle file. Type **N** and press RETURN for the vehicle file to remain unchanged.

<pre>*CV CLEAR VEHICLE FILE? <Y OR N>: Y↵ *</pre>

LV - LOAD/EDIT A VEHICLE RECORD

Use the **LV** command to load a new record into the vehicle file or edit an existing record in the vehicle file.

Load a New Vehicle Record

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Type the vehicle number and press RETURN. The system displays: **LIM. CODE:**

*NOTE: If the vehicle record already exists, the system displays: **RECORD EXISTS ALREADY! EDIT THIS VEHICLE RECORD? <Y OR N>**. Instructions on editing an existing vehicle record are provided on the next page.*

*If you attempt to load/edit the vehicle file while transactions are in progress, the system will display: **TRANS IN PROGRESS!** You must wait until there are no transactions active to use this command.*

3. Type the one-digit fuel limitation code to be used for this vehicle and press RETURN. The system displays: **AUTH. CODE:**
4. Type the one-digit fuel authorization code to be used for this vehicle and press RETURN. The system displays: **CHECK DIGIT:**
5. Type the one-digit check digit code to be used for this vehicle and press RETURN. The **VEH. NO.** prompt reappears.
6. To load/edit additional vehicle records, repeat this procedure from Step 2.

To stop entering vehicle information, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example:

```
*LV
VEH. NO. 0543↵
LIM. CODE: 2↵
AUTH. CODE: 5↵
CHECK DIGIT: 1↵

VEH. NO. ↵
*
```

NOTE: This command contains additional prompts when used with the MPG/HPG and Reasonable Odometer/Hours Check options. See the sections covering these options for details.

Edit an Existing Vehicle Record

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Enter the vehicle number and press RETURN. If the vehicle record entered already exists in the vehicle file the system displays: **RECORD EXISTS ALREADY! EDIT THIS RECORD? <Y OR N>**

*NOTE: If the system displays **LIM. CODE:** immediately after entering the vehicle number, the vehicle number was not in the vehicle record file. Instruction on loading a new vehicle record are provided on the previous page.*

*If you attempt to load/edit the vehicle 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. Type **Y** to edit this vehicle record or **N** to leave the vehicle record unchanged. If you type **N**, the system displays **VEH. NO.** to request a different vehicle number. If you type **Y**, the system displays: **LIM. CODE:**
4. Type a new one-digit fuel limitation code and press RETURN or just press RETURN without typing a new code to leave the existing one unchanged. The system displays: **AUTH. CODE:**
5. Type a new one-digit fuel authorization code and press RETURN or just press RETURN without typing a new code to leave the existing one unchanged. The system displays: **CHECK DIGIT:**
6. Type a new one-digit check digit code and press RETURN or just press RETURN without typing a new code to leave the existing one unchanged. The **VEH. NO.** prompt appears.
7. To load/edit additional vehicle records, repeat this procedure from Step 2.

To stop entering vehicle information, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example:

```
*LV
VEH. NO. 0543.
RECORD EXISTS ALREADY!
EDIT THIS VEHICLE RECORD? <Y OR N>: Y.
LIM. CODE: 3.
AUTH. CODE:
CHECK DIGIT: 2.

VEH. NO.
*
```

RV - REMOVE A VEHICLE RECORD

Use the **RV** command to remove a vehicle record from the vehicle file.

1. At the * prompt, type **RV**. The system displays: **VEH. NO.**
2. Type the vehicle number that you wish to remove and press RETURN. The **VEH. NO.** prompt reappears.

*NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.*

*If you attempt to remove a vehicle 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 vehicle records from the vehicle file, repeat this procedure from Step 2.

To stop removing vehicle records, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example:

```
*RV
VEH. NO. 0543↵
VEH. NO.↵
*
```

VF - PRINT VEHICLE FILE

Use the **VF** command to print all the records in the vehicle file. This listing includes the vehicle number, fuel limitation code, fuel authorization code, check digit, and lockout flag.

1. At the * prompt, type **VF**. The listing prints.

Example:

```
*VF
VEH LIM AUTH CD LOCK
0543 3 5 2 N
1342 2 1 4 N
1811 5 7 1 Y
2816 8 0 0 N
3244 2 6 3 Y
4200 0 8 7 N
*
```

CR - CHECK A VEHICLE RECORD

Use the **CR** command to print a single vehicle record. This listing includes the vehicle number, fuel limitation code, fuel authorization code, check digit, and lockout flag.

1. At the * prompt, type **CR**. The system displays: **VEH. NO.**
2. Type the vehicle number that you wish to view and press RETURN. The listing prints and the **VEH. NO.** prompt reappears.

*NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.*

3. To view additional vehicle records, repeat this procedure from Step 2.

To stop viewing vehicle records, press RETURN at the **VEH. NO.** prompt.

The * prompt reappears.

Example:

```
*CR
VEH. NO. 0543.
VEH  LIM AUTH CD LOCK
0543  3      5   2   N
VEH. NO.
*
```


RECORD VALIDATION COMMANDS

DESCRIPTION

Users access the system by entering a vehicle number and sometimes a second account number (**Employee**, in this manual). The vehicle number corresponds to a vehicle record file stored within the system. The employee number is stored in a separate file and allows you additional criteria for restricting system access.

Record validation commands allow you to control access to your system by validating/invalidating these records by number. This process is called *lockout*.

Lockout works differently for each type of record. Vehicle records, in addition to vehicle file data, contain a lockout flag. When the record is valid, the flag is set to **N** (not locked out); when the record is invalid, the flag is set to **Y** (locked out). The employee file can be *negative* where you validate all records and invalidate individual records; or *positive*, where you invalidate all records and validate individual records.

Records can be validated/invalidated individually or in strings up to ten assorted record numbers. The number of records which may be validated/invalidated is limited to the number of vehicle and employee records configured into your system at order time.

Record Validation Commands

The record validation commands are:

- **VA** validate all records
- **VR** validate a single record
- **IA** invalidate all records
- **IR** invalidate a single record
- **RC** record validation check
- **PV** print valid record list
- **PI** print invalid record list

VA - VALIDATE ALL RECORDS

Use the **VA** command to validate all records in the vehicle or employee lockout file. This command creates a negative record file, where you must invalidate records individually to control access to the system.

1. At the * prompt, type **VA**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system then displays: **VALIDATE ALL RECORDS? <Y OR N>**.
3. Type **Y** and press RETURN to validate all records (negative) or **N** and press RETURN for the lockout file to remain unchanged.

Example:

```
*VA
VEHICLE OR EMPLOYEE? <V OR E> v.
VALIDATE ALL RECORDS? <Y OR N> y.
*
```


VR - VALIDATE A RECORD

Use the **VR** command to validate specific records in the lockout file. You can validate a single record or a string of up to 10 assorted records.

Validate a Single Record

1. At the * prompt, type **VR**. The system displays **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays: **ENTER NO.:**
3. Type the record number to be validated and press RETURN. If the record was previously invalid and made valid, the system displays **VALIDATED**, followed by *. If the record was previously valid, the system displays **NO. IS VALID**, followed by *. If an attempt is made to validate a vehicle record which does not currently exist in the vehicle file, the system displays: **XXXX - NO RECORD FOUND!** where **XXXX** is the record number entered.

Example:

```
*VR
VEHICLE OR EMPLOYEE? <V OR E> V
ENTER NO.: 1034
VALIDATED
*
```

Validate a String of Assorted Records

1. At the * prompt, type **VR**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file. The system then displays: **ENTER NO.:**
3. Type the record number to be validated followed by a comma.
4. Repeat Step 3 for up to 10 record numbers.
5. When you enter your last record number or you reach 10 entries, press RETURN. If at least one record was previously invalid, the system displays: **VALIDATED**, followed by *. If all of the entered records were previously valid, the system responds **NO. IS VALID**, followed by *. If a string of vehicle numbers is being validated, and one of the numbers entered in the string is not in the vehicle file, the system displays: **XXXX - NO RECORD FOUND!** where **XXXX** is the vehicle number not found in the file. No action will be taken on any records in the string after this record.

Example:

```
*VC
VEHICLE OR EMPLOYEE <V OR E> V.
ENTER NO. : 1234,2653,28,278.
VALIDATED
*
```

IA - INVALIDATE ALL RECORDS

Use the **IA** command to invalidate all records in the vehicle or employee lockout file. This command creates a positive record file, where you must validate records individually to control access to the system.

1. At the * prompt, type **IA**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays: **INVALIDATE ALL RECORDS? <Y OR N>**.
3. Type **Y** and press RETURN to invalidate all records (positive) or type **N** and press RETURN for the lockout file to remain unchanged.

Example:

```
*IA
VEHICLE OR EMPLOYEE? <V OR E> V␣
VALIDATE ALL RECORDS? <Y OR N> Y␣
*
```

IR - INVALIDATE A RECORD

Use the **IR** command to invalidate specific records in the lockout file. You can invalidate a single record or a string of up to 10 assorted records.

Invalidate a Single Record

1. At the * prompt, type **IR**. The system displays **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays: **ENTER NO.:**
3. Type the record number to be invalidated and press RETURN. If the record was previously valid and made invalid, the system displays **INVALIDATED**, followed by *. If the record was previously invalid, the system displays **NO. IS INVALID**, followed by *. If an attempt is made to invalidate a vehicle record which does not currently exist in the vehicle file, the system displays: **XXXX - NO RECORD FOUND!** where **XXXX** is the record number entered.

Example:

```
*IR
VEHICLE OR EMPLOYEE? <V OR E> V.
ENTER NO.: 1034.
INVALIDATED
*
```

Invalidate a String of Assorted Records

1. At the * prompt, type **IR**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays: **ENTER NO.:**
3. Type the record number to be invalidated followed by a comma.
4. Repeat Step 3 for up to 10 record numbers.
5. When you enter your last record number or you reach 10 entries, press RETURN. If at least one record was previously valid, the system displays: **INVALIDATED**, followed by *. If all of the entered records were previously invalid, the system responds **NO. IS INVALID**, followed by *. If a string of vehicle numbers is being invalidated, and one of the numbers entered in the string is not in the vehicle file, the system displays: **XXXX - NO RECORD FOUND!** where **XXXX** is the vehicle number not found in the file. No action will be taken on any records in the string after this record.

Example:

```
*IR
VEHICLE OR EMPLOYEE <V OR E> V.
ENTER NO.: 1234,2653,28,278.
INVALIDATED
*
```

RC - RECORD VALIDATION CHECK

Use the **RC** command to check on a record's validation status.

1. At the * prompt, type **RC**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays: **ENTER NO.:**
3. Type the record number you wish to check and press RETURN. The system displays: **NO IS VALID** or **NO. IS INVALID**, followed by *. If an attempt is made to check the status of a vehicle record which does not currently exist in the vehicle file, the system displays: **NO RECORD FOUND!**.

NOTE: The RC command accepts only single entries; you cannot check a string.

Example:

```
*RC
VEHICLE OR EMPLOYEE? <V OR E> V↵
ENTER NO.: 1034↵
NO. IS VALID
*
```

PV - PRINT VALID RECORD LIST

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

1. At the * prompt, type **PV**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays a list of all valid record numbers followed by *. If the vehicle file is selected, the system prints only those valid vehicle records loaded into the vehicle file. If the employee file is selected and is configured as a *negative record file*, the system displays: **TOO LONG TO LIST**.

Example:

```
*PV
VEHICLE OR EMPLOYEE? <V OR E> V.
VALID LIST
2334 2599 6414 6415 6416 6417 6418 6419 6420 6421 7210 7215
7216 7217 7218 7219 7220 7221 7550 7600
*
```

PI - PRINT INVALID RECORD LIST

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

1. At the * prompt, type **PI**. The system displays: **VEHICLE OR EMPLOYEE? <V OR E>**.
2. Type **V** to select the vehicle file or **E** to select the employee file and press RETURN. The system displays a list of all invalid record numbers followed by *. If the vehicle file is selected, the system prints only those invalid vehicle records loaded into the vehicle file. If the employee file is selected and is configured as a positive record file, the system displays:
TOO LONG TO LIST.

Example:

```
*PI
VEHICLE OR EMPLOYEE? <V OR E> V.
INVALID LIST

1222 3345 4999
*
```


RECORD VALIDATION/INVALIDATION ERROR MESSAGES

This section contains an alphabetic list of record 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 OTHER ENTRIES (IN)VALIDATED

You entered an invalid character in a string of numbers or a vehicle number which does not exist in the vehicle file. The system validates or invalidates all previous legal numbers within the string.

ENTRY TERMINATED - INVALID CHARACTER ENTERED

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

For the **RC** command, you tried to enter a comma (for string). The **RC** command can check only a single number.

ENTRY TERMINATED - TOO MANY DIGITS

You entered a number larger than the vehicle or employee size configured in your system. No action is taken for this entry.

LOCKOUT FILE IS FULL!

You attempted to add another record to a lockout file which is full.

XXXX - LAST RECORD (IN)VALIDATED

You entered a lockout string with more entries than were available in the lockout file. **XXXX** was the last record (in)validated.

XXXX - NO RECORD FOUND!

You entered a vehicle number which does not exist in the vehicle file. No action is taken for this entry.

TOO LONG TO LIST

For the **PV** command, you attempted to print the valid list for an employee file configured as a negative record file.

For the **PI** command, you attempted to print the invalid list for an employee file configured as a positive record file.

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 option, the Series 1000 cardless system allows the you to load a range of vehicle records into the vehicle file to be used for Delivery or Dipstick entries. This allows a user having access to a Delivery record (i.e., your supplier), the ability to enter delivery amounts right at the Series 1000 keypad as soon as the delivery is complete. This automatically increments your tank inventory and generates a transaction noted **DELIVERY** (see Section 21, **Fuel Delivery and Dipstick Option**).

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

Tank Inventory Commands

Tank Inventory Commands are:

- **LI** load initial inventory
- **AI** add to tank inventory
- **SI** subtract from tank inventory
- **TI** print an inventory listing
- **LR** 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**. 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.

Example:

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**. 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.

Example:

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**. 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.

Example:

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.

1. At the * prompt, type **TI**. 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.*

Example:

```
*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**. 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.

Example:

```
*LR
TANK #2↵
REORDER: 700↵

TANK #↵

*
```


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. 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:

- **LP** load pump data
- **PP** print pump data
- **DP** disable a pump
- **EP** enable a pump
- **AP** activate a pump
- **IP** inactivate a pump
- **ZP** zero pump totalizers
- **XP** 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 will be 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**. 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. This code denotes a specific type of fuel. You assign fuel codes and describe your fuel types before you load vehicle records. For more information on fuel type assignment, see the Fuel Authorization Code parameter in Section 11. 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.

Example:

```
*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. Press RETURN for each prompt until you reach the one you wish to change. Type your changed data and press RETURN. You can continue this process until the load pump prompts end and the * prompt reappears. Pressing RETURN at a prompt without entering data preserves the original entry for that field. To exit the load pump process at any time, without going through all the prompts, press CTRL C.

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), and number of gallons dispensed through 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.*

1. At the * prompt, type **PP**. A listing similar to the following prints.

Example:

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

EP - ENABLE A PUMP

1. At the * prompt, type **EP**. The system displays **PUMP NO.**
2. Type the number of the pump to be enabled and press RETURN. This allows access to the pump.
3. 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.

Example:

```
*EP
PUMP NO. 2↵
PUMP NO. ↵
*
```

DP - DISABLE A PUMP

1. At the * prompt, type **DP**. 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.

Example:

```
*DP
PUMP NO. 2↵
PUMP NO. ↵
*
```

The status of each pump is indicated with the **PP** command.

```
*PP
P#  TANK  FUEL#  FUEL NAME    PRICE    GALLONS
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. The pump remains disabled until you enable it using the **EP** command.

```
*PT
SITE 1234

TRAN VEH EMP    DATE    TIME  P# PR QUANTITY  ODOM  ERROR
1023 7596 2813   03/01/92 09:33 02 02    0.0   045287 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 below. The pump remains disabled until you enable the pump using the **EP** command.

TRAN	VEH	EMP	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
0930	7596	2813	03/05/92	15:35	03	03	10.3	005421	
0931	3344	1122	03/05/92	15:35	01	01	0.0	000000	
PUMP #01 DISABLED									
0932	3344	1122	03/05/92	15:35	04	02	10.611	000000	

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 transaction except that the information which is normally input at the keypad (vehicle number, employee number, odometer) appears as all 9s. The limit cutoff for an **AP** transaction is determined by the limit entered for limit code 9 (see Section 11, **LL- Load Fuel Limitations**).

1. At the * prompt, type **AP**. The system displays: **PUMP NO.**
2. Type the pump number and press RETURN. The * prompt reappears.

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

*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.*

Example:

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

The data normally read from the keypad and the odometer field is filled with nines. The message **TERM ACTIVATE** appears in the **ERROR** field.

Example:

```
SITE 1234

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0874 9999 9999 05/20/92 09:17 01 01 22.21 999999 TERM ACTIVATE
```

At the completion of fueling, the **TERM ACTIVATE** message may be overwritten by one of these messages: **EMERG. STOP** or **PWR FAIL**.

Example:

```
SITE 1234

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
1904 9999 9999 12/07/92 13:12 03 06 15.1 999999 PWR FAIL
```

IP - INACTIVATE A PUMP

Use the **IP** command 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** appears in the error field for that transaction.

1. At the * prompt, type **IP**. 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.***

Example:

```
*IP
PUMP NO. 1↵
*
```

Example:

```
SITE 1234

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0021 0543 2813 05/21/92 15:42 01 01 16.33 054786 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**.

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**. The system displays **RESET PUMP TOTALIZERS? <Y OR N>**
2. Type **Y** and press RETURN to reset the totalizers to zero. Type **N** and press RETURN to leave the totalizers 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.

Example:

```
*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, 500, 250, and 1000. If you have a penny pulsing pump, a dollar sign (\$) appears in the pulses per gallon field.

1. At the * prompt, type **XP**. The system prints the data. The * prompt reappears.

Example:

***XP**

-PUMP TIMEOUTS-
IN SECONDS

P#	PULSES PER GALLON	BEFORE PULSES	AFTER PULSES
01	\$	080	060
02	0010	080	080
03	0010	120	120
04	1000	120	080

*

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 number within a field (for example, vehicle number 9381)
- compacted, string of numeric data, no headings
- compacted with host interaction, the system waits for host confirmation before sending another transaction

Transaction Commands

The transaction commands are:

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

TRANSACTION HEADINGS

No matter what type of transaction printing you choose, you always get the same fields. The only difference is with the **PT**, **ST**, and **SS** commands, you get a formatted report and with the **PC** and **PH** commands, you get a string of unformatted data. Additionally, the **PC** and **PH** formats include a 3-digit checksum at the end of each transaction.

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

SITE	- site number
TRAN	- transaction number
VEH	- vehicle number
EMP	- employee number (second account field)*
DEPT	- department number manual entry field, Manual Keypad Entry option only*
DATE	- Gregorian date
TIME	- 24-hour (military) time
P#	- pump number
PR	- product type
QUANTITY	- quantity of product dispensed
PRICE	- unit price of product (depends on Price Data Format setting)
\$TOTAL	- total calculated transaction price (depends on Price Data Format setting)
ODOM/C HOURS	- odometer mileage entry or current hours entry
MILES/TIME E	- miles travelled, hours elapsed, MPG/HPG option only
MPG/HPG	- miles/hours-per-gallon calculation, MPG/HPG option only
ERROR	- transaction message

- * You designate the name for the second account field (**EMP**) and (if you have the option) the manual entry field (**DEPT**) at the time of order. 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 Printing with the Link Terminal and Okidata Printer

If you are using the Link data 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 A 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.

1. At the * prompt, type **PT**. Completed transactions print as shown in the following example. The * prompt reappears.

Example:

***PT**

SITE 1234

TRAN	VEH	EMP	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
0221	2430	5967	05/20/92	15:30	01	01	8.28	054880	
0222	9012	5678	05/20/92	15:37	03	03	13.6	010222	
0223	9675	8132	05/20/92	15:39	02	02	11.6	000000	
0224	9675	8132	05/20/92	16:23	01	01	0.0	000000	PUMP IN USE
0225	6541	8523	05/20/92	16:24	01	01	5.02	082311	LIMIT CUTOFF
0226	9675	8132	05/20/92	16:25	02	02	7.1	000000	

*

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/HPG.

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

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.

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.

Example:

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

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0022 3344 1122 10/16/92 16:28 01 01 11.71 000000
0023 3344 1122 10/16/92 16:30 01 01 9.64 000000

TOT GALS: 21.350

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0025 1430 1122 10/17/92 10:44 04 02 25.142 000000 LIMIT CUTOFF

TOT GALS: 25.142

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0021 7596 2813 10/16/92 15:11 01 01 16.33 054786

TOT GALS: 16.330

0024 0243 2813 10/17/92 08:55 02 02 12.3 087462

TOT GALS: 12.300
*
```


SS - PRINT TRANSACTION FOR SPECIFIED NUMBER WITHIN A FIELD

Use the **SS** command to print transactions for a specific value within a field (for example, vehicle number 3344). 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.

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 NO.:**
3. Type the number value for transactions you wish to sort and press RETURN. The system displays **SECOND SORT**:
4. If you do not wish to sort by two fields, press RETURN at the **SECOND SORT** prompt.

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 is 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.

Example:

```
*SS
FIRST SORT: VEH
ENTER NO. : 3344
SECOND SORT: PR

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0022 3344 1122 10/16/92 16:28 01 01 11.71 000000
0023 3344 1122 10/16/92 16:30 01 01 9.64 000000

TOT GALS: 21.350

0028 3344 5835 10/17/92 11:14 04 02 35.137 000000 LIMIT CUTOFF

TOT GALS: 35.137

*
```

PC - PRINT COMPACTED TRANSACTIONS

Use the **PC** command to output transaction data in a *compacted* format, without spaces, headings, or punctuation. This format is generally used to send transactions to a computer. Error messages are represented by a two-digit code, and the last three digits of each line indicate the check sum, a total of characters within the transaction.

- At the * prompt, type **PC**. The output appears as shown in the following example.

Example:

```
*PC
05890000167594302033092125901010008760010190000892600000009161
05890000212345678033092130002020001114012590000140323512309142
05890000399999999033092183004040002006011690000234599999932232
058900004123456780330921830050000000000000000000005856819138
05890000500010002040292082303030011740010590001243300452301122
05890000667594302040292120602020008126012590001023100000009144
*
```

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

```
*PC
0589|0001|6759|4302|033092|1259|01|01|00087600|1019|00008926|000000|09|161
0589|0002|1234|5678|033092|1300|02|02|00011140|1259|00001403|235123|09|142
0589|0003|9999|9999|033092|1830|04|04|00020060|1169|00002345|999999|32|232
0589|0004|1234|5678|033092|1830|05|00|00000000|0000|00000000|058568|19|138
0589|0005|0001|0002|040292|0823|03|03|00117400|1059|00012433|004523|01|122
0589|0006|6759|4302|040292|1206|02|02|00081260|1259|00010231|000000|09|144
*
A      B      C      D      E      F      G      H      I      J      K      L      M      N
```

A is a 4-digit site number

B is a 4-digit transaction number

C is a 4-digit vehicle number

D is a 4-digit employee number

E is a 6-digit Gregorian date

F is a 4-digit 24 hour time

G is a 2-digit pump number

H is a 2-digit product code

I is a 8-digit quantity

J is a 4-digit unit price

K is an 8-digit total price

L is a 6-digit odometer reading

M is a 2-digit error message code *

N is a 3-digit check sum

- * See the next page for a listing of message codes and their meanings. See **Transaction Messages** later in this section for an explanation of the message.

Message codes and their meanings are:

01 - TIMED OUT
02 - LOCKED OUT
03 - INVALID FUEL
04 - PUMP IN USE
06 - LIMIT CUTOFF
08 - TTY CMD
09 - COMPLETED TRANSACTION
11 - GATE ENTRY (Gate Controller option only)
13 - INVALID ODOM (MPG & Reasonable Odometer options only)
14 - PIN ERROR
15 - ALLOC LIMIT (Fuel Allocation Option only)
16 - NO ALLOC (Fuel Allocation Option only)
17 - PUMP DISABLED
19 - INVALID PUMP
23 - EMERG. STOP
29 - REORDER FUEL
31 - PWR FAIL
32 - TERM ACTIVATE
34 - INVALID TANK (Fuel Delivery and Dipstick Option Only)
35 - DIPSTICK (Fuel Delivery and Dipstick Option Only)
51 - PMP SW ERROR (Pump Switch Timer Option Only)
55 - DELIVERY (Fuel Delivery and Dipstick Option Only)

PH - PRINT COMPACTED TRANSACTIONS WITH HOST INTERACTION

Use the **PH** command to output compacted transactions. This command is similar to the **PC** command with the following exceptions:

Instead of sending transactions, one after another until they are all printed, the microprocessor sends one transaction and waits for a response from the host computer. If the computer acknowledges the check sum of the last transaction (received check sum agrees with received transaction characters), 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 check sum of the last transaction (received check sum does not agree with received transaction characters), 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**.

Example:

```
*PH
0589000167594302033092125901010008760010190000892600000009161A
0589000212345678033092130002020001114012590000140323512309142A
0589000399999999033092183004040002006011690000234599999932232A
05890004123456780330921830050000000000000000000005856819138A
0589000500010002040292082303030011740010590001243300452301122A
0589000667594302040292120602020008126012590001023100000009144A
*
```

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. Type **N** and press RETURN to leave the transaction 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.

Example:

```
*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.

WARNING:

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.

Example:

```
*RP
ENTER NO. : 0124↵
*
```

For an example using the **RP** command, see **Obtaining a Printout of Specific Transactions** later in this section.

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.

Example:

```
*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 transactions. The number may vary depending on your system specifications. 967 transactions is typical for systems with field sizes of 4-digits each for the vehicle and second account field and no optional software features.

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.

WARNING:

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. When the first transaction finishes printing, press CTRL C to stop printing so you can review the transaction. The * prompt reappears.

Remember, when you use the **RP** command, you set the number to the transaction you want, therefore, it is the first one printed.

6. Type **RP** to reset your transaction pointer back to its original position. The system displays **ENTER NO.:**
7. Type the transaction number you noted in Step 2 and press RETURN. Your transaction pointer is now back to its original position.

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 the **PC** command 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 vehicle number in the delivery range was used to enter a fuel delivery and update the inventory totalizer.

DIPSTICK

Fuel Delivery and Dipstick Option only. A vehicle number in the dipstick range was used to enter a dipstick reading.

EMERG. STOP

The Emergency Stop button was pressed.

GATE ENTRY

Gate Controller only. The gate controller was activated through the Series 1000.

INVALID FUEL

User attempted access to fuel product not authorized to his account; no access permitted.

INVALID ODOM

MPG option only. Appears in transaction listings. An incorrect odometer reading was entered. Product may be dispensed in the next transaction.

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 inputting a fuel delivery or dipstick transaction.

LIMIT CUTOFF

Limitation was reached, pump was turned off.

LOCKED OUT

Record invalidated; no access permitted.

NO ALLOC

Allocation option only. A user with no allocation attempted to obtain fuel. No access was permitted.

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 (i.e., 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).

FUELING RESTRICTION COMMANDS

DESCRIPTION

You use fueling restriction commands to load into the system, values that correspond to various parameters stored in each vehicle record. For example, when you load vehicle records you assign each record a fuel authorization code from zero to nine. You use the **LF** command to load allowable fuels for each code. A user can access only the fuels that correspond to the authorization code stored in the vehicle record he is using.

Likewise, you assign each vehicle record a limitation number from zero to nine. Then you use the **LL** command to assign limitation values to each of those ten digits. The user is restricted to the amount assigned to the limitation code stored in the vehicle record he is using.

Fueling Restriction Commands

The fueling restriction 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 fuel authorization codes. There are ten fuel 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.

At system start up, 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. When you load or edit a vehicle record using the **LV** command, you set the authorization code for that vehicle to a value of 0 to 9. Users accessing the system with that vehicle record can only access 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 add a new 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.

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.
5. When all desired fuel assignments are loaded, the **AUTH NO.:** prompt reappears. Repeat this procedure from Step 2 to define fuel types for additional authorization codes.

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

Example:

```
*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.

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

Example:

***PF**

```
AUTH. CODE: 1  ALLOWS FUELS...04 03
AUTH. CODE: 2  ALLOWS FUELS...02
AUTH. CODE: 3  ALLOWS FUELS...03 26 13 02 16 01
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 fuel limitation code. There are ten fuel limitation codes (0 to 9). At system start up you decide what quantity limits to impose and assign a limitation code to each quantity. When vehicle records are loaded using the **LV** command, you set the fuel limitation code for that vehicle record with the desired number. Usually, the limitation code used 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.

When a user accesses the system and reaches the limit assigned to his vehicle record, the pump automatically shuts off and sends a **LIMIT CUTOFF** error message.

For example, assume that vehicle record number 9381 is assigned to 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 vehicle record a limitation code of 4 using the **LV** command.

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 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.

Example:

```
*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.

1. At the * prompt, type **PL**. The listing prints.

Example:

```
*PL

LIMITS :

0 =      250
1 =       25
2 =       20
3 =       30
4 =       50
5 =       70
6 =      100
7 =      120
8 =      150
9 =      200
*
```

POLLING TRANSACTION INFORMATION

METHODS OF POLLING

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** command 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 the **RP** command 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. Type the number 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** command 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 the **RP** command 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

THE FOLLOWING SECTIONS CONTAIN OPTIONAL
FEATURES WHICH MAY OR MAY NOT PERTAIN
TO FEATURES INCORPORATED IN YOUR SYSTEM.

ACTIVATE PUMP (AP) DATA ENTRY OPTION

DESCRIPTION

This option allows you to enter account data and an odometer/hours reading at the data terminal before activating a pump. The system prompts you for the vehicle number and if required by the check digit for the vehicle entered, an odometer/hours reading and a second account field (i.e. EMP) before allowing you to select a pump. When this transaction is recorded, the digits of information normally retrieved from the Series 1000 keypad 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**. The system displays **VEH :**

*NOTE: When a vehicle number is entered, the system checks to see if a record exists in the vehicle file and if the record is unlocked. If there is no record, the message **NO RECORD FOUND!** appears. If the record is locked out, the message **LOCKED OUT** appears. Both conditions terminate the command.*

2. Type any data for this field and press RETURN or just press RETURN to bypass all data entries and select a pump (Step 5). If you entered a valid vehicle number and the vehicle check digit requires an employee entry, the system displays: **EMP :**
3. Type any data for this field and press RETURN or just press RETURN to skip this field. If the vehicle check digit requires an odometer/hours entry, the system displays: **ODOM:** or **HOURS:**

*NOTE: When an **EMP** (second account field) is entered, the number 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 RETURN to skip this field. The system displays: **PUMP NO.**
5. Type the number of the pump you wish to access. The * prompt reappears.

The data normally retrieved from the Series 1000 keypad is filled with the data entered at the terminal. If no data is entered for a particular field, that field is filled with nines.

Example without Hours option:

```
*AP
VEH : 1234.
EMP : 16.
ODOM : 56750.
PUMP NO. 1.
*
```

Example:

```
SITE 1234

TRAN VEH EMP DATE TIME P# PR QUANTITY ODOM ERROR
0874 1234 0016 10/23/92 15:52 01 01 22.21 056750 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.

- **Manual Keypad Entry option**

After the **VEH** and/or **EMP** 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 option**

If a vehicle number is entered and the MPG calculation/reasonable odometer check option is enabled for the record, the odometer entry is checked against the last odometer reading entered. If the difference is greater than the maximum miles between fueling range (**LM** command) or less than the recorded odometer, the entry is considered invalid. If the MPG calculation/reasonable odometer check option is enabled and you press RETURN at the **ODOM** prompt, it is considered an invalid odometer and is treated as described below. The odometer is recorded as **000000**.

If a valid odometer is entered, you are prompted for the pump number and fueling is permitted. At the end of the fueling transaction, the **MILES** and **MPG** fields in the transaction, show the miles traveled and the calculated MPG. The vehicle file is updated. The **E ODOM** field shows the latest odometer entry, the **MILES** field shows the new accumulated miles, the **GALLONS** field increases by the number of gallons pumped, and a new MPG is calculated. Status flags may change based on this new data.

If the odometer is invalid, the user is reprompted up to the number of times specified in the **NO. OF RETRIES** system configuration entry (**SC** command). The system accepts the next odometer entered and generates a transaction.

- If the entry is valid or invalid but greater than the last recorded odometer, the **MILES** and the **MPG** transaction fields show the miles traveled and the calculated MPG.
- If the entry is invalid but less than the last recorded odometer, the **MILES** and **MPG** transaction fields contain question marks.

The system updates the vehicle and transaction files as follows:

- In the vehicle file, if the odometer entry is valid or invalid but greater than the beginning odometer, the system updates the following fields, **E ODOM**, to show the odometer entry; **MILES** to show the new, accumulated miles; **GALLONS**, to show the accumulated number of gallons pumped; and **MPG**, to show the new calculation. Status flags may also change.

If the odometer entry is invalid but less than the beginning odometer, the **E ODOM** field is not updated (this would result in negative miles). **MILES** does not change, **GALLONS** increases by the number of gallons pumped, and **MPG** is recalculated. The status flag is updated to >> to indicate that fueling occurred but the last odometer was not recorded.

- In the transaction file, if the odometer entry is valid or greater than the last recorded odometer, the **MILES** and **MPG** fields are updated. If the odometer entry is less than the last recorded odometer, the **MILES** and **MPG** fields contain question marks.

- **Hours Per Gallon option**

If a vehicle number is entered and the HPG option is enabled for the record, the hours entry is checked against the last hours reading entered. If the difference is greater than the maximum hours between fueling range (**LM** command) or less than the recorded hours, the entry is considered invalid. If the HPG option is enabled and you press RETURN at the **HOURS** prompt, it is considered an invalid hours and is treated as described below. The hours are recorded as **000000**.

If a valid hours is entered, you are prompted for the pump number and fueling is permitted. At the end of the fueling transaction, the **TIME E** and **HPG** fields in the transaction, show the time elapsed and the calculated HPG. The vehicle file is updated. The **E HOURS** field shows the latest hours entry, the **A HOURS** field shows the new accumulated hours, the **GALLONS** field increases by the number of gallons pumped, and a new HPG is calculated. Status flags may change based on this new data.

If the hours are invalid, the user is reprompted up to the number of times specified in the **NO. OF RETRIES** system configuration entry (**SC** command). The system accepts the next hours entered and generates a transaction.

- If the entry is valid or invalid but greater than the last recorded hours, the **TIME E** and the **HPG** transaction fields show the time elapsed and the calculated HPG.
- If the entry is invalid but less than the last recorded hours, the **TIME E** and **HPG** transaction fields contain question marks.

The system updates the vehicle and transaction files as follows:

- In the vehicle file, if the hours entry is valid or invalid but greater than the beginning hours, the system updates the following fields, **E HOURS**, to show the hours entry; **A HOURS** to show the new, accumulated hours; **GALLONS**, to show the accumulated number of gallons pumped; and **HPG**, to show the new calculation. Status flags may also change.

If the hours entry is invalid but less than the beginning hours, the **E HOURS** field is not updated (this would result in negative hours). **A HOURS** does not change, **GALLONS** increases by the number of gallons pumped, and **HPG** is recalculated. The status flag is updated to >> to indicate that fueling occurred but the last hours were not recorded.

- In the transaction file, if the hours entry is valid or greater than the last recorded hours, the **TIME E** and **HPG** fields are updated. If the hours entry is less than the last recorded hours, the **TIME E** and **HPG** fields contain question marks.

- **Reasonable Odometer option**

If a vehicle number is entered and the reasonable odometer check option is enabled for the record, the odometer entry is checked against the last odometer reading entered. If the difference is greater than the maximum miles between fueling range (**LM** command) or less than the recorded odometer, the entry is considered invalid. If the reasonable odometer check option is enabled and you press RETURN at the **ODOM** prompt, it is considered an invalid odometer and treated as described below. The odometer is recorded as 000000.

If the odometer is valid, fueling is allowed. When the transaction completes, the system updates the **ODOM** field in the vehicle record to show the latest odometer entry. The status flag may also change.

If the odometer is invalid, the user is re-prompted. (You can indicate the number of entry retries allowed using the **SC** command.) If the maximum number of retries is exceeded, the system accepts the next odometer entered and fueling is allowed. When fueling is complete, a transaction is generated as usual. The vehicle record in the vehicle file is updated at this time. The odometer entry is recorded in the **ODOM** field. The status flag may change based on the new data.

- **Reasonable Hours option**

If a vehicle number is entered and the reasonable hours check option is enabled for the record, the hours entry is checked against the last hours reading entered. If the difference is greater than the maximum hours between fueling range (**LM** command) or less than the recorded hours, the entry is considered invalid. If the reasonable hours check option is enabled and you press RETURN at the **HOURS** prompt, it is considered an invalid hours and treated as described below. The hours entry is recorded as 000000.

If the hours are valid, fueling is allowed. When the transaction completes, the system updates the **E HOURS** field in the vehicle record to show the latest hours entry. The status flag may also change.

If the hours are invalid, the user is re-prompted. (You can indicate the number of entry retries allowed using the **SC** command.) If the maximum number of retries is exceeded, the system accepts the next hours entered and fueling is allowed. When fueling is complete, a transaction is generated as usual. The vehicle record in the vehicle file is updated at this time. The hours entry is recorded in the **E HOURS** field. The status flag may change based on the new data.

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 field (**Vehicle** or **Employee**) 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 user to be authorized can only get the amount in the allocation totalizer minus what the first user 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 enters his vehicle number, his 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 (i.e., 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**. The system displays: **ALLOC OFFSET: XXXX**

XXXX is the existing allocation offset.

2. Type a new allocation offset and press RETURN.

To keep the existing allocation offset, press RETURN.

If the new allocation offset is acceptable, the * prompt reappears. If the allocation offset is unacceptable, the system responds with question marks.

Example:

```
*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**. The system displays: **ALLOCATION 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 **ALLOCATION NO.** prompt. Repeat this procedure from Step 2 to load additional allocation amounts.
4. To stop loading amounts, press RETURN at the **ALLOCATION NO.:** prompt. The * prompt reappears.

Example:

```
*LA
ALLOCATION NO. : 0025 ↵
AMOUNT: 1200↵
ALLOCATION 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**. The system displays: **ALLOCATION NO. :**
2. Type the beginning totalizer number of the block and press RETURN. The system displays: **TO ALLOCATION 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.

Example:

```
*ML
```

```
ALLOCATION NO. : 0030↵
```

```
TO
```

```
ALLOCATION 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**. The system displays: **ALLOCATION 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 **ALLOCATION NO.:** prompt reappears.
4. To continue adding amounts to other totalizers, repeat this procedure from Step 2.

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

Example:

```
*AA
ALLOCATION NO. : 0030↵
AMOUNT: 100.0↵
ALLOCATION 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**. The system displays: **ALLOCATION NO. :**
2. Type the beginning totalizer number of the block and press RETURN. The system displays: **TO ALLOCATION 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.

Example:

```
*MA
ALLOCATION NO. : 0030↵
TO:
ALLOCATION 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**. The system displays: **ALLOCATION 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.

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

Example:

```
*SA
ALLOCATION NO. : 0030↵
AMOUNT: 100.000↵
ALLOCATION 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**. The system displays: **ALLOCATION NO. :**
2. Type the beginning totalizer of the block and press RETURN. The system displays: **TO ALLOCATION 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.

Example:

```
*MS
ALLOCATION NO. : 0030↵
TO:
ALLOCATION 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**. The system displays: **ALLOCATION NO. :**
2. Type the number of the allocation totalizer and press RETURN.
3. To continue checking other totalizers, repeat this procedure from Step 2.

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

Example:

```
*CA
ALLOCATION NO. : 0030↵
ALLOCATION      97.000
ALLOCATION 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** later in this section).

1. At the * prompt, type **AT** command. The * prompt appears.

Example:

```
*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** later in this section). This command is especially helpful for systems where only a small percentage of the totalizers contain non-zero values.

1. At the * prompt, type **NZ**. The * prompt appears.

Example:

```
*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.

1. At the * prompt, type **PA**. The listing prints.

Example (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**. The system displays: **ALLOCATION NO. :**
2. Type the beginning totalizer number of the block and press RETURN. The system displays: **TO ALLOCATION NO. :**
3. Type the ending totalizer number of the block and press RETURN. The listing prints.

Example:

```
*MP
ALLOCATION NO. : 0095↵
      TO:
ALLOCATION 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.

FUEL DELIVERY AND DIPSTICK OPTION

DESCRIPTION

This option allows you to load a specific range of vehicle numbers into the vehicle file to be used for fuel deliveries or dipstick readings. 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

Listed below are the ranges of vehicle numbers the Series 1000 cardless system reserves for delivery and dipstick entries.

Vehicle Size	Range		Type
2 digits	80	- 89	delivery
2 digits	90	- 99	dipstick
3 digits	980	- 989	delivery
3 digits	990	- 999	dipstick
4 digits	9980	- 9989	delivery
4 digits	9990	- 9999	dipstick
5 digits	99980	- 99989	delivery
5 digits	99990	- 99999	dipstick
6 digits	999980	- 999989	delivery
6 digits	999990	- 999999	dipstick
7 digits	9999980	- 9999989	delivery
7 digits	9999990	- 9999999	dipstick
8 digits	99999980	- 99999989	delivery
8 digits	99999990	- 99999999	dipstick

LOAD A DELIVERY OR DIPSTICK VEHICLE RECORD

Use the **LV** (load vehicle) command to load a delivery or dipstick vehicle record. The **LV** command is executed in the same fashion explained in Section 6, **Vehicle File Commands**, with the following changes. After you enter the vehicle number and the system determines that the number entered falls in the range of a delivery or dipstick record, the system displays: **<< DELIVERY VEHICLE >>** or **<< DIPSTICK VEHICLE >>**. The system then prompts only for the check digit.

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Enter a vehicle number within the range set aside for Delivery or Dipstick vehicles. The system displays: **<< DELIVERY VEHICLE >>** or **<< DIPSTICK VEHICLE >>** followed by **CHECK DIGIT:**

*NOTE: If the vehicle record already exists, the system displays: **RECORD EXISTS ALREADY! EDIT THIS VEHICLE RECORD? <Y OR N>**. A **Y** response allows you to edit the check digit for this record. A **N** response re-prompts you for another vehicle.*

3. Type the 1-digit check digit code to be used for this vehicle and press RETURN. The **VEH. NO.** prompt reappears.
4. To load/edit additional vehicle records, repeat this procedure from Step 2.

To stop entering vehicle information, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example:

```
*LV
VEH. NO. 9985.
<< DELIVERY VEHICLE >>
CHECK DIGIT: 4.
VEH. NO.
*
```

FUEL DELIVERIES

To enter a fuel delivery at the Series 1000 keypad:

1. At the **ENTER VEHICLE** prompt, enter your vehicle number on the keypad and press ENTER. If you make a mistake while entering your vehicle number, press CLEAR and enter it again.

If the vehicle number entered is valid the system will proceed to the next step, otherwise the system will show an error message at the LCD and will return to its idle state.

2. If you are required to enter a second account field such as an employee number, the LCD displays: **ENTER EMP.**

Use the keypad to enter the employee number. The digits appear as they are entered. If you make a mistake, press CLEAR and enter the employee number again. When you have entered the correct number press ENTER.

If the number entered is valid, the system will proceed to the next step, otherwise, the system will show an error message at the LCD and return to its idle state.

3. If you are required to enter a Personal Identification Number (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 you press. If you make a mistake while entering your PIN, press CLEAR and enter it again.

You have three tries to enter your PIN. After the third unsuccessful try, the display returns to **ENTER VEHICLE** and you must start again at Step 2.

4. After a successful PIN entry the LCD displays: **ENTER TANK #.**
5. Type the number of the tank that received a fuel delivery and press ENTER.

You have three tries to select a valid tank. If after three attempts, you have not selected a valid tank, the **ENTER VEHICLE** message reappears and you must begin again at Step 1.

If you select a tank that is not available, this message appears: **NO SUCH TANK!**

If you select a valid tank, the LCD displays: **ENTER QUANTITY.**

6. 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 and **INVALID TANK** for an error transaction.

Example:

SITE 1234

TRAN	VEH	EMP	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
1209	9985	1123	10/23/92	14:36	03	00	350.	000000	DELIVERY

DIPSTICK READINGS

To enter a dipstick reading at the Series 1000 keypad:

1. At the **ENTER VEHICLE** prompt, enter your vehicle number on the keypad and press ENTER. If you make a mistake while entering your vehicle number, press CLEAR and enter it again.

If the vehicle number entered is valid the system will proceed to the next step, otherwise, the system will show an error message at the LCD and will return to its idle state.

2. If you are required to enter a second account field such as an employee number, the LCD displays: **ENTER EMP.**

Use the keypad to enter the employee number. The digits appear as they are entered. If you make a mistake, press CLEAR and enter the employee number again. When you have entered the correct number press ENTER.

If the number entered is valid, the system will proceed to the next step otherwise, the system will show an error message at the LCD and return to its idle state.

3. If you are required to enter a Personal Identification Number (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 you press. If you make a mistake while entering your PIN, press CLEAR and enter it again.

You have three tries to enter your PIN. After the third unsuccessful try, the display returns to **ENTER VEHICLE** and you must start again at Step 2.

4. After a successful PIN entry the LCD displays: **ENTER TANK #.**
5. Type the number of the tank where you want to enter a dipstick reading and press ENTER.

You have three tries to select a valid tank. If after three attempts, you have not selected a valid tank, the **ENTER VEHICLE** message reappears and you must begin again at Step 1.

If you select a tank that is not available, this message appears: **NO SUCH TANK!**

If you select a valid tank, the LCD displays: **ENTER QUANTITY.**

6. Type the dipstick reading (up to 5 digits, in whole gallons only) and press ENTER. The LCD displays **QUANTITY RECORDED!.**

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 and **INVALID TANK** for an error transaction.

Example:

```
SITE 1234
```

TRAN	VEH	EMP	DATE	TIME	P#	PR	QUANTITY	ODOM	ERROR
1210	9993	4261	10/23/92	14:53	01	00	1185.	000000	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.

GATE CONTROLLER OPTION

DESCRIPTION

The Gate Controller option enables you to control access to a gate using your Series 1000 Cardless System. Separate Series 1000 units are required to activate gates and pumps. When you enter your vehicle number, the gate controller verifies the entry and activates the gate.

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

1. Position your vehicle in front of the gate to be accessed.
2. In its idle state, the Series 1000 LCD display alternates between an **ENTER VEHICLE** message and a personalized system message.
3. Using the keypad, enter your vehicle number and press ENTER. If you make a mistake while entering your vehicle number, press CLEAR and enter it again.

If the vehicle number entered is valid the system will proceed to the next step, otherwise the system displays an error message at the LCD and returns to its idle state.

4. If you are required to enter a second account field (such as an employee number), the LCD displays: **ENTER EMP.**

Use the keypad to enter the employee number. The digits appear as they are entered. If you make a mistake, press CLEAR and enter the employee number again. When you have entered the correct number press ENTER.

If the number entered is valid, the system proceeds to the next step otherwise, the system displays an error message at the LCD and returns to its idle state.

5. If you are required to enter a Personal Identification Number (PIN), the LCD displays: **ENTER PIN**

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

You have three tries to enter you PIN. After is third unsuccessful try, the display returns to **ENTER VEHICLE** and you must start again at Step 2.

6. After a successful PIN entry the LCD displays: **GATE ACTIVATED**. This message remains until the Series 1000 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 Series 1000 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**. The system displays: **ENTER GATE TIMEOUT:**
2. Type the desired number of seconds (1 to 255) for the Series 1000 to energize the gate relay and press RETURN. Most gate systems use four seconds. The * prompt reappears.

Example:

```
*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.

1. At the * prompt, type **PG**. The timeout value prints. The * prompt reappears.

Example:

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

AG - ACTIVATE GATE

Use the **AG** command to activate the gate relay from the data terminal. When you use this command, the transaction is recorded as a normal gate transaction but the data normally read from the Series 1000 keypad is filled with nines.

1. At the * prompt, type **AG**. The system activates the gate relay and displays **GATE ACTIVATED!** followed by *.

If you attempt to activate the gate when it is already activated, the system displays: **GATE ALREADY ACTIVATED!**.

Example:

```
*AG
GATE ACTIVATED!
*
```

Example: Gate Transaction Printout

```
SITE 1234

TRAN VEH EMP DATE      TIME  ERROR
0874 9999 9999 10/23/92 09:17 TERM ACTIVATE
```

TRANSACTION HEADINGS WITH THE GATE CONTROLLER

When you use the Gate Controller option, the **P#**, **PR**, **QUANTITY**, and **ODOM** fields are not printed.

Example:

SITE 1234						
TRAN	VEH	EMP	DATE	TIME	ERROR	
0875	8410	1358	10/23/92	10:41	GATE ENTRY	

COMPACTED PRINT FORMAT WITH THE GATE CONTROLLER

The transaction format for compacted printouts for a Gate Controller system remains the same size as a non-gate system. The product, quantity, unit price, total price, and odometer fields are zero-filled. The pump number field contains 01.

Example:

[illegible]

CHANGES IN STANDARD COMMANDS

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

LI - load tank inventory

SI - subtract from tank inventory

LR - load inventory reorder point

PP - print pump data

DP - disable pump

IP - inactivate pump

XP - print timeouts and pulse rates

PF - print fuel authorizations

PL - print fuel limits

AI - add to tank inventory

TI - print tank inventory

LP - load pump data

EP - enable pump

AP - activate pump

ZP - zero pump totalizers

LF - load fuel authorizations

LL - load 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:

NUMBER OF PUMPS

PULSE RATE

NUMBER OF TANKS

AUTO PUMP DISABLE

SOFTWARE OPTIONS AFFECTED BY GATE CONTROLLER

Data Entries on Activate Gate (AG) Command option

This option (the gate controller equivalent of Data Entries on Activate Pump Command) allows you to enter account data at the terminal before activating the gate. The system prompts you to enter data for the vehicle number. Then depending upon the value of the check digit assigned to the vehicle number entered, the system may prompt you for a second account field (i.e., EMP) before the gate is activated. When this transaction is recorded, the digits of information, which are usually input at the Series 1000 keypad, are replaced by those entered at the 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). Lockout checks are performed on the vehicle number, and if entry was required, the second account field (i.e., EMP).

1. At the * prompt, type **AG**. The system displays: **VEH:**
2. Type any data for this field and press RETURN or just press RETURN to skip over the field entries and activate the gate. If you entered a valid vehicle number the check digit assigned to that vehicle requires a second account field entry, the system displays: **EMP:** (field name for second account field)
3. Type any data for this field and press RETURN or just press RETURN to skip this field. The system activates the gate relay and displays: **GATE ACTIVATED**. Then the * prompt reappears.

The data normally inputted from the Series 1000 keypad 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).

Example:

```
*AG
VEH : 1234↵
EMP : 5678↵

GATE ACTIVATED!
*
```

Example: Transaction Printout

```
SITE 1234

TRAN VEH EMP DATE      TIME  ERROR
0874 1234 5678 10/23/92 09:17 TERM ACTIVATE
```


Compacted Print Format with MPG/HPG option

The Series 1000 configured as a gate controller may be ordered to match another Series 1000 system which contains the MPG/HPG option. When matching a Series 1000 with MPG/HPG, the Gate Controller transaction format for compacted printouts contains zero-filled space padding for the MPG/HPG fields **MILES/HOURS** and **MPG/HPG**. This ensures that the transaction length for compacted printouts on the Gate Controller remains the same as the Series 1000 it is matching. This eliminates potential problems where both sites are polled by the same host computer.

Example:

[illegible]

ADDITIONAL SOFTWARE OPTIONS FOR GATE CONTROLLER

Disable Memory Full Protection

You can order the Series 1000 Gate Controller with the memory full protection disabled. When memory full 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

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 Series 1000. 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 Series 1000. 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. 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

Example: SC Command

```
*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y
SITE NO.: <XXXX> 0003
IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000
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↵

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

LINES PER PAGE <0-62>: 62↵

PIN ENTRY
  ENABLE OR DISABLE? <E OR D> E↵

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

The base pump number can be displayed with the **PS** command.

Example: **PS** Command

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

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

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

LINES PER PAGE           62

PIN ENTRY:               ENABLED

AUTO SITE SHUT DOWN:     DISABLED

*
```


Section 18

MANUAL KEYPAD ENTRY OPTION

DESCRIPTION

The Auxiliary Keypad Entry option provides an additional field that allows you to request input, from the Series 1000 user, during the keypad entry process. You can use this field to record anything from manual oil transactions to department or trailer numbers.

The field name and size were specified at the time of order. The field may be up to six digits. The check digit, stored in the vehicle record, controls whether the individual user is prompted to enter the manual entry. (For more information, see Section 6, **Vehicle File Commands**. The manual entry appears under its own heading in the transaction printouts.

Example: Transaction printout with DEPT as the optional entry

```
*PT
SITE 1234

TRAN VEH  EMP  DEPT DATE      TIME  P# PR QUANTITY  ODOM  ERROR
0008 2813 7596 0032 10/22/92 13:38 01 01    11.91 045621
0009 1122 3344 0011 10/22/92 13:41 03 03     10.0 000000
0010 2480 1431 0001 10/22/92 13:56 02 04   108.42 044291
*
```

MPG/HOURS PER GALLON OPTION

DESCRIPTION

The MPG/HPG option allows your Series 1000 Cardless System to calculate and maintain a cumulative miles-per-gallon or hours-per-gallon tally for each vehicle record loaded into the vehicle file. (**NOTE: Hours-per-gallon is used when user equipment is monitored with an hour meter instead of an odometer*). The type of option, MPG or HPG, was determined when you ordered your system. Also, the exact number of vehicles supported depends upon the limit specified when you ordered your system.

Each vehicle in the file may be configured as to whether or not the system will calculate MPG/HPG and execute a reasonable odometer/hours check on it. If this feature is disabled for a vehicle record, the system will continue to update the total gallons and odometer/hours entries, but MPG/HPG will not be calculated and a reasonable odometer/hours check will not be executed.

MPG/HPG software computes fuel efficiency two ways: per transaction and averaged over a period of time you determine (usually a month). The MPG option adds the following parameters to each vehicle record.

- B ODOM up to 6 digits for the beginning odometer reading
- E ODOM up to 6 digits for the ending odometer reading (last recorded)
- MILES up to 6 digits for the difference between the beginning and ending odometer readings
- GALLONS up to 8 digits for total gallons for period
- MPG three digits before and one after the decimal point to indicate MPG value.
- STAT record status code indicating MPG comments (for more on status flags, see the **VF** command)

For HPG, the following information appears in addition to standard vehicle file fields:

- B HOURS up to 6-digits for the beginning hours reading
- E HOURS up to 6-digits for the ending hours reading (last recorded)
- A HOURS up to 6-digits for the new, accumulated hours
- GALLONS up to 8-digits for total gallons for period
- HPG three digits before and one after the decimal point to indicate HPG value
- STAT a record status code indicating HPG comments (for more on status flags, see the **VF** command)

You can print out the vehicle file to view these additional parameters along with the standard vehicle file parameters.

The transaction printout, in addition to standard transaction fields, lists the number of miles/hours since the vehicle's last transaction, and the per transaction miles/hours per gallon. Sample transaction printouts for both MPG and HPG are shown later in this section. See **Transaction Processing** later in this section for typical MPG/HPG transaction sequences.

Vehicle File Commands

The MPG/HPG option changes the operation of these vehicle file commands (covered in Section 6):

- **LV** load/edit vehicle record
- **VF** print vehicle file
- **CR** check vehicle record

The MPG/HPG option uses these additional commands:

- **LO** load odometer/hours
- **IV** initialize vehicle file
- **LM** load maximum miles/hours between fuelings
- **LE** load ending odometer/hours
- **EC** enable MPG/HPG calculation and reasonable odometer/hours check for all vehicles
- **DC** disable MPG/HPG calculation and reasonable odometer/hours check for all vehicles

CHANGES TO STANDARD VEHICLE FILE COMMANDS

LV - Load/Edit a Vehicle File Record

When you use the **LV** command to load a new or edit an existing vehicle record, the MPG/HPG option prompts you for two more parameters, in addition to the standard parameters explained in Section 6, **Vehicle File Commands**. They are:

- **Beginning odometer/hours**
Beginning odometer/hours entry for the vehicle record.
- **MPG/HPG - Reasonable odometer/hours check flag**
The system prompts you whether or not you wish to enable the MPG/HPG calculation and reasonable odometer/hours check option for this vehicle. If this option is disabled, the system will continue to accumulate total gallons and update the odometer/hours information but will not calculate MPG/HPG or execute a reasonable odometer/hours check for the vehicle.

Load a New Vehicle Record

*NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.*

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Follow the procedure for loading a new vehicle record as described in Section 6. After you enter the check digit code, the system displays: **BEGIN ODOM:**
3. Type the vehicle's present odometer reading (up to six digits) and press RETURN. The system displays: **ENABLE MPG CALCULATION? <Y OR N>:**
4. Type **Y** to enable MPG calculation and reasonable odometer check for this vehicle record or **N** to disable the feature and press RETURN. The **VEH. NO.** prompt reappears.
5. To load additional vehicle records, repeat this procedure from Step 2.

To stop entering vehicle information, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example for MPG:

```
*LV
VEH. NO. 0543.
LIM. CODE: 2.
AUTH. CODE: 5.
CHECK DIGIT: 1.
BEGIN ODOM: 12850.
ENABLE MPG CALCULATION? <Y OR N>: Y.
VEH. NO. .
*
```

Example for HPG:

```
*LV
VEH. NO. 0543.
LIM. CODE: 2.
AUTH. CODE: 5.
CHECK DIGIT: 1.
BEGIN HOURS: 000128.
ENABLE HPG CALCULATION? <Y OR N>: Y.

VEH. NO. .
*
```

Edit an Existing Vehicle Record

NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Follow the procedure for editing an existing vehicle record as described in Section 6. After you enter the check digit code, the system displays either: **DISABLE MPG CALCULATION? <Y OR N>**; if the MPG calculation option was previously enabled or **ENABLE MPG CALCULATION? <Y OR N>**; if the MPG calculation option was previously disabled.
3. If the system displays **DISABLE MPG CALCULATION? <Y OR N>**;, type **Y** and press RETURN to disable MPG calculation and reasonable odometer check for this vehicle. If you type **N** and press RETURN or press RETURN without an entry, the MPG calculation and reasonable odometer check options remain enabled for this vehicle record. The **VEH. NO.** prompt reappears after receiving an entry. Proceed to Step 5.

If the system displays **ENABLE MPG CALCULATION? <Y OR N>**;, type **Y** to enable MPG calculation and reasonable odometer check for this vehicle. The system displays: **BEGIN ODOM:** and you may proceed to Step 4. If you type **N** and press RETURN or press RETURN without an entry, the MPG calculation and reasonable odometer check option remains disabled for this vehicle record. The **VEH. NO.** prompt reappears. Proceed to Step 5.

4. In response to the **BEGIN ODOM:** prompt, type the vehicle's present odometer reading (up to six digits) and press RETURN. The **VEH. NO.** prompt reappears.
5. To edit additional vehicle records, repeat this procedure from Step 2.

To stop editing existing vehicle records, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example for MPG:

```

*LV
VEH. NO. 0543.
RECORD EXISTS ALREADY!
EDIT THIS VEHICLE RECORD? <Y OR N>: Y.
LIM. CODE: 3.
AUTH. CODE:.
CHECK DIGIT: 2.
ENABLE MPG CALCULATION? <Y OR N> Y.
BEGIN ODOM: 42628.

VEH. NO..
*
```

Example for HPG:

```

*LV
VEH. NO. 0543.
RECORD EXISTS ALREADY!
EDIT THIS VEHICLE RECORD? <Y OR N>: Y.
LIM. CODE: 3.
AUTH. CODE:.
CHECK DIGIT: 2.
ENABLE HPG CALCULATION? <Y OR N> Y.
BEGIN HOURS: 000300.

VEH. NO..
*
```

VF - Print Vehicle File for MPG

When you use the **VF** command to print all the records in the vehicle file, six additional items print out for each record in addition to the standard vehicle file data:

- **B ODOM**
A six-digit numeric field containing the beginning odometer reading for the vehicle.
- **E ODOM**
A six-digit numeric field containing the ending odometer reading (last recorded) for the vehicle.
- **MILES**
A six-digit numeric field containing the difference between the beginning and ending odometer fields.

- **GALLONS**

An eight-digit (5 integer, 3 decimal) numeric field representing the total gallons recorded for this vehicle.

- **MPG**

A 4-digit (3 integer, 1 decimal) field containing the miles-per-gallon calculation for this vehicle record.

*NOTE: The letters **N/A** will be displayed in the MPG field if the MPG calculation and reasonable odometer check option has been disabled for this vehicle.*

- **STAT**

A status field for the vehicle record. The status messages and their meanings are:

HIGH The MPG calculation was above 50 MPG.

LOW The MPG calculation was below 5 MPG.

<< The last odometer entry was less than the beginning odometer and could not be recorded. Fueling was allowed.

%% The record has an initial value; no transaction occurred since it was initialized.

****** The ending odometer reading was entered via the data terminal.

VF - Print Vehicle File for HPG

When you use the **VF** command with HPG to print all the records in the vehicle file, six additional items print out for each record in addition to the standard vehicle file data:

- **B HOURS**

A 6-digit numeric field containing the beginning hours reading.

- **E HOURS**

A 6-digit numeric field containing the ending hours reading (last recorded).

- **A HOURS**

A numeric field of up to 6-digits containing the new, accumulated hours.

- **GALLONS**

A numeric field of up to 8-digits for total gallons for period.

- **HPG**

A 4-digit numeric field (3 integer, 1 decimal) containing the HPG calculation.

- **STAT**

A record status code indicating HPG comments. The status messages and their meanings are:

<< The last hours entry was less than the beginning hours and could not be recorded. Fueling was allowed.

%% The record has an initial value; no transaction occurred since it was initialized.

****** The ending hours reading was entered via the data terminal.

1. At the * prompt, type **VF**. The listing prints.

Example for MPG:

*VF											
VEH	LIM	AUTH	CD	LOCK	B	ODOM	E	ODOM	MILES	GALLONS	MPG STAT
0543	3	5	2	N	031256	031554	000298			16.000	18.6
1342	2	1	4	N	043578	043957	000379			7.100	53.4 HIGH
1811	5	7	1	Y	012967	012989	000022			11.600	1.9 LOW
2816	8	0	0	N	035014	042651	007637			474.350	N/A
3244	2	6	3	Y	024644	024644	000000			0.000	0.0 %%
4200	0	8	7	N	000100	000250	000150			28.100	5.3 <<
5196	6	4	5	N	000000	002735	002735			0.000	0.0 **
*											

Example for HPG:

*VF											
VEH	LIM	AUTH	CD	LOCK	B	HOURS	E	HOURS	A	HOURS	GALLONS HPG STAT
0543	3	5	2	N	000000	000005	000005			10.000	0.5
1342	2	1	4	N	000150	000170	000020			100.000	0.2
1811	5	7	1	Y	000205	000215	000010			10.000	1.0
*											

CR - Check a Vehicle Record

When you use the **CR** command to print a single vehicle record, six more items are printed out for the record in addition to the standard vehicle record data. These were described earlier under the **VF** command.

1. At the * prompt, type **CR**. The system displays: **VEH. NO.**
2. Type the vehicle number that you wish to view and press RETURN. The listing prints and the **VEH. NO.** prompt reappears.

NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.

3. To view additional vehicle records, repeat this procedure from Step 2.

To stop viewing vehicle records, press RETURN at the **VEH. NO.** prompt.

The * prompt reappears.

Example for MPG:

```
*CR
VEH. NO. 0543.
VEH  LIM AUTH CD LOCK B ODOM E ODOM MILES    GALLONS    MPG STAT
0543  3      5   2   N  031256 031554 000298      16.000    18.6
VEH. NO.
*
```

Example for HPG:

```
*CR
VEH. NO. 0543.
VEH  LIM AUTH CD LOCK B HOURS E HOURS A HOURS  GALLONS    HPG  STAT
0543  3      5   2   N  000000  000005  000005    10.000    0.5
VEH. NO.
*
```


LO - LOAD ODOMETER/HOURS

Use the **LO** command to update odometer/hours readings for an existing vehicle record. This command helps to maintain accurate odometer/hours readings (such as in cases where the selected vehicle may have fueled at another location, etc.)

*NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.*

1. At the * prompt, type **LO**. The system displays: **VEH. NO.**
2. Type the vehicle number and press RETURN. The system displays: **BEGIN ODOM:**
3. Type the vehicle's present odometer reading and press RETURN.

*NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.*

4. To update additional odometer readings, repeat this procedure from Step 2.

To stop updating odometer readings, press RETURN at the **VEH. NO.** prompt.

The * prompt reappears.

NOTE: Both the beginning and ending odometer fields are loaded with the mileage entry. The gallon total field is reset to zero.

Example for MPG:

```
*LO
VEH. NO. 0543↵
BEGIN ODOM: 32407↵
VEH. NO.↵
*
```

Example for HPG:

```
*LO
VEH. NO. 0543↵
BEGIN HOURS: 000005↵
VEH. NO.↵
*
```

IV - INITIALIZE VEHICLE FILE

Use the **IV** command to initialize the vehicle file. **Use this command only at initial start-up or at the beginning of a new month or MPG/HPG calculation period you set.** This command resets the entire vehicle file; data cannot be retrieved. When this command is executed, the ending odometer/hours entry becomes the beginning entry and gallon totals are reset to zero.

1. At the * prompt, type **IV**. The system displays:

INITIALIZE VEHICLE FILE? <Y OR N>

2. Type **Y** and press RETURN to initialize (reset) the vehicle file. Type **N** and press RETURN to leave the vehicle file as is.

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

The * prompt reappears.

Example:

```
*IV
INIT VEHICLE FILE? <Y OR N> Y↵
*
```

LM - LOAD MAXIMUM MILES/HOURS BETWEEN FUELINGS

Use the **LM** command to enter the maximum amount of miles or hours (1-9999) that are allowed between fuelings.

*NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.*

1. At the * prompt, type **LM**. The system displays:

MAX. MILES

2. Type the maximum miles allowed between fuelings and press RETURN. The * prompt reappears.

Example for MPG:

```
*LM
MAX. MILES 500↵
*
```

Example for HPG:

```
*LM
MAX. HOURS 500↵
*
```

LE - LOAD ENDING ODOMETER/HOURS

Use the **LE** command to load an ending odometer/hours reading. This is useful if a vehicle was fueled off-site or an invalid odometer/hours entry was made.

*NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.*

1. At the * prompt, type **LE**. The system displays: **VEH. NO.**
2. Type the vehicle number and press RETURN. The system displays: **ENDING ODOM:**

*NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.*

3. Type the current ending odometer and press RETURN. The **VEH. 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 **VEH. NO.** prompt reappears.*

4. To type additional odometer readings, repeat this procedure from Step 2.

To stop entering odometer readings, press RETURN at the **VEH. NO.** prompt.

The * prompt reappears.

Example for MPG:

```
*LE
VEH. NO. 0543↵
ENDING ODOM: 3560↵
VEH. NO.↵
*
```

Example for HPG:

```
*LE
VEH. NO. 0543↵
ENDING HOURS: 000005↵
VEH. NO.↵
*
```

EC - ENABLE MPG/HPG CALCULATION AND REASONABLE ODOMETER/HOURS CHECK FOR ALL VEHICLES

Use the **EC** command to enable MPG/HPG calculation and reasonable odometer/hours check for all vehicle records contained in the vehicle file. This command resets the entire vehicle file; data cannot be retrieved. When this command is executed, the ending odometer/hours entry becomes the beginning entry and gallon totals are reset to zero.

*NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.*

1. At the * prompt, type **EC**. The system displays:

ENABLE MPG CALCULATION FOR ALL VEHICLES? <Y OR N>

2. Type **Y** and press RETURN to enable the MPG calculation and reasonable odometer check option for all vehicle records currently in the vehicle file. 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.

Example for MPG:

```
*EC
ENABLE MPG CALCULATION FOR ALL VEHICLES? <Y OR N> Y
*
```

Example for HPG:

```
*EC
ENABLE HPG CALCULATION FOR ALL VEHICLES? <Y OR N> Y
*
```

DC - DISABLE MPG/HPG CALCULATION AND REASONABLE ODOMETER/HOURS CHECK FOR ALL VEHICLES

Use the **DC** command to disable MPG/HPG calculation and reasonable odometer/hours check for all vehicle records contained in the vehicle file. Total gallon and odometer/hours data will continue to be updated for all vehicle records contained in the vehicle file, but the system will not calculate MPG/HPG or execute reasonable odometer/hours checks on these vehicles.

*NOTE: The prompts and procedure steps shown in this section are for MPG. If you have the hours-per-gallon option, your prompts will contain **HOURS** instead of **ODOM** and **HPG** instead of **MPG**. An example of HPG commands is shown at the end of this command procedure.*

1. At the * prompt, type **DC**. The system displays:

DISABLE MPG CALCULATION FOR ALL VEHICLES? <Y OR N>

2. Type **Y** and press RETURN to disable the MPG calculation and reasonable odometer check option for all vehicle records currently in the vehicle file. 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.

Example for MPG:

```
*DC
DISABLE MPG CALCULATION FOR ALL VEHICLES? <Y OR N> Y↵
*
```

Example for HPG:

```
*DC
DISABLE HPG CALCULATION FOR ALL VEHICLES? <Y OR N> Y↵
*
```

MPG/HPG TRANSACTION PROCESSING

Transaction processing is essentially the same whether you have the MPG or the HPG option. Because vehicle file fields are different depending on which option your system has, the transaction processing for each is described separately. You need read only the transaction processing description for your system option.

MPG Transaction Processing

When the system detects an odometer entry, the vehicle record is checked to see if MPG calculation and reasonable odometer check is enabled. If it is, the system validates the odometer entry and updates the vehicle record when the transaction is completed. If MPG calculation and reasonable odometer entry is disabled, the system accepts the odometer entry without verification and updates the vehicle record when the transaction is completed. Transaction processing for each condition is as follows:

MPG Calculation Enabled

The odometer entry is checked against the last odometer reading entered. If the difference is greater than the maximum miles between fueling range (**LM** command) or less than the last recorded odometer, the entry is considered invalid.

If the odometer is valid, fueling is allowed. When the transaction completes, the system updates:

- the vehicle record fields: **E ODOM**, to show the last odometer entry; **MILES** to show the new, accumulated miles; **GALLONS**, to show the new accumulated number of gallons pumped; and **MPG**, to show the new calculation. Status flags may also change.
- the transaction fields, **MILES** and **MPG** to show the miles traveled and calculated MPG.

If the odometer is invalid for the reasons listed above, the user is re-prompted up to the number of times specified in the **NO. OF RETRIES** system configuration entry (see **Changes in Standard Commands** later in this section). If a valid odometer is not entered, the transaction terminates. When this occurs, the system:

- makes no changes to the vehicle record
- stores a zero quantity transaction (no fuel dispensed) with the message **INVALID ODOM** in the **ERROR** field. It also displays the following transaction fields based on the value of the odometer entered:
 - If the entry is greater than the last recorded odometer, the value is recorded in the **ERROR** field and the **MPG** field shows 0.
 - If the entry is less than the last recorded odometer, the **MILES** and **MPG** fields contain question marks.

After the termination of the first transaction (where the system takes the listed actions), the user is prompted to enter his vehicle number again. The user can then enter any odometer reading and fueling is allowed. When fueling is complete, a normal transaction is recorded. The system updates the vehicle and transaction files as follows:

- In the vehicle file, if the odometer entry is valid or invalid but greater than the beginning odometer, the system updates the following fields, **E ODOM**, to show the odometer entry; **MILES** to show the new, accumulated miles; **GALLONS**, to show the number of gallons pumped, and **MPG**, to show the new calculation. Status flags may also change.

If the odometer entry is invalid but less than the beginning odometer, the **E ODOM** field is not updated (this would result in negative miles). **MILES** does not change, **GALLONS** increases by the number of gallons pumped, and **MPG** is recalculated. The status flag is updated to << to indicate that fueling occurred but the last odometer was not recorded.

- In the transaction file, if the odometer entry is valid or greater than the last recorded odometer, the **MILES** and **MPG** fields are updated. If the odometer entry is less than the last recorded odometer, the **MILES** and **MPG** fields contain question marks.

MPG Calculation Disabled

Any odometer entry is accepted. When the transaction completes, the system updates the vehicle and transaction files as follows:

- In the vehicle file, if the odometer entry is greater than the beginning odometer, the system updates the following fields, **E ODOM**, to show the odometer entry; **MILES**, to show the new, accumulated miles; and **GALLONS**, to show the number of gallons pumped. The MPG field will contain the letters **N/A** indicating that MPG is not being calculated for this record. Status flags may also change.

If the odometer entry is less than the beginning odometer, the **E ODOM** field is not updated (this would result in negative miles). **MILES** does not change, and **GALLONS** increases by the number of gallons pumped. The **MPG** field will contain the letters **N/A** indicating MPG is not being calculated for this record. Status flags may also change.

- In the transaction file, the **MILES** and **MPG** fields are empty (filled with spaces).

HPG Transaction Processing

When the system detects an hours entry, the vehicle record is checked to see if HPG calculation and reasonable hours check is enabled. If it is, the system validates the hours entry and updates the vehicle record when the transaction is completed. If HPG calculation and reasonable hours entry is disabled, the system accepts the hours entry without verification and updates the vehicle record when the transaction is completed. Transaction processing for each condition is as follows:

HPG Calculation Enabled

The hours entry is checked against the last hours reading entered. If the difference is greater than the maximum hours between fueling range (**LM** command) or less than the last recorded hours, the entry is considered invalid.

If the hours is valid, fueling is allowed. When the transaction completes, the system updates:

- the vehicle record fields: **E HOURS**, to show the last hours entry; **A HOURS** to show the new, accumulated hours; **GALLONS**, to show the new accumulated number of gallons pumped; and **HPG**, to show the new calculation. Status flags may also change.
- the transaction fields, **TIME E** and **HPG** to show the time elapsed and calculated HPG.

If the hours is invalid for the reasons listed above, the user is re-prompted up to the number of times specified in the **NO. OF RETRIES** system configuration entry (see **Changes in Standard Commands** later in this section). If a valid hours is not entered, the transaction terminates. When this occurs, the system:

- makes no changes to the vehicle record
- stores a zero quantity transaction (no fuel dispensed) with the message **INVALID HOURS** in the **ERROR** field. It also displays the following transaction fields based on the value of the hours entered:
 - If the entry is greater than the last recorded hours, the value is recorded in the **TIME E** field and the **HPG** field shows 0.
 - If the entry is less than the last recorded hours, the **TIME E** and **HPG** fields contain question marks.

After the termination of the first transaction (where the system takes the listed actions), the user is prompted to enter his vehicle number again. The user can then enter any hours reading and fueling is allowed. When fueling is complete, a normal transaction is recorded. The system updates the vehicle and transaction files as follows:

- In the vehicle file, if the hours entry is valid or invalid but greater than the beginning hours, the system updates the following fields, **E HOURS**, to show the hours entry; **A HOURS** to show the new, accumulated hours; **GALLONS**, to show the number of gallons pumped, and **HPG**, to show the new calculation. Status flags may also change.

If the hours entry is invalid but less than the beginning hours, the **E HOURS** field is not updated (this would result in negative hours). **A HOURS** does not change, **GALLONS** increases by the number of gallons pumped, and **HPG** is recalculated. The status flag is updated to << to indicate that fueling occurred but the last hours was not recorded.

- In the transaction file, if the hours entry is valid or greater than the last recorded hours, the **TIME E** and **HPG** fields are updated. If the hours entry is less than the last recorded hours, the **TIME E** and **HPG** fields contain question marks.

HPG Calculation Disabled

Any hours entry is accepted. When the transaction completes, the system updates the vehicle and transaction files as follows:

- In the vehicle file, if the hours entry is greater than the beginning hours, the system updates the following fields, **E HOURS**, to show the hours entry; **A HOURS**, to show the new, accumulated hours; and **GALLONS**, to show the number of gallons pumped. The **HPG** field will contain the letters **N/A** indicating that HPG is not being calculated for this record. Status flags may also change.

If the hours entry is less than the beginning hours, the **E HOURS** field is not updated (this would result in negative hours). **A HOURS** does not change, and **GALLONS** increases by the number of gallons pumped. The **HPG** field will contain the letters **N/A** indicating HPG is not being calculated for this record. Status flags may also change.

- In the transaction file, the **TIME E** and **HPG** fields are empty (filled with spaces).

TRANSACTION HEADINGS

MPG Option

When you have the MPG option, 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.

Example:

*PT													
TRAN	VEH	EMP	DATE	TIME	P#	PR	QUANTITY	ODOM	MILES	MPG	ERROR		
0004	2430	5967	10/19/92	15:02	02	02	15.1	035025	0375	24.8	LIMIT CUTOFF		
0005	1234	4627	10/19/92	15:03	01	01	16.71	048546	0328	19.6			
*													

HPG Option

When you have the HPG option, the transaction printout contains all of the standard fields, plus two additional fields: **TIME E** and **HPG**. **TIME E** is the amount of time elapsed since the last hours reading. **HPG** is the hours-per-gallon calculation for the transaction.

Example:

*PT													
TRAN	VEH	EMP	DATE	TIME	P#	PR	QUANTITY	C	HOURS	TIME E	HPG	ERROR	
0004	2430	5967	10/19/92	15:02	02	02	15.00	000200		0020	1.3		
0005	1234	4627	10/19/92	15:03	01	01	16.00	000048		0015	0.9		
*													

CHANGES IN STANDARD COMMANDS

All commands, excluding vehicle record commands, remain the same except for the **SC** and **PS** commands. The **SC** command contains an additional prompt for the number of retries allowed when entering the odometer/hours reading. The response must be a number between 1 and 99. The **PS** command displays the number of retries currently selected. See the following examples.

Example: **SC** Command:

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

SITE NO.: <XXXX> 0003

IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000

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

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

LINES PER PAGE <0-62>: 62

PIN ENTRY
  ENABLE OR DISABLE? <E OR D> E

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

REASONABLE ODOMETER                                (REASONABLE HOURS for HPG)
  NO OF RETRIES: <1-99> 3

*
```

Example: PS Command:

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

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

PUMP #01  PULSES PER GAL.: $
PUMP #02  PULSES PER GAL.: 100
PUMP #03  PULSES PER GAL.: 10
PUMP #04  PULSES PER GAL.: 10

NUMBER OF TANKS:        4

PRICE DATA FORMAT:      NO PRICE DATA

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

LINES PER PAGE          62

PIN ENTRY:              ENABLED

Press any key to continue...

AUTO SITE SHUT DOWN:     DISABLED

REASONABLE ODOM
  NO. OF RETRIES:        03                                (REASONABLE HOURS for HPG)

*
```

MILES/HOURS PER GALLON MESSAGES

The following lists all MPG/HPG messages that may appear at the data terminal:

INVALID ENDING HOURS!

HPG only. Appears with the **LE** command. The ending hours reading must be greater than the beginning hours reading.

INVALID ENDING ODOM!

MPG only. Appears with the **LE** command. The ending odometer reading must be greater than the beginning odometer reading.

NO RECORD FOUND!

Appears with the **LO**, **LE**, and **CR** commands. The vehicle record does not exist.

RECORD EXISTS ALREADY!

Appears with the **LV** command. You entered a vehicle record that already exists.

MULTI-LEVEL PASSWORD OPTION

DESCRIPTION

The Multi-Level Password option provides two levels of passwords:

- super user
- standard user

When you use diagnostic test 1 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.

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.

Example:

```
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.

Example: Selection **A**

```
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* VR* IA* IR* RC* PV* PI* LI* AI*
SI* TI* LR* LP* PP* EP* DP* AP* IP* ZP*
XP* PT* ST* SS* PC* PH* RP* RT* LN* CV*
LV* RV* VF* CR* LF* PF* LL* PL* LK* SC*
PS* LD* PD* SD* PR* MO* HE* EX* CP
```


If you select **U**, all commands except help (HE) and exit (EX) are unauthorized for the standard user.

Example: Selection U

```
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  VR  IA  IR  RC  PV  PI  LI  AI
SI  TI  LR  LP  PP  EP  DP  AP  IP  ZP
XP  PT  ST  SS  PC  PH  RP  RT  LN  CV
LV  RV  VF  CR  LF  PF  LL  PL  LK  SC
PS  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.

Example: Selection P

```
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
VR  AUTHORIZE/UNAUTHORIZE? <A/U> : U
IA  AUTHORIZE/UNAUTHORIZE? <A/U> : U
IR  AUTHORIZE/UNAUTHORIZE? <A/U> : U
RC  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
CV  AUTHORIZE/UNAUTHORIZE? <A/U> : U
LV  AUTHORIZE/UNAUTHORIZE? <A/U> : A
RV  AUTHORIZE/UNAUTHORIZE? <A/U> : U
VF  AUTHORIZE/UNAUTHORIZE? <A/U> : A
CR  AUTHORIZE/UNAUTHORIZE? <A/U> : U
LF  AUTHORIZE/UNAUTHORIZE? <A/U> : A
PF  AUTHORIZE/UNAUTHORIZE? <A/U> : U
LL  AUTHORIZE/UNAUTHORIZE? <A/U> : A
PL  AUTHORIZE/UNAUTHORIZE? <A/U> : A
LK  AUTHORIZE/UNAUTHORIZE? <A/U> : A
SC  AUTHORIZE/UNAUTHORIZE? <A/U> : U
PS  AUTHORIZE/UNAUTHORIZE? <A/U> : A
LD  AUTHORIZE/UNAUTHORIZE? <A/U> : A
PD  AUTHORIZE/UNAUTHORIZE? <A/U> : A
SD  AUTHORIZE/UNAUTHORIZE? <A/U> : A
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 the following example. The Expanded Help List appears as usual except an asterisk appears before the command for authorized standard user commands.

```

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

COMMANDS ARE :

    * denotes Standard User access

LS* VA  VR  IA  IR  RC* PV* PI* LI  AI
SI  TI* LR  LP  PP* EP  DP  AP  IP  ZP
XP* PT* ST* SS* PC* PH* RP  RT  LN  CV
LV* RV  VF* CR  LF* PF  LL* PL* LK* SC
PS* LD* PD* SD* PR* MO* HE* EX* CP
```

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 contains an additional prompt for the time period to check the pump. The **PS** and **XP** commands display the pump switch timer values entered for each pump.

Example: **SC** Command:

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

SITE NO.: <XXXX> 0003␣

IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000␣

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>: 0␣

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. TRAN. <1-99> 5␣

LINES PER PAGE <0-62>: 62␣

PIN ENTRY
  ENABLE OR DISABLE? <E OR D> E␣

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

*
```

Example: **PS** Command:

```

*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

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: 00

NUMBER OF TANKS:         4

PRICE DATA FORMAT:      NO PRICE DATA

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

LINES PER PAGE:         62

PIN ENTRY:              ENABLED

AUTO SITE SHUT DOWN:    DISABLED

*

```

Example: **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

*

```

REASONABLE ODOMETER/HOURS

CHECK OPTION

DESCRIPTION

The Reasonable Odometer/Hours Check option provides an odometer/hours* validity check for any vehicle record loaded in the vehicle file. You may enable or disable the odometer validity check for each vehicle. (**NOTE: Reasonable hours is used when user equipment is monitored with an hour meter instead of an odometer*). The type of option, reasonable odometer/hours, was determined when you ordered your system. Also, the exact number of vehicles supported depends upon the limit specified when you ordered your system.

The reasonable odometer/hours option is similar to the MPG/HPG option without MPG/HPG features. For reasonable odometer, the following parameters are added to each vehicle record:

- ODOM up to six-digit odometer reading
- STAT record status code (for more on status flags, see the **VF** command)

For reasonable hours, the following parameters are added to each vehicle record:

- HOURS up to six-digit odometer reading
- STAT record status code (for more on status flags, see the **VF** command)

You can print out the vehicle file to view these additional parameters along with the standard vehicle file parameters.

When the system detects an odometer/hours entry, the vehicle record is checked to see if reasonable odometer/hours check is enabled. If it is, the odometer/hours entry is checked for validity against the last odometer/hours reading entered. It also considers the maximum miles/hours between fuelings value (**LM** command). If an odometer/hours entry is out of range, the system prompts for another entry.

If the odometer/hours is valid, fueling is allowed. When the transaction completes, the system updates the **ODOM** or **HOURS** field in the vehicle record to show the latest odometer entry. The status flag may also change.

If the odometer/hours is invalid, the user is re-prompted. (You can indicate the number of entry retries allowed using the **SC** command.) If the maximum number of retries is exceeded, the transaction terminates and the vehicle record is not changed. The transaction is stored as a zero quantity transaction (no fuel dispensed) and is tagged with an **INVALID ODOM** or **INVALID HOURS** message.

At the termination of the first transaction, the user is prompted to enter his vehicle number again. The user can enter any odometer/hours reading and fueling is allowed. When fueling is complete, a normal transaction is recorded. The system updates the vehicle record by storing the odometer/hours entry in the **ODOM** or **HOURS** field. The status flag may also change.

If reasonable odometer/hours check is disabled for a vehicle record, the odometer/hours entry is recorded in the vehicle record but not checked for validity.

Vehicle File Commands

The Reasonable Odometer/Hours Check option changes the operation of these vehicle file commands:

- **LV** load/edit vehicle record
- **VF** print vehicle file
- **CR** check vehicle record

The Reasonable Odometer/Hours Check option uses these additional commands:

- **LO** load odometer/hours in vehicle record
- **LM** load maximum miles/hours between fuelings

CHANGES TO STANDARD VEHICLE FILE COMMANDS

LV - Load/Edit a Vehicle File Record

When you use the **LV** command to load a new or edit an existing vehicle record, the reasonable odometer/hours check option prompts you for two more parameters in addition to the standard vehicle record parameters explained in Section 6, **Vehicle File Commands**.

The two additional parameters are:

- **Beginning odometer/hours**
Beginning odometer/hours entry for the vehicle record.
- **Reasonable odometer/hours check flag**
The system prompts you whether or not you wish to enable the reasonable odometer/hours check option for this vehicle. If this option is disabled, the system will update the odometer/hours reading, but will not execute a reasonable odometer/hours check for the vehicle.

Load a New Vehicle Record

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Follow the procedure for loading a new vehicle record as described in Section 6. After you have entered the check digit code, the system displays: **BEGIN ODOM:**
3. Type the vehicle's present odometer reading (up to six digits) and press RETURN. The system displays: **ENABLE REASONABLE ODOMETER CHECK? <Y OR N>:**
4. Type **Y** to enable a reasonable odometer check for this vehicle record or **N** to disable the feature and press RETURN. The **VEH. NO.** prompt reappears.
5. To load additional vehicle records, repeat this procedure from Step 2.

To stop entering vehicle information, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example for reasonable odometer:

```
*LV
VEH. NO. 0543.
LIM. CODE: 2.
AUTH. CODE: 5.
CHECK DIGIT: 1.
BEGIN ODOM: 12850.
ENABLE REASONABLE ODOMETER CHECK? <Y OR N>: Y.
VEH. NO. .
*
```

Example for reasonable hours:

```
*LV
VEH. NO. 0543.
LIM. CODE: 2.
AUTH. CODE: 5.
CHECK DIGIT: 1.
BEGIN HOURS: 000128.
ENABLE REASONABLE HOURS CHECK? <Y OR N>: Y.
VEH. NO. .
*
```

Edit an Existing Vehicle Record

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **LV**. The system displays: **VEH. NO.**
2. Follow the procedure for editing an existing vehicle record as described in Section 6. After you enter the check digit code, the system displays either: **DISABLE REASONABLE ODOMETER CHECK? <Y OR N>**: if the Reasonable Odometer Check option was previously enabled or **ENABLE REASONABLE ODOMETER CHECK ? <Y OR N>**: if the Reasonable Odometer Check option was previously disabled.
3. If the system displays **DISABLE REASONABLE ODOMETER CHECK? <Y OR N>**: , type **Y** and press RETURN to disable Reasonable Odometer Check for this vehicle. If you type **N** and press RETURN or press RETURN without an entry, the Reasonable Odometer Check option remains enabled for this vehicle record. The **VEH. NO.** prompt reappears after receiving an entry. Proceed to Step 5.

If the system displays **ENABLE REASONABLE ODOMETER CHECK? <Y OR N>**: , type a **Y** to enable Reasonable Odometer Check for this vehicle. The system displays: **BEGIN ODOM:** and you may proceed to Step 4. If you type **N** or press RETURN without an entry, the Reasonable Odometer Check option will remain disabled for this vehicle record. The **VEH. NO.** prompt reappears. Proceed to Step 5.

4. In response to the **BEGIN ODOM:** prompt, type the vehicle's present odometer reading (up to six digits) and press RETURN. The **VEH. NO.** prompt reappears.
5. To edit additional vehicle records, repeat this procedure from Step 2.

To stop editing existing vehicle records, press RETURN at the **VEH. NO.** prompt. The * prompt reappears.

Example for reasonable odometer:

```
*LV
VEH. NO. 0543.
RECORD EXISTS ALREADY!
EDIT THIS VEHICLE RECORD? <Y OR N>: Y.
LIM. CODE: 3.
AUTH. CODE:.
CHECK DIGIT: 2.
ENABLE REASONABLE ODOMETER CHECK? <Y OR N> Y.
BEGIN ODOM: 42628.

VEH. NO.
*
```

Example for reasonable hours:

```
*LV
VEH. NO. 0543.
RECORD EXISTS ALREADY!
EDIT THIS VEHICLE RECORD? <Y OR N>: Y.
LIM. CODE: 3.
AUTH. CODE:.
CHECK DIGIT: 2.
ENABLE REASONABLE HOURS CHECK? <Y OR N> Y.
BEGIN HOURS: 42628.

VEH. NO.
*
```

VF - Print Vehicle File for Reasonable Odometer

When you use the **VF** command to print all the records in the vehicle file, two more items are printed out for each record in addition to the standard vehicle file data. They are:

- **ODOM**
A six-digit numeric field containing the ending odometer reading (last recorded) for the vehicle.
- **STAT**
A status field for the vehicle record.

The status messages and their meanings are:

- %%** The record has an initial value; no transaction occurred since it was initialized.
- N/A** The Reasonable Odometer Check option for this vehicle record is disabled.

1. At the * prompt, type **VF**. The listing prints.

Example:

*VF						
VEH	LIM	AUTH	CD	LOCK	ODOM	STAT
0543	3	5	2	N	031554	
1342	2	1	4	N	043957	%%
1811	5	7	1	Y	012989	
2816	8	0	0	N	042651	N/A
3244	2	6	3	Y	024644	%%
4200	0	8	7	N	000250	
5196	6	4	5	N	002735	N/A
*						

VF - Print Vehicle File for Reasonable Hours

When you use the **VF** command to print all the records in the vehicle file, two more items are printed out for each record in addition to the standard vehicle file data. They are:

- **HOURS**
A six-digit numeric field containing the ending hours reading (last recorded) for the vehicle.
- **STAT**
A status field for the vehicle record.

The status messages and their meanings are:

- %%** The record has an initial value; no transaction occurred since it was initialized.
- N/A** The Reasonable Hours Check option for this vehicle record is disabled.

1. At the * prompt, type **VF**. The listing prints.

Example:

*VF						
VEH	LIM	AUTH	CD	LOCK	HOURS	STAT
0543	3	5	2	N	000128	
1342	2	1	4	N	000957	%%
1811	5	7	1	Y	000301	
*						

CR - Check a Vehicle Record

When you use the **CR** command to print a single vehicle record, two more items are printed out for the record in addition to the standard vehicle record data. These were described under the **VF** command.

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **CR**. The system displays: **VEH. NO.**
2. Type the vehicle number that you wish to view and press RETURN. The listing prints and the **VEH. NO.** prompt reappears.

*NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.*

3. To view additional vehicle records, repeat this procedure from Step 2.

To stop viewing vehicle records, press RETURN at the **VEH. NO.** prompt.

The * prompt reappears.

Example for reasonable odometer:

```
*CR
VEH. NO. 0543↵
VEH  LIM AUTH CD LOCK ODOM  STAT
0543  3    5  2   N  031554
VEH. NO. ↵
*
```

Example for reasonable hours:

```
*CR
VEH. NO. 0543↵
VEH  LIM AUTH CD LOCK HOURS  STAT
0543  3    5  2   N  000128
VEH. NO. ↵
*
```

LO - LOAD ODOMETER/HOURS

Use the **LO** command to update the odometer/hours reading for an existing vehicle record. This command helps to maintain an accurate odometer/hours reading (such as in cases where the selected vehicle may have fueled at another location, etc.)

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **LO**. The system displays: **VEH. NO.**
2. Type the vehicle number and press RETURN. The system displays: **BEGIN ODOM:**
3. Type the vehicle's present odometer reading and press RETURN.

*NOTE: If the vehicle record does not exist, the system displays **NO RECORD FOUND!** The **VEH. NO.** prompt reappears.*

4. To update additional odometer readings, repeat this procedure from Step 2.

To stop updating odometer readings, press RETURN at the **VEH. NO.** prompt.

The * prompt reappears.

Example for reasonable odometer:

```
*LO
VEH. NO. 0543↵
BEGIN ODOM: 32407↵
VEH. NO.↵
*
```

Example for reasonable hours:

```
*LO
VEH. NO. 0543↵
BEGIN HOURS: 000128↵
VEH. NO.↵
*
```

LM - LOAD MAXIMUM MILES/HOURS BETWEEN FUELINGS

Use the **LM** command to enter the maximum amount of miles or hours (1-9999) that are allowed between fuelings.

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **LM**. The system displays:

MAX. MILES

2. Type the maximum miles allowed between fuelings and press RETURN. The * prompt reappears.

Example for reasonable odometer:

```
*LM
MAX. MILES 500.
*
```

Example for reasonable hours:

```
*LM
MAX. HOURS 500.
*
```

EC - ENABLE REASONABLE ODOMETER/HOURS CHECK FOR ALL VEHICLES

Use the **EC** command to enable reasonable odometer/hours check for all vehicle records contained in the vehicle file. This command resets the entire vehicle file; data cannot be retrieved.

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **EC**. The system displays:

ENABLE REASONABLE ODOMETER CHECK FOR ALL VEHICLES? <Y OR N>

2. Type **Y** and press RETURN to enable the reasonable odometer check option for all vehicle records currently in the vehicle file. 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.

Example for reasonable odometer:

```
*EC
ENABLE REASONABLE ODOMETER CHECK FOR ALL VEHICLES? <Y OR N> Y↵
*
```

Example for reasonable hours:

```
*EC
ENABLE REASONABLE HOURS CHECK FOR ALL VEHICLES? <Y OR N> Y↵
*
```


DC - DISABLE REASONABLE ODOMETER/HOURS CHECK FOR ALL VEHICLES

Use the **DC** command to disable reasonable odometer/hours check for all vehicle records contained in the vehicle file.

*NOTE: The prompts and procedure steps shown in this section are for reasonable odometer. If you have the reasonable hours option, your prompts will contain **HOURS** instead of **ODOM**. An example of reasonable hours commands is shown at the end of this command procedure.*

1. At the * prompt, type **DC**. The system displays:

DISABLE REASONABLE ODOMETER CHECK FOR ALL VEHICLES? <Y OR N>

2. Type **Y** and press RETURN to disable the reasonable odometer check option for all vehicle records currently in the vehicle file. Type **N** and press RETURN to leave it enabled.

*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.

Example for reasonable odometer:

```
*DC
DISABLE REASONABLE ODOMETER CHECK FOR ALL VEHICLES? <Y OR N> Y.
*
```

Example for reasonable hours:

```
*DC
DISABLE REASONABLE ODOMETER CHECK FOR ALL VEHICLES? <Y OR N> Y.
*
```

CHANGES IN STANDARD COMMANDS

All commands, excluding vehicle record commands, remain the same except for the **SC** and **PS** commands. The **SC** command contains an additional prompt for the number of retries allowed when entering the odometer reading. The response must be a number between 1 and 99. The **PS** command displays the number of retries currently selected. See the following examples.

Example: **SC** Command:

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

SITE NO.: <XXXX> 0003␣

IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000␣

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␣

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

LINES PER PAGE <0-62>: 62␣

PIN ENTRY
ENABLE OR DISABLE? <E OR D> E␣

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

REASONABLE ODOMETER (or REASONABLE HOURS)
NO OF RETRIES: <1-99> 3␣
*
```

Example: **PS** Command:

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

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

PUMP #01  PULSES PER GAL.: $
PUMP #02  PULSES PER GAL.: 100
PUMP #03  PULSES PER GAL.: 10
PUMP #04  PULSES PER GAL.: 10

NUMBER OF TANKS:        4

PRICE DATA FORMAT:      NO PRICE DATA

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

LINES PER PAGE          62

PIN ENTRY:              ENABLED

Press any key to continue...

AUTO SITE SHUT DOWN:     DISABLED

REASONABLE ODOM                      (or REASONABLE HOURS)
  NO. OF RETRIES:        03

*
```

TRANSACTION HEADINGS WITH THE REASONABLE ODOMETER/HOURS CHECK OPTION

The Reasonable Odometer/Hours Check option does not change the transaction printout.

REASONABLE ODOMETER/HOURS MESSAGES

The following lists all Reasonable Odometer/Hours messages that may appear at the data terminal:

NO RECORD FOUND!

Appears with the **LO** and **CR** commands. The vehicle record does not exist.

RECORD EXISTS ALREADY!

Appears with the **LV** command. You entered a vehicle record that already exists.

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 enter your vehicle number. 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 vehicle number, the system asks if you want a receipt for that transaction. If you say yes, the system prints a receipt. You must then enter your vehicle number 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 vehicle number.
- The receipt printer is in an error condition. (i.e., 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 Section 2, **Fueling with the Series 1000**.
2. When fueling is complete and the pump nozzle is replaced, return to the Series 1000. The Series 1000 LCD display alternates between an **ENTER VEHICLE** message and a personalized system message.
3. Using the keypad, enter your vehicle number and press ENTER. If you make a mistake while entering your vehicle number, press CLEAR and enter it again.
4. If a transaction receipt is available, the LCD displays: **RECEIPT? 1=YES 0=NO**
5. 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.

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 **ENTER VEHICLE** and you must start again at Step 2. If a transaction receipt is not available, the sequence for starting a new fueling transaction begins.

6. 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 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**. 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.

Example:

<pre>*GR TRANS NO.: 604↵ *</pre>

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. 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 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 maximum number of heading or trailing lines allowed, type the caret character (^) as the first character of the unwanted 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.

Example:

```
*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y
SITE NO.: <XXXX> 0003
IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000
HEADING LINE #1 : <30 CHARS> GASBOY INTERNATIONAL LLC
HEADING LINE #2 : <30 CHARS> 707 N. VALLEY FORGE ROAD
HEADING LINE #3 : <30 CHARS> LANSDALE, PA 19446
HEADING LINE #4 : <30 CHARS> TELE: 215-855-4631
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
AUTO PUMP DISABLE
```



```
NO. OF ZERO QTY. TRANS. <1-99> 5.
LINES PER PAGE <0-62>: 62.
PIN ENTRY
  ENABLE OR DISABLE? <E OR D> E.
AUTO SITE SHUT DOWN
  ENABLE OR DISABLE? <E OR D> D.
```

Example: **PS** command shows the heading and trailing lines you have loaded.

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

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

HEADING LINE #1:        GASBOY INTERNATIONAL LLC
HEADING LINE #2:        707 N. VALLEY FORGE ROAD
HEADING LINE #3:        LANSDALE, PA 19446
HEADING LINE #4:        TELE: 215-855-4631

TRAILING LINE #1:       THANK YOU!
TRAILING LINE #2:       PLEASE COME AGAIN.

PUMP #01  PULSES PER GAL.: $
PUMP #02  PULSES PER GAL.: 100
PUMP #03  PULSES PER GAL.: 10
PUMP #04  PULSES PER GAL.: 10

NUMBER OF TANKS:        4

Press any key to continue...

PRICE DATA FORMAT:      NO PRICE DATA

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

LINES PER PAGE          62

PIN ENTRY:              ENABLED

AUTO SITE SHUT DOWN:    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 keypad.

You load the number of multiple receipts using the **SC** command:

1. At the * prompt, type **SC**. The usual system configuration prompts appear. (See **SC - Load or Change System Configuration**)
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 (1-3) to be printed for each receipt request at the Series 1000 keypad and press RETURN.

NOTE: This option affects only the receipt requests generated from the Series 1000 keypad. Requests issued from the data terminal (GR command), generate single receipts.

4. If you wish to change additional system configuration parameters, continue to do so.

To exit from system configuration, press CTRL C.

Example:

```
*SC
RESETTING SYSTEM CONFIGURATION
ARE YOU SURE? <Y OR N> Y
SITE NO.: <XXXX> 0003
IDLE MESSAGE: <20 CHARS> GASBOY SERIES 1000
HEADING LINE #1 : <30 CHARS> GASBOY INTERNATIONAL LLC
HEADING LINE #2 : <30 CHARS> 707 N. VALLEY FORGE ROAD
HEADING LINE #3 : <30 CHARS> LANSDALE, PA 19446
HEADING LINE #4 : <30 CHARS> TELE: 215-855-4631
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.

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

LINES PER PAGE <0-62>: 62.

PIN ENTRY
ENABLE OR DISABLE? <E OR D> E.

AUTO SITE SHUT DOWN
ENABLE OR DISABLE? <E OR D> D.
*
```

Example: **PS** command shows the selected number of receipts per transaction.

```

*PS
*** SYSTEM CONFIGURATION ***

SITE NO.:                0003

IDLE MESSAGE:            GASBOY SERIES 1000

HEADING LINE #1:        GASBOY INTERNATIONAL LLC
HEADING LINE #1:        707 N. VALLEY FORGE ROAD
HEADING LINE #1:        LANSDALE, PA 19446
HEADING LINE #1:        TELE: 215-855-4631

TRAILING LINE #1:       THANK YOU!
TRAILING LINE #1:       PLEASE COME AGAIN.

RECEIPTS PER TRANS:     2

PUMP #01  PULSES PER GAL.: $
PUMP #02  PULSES PER GAL.: 100
PUMP #03  PULSES PER GAL.: 10
PUMP #04  PULSES PER GAL.: 10

Press any key to continue...

NUMBER OF TANKS:        4

PRICE DATA FORMAT:     NO PRICE DATA

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

LINES PER PAGE          62

PIN ENTRY:              ENABLED

Press any key to continue...

AUTO SITE SHUT DOWN:    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 Section 25, **Receipt Printer Maintenance**.

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**. The system displays: **TANK MONITOR LINK? <Y OR N>**
2. To establish the communications link, type **Y** and press RETURN.

To terminate the request, type **N** and press RETURN.

If the Series 1000 is successful in establishing a communications link with the tank monitoring system, it displays this character: **>**.

Example:

```
*TM
TANK MONITOR LINK <Y OR N> Y ↵
>
```

3. 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, we used **2A1**. This prints an alarm status report (code **2A**) for tank **1**.

```
*TM
TANK MONITOR LINK <Y OR N> Y
>
(Press CTRL A here)
2A1
ALARM STATUS

FEB 27, 1992
9:38 AM

TANK  PRODUCT                LEAK    HIGH    OVER    LOW
      WATER                  WATER  FILL    LIMIT  THEFT

  1    SUPER UNLEADED          OFF     OFF     OFF     OFF     OFF

EXTERNAL INPUT STATUS: OPEN
```

NOTE: See the documentation supplied with your tank monitoring system for additional communications commands and report codes.

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

1. 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.

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.

Example:

```
*TM
TANK MONITOR LINK <Y OR N> Y
>(Press CTRL A here)
2A1
ALARM STATUS

FEB 27, 1992
 9:38 AM

TANK  PRODUCT                LEAK    HIGH    OVER    LOW
      WATER                FILL   LIMIT   THEFT

  1   SUPER UNLEADED          OFF     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. 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.

Example:

***TM**

TANK MONITOR LINK <Y OR N> **Y**
>(Press CTRL A here)

2A1

ALARM STATUS

FEB 27, 1992

9:38 AM

TANK	PRODUCT	LEAK	HIGH WATER	OVER FILL	LOW LIMIT	THEFT
1	SUPER UNLEADED	OFF	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.

RECEIPT PRINTER MAINTENANCE

PRINTER DESCRIPTION

The optional receipt printer that is used in GASBOY Series 1000 Card Systems enables you to print receipts for fueling transactions right at your card system.

The printer is housed within the pedestal of your card 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 25-1 highlights the location and features of a card reader with a receipt printer. The remainder of this section describes the printer, its internal switches and settings, and how to maintain it.

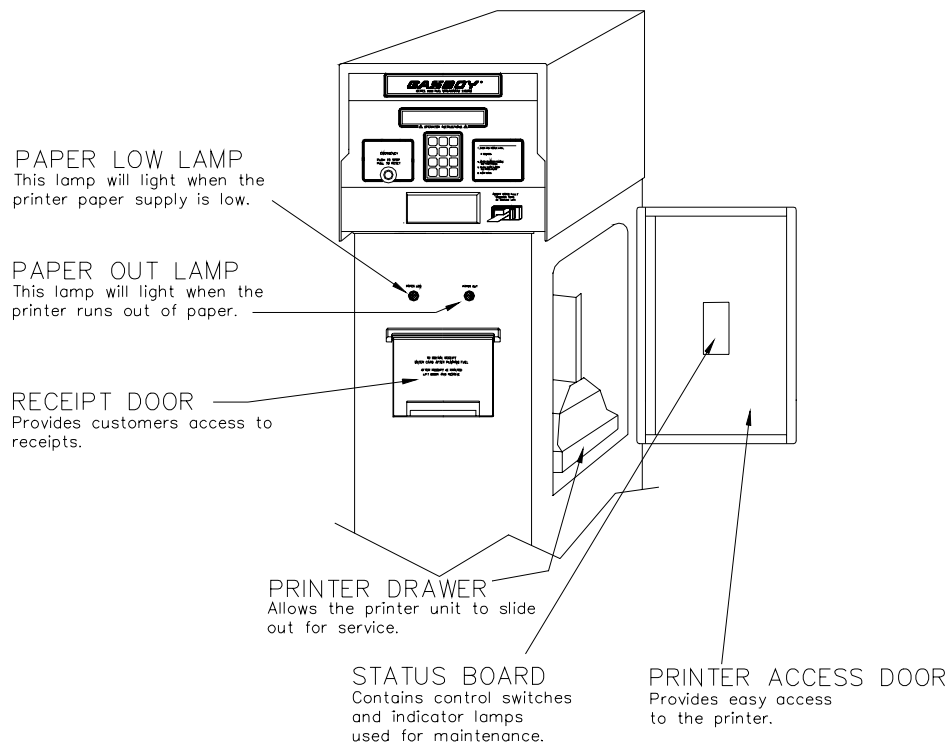


Figure 25-1. System with Receipt Printer

SWITCHES AND SETTINGS

Printer Status Board

The printer status board (Figure 25-2) is attached to the inside of the printer access door (See Figure 25-1) This location provides the site attendant easy access to the switches and indicator lamps needed to perform paper loading, self-tests, and simple troubleshooting.

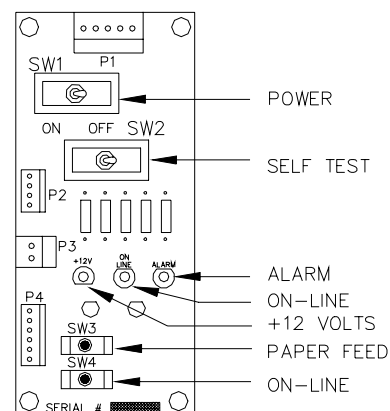


Figure 25-2. Printer Status Board

Status Board Switches

Table 25-1 summarizes switches and results for the printer status board.

Table 25-1. Status Board Switches

SW1	<p>POWER</p> <p>Switching SW1 to the left turns power on to the printer and the status board.</p> <p>Switching SW1 to the right removes power from the printer and status board</p>
SW2	<p>SELF-TEST</p> <p>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.</p> <p>Switching SW2 to the right stops the printing and cuts the paper.</p> <p>A short self-test should be performed whenever the paper or ribbon is changed.</p>
SW3	<p>PAPER FEED</p> <p>Pressing SW3 causes a continuous paper feed. This is used while loading new paper.</p>
SW4	<p>ON LINE</p> <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

Table 25-2. Status Board Lamps

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

The controller board DIP switches are set at the factory prior to shipment. For proper operation of the printer, set the controller board switch settings as shown in Table 25-3.

Table 25-3. DIP Switch Settings

DIP SW1		DIP 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		

NOTE: DIP switches are only read by the controller at power up. DIP switch changes should be made with the power off.

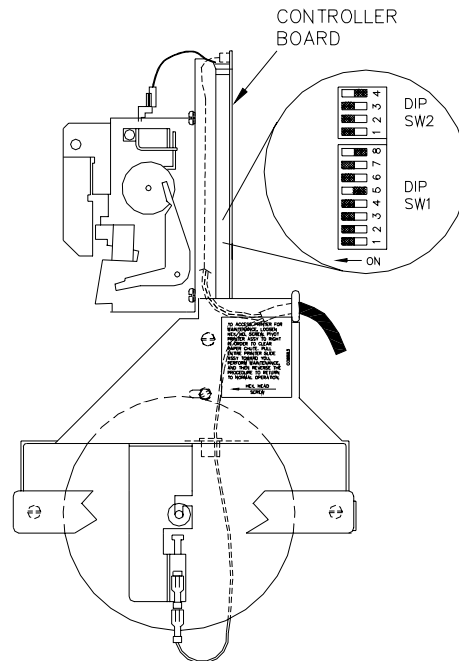


Figure 25-3. DIP Switches

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. Reverse this procedure to return the printer to normal operation.

CHANGING THE PAPER

Removing the Paper

1. Follow the procedure for accessing the printer.
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.

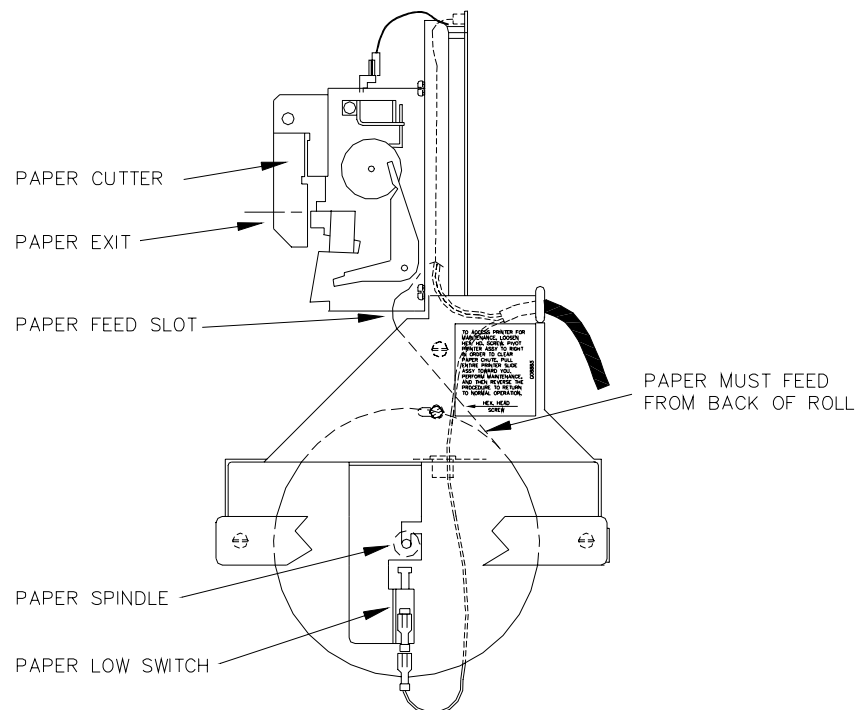


Figure 25-4. Printer Side View

Installing the Paper

1. Insert spindle into paper roll.
2. Insert roll into holder, being careful not to bend the PAPER LOW switch.
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 25-4 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 25-5 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 25-5 C). Repeat for the other spool.

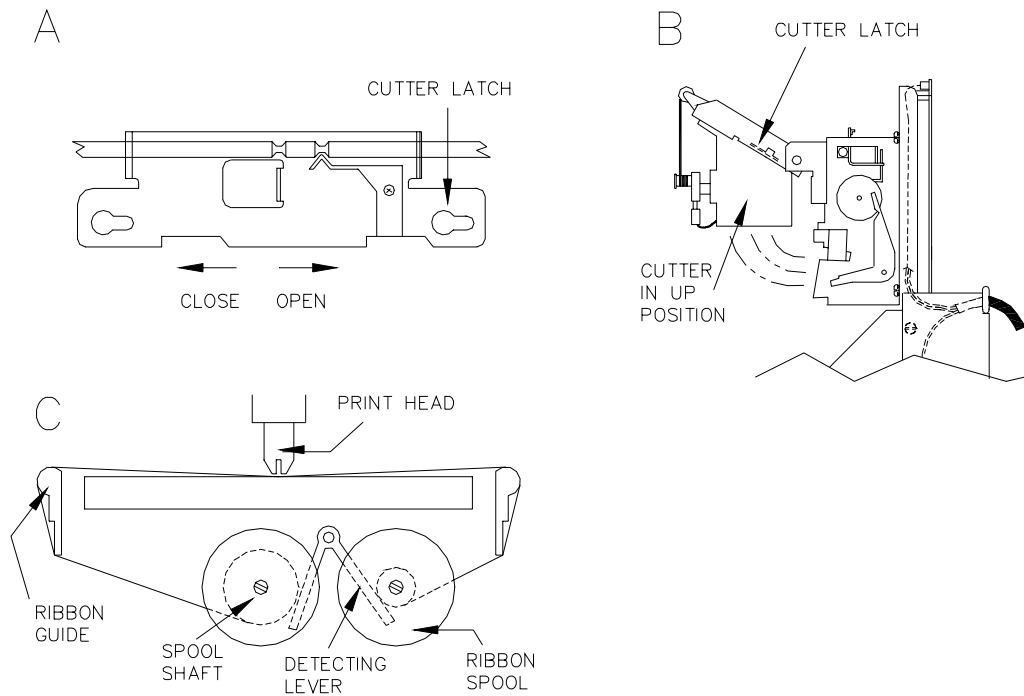


Figure 25-5. Ribbon Installation Sequence

Installing New Ribbon Spools

1. Place the ribbon spool onto the left shaft with the spool-driving pins pointing toward the printer (Figure 25-5 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 25-5 A).
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 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 when 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) 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.

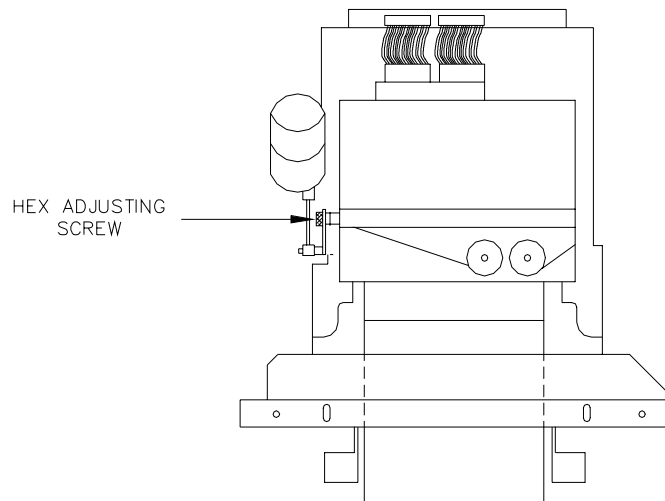


Figure 25-6. Cutter Bar Adjustment Screw

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) 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.

SETUP OF PERIPHERAL EQUIPMENT

Some of the peripheral equipment that can be connected to the Series 1000 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 four screens. This enables the terminal to function properly with both the Okidata printer and the Series 1000 system. Be sure to set the **LINES PER PAGE** in the **SC** command (Section 5) 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 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:

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.

General Setup			
Emulation	VT220-7	Auto Page	Off
Enhancements	Off	Warning Bell	On
Virtual Terminal	Off	Margin Bell	off
Scroll Style	Jump	Bell Sound	1
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.

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, FleetKey software prior to version 2.1, and "A" System software does not support XON/XOFF protocol. In these cases, 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. For "A" Systems, set **Main Data/Parity** to 7/Even and set **Main Stop Bits** to 2.

4. Press F3 or PAGE DOWN to display the next Setup Screen, Display Setup.

Display Setup			
Columns	132	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
Cursor Style	Blink Block	Refresh Rate	60Hz
Cursor	On	Pound Char	US
Screen Saver	15 Min	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.

Keyboard Setup			
Key Click	Off	Break	250 ms
Key Repeat	On	Xmit 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	Funct	Language	US
Delete Key	Normal		

6. Press F5 or PAGE DOWN to display the next Setup Screen, ANSI Setup.

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 See Note
VT100 ID	VT 100	Auto Answerback	Off

NOTE: When the Print Mode is set to **AUTO**, the Okidata printer acts as a logger and prints everything done in command mode. To temporarily suspend output to the printer, press CTRL, SHIFT, and PRINT SCREEN simultaneously (the message line at the top of the CRT screen will toggle between **FDX>MAIN** and **FDX>AUX** when these keys are pressed). Press CTRL, SHIFT, and PRINT SCREEN simultaneously to resume output to the printer.

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

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
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.

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.

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WARRANTY

General Statements:

Gasboy International LLC. warrants all new equipment manufactured by Gasboy against defective material and/or workmanship, for the warranty period specified below, when the equipment is installed in accordance with specifications prepared by Gasboy.

This warranty does not cover damage caused by accident, abuse, Acts of God, lack of surveillance of automatic recording systems, negligence, mis-application, faulty installation, improper or unauthorized maintenance, installation or use in violation of product manuals, instructions, or warnings. Under no circumstance shall Gasboy be liable for any indirect, special, or consequential damages, losses, or expenses to include, but not limited to, loss of product, loss of profits, litigation fees, or the use, or inability to use, our product for any for any purpose whatsoever.

Parts Only - During the warranty period, Gasboy will, at its option, repair or replace defective parts returned transportation prepaid to its factory.

On-Site Labor Included - Gasboy will also provide, within the Continental United States and during the warranty period, the services of an Authorized Service Representative (ASR) for on-site repair or replacement of defective parts.

Replacement Parts - Any system components that are not part of the original system order, including Island Card Readers, Pump Control Units, etc., are considered replacement parts.

Equipment	Term	Coverage
Commercial Pumps and Dispensers Full-Cabinet Consumer Pumps	One year from date of installation or 18 mos. from date of Gasboy International's invoice to the purchaser, whichever comes first.	Parts and Labor.
Small Transfer Pumps, Meters, Pressure Regulators	One year from date of installation or 18 mos. from date of Gasboy International's invoice to the purchaser, whichever comes first. - Excepting the Model 2020 Hand Pump, which has a 90-day warranty from date of GASBOY International's invoice.	Parts Only.
Keytrol	One year from date of installation or 18 mos. from date of Gasboy International's invoice to the purchaser, whichever comes first.	Parts and Labor.
Fuel Management Systems: - CFN/ Profit Point - Series 1000/Fleetkey - TopKAT - Fuel Point Readers (sold with new systems)	One year from date of start-up or 15 mos. from date of Gasboy International's invoice to the purchaser, whichever comes first. - The basic warranty only applies to systems which have been started up by a Gasboy Authorized Service Representative (ASR).	Parts and Labor.
Additional Fuel Point Items: - Fuel Point Readers sold for retrofitting existing systems. - Fuel Point vehicle and dispenser components.	One year from date of start-up or 15 mos. from date of Gasboy International's invoice to the purchaser, whichever comes first.	Parts Only.
Encoders, Embossers, Modems, CRTs, and Logger Printers	Purchased with Fuel Management System (Encoders, Embossers only): 90 days from the date of start-up by a Gasboy ASR, or 180 days from date of Gasboy International's invoice, whichever occurs first. Purchased with Fuel Management System (Modems, CRTs, and Logger Printers only): Matches system warranty. Purchased Separately: 90 days from date of Gasboy International's invoice to the purchaser.	Purchased with System (Encoders, Embossers only): Parts only. Purchased with System (Modems, CRTs, Logger Printers only): Matches system warranty. Purchased Separately: Parts Only.
Air Diaphragm Pumps	Three years from date of purchase (for full warranty description, see Price List).	Parts Only.
Items not manufactured by Gasboy (ex. automatic nozzles, hoses, swivels, etc.)	Not warranted by Gasboy International (consult original manufacturer's warranty).	Not Applicable.
Replacement Parts	One year from date of Gasboy International's invoice to the purchaser.	Parts Only.

To the extent permitted by law, this warranty is made in lieu of all other warranties, expressed or implied, including warranties of freedom from patent infringement, or merchantability, or fitness for a particular purpose, or arising from a course of dealing or usage of trade. No one is authorized to vary the terms of the warranty nor may anyone make any warranty of representation, or assume any liability other than that herein stated, in connection with the sale described herein. The acceptance of any order by Gasboy International is expressly made subject to the purchaser's agreement to these conditions.



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