GASBOY

FleetKey Fuel Management System

KE200 Key Encoder/Maintenance Terminal Operation Manual

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Approvals

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

Underwriters Laboratories (UL):

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

New York City Fire Department (NYFD):

NYFD C of A #	Product
4823	9100A, 9140A, 9152A, 9153A, 9800A, 9840A, 9850A, 9852A, 9853A, 9140
4997	9822A, 9823A
5046	9100Q, 9140Q, 9152Q, 9153Q, 9800Q, 9840Q, 9852Q, 9853Q
5087	8753K, 8853K, 9153K, 9853K (restricted to diesel and non-retail gasoline sales)

California Air Resources Board (CARB):

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

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

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

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

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Dispensers

5,257,720

Point of Sale/Back Office Equipment

D335,673

Additional US and foreign patents pending.

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1 – System Overview

Introduction

The Gasboy® KE200 Key Encoder/Maintenance Terminal allows you to encode Fleetkeys that are used in the 1000 FleetKey system and the CFN system with the key option. It also allows you to update the data key with maintenance information for the FleetKey system.

Figure 1-1: FleetKey
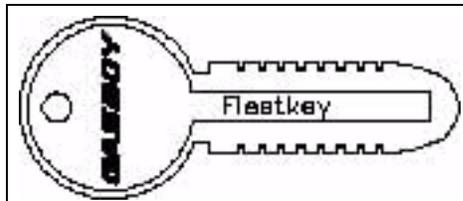
A Fleetkey is a small, plastic-encased integrated circuit which is capable of storing and retaining data. The Fleetkey is inserted, for encoding and maintenance purposes, into the receptacle labeled "FLEETKEY" that is located on the face of the KE200. Encoding involves electronically writing user-identification information for system access onto a Fleetkey.

The encoder itself can function as a standalone unit, or it can be attached to a data terminal or host computer that allows easier setup and encoding. For the standalone unit, the keypad allows you direct access to all setup, encoding, and maintenance procedures using a series of menus. When a data terminal is attached, you can perform all setup and all encoding (with the exception of inserting the key, which must be done at the KE200) using simple commands and stored encoding formats. Maintenance tables and transactions can be set up and updated from the data terminal. However, key updating must be performed at the KE200. When attached to a host computer, communication is via command and response packets. All data exchanged between the KE200 and the host computer is packaged as a data packet. C35365 KE200 Host Communications Command and Response Format manual contains information on communications and commands.

Hardware Description

The KE200 Key Encoder/Maintenance Terminal is a microprocessor controlled unit that encodes and updates Fleetkeys. It also serves as a maintenance terminal where technicians can update keys as part of the Fleetkey Maintenance Option.

It can be used in any of the following ways:
- Standalone
- With an ASCII terminal or a Cathode Ray Tube (CRT) monitor
- With a PC using appropriate interface software

The unit is compact and durable, and is equipped with a 20-position tactile feel membrane keypad and a key receptacle for insertion of Fleetkeys. A Manager's keyswitch is provided with two key types (Manager and Maintenance) to safeguard the system from unauthorized access. The system has 32K of battery-backed RAM, which safeguards system data in the event of a power failure. Two communication ports are provided: an RS-232 logger port, which is usually used for a printer, and an RS-232/RS-422 port used for communication with external devices (PC, CRT, and so on). A third port is also available for use with an optional 1200/2400 baud built-in modem.

Power	120 VAC, 60 Hz., 22W. Plugs into any standard 115 VAC wall outlet. The power line should be free from any surges or other electrical interference.
Operating Environment	0 to 40° C, 32 to 104° F, with a relative humidity of 20 - 80%, non-condensing.
Location	The KE200 should be located in an office or garage type environment in an area protected from direct contact with the weather. It should not be installed over a hazardous location.

Figure 1-2: KE200 Hardware

KE200 PCB

The KE200 PCB is the controller for the key encoder. Jumper settings on the PCB for each of the following must be made to ensure correct operation.

- Port 1 configuration for RS-232 or RS-422
- Baud Rates for Ports 1, 2, and 3
- Program address (map type)

Figure 1-3 illustrates the jumper position for each and shows where the jumper patch appears on the PCB.

Figure 1-3: KE200 PCB
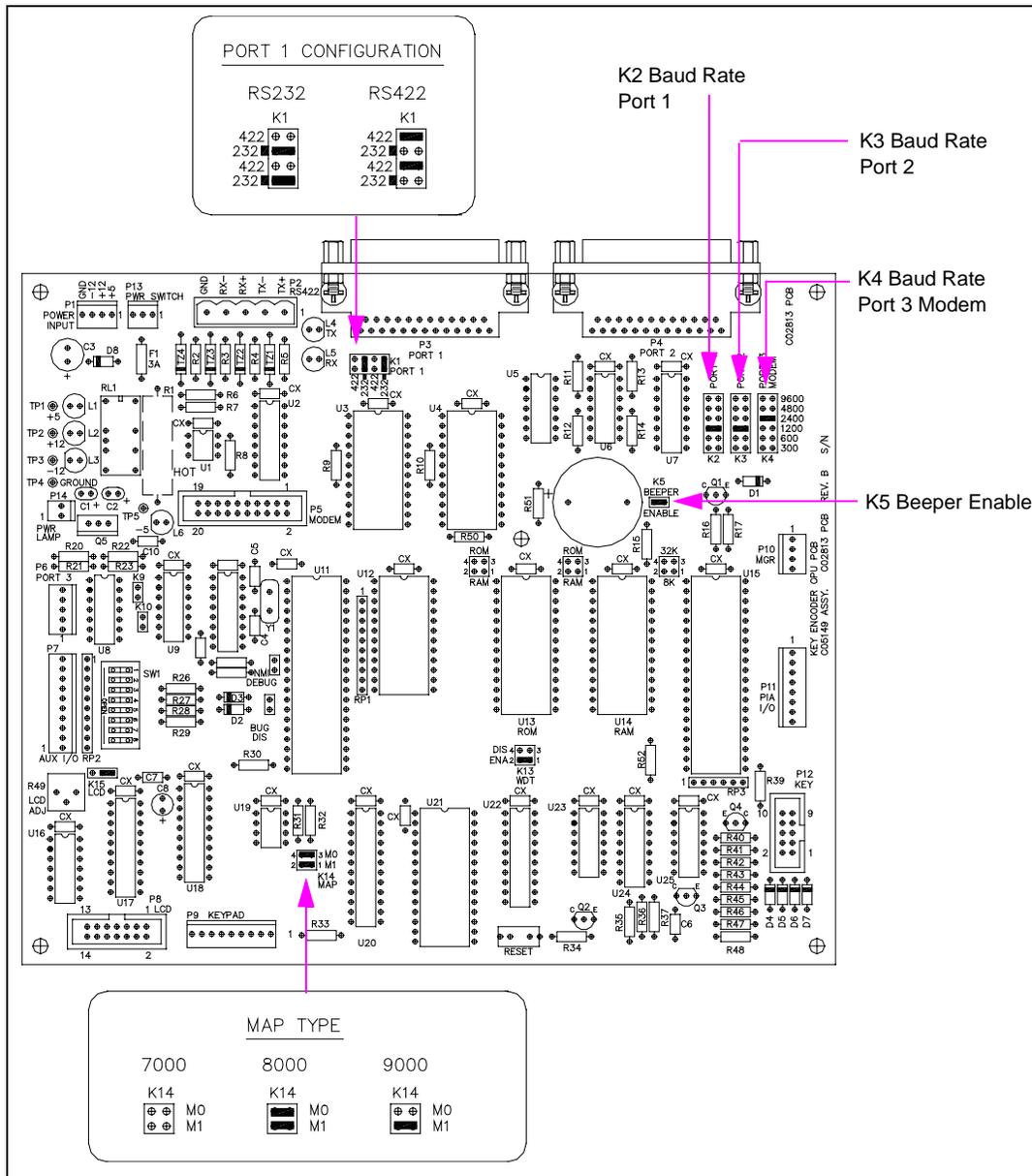
Communications

Communications Ports

The KE200 has two asynchronous ports to connect a logger printer and/or a data terminal. The connection can be made by a direct cable or via a telephone modem. Ports 1 and 2 can be set to a variety of baud rates (300, 600, 1200, 2400, 4800, and 9600) depending on the equipment being connected.

- Port 1 is an RS-232/RS-422 port used to connect to external devices such as a PC, CRT or external modem.
- Port 2 is an RS-232 port used to directly connect a printer (logger) to the KE200.
- A third port is also available for use with a built-in 1200/2400 baud modem (optional).

The cable length from the RS-232 port to the device is limited to 100 feet. If the distance exceeds 100 feet, a Gasboy Short Haul Modem (P/N C05618) is required.

Communication Protocol

Devices that communicate with the KE200 must be able to transmit and receive full duplex, ASCII, asynchronous data via an EIA RS-232 connection.

The KE200 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.

When used with the computer (or host) mode interface, the host computer initiates all communications between itself and the KE200, with command packets. The KE200 responds to the host command packets with response packets. All data exchanged between the KE200 and the host computer is packaged as a data packet.

KE200 Switch Settings

An 8-position switch bank, located on the KE200 CPU board is used to set the poll address and the communications mode for the KE200. On switch bank SW1, for SW1-1 through SW1-4, set the poll address when the Computer Mode interface is active. SW1-5 indicates the communications mode for the KE200's Port 1. The last three switch positions (SW1-6 through SW1-8) are currently unused. All switch settings are read during program initialization, at power-up. If changes are made, the KE200 must be turned off then on, to recognize them.

The following table contains Poll Address Switch Settings for SW1-1 through SW1-4.

Address	SW1-1	SW1-2	SW1-3	SW1-4
01	CLOSED	CLOSED	CLOSED	CLOSED
02	OPEN	CLOSED	CLOSED	CLOSED
03	CLOSED	OPEN	CLOSED	CLOSED
04	OPEN	OPEN	CLOSED	CLOSED
05	CLOSED	CLOSED	OPEN	CLOSED
06	OPEN	CLOSED	OPEN	CLOSED
07	CLOSED	OPEN	OPEN	CLOSED
08	OPEN	OPEN	OPEN	CLOSED
09	CLOSED	CLOSED	CLOSED	OPEN
10	OPEN	CLOSED	CLOSED	OPEN
11	CLOSED	OPEN	CLOSED	OPEN
12	OPEN	OPEN	CLOSED	OPEN
13	CLOSED	CLOSED	OPEN	OPEN
14	OPEN	CLOSED	OPEN	OPEN
15	CLOSED	OPEN	OPEN	OPEN
16	OPEN	OPEN	OPEN	OPEN

Note: The poll address is the same for both Port 1 and Port 3 (internal modem port).

Position 5 on switch bank SW1 is used to select the communications mode for Port 1. When position 5 is closed, the port operates in the Standard Terminal mode providing operator prompts and messages. Activity through Port 1 is also sent to the logger port while Port 1 is in the Terminal mode.

When position 5 is open, the Computer Mode interface is selected for Port 1. While in the Computer mode, the port only responds to Computer mode command packets. Gasboy PC software uses Computer mode to communicate with the KE200. Activity through Port 1 is not sent to the logger port while it is set for Computer mode.

SW1-5	Definition
CLOSED	Terminal mode selected for Port 1
OPEN	Computer mode selected for Port 1

Communications Terminations

The wiring terminations for various communication options are provided below:

RS-232 - Data Terminal Communications for Ports 1 and 2

Pin	Function	Input/Output
2	TxD - Transmit data	Input
3	RxD - Receive data	Output
7	Signal ground	Ground
8	DCD - Data Carrier Detect	Output
20	DTR - Data Terminal Ready	Input

RS-422 - Device Communications for Port 1

Pin	Function	Input/Output
1	Tx+ - Transmit data	Output
2	Tx- - Transmit data	Output
3	Rx+ - Receive data	Input
4	Rx- - Receive data	Input
5	Signal ground	Ground

Internal Modem

The optional built-in modem on the KE200 is a Bell 103J/212A compatible answer modem. The KE200 supports a 2400 baud internal modem, which is part of the modem kit (P/N C06319).

The modem is designed for 0-300, 1200, or 2400 baud, full duplex, asynchronous communication. The modem is mounted inside the KE200 system at the factory. Power for the modem is supplied by the KE200 system.

The modem is designed to meet or exceed the direct connection registration requirements of the FCC rules. This means the modem will connect directly with a jack supplied by the phone company. The customer has to order this jack and have it installed. To order this equipment from the phone company, specify the following:
- Any one of the following jacks: RJ11C or RJ41S, or RJ45S.
- The registration number of 6BHUSA-24793-DT-E.
- The data transmission rate of 0-300 baud, 1200 baud, or 2400 baud.
- The Bell equivalent of 103J/212A.

Communication Wiring

The figures below show the various wiring schemes that are available for the installation of the KE200.

Figure 1-4: RS-232 Connection

KE200 Port 1 or 2

Peripheral Device
(Terminal or Modem)

EIA 1:1 Cable
P/N C04549
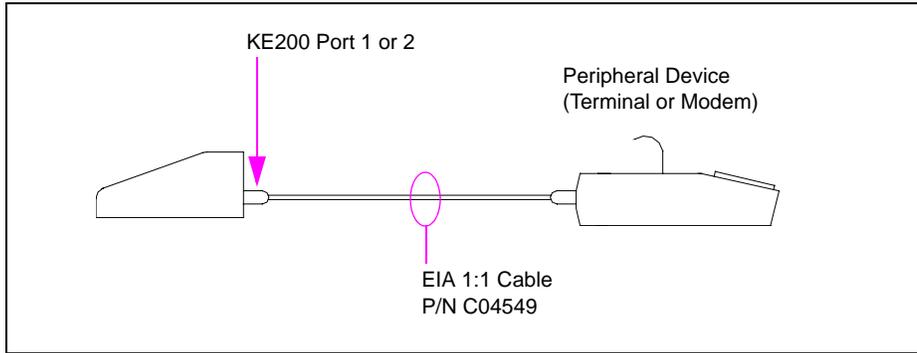
Figure 1-5: Short Haul Modem - ME800

KE200 Port 1 or 2

SHM -ME800
(P/N C02479)

Protector
(P/N C08159)

Maximum
Distance
(see Note)

Protector
(P/N C08159)

SHM -ME800
(P/N C02479)

Peripheral Device

Tx+ / Tx− / Rx+ / Rx− / GND

2 4 6 8 10   3 5 7 9 1   3 5 7 9 1   2 4 6 8 10

Rx+ / Rx− / Tx+ / Tx− / GND

Shield
GND
(if used)

EIA 1:1 Cable
(P/N C04549)

EIA 1:1 Cable
(P/N C04549)

AC Power   AC Ground   2 Twisted Pairs   AC Ground   AC Power
                           (see Note)
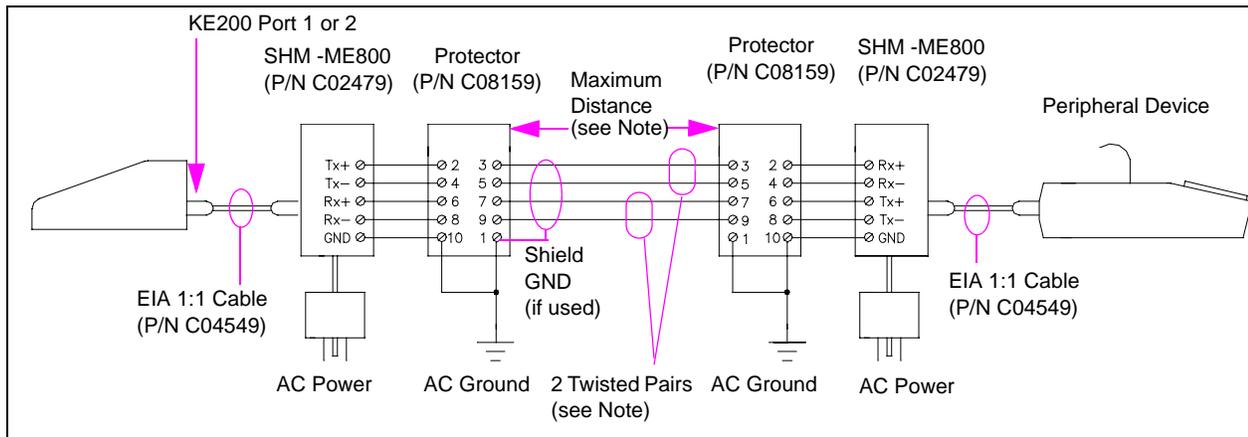
Note: Maximum distances specified by the manufacturer are listed here. These distances are valid when you use 22 AWG or 24 AWG two twisted-pair unshielded cable (a shielded cable will reduce the distance to one-third of the values shown).

Baud Rate	Distance
300 and 1200 baud	10 miles
2400 baud	5 miles
4800 baud	4 miles
9600 baud	2 miles

Figure 1-6: RS-422 Gasboy Short Haul Modem
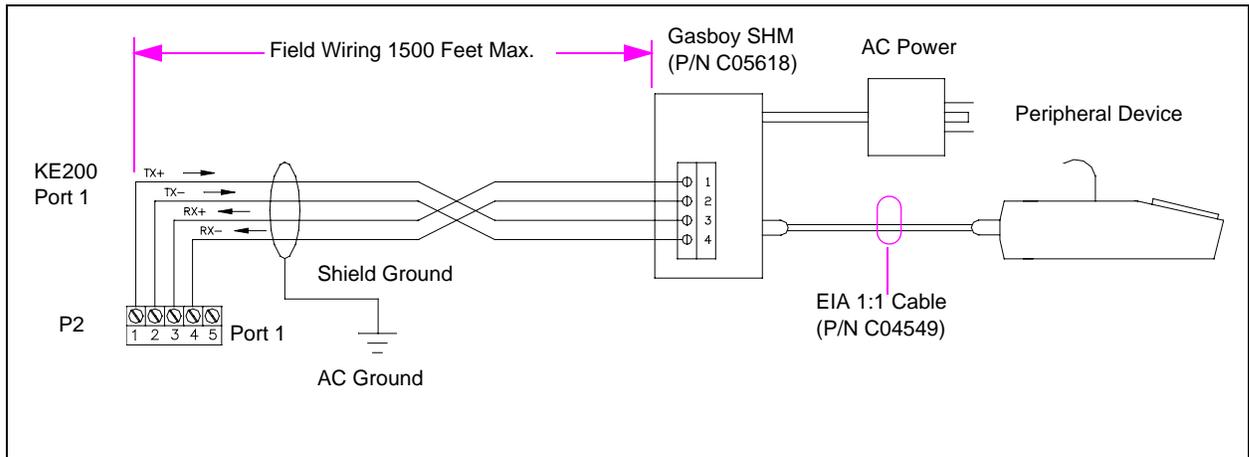
Cables

The drawing below shows the pin-to-pin layout of the EIA 1:1 cable (Gasboy P/N C04549).

Figure 1-7: Pin-to-Pin Layout of EIA 1:1 Cable
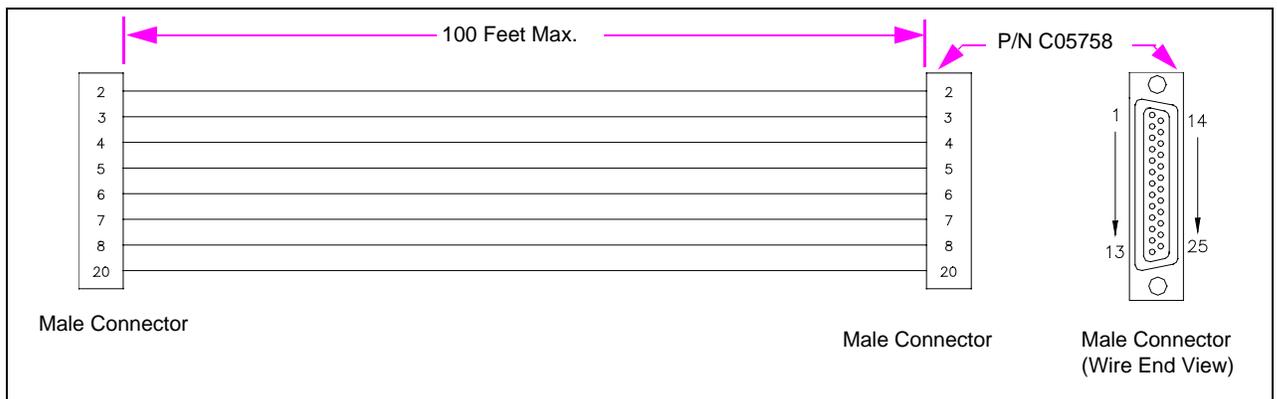
Using the KE200 Keypad and Key Receptacle

The keypad for the encoder is simple, consisting of numeric keys 0-9, and the following keys:

Figure 1-8: KE200 Keypad and Receptacle
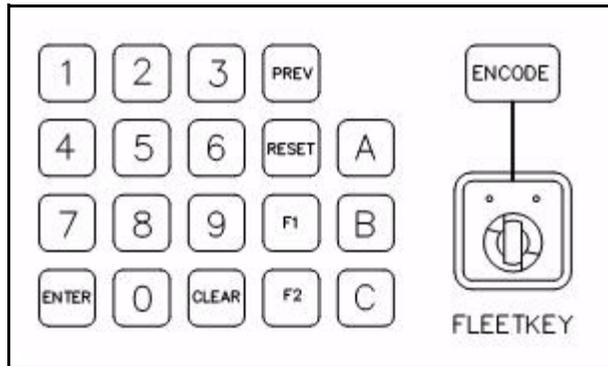
- **ENTER** transmits entered information to the encoder and allows you to move through the prompts. It is also used to acknowledge and clear error or status messages.
- **CLEAR** clears the entry. It is used as a "NO" response to a verification prompt. When pressed twice in encoding mode, it enters special field separators and supervisor entry characters.
- **F1** in Setup and Maintenance modes allows you to move to the next prompt. It is disabled for Encoding mode.
- **F2** in Setup and Maintenance modes allows you to move to the previous prompt. It is disabled for Encoding mode.
- **RESET** in Encoding or Setup modes returns you to the first prompt in the group. It is disabled in Edit mode.
- **PREV** in Encode mode returns you to the previously displayed prompt. If you are at the first prompt in a group, you will exit to the Encode menu. In Setup or Maintenance modes, it backs you out by group. Use the flow diagram in Section 2 to visualize the following: If you are at **FIELD SIZE**, under the group **SELECT ID FIELD** and you press **PREV** once, you return to **SELECT ID FIELD**. If you press **PREV** again, **CONFIG ID MENU** displays. If you press **PREV** again, **SETUP MENU** displays.
- **ENCODE** in Encode mode skips any intermediate prompts, validates remaining unentered data, and takes you immediately to the **ENCODE KEY** verification menu from whatever prompt you were at. If errors exist in the unentered data, the system returns to the prompt in error and displays **RANGE ERROR**.
- "**A**", "**B**", "**C**" selects maintenance category in Setup and Maintenance modes.
- A key receptacle on the right-hand side of the encoder face allows you to insert Fleetkeys for encoding or maintenance updating.

Using the KE200 Display

The display has some distinguishing characteristics that will help you determine what entry is required. A flashing cursor at the end of a prompt indicates that the KE200 is waiting for input from the keypad (0-9) or "A", "B", "C" keys. If there is no flashing cursor on an input prompt, use the "F1" or "F2" keys to toggle between possible choices for that prompt. When you encounter an error or status message, press **ENTER** to clear the message. In an error condition, the KE200 displays the field in error for correction. In Encoding mode, you may see the following special characters on the display: "~" for field separator and "*" for supervisor entry. These are discussed later in Field Descriptions, ID Fields (see "Configure ID Fields" on page 23).

Using Your Logger Printout

When you have a logger (printer) attached to Port 2 of your KE200 system, all significant events are recorded on this printout. The following events are logged: power-ups, sign-ons, sign-offs, mode changes, setup and load commands, encode key commands, reset commands, encode records (if you answered yes to **LOG KEY DATA?**) and maintenance transactions.

Each logger printout entry is set up the same. It contains where the command originated (system, keypad, Port 1 or Port 3), the command or event, and a date/time stamp. A sample logger printout is shown below.

Figure 1-9: Logger Printout

```
SYSTEM: POWER UP @03/10/92 08:16
KEYPAD: IDLE MODE @03/10/92 08:16
PORT 1: SIGNED OFF @03/10/92 08:21
PORT 1: SIGNED ON @03/10/92 10:10
PORT 1: LOad SIgnon @03/10/92 10:11
PORT 1: SETUP @03/10/92 10:11
PORT 1: LOad COuntry @03/10/92 10:10
PORT 1: LOad IDfields
PORT 1: LOad FOrmat
PORT 1: RESet REcords
PORT 1: RESet TRansactions
PORT 1: LOad TRansactions
PORT 1: CLear MAintenance
PORT 1: LOad MAintenance
PORT 1: SIGNED OFF @03/10/92 10:10
```

System Access and Operating Modes

To guard against unauthorized use, the KE200 system has two types of access keys:
- A manager key, which allows access to both the Encoding and Maintenance modes
- A maintenance key, which allows access to Maintenance modes only.

The key is inserted into the front of the encoder cabinet. It has three possible positions which correspond to the system modes:
- Idle
- Maintenance
- Encode/Setup

The key position for each mode is shown in Figure 1-10. You can access the modes only when the proper key is inserted and in the correct position.

Figure 1-10: Key Positions for Each Mode
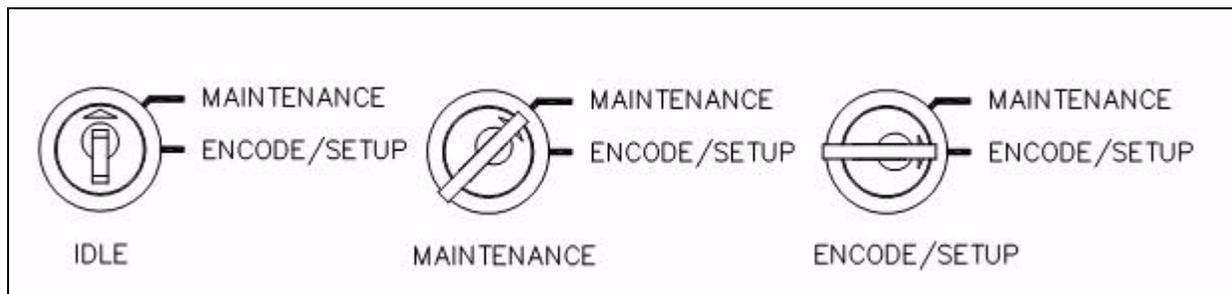
When a data terminal is in use, the KE200 must be in Idle mode to enable operation of all the commands. When the KE200 is a standalone, Idle mode has no function other than to display the current date and time.

Maintenance mode allows you to view and update maintenance information on a key. All maintenance is performed from the KE200; you cannot perform maintenance from the data terminal.

Encode/Setup mode allows access to all system setup parameters and encoding fields. The key must be in this position for you to set up your system from the KE200 or to encode keys from the KE200.

Before Proceeding

You can begin to set up the KE200 for operation, if you have a general understanding of how the system works.

When you first use the system, you will have to perform setup functions to define your system attributes, configure the maintenance table, set your units and date format, and run any diagnostics that are required. The procedure for setting up the KE200 differs depending on whether you are using the keypad or a data terminal.

With the keypad, you must progress through a series of displayed menus and fill in the data for each. With the terminal, you can run a "SETUP" routine that automatically prompts you for the data necessary to run your system, or you can execute commands individually.

The section "KE200 Setup - Standalone" on page 15 describes setting up the system using the Standalone KE200. The section "KE200 Setup - Terminal" on page 35 describes setting up the system using the data terminal.

Once your system is set up, you must encode your keys, based on your system layout and use some of the values you entered in Setup mode. Once your keys are initially encoded, you will have to access Encode mode infrequently, when you need to add additional keys, or change data on a key. The section "Encoding Keys" on page 63 contains general information on key encoding and encoding procedures for both the standalone KE200 and the data terminal.

Finally, you will have to record Performed Maintenance as scheduled. The section "Performing Maintenance" on page 77 describes viewing maintenance information on the key and performing maintenance.

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2 – KE200 Setup - Standalone

Overview

The standalone KE200 allows you direct access to all setup, encoding (numeric fields only), and maintenance procedures. You must enter commands via the keypad and a series of menus are displayed, which guide you through setup, encoding, and maintenance.

Accessing KE200 Modes

The different modes of the KE200 are determined by the position of the Manager's key. When the KE200 is standalone, Idle mode has no function, other than to display the current date and time. Maintenance mode allows you to view and update maintenance information on a key. Encode/Setup mode allows access to all system setup parameters and encoding fields. The key must be in this position for you to set up your system from the KE200 or to encode keys from the KE200.

Maintenance Mode (1000 FleetKey only)

Note: You can use either the Manager key or the Maintenance key to access Maintenance mode.

To access Maintenance mode, proceed as follows:

1   Turn the Manager key to **MAINT**. The system displays the following:

```
MAINTENANCE MODE:
   PERFORM MAINTENANCE
```

2   Press **ENTER** to display the first Perform Maintenance prompt.

```
PERFORM MAINTENANCE:
            INSERT KEY
```

Encode Mode

To access Encode mode, proceed as follows:

1 Turn the Manager key to **ENCODE**. The system displays the following:

```
SELECT OPTION:
                ENCODE
```

2 If you wish to encode keys, press **ENTER**. The system displays the following:
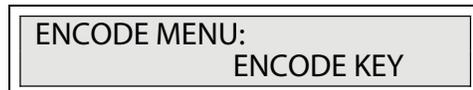
```
ENCODE MENU:
                ENCODE KEY
```

Setup Mode

To access Setup mode, proceed as follows:

1 Turn the Manager key to **ENCODE**. The system displays the following:
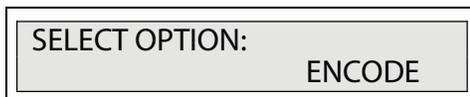
```
SELECT OPTION:
                ENCODE
```

2 If you wish to enter Setup mode, press **F1**. The system displays the following:
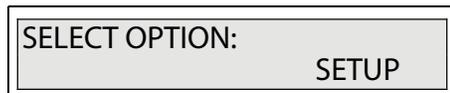
```
SELECT OPTION:
                SETUP
```

3 Press **ENTER** to display the first Setup prompt.
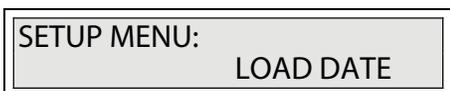
```
SETUP MENU:
                LOAD DATE
```

System Flow Diagram

The KE200 Key Encoder/Maintenance Terminal software is designed to facilitate easy navigation. Figure 2-1 on page 17 shows the system layout by manager key position.

Figure 2-1: System Flow Diagram
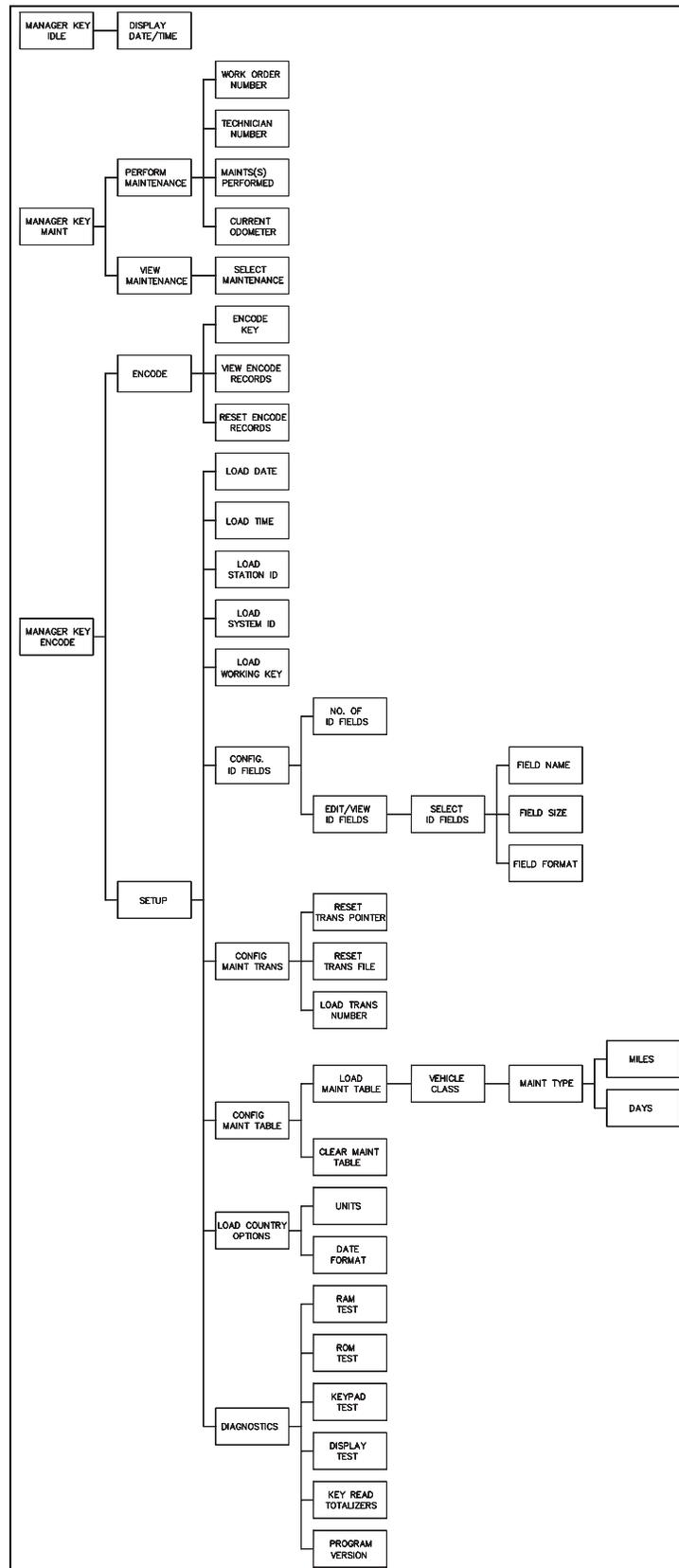
Setting Up the KE200

The first time you use your Key Encoder/Maintenance Terminal, perform the following steps in order to load your system with the necessary data for processing.

1 With the Manager key inserted and in the idle position, turn the power switch, located on the left side of the face to "ON". The KE200 displays the current date and time (these were set at the factory to Eastern time).

2 Perform the Reset Records command. See "Encoding Keys" on page 63 and "Reset Encode Records - Keypad" on page 75.

3 Enter Setup mode and perform the following:
   • Load Date (if not correct)
   • Load Time (if not correct)
   • Load Station ID for your key encoder/maintenance terminal.
   • Load System ID: This must match the system ID of your FleetKey system. Refer to the key layout provided with your FleetKey system.
   • Load Working Key: This must match the working key of your FleetKey system. Refer to the key layout provided with your FleetKey system.
   • Load Country options.
   • Configure ID fields: The fields you configure must match the fields as you ordered them. Only numeric fields can be encoded using the KE200 keypad. If your ID fields are alphanumeric (FleetKey only), you must use a data terminal for encoding input. Refer to your key layout.
   • Configure Maintenance Transactions (FleetKey only): This includes resetting the transaction pointer, resetting the transaction file and loading the transaction number.
   • Configure Maintenance table (FleetKey only): This includes clearing the Maintenance Table to eliminate any data that may have been present from testing and loading a Maintenance Table that matches the one defined in your FleetKey system.
   • Run diagnostics, if necessary.

Once the above steps are performed, your system is ready to encode keys and record Performed Maintenance.

The commands listed above are discussed on the pages that follow, in the order in which they appear on the Setup menu.

Load Date

Use "LOAD DATE" to load the current date. The KE200 should be factory set with the correct date, but occasionally you may need to change it.

To load date, proceed as follows:

1 Enter the Setup mode as described previously. The system displays the following:

> SETUP MENU:
>   LOAD DATE

2 Press **ENTER**. The system displays the following:

> SETUP MENU: MMDDYY
>   1 2 1 6 9 1

The currently loaded date appears on the second line of the display.

3 Type the correct date and press **ENTER**. The display returns to the following:

> SETUP MENU:
>   LOAD DATE

To display another primary prompt, press **F1** or **F2** until the desired prompt appears.

To exit back to "SELECT OPTION: SETUP", press **PREV**.

Load Time

Use "LOAD TIME" to load the current time in 24-hour format (00:00 to 23:59). The KE200 is factory set to Eastern time with the correct time, but occasionally you may need to change it.

To load time, proceed as follows:

1 Enter Setup Mode as described previously. The system displays the following:

> SETUP MENU:
>   LOAD DATE

2   Press **F1** or **F2** until the following is displayed:

```
SETUP MENU:
              LOAD TIME
```

3   Press **ENTER**. The prompt now reads:

```
LOAD TIME:        HHMMSS
                  095521
```

The currently loaded time appears on the second line of the display.

4   Type the correct time and press **ENTER**. The display returns to the following:

```
SETUP MENU:
              LOAD TIME
```

5   To display another primary prompt, press **F1** or **F2** until the desired prompt appears.

6   To exit back to "SELECT OPTION**"**, press **SETUP** > **PREV**.

Load Station ID

Use "LOAD STATION ID" to load a number of up to three digits to identify the key encoder/ maintenance terminal. This identifier is similar to the site ID used in the FleetKey system. It is used mainly to identify the station for communication with PCs or other communications equipment.

To load station ID, proceed as follows:

1   Enter Setup Mode as described previously. The system displays the following:

```
SETUP MENU:
              LOAD DATE
```

2   Press **F1** or **F2** until the following appears:

```
SETUP MENU:
            LOAD STATION ID
```

3   Press **ENTER**. The currently loaded value appears on the second line of the display.
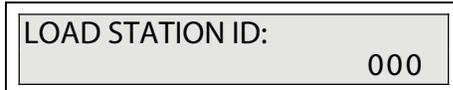
```
LOAD STATION ID:
                          000
```

4   Type a one to three digit identifier and press **ENTER**. The display returns to the following:

```
SETUP MENU:
            LOAD STATION ID
```

5   To display another primary prompt, press **F1** or **F2** until the desired prompt appears.

6   To exit back to "SELECT OPTION"**,** press **SETUP** > **PREV**.

Load System ID

Use "LOAD SYSTEM ID" to load the 4-digit system ID of your FleetKey system. This number is verified with the key when you perform maintenance.

To load system ID, proceed as follows:

1   Enter Setup Mode as described previously. The system displays the following:

```
SETUP MENU:
            LOAD DATE
```
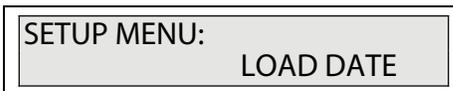
2   Press **F1** or **F2** until the following appears:
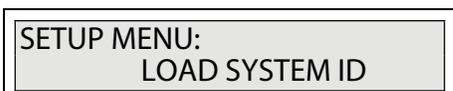
```
SETUP MENU:
            LOAD SYSTEM ID
```

3   Press **ENTER**. The currently loaded value appears on the second line of the display.

```
SYSTEM ID:
                          5630
```

4   Type the system ID of your FleetKey system. This number appears on your key layout.

5   Press **ENTER**. The display returns to the following:

```
SETUP MENU:
            LOAD SYSTEM ID
```

6 To display another primary prompt, press **F1** or **F2** until the desired prompt appears.

7 To exit back to "SELECT OPTION", press **SETUP** > **PREV**.

Load Working Key

Use "LOAD WORKING KEY" to load the 4-digit working key used with your FleetKey system. This number is used to encrypt and decrypt Personal Identification Numbers (PINs) when you encode your keys.

To load working key, proceed as follows:

1 Enter Setup Mode as described previously. The system displays:

```
SETUP MENU:
            LOAD DATE
```

2 Press **F1** or **F2** until the following appears:

```
SETUP MENU:
     LOAD WORKING KEY
```

3 Press **ENTER**. The currently loaded value appears on the second line of the display.

```
LOAD WORKING KEY:
                1234
```

4 Type the working key for your FleetKey system. This number appears on your key layout.

5 Press **ENTER**. The display returns to the following:

```
SETUP MENU:
     LOAD WORKING KEY
```

6 To display another primary prompt, press **F1** or **F2** until the desired prompt appears.

7 To exit back to "SELECT OPTION", press **SETUP** > **PREV**.

Configure ID Fields

Use "CONFIG ID FIELDS" to identify the number of ID fields and the name, size, and format of each. The system has a set number of predefined field names (VEHICLE, EMPLOYEE, TRAILER, EQUIPMENT, PATRON, S.S. NO., MISC, DRIVER, ACCOUNT, or DEPARTMENT). You must choose one of these names. If you have a field that does not exactly match one of these names, select one that is close or select "MISC". ID fields used on CFN systems with the key option must be numeric.

To configure ID fields, proceed as follows:

Number of ID Fields

1 Enter Setup Mode as described previously. The system displays:

```
SETUP MENU:
            LOAD DATE
```
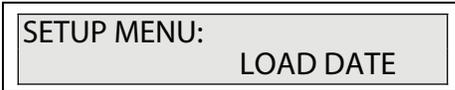
2 Press **F1** or **F2** until the following appears:

```
SETUP MENU:
       CONFIG ID FIELDS
```

3 Press **ENTER**. The display prompts:

```
CONFIG ID MENU:
       NO. OF ID FIELDS
```

4 To identify the number of ID fields, proceed to step 5. To edit/view ID fields, proceed to step 7.

5 Press **ENTER**. The currently loaded value appears on the second line of the display.
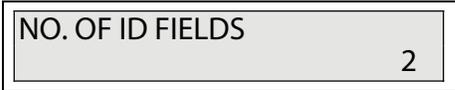
```
NO. OF ID FIELDS
                      2
```

6 Type the number of ID fields configured in your FleetKey system and press **ENTER**. The display returns to the following:

```
CONFIG ID MENU:
       NO. OF ID FIELDS
```

Edit or View Field Data

7 Press **F1**. The system displays the following:

```
CONFIG ID MENU:
    EDIT/VIEW ID FIELD
```

8 Press **ENTER**. The system displays the following:

```
SELECT ID FIELD:
#1          EMPLOYEE,04,N
```

The second line of the display shows the current attributes of field 1 (number, name, size, and format). If no data has been loaded for the field, the system displays "no data loaded...".

9 To select data for a different ID field, press **F1** or **F2** until the desired field data is displayed.

10 To change one or more of the displayed field's attributes, press **ENTER**. The system prompts:

```
ID FIELD #1:
               FIELD NAME
```

11 To change the field name, press **ENTER**. The currently loaded value appears on the second line of the display.

```
FIELD NAME:
               EMPLOYEE
```

12 Press **F1** or **F2** to scroll through the list of available field names. When the desired name is displayed, press **ENTER**. The display returns to the following:

```
ID FIELD #1:
               FIELD NAME
```

13 To change another field attribute, press **F1**. The system displays the following:

```
ID FIELD #1:
               FIELD SIZE
```

14 To change the size (length) of the field, press **ENTER**. The currently loaded value appears on the second line of the display.

```
FIELD SIZE:
                     04
```

15 Type the new field size and press **ENTER**. The display returns to the following.

```
ID FIELD #1:
              FIELD SIZE
```

16 To change another field attribute, press **F1** to display the following.

```
ID FIELD #1:
              FIELD FORMAT
```

17 To change the format of the field (numeric or alpha), press **ENTER**.
Note: Fields used on CFN systems with the key option must be numeric.

The currently loaded value appears on the second line of the display.

```
FIELD FORMAT:
                NUMERIC
```

18 Press **F1** or **F2** to toggle between choices. When the desired choice is displayed, press **ENTER**. The system returns to "FIELD FORMAT".

Note: Numeric ID fields can be set up as incrementing or decrementing fields to speed data entry. However, these fields can only be encoded this way using the "LOAD FORMAT" terminal command. See .

19 To change the attributes for another field name, press **PREV**. The display returns to the following:

```
SELECT ID FIELD:
#1        EMPLOYEE,04,N
```

Repeat the procedure from step 9 onwards.

20 To exit to the "EDIT/VIEW ID FIELD" prompt, press **PREV** twice.

21 To exit to the "SETUP MENU" prompt, press **PREV** thrice. Then press **F1** to select another primary prompt.

Configure Maintenance Transactions (1000 FleetKey only)

"CONFIGURE MAINTENANCE TRANSACTIONS" is a menu item that provides access to three submenus that allow you to reset the maintenance transaction pointer, reset the transaction file, and load the starting transaction number for maintenance transactions.

Maintenance transactions are stored in the KE200 in circular memory storage. The system keeps track of these transactions by a beginning (FIRST) and ending (LAST) pointer system. The FIRST pointer is set with the "Reset Transaction Number" procedure. The LAST pointer advances as transactions are stored. The KE200 stores 980 maintenance transactions. You can print these transactions via the RS-232 port, or you can print only specific ones by moving the FIRST pointer using the "Reset Transaction Pointer" procedure. Ensure that you replace the pointer to its original location after printing the desired transactions. If you leave the pointer ahead of transactions not yet printed, transactions may be overwritten and lost.

When the entire maintenance transaction file has been filled, a "MEMORY FULL" condition exists. The KE200 will not accept new maintenance transactions until space has been freed up. To free transaction space, first, print or poll the existing maintenance transactions. Then, advance the FIRST transaction pointer using the reset transaction pointer procedure. This will free space below the first pointer allowing new transactions to overwrite the old ones.

To configure Maintenance Transactions, proceed as follows:

1 Enter Setup Mode as described previously. The system displays the following:

```
SETUP MENU:
            LOAD DATE
```

2 Press **F1** or **F2** until the following appears:

```
SETUP MENU:
    CONFIG MAINT TRANS
```

Reset Transaction Pointer

Use "RESET TRANS POINTER" to reset the starting point for printing maintenance transactions via an RS-232 port. For example, if you have 50 transactions in the maintenance transaction file (your ending pointer is at 50) and you want to print only the last 10 transactions, you will have to move your FIRST pointer to 40.

Note: Ensure that you return your pointer to its starting location to avoid losing transactions.

To reset Transaction Pointer, proceed as follows:

1 From the "CONFIG MAINT TRANS" display, press **ENTER**. The system displays the following:

```
MAINT TRANS MENU:
  RESET TRANS POINTER
```

2 Press **ENTER**. The system displays the following:

```
RESET TRANS POINTER:
                        ?
```

3 Type the number at which you want transactions to start and press **ENTER**.

Reset Transaction File

Use "RESET TRANS FILE" to reset the maintenance transaction file.

To reset Transaction file, proceed as follows:

1 From the "CONFIG MAINT TRANS" display, press **ENTER**. The system displays the following:

```
MAINT TRANS MENU:
  RESET TRANS POINTER
```

2 Press **F1** until the system displays the following:

```
MAINT TRANS MENU:
        RESET TRANS FILE
```

3 Press **ENTER**. The system displays the following:

```
ARE YOU SURE?
  <ENT>=YES <CLR>=NO
```

4 Press **ENTER** to reset the file. The system displays the message "COMMAND COMPLETED".

Load Transaction Number

Use "LOAD TRANS NUMBER" to load a starting number for your maintenance transactions. To start your transactions at the number you desire, this command value must be set to the number before the one you wish to start at (for example, if your first transaction is to be number 1, set this command to zero).

To load Transaction number, proceed as follows:

1 From the "CONFIG MAINT TRANS" display, press **ENTER**. The system displays the following:

```
MAINT TRANS MENU:
  RESET TRANS POINTER
```

2 Press **F1** until the system displays the following:

```
MAINT TRANS MENU:
    LOAD TRANS NUMBER
```

3 Press **ENTER**. The currently loaded value appears on the second line of the display.

```
LOAD TRANS NUMBER:
                0035
```

4 Type a 4-digit transaction number and press **ENTER**. The system returns to the following:

```
MAINT TRANS MENU:
    LOAD TRANS NUMBER
```

5 To exit to the "SETUP MENU" prompt, press **PREV**, then press **F1** to select another primary prompt.

Configure Maintenance Table (1000 FleetKey only)

"CONFIG MAINTENANCE TABLE" is a menu item that provides access to two submenus which allow you to load the maintenance table or clear the maintenance table. As discussed in detail in the FleetKey Operation Manual, the Maintenance table consists of up to 20 classes of vehicle, with the three maintenance types (A, B, and C) and a "MILES" and "DAYS" between maintenance entry defined for each. The maintenance table you enter at the KE200 Encoder must be identical to the one entered at the FleetKey system.

Use "CLEAR MAINT TABLE" when you start up your system or before the initial loading of the maintenance table to clear out any leftover information that may be present from factory testing. Use the "CLEAR" option with care as it deletes the entire maintenance table and loads it with zeros.

To configure Maintenance Table, proceed as follows:

Build a Maintenance Table

1 Enter Setup Mode as described previously. The system displays the following:

```
SETUP MENU:
                LOAD DATE
```

2 Press **F1** or **F2** until the following appears:

```
SETUP MENU:
    CONFIG MAINT TABLE
```

3 Press **ENTER**. The system prompts:

```
MAINT TABLE MENU:
        LOAD MAINT TABLE
```

If you wish to load a maintenance table, press **ENTER**. The system prompts:

```
VEH. CLASS (1-20):
                        01
```

4 Enter the class you wish to define and press **ENTER** (to define data for class "1", just press ENTER). The system displays:

```
VEHICLE CLASS #01:
A:      M=010000  D=000
```

Line 2 contains the current data for maintenance type A (miles and days).

5 If you wish to display data for another maintenance type (B or C), press **F1** or **F2**. When the desired maintenance type data is displayed, press **ENTER**. The system displays:

```
MAINTENANCE x:
                        MILES
```

6   To enter miles, press **ENTER**. The currently loaded value appears on the second line of the display:

```
MILES:
              010000
```

7   Enter up to six digits to represent the number of miles between maintenance (for example, if maintenance "A" is to be performed every 10,000 miles, enter 10000) and press **ENTER**. The display returns to:

```
MAINTENANCE x:
              MILES
```

8   To enter days, press **F1** and **ENTER**. The system displays the following:

```
DAYS:
               000
```

The currently loaded value appears on the second line of the display.

9   Enter up to three digits to represent the number of days between maintenance (for example, if maintenance "A" is to be performed every 60 days, enter 60) and press **ENTER**. The display returns to:

```
MAINTENANCE A:
               DAYS
```

10 To define data for another maintenance type, press **PREV** and repeat this procedure from step 5 onwards.

11 To define maintenance types for another class, press **PREV** twice and repeat this procedure from step 4 onwards.

12 To return to the "SETUP MENU" display, press **PREV** four times.

Clear the Maintenance Table

To clear the maintenance table, proceed as follows:

1   Enter Setup Mode as described previously. The system displays the following:

```
SETUP MENU:
          LOAD DATE
```

2 Press **F1** or **F2** until the following appears:

```
SETUP MENU:
    CONFIG MAINT TABLE
```

3 Press **ENTER**. The system prompts:

```
MAINT TABLE MENU:
    LOAD MAINT TABLE
```

4 Press **F1** or **F2** until the system prompts:

```
MAINT TABLE MENU:
    CLEAR MAINT TABLE
```

5 To clear the maintenance table, press **ENTER**. The system prompts you with the following query:

```
ARE YOU SURE?
    <ENT>=YES <CLR>=NO
```

6 To clear the maintenance table, press **ENTER**. To leave the maintenance table unchanged, press **CLEAR**. The display returns to the following:

```
MAINT TABLE MENU:
    CLEAR MAINT TABLE
```

7 To return to the "SETUP MENU", press **PREV**.

Load Country Options

Use "LOAD COUNTRY OPTIONS" to enter the units of measure (miles or kilometers) and the date format to be used (MM/DD/YY, YY/MM/DD, or DD/MM/YY). The date format you select will show up in Idle mode, in encoding records, in maintenance transactions, or when you are viewing maintenance.

To load Country options, proceed as follows:

1   Enter Setup mode as described previously. The system displays the following:

```
SETUP MENU:
                LOAD DATE
```

2   Press **F1** or **F2** until the following appears:

```
SETUP MENU:
 LOAD COUNTRY OPTIONS
```

3   Press **ENTER**. The system displays the following:

```
COUNTRY OPTIONS:
                 UNITS
```

4   To enter units, press **ENTER**. The system displays the following:

```
UNITS:
                  MILES
```

5   Press **F1** to toggle between miles and kilometers. When the desired choice displays, press **ENTER**. The display returns to the following:

```
COUNTRY OPTIONS:
                 UNITS
```

6   To enter the date format, press **F1**. The system displays the following:

```
COUNTRY OPTIONS:
             DATE FORMAT
```

7   Press **ENTER**. The system displays the following:

```
DATE FORMAT:
              MM/DD/YY
```

8   Press **F1** to toggle between "MM/DD/YY", "YY/MM/DD", or "DD/MM/YY". When the desired choice appears, press **ENTER**. The display returns to "COUNTRY OPTIONS: DATE FORMAT".

9   To return to the "SETUP MENU", press **PREV**.

Diagnostics

The KE200 Key Encoder/Maintenance Terminal contains six diagnostics:
- RAM Test - tests RAM
- ROM Test - tests ROM
- Keypad Test - tests keypad
- Display Test - tests display
- Key Read Totalizers - displays number of keys read or written to
- Program Version - provides program version information and program date

To access any of the diagnostics, proceed as follows:

1 Enter Setup mode as described previously. The system displays the following:
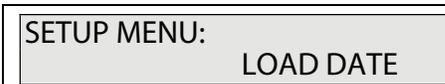
> SETUP MENU:
>   LOAD DATE

2 Press **F1** or **F2** until the system displays the following:

> SETUP MENU:
>   DIAGNOSTICS

3 Press **ENTER**. The system displays the first diagnostic test.

> DIAGNOSTICS MENU:
>   RAM TEST

To perform a RAM test, skip to step 4. To perform another test, skip to step 5.

4 Press **ENTER**. The message "RAM PASSED" or "RAM FAILED" appears.

5 To select another diagnostic, press **F1** or **F2** to display the available choices. When the desired diagnostic appears, press **ENTER**.

*Note: If you select "KEYPAD TEST", press the keys on the face of the unit and verify that they match the displayed key name. To exit from the keypad test, press **ENTER** twice.*

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3 – KE200 Setup - Terminal

Using the Terminal

Using the data terminal to set up the KE200 and Encode keys is different and easier compared to setting up and encoding from the keypad. Ensure that the manager's key on the KE200 is in the Idle position. You do not have to switch between modes when using the terminal.

Commands at the data terminal are keyed in directly, eliminating the need for menus. Once you begin running the system, you will quickly memorize the necessary commands. If needed, a special HELP command is available which lists the commands and their abbreviations.

When setting up the system, the terminal command set includes a "SETUP" command, which automatically prompts you for the setup data. Alternatively, you can execute commands individually.

When encoding, using the terminal speeds up the input by allowing you to load and use stored encoding formats. These formats allow you to enter field type specifiers and values that will automatically increment, decrement, or keep a field constant as you proceed through your encoding operation. See the "Load Format (LO FO)" on page 42 for details.

Entering Commands and Input

At the data terminal, you must key in commands at the asterisk prompt. In the procedures for Terminal mode, the short form of the command is shown in uppercase letters. However, you can type whole or partial words to run the commands and you can use either uppercase or lowercase letters.

Load commands have various possible values contained in "< >" brackets after the command. The system also displays the current value of the command. You can press ENTER to accept the displayed value or type a different one.

You can abort the running of any command by pressing the CTRL and C keys. The KE200 supports "X-ON/X-OFF" protocol for halting data transmission. To halt or suspend data from being transmitted, issue an "X-OFF" command by pressing the CTRL and S keys. To resume data transmission, issue the "X-ON" command by pressing the CTRL and Q keys. The KE200 also supports the more command pipe (for example, "PR FO | more"). To resume data display after a "more" command, press any key.

You may make a mistake when you enter commands and data. If you need to delete text, you can use backspace to move the cursor to the error and type over to correct it, or you can press the delete key repeatedly to back the cursor up to the error location. When you use the delete method, the system inserts a slash and prints the characters in reverse order from the way they were entered. When you reach the error location, press the correct character. The system inserts another slash and you can continue typing the correct string. For example, if you typed "PRUNT DATE", pressing delete repeatedly back to the error and then typing the correct string will display text similar to the following:

```
PRUNT DATE/ETAD TNU/INT DATE
```

Signing On to the Terminal

Once your data terminal is connected to the KE200, 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 on the system.

To sign on to the terminal, proceed as follows:

1 Turn on the power to your data terminal.

2 If you are using phone modems, dial and establish a connection with the site modem. If you are using a computer, follow the instructions of your interface program.

3 The system should display "SIGN ON:". If it does not, press **RETURN**. "SIGN ON:" will then appear.

4 Type a 1 to 16-character alphanumeric password and press **RETURN**. The password is not displayed 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", which needs to be typed in uppercase.

To change the password, use the "LOad SIgn-on" command.

If you enter the password incorrectly, the system returns to the "SIGN ON:" prompt. Repeat step 4.

Signing Off of the Terminal

To sign off from the terminal, type **EXIT** and press **ENTER**.

The data terminal for KE200 communication is set to a 5 minute time-out. This means that if the terminal does not register any input for 5 minutes, it automatically signs off.

Lost or Forgotten Password

If you forget your sign-on password, the KE200 system provides a way for you to gain system access.

1 Place the manager's key in the "ENCODE" position.

2 At the "SIGN ON:" prompt, type "GASBOY" and press **ENTER**. The asterisk prompt appears.

3 Re-load your sign-on password using the "LOAD SIGNON" command.

Setting Up the KE200

The first time you use your Key Encoder/Maintenance Terminal, you must perform the following steps in order to load your system with the necessary data to perform your processing:

1 With the Manager key inserted and in the idle position, turn the power switch located on the left side of the face to "ON". The KE200 displays the current date and time (these were set at the factory to Eastern time).

2 Sign on to the terminal as described in "Signing On to the Terminal" on page 36.

3 At the asterisk command prompt, use the "LO SI" command to load your sign-on code (password) if you have not already done so.

4 Type "**SETUP**" and press **ENTER**. "SETUP" is a batch program containing all commands needed to load the KE200 for operation. Some commands are not included; see the "Setup" on page 58 for details. If desired, you can also run all the load commands manually. The commands to be run are:
    - "LO DA", loads date and time
    - "LO SY", loads the system ID. This must match the system ID of your FleetKey system.
    - "LO ST", loads the station ID.
    - "LO PI", loads the working key (for pin calculation). This must match the working key of your FleetKey system.
    - "LO CO", loads country options for units and date format.

- "LO ID", loads ID fields. The fields you configure must match the fields as you ordered them. Consult your key layout.
- "LO FO", loads formats for key encoding.
- "RES RE", resets encoding records file.
- "RES TR", resets maintenance transaction file.
- "LO TR", loads the starting transaction number.
- "CL MA", clears the maintenance table (1000 FleetKey only).
- "LO MA", loads the maintenance table. This table must match the one defined in your FleetKey system. (1000 FleetKey only).

Once the above steps are performed, your system is ready to encode keys and record performed maintenance.

The following pages contain all terminal commands, in alphabetical order.

The symbol "↵" is shown in examples to denote that the "ENTER" key is pressed.

Clear Maintenance (CL MA) (1000 FleetKey only)

Use "CLEAR MAINTENANCE" when you start up your system or before the initial loading of the maintenance table to clear out any residual information that may be present from factory testing. Use the "CL MA" option with care as it deletes the entire maintenance table and loads it with zeros.

To clear the maintenance table, proceed as follows:

1 At the asterisk prompt, type "**CL MA**" and press **ENTER**. The system responds with the message, "CLEAR MAINTENANCE TABLE? <Y OR N>:".

2 Type "**Y**" to clear or "**N**" not to clear and press **ENTER**. The system displays the message, **"**COMMAND COMPLETED".

```
*CL MA↵
CLEAR MAINTENANCE TABLE? <Y OR N>Y↵
COMMAND COMPLETED
```

Encode Key (EN KE)

Encoding your keys involves taking all the information you want on the key (from the encoding form) and electronically writing it onto each key.

There are two methods for encoding: Formatted Encode and Unformatted Encode. A Formatted Encode uses the field values loaded with the "LOAD FORMAT" command. An Unformatted Encode prompts for every field and you must enter a value for each.

Sometimes you will have to enter special characters into a field: field separators, and supervisor entry fields. Field separators are represented by a tilde "~" character and are used mainly during dual key encoding. Supervisor entry fields are represented by an asterisk "*" and are used when encoding supervisor key fields.

To encode the key, proceed as follows:

1 Type "**EN KE**" and press **ENTER**. The system responds with the message, "FORMATTED ENCODE? <Y OR N>:"

2 Type "**Y**" if you want to encode using the formats loaded with the "LOad FOrmat" command, or "**N**" to override the formats and enter data for each field. Press **ENTER**. The system prompts: "DISPLAY KEY DATA? <Y OR N>:".

3 Type "**Y**" to display data on the terminal for the key upon completion of encoding or "**N**" not to display the data. The system prompts: "LOG KEY DATA? <Y OR N>:".

4 Type "**Y**" to print (on the logger) key field headings and key data for all keys encoded during this session or "**N**" not to log the data. The system prompts **"KEY TYPE?"**.

5 Type the key type you wish to encode and press **ENTER**. The system responds with the first prompt for that key type (this prompt will vary depending on whether you are doing a Formatted or Unformatted Encode).

The system displays prompts until all key fields contain data, then displays the message, "ENCODE KEY? <Y OR N>".

6 To encode the key, type "**Y**" and press **ENTER**. The system displays the message, "INSERT KEY".

7 Insert the key into the KE200 receptacle and turn to the right. The system displays the following message:

"ENCODING KEY #xxxxx...COMPLETED
REMOVE KEY".

8 Remove the key. If you replied "Y" to "DISPLAY KEY DATA", the data is displayed on your terminal.
Note: The data you may have entered for the Previous Odometer and Last Odometer fields will appear next to PREVIOUS ODOM (2) and LAST ODOM (2) in the display.

If you replied "Y" to "LOG KEY DATA", a logger entry is made. The "KEY TYPE" prompt reappears.

A sample logger entry is shown below:

9 Repeat this process from step 5 onwards to encode additional keys.

10 Press **ENTER** to exit to the asterisk prompt.

Exit (EX)

Use "EXIT" to sign off of the terminal.

At the asterisk prompt, type "**EX**" and press **ENTER**. You are now signed off of the KE200.

```
*EX↵


SIGN ON:
```

Help (HE)

Use "HELP" to display a list of all terminal commands.

At the asterisk prompt, type "**HE**" and press **ENTER**. The system displays the following:

```
*HE↵

PRint DAte              PRint STation           PRint SYstem
PRint IDfields          PRint TRansactions      PRint MAintenance
PRint PIn               PRint COuntry           PRint FOrmat
PRint REcords           LOad DAte               LOad STation
LOad SYstem             LOad IDfields           LOad TRansactions
LOad MAintenance        LOad PIn                LOad SIgnon
LOad COuntry            LOad FOrmat             RESet TRansactions
RESet POinter           RESet REcords           ENcode KEy
CLear MAintenance       REAd KEy                EXit
HElp                    STatus                  SETUP
Version
```

Load Country (LO CO)

Use "LOAD COUNTRY" to enter the units of measure (miles or kilometers) and the date format to be used (MM/DD/YY, YY/MM/DD, or DD/MM/YY). The date format you select will show up in Idle mode, in encoding records, in maintenance transactions, or when you are viewing maintenance.

To enter units of measure and the date format, proceed as follows:

1 At the asterisk prompt, type "**LO CO**" and press **ENTER**. The system responds with the message: "UNITS? <M=MILES, K=KILOMETERS>".

2 Press **ENTER** to accept the current setting or type an alternate setting and press **ENTER**. The system responds, "DATE FORMAT? <M=MM/DD/YY, Y=YY/MM/DD, D=DD/MM/YY>".

```
*LO CO↵
UNITS? <M=MILES, K=KILOMETERS> M↵
DATE FORMAT? <M=MM/DD/YY, Y=YY/MM/DD, D=DD/MM/YY> Y↵
```

Load Date (LO DA)

Use "LOAD DATE" to load the current date and time. The KE200 should be factory set with the correct date. However, you may have to change it occasionally.

The system validates the month, day, and year together, so if you type an invalid month, day, or year, you will not be notified until you have typed in values for all three fields. Hours and minutes are entered in 24-hour format (00:00 to 23:59) and are validated together. If you type an invalid value for hours, you will not be notified until after you type a value for minutes.

To load date, proceed as follows:

1 At the asterisk prompt, type "**LO DA**" and press **ENTER**. The system responds: "MONTH?"

2 Type a valid month and press **ENTER**. The system responds: "DAY?"

3 Type a valid day and press **ENTER**. The system responds: "YEAR?"

4 Type a valid year and press **ENTER**. The system responds "HOUR?"

5 Type a valid hour (in 24-hour format) and press **ENTER**. The system responds: "MINUTE?"

6 Type the valid minutes and press **ENTER**.

```
*LO DA↵
MONTH? 3↵
DAY? 10↵
YEAR? 92↵
HOUR? 14↵
MINUTE? 30↵
```

Load Format (LO FO)

"Load Format" allows you to load predefined formats for each key type. During encoding, you can use these formats as a template to speed up encoding of your keys. Each format contains all possible fields (except System ID) that can be on a key. Data for the system ID field is obtained from the "LOAD SYSTEM" command.

Each format prompt consists of two parts: the field name, and a bracketed list of formatting choices (specifiers) for that field. The system lists only specifiers that are relevant to that field. A chart of specifiers and the applicable fields is provided below.

Key Fields	Key Types 0, 4, 5, 6, 7	Key Type 1	Key Type 2	Key Type 3
Key Number[1]	V, I, D	V, I, D	V, I, D	V, I, D
Alpha ID Fields[2]	V, C	V, C, F, S	V, C, F, S	V, C, S
Numeric ID Fields	V, C, I, D	V, C, F, I, D, S	V, C, F, I, D, S	V, C, I, D, S
Exp. Date	V, C	V, C, F	V, C, F	V, C
Prod. Limit	V, C	F	V, C	V, C
Prod. Auth.	V, C	F	V, C	V, C
Price Level	V, C	V, C, F	V, C, F	V, C
Check Digit	V, C	V, C	V, C	V, C
Prev. Odom.	V, C	F	V, C	V, C
Last Odom.	V, C	F	V, C	V, C
Reas. Chk Dig.	V, C	F	V, C	V, C
Odom. Retries	V, C	F	V, C	V, C
Min. Miles	V, C	F	V, C	V, C
Max. Miles	V, C	F	V, C	V, C
Veh. Class	V, C	F	V, C	V, C
Maint A Odom.	V, C	F	V, C	V, C
Maint A Date	V, C	F	V, C	V, C
Maint B Odom.	V, C	F	V, C	V, C
Maint B Date	V, C	F	V, C	V, C
Maint C Odom.	V, C	F	V, C	V, C
Maint C Date	V, C	F	V, C	V, C
PIN	V, C, I, D	V, C, I, D	V, C, I, D	V, C, I, D

V = Variable, field will be entered during encoding.

C = Constant, value is entered into format and used in all formatted encodes.

I = Incrementing, value is entered into format and increased by one for each key encoded.

D = Decrementing, value is entered into format and decreased by one for each key encoded.

F = Field separator, field defined on another key type (Key types 1 & 2 only).

S = Supervisor, field is a supervisor entry (Key types 1, 2, and 3 only).

1 = The Key Number field is not used by the CFN system, but it needs to be encoded. Set it up as an incrementing field.

2 = The CFN system does not support alphanumeric ID fields.

The only key fields that can be formatted as incrementing or decrementing are key number, numeric ID fields, or the PIN field. When you set a base number ("VALUE") for an incrementing/decrementing field, that value is used for all key types. If you change this field value for one key type, the value is changed for all key types.

There are two types of key fields: Fixed fields, which are standard on all keys, and Variable ID fields (numeric or alphanumeric), which must match those ordered with your FleetKey system. On all Fixed fields and Numeric ID fields, the system affixes leading zeros to any number you type in. On Alphanumeric ID fields, the system adds spaces from the end of your entry to the end of the field.

Certain key types do not use every key field (for example, delivery keys do not need product limit or product authorization). These fields must still contain a value, even though they are not used. If you are encoding a key type that does not use a certain field, encode the field as "C" (constant) and assign a value of zero. Do not enter zeros for dual key fields, when the field in question appears on the other key. In this case, use field separators. The chart below shows the fields that are encoded for each key type and those that can be encoded as constants with a value of 0.

Key Type	0	1	2	3	4	**5**	**6**	7	CFN 0-3	CFN 4,5	CFN 6
Key Number	X	X	X	X	X	X	X	X	C	C	C
Alpha ID Fields	X	X	X	X	CAN BE ENCODED WITH				N/A	N/A	N/A
Numeric ID Fields	X	X	X	X	VALUES OR AS CONSTANT WITH A VALUE OF ZERO.				X	X	X
Exp. Date	X	X	X	X	X	X	X	X	X	X	X
Prod. Limit	X	X	X	X	C	C	C	C	X	C	C
Prod. Auth.	X	X	X	X	C	C	C	C	X	C	C
Price Level	X	X	X	X	C	C	C	C	X	C	C
Check Digit	X	X	X	X	X	X	X	X	X	C	C
Prev. Odom.	X	X	X	X	C	C	C	C	X	C	C
Last Odom.	X	X	X	X	C	C	C	C	X	C	C
Reas. Chk Dig.1	X	X	X	X	C	C	C	C	X	C	C
Odom. Retries1	X	X	X	X	C	C	C	C	X	C	C
Min. Miles1	X	X	X	X	C	C	C	C	X	C	C
Max. Miles1	X	X	X	X	C	C	C	C	X	C	C
Veh. Class1	X	X	X	X	C	C	C	C	C	C	C
Maint A Odom. 2	X	X	X	X	C	C	C	C	C	C	C
Maint. A Date2	X	X	X	X	C	C	C	C	C	C	C
Maint. B Odom. 2	X	X	X	X	C	C	C	C	C	C	C
Maint .B Date2	X	X	X	X	C	C	C	C	C	C	C
Maint. C Odom. 2	X	X	X	X	C	C	C	C	C	C	C
Maint. C Date2	X	X	X	X	C	C	C	C	C	C	C
PIN	X	X	X	X	X	X	X	X	X	C	C

Key:
 X=Encode, C=Encode as constant with a value of zero, N/A = Not available with CFN system with key option.

> *Notes:1) If "Reas. Chk Dig." is 0, you can encode zeros in odom retries and min/max miles as long as you are not using the maintenance option. If you are using the maintenance option, you must encode values in min/max miles. Minimum miles can be zero.*
>
> *2) If you are not using the maintenance option, encode as constant with a value of zero.*

To use the "LOAD FORMAT" command, proceed as follows:

1 At the asterisk prompt, type "**LO FO**" and press **ENTER**. The system responds: "KEY TYPE?".

2 Type a key type from "0" to "7" and press **ENTER**. Key type values are:

0	Single Key	4	Delivery Key
1	Employee Key	5	Dipstick Key
2	Vehicle Key	6	Password Key (FleetKey), Code Key (CFN)
3	Supervisor Key	7	Encoding Key (FleetKey only)

3 Once you enter a key type, the system prompts you for all possible key fields. You will first have key number, followed by your variable ID fields and then the rest of the key fields. Each field must contain a valid value. When you complete the last key field (PIN), the prompt "KEY TYPE?" reappears so you can define the format for another key type.

4 To define another key type, type the number and press **ENTER**. To exit the "LOAD FORMAT" command, press **ENTER** at the "KEY TYPE?" prompt.

```
*LO FO↵
KEY TYPE?
```

Load IDFIELDS (LO ID)

Use "LOAD IDFIELDS" to identify the number of ID fields, and the name, size, and format of each. The system provides up to 20 characters of variable identification fields (19 for CFN); you can customize the system to your particular information requirements. The names and sizes of these variable fields were specified at the time your FleetKey system was ordered. You can have any combination of fields totaling up to 20 characters, but the maximum number of separate fields is eight. Refer to the key layout provided with your FleetKey system for your ID field definitions. For more information on ID fields, refer to "Field Descriptions" on page 64 in the Encoding Keys section.

To use the "LOAD IDFIELDS" command, proceed as follows:

1 At the asterisk prompt, type "**LO ID**" and press **ENTER**. The system responds: "NO OF ID FIELDS?".

2 Type the number of ID fields for your FleetKey system and press **ENTER**. The system displays a chart containing the ID fields and their current values.

```
*LO ID↵
NO. OF ID FIELDS? 3↵


ID          NAME SZ FORMAT
-- ------------- -- ------
#1      EMPLOYEE  4 NUMERIC
#2       VEHICLE  4 NUMERIC
#3    DEPARTMENT  4 ALPHA
```

The system then prompts: "FIELD NO?"

3 Type the number of the ID field you wish to define and press **ENTER**. The system responds with the prompt: "FIELD NAME?"

4 Type a 1 to 12-digit name for the field. The name you enter must match the one on your FleetKey system. Press **ENTER**. The system responds: "FIELD SIZE? <1-20>".

5 Type the field size (1 to 20; {limited to 19 numeric for CFN}) and press **ENTER**. The field size must be the same as that specified for this field on your FleetKey system. The system responds: "FIELD FORMAT? <A=ALPHA, N=NUMERIC>".

6 Type "**A**" or "**N**" for your field format and press **ENTER**. You have now completed definition for one ID field. The system responds: "FIELD NO?".

7 Repeat this procedure from step 3 to define additional ID fields. If you have defined all your ID fields, press **ENTER** to exit to the asterisk prompt.

Load Maintenance (LO MA) (1000 FleetKey only)

Use "LOAD MAINTENANCE" to load the maintenance table. As discussed in the FleetKey Operation Manual, the maintenance table consists of up to 20 classes of vehicle, with the three maintenance types (A, B, and C) and a "MILES" and "DAYS" between maintenance entry defined for each. The maintenance table you enter onto the KE200 must be identical to the one entered at the FleetKey system.

To use Load Maintenance to load the maintenance table, proceed as follows:

1 At the asterisk prompt, type "**LO MA**" and press **ENTER**. The system responds with the prompt: "CLASS?".

2 Type the first class (1-20) to be defined and press **ENTER**. The system responds:
"MAINT A
MILES? 000000"

3 Type the number of miles to elapse until maintenance is due for that class and press **ENTER**. The system responds with the prompt: "DAYS?".

4 Type the number of days to elapse until maintenance is due for that class and press **ENTER**.

The system then prompts for miles and days for maintenance types "B" and "C".

5 Repeat steps 3 and 4 for each maintenance type. As each class is defined, the system prompts for the next class. Repeat the procedure from step 2 to 4 define each new class.

```
*LO MA↵
CLASS? 1↵
MAINT A
MILES? 000000
DAYS? 000
MAINT B
MILES? 000000
DAYS? 000
MAINT C
MILES? 000000
DAYS? 000

CLASS?
```

6 Press **ENTER** to exit to the asterisk prompt.

Load PIN (LO PI)

Use "LOAD PIN" to load the 4-digit working key used with your FleetKey system. This number is used to encrypt and decrypt Personal Identification Numbers (PINs) when you encode your keys. See the key layout provided with your FleetKey system to find your working key.

To use Load PIN to load the 4-digit working key, proceed as follows:

1   At the asterisk prompt, type "**LO PI**" and press **ENTER**. The system responds "WORKING KEY? 0000".

2   Type the four digit working key ensuring that it matches the one used at your FleetKey system, and press **ENTER**.

```
*LO PI⏎
WORKING KEY? xxxx 1234⏎
```

Load Signon (LO SI)

Use "LOAD SIGNON" to load the password you will use to sign on to the KE200 terminal. Passwords can be up to 16 alphanumeric characters and are case sensitive. When signing on to the system, you must type the password exactly as you loaded it.

To use Load Signon to load the password, proceed as follows:

1   At the asterisk prompt, type "**LO SI**" and press **ENTER**. The system responds: "SIGNON CODE?".

2   Type a 1 to 16-character password and press **ENTER**. You will not see the password you enter. The next time you use the system, you must use this password to sign on.

```
*LO SI⏎
SIGN ON CODE? password⏎
```

Load Station (LO ST)

Use "LOAD STATION" to load the 3-digit numeric station number of the KE200. This identifier is similar to the site ID used in the FleetKey system and is used to identify the station for communication with PCs or other communications equipment.

To use Load Station to load the 3-digit numeric station number of the KE200, proceed as follows:

1 At the asterisk prompt, type "**LO ST**" and press **ENTER**. The system responds with the prompt: "STATION ID? xxx".

2 Type the 3-digit station ID and press **ENTER**.

```
*LO ST↵
STATION ID?  xxx 123↵
```

Load System (LO SY)

Use "LOAD SYSTEM" to load the four digit system ID of your FleetKey system. This number is verified with the key when you perform maintenance.

To use Load System to load the four digit system ID of your FleetKey system, proceed as follows:

1 At the asterisk prompt, type "**LO SY**" and press **ENTER**. The system responds with the prompt: "SYSTEM ID?".

2 Type your four digit system ID and press **ENTER**. This number must match the system ID assigned to your FleetKey system. If you are unsure of your system ID, consult your custom key layout provided with your FleetKey system.

```
*LO SY↵
SYSTEM ID? xxxx 1234↵
```

Load Transactions (LO TR)

Use "LOAD TRANSACTIONS" to load a starting number for your maintenance transactions. For your transactions to start at the number you desire, this command value must be set to the number before the one you wish to start at (for example, if your first transaction is to be number 1, set this command to zero). You can check the current values for "FIRST", "LAST", and "NEXT" transactions by running the "STATUS" command.

To use Load Transactions to load a starting number for maintenance transactions, proceed as follows:

1 At the asterisk prompt, type "**LO TR**" and press **ENTER**. The system responds: "LOAD TRANSACTION NUMBER?".

2 Type the number preceding the number at which you wish to start and press **ENTER**.

```
*LO TR↵
LOAD TRANSACTION NUMBER? xxxx 0000↵
```

Print Country (PR CO)

Use "PRINT COUNTRY" to print the current settings for your country options.

At the asterisk prompt, type "**PR CO**" and press **ENTER**. The system displays the current settings as shown below.

"UNITS = MILES
DATE FORMAT = MM/DD/YY"

```
*PR CO↵
UNITS = MILES
DATE FORMAT = MM/DD/YY
```

Print Date (PR DA)

Use "PRINT DATE" to print the current system date and time.

At the asterisk prompt, type "**PR DA**" and press **ENTER**. The system displays the current settings as shown below.

03/06/92   11:19:49

```
*PR DA↵


03/06/92    11:19:49
```

Print Format (PR FO)

Use "PRINT FORMAT" to list the fields and values for a particular key type. If you are using a CRT monitor, this display may scroll off the screen due to its length. To display the data full screen, you can use the pipe command followed by the word more (that is, "PR FO | more"). Press any key to continue after a "more". You can also stop the scroll by pressing the CTRL and S keys. Then you can resume the scroll by pressing the CTRL and Q keys.

To use Print Format to list the fields and values for a particular key type, proceed as follows:

1 At the asterisk prompt, type "**PR FO**" and press **ENTER**. The system prompts: "KEY TYPE?"

2 Enter the key type for which you want to print formats and press **ENTER**. The system displays the following:

```
*PR FO⏎

KEY TYPE? 0⏎

FIELD               TYPE   VALUE
-----               ----   -----
SYSTEM ID           C      1234
KEY NUMBER          I      00000
EMPLOYEE            V
VEHICLE             V
DEPARTMENT          C      0055
EXPIR. DATE         C      9912
PRODUCT LIMITATION  V
PRODUCT AUTHOR.     V
PRICE LEVEL         ?
CHECK DIGIT         V
PREVIOUS ODOMETER   V
LAST ODOMETER       V
REAS. CHECK DIGIT   V
ODOMETER RETRIES    V
MINIMUM MILES       V
MAXIMUM MILES       V
VEHICLE CLASS       V
MAINT A ODOMETER    V
MAINT A DATE        V
MAINT B ODOMETER    V
MAINT B DATE        V
MAINT C ODOMETER    V
MAINT C DATE        V
PIN NUMBER          D      9999

KEY TYPE?⏎
```

3 Press **ENTER** to exit to the asterisk prompt.

Print IDfields (PR ID)

Use "PRINT IDFIELDS" to print a listing of the ID fields and their contents.
At the asterisk prompt, type "**PR ID**" and press **ENTER**. The system displays a chart containing the ID fields and their current values.

```
*PR ID↵

ID          NAME SZ FORMAT
-- ------------- -- ------
#1      EMPLOYEE  4 NUMERIC
#2       VEHICLE  4 NUMERIC
#3    DEPARTMENT  4 ALPHA
```

Print Maintenance (PR MA) (1000 FleetKey only)

Use the "PRINT MAINTENANCE" command to print the current contents of the maintenance table.

1 At the asterisk prompt, type "**PR MA**" and press **ENTER**. The system displays: "ENTER CLASS <1-20, 0=ALL>:"

2 Type the number of the class you wish to view, or "**0**" to view all, and press **ENTER**. The indicated classes are printed as shown.

```
*PR MA↵

ENTER CLASS <1-20, 0=ALL> : 0↵

          MAINT A        MAINT B        MAINT C
CLASS    MILES  DAYS    MILES  DAYS    MILES  DAYS
 01      010000 365     005000 120     000000 000
 02      015000 365     001000 120     000000 000
 03      020000 365     015000 120     000000 000
 04      025000 365     020000 120     000000 000
 05      030000 365     025000 120     000000 000
 06      000000 000     000000 000     000000 000
 07      000000 000     000000 000     000000 000
 08      000000 000     000000 000     000000 000
 09      000000 000     000000 000     000000 000
 10      000000 000     000000 000     000000 000
 11      000000 000     000000 000     000000 000
 12      000000 000     000000 000     000000 000
 13      000000 000     000000 000     000000 000
 14      000000 000     000000 000     000000 000
 15      000000 000     000000 000     000000 000
 16      000000 000     000000 000     000000 000
 10      000000 000     000000 000     000000 000
 18      000000 000     000000 000     000000 000
 19      000000 000     000000 000     000000 000
 20      000000 000     000000 000     000000 000
```

Print PIN (PR PI)

Use "Print PIN" to print the value of the working key used on your system.

At the asterisk prompt, type "**PR PI**" and press **ENTER**. The system displays the current working key value.

```
*PR PI↵


6093
```

Print Records (PR RE)

Use "PRINT RECORDS" to display a listing of encoding records (one record for each key encoded). The list contains up to the last 100 keys that were encoded. The print records display contains the record number, key number, the date, and the time of encoding.

The file is structured in descending order. Record number one always contains the last key encoded. For example, when you encode your first key, that key's data is contained in record number "1". When you encode your second key, that key's data becomes record number "1" and the first key's data becomes record number "2".

At the asterisk prompt, type "**PR RE**" and press **ENTER**. The system displays a report similar to the following:

```
*PR RE↵


REC     KEY #  DATE      TIME
001     00003  03/06/92  05:21
002     00002  03/06/92  05:18
003     00001  03/06/92  05:15
```

Print Station (PR ST)

Use "PRINT STATION" to print the station ID for the KE200.

At the asterisk prompt, type "**PR ST**" and press **ENTER**. The system displays the three digit station ID.

```
*PR ST↵


123
```

Print System (PR SY)

Use "PRINT SYSTEM" to print the system ID for the FleetKey system.

At the asterisk prompt, type "**PR SY**" and press **ENTER**. The system displays the four digit system ID.

```
*PR SY↵


1234
```

Print Transactions (PR TR)

Use "PRINT TRANSACTIONS" to print a listing of maintenance transactions that were performed at the KE200. The first transaction to print will be the transaction number shown in the "FIRST TRANSACTION" field of the **STATUS** command.

At the asterisk prompt, type "**PR TR**" and press **ENTER**. The system displays a report similar to the following:

```
*PR TR↵

TRAN    KEY#    DATE       TIME    W.O.#    TECH    MAINT    ODOM      STATUS
0001    00003   03/06/92   05:15   000123   1666    A        0001000
0002    00002   03/06/92   05:18   000124   1666    ABC      0012487
0003    00001   03/06/92   05:21   000125   1666    AB       0007549
```

The "STATUS" field will only contain a value if there was a problem when the key was updated. In this case, the message "KEY WRITE FAILURE" appears.

Read Key (REA KE)

Use "READ KEY" to display a formatted or unformatted display of all information contained on the key.

If you select a Formatted read, the system lists every key field and its value. If you select an Unformatted read, the system displays all key information, but the ID fields are shown in a string labeled "[ID field data]".

1 At the asterisk prompt, type "**REA KE**" and press **ENTER**. The system responds: "FORMATTED READ? <Y/N>".

2 Type "**Y**" or "**N**" as desired and press **ENTER**. The system prompts "INSERT KEY...".

3 Insert the key into the KE200 key receptacle and turn it to the right. The system responds:
"READING KEY...COMPLETED
REMOVE KEY"

Note: If a key contains errors, the message "READING KEY...BAD" appears. If you selected
a Formatted read, no data is displayed. If your selected an Unformatted read, data is
displayed even though the key is bad.

If you are reading a key that was encoded at a KE200 running software version 5.2 or lower, or
that was encoded at a FleetKey system running software 4.1 or lower, you may see the
message, "READING KEY...COMPLETED...FORMAT 1 OK, FORMAT 2 BAD". Your key
is not bad, there is just a difference internally in the way the "PREVIOUS ODOM" and
"LAST ODOM" fields are stored on the key. Once a key has been encoded at a KE200
running software version 5.3 or higher or has been encoded or used for fueling at a FleetKey
system running version 5.1 or higher, this message will no longer appear.

The system then displays a Formatted or Unformatted Read as requested, and prompts:
"INSERT KEY".

4 To read another key, repeat this procedure from step 3 onwards. To stop reading keys, press the
CTRL and **C** keys.

A Formatted Read appears as shown below:

```
*REA KE↵
FORMATTED READ? <Y OR N> Y↵
INSERT KEY...
READING KEY...COMPLETED
REMOVE KEY.


KEY TYPE             0                LAST ODOM (2)        0001000
SYSTEM ID            1234             REAS. CHECK DIGIT    1
KEY NUMBER           00010            ODOMETER RETRIES     02
EMPLOYEE             1234             MINIMUM MILES        0100
VEHICLE              1234             MAXIMUM MILES        0500
DEPARTMENT           0055             VEHICLE CLASS        01
EXPIR. DATE          9912             MAINT. A ODOM        0001000
PRODUCT LIMITATION   1                MAINT. A DATE        920306
PRODUCT AUTHOR.      1                MAINT. B ODOM        0000500
PRICE LEVEL          0                MAINT. B DATE        920101
CHECK DIGIT          5                MAINT. C ODOM        0000500
PREVIOUS ODOM (1)                     MAINT. C DATE        920101
LAST ODOM (1)                         PIN NUMBER           1234
PREVIOUS ODOM (2)    0000700


INSERT KEY...
```

An Unformatted Read appears as shown below:

```
*REA KE↵
FORMATTED READ? <Y OR N> N↵
INSERT KEY...
READING KEY...COMPLETED...FORMAT 1 OK, FORMAT 2 BAD
REMOVE KEY.

KEY TYPE              0              LAST ODOM (2)      FFFFFFF
SYSTEM ID             1234           REAS. CHECK DIGIT  1
KEY NUMBER            00010          ODOMETER RETRIES   02
[ID field data]      123412340055   MINIMUM MILES      0100
EXPIR. DATE           9912           MAXIMUM MILES      0500
PRODUCT LIMITATION   1              VEHICLE CLASS      01
PRODUCT AUTHOR.      1              MAINT. A ODOM      0001000
PRICE LEVEL           0              MAINT. A DATE      920306
CHECK DIGIT           5              MAINT. B ODOM      0000500
PREVIOUS ODOM (1)    0000700        MAINT. B DATE      920101
LAST ODOM (1)        0001000        MAINT. C ODOM      0000500
PREVIOUS ODOM (2)    FFFFFFF        MAINT. C DATE      920101
                                     PIN NUMBER         1234
```

Reset Pointer (RES PO) (1000 FleetKey only)

Use "RESET POINTER" to reset the starting point for printing maintenance transactions. Maintenance transactions are stored in the KE200 in circular memory storage. The system keeps track of these transactions by a beginning (FIRST) and ending (LAST) pointer system. The FIRST pointer is set with the "RESET POINTER" command. The LAST pointer advances as transactions are stored. The KE200 stores about 980 maintenance transactions.

You can print these transactions via the RS-232 port, or you can print only specific ones by moving the FIRST pointer using the "RESET POINTER" command. For example, if you have 50 transactions in the maintenance transaction file (your LAST pointer is sitting at 50) and you want to print only the last 10 transactions, you would move your FIRST pointer to 40. You can determine the location of your pointers by running the "STATUS" command and viewing the value in the "FIRST TRANSACTION NUMBER" field.

Ensure that you replace the pointer to its original location after printing desired transactions. If you leave the pointer ahead of transactions not yet printed, transactions may be overwritten and lost.

When the entire maintenance transaction file has been filled, a "MEMORY FULL" condition exists. The KE200 will not accept new maintenance transactions until space has been freed up. To free transaction space, first, print or poll the existing maintenance transactions. Then, advance the FIRST transaction pointer using the "RESET POINTER" command. This will free space below the first pointer allowing new transactions to overwrite the old ones.

To reset the pointer, proceed as follows:

1 At the asterisk prompt, type "**RES PO**" and press **ENTER**. The system responds: "TRANSACTION NUMBER?"

2 Type the transaction number where you want the pointer and press **ENTER**.

```
*RES PO↵
TRANSACTION NUMBER? 1


*
```

Reset Records (RES RE)

Use "RESET RECORDS" to reset the encoded records file.

1 At the asterisk prompt, type "**RES RE**" and press **ENTER**. The system responds: "RESET ENCODE RECORDS? <Y OR N>".

2 Type "**Y**" to reset the file or "**N**" to not clear the file, and press **ENTER**.

```
*RES RE↵
RESET ENCODE RECORDS? <Y OR N>
```

Reset Transactions (RES TR) (1000 FleetKey only)

Use "RESET TRANSACTIONS" to reset the maintenance transaction file, as follows:

1 At the asterisk prompt, type "**RES TR**" and press **ENTER**. The system responds: "RESET TRANSACTION FILE? <Y OR N>".

2 Type "**Y**" to clear the file or "**N**" to not clear the file, and press **ENTER**.

```
*RES TR↵
RESET TRANSACTION FILE? <Y OR N>
```

Setup

Use "SETUP" to run all load commands associated with the system. The "SETUP" command initiates a batch file which runs all load commands (except "LOAD SIGNON") in sequence for your input. This speeds your system setup by eliminating the need for you to remember command syntax and order.

1 At the asterisk prompt, type "**SETUP**" and press **ENTER**. The system responds with the first command "LO DA".

2 Enter the data for the commands as prompted. If you need assistance on any command, refer to the description of that command in this section.

"x" represents the current value of the command.

```
*SETUP↵

LO DA↵
MONTH? xx 3↵
DAY? xx 10↵
YEAR? xx 92↵
HOUR? xx 14↵
MINUTE? xx 30↵

LO SY↵
SYSTEM ID? xxxx 1234↵

LO ST↵
STATION ID? xxx 123↵

LO PI↵
WORKING KEY? xxxx 1234↵

LO CO↵
UNITS? <M-MILES, K-KILOMETERS> x M↵
DATE FORMAT? <M-MM/DD/YY, Y-YY/MM/DD, D-DD/MM/YY> x Y↵

LO ID↵
NO OF ID FIELDS? x 3↵
ID         NAME SZ FORMAT
-- ------------- -- -------
#1      EMPLOYEE  4 NUMERIC
#2       VEHICLE  4 NUMERIC
#3    DEPARTMENT  4 ALPHA

FIELD NO?↵

LO FO
KEY TYPE? 0↵

KEY NUMBER? <V-VAR, I-INCR, D-DECR> x V↵
EMPLOYEE? <V-VAR, C-CONST, I-INCR, D-DECR> x V↵
VEHICLE? <V-VAR, C-CONST, I-INCR, D-DECR> x V↵
```

```
DEPARTMENT? <V=VAR, C=CONST> x C↵
VALUE? xxxx 0055↵
EXPIR DATE? <V=VAR, C=CONST> x V↵
PRODUCT LIMITATION <V=VAR, C=CONST> x V↵
PRODUCT AUTHOR. <V=VAR, C=CONST> x V↵
PRICE LEVEL <V=VAR, C=CONST> x V↵
CHECK DIGIT <V=VAR, C=CONST> x V↵
PREVIOUS ODOMETER? <V=VAR, C=CONST> x V↵
LAST ODOMETER? <V=VAR, C=CONST> x V↵
REAS. CHECK DIGIT? <V=VAR, C=CONST> x V↵
ODOMETER RETRIES? <V=VAR, C=CONST> x V↵
MINIMUM MILES? <V=VAR, C=CONST> x V↵
MAXIMUM MILES? <V=VAR, C=CONST> x V↵
VEHICLE CLASS? <V=VAR, C=CONST> x V↵
MAINT A ODOMETER <V=VAR, C=CONST> x V↵
MAINT A DATE <V=VAR, C=CONST> x V↵
MAINT B ODOMETER <V=VAR, C=CONST> x V↵
MAINT B DATE <V=VAR, C=CONST> x V↵
MAINT C ODOMETER <V=VAR, C=CONST> x V↵
MAINT C DATE <V=VAR, C=CONST> x V↵
PIN NUMBER? <V=VAR, C=CONST, I=INCR, D=DECR> x D↵
    VALUE? xxxx 9999↵


RES RE↵
RESET ENCODE RECORDS? <Y OR N> Y↵


RES TR↵
RESET TRANSACTION FILE? <Y OR N>Y↵


LO TR↵
LOAD TRANSACTION NUMBER? xxxx 0000↵


CL MA↵
CLEAR MAINTENANCE TABLE? <Y OR N>Y↵
COMMAND COMPLETED


LO MA↵
CLASS? 1↵
MAINT A
MILES? 000000 3000↵
DAYS? 000 90↵
MAINT B
MILES? 000000 6000↵
DAYS? 000 180↵
MAINT C
MILES? 000000 12000↵
DAYS? 000 365↵


CLASS?↵
```

Note: The "LO ID" command shows only a return for input. These must be defined later. The "LO MA" command shows definition of only one vehicle class.

Status

Use "STATUS" to list the settings for some of the main parameters of the system. The "STATUS" command lists the following:

- Program version, which contains current version and program date
- Current date and time
- Station ID, which contains value loaded in "LO ST"
- System ID, which contains value loaded in "LO SY"
- Working key, which contains value loaded in "LO PI"
- Country options, which contain values loaded in "LO CO"
- First transaction number, which contains the first transaction to print under the "PR TR" command. Dashes in this field mean the file is empty.
- Last transaction number, which contains the last transaction to print under the "PR TR" command. Dashes in this field mean the file is empty.
- Next transaction number, which contains the next transaction number to be assigned when maintenance is performed.
- Key receptacle status: If a key is inserted and turned in the KE200, the message "IN USE" appears. If no key is inserted, the message "NOT IN USE" appears.
- Manager key position, which indicates "IDLE", "MAINTENANCE" or "ENCODE".
- Key read totalizer, which contains a count of the total number of keys read or encoded/updated on the encoder.
- ID fields, which contain the currently loaded values.
- Eight dipswitches SW1-1 through SW1-8 (not presently used).

At the asterisk prompt, type "**STATUS**" and press **ENTER**. The system lists the parameters described above with their currently loaded values.

```
*STATUS⏎

PROGRAM VERSION:         KE200,V2.1,03/09/92
TODAY'S DATE:            03/09/92  11:30:10
STATION ID:              113
SYSTEM ID:               1234
WORKING KEY:             0012
COUNTRY OPTIONS:         MILES, MM/DD/YY
FIRST TRAN NUMBER:       0001
LAST  TRAN NUMBER:       0001
NEXT TRAN NUMBER:        0001
KEY RECEPTACLE:          NOT IN USE
MANAGER KEY POSITION:    IDLE MODE
KEY READ TOTALIZER:      000018


ID       NAME SZ FORMAT
-- ------------ -- ------
#1    EMPLOYEE  4 NUMERIC
#2     VEHICLE  4 NUMERIC
#3  DEPARTMENT  4 ALPHA


SW1-1  SW1-2  SW1-3  SW1-4  SW1-5  SW1-6  SW1-7  SW1-8
CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED
```

Version (V)

Use "VERSION" to list the current program version and date. This information can also be obtained from the sticker on the ROM program chip located in slot U13 of the KE200 PCB.

At the asterisk prompt, type "**V**" and press **ENTER**. The system displays the current version and date.

```
*V↵

KE200,V2.1,03/09/92
```

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4 – Encoding Keys

Methods of Encoding

Encoding a key involves electronically writing user-identification information for system access onto a Fleetkey. There are three methods for encoding: from the KE200 keypad, from the KE200 data terminal using the "EN KE" command, and from the FleetKey system with the encoding option (refer to the FleetKey Operation Manual for details on encoding with this option).

Key Fields

The encoded information on the Fleetkeys is broken down into fields, which appear in a set order with regard to location and length. The system provides up to 20 characters of variable identification fields (19 numeric for CFN) that allows you to customize the system to your particular information requirements. The names and sizes of these variable fields were specified at the time of your system order. You can have any combination of fields totaling up to 20 characters (19 for CFN). However, the maximum number of separate fields is eight. You may also specify which key(s) the various information fields are encoded on in a dual key application, with one exception. In dual key systems where VEH is used as an ID field, this field must be encoded on the Vehicle key (key type 2).

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

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

*Calculated by the system. This field is not entered during encoding and is not displayed at the encoder.
**Not used by CFN.
***Numeric

Field Descriptions

Key Type

The Key Type is a one digit numeric field that identifies the type of key being used. Possible values are:

0	Single Key
1	Employee Key (Dual key)
2	Vehicle Key (Dual key)
3	Supervisor Key
4	Delivery Key
5	Dipstick Key
6	Password Key (FleetKey); Code Key (CFN)
7	Encoding Key (FleetKey only)

Field Separators

In a dual-key system, some fields are encoded on one key, but not on the other. Special characters called field separators take the place of the corresponding ID field on the other key. To encode a field with field separators at the KE200 keypad, press **CLEAR** twice to fill the field. On the data terminal, use the tilde character ("~") as a field separator and enter one tilde for each character in the field.

System ID

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

Key Number

The Key Number is a five digit numeric field used for lockout on FleetKey systems. When using two keys, each key has its own unique key number. On a standard system with 10,000 key lockout, key numbers range from 00001-09999. Additional blocks of 10,000 lockouts can be specified at order time. This field is not used with CFN systems, but should be set up as an incrementing field.

ID Fields

ID Fields are numeric or alphanumeric fields, configurable at order time. Each field can be between 1-20 characters with the total of all fields not exceeding 20 characters (19 characters, numeric only, for CFN). The number of separate fields cannot exceed eight. When you are using dual keys, each ID field is usually encoded on only one of the two keys. Field separators take the place of the corresponding ID field on the other key. If an ID field appears on both keys, the ID field data must be the same on both keys. In dual key applications, when VEH is used as an ID field, it must be encoded on the vehicle key (key type 2).

Supervisor Keys

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

For example, assume that your system has the following ID fields and you want the supervisor to enter a 4-digit "EMP" and 3-digit "DEPT". You must encode the fields as shown on the partial key layout below:

KEY TYPE	SYS ID	KEY	EMP	VEH	DEPT	EXP DATE
3	1234	12345	****	1226	***	9112

Expiration Date

The Expiration Date is a 4-digit numeric field (YYMM) assigned to establish a lifetime for the key. Different expiration dates can be encoded on each key of a dual-key system. This allows you to establish separate expiration dates for employees and vehicles. If you wish to encode the keys with a date in the distant future, you can code 5012 for December 2050. You must encode a valid year (00-99) and a valid month (01-12) on the key.

Product Limit

The Product Limit is a one digit numeric field used to restrict the maximum quantity of product dispensed per transaction. When you are using dual keys, the product limitation code is encoded on the vehicle key. A field separator takes the place of the digit on the other dual key.

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

Complete the Product Limitation Codes table below prior to ordering or encoding your keys. Ensure that the completed table is available at FleetKey start-up so it can be loaded into the FleetKey system at that time.

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

Product Authorization

Product Authorization is a one digit numeric field used to specify the type(s) of fuel a key is allowed to access. When using dual keys, the product authorization code is encoded on the vehicle key. A field separator takes the place of the digit on the other dual key.

You can load up to nine (1-9) authorization codes into the FleetKey system, with up to five fuel types per code. The user is permitted to access only the product type(s) loaded into the system for the authorization code encoded on his key. The authorization code 0 permits access to all fuels.

Complete **Product Code Assignments** and **Product Authorization Codes** tables (see Figure 4-1 on page 67) before ordering or encoding your keys and before system start-up. First, assign a 2-digit product code to each product controlled by your system. The FleetKey system can maintain inventories for up to eight products. Typically, the product codes are numbered 1 through 9. Second, assign the product code(s) to the product authorization codes as you require. Ensure that your completed product code assignments and authorization code table are available at FleetKey start-up, so they can be loaded into your FleetKey system at that time.

Figure 4-1: Product Codes

Product Code Assignments		Product Authorization Codes	

Product Code (Two Digits)	Description		Auth Code	Product Code(s) Allowed

Price Level

Price Level is used only by CFN Systems. It is a one digit numeric field used to specify the price a key will be charged for fuel products. In the CFN System, price levels enable you to have several different prices for each fuel product depending on the method of payment. In a CFN System, the following are the default price level assignments:

Price level	Assigned price
0	Fallback Price
1	Cash Price
2	Credit Price
3	Debit Price

In addition, you can configure other price level codes as you wish. For Site II/Islander II/CFN III, the fallback price level is configurable; therefore, you can assign any number as the fallback price level. However, it is best to leave Standard pricing at 0 through 3, and then enter custom price levels greater than 3 for keyholders. You must assign at least one price to each fuel product. If you are only assigning one price or are not using prices (fleet application), use price level 0.

Check Digit

Check Digit is a one digit numeric field used to determine what data must be entered at the FleetKey keypad. When you are using two keys, a different check digit may be on each key. This allows the check digit to relate to the particular key on which it is encoded. For example, the odometer check digit is usually associated with the vehicle key, whereas the Personal Identification Number (PIN) check digit is usually associated with the employee key. This is encoded by using a check digit of "1" on the vehicle key and a check digit of "4" on the employee key. Table shows the various check digit codes.

Code	Required Manual Entries
0	No manual entry required
1	Odometer entry required
2	Manual entry required
3	Odometer and manual entries required

Code	Required Manual Entries
4	PIN entries required
5	Odometer and PIN entries required
6	Manual and PIN entries required
7	Odometer, manual, and PIN entries required

Previous Odometer

Previous Odometer is a seven digit numeric field. It is used for odometer reasonableness check, when the current odometer is equal to the last odometer entered. In a dual key system, this field is encoded on the vehicle key.

Last Odometer

Last Odometer is a seven digit numeric field. It is used for odometer reasonableness check. In a dual key system, it is encoded on the vehicle key. If encoded with zeros, first entry at fueling island is accepted.

Reasonableness Check Digit

Reasonableness is a one digit numeric field containing one of the following values:

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

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

Odometer Retries

Odometer Retries is a two digit numeric field (00-99). It is the number of times the odometer will be prompted for when an incorrect odometer has been entered. In a dual key system, this field is encoded on the vehicle key.

Minimum Miles

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

Maximum Miles

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

Vehicle Class (1000 FleetKey only)

Vehicle Class is a two digit numeric field. Used only with the Maintenance Option. Valid vehicle classes are 00-20. Vehicle class appears on the key; vehicle maintenance table is defined within the FleetKey system and in the KE200 Key Encoder/Maintenance Terminal manual (refer to the Maintenance option in the FleetKey Operation Manual or the Performing Maintenance section on page 77 for more details). In a dual key system, this field must be on the vehicle key. Loading zeros in this field disables maintenance checking.

Maintenance X Odometer (1000 FleetKey Systems only)

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

Maintenance X Date (1000 FleetKey Systems only)

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

PIN

PIN is a four digit numeric field. It protects the system from unauthorized use should a key be lost or stolen. PINs are assigned to keyholders.The PIN is stored on the key in an encrypted form so that it is not readable without being decrypted.

On a single key system, if you are not using the PIN field or the check digit does not require PIN entry, encode the PIN field as zeros.

On a dual key system, the PIN must be encoded on the key which has the check digit configured for PIN. Zeros take the place of digits on the other key. If PIN is encoded on both keys, it must be the same on both. If neither check digit requires PIN entry, the PIN field should be encoded as zeros on both keys.

CRC

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

Preparing for Encoding

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

Filling Out the Key Encoding Form

To fill the Key Encoding form, proceed as follows:

1 Make a photocopy of the key encoding form. Make several if you are encoding a large number of keys, or if you are defining multiple types.

2 In the "Key Type" field, fill in the type of key you are encoding. The Key type can be from 0 to 7.

0	Single Key	4	Delivery Key
1	Employee Key	5	Dipstick Key
2	Vehicle Key	6	Password Key (FleetKey), Code Key (CFN)
3	Supervisor Key	7	Encoding Key (FleetKey only)

Note: If you are providing data for dual keys, use a separate sheet for each key type (for example, one for EMPLOYEE, one for VEHICLE). Do not list dual keys on the same sheet one after another. Special format keys (fuel delivery, supervisor, and so on) have different layout requirements. Refer to the FleetKey Operation Manual for details on each option.

3 Fill in the data for each key field. You must define data for every field represented on your key layout. Do not leave spaces blank. The first line on the body of the form that is, "Reference" is provided for you to write reference information for the key (for example, employee name, account name, and so on). This column of information is not encoded on the key, it is optional and for your use.

Series 1000/CFN Key Encoding Form

System Owner: _____   Ship To: _____

Bill To: _____   _____

_____   _____

_____

Key Type: _____   System ID: _____

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

* Up to 8 digits totaling up to 20 digits (19 numeric for CFN)
1 Not used by CFN key types 0-6; encode as 0
2 Not used by CFN key types 4-6; encode as 0
3 Not used by CFN key type 6; encode as valid expiration date

Encoding from the Keypad

Encoding your keys involves taking all the information you want on the key (from the encoding form) and electronically writing it onto each key. There are two occasions when you will need to enter special characters that are not present on the keypad. These characters are "~" for field separator, and "*" for supervisor entry. The method for inserting these special characters varies by key type:

- For key type "3", press **CLR** twice. The field is filled with asterisks.
- For key types "1" and "2", press **CLR** thrice to display the asterisks.

You can alternate among clear display and asterisks by repeatedly pressing the CLR button. Key types "1" and "2" also have a field separator character.

To encode keypad, proceed as follows:

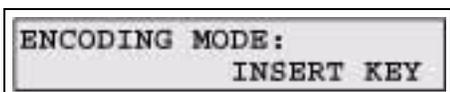1 Turn the Manager key to "ENCODE". The system displays the following:

```
SELECT OPTION:
                ENCODE
```
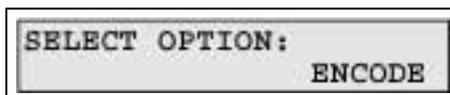
2 If you wish to encode keys, press **ENTER** to display the first encoding prompt. The system displays the following:
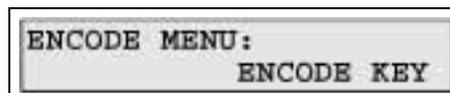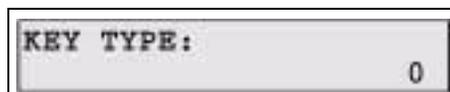
```
ENCODE MENU:
            ENCODE KEY
```

3 To begin key encoding, press **ENTER**. The system displays the following:

```
ENCODING MODE:
            INSERT KEY
```

4 Insert the key to be encoded. The system responds with the first field on the key as shown below.

```
KEY TYPE:
                   0
```

Line 2 contains the current value of that field.

Each time you enter Encode mode, the first key you encode will display one of the following:

- If the key has no data on it (new) all fields display as field separators (~). Subsequent new keys that you encode display the data contained on the previous key with the exception of "Key Number", which is displayed as field separators (~). This allows you to use the same data (account numbers, expiration dates and so on) if desired, for additional keys.

- If the key has data on it, the encoded data will be displayed. Each subsequent key containing data will display the data encoded upon it.

5   To accept the data in the field, press **ENTER**. To change the data in the field, type the new value and press **ENTER**. The system displays the next field prompt.

6   Repeat step 5 until all fields are defined.

If you are only changing certain fields, or the data for this key is the same for the remaining fields as the key before, you can use the ENCODE key as a shortcut to update the key. This allows you to skip over any fields that do not have to be changed, and go directly to updating the key. When you press ENCODE, the system skips any intermediate prompts, validates remaining unentered data, and takes you immediately to the "ENCODE KEY" verification prompt. If errors exist in the unentered data, the system displays "RANGE ERROR". Press **ENTER** to acknowledge the error condition and the system returns to the prompt in error so you can make corrections.

The system displays the ENCODE KEY verification menu:

```
ENCODE KEY
   <ENT>=YES <CLR>=NO.
```

7   Press **ENTER** to encode the key. The system displays the following:

```
Encoding key...
           please wait
```

```
FINISHED, REMOVE KEY
```

8   Remove the key and repeat this procedure from step 4 until all keys are encoded.

9   To return to the "ENCODE MENU" prompt, press **PREV** at the INSERT KEY prompt.

Reading Key from the Keypad

"ENCODE KEY" can be used to display all information contained on a specific key. Use this option to view key data only. When reading a key, ensure that you have not changed any field values loaded on the key. If you need to change any field data on a key, refer to the section "Encoding from the Keypad" on page 72.

To read encoded key information, proceed as follows:

1 Turn the Manager key to "ENCODE". The system displays the following:

```
SELECT OPTION:
                  ENCODE
```

2 Press **ENTER**. The system displays the first encoding prompt.

```
ENCODE MENU:
             ENCODE KEY
```

3 Press **ENTER**. The system displays the following:

```
ENCODING MODE:
            INSERT KEY
```

4 To read the key, insert it into the key receptacle and turn it to the right. The system responds with the first field on the key:

```
KEY TYPE:
                       0
```

Line two contains the current value of that field.

5 To view the next field, press **ENTER**. The system displays the next encoded field.

6 Repeat step 5 until all fields are viewed.

7 The system displays the ENCODE KEY verification menu:

```
ENCODE KEY:
   <ENT>=YES  <CLR>=NO
```

8 Turn the key to the left, remove it, and press **ENTER**.

9 To read another key, repeat this procedure from step 4 onwards.

10 To return to the ENCODE KEY prompt, press **PREV**.

View Encode Records - Keypad

Use "VIEW ENCODE RECORDS" to view a log of the last 100 keys that were encoded. The view records display contains the key number, the date, and the time of encoding.

1 Turn the Manager key to "ENCODE". The system displays the following:

```
SELECT OPTION:
              ENCODE
```

2 Press **ENTER**. The system displays the following:

```
ENCODE MENU:
            ENCODE KEY
```

3 Press **F1**. The system displays the following:

```
ENCODE MENU:
  VIEW ENCODE RECORDS
```

4 Press **ENTER**. The system displays the following:

```
RECORD #001
16759 12/16/91 12:05
```

The first line contains the record number (001-100). The second line contains the key number, the date, and the time of encoding.

5 Use **F1** or **F2** to scroll through the available encode records. The message, "END OF DATA" appears when the last record has been displayed.

6 To return to "SELECT OPTION: ENCODE", press **PREV** twice.

Reset Encode Records - Keypad

Use "RESET ENCODE RECORDS" to clear out the encode records file.

1 Turn the Manager key to "ENCODE". The system displays the following:

```
SELECT OPTION:
              ENCODE
```

2   Press **ENTER** to display the following:

```
ENCODE MENU:
            ENCODE KEY
```

3   Press **F1** until the system displays the following:

```
ENCODE MENU:
 RESET ENCODE RECORDS
```

4   Press **ENTER**. The system queries:

```
ARE YOU SURE?
   <ENT>=YES <CLR>=NO.
```

5   Press **ENTER** to clear the file. The system displays "COMMAND COMPLETED".

6   Press **ENTER** and the display returns to "RESET ENCODE RECORDS".

7   To return to "SELECT OPTION: ENCODE", press **PREV**.

Encoding from the Terminal

To encode keys from the terminal, use the "ENCODE KEY (EN KE)" command. This command is discussed in "Encode Key (EN KE)" on page 38.

5 – Performing Maintenance

Description

The FleetKey Maintenance option allows you to set up and enforce a vehicle maintenance timetable for up to three types of scheduled maintenance. The maintenance types are A, B, and C, and you can use them for any maintenance activity. For example: "A" might be tune up/oil, "B" might be brakes, "C" might be tire maintenance.

To use the Maintenance options, you must load a maintenance table. This is done in Setup mode. The maintenance table consists of three Maintenance categories (A, B, and C) and a "MILES" and "DAYS" between maintenance entry for each. You can define a maintenance schedule for up to 20 classes (1-20) of vehicle. The vehicle class is encoded on the user's key. A class of 00 indicates that no maintenance is performed. The key also contains a seven digit maintenance odometer and a six digit maintenance date field for each of the three maintenance types. This maintenance odometer is separate from the odometer that a vehicle enters during fueling. It contains the vehicle's odometer from the last time maintenance was performed. The maintenance table uses the maintenance odometer as a starting point for calculating the next scheduled maintenance. The maintenance date is the date the maintenance was last performed. This date is the starting point for calculating the next scheduled maintenance date. Neither the maintenance odometer nor the maintenance date can be set at zeros. Else, the system assumes maintenance will not be used. If the last maintenance odometer or date is not known, enter an odometer or date from which to calculate future maintenance.

When the vehicle is sent to the garage for maintenance, the technician uses the "VIEW MAINTENANCE" prompt to read the key and find out which maintenance is due. He then uses the "PERFORM MAINTENANCE" option to perform that maintenance and update the user's key with the current odometer and the date. A maintenance transaction is generated and placed in the maintenance transaction file. A copy of the transaction is also printed on the logger.

Maintenance is only valid for key types 0, 2, or 3. If maintenance is attempted on a key type other than 0, 2, or 3, the message "ERROR: INVALID KEY TYPE" appears. Keys encoded with supervisor characters in the VEH field cannot be used with the maintenance option.

If the technician attempts to update the key's odometer with an out-of-range odometer, the system displays, "WARNING: ODOMETER OUT OF RANGE". This message can appear for two reasons: one, if the odometer entered is less than the last odometer on the key; or two, if the odometer is greater than the last odometer plus the maximum miles encoded on the key. However, to perform maintenance with an out-of-range odometer, press **ENTER** to acknowledge the error and re-enter the odometer. The system accepts the second odometer entry (invalid or valid).

Perform Maintenance (1000 FleetKey only)

To perform maintenance, proceed as follows:

1 Turn the Manager key to **MAINT**. The system prompts:

```
MAINTENANCE MODE:
  PERFORM MAINTENANCE
```

2 Insert the Fleetkey into the receptacle and turn it to the right.

3 If you wish to perform maintenance, press **ENTER**. The system displays the following:

```
WORK ORDER NUMBER:
                   ■
```

4 Type up to six digits for work order number and press **ENTER**. The system displays the following:

```
TECHNICIAN NUMBER:
                 000
```

5 Enter a one to four digit technician number and press **ENTER**. The system displays the following:

```
MAINT(S) PERFORMED:
                   ■
```

6 Enter all that apply (**A**, **B**, **C**), using the A B C keys to the right of the keypad and press **ENTER**. The system displays the following:

```
CURRENT ODOMETER:
                   ■
```

7 Enter the vehicle's current odometer and press **ENTER**. The system queries as shown below.

```
UPDATE KEY?
   <ENT>=YES  <CLR>=NO
```

If you press CLEAR, no maintenance data is recorded on the key, the system displays, "REMOVE KEY". When you remove the key, the "MAINTENANCE MODE: PERFORM MAINTENANCE" prompt reappears.

8   Press **ENTER** to update the key. The system displays the following:

```
Encoding key...
            please wait
```

```
FINISHED, REMOVE KEY
```

An entry is made on the logger printout each time maintenance is performed. A sample entry appears as shown below:

```
KEYPAD: PERFORM MAINTENANCE @03/10/92 10:10
TRAN KEY#   DATE     TIME  W.O.#  TECH MAINT ODOM    STATUS
0003 00082 03/10/92 10:03 000123 1234 ABC    0000100
```

9   Remove the key and the display returns to "PERFORM MAINTENANCE: INSERT KEY".

10 Repeat steps 2 to 9 until all keys are updated.

11 Press **PREV** to return to the maintenance mode: "MAINTENANCE MODE: PERFORM MAINTENANCE" prompt.

View Maintenance (1000 FleetKey only)

Use "VIEW MAINTENANCE" to view the maintenance information that is encoded on the key. Under usual circumstances, when you select "VIEW MAINTENANCE", the system displays the maintenance type, and the date and odometer reading at which maintenance was last performed. The second line of the display shows the number of days and/or odometer remaining until the next maintenance is due. Any of the following circumstances can cause dashes to be displayed in the fields on the second line of the display:
  • The maintenance information on the key equals 0
  • The maintenance table data equals 0
  • The maintenance odometer is greater than the last odometer on the key
  • The maintenance date is greater than the current date
  • The vehicle class on the key equals 0 (no maintenance)

Note: When maintenance is overdue, the second line of the display contains zeros.

1 Turn the Manager key to MAINT. The system prompts:

```
MAINTENANCE MODE:
  PERFORM MAINTENANCE
```

2 Insert the Fleetkey into the receptacle and turn it to the right.

3 Press **F1**. The system displays the following:

```
MAINTENANCE MODE:
      VIEW MAINTENANCE
```

4 Press **ENTER**. The system prompts:

```
SELECT MAINTENANCE:
                    ■
```

5 Enter the maintenance type to be viewed (A, B, or C) and press **ENTER**. The system displays the following:

```
A:  12/16/91 0000122
DUE:    ---     000000
```

This display shows the maintenance type, and the date and odometer reading at which maintenance was last performed. The second line shows the number of days and/or miles/kilometers remaining until the next maintenance is due.

6 Press **ENTER**. The system returns to "SELECT MAINTENANCE" and you can select another maintenance type to view.

*Note: If you do not wish to view additional maintenance, press **PREV**. The "MAINTENANCE MODE: VIEW MAINTENANCE" display reappears.*

Appendix A – Error Messages

0 ID FIELDS LOADED
An attempt to edit/view ID fields through the keypad was made when the KE200 is configured for 0 ID fields.

BAD
Unsuccessful Fleetkey read/write attempt was executed by a terminal command.

COMMAND IS BLOCKED
An attempt was made to execute a terminal command that is currently being blocked by another port or the keypad.

ENCODE FORMAT ERROR: xxx...xxx
ENCODE KEY command was executed on a key type whose format contains an error in the field indicated.

---ENTRY ERROR---
Invalid data was entered at terminal.

INVALID COMMAND
Terminal command entered is unknown.

INVALID KEY TYPE
An attempt was made to perform maintenance on a Fleetkey, with a key type other than 0 (single key), 2 (vehicle key), or 3 (supervisor key).

INVALID SYSTEM ID
An attempt was made to perform maintenance on a Fleetkey whose system ID does not match the one loaded into the KE200.

KEY READ FAILURE
KE200 detected a CRC error while reading a Fleetkey in the keypad mode.

KEY REMOVED
Fleetkey was removed during the update process.

KEY WRITE FAILURE
KE200 detected a CRC error while writing to a Fleetkey in the keypad mode.

MEMORY FULL

This indicates that maintenance transaction file is currently filled. No new transactions will be accepted until space is freed by advancing the "FIRST" transaction pointer. See "Configure Maintenance Transactions (1000 FleetKey only)" on page 26 or "Reset Pointer (RES PO) (1000 FleetKey only)" on page 56 for details.

NO DATA LOADED-ID #x

An attempt was made to encode or read a Fleetkey prior to configuring the variable ID fields. "x" represents the first ID field found, which has not been configured.

NO ENTRY

ENTER button was pressed on the keypad with no prior data input.

ODOM OUT OF RANGE

The odometer value entered while performing maintenance is less than the Fleetkey's LAST ODOMETER or greater than the Fleetkey's LAST ODOMETER plus MAX MILES.

OUT OF RANGE

The entered value is not within an allowable range.

RAM FAILED

Read/write failure was detected on RAM chip during diagnostics test.

ROM FAILED

Checksum error was detected on ROM chip during diagnostics test.

TOTAL ID DIGITS > 20

The sum of all ID field sizes exceeds 20 digits.

TRAN NOT FOUND

The value entered during "RESET TRANS POINTER" keypad function is not available.

TURN OFF "MGR KEY"

A command attempted at the terminal requires the manager key to be placed in the OFF (idle) position.

Appendix B – Parts List and Preventive Maintenance

This appendix lists parts spotting drawings and parts lists for the KE200 Key Encoder Maintenance Terminal and simple preventive maintenance for the Fleetkeys.

Use the part numbers when you order, to expedite your order and reduce the possibility of the wrong parts being shipped. Multiple views of the system are provided to ensure that all parts are identified. Contact your Gasboy distributor for parts and service. If you have any questions or problems pertaining to this KE200 Key Encoder/Maintenance Terminal, call Gasboy Technical Service at 1-800-444-5529.

KE200 - Exterior View

Figure B-1: KE200 - Exterior View
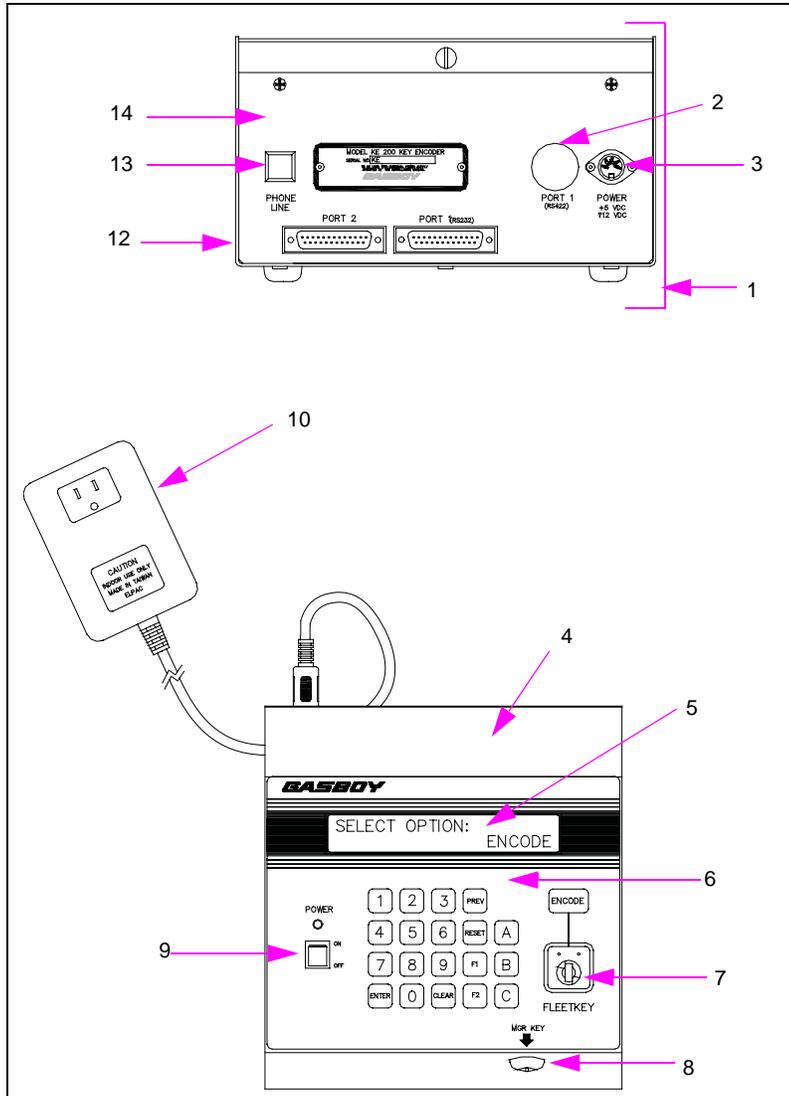
Item	Description	Part Number
1	Whole Unit without Power Supply	C06544
2	Plug Button	047219
3	Connector/Cable Assembly	C06296
4	Housing Cover	C35318
5	LCD Display	C06331
6	Overlay with Keypad	C02812
7	Key Receptacle	C02848
8	Manager Switch/Cable Assembly	C06314

Item	Description	Part Number
9	Power Switch Assembly	C06295
10	Power Supply Assembly (115 VAC)	C02846
	Power Supply Assembly (230 VAC)	C06329
11	Cable to Outlet (Not Shown)	-
	6 ft, 7 inches (North American)	C04245
	9 ft, 10 inches (North American)	C04284
	8 ft, 2 inches (Britain/UK)	C01238
	8 ft, 2 inches (European)	C01237
	8 ft, 2 inches (Australian)	C01239
12	Base Housing Assembly	C35307
13	1/2" Square Cover	C01586
14	Rear Panel	C35312

FleetKeys

Figure B-2: FleetKeys
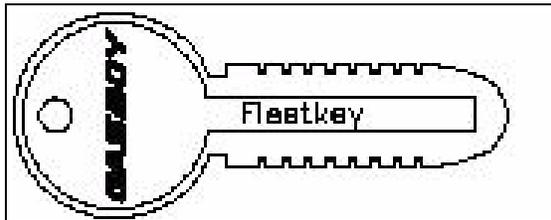
Description	Part number
FleetKey, Black	C01625
FleetKey, Gray	C01624
FleetKey, Green	C01623

KE200 - Inside Top Cover View

Figure B-3: KE200 - Inside Top Cover View
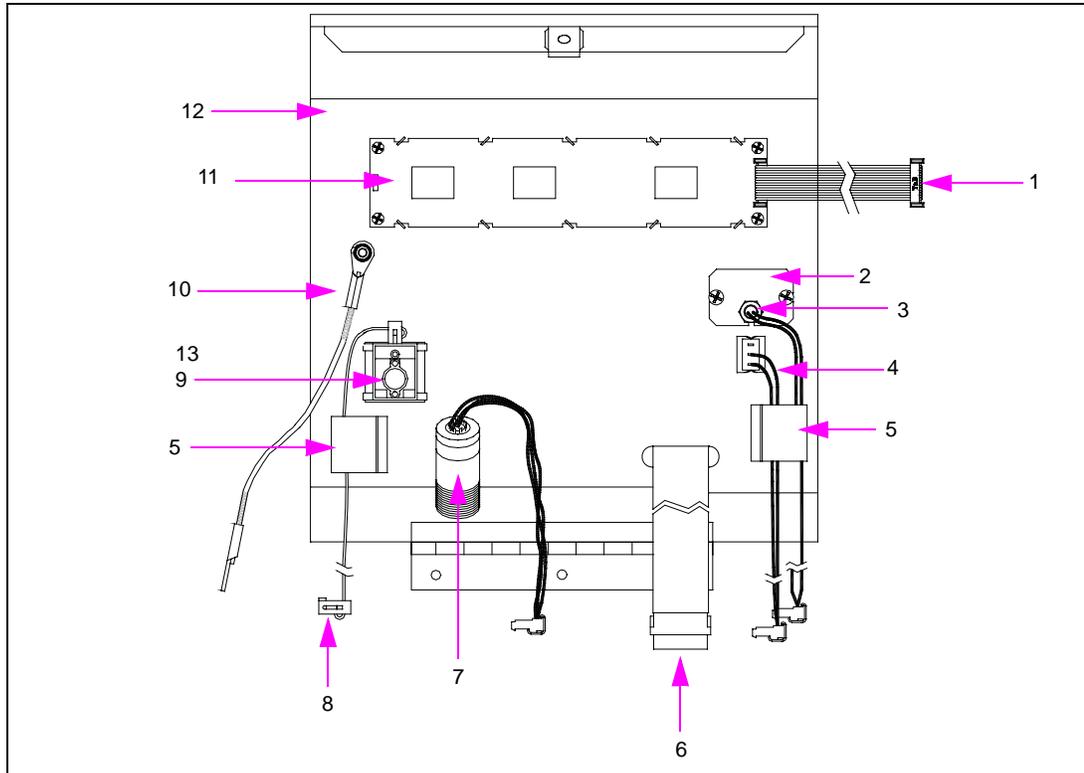
Item	Description	Part Number
1	Ribbon Cable for LCD Display	C05708
2	Bracket for LED Cable Assembly	C35304
3	LED Cable Assembly	C06294
4	Power Switch Assembly	C06295
5	Ribbon Cable Clamp	C02207
6	Overlay with Keypad	C02812
7	Manager Switch/Cable Assembly	C06314
8	Ribbon Cable Assembly for Key Receptacle	C06293
9	Key Receptacle	C02848
10	Housing Support Cable	C01589
11	LCD Display	C06331
12	Housing Cover	C35318
13	Tie Wrap (Not Shown)	Q10178-10

Modem Option (Not Illustrated)

Description	Part Number
Internal Modem, 2400 Baud	C07122
Cable Assembly with Phone Jack	C06313
Standoffs (4)	C01520
Ribbon Cable	C05738

KE200 - MPU View

Figure B-4: Modem Option
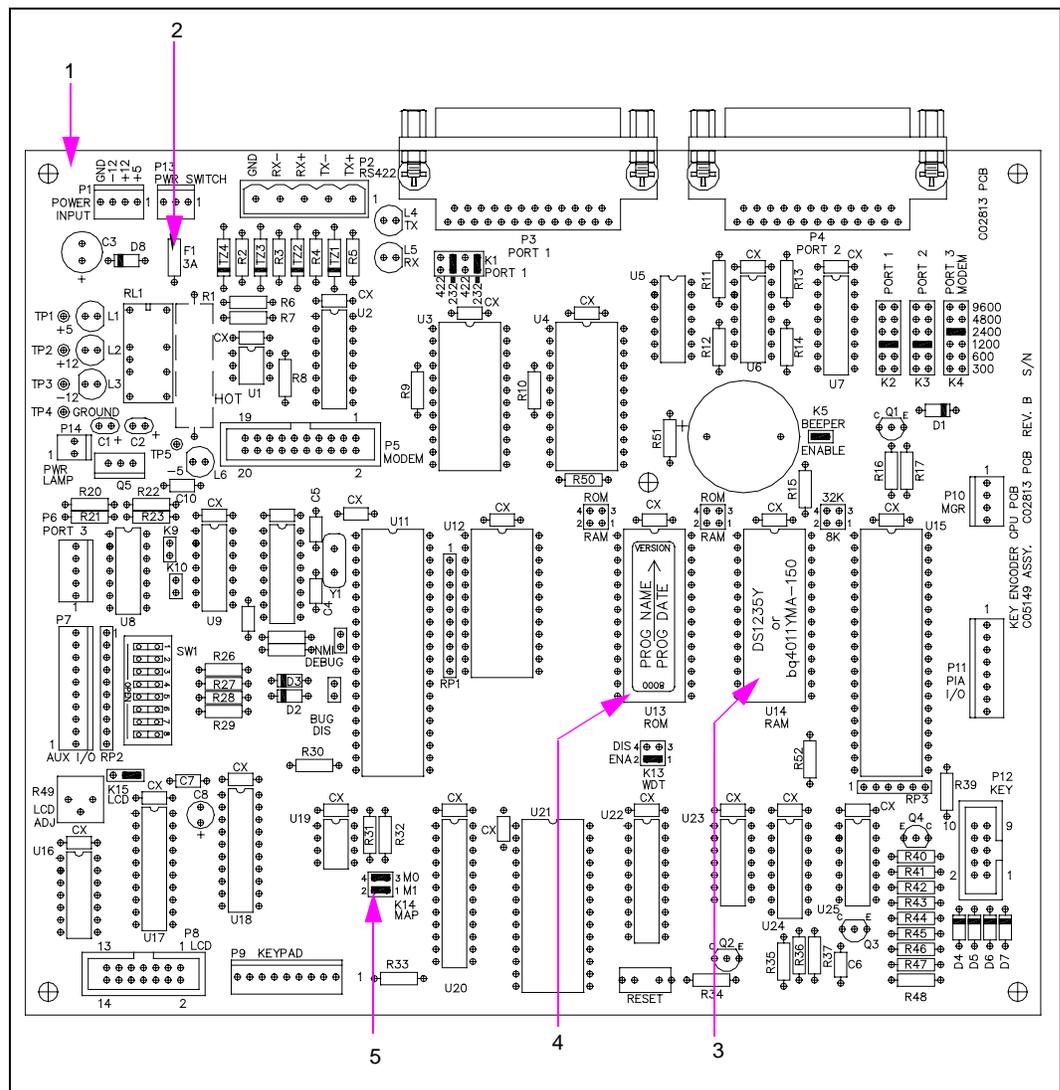
Item	Description	Part Number
1	Key Encoder CPU Assembly	C05149
2	Fuse, 3A, Pico	C02824
3	IC, RAM 32K x 8 CMOS	C08629
4	IC, EPROM 64K x 8 Programmed where xxx = one of the following: EN (for English version) FR (for French version)	C08721KKE2xxx
5	Connector, Jumper, 2-Position, Female, 100CL	Q11011 01

Preventive Maintenance

To prevent key read errors, perform the following maintenance on the keys as required:

1 Clean the contacts on the key using isopropyl alcohol and a toothbrush.

2 Dip the toothbrush in alcohol and brush the contacts of the key until they are clean.

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